The chief prior contrivance set up by the defence was that of Davison & Symington. The object of this was to cleanse the interior of barrels, particularly beer barrels, by heat. The hot air was driven into the cask in the same manner as in the complainants' process, but it was[1]

"heated by being driven through heated tubes; that is, a nest or group of iron pipes was arranged in a furnace, and, the pipes becoming hot, the air was driven through them into the cask, whereby the inner side of the cask became heated. By that, it was claimed, the must and various impurities were expelled."

The court next remarked, that barrels might be heated for pitching as readily by this process as by the complainants', but that the two processes were different. In the Davison & Symington contrivance the air to be heated did not fan the fire, as it did in the complainants' contrivance, and, moreover, it was discharged into the barrel in a pure state, with all its oxygen; whereas, as we have seen, the oxygen was removed from the air used in the complainants' process, by direct contact with the fire.

The court noted this other important difference between the two contrivances: —

"The Davison & Symington process may produce the same results, yet they produce them by a different mechanism, and a mechanism much more costly; it costs much more to make a machine, and fully as much, if not more, to operate it. You would have to produce heat enough in your furnace around your pipes to make the air sufficiently hot, and then keep up that heat by an additional blast of air into your furnace in addition to the blast which drives the air into your cask; so that the two mechanisms, while they produce the same result and reach the same end, do it by two different processes."

There was another suit upon this patent in the Eastern District of Wisconsin, before Dyer, J. (17 O. G. 675), when, by agreement, the Illinois cases were decided by Judge Dyer (a rehearing having been allowed by Judge Blodgett), and suits against four other respondents in the Eastern District of Wisconsin were decided at the same time. In this new trial the Davison & Symington contrivance was again set up. Judge Dyer agreed with Judge Blodgett in holding that it did not anticipate the complainants' contrivance. Both contrivances are

[1] Quoting from the opinion.

more fully described in the report of this case than in that of the former case. Other prior patents are also set forth at length in this second case, among them the Neilson patent,[1] which, being similar to that of Davison & Symington, was disposed of on the same grounds, and the De Vaux patent, issued in England in 1835. This was next in importance to the Davison & Symington patent in this case.

It was for "certain improvements in smelting iron stone or iron ore." It was like the complainants' patent in that it provided for a hot-air blast produced by the passage of atmospheric air through fire, but in all other respects it was very unlike it. Briefly, it provided for two chambers in which the air was condensed, and through which it passed into a third chamber, — the furnace where it was heated ; and thence it passed into the furnace where the ore was. These condensing chambers were an essential feature of the invention.

Said the court : —

"The evident purpose of the accumulation of compressed air in the chambers is to constantly force through the fire a great quantity of air, and in its rapid passage through the fire it seems reasonable that a considerable quantity of oxygen would be unconsumed and be present in the hot blast; and, as one of the witnesses stated, 'since the intensity of combustion depends largely on the amount of oxygen supplied, the compressed air will produce more burning, and therefore a higher temperature, than air which is not compressed.'

"Furthermore, I am convinced that the accumulation of compressed air in the chambers A and B of the De Vaux apparatus must have been regarded by the inventor, and is an essential part of the device for the purpose of securing uniformity in the blast, which scientific authorities appear to regard as essential to the best results in the production of a good quality of iron," &c.

BARKER *v.* STOWE, 15 BLATCH. 49.

N. D. OF N. Y., 1878. BLATCHFORD, J.

W. C. Barker's reissued patent of July 6, 1875.

A rubber bucket for a chain-pump, fitting tightly to the tube, and having an orifice in its side for the escape of water remaining

[1] *Vide post*, p. 611.

above it when pumping ceases, is anticipated by a bucket consisting of a rubber disk resting on a metal disk, the rubber disk having a hole in its centre for the chain to pass through; the hole serving, like the slit in the plaintiff's bucket, for the escape of water to the well; the back motion of the chain, when pumping ceased, causing the rubber disk to adhere to the sides of the tube, leaving a space between it and the metal disk, by which the water, after passing through the hole in the rubber disk, escaped to the well.

IN RE APPLICATION OF JAMES ARKELL, 15 BLATCH. 437.

D. OF CONN., 1879. SHIPMAN, J.

Given a notch in one thickness of a paper bag, having an evenly cut mouth, the notch being for the purpose of facilitating the opening of the mouth, it is not invention to make such a notch, for the same purpose, in one thickness of a paper bag, which has a mouth not smooth, but jagged or serrated as to its edges.

BADISCHE ANILIN & SODA FABRIK *v.* HAMILTON MANUFACTURING CO., 13 O. G. 273.

D. OF MASS., 1878. SHEPLEY, J.

Reissued patent No. 4321 (Div. B), dated April 4, 1871, for a new product called artificial alizarine, the invention of Græbe & Liebermann.

A dyestuff called alizarine is produced from the vegetable madder formerly cultivated in immense quantities for that purpose. This alizarine is not pure, but contains other ingredients, which are dyeing agents. The term "alizarine" was also applied by chemists to a theoretically pure crystallized extract from madder, the formula of which is $C^{14} H^{8} O^{4}$.

Græbe & Liebermann, through a process of chemical synthesis invented by them, produced alizarine from coal-tar, which, being cheaper than madder alizarine, superseded the latter. Their alizarine also contained other substances (different from

those found with the alizarine produced from madder), which were valuable as dyeing agents, and not before known.

This artificial alizarine, as it is called,

"was new," said the court, "not only in some of its new chemical properties, but in its capacity to produce, in dyeing and calico-printing, tints which cannot be obtained with the preparation of madder or any other dyestuffs previously known. . . . But defendants further contend, that alizarine was a well-known substance long before the patent, and it could not be made the subject of any letters-patent. . . . Whatever Græbe & Liebermann called their product in the original or the reissue, it was a new product; and they showed what it was, and how it could be produced. Pure alizarine, if it ever existed except in chemical rotation or laboratory experiment, could not have been made the subject of a patent. Nor have Græbe & Liebermann undertaken to patent alizarine, if by alizarine is meant what was known before their inventions to chemists as the body existing in dyestuffs prepared from the madder. What they have patented is the new composition of matter and the new manufacture, having the described properties, produced from anthracine by any process which will produce their new product."

The real value of Græbe & Liebermann's dyestuff, as of the madder dyestuff, lay in the alizarine. There is therefore some reason in the defendant's contention that Græbe & Liebermann's *product* was anticipated by the madder product, although their process was, of course, patentable. Is a compound a unit, in a sense in which a machine is not, so that new elements, even when they are comparatively unimportant, change the identity of a compound, although new elements of corresponding unimportance do not change the identity of a machine? Or could it be maintained that in the case of this compound the *combination* of the old elements with the new elements is what makes it patentable?

But however we look at the matter, the fact remains, that the chief value of "artificial alizarine" arose from the presence in it of the same thing which made the value of madder alizarine. Supposing that both alizarines had been produced from madder, would Græbe & Liebermann's alizarine have been held patentable? If not, then it was held patentable in the actual case, because the process was taken into account in deciding whether the product was new. Such a consideration, however, is not

admitted, under the patent law, in deciding upon the novelty of a product. In this very opinion Judge Shepley said: —

" . . . When the product is new, *independent of the process*, the patent is infringed by the unlicensed manufacture of the new product by any mode of manufacture, the process of manufacture being wholly unimportant."

This patent was also sustained by Wheeler, J., in the Southern District of New York, 1877, Badische Anilin & Soda Fabrik *v.* Higgin, 15 Blatch. 290.

In both cases the decision rested, very properly, upon the presence in the artificial alizarine of new and valuable ingredients.

So also in

BADISCHE ANILIN & SODA FABRIK *v.* COCHRANE,
16 BLATCH. 155,

S. D. OF N. Y., 1879. WHEELER, J.,

where additional evidence, not however fully rehearsed in the report, was produced.

Judge Wheeler also said: —

"If this substance should be found to be so like natural alizarine that no one could tell the difference between them, or know them apart except by their source, the question would be presented whether, even then, it would not of itself be subject under the law to a patent granting to its inventors an exclusive right to it.[1] . . .

"In Steiner *v.* Heald[2] (6 Eng. L. & Eq. 536) the patent was for the invention of a new manufacture of garancine. Garancine was an extract from madder, having its pure red coloring matter, and was well known. The plaintiff produced it from spent madder by the same process by which it had before been produced from fresh madder. It was ruled at the trial that because it was the same substance it was not a new manufacture. This ruling was reversed in the Exchequer Chamber, on the ground that spent madder 'might be a very different thing from fresh madder, in its properties, chemical and otherwise;' and that whether it was or not would be material to the validity of the patent. If it was [not?], the novelty of the manufacture would consist wholly in the material from which it was produced. There would be a combination of

[1] This was merely an *obiter dictum*. It is, we think, unsound. *Vide ante*, page 79.

[2] *Vide post*, page 292.

new materials, which would be a new combination; and so there would be here.

"In the case of The Wood-Paper Patent (23 Wall. 566), the paper-pulp sought to be covered by the patent was not made at all by the new process, but was merely extracted by it. It was cellulose before the treatment, and after; and its patentability appears to have been denied on that ground. There was no new combination about it."

THE ATLANTIC GIANT POWDER CO. *v.* RAND, 16 BLATCH. 250.

S. D. OF N. Y., 1879. BLATCHFORD, J.

Infringement of a patent reissued to the Giant Powder Co., March 17, 1874, No. 5799. The claim was: —

"The combination of nitro-glycerine with infusorial earth, or other equivalent absorbent substance, as a new explosive compound."

The specifications gave the proper proportions, stating that they should vary

"according to the absorbent capacity of the substance mixed with the nitro-glycerine, it being preferable in all cases — and this is the only limit — to use so much only of the liquid nitro-glycerine as the absorbent substance will retain without liability to subsequent separation by compression or leakage."

For ordinary purposes, a mixture of seventy-five parts, by weight, of nitro-glycerine and twenty-five parts of infusorial earth was recommended.

The merit of the invention was that it put nitro-glycerine into the form of a powder instead of a liquid; and by this change two advantages were gained: First, the powder could be transported and handled with comparative safety, whereas the liquid was dangerously explosive; and, secondly, the powder could be put directly into the bore-hole of the rock to be blasted, entirely filling it, however irregular its shape; whereas again the liquid nitro-glycerine, in order that it should not permeate the rock, and thus become a source of danger in subsequent drillings, had to be enclosed in a cartridge somewhat smaller, of course, than the diameter of the bore-hole, and incapable of adjusting itself to the crannies thereof. A percussion-cap and an ordinary fuse

were the means of exploding the powder. Its safety lay in the fact that it could not be exploded by concussion.

Among other defences, two previous patents were set up; namely, a French patent for "improvements in the manufacture of mining and shooting powders," taken out by one Nobel, dated Sept. 18, 1863 (and a certificate of addition thereto, dated Jan. 19, 1864); and an English patent, dated Sept. 24, 1863, granted to A. F. Newton, for "improvements in the manufacture of gunpowder and powder for blasting purposes," being "a communication from abroad by Alfred Nobel." Both patents described the same invention, which was for a mixture of nitro-glycerine with gunpowder, the explosion being brought about, not primarily by ignition of the nitro-glycerine through percussion, but by ignition of the gunpowder. The claim was for

"producing explosive mixtures by treating gunpowder or analogous substances, in the manner and for the purposes above set forth."

Judge Blatchford thus stated the difference between this invention and that of the complainant: —

"It is quite clear that these French and English patents set forth that nitro-glycerine is to be mixed with gunpowder, and that the resulting compound is to be used, in the shape of a dry powder, for shooting and blasting purposes.

"The nitro-glycerine is stated to be absorbed by the gunpowder. But throughout these patents there is no allusion to the explosion of the compounded powder by the detonation or percussion of the nitro-glycerine in it, or to the explosion of the gunpowder in it by the prior explosion of the nitro-glycerine in it. On the contrary, the suggested method of exploding the compounded powder is by the ignition, first, of the gunpowder in it, and the communication to the nitro-glycerine in it of the heat generated by the burning or exploding gunpowder, so as to cause the explosion of such nitro-glycerine. There is no allusion to the fact that nitro-glycerine can be exploded by percussion or detonation, or that it ought to be so exploded, or that it is liable to be exploded by accidental concussion, or that it is therefore unsafe in being handled or transported, or that it is, when mixed with a suitable absolvent, less sensitive to shocks than when in a liquid condition, or that the proportions of nitro-glycerine and absorbent should be such that the absorbent will retain what it absorbs and not let it leak out, and that there should be sufficient nitro-glycerine to form an efficient explosive when designedly exploded by concussion. These are all dis-

tinctively described features, in No. 5799, of the powder there described, and they are none of them described in the French and English patents as features of the compound of nitro-glycerine and gunpowder there referred to," &c.

In a subsequent case,

THE ATLANTIC GIANT POWDER CO. *v.* PARKER, 16 BLATCH. 281,

Judge Blatchford once more sustained the patent against the same prior invention and against another,—a similar compound invented by one Turly, being a mixture of nitro-glycerine and gunpowder. He concluded thus: —

"The article [describing the compound referred to] . . . does not suggest that the blasting compound was a dry powder, or a safety powder, or such a compound as the patent sued on describes. The prior description to invalidate the patent must be such as to show that the article described in the patent can be certainly arrived at by following the prior description; and it is not enough to show that, by the lucky accident of taking gunpowder of the proper quality, a compound may be obtained which is unlike that indicated by such description. By the light of what Nobel has taught in the patent sued on, much can now be asserted to be seen in what was published before, which no one ever, in fact, saw in it before the original of the patent sued on was taken out. There is no evidence that any one from the Turly article, or by any method supposed to be described in it, made, before the invention in question, as patented by Nobel . . . was made by him, the safety powder which constitutes that invention. So far from this, the Turly article starts out with the assertion, that a mass of liquid nitro-glycerine is quite harmless in and of itself, and that its employment has no greater danger than that of common powder."

STROBRIDGE *v.* LINDSAY, 18 O. G. 62.

W. D. OF PENN., 1870. ACHESON, J.

T. Strobridge's reissued patent, No. 7583, dated March 27, 1877, for an improvement in coffee-mills. The claim was for

"A coffee or similar mill having a detachable hopper and grinding-shell formed in a single piece, and suspended within the box by the upper part of the hopper or a flange thereon, substantially as and for the purpose specified."

Acheson, J.:—

" . . . I do not think the word 'detachable,' as used in this claim, necessarily implies that the hopper must possess the capacity of being detached from the top of the box. The object contemplated seems rather to be to have a hopper easily detachable from the box. . . . It is not denied that prior to the date of the Strobridge invention there existed, and were well known in the art, coffee-mills in which the hopper and grinding-shell were formed in one and the same piece. This, however, is not claimed as new or patentable, but the claim is limited to a hopper and grinding-shell so constructed. If the Strobridge invention was anticipated at all, it was by . . . the 'French mill,' . . . thus described by the defendant's expert witness: 'I find in the "Exhibit French mill" an article known as a box-mill, and consisting of a box with a top made of wood, upon the under side of which a block is glued so as to extend down into the box when the top is placed on the box. Through the centre of the top and block a funnel-shaped opening is made, so that this opening through the top and block forms a hopper, being flush with the upper surface of the top of the box. The top and block being glued together makes them practically one piece. To the bottom of the hopper, and concentric with it, the grinding-shell is attached.'

" After a careful inspection of the 'Exhibit French mill' and 'Exhibit Strobridge,' I have reached the conclusion that they differ in important particulars, and that the 'French mill' does not embody the invention covered by the first claim of the complainant's patent. The 'French mill,' indeed, has a sunken or suspended hopper; but here, it seems to me, its likeness to the complainant's invention ceases. The hopper and grinding shell of the 'French mill' are not in one piece. The steel grinding-shell is attached to the bottom of the wooden hopper by means of screws. The sunken part of the wooden hopper is glued to the underside of the cover or top of the mill, and the top is nailed and glued to the sides of the box.

" Neither in the 'French mill,' nor in any other mill shown to have been in existence prior to the Strobridge invention, is there to be found the combination described in the . . . complainant's reissued patent; namely, a coffee-mill having a detachable hopper and grinding-shell formed in a single piece, and suspended within the box by the upper part of the hopper or a flange thereon. . . .

" The defendants, however, strenuously insist that in view of the state of the art, especially as shown by 'Exhibit elevated hopper mill' [not described in the report] and 'Exhibit French mill,' the former having the hopper and grinding-shell in one piece, and the latter

showing a sunken hopper, it did not require invention to make the structural changes recited in the . . . Strobridge reissued patent; but to this I cannot give my assent. To me it seems that the complainant has produced a new and useful mill differing substantially from any which preceded it, and evincing the exercise of the inventive faculty.

"A change in the form of a machine or instrument, though slight, if it works a successful result not before accomplished in a similar way in the art to which it is applied, or in any other, is patentable (Isaacs *v.* Abrams, 14 O. G. 861); and the validity of a patent is not determinable by the degree of novelty or invention displayed (The Miller & Peters Mfg. Co. *v.* Du Brul, 12 O. G. 531). Utility, within the meaning of the patent law, is authoritatively declared to exist 'if the combination is new and the machine is capable of being beneficially used for the purpose for which it was designed' (Seymour *v.* Osborne, 11 Wall. 549).

"Applying these principles to the complainant's reissued patent, why should it not be sustained?

"His combination is new, and, as a result, we have a superior mill characterized by simplicity of construction and the facility with which its several parts may be set up, and, when finished, compact, convenient, and durable. The merits of the invention were quickly perceived by the public. The box-mills in the general market prior to the introduction of the Strobridge mill had the hopper above the top of the box. Immediately upon the appearance of the complainant's mill it met with great popular favor and obtained a ready sale," &c.

In a subsequent case, The Same *v.* The Same, 19 O. G. 1285, Acheson, J., again described the French mill.

THE UNITED STATES STAMPING CO. *v.* KING, 17 BLATCH. 55.

S. D. OF N. Y., 1879. BLATCHFORD, J.

Infringement of a patent granted to E. A. Heath, Oct. 10, 1871, for an "improvement in cuspadores." The defence set up the patent of W. H. Topham, granted Aug. 2, 1870, for an "improved spittoon."

The Heath invention was thus clearly described by Judge Blatchford: —

"It is plain that the invention claimed is a metallic cuspadore, formed of three metallic parts, the lower part being heavier than in

ordinary then existing cuspadores, and extending up to the largest diameter of the spheroid, the middle part and the upper part being lighter than in ordinary then existing cuspadores, the middle part being of a dome shape, and being joined below to the lower part, and above to the upper part, and the upper part being an inverted cone in shape, flaring outwards, and forming a mouth, the whole structure not being liable to fracture, and having the capacity of returning to an upright position, of itself, from a position not upright, when left free, and being essentially of the form shown in the drawings of the patent. That form is a spheroidal body with a conical mouth, flaring outwards."

The Topham specification said: —

"My invention is designed to be applied to spittoons, pails, and other vessels made of paper, . . . and the invention consists in incorporating with the bottom or lower part of the vessel a weight so arranged that, in case of force being applied, no matter from what side, to tilt or upset the vessel, said weight will have the effect of retaining it in its proper position, or of returning it thereto, and so that, when the vessel is thrown down to its place, the weight will cause it to readily adjust itself to a proper bearing on the surface on which it is intended to rest." The claims were: "1. A spittoon made of paper, weighted at its bottom or lower part by a heavier material. . . . 2. The arrangement of a weight, B, between two thicknesses or layers of which the bottom, *a*, or lower part of the paper vessel is composed, essentially as for the purpose herein set forth."

Judge Blatchford remarked: —

". . . The Topham loaded-bottom papier-maché spittoon is not shown to have suggested to any one the making of a metallic loaded-bottom cuspadore like that of Heath's. The metallic cuspadores of Musgrove were not loaded at the bottom, and were merely experimental. . . . But the history of Musgrove's experiment, as given by himself, goes far to show that the making of Heath's cuspadore was not the obvious thing that it is now, after the event, claimed to have been. . . . Many articles had, prior to Heath's invention, been made of three or more pieces of sheet-metal joined together by horizontal seams; but the question as to whether it would be useful or practical to make a metallic cuspadore of three pieces of metal in the way suggested by Heath, and with a loaded bottom, still remained for the exercise of invention. . . . The Topham structure is lacking in the essential features of the Heath structure. Topham's spittoon is not a cuspadore, and is not metallic, and is not made of three parts joined together. In Heath's cuspadore the rounded form and the load in the base co-operate to make

the structure self-righting. In Topham's spittoon there is no such co-operation between the form and the weighted base, as the sides are nearly straight, and the bottom is not rounded. . . . The Heath cuspadore . . . was immediately appreciated by the public. In the first season 20,000 were made; in the second, 40,000; in the third, over 80,000. . . . This result, in connection with all the differences before adverted to between the Heath cuspadore and prior structures, leads to the conclusion that the invention claimed in the Heath patent is a patentable invention, and that the patent is valid. The case falls within the principles laid down in Smith *v.* Goodyear Dental Vulcanite Co. (3 Otto, 496) and in Hicks *v.* Kelsey (18 Wall. 670)." [1]

Judge Blatchford made a similar decision in the case of the same plaintiff *v.* Jewett, 18 Blatch. 469.

GARDNER *v.* HERZ, 16 BLATCH. 303.

S. D. OF N. Y., 1879. BLATCHFORD, J.

Gardner's reissued patent of July 4, 1876, No. 7203; originally granted May 21, 1872.

The patent was for a chair-seat made of two or more veneers of wood, with the grains thereof crossing each other, the veneers being glued together. The seat might be perforated, for ventilation and for ornament, in any desired form. This arrangement of the veneers made a strong and solid seat.

A patent, however, had been granted to Mayo, one of the defendants, Dec. 25, 1865, reissued Aug. 18, 1868, for "improved material for roofing, tubing, tanks," &c., "and other

[1] A decision the other way was made by Nixon, J., in the case of Ingersoll *v.* Turner, 12 O. G. 189, where, however, the evidence as to priority was somewhat different. Speaking of Heath's cuspadore in relation to Topham's spittoon, Judge Nixon said: "*What, then, has Heath done? He has improved a cuspadore by increasing the weight of the bottom, whereby it is rendered less liable to upset, using the same means that Topham applied to spittoons, and producing the same results. He has substituted sheet-metal for other, and, it may be, less appropriate, materials for the manufacture; but there was no invention in the mere change of material. And this method of construction, to wit, the putting together the cuspadore in three pieces, is so obvious that nothing was claimed for it in the patent, and nothing ought to have been.*"

structures." This patent described exactly such a substance as the plaintiff's; and the claim of the reissue was as follows: —

"The employment or use of the compound scale-board, hereinbefore described, in the formation of the specified or analogous structures or articles of house decoration, fitting, and furnishing."

As to the perforations, a patent had been reissued to one Tice, June 27, 1835, for a chair-bottom of perforated sheet-metal; and another to J. A. Cochran, May 22, 1866, for a perforated chair-bottom of india-rubber.

On these facts, the court held that there was no invention in the plaintiff's chair-bottom.

SHARP *v.* STAMPING CO., 103 U. S. 250 (1880).

Lazear's patent of July 14, 1868 (No. 79,989), for an improved apparatus for broiling steak by gas, thus described by the court (Woods, J.): —

"The invention was represented and described as an upright cylinder or closed casing of sheet-metal, with a lid for closing the top, and with an open bottom. The diameter of the open bottom was traversed by a V-shaped horizontal trough, dividing it into two equal openings, through which the flame of a gas-stove, over which the apparatus was placed, might enter in two equal sheets. The trough was filled with plaster of Paris or other good non-conductor of heat, and upon this non-conductor the dripping-pan was placed for receiving the juices of the meat. The steak was clasped in a wire broiler, which was placed in the cylinder or closed casing in a vertical position, with its lower end resting in the dripping-pan, the two flat sides of the meat being equally exposed to the two sheets of flame which entered the lower end of the cylinder in the manner stated. The object was to produce an apparatus in which both sides of the meat might be cooked equally and at the same time, and in which the drippings from the meat might be caught in a pan, where it [*sic*] would be protected from the injurious effects of the heat.

"The latter object was obtained by the non-conductor filling upon which the drip-pan rested, and which filled the V-shaped trough.

"The trough served to contain the filling and support the pan, and to divide the flame into two equal sheets, which ascended along the sides of the steak."

The first and third claims of the patent were: —

"'1. The V-shaped trough E and the filling E', by which the flame is divided, and the grease protected from burning, and smoke thereby prevented, substantially as described, in combination with a gas steak-broiler.'

"'3. An apparatus for broiling steak by gas, whereby the steak is broiled or cooked simultaneously on both sides, or where the sides are equally exposed to the flame and heat, substantially as shown and described.'"

Devices alleged to anticipate this device were set up as follows: 1. Teller's patent (No. 66,911), dated July 16, 1867. The court remarked upon it: —

"The apparatus described in the Teller patent was a cylindrical vessel, having a central opening in the bottom, and an annular opening around the central opening, and a series of vertical wires or rods inserted in the annular bottom that intervened between the two openings. An inverted conical deflector was suspended in the central space from above. The claim of Teller's patent was thus stated: 'The vertical position in which the steaks are placed over the fire, and the arrangement of the vertical rods E E, all substantially enclosed with the cap C, as specified for the purposes in the specifications.'

"It is clear that this contrivance did not anticipate the invention of Lazear. It had no V-shaped trough, filled with a non-conducting substance, nor the dripping-pan referred to and claimed in his letters-patent, nor anything resembling it. It was not adapted to be used with a removable wire broiler, and did not evenly distribute the flame along two sides of the steak."

2. The Shaw patent, No. 28,781, dated June 19, 1860. This patent described a broiling-chamber within which, and supported by a steak-holder in a vertical position, was the steak, not in the centre of the chamber, but close to one side of it. This side was removable, and had attached to its lower end a pan to catch the gravy. Gas jets were placed below the centre of the chamber, and there were two deflectors extending across the chamber, — one at the top and one at the bottom. The object of the deflectors was to turn the heat, first, upward, and then downward from the top of the chamber, so that it should be distributed evenly on all sides of the steak. This, however, was not the result, for, to quote from the opinion, —

"The evidence makes it clear that this contrivance is not capable of broiling a steak equally and simultaneously on both sides, the lower

deflector causing the lower part of the steak to remain raw while the upper part is burned, and the side next the removable vertical cover is left raw." "We can find nothing," said the court, "in this invention which anticipates the claims of the Lazear patent."

A third contrivance set up in defence is not important for our purpose.

HOBBS *v.* KING, 8 FED. REP. 91.

W. D. OF PENN., 1881. ACHESON, J.

J. H. Hobbs's patent of Oct. 15, 1872, No. 132,208, for glass-ware graduated on its inner face, by means of a graduated plunger, is not anticipated by Timmon's patent (dated Sept. 18, 1866), which described graduations blown or cut on the out-side of the glass; nor by Hodgson's patent (dated Feb. 18, 1862), according to which "the glass measures have exterior graduations communicated from graduating marks on the inte-rior walls of the mould."

Said the court:—

"From the uncontradicted evidence it appears that Hobbs's invention is a decided improvement. . . . It is shown that where the graduations are on the cavity of the glass mould, the correctness of the work pro-duced is affected by unavoidable variations in the quantity of molten glass put in the mould, for these variations affect the thickness of the articles of glass-ware through the bottom. But with Hobbs's apparatus and method the thickness of the article through the bottom makes no difference; for if the plunger goes down deeper into the mould, the graduations made in the article will be correspondingly low down, and *vice versa*."

The learned judge also discussed, perhaps unnecessarily, a metallic cup, included in the Hodgson patent, graduated on the inside, but not by the plaintiff's method; and he remarked upon the fact that you cannot see through a metallic cup, but you must observe the graduations of it, by peering into it over the top.

GRIFFITHS *v.* HOLMES, 8 Fed. Rep. 154.

D. of Conn., 1881. Shipman, J.

Cary & Griffiths's reissued patent, No. 5067 (dated Sept. 24, 1872), for an improved suspension ring for business cards.

Shipman, J.:—

"The device consists of a ring of thin sheet-metal, having a shank or bottom piece, provided with sharp spurs, which are pushed through the card and turned down on the opposite side. These spurs are made like those of the little article in common use as a paper-fastener.

"The novelty of the patented device was anticipated by an umbrella-fastener, called upon the trial 'Twitchell's umbrella-fastener,' which was made by the American Ring Company of Waterbury, Conn., for some years, beginning in the summer or fall of 1865, and which is still in common use. This fastener is a ring of sheet-metal, with spurs, which are pushed through the india-rubber band which serves to keep a folded umbrella in place.

"The ring attaches the end of the band to a button or hook. The suspension ring is like the umbrella-fastener, except that the former has a longer shank than the latter, because it is a matter of convenience that after the spurs have been fastened to the card the whole circumference of the ring should be unoccupied, so as to permit it to be easily slipped upon a nail.

"This is an obvious matter of construction, and the necessary change requires only mechanical taste and skill. Substantially the same article is used for two objects, and the new use is quite analogous to the purpose for which the article was previously used. The bill is dismissed."

PENNINGTON *v.* KING, 7 Fed. Rep. 462.

D. of Mass., 1881. Lowell, J.

Automatic lawn-sprinklers.

Head-note: "Sprinklers with radial arms revolved automatically by the force of water passing out through one and the same side of each arm, and sprinklers having a semi-globular vessel with radial ridges and perforations on one side thereof, causing the vessel to revolve by the water passing through them, *held*, not to anticipate a sprinkler having a

rose or globe, with holes bored at an angle of inclination, so as to produce a revolving motion by the forcible discharge of water through them."

SMITH *v.* MERRIAM, 6 FED. REP. 903.

D. OF MASS., 1881. LOWELL, J.

Sutherland's reissued patent, No. 7510,

[1] "for a stay-strip as a new article of manufacture. The stay-strip, as described, is a narrow piece of leather folded or doubled so as to fit over the projecting seam, and with a channel or groove to hug or fit that seam, and other grooves at the sides of the seam calculated to receive the stitches by which the stay is fastened to the boot or shoe. The projection of the seam raises a fillet as it is called, or swell, which serves to protect the stitches, and this is done still further by the beads or swells or fillets which bound the grooves on the edges of the stay-strip. The specification explains one great advantage of a strip thus prepared to be that it can be sewed automatically to the boot or shoe without troubling the operator to guide it by hand so much as he must a strip of a different shape. He claims this stay-strip in its several forms. . . . The admitted or uncontradicted state of the art I understand to be this: Strips had been sewed over the seams of boots and shoes by hand and by sewing-machines. In one class of work soft strips had been applied to outward-turned seams with a rolling presser-foot, and the effect of the operation was to leave slight grooves or depressions near the edges of the finished and applied strip, which had the useful property of protecting the stitches, and a central swell over the seam. Grooved or beaded edges of leather strips, where stitches were laid, had been used in harnesses, and in ladies' belts, and straps for pocket-books, and other articles. One of the pieces of harness produced in evidence looks very much like the plaintiffs' stay-strip. In this state of the art, and of the plaintiffs' patents, I am of opinion that a stay-strip with beaded edges, to protect the stitches, could not be patented as a new article of manufacture, and that a stay-strip with a central recession formed beforehand, to fit or hug the seam, could not be patented by the reissue."

[1] Quoting from the opinion of Lowell, J.

JOHNSON *v.* RAILROAD CO., 105 U. S. 539 (1881).

It was alleged by the plaintiff that his patent (reissued April 16, 1872) covered what is commonly known as "the fish-plate joint" for uniting the ends of railroad rails. The report thus describes this joint: —

"It consists of two iron plates of proper shape and size to fit the 'web,' which is the upright portion of the rail between its head and base. The plates are fastened one on each side of and near the ends of two abutting rails by means of bolts and nuts, the bolts passing through corresponding holes formed in both the plates and rails. In order to permit the rails to expand and contract with the changes in temperature, their ends are not allowed to form a close joint, and the holes, either in the fish-plates or in the rails, are made larger than the bolts, and are elongated in the direction of the length of the rails. By these means the expansion and contraction of the rails is 'compensated' without injury to the joint."

The patentee alleged that in the year 1843 he made a model which contained this device; and thus he attempted to carry back his original patent, dated 1857, to the year 1843.

Upon this point the court remarked as follows: —

"We have examined the model referred to, and cannot see that it contains any suggestion of the fish-plate joint. It is simply an oblong strip of sheet-iron, having its sides bent over so as to form flanges, and with four oblong holes in each flange corresponding with similar holes in the other, and a bolt to pass through the corresponding holes in the flanges. The model is a single piece of sheet-iron, supposed to represent an iron rail. There is no suggestion that it is to be connected with any other rail, and there are no plates or bars with which to make the connection. If the model suggests anything, it is simply the use of a bolt in slotted holes, which, as the testimony in this case shows, was a device in common use in many ways long before the year 1843.

"It is alleged that the model spoken of was made by Johnson when he was about twenty years of age. It does not appear that at this time he had ever seen an iron rail such as those to which a fish-plate joint can be applied, or that he had ever seen a railroad. According to his testimony, the model when finished was placed by him upon the plate under the eaves of a wood-house, where it remained unseen by any one for thirty-three years, until the spring of 1876, when he returned to the place where he had lived in 1843, and got the model for the purposes of this suit.

"It is sufficient to say that the proof fails to show that he in 1843, or at any time before the fish-plate joint for uniting iron rails came into use, was the inventor of that device, or that he ever invented it at all. It was not described in his original patent, and he never set up any claim to it until the year 1872, when its use had become universal wherever railroads were constructed."

PACKING COMPANY CASES, 105 U. S. 566 (1881).

W. J. Wilson's reissued patent No. 6370, dated April 6, 1875. J. A. Wilson's reissued patent No. 7923, dated Oct. 23, 1877. The first for a process of preserving and packing cooked meats for transportation. The second for an improvement in metallic cans intended to hold cooked meats.

The first patent was the more important in this case. The court below thus described it:[1] —

"The meat is to be first thoroughly cooked by boiling it in water, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity. While yet warm with cooking it must, by some suitable apparatus, be pressed into a box or case, previously prepared, with sufficient force to remove the air and all superfluous moisture, and make the meat form a solid cake. The box or case is then to be closed air-tight upon the meat. So that the invention contains these elements: 1. Thoroughly cooking the meat by *boiling it in water*, removing the bone and gristle. 2. Placing it, while yet warm with cooking, into a box or case, and pressing it by some suitable apparatus with sufficient force to remove the air and all superfluous moisture, and make the meat form a solid cake. 3. Closing the box or case air-tight upon the meat."

The patent originally included meat *however* cooked, if otherwise treated as described in the patent. But while the trial below was in progress, the patentee disclaimed any process in which the meat was not boiled.

After this disclaimer, the claims of the patent, for the process and its product, ran as follows: —

"*First.* The within-described process of packing, for transportation, meats cooked by boiling, by compressing the same while heated with

[1] 9 Fed. Rep. 547.

cooking into an air-tight package, so as to preserve the meat in its integrity, and retain the natural juices and nutritious qualities of the same.

"*Second.* As a new article of manufacture, meat cooked by boiling, put up while heated with cooking, so as to form a solid cake in the package in its natural state, without disintegration or desiccation, in hermetically sealed packages, as set forth."

Mr. Justice Woods delivered the opinion of the court. Speaking of the disclaimer which we have mentioned, he said: —

". . . The patentee and the complainants, it appears, were induced to make this disclaimer by the evidence introduced by the defendants in this case, especially the patent of A. S. Lyman, dated June 22, 1869, 'for an improved mode of preparing and pressing roast meat in a condensed and concentrated form,' and it amounts to an admission that they could not sustain the process covered by their patent, except as applied to boiled meats.

"We are clearly of opinion that a change in the mode of cooking the meat from broiling, roasting, or steaming to boiling, all the other parts of the process remaining unchanged, cannot be called invention, and does not entitle the party who suggests the change to a patent for the process. 'All improvement is not invention, and entitled to protection as such. Thus to entitle it, it ought to be the product of some exercise of the inventive faculties, and it must involve something more than what is obvious to persons skilled in the art.' Pearce *v.* Mulford, 102 U. S. 112. See also Rubber-Tip Pencil Company *v.* Howard, 20 Wall. 498; Hotchkiss *v.* Greenwood, 11 How. 248; Stimpson *v.* Woodman, 10 Wall. 117.

"If meat cooked by roasting or steaming, and put up in a given mode, formed a valuable article of commerce, the cooking of the meat in other ways, as, for instance, by boiling, would naturally occur to any one engaged in the business of packing such food for the market.

"But we think there is nothing new in the process covered by the patent under consideration. Clearly, all its separate elements are old and well known, and have been long used. This is not controverted. The evidence shows that the process of boiling meat, packing it while warm in cans, and sealing it air-tight, had long been used before the original application of Wilson. There is, it is true, much conflict in the evidence, but, taken all together, it leaves no doubt in our minds that the process of cooking meat, lobsters, and other articles of food by boiling, and, while warm from the cooking, compacting them in cans, which are then sealed up air-tight, was practised in many places and for many years before his application.

"Complainants, however, insist that there are two elements in their process which, taken in connection with the others above mentioned, form a combination never used before the date of his patent.

"The first of these is the subjecting of the cases, after they are packed and sealed air-tight, to what is known as the Appert process. This consists of placing in hot water the cans, after they have been filled and sealed up, and thereby heating them. They are then removed and punctured, and the heated air and gases in the cans are allowed to escape. The puncture is immediately closed by a drop of solder.

"The contention is that all this is made a part of the process covered by the Wilson patent, by the description of the new article of merchandise covered by the second claim as "cooked meat" "in hermetically sealed packages." It is insisted that the term 'hermetically sealed packages' implies, among those dealing in canned goods, that the packages have been subjected to the Appert process.

"We think that this is an unwarrantable stretch of the meaning of that claim. The article of merchandise which it covers is produced by the process disclosed by the specification and first claim. "The second claim expressly states that it covers cooked meat put up in solid form, &c., 'in hermetically sealed packages, as set forth.'

"Recurring to the specification and first claim, we are not left in doubt about what, as there set forth, is the process of sealing the cases or cans hermetically. The invention is declared to consist in a process for packing cooked meats into an air-tight package. The method of doing this is thus described: 'A measured quantity of this cooked meat is, while yet warm with cooking, pressed by any suitable apparatus into a previously prepared box or case with sufficient force to remove the air and all superfluous moisture and make the meat form a solid cake. The box or case is then closed air-tight upon the meat.' The process is simply to exclude the air from the case by filling it compactly with cooked meat still warm, so that the cover, when applied, will rest on the meat, and then closing the case by fitting on the cover air-tight.

"There is no suggestion here of anything further to be done to make the package a hermetically sealed one. The process described leaves it hermetically sealed. There is no hint that the Appert process is to be subsequently applied as a part of the process covered by the patent. On the contrary, that idea is excluded by the terms of the second claim, 'hermetically sealed, as set forth.'

"It is further contended by the appellants that the process disclosed by the patent includes the cooking of the meat to be canned by plunging it into water already heated to the boiling-point. That is, the process of cooking is commenced by placing the meat in water already heated up to 212° Fahrenheit. By this method of cooking, it is said that the

meat is preserved in its integrity, and all its natural juices and nutritious qualities are retained.

"We think that the plan of beginning this process of cooking, by putting the meat in water already heated to the boiling-point, is not set forth in the specification or claims. The conditions that they prescribe would just as well be filled by placing the meat in cold water which is then heated to the boiling-point, and allowing the meat to remain in it until cooked thoroughly. No person, on reading them, could extract the idea that there was any advantage to be gained by heating the water to the boiling-point before placing the meat in it to be cooked, or that any such method was in the mind of the inventor. This part of the process is clearly an afterthought, and not intended by him to be covered by his patent when he applied for it. It is evident that the part now under consideration is nowhere described in the specification in full, clear, and exact terms, as required by law. On the contrary, it is not described at all.

"The Appert process, and the cooking of meats by plunging them into water already heated to the boiling-point, may be of great advantage to the canned meats put up by the complainants, and their alleged superiority to the products of other parties may be attributed to these practices. But the trouble with complainants' case is that these elements are not included in the process disclosed by the patent which they allege is infringed by the defendants. Our conclusion is, therefore, that there is nothing new in the process described in the patent. All the elements of the process are old. They are merely aggregated, and the aggregation brings out no new product, nor does it bring out any old product in a cheaper or otherwise more advantageous way. This disposes of the first claim of the patent under consideration. If that claim cannot stand, it follows that the second claim, which is for the product made by the employment of the process described in the first claim, is also invalid. We are of opinion, therefore, that the patent is void for want of invention and for want of novelty in the process described therein. . . .

"All, therefore, that is left to consider is whether the shape of the can described in the [J. A. Wilson] patent[1] is new, and whether the

[1] The first and third claims only were in suit. They ran thus:—

1. "A can for packing food, hermetically sealed and constructed of pyramidal form, with rounded corners, and offset ends to support the heads, said heads being secured as shown and described."

3. "An improved article of manufacture, solid meat compressed and secured within a pyramidal case or can, so that said can forms a solid mould for the meat, and permits its discharge as a solid cake, substantially as described."

defendants use it. The shape of the can described in the patent is pyramidal, with round corners, and with four or more sides. It is admitted on the record by counsel for the complainants that, prior to the date of the Wilson patents, conical tin cans were made and used for canning alimentary substances, and sealed air-tight. If it be conceded that the change of a conical can to a pyramidal can, with rounded corners, involves invention, the complainants are met with distinct and unequivocal evidence that cans used for containing preserved food, and closed air-tight, having four or more sides and pyramidal in form, with rounded corners, were mentioned in the fifth addition to the patent of Emile Peltier, before referred to, and that the machinery for making them was therein described.

"What has been said leaves nothing for the third claim of the patent to rest on. There is nothing new either in the shape, construction, or material of his cans. There is in the record abundant evidence that, long before the date of his patent, cooked meat was packed in cans, so that they served as a mould for the meat, and the meat formed a solid cake. The use of a pyramidal can, which was old, for the purpose of receiving the meat cake, which was also old, involved no invention. The use of vessels with flaring sides, as receptacles and moulds for edible substances, is as old as the art of cookery. Our conclusion is that both the first and third claims of the patent are void for want of novelty."

MATTHEWS *v.* MACHINE CO., 105 U. S. 54 (1881).

Hydrants. Unimportant case.

The court: —

"As to the valve apparatus, the object of which is to let the water in the body of the hydrant escape when the main valve is closed, and to prevent any escape of water when the main valve is open. Since Race and Matthews [the plaintiffs] were not the original inventors of this process, but only of a particular arrangement of valves to effect it, they can only properly claim the specific arrangement which they invented."

McCLOSKEY *v.* DU BOIS, 19 BLATCH. 205.

S. D. OF N. Y., 1881. WHEELER, J.

McCloskey's patent, No. 220,767, for an improvement in plumbers' soft-metal traps, the claim being for

"a die-drawn seamless trap of soft metal, as a new article of manufacture, substantially as herein described."

"These traps," said the court, "are simply bends of water-pipes downward and then upward far enough to hold sufficient water in the bends to fill the bore of the pipes at the lowest point, and prevent the passage of air or gas."

The patentee's traps differed from those commonly used only in that they were drawn through a die instead of being cast or moulded; and it did not appear that lead or other soft metal, when drawn or wrought, was at all different from lead cast or moulded. (The patentee described a process, but claimed only the product.) The court, therefore, held that the plaintiff's traps were not patentable.

". . . The new [traps] are said to be marked with 'longitudinal striations;' but these have nothing whatever to do with the quality or operation of the trap. They are merely the inevitable marks of the die. They are said to distinguish in appearance the new from the old; but that would only be the subject of a design patent, if of any. . . . The patent covers no invention. Wood-Paper Patent, 23 Wall. 562.

"However meritorious an invention of the means for making a drawn trap might be, this patent, which, while it describes means, is for the product only, has nothing to rest upon."

CROSS *v.* MACKINNON, 11 FED. REP. 601.

S. D. OF N. Y., 1882. WHEELER, D. J.

The court: —

"The orator has a patent, numbered 199,621, for an improvement in fountain pens, the principal distinctive feature of which is a spring working between the vibrating writing-pin and the air-tube, to project the pin and restrain the flow of ink when the pen is not in use, and yield to the pressure on the point of the pin and make room for the

flow of ink when the pen is in use. The first claim, which is the one in controversy, is of the vibrating pin and spring combined with the air-tube case of the pen and ink-tube. The defences to this suit upon the patent are want of novelty in the invention patented, and non-infringement. Fountain pens with air-tubes, vibrating points, and other necessary points were well known at the time of the plaintiff's invention; but none of them had his precise arrangement of a vibrating point worked by a spring connected with an air-tube, as he arranged them. The defendant, Mackinnon, had a patent for one substantially like the plaintiff's, except that the vibrating point was actuated by a weight instead of by a spring; in others there were springs, but which were not connected, and did not operate like the plaintiff's.

"One ground of want of novelty presented and urged is the equivalency of the weight in Mackinnon's patent to the spring in the plaintiff's. That they are equivalent in some operations is well established and known; but the question on this part of the case is whether they are equivalent in producing the desired result here. The efficiency of the weight is affected by its necessary confinement in a small working place, and by the necessary inclination of the pen from a perpendicular, both when in and out of use. Something to act more quickly in the direction of the point of the pen, without regard to its perpendicularity, was necessary, and this was found in the spring, which in this operation was more than the equivalent of the weight.[1] Another ground of lack of patentable novelty is an alleged want of working together of the parts mentioned as combined in this claim. This position rests chiefly upon the fact that the air-tube, as such, has nothing to do with the spring; that it is a mere support to the spring, and for that purpose might as well be a solid rod.

"It is a fact that the air in the tube, and the tubular form of that part, have nothing whatever to do with the operation of the springs; but the patent does not rest upon the idea that they do. The pressure of the air-tube was necessary in the pen, and the merit of the invention consists in making the further use of this necessary part to sustain the spring where it is wanted. It does combine with the spring for this purpose, and by this invention is made to do two things instead of one. The spring could be attached to something else, but that would make a different pen, and probably not so good a one."

[1] *Vide ante*, page 67.

ADVANCE IN DEGREE.

FLOOD *v.* HICKS, 2 Biss. 169.

N. D. of Illinois, 1869. Drummond, J.

E. F. Flood's patent of Oct. 15, 1867.

A wagon had been constructed with a reach curved, but not curved sufficiently to allow the fore-wheels to pass under it. The patentee made the reach much more curved, so that the wheels could pass under it, and the wagon could make a sharp turn.

Drummond, J., *held* that when the idea of a curve in the reach had once been attained, any mechanic might naturally think of a greater curve under which the fore-wheels could pass, and, therefore, that the improvement was not patentable.

SMITH *v.* ELLIOTT, 9 Blatch. 400.

S. D. of N. Y., 1872. Woodruff, J.

Perhaps the patent which best illustrates the distinction taken by the courts between mechanical skill and invertive genius is that of William Smith for a corded fabric, reissued in 1868. This patent was thrice in suit, the last time in the Supreme Court. In each case the decision was against the patent.

The fabric as improved by the patentee was used for the gores of gaiter boots, superseding all other materials for that purpose, so that it was of great value. It was thus described by Lowell, J.:[1] —

"A corded fabric in which the central cords or cord warps are griped firmly between two weft threads, each passing half-way round the cord, one above and the other below, and the cords are separated from each other by the interweaving of warp threads and weft threads in strips of cloth between the cords only, and not over and under the cords, so that the cords are covered by weft threads only. The claim is for the corded fabric, substantially as described, in which the cords are elastic and are held between the upper and under weft-threads, and are sepa-

[1] Smith *v.* Nichols, 1 Holmes, 172.

rated from each other by the interweaving of the upper and under weft-threads with the warp threads in the space between the cords, and only there."

Before the first trial,[1] in January, 1870, the patentee filed a disclaimer of any fabric "in which the warp and weft threads are so interwoven between the elastic cords as to form strips of shirred cloth between, and by the contraction of the elastic cords; declaring that in his fabric the warp threads are interwoven with the weft threads only for the purpose of bending the latter tightly about the elastic cords."[2]

The fabric relied upon by the defendants in each case to defeat the patent was a webbing which had been used for suspenders, &c., but not for gores of boots. This was like the patentee's fabric, except that it was less tightly woven, and that its cords were less near together. It was thus described by Woodruff, J.:[3] —

"True, these fabrics do not appear to have been woven of a width sufficient for gores of boots. The material does not appear to have been of suitable fineness to render the fabric attractive for that purpose, although there is some evidence which may qualify this observation. Such a use does not distinctly appear to have been made of those fabrics, until the complainant commenced the manufacture. It is at least doubtful whether those fabrics had the elasticity which is required for shoe gores; and in other particulars there were differences, not in construction or kind, but only in degrees and qualities, not of the substance of the invention claimed.

"If the complainant's patent had been prior in date to the manufacture of these fabrics, and was otherwise valid, there is not a doubt — there can be none — that these fabrics are directly within the claim of the complainant, and would have been plain infringements of his patent. This is a rational, and in general, when they include the whole of an alleged invention, a conclusive, test of the originality of the latter."

Before the second suit,[4] the patentee had disclaimed "any fabric in which the weft threads are so interwoven with the warp threads which lie between the elastic cords that the former are not brought half-way around each of said cords, so as to gripe

[1] Smith *v.* Elliott, *supra*.
[2] Quoted from the opinion of Lowell, J.
[3] Smith *v.* Elliott, *supra*.
[4] Smith *v.* Nichols, *supra*.

them in such a way as not to permit said elastic cords to slip between said weft threads, in case said cords are cut crosswise or bias." In this second case[1] (before Clifford and Lowell, JJ.), Judge Lowell delivered the opinion as follows: —

" . . . This evidence establishes that cloth for suspenders was made with cords of india-rubber covered with weft threads only, the cords being of variable sizes and placed at variable distances apart, according to the degree of elasticity and other properties that were desired. Taking this evidence and the plaintiff's disclaimers into consideration, he appears now to claim that his fabric differs from others known before by being more tightly woven, so that it can be cut crosswise without danger of the cords slipping back or withdrawing, and by having the cords so near together that they form a great part of the bulk of the cloth. Now, it does not appear to us that these differences make up a patentable improvement.

"The fact that an article is better and more useful in the trade is evidence of novelty; but if the superiority is attained by the application of known means in a known way to produce a known result, though a better one, the novelty required by the patent law is wanting. . . . We find that the real objection [to the old webbing used for suspenders] . . . is the want of sufficient elasticity. Many of the dealers give this as the only defect, and most of the others say that the old article is wrong in color, width, and elasticity.

"It is plain that color and width are merely questions of construction, and we think it not less so that the greater elasticity of the complainant's fabric will not support his claim. The old fabrics were of various degrees of elasticity, and the way to increase or diminish the elasticity was perfectly well known; namely, by increasing or diminishing the relative proportion of the elastic cords to the other threads. Any manufacturer could have produced an article with greater or less elasticity, as the needs of the trade might require, up to the maximum which was possible to be attained by native india-rubber, the article then in use for the elastic strand. . . .

"The other ground on which the second disclaimer distinguishes the old from the new article is that in the latter the cords are so firmly grasped by the weft threads, each of which passes half-way round them, that the cords can be cut crosswise, without injury to the fabric by the withdrawing of the cords." He examines the evidence on this point, and says: "The fair result of the whole evidence is very strongly to prove that the old webbing was wanting only in elasticity, and that

[1] Smith *v.* Nichols, *supra*.

the amount of that quality was variable, and could be increased or diminished by the manufacturer.

"But granting that the old cloth was not so tightly woven that it could be cut crosswise without injury (which we do not think the evidence warrants us in granting), that change, too, would seem to be within the knowledge of the manufacturer. Corded elastic fabrics were made in which the same mode of weaving was employed as in the plaintiff's, and making a closer texture by the old means — that is, by drawing the weft threads tighter round the cords — must surely be a matter of construction only. Especially is this seen to be true when we remember that the cords were of various sizes, since the firmness with which they would be griped by the weft threads would depend much on the relative size of the cords and weft threads."

On appeal to the Supreme Court,

SMITH *v.* NICHOLS, 21 WALL. 112,

the decision of the circuit judges was affirmed. Mr. Justice Swayne, delivering the opinion of the court, said: —

"A patentable invention is a mental result. It must be new and shown to be of practical utility; everything within the domain of the conception belongs to him who conceived it. The machine, process, or product is but its material reflex and embodiment. A new idea may be engrafted upon an old invention, be distinct from the conception which preceded it, and be an improvement. In such case it is patentable. . . . But a mere carrying forward, or new or more extended application of the original thought, — a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way, by substantially the same means, with better results, — is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent, or rested only in public knowledge and use. In neither case can there be an invasion of such domain, and an appropriation of anything found there. In one case everything belongs to the prior patentee; in the other, to the public at large.

"The question before us must be considered in the light of these rules. All the particulars claimed by the complainant, if conceded to be his, are within the category of *degree*.

"Many textile fabrics, especially those of cotton and wool, are constantly improved. Sometimes the improvement is due to the skill of the workmen, and sometimes to the perfection of the machinery employed. The results are higher finish, greater beauty of surface, and

increased commercial value. A patent for the better fabric in such cases would, we apprehend, be unprecedented. The patent in the present case rests upon no other or better foundation."

WOOSTER *v.* CALHOUN, 11 BLATCH. 215.

S. D. OF N. Y., 1873. WOODRUFF, J.

Patent of T. Robjohn, dated April 19, 1864, claiming "a banded ruffle, whether crimped, fluted, ruffled, or shirred, when said ruffle is made of two thicknesses of goods, substantially as herein described."

Of this article the court said:—

"It embodied no new idea whatever in mechanical construction; it was identical with what had been made by hand long before. If it possessed greater beauty, greater evenness and regularity of its plaits, than the ruffling made by hand, that was due to the machinery by which it was made, and not to the invention of the maker in suggesting any novelty but such as pertains to quality or degree of perfection in what was old. If it be conceded that such evenness, regularity of plaits, beauty, and finish, exceeding anything which it is possible to produce by hand, made it a patentable article of manufacture, notwithstanding it is in other respects like ruffling before made, still it was not new in such sense as to be patentable. Just such even, regular, beautiful, finished plaits were made and on sale before. . . . The point of difference most insisted upon is that none had at that time the edge of the band hemmed or turned up. I cannot agree, that if there be ruffling known and in the market, which requires to be hemmed before being used, or when put to use, one who hems it before offering it for sale has made a patentable invention, and can monopolize the business of hemming ruffles. The mistake of the complainant is in confounding a process, or a machine for performing, at one operation, what before required more than one, with the product of the operation. The former may be patentable; the latter is not. . . .

"Nor am I prepared to assent to the proposition that the product of a machine is patentable on the mere ground that it makes an already known article more perfectly than it has been or can be made without a machine. The idea being old, men strive to embody it perfectly. Human skill is exhausted in the effort. Human hands, less exact and unvarying in their movements, only approximate perfection. A machine is devised which makes it better than it has ever before been

made. Another machine is invented which approaches more nearly. Still another machine is invented, which performs, it may be, better, — it may be not so well. Is the product of the best human skill, in such case, patentable? Is the product of each successive machine patentable? If all the makers are not entitled to a patent for the article as a product, which of them is entitled? Surely improvements in degree or quality are not the subject of a patent."

CROUCH *v.* ROEMER, 103 U. S. 797 (1880).

Crouch's reissued patent of March 7, 1871, No. 4289, for an improvement in shawl-straps.

Waite, C. J.: —

"The appellant in this case, complainant below, in describing his invention, when he applied for his patent, said that before his invention 'straps had been used to confine a shawl, or similar article, in a bundle, and a leather cross-piece, with loops at the ends, had extended from one strap to the other; and above, and attached to this leather cross-piece, was a handle.' He then said: 'My invention consists of a rigid cross-bar beneath the handle, combined with straps that are passed around the shawl or bundle, such straps passing through loops at the ends of the handle.' This was because the 'leather cross-piece or connecting strap' was 'liable to bend and allow the straps to be drawn toward each other by the handle in sustaining the weight; . . . hence the handle is inconvenient to grasp.' From this, as it seems to us, the *rigid* cross-bar was from the beginning the controlling idea of the inventor. His object clearly was not to bind and hold the bundle, but to keep the handle which the holder was to grasp from pressing the sides of the hand. Hence he says: 'I claim as my invention — 1. The rigid cross-bar connecting the ends of the handle, and provided with loops for the straps, substantially as and for the purposes set forth;' that is to say, to bind and hold a bundle to be carried.

" . . . It is conceded in the patent itself that shawl-straps with handles attached to a leather cross-piece having loops at the ends were old. Eustace, one of the witnesses for the complainant, says he made his goods with a cross-piece of the firmest leather he could get, doubled and stitched so as to render it firmer still. His object clearly was to keep the weight of the bundle from drawing the ends of the handle together so as to press against the sides of the hand. The testimony leaves no doubt on our minds that handles fastened on rigid cross-bars

and used to carry bundles were known long before the complainant's invention. Possibly in adjusting them to use, though this is by no means certain, the straps to bind the bundle were not passed through loops across the bar, yet it is clear, beyond all question, that the handle, rigid cross-bar, loops, or their equivalent, and straps, or equivalents, were used in combination to keep together and carry one or more articles in a package made by piling or rolling the articles together.

"Under these circumstances, it was no invention to stiffen by artificial means the leather cross-piece which had before been made as rigid as it could be by thickness, doubling and stitching. All that was done by this inventor was to add to the degree of rigidity which had been used before. The addition of metal or other substance as a stiffener of the known cross-piece, which had already been made rigid in a degree, was not invention. The substantial elements of a well-known structure were thus in no patentable way changed."

BUCKAN *v.* McKESSON, 18 Blatch. 485.

S. D. of N. Y., 1880. Blatchford, J.

Eames & Seely's patent, reissued July 30, 1872, No. 5007, for a "new soap-compound, produced by incorporating carbolic and cresylic acids, either one or both, with ordinary soap."

An earlier soap was substantially the same as this, except that the carbolic or cresylic acid there employed, though the best obtainable at that time, was not so pure and concentrated as the acid used by the plaintiffs. The plaintiffs' compound was applicable to new purposes; but it was held to be not a patentable improvement.

Blatchford, J. (p. 490):—

". . . There was no invention in using the purer article, provided the prior compound was a true soap, developing the properties of the acids referred to. The advance was only one of degree, so far as the use of the acids was concerned."

BELT *v.* CRITTENDEN, 2 FED. REP. 82.

D. OF MINN., 1880. NELSON, J.

Letters-patent No. 177,986, dated May 30, 1876, for an improvement in metallic coverings for buildings.

All that the patentee did was to increase the size of the corrugations in the metallic sheathing previously used for the same purpose, so that the spaces between the wood-work and the iron were larger. Said the court:—

"If the ordinary form of corrugated iron, when applied to the roof or sides of a building, does not give sufficient air-spaces, there is nothing new in the idea of making them larger and diminishing the surface of the iron at the point where it is nailed to the wood-work, although it might remedy the objection. Neither discovery nor invention was necessary to do this. . . . The fact that the iron at the point of contact with the wood is double in thickness; or that the nail-holes at the joints may be made elongated in order not to interfere with the nails in case of expansion or contraction lengthwise of the corrugations, will not sustain the patent; nor will his manner of forming the joints connecting the several sections of sheathing[1] aid him."

See also —

DALTON *v.* JENNINGS, *ante*, page 142.
THE WOOD-PAPER PATENT, *ante*, page 143.
GUIDET *v.* BROOKLYN, *post*, page 245.

ENLARGEMENT.

DAY *v.* THE BANKERS' & BROKERS' TELEGRAPH COMPANY, 9 BLATCH. 345.

S. D. OF N. Y., 1872. BLATCHFORD, J.

In this case the thing enlarged was a hollow box placed under the sounding-post (upon which the stylus strikes) in the Morse telegraphic machine, the object being to increase the sound.

[1] "The upper end is slit at the centre of the corrugations, and the two parts drawn in and lapped one over the other, thus forming a bevelled surface and a good joint." (The specification.)

It was a natural inference that increasing the size of the box would have this effect; and the improvement was held to be not patentable.

THE THATCHER HEATING CO. *v.* THE CARBON STOVE CO., 15 O. G. 1051.

D. OF N. J., 1878. NIXON, J.

Letters-patent No. 71,244, dated Nov. 19, 1867, for improvements in a stove.

The chief feature of the patentee's stove was a passage-way from the fire-pot to the furnace front, large enough to let "clinkers" pass through it.

The defence produced an old heater which had a passage-way like the plaintiff's, except that it was too small for the passage of "clinkers;" and they asserted that the plaintiff's passage-way, being merely an enlargement of the old one, did not constitute a patentable invention.

"That would be true," said the court, "if no new and useful result was accomplished by the enlargement; but when a change of form produces a new and beneficial result, such change may be patentable. Curtis on Patents, § 44."

This patent was again sustained by Blatchford, J., in Thatcher Heating Co. *v.* Spear, 1 Fed. Rep. 411. S. D. of N. Y., 1880.

PLANING-MACHINE CO. *v.* KEITH, 101 U. S. 479 (1879).

Woodbury's planing-machine, patented April 29, 1873.

The court held that it was anticipated by the machine of one Anson, from which it differed by being larger and stronger, and consequently adapted to planing heavy planks, — a use of which the Anson machine was incapable.[1]

This case also raised the question of anticipation strictly; but on that score it is too long and elaborate for our purpose.

[1] See also a very similar case, Phillips *v.* Page, *post*, page 318.

BRUCE *v.* MARDER, 10 FED. REP. 750.

S. D. OF N. Y., 1882. WHEELER, J.

Bruce's patent of May 27, 1873, No. 139,365, for an improvement in printing-types.

Wheeler, J.: —

" . . . The improvement consists in having types for figures cast two-thirds the width of the body, which is the height of the type, and with correspondingly larger faces, whereby the type can be more readily set, because they can be justified, as printers say, by two of the ordinary three-in-em spaces, and because the print is much more legible.

" The defences are want of patentability, of invention, and want of novelty.

" The claim in controversy of the patent is for ' figures and fractions in printing-type cast upon a block equal to two-thirds the width of the body of the " em " or standard type.'

" . . . The claim of lack of patentability rests upon the argument that there can be no invention in merely increasing the size of the types for figures, or the width of the body of the type, and none in doing both. At first it would seem that this argument was well founded as to scope of the patent, and sound. But a closer examination of the subject shows that the patent involves more than either of these things, or the combination of both. The invention is not merely of an increase of the size of type for figures. Figures in printing are to be used in the same body of type with letters, and the whole are to be justified, in the language of printers; in other words, spaced so as to fill out the lines. By the old method, figures were cast on types one-half the width of the body of the line, whatever the size of the type might be; and an increase of the size of the figures made necessary an increase of the size of the whole. The orator invented a method of increasing the size of the figures without increasing the size of the type of the letters and the body of the line, and a method of conveniently justifying the types for figures by making the width of the body of the type exactly two-thirds of the width of the body of the line, so that they could be justified by two of the ordinary three-in-em spaces, whatever the size of the type of the body of the line might be.

" This involved finding a new rule of proportion between the sizes of letters and the sizes of figures, and one that not only would give more legible figures, but such as would be more legible without increasing the size of the letters with which they should be printed, and such size of body of type, on which to cast the figures, that the types could be

used conveniently, and economically of space. This required more than mere mechanical skill: it made necessary the creative genius of the inventor. The testimony of practical and largely experienced printers taken in the case shows that his method was not known before his invention; that it has been of great utility and gone largely into use since. This shows that he discovered and put to use what others skilled in the art had overlooked; that it was very desirable when known, and would very probably have been found out before, if ordinary skill in that art could have discovered it. On the whole, the presumption of patentability arising from the grant of the patent is not only not overthrown, but is well sustained.

"The evidence as to prior knowledge and use establishes fairly enough that types for figures were cast with the body of the type two-thirds the width of the body of the line before this invention; and if that was all of the invention, or if the claim was to be construed according to its own terms, without resort to the specification, so that no more would be patented, the want of novelty might be made out. But, as before attempted to be shown, the invention involves the increase of the size of figures in proportion to the size of letters in connection with this size of the body of the type; and the whole of that does not appear with the requisite clearness to have been known or used before."

DUPLICATION.

WILBUR *v.* BEECHER, 2 BLATCH. 132.

N. D. OF N. Y., 1850. NELSON, J., AND A JURY.

Montgomery & Harris's patent of Aug. 12, 1840, for an "improvement in the mill for breaking and grinding bark."

Judge Nelson instructed the jury that the improvement was patentable. Its object was the duplication or multiplication of grinding-chambers; but the invention lay in the manner in which this was brought about. The case, therefore, does not decide, either that mere duplication is patentable, or that it is not patentable except when a new result is developed; but it decides that duplication may be patentable when invention is shown in bringing it about.

The description of the machinery is not sufficiently full and clear to make a detailed report of the case valuable.

BARNES *v.* STRAUS, 9 BLATCH. 553.

S. D. OF N. Y., 1872. BLATCHFORD, J.

Patent for improvement in corset-springs, reissued to the plaintiff Aug. 31, 1869.

The corset-springs in use before the plaintiff's invention consisted in a single metallic plate. There were two such springs, one on each side of the vertical opening in the corset, and they were connected by clasps. For this single plate the plaintiff substituted two plates, one on top of the other, the lower plate being a little longer than the upper. The court thus described them: —

"By having two plates he secured greater strength. But in order to maintain the flexibility of the spring, and prevent danger of fracture to the metal, in the bending of it, in use in the corset, he fastened the two plates together at their centres, and made lengthwise slots in the upper plate, near its end, through which headed pins, fastened to the lower plates, projected, which allowed the two plates to slide along each other lengthwise, when bent, while the headed pins prevented the plates from slipping by each other sidewise, or springing apart from each other facewise.

"This provision was necessary in order to develop the advantage of a spring made of two plates; and, in order not to prevent such sliding action of the plates, it was further necessary that the clasping devices, other than those at the centre of the length of the spring, should not be fastened through both plates. All this Barnes did; and this, in fact, was his real invention. He did not merely substitute two plates for one plate."

So much on the question of patentability. On that of anticipation the court observed as follows: —

"A spring existed before, used in a carriage, which consisted of several metallic plates, placed one upon another and fastened together at their centres, the shorter ones above the longer ones, but so connected at or near each end by headed pins, playing in and through slots, that they could move upon each other in the direction of their length, and be prevented from sliding off each other laterally. I think the evidence shows [it is not otherwise reported] that there was something more than the mere new use of an old article, and more than the mere use of an old article for a new purpose, and more than the mere use of two springs, one of which had been used before, in making the com-

bination which Barnes made. The carriage-spring differed from the corset-spring in not having that flexibility at the centre of its length which the corset-spring has and must have, and in not curving in one direction at one end and in the other direction at the other end, as the corset-spring is shown in the drawings of the patent to do. In other words, the carriage-spring was not a corset-spring, and could not be used as such, without such a change as involved invention.

"The French corset-spring put in evidence was a single spring, not a combined pair of springs; and although it was composed of several metallic plates, placed one above another and fastened together at their centres, and free to move or play upon each other in the direction of their lengths, yet it had no such provision as the slots and fixed pins with heads which Barnes introduced, nor any other provision for preventing the plates from becoming disengaged facewise or laterally. The French spring had no means of combining it with a second spring, when the two should be used, one on each side of the vertical opening in a corset."

DUNBAR *v.* MYERS, 94 U. S. 187 (1876).

This case decides that a single circular deflecting plate, attached to one side of a circular saw in order to spread the wood after it is sawn, thus preventing it from bearing against the side of the saw, and impeding its motion, — this being known, it was not a patentable improvement (though an improvement) to add a second and similar plate to the other side of the saw for the same purpose, and attached in the same manner, — the evidence being that no invention was required to make this addition.

Mr. Justice Clifford delivered the opinion of the court, and reviewed the cases which show that ingenuity or invention is the test of patentability: —

"Invention or discovery is the requirement which constitutes the foundation of the right to obtain a patent; and it was decided by this court, more than a quarter of a century ago, that unless more ingenuity and skill were required in making or applying the said improvement than are possessed by an ordinary mechanic acquainted with the business, there is an absence of that degree of skill and ingenuity which constitute the essential element of every invention. Hotchkiss *v.* Greenwood, 11 How. 267," &c.

See also pages 471 and 561, *ad fin.*

OMISSION.

PHILLIPS *v.* CITY OF DETROIT, 17 O. G. 191.

E. D. OF MICH., 1879. BROWN, J.

Robert C. Phillips's patent, No. 121,544, for improvements in wooden pavements.

Said the court: —

"The patent under consideration is of the simplest description. It consists of blocks of wood cut from the trunks or branches of trees in their natural form, the bark only being removed, laid vertically upon a bed of gravel or sand, which is also used as a filling-in to keep the blocks in position. The result is a smooth pavement of greater durability than any other wooden pavement known."

The main question was, whether, considering the state of the art, Phillips's invention was patentable. It was proved, first, that gravel or sand was the common filling for stone pavements; and, secondly, that blocks of wood, such as Phillips described, had been used in pavements before, in the same way that he described, except that in all these prior forms of pavement cement or asphalt, or something of like nature, was used in part, or entirely, for the filling (with one exception, noticed below).

"It remains to consider," said the court, "whether the mere omission of these bituminous substances in the filling is patentable. In the Parkins patent, pitch is mentioned as the other element of the compound; in the Reynolds patent, concrete or asphalt; in the Stead patent, asphalt; in the Fontaine-Moreau patent, asphalt, cement, glue, or bitumen; but in none of them is the proportion in which these substances shall be used in any manner stated or indicated. This is left entirely to the judgment of the paver, who may use it in such quantity as to render the filling absolutely impervious to water, or may diminish it so much (as he would be likely to do, if he were an economical or dishonest contractor) as to make it of no perceptible effect. If, in his judgment, he may use a very small quantity, it seems to be equally a matter of judgment to omit it altogether.[1]

[1] This is very curious reasoning. It is construing a patent for the use (in combination) of cement, or of sand and cement, as a patent for such use of sand alone.

"It is conceded that the round block may be used in any other combination without infringing complainant's patent. The street may be graded, the blocks laid upon the solid earth, and the interstices left open to be filled by the gradual accumulation of the streets, as suggested in the Stead patent of 1839,[1] or they may be filled with the earth scraped from the surface to make the solid road-bed,[2] and still there is no infringement. But suppose the street itself is pure sand, as in Grand Haven, or gravel, as in Ann Arbor, would it be an infringement to do precisely the same thing? If complainant's theory be sound, then the use of round blocks which would infringe his patent in one place would not infringe it in another; and in towns where the natural substratum was sand or gravel, earth of some description would have to be imported from abroad for the filling and foundation, to avoid an infringement. The question of infringement ought not to depend upon the accidents of the soil upon which the round blocks are laid. . . . The variations made from previous patents do not involve the exercise of the inventive faculty."

The learned judge's process of reasoning, as we have partly suggested, in a foot-note, seems to be something as follows:—

1. In the prior patents, the proportion of bituminous substance in the filling is not stated; therefore, those patents may be construed to include fillings which contain no bituminous matter at all.

2. The combination of small blocks (which presented an even surface without filling) and a filling supplied by gradual accu-

[1] In regard to this, the opinion says: "It does not appear that this would be a practicable mode of filling the interstices in the plaintiff's pavement, inasmuch as his patent contemplates the use of segments of whole trunks and branches of trees, which, though placed as close together as possible, would yet leave large spaces between them; whereas the Stead patent obviously contemplates small blocks the spaces between which would be small."

Earlier in the opinion the court thus describes his inver'ion: "The patent to Stead of 1839 includes wooden blocks *so shaped and placed as to support each other in a close and compact manner*, always having the fibres in a vertical position. 'The blocks which I use for the improved paving are cut transversely, out of fir or other suitable timber, or they may be composed of deal-plank ends or small portions of timber firmly cemented together to any of the required figures hereinafter described. . . . The spaces between the blocks may be filled with wooden pieces suited to their shape, or with cement or asphalt, or they may be left open, if not too large.'"

[2] This may be implied from the preceding proposition relating to the Stead patent; but it does not appear from the report that any other patent produced in the case provided for such a filling.

mulation, being old, a combination of large blocks and a filling so obtained would not be patentable, — which, if true, is entirely beside the point (for such a method of filling, under the plaintiff's patent, is neither contemplated nor practicable).

3. If one element of a new combination has not to be procured from a distance, but is at hand, its use with the remaining element is not an infringement of the combination.

The following remarks as to utility, which occur elsewhere in the opinion, seem to us more valuable: —

"Great stress is laid in this case upon the superiority of this pavement over any other heretofore used, and it is claimed as almost, if not quite, decisive of the right of complainants to their patent. While the value and utility of a device and the fact that it has superseded others previously employed for analogous uses is undoubtedly entitled to weight in considering the question of patentability[1] (Smith *v.* Goodyear Dent. Vul. Co., 93 U. S. 486), it is, after all, a somewhat uncertain criterion. If the device be in fact novel, it furnishes an additional reason why the inventor should receive the reward of his ingenuity; but if it involved no exercise of the inventive faculty, its very utility is an aggravation of the wrong done by the patentees in seizing and appropriating that which properly belongs to the public. If, for example, a person should succeed in obtaining a patent for painting the names of streets upon the gas-lamps, it would be a very insufficient answer to the defence of non-patentability to say that it was a very useful device, and one which had superseded the ancient method of painting the names upon the walls of the corner houses." [1]

See also —

RUSSELL *v.* COWLEY, *post*, page 275.
TARR *v.* WEBB, *post*, page 437.
BOOTH *v.* KENNARD, *post*, page 619.
WHEELER *v.* CLIPPER, &c. Co., *post*, page 242.
STOW *v.* CHICAGO, 3 Bann. & Ard. page 91.

[1] *Vide ante*, page 62.

"It may be admitted that, in all doubtful cases involving the validity of a patent, the fact that a mode described in the patent has gone into extensive use has [*sic*] and often will induce courts to decide in favor of the patent.

"But while this is so, courts ought not, merely because of such use, to sustain a patent. The rights of the public are to be protected as well as those of individuals, and a monopoly should not be allowed unless the right to it is clearly shown." Wilson Packing Co. *v.* Chicago Packing, &c. Co., 9 Fed. Rep. p. 552.

DIVISION.

BLACKMAN *v.* HIBLER, 17 BLATCH. 333.

E. D. OF N. Y., 1879. BENEDICT, J.

Ebenezer Blackman's reissued patent of Dec. 5, 1876, No. 7417. The invention was of a glass chimney in two parts, a base or tubular body and a top-piece, the base being fitted with a flange and a surrounding rim to hold the top-piece in place. Prior inventions were set up, and the court remarked : —

"The only distinction between the prior inventions referred to and the plaintiff's invention is that in these prior inventions the chimney-base and chimney-top were formed in one piece, while in the plaintiff's invention the chimney-base is by itself. But no invention was required to conceive the idea that a lamp chimney could be cut in two, nor was the idea of constructing a lamp chimney in two parts new. In Millar's patent of July 21, 1863, the lamp chimney was constructed in two parts. . . . No change in the mode of operation or the result was effected by cutting off the top-piece. . . . Neither does the plaintiff gain anything from the surrounding rim, which has formed the sole ground for claiming a difference between the invention in the patent sued on and the invention of Arnold and Blackman.

"No true combination [1] results from the addition of the surrounding rim, for there is no co-action between the rim and the tubular body. The only function of the rim is to prevent the top-piece from slipping. The application of the surrounding rim for the purpose of preventing the top-piece from slipping required no invention, and makes a case of juxtaposition, not a new combination."

BUZZELL *v.* O'CONNELL, 4 FED. REP. 325.

D. OF MASS., 1880. LOWELL, J.

Willis's patent, No. 100,229, for an improved sand-paper holder for finishing or "buffing" the soles of boots and shoes.

The court : —

"He described a cylinder formed of two halves hinged together; round each half the sand-paper was wrapped, and its edges were

[1] One claim was for a combination of the base, surrounding rim, and top-piece.

brought together on the inside of the cylinder and kept tight by pins and dowels; journals were shown, to which each end of the cylinder was attached by screws. The old form of holder was described as solid, with the sand-paper wrapped around it, and secured by tacks."

But this was a defective instrument. The lapping of the paper made a surface irregular and not durable; the tacks, which had to be renewed frequently, tore the surface of the roller; and time was lost in reversing the paper.

The defence set up prior devices, which were thus disposed of by the court: —

"Solid cylinders with sand-paper tacked to them had been used before; and one Copeland had, as early as 1855, made and patented a hand-tool in which the sand-paper was wrapped around two halves of an ellipse, which were hinged by a piece of cloth glued to each, and was [*sic*] held firmly together by the hand of the operator, who rubbed the soles with this tool, much as he would have done with a large file or rasp having a handle at each end. The defendant contends that the only change which Willis introduced was to cut the old solid cylinder into two parts and hinge these parts together, just as Copeland had hinged his hand-tool; and that this did not require invention. How generally the old solid cylinder was used, and whether it was of much or little value, we are not informed. I infer from the remarks of one witness that the patentee's cylinder, or those [*sic*] like it in principle, first brought bulling by machinery into common use. Supposing the old solid cylinder used in a machine driven by power to have been of some use, and to have been generally known, still, I think there was a patentable improvement in cutting it in two, bringing the parts together and fastening them to the shaft, so that they should operate like a solid cylinder, though the hinged tool to be operated by hand had already been introduced by Copeland. The advantages of the knife and this mode of adjustment and of operation are so different in the two cases that one could hardly be an anticipation of the other."

CHANGE OF SITUATION.

WHIPPLE *v.* BALDWIN MANUFACTURING CO., 4 FISH. 29 (D. OF MASS., 1858. SPRAGUE, J., AND A JURY); WHIPPLE *v.* BALDWIN MANUFACTURING CO., 4 FISH. 41 (SPRAGUE, REFEREE, 1859).

The Whipple patent for "improvements in machine for cleaning wool from burrs and other foreign substances, and also for ginning cotton," reissued July 31, 1849.

The patent included a change of situation, whereby a continuous instead of a broken surface was obtained. Sprague, J., thus described the prior contrivance, that of Whitney, and the plaintiff's chief improvement: —

"Now, the *Whitney* teeth, instead of being so arranged as to prevent seeds of cotton from falling between them, that is, presenting a surface which will support or float foreign matter, are designedly so arranged as to create no such surface, but to permit the seeds and foreign matter to fall between the rows of the teeth; and it is in this respect the plaintiff's patent says that its teeth are distinguishable from those of the saw-gin, in the language already quoted. The plaintiff's teeth differ from Whitney's in their arrangement.

"But is this a material difference? Does it involve such invention or discovery as to be patentable? There is a mechanical or physical change by bringing the metallic rings, from which the teeth are cut, so near together that burrs or cotton-seeds will not fall into channels between them. This change of arrangement creates a surface which supports or floats the burrs, so that the guard may remove them, which could not be done if they fell into channels between the rings. This result is important. Indeed, it is the attainment of the whole object of the machine; namely, the removing the burrs, by bearing them on this surface to meet this guard. This mechanical change and its effects are, I think, so considerable as to be patentable."

KIRBY *v.* BEARDSLEY, 5 BLATCH. 438.

N. D. OF N. Y., 1867. SHIPMAN, J.

Patent reissued to Kirby & Osborne (dated July 9, 1861), for an improvement in harvesters, consisting in a new arrangement of the bearing or seat on which the raker sits. The improvement

was useful, enabling the raker to do his work both more efficiently and more easily.

The court first examined the original patent,[1] as it threw some light on the construction of the reissue. The reissue introduced a new qualification which, apparently, served to distinguish the patentee's combination and apparatus from something that was old, and that was covered by the original patent. The court laid out of the case the effect on the raker as being no invention, but merely the result of the invention, which was the position of the seat. And, finally, the court *held* that the change in the position of the seat did not involve invention.

"The change of the raker's seat, so that it may face any particular angle, is an act of purely manual adjustment, which any one and every one is free to make. . . . I am well aware that it is often no easy task to draw the true line of distinction between invention, the product of original thought, and mere obvious manual changes, following the beaten track of mechanical experience. This difficulty, in connection with the general merit of inventors, as contributors to the material interests of society, has inclined courts to give a liberal construction to the law, so as to protect every contrivance that can be called new, which proves at all useful. Care has been taken to give the benefit of doubt, as to originality or creative thought, to the inventor. . . . But it is obvious that there is a limit beyond which mere changes cannot and ought not to receive this protection. I think the law never intended that it should cover a change like this, of merely turning a seat at a different angle, regardless of the means by which the change is to be accomplished," [2] &c.

See also The Corn-Planter Patent, *ante*, page 147.

DANE *v.* ILLINOIS MANUFACTURING CO., 3 Biss. 374.

N. D. of Illinois, 1872. Blodgett, J.

Infringement of a patent (granted to William Westlake, April 26, 1864, reissued to James F. Dane and others, Dec. 23, 1869) for an improvement in lanterns. The chief defence was that Westlake's patent was anticipated by that granted to Charles Waters, July 17, 1855.

[1] Granted to W. A. Kirby, March 15, 1859.

[2] McCormick *v.* Seymour, 2 Blatch. 240.

Waters's invention was a means of withdrawing from its frame the glass globe of a lantern, by attaching the rods that protect it, at their lower ends, to a ring, which in turn, by spring catches and by lips, was fastened to a disk that projected outwardly from the top of the base of the lantern. Westlake simply inverted this device, and transferred it to the top of the lantern, where the disk filled the space between the dome of the lantern and the ring, to which the rods were attached. He drew out the globe at the top of the lantern, instead of at the bottom, as Waters had done.

This, being a mere change of situation, was held not to be a patentable invention; and it was also held that it was not made such by the fact that the disk, in its new position above the light, performed the additional function of a reflector, inasmuch as a disk for a reflector merely, in that place, was an old device.

MARSH *v.* DODGE, &c. MANUFACTURING CO., 6 FISH. 562.

N. D. OF N. Y., 1873. WOODRUFF, J.

Infringement of a patent (reissued to Marsh, Sept. 11, 1866, No. 2354) for an improvement in harvesters. The alleged invention was a change in the relative position in the machine of the "revolving raking and reeling device."

Woodruff, J.:—

" . . . The counsel for the defendants insists that the patentee is restricted to a location below the top of the driving-wheel of the principal machine, and within the limits of the circumference of that wheel; and in behalf of the defendants, it is insisted that the patent includes any location which is nearer the ground than a horizontal plane passing through the top of such driving-wheel. But, in either view, location is a chief feature in the complainant's claims. This, of course, suggests the question: Is the mere location of devices, such devices not being new, patentable? To this the answer must be that it is not. If the result is the same, and nothing new is required to adapt an apparatus to operate in its new location, nothing has been done which can be called invention. If such change of location produced a new combination of devices, producing a new result, then, indeed, something patentable may have been devised; but mere change of location is not

invention. On the other hand, where change of location involves the employment of new devices to adapt an apparatus for use in the new position, and a beneficial result is produced, then this location, in its connection with such new devices, — that is, the means by which the result is produced, and not the result itself, — is patentable. And where such change of location brings into existence a new combination of devices, operating by reason of such new combination to produce a new and useful result, such new combination is patentable."

The case was decided mainly on the ground that the defendants had not infringed.

GILBERT, &c. MANUFACTURING CO. *v.* TIRRELL, 12 BLATCH. 144.

S. D. OF N. Y., 1874. WOODRUFF, J.

The patent was for an improved apparatus for carburetting air, *i. e.* for producing illuminating gas by forcing atmospheric air through petroleum or other volatile oil. The apparatus in use for this purpose included the carburetter (containing heated coils for evaporating the oil), in which the gas was generated; a motor-wheel driven by any of the well-known motive powers, by means of which the air was pumped through a pipe into the carburetter; and a conduit for conveying the gas from the carburetter to the distributing pipes.

The patentee's alleged invention consisted merely in placing the carburetter in a vault or house by itself; the object being to avoid the danger of explosion in the building to be lighted, caused by gas escaping from the carburetter. There was evidence, also, that by the passage of the gas through the conduit, laid at the frost line from the carburetter to the building, a preliminary condensation of the gas was effected; whereas, if the carburetter were placed in the building, and the gas passed directly into distributing pipes running through cold rooms, condensation immediately took place, and the result was a dangerously inflammable liquid obstructing the pipes. This second benefit produced by the patentee's alleged invention was not adverted to in his claim;[1] but the court, Woodruff, J., proceeded as if

[1] Which ran thus: "The arrangement of the carburetter with a motor-wheel, said wheel being driven by a descending weight or other equivalent mechanical power, applied to force the air through the carburetter to the

it were, and sustained the patent, as follows (first quoting from his decision in Marsh *v.* Dodge, &c. Co., *ante*, page 213) : —

" ' Where change of location involves the employment of new devices to adapt an apparatus for use in the new position, and a beneficial result is produced, then this location, in its connection with such new devices, — that is, the means by which the result is produced, and not the result itself, — is patentable. And where such change of location brings into existence a new combination of devices, operating, by reason of such new combination, to produce a new and useful result, such new combination is patentable.' This illustrates the nature and patentable character of the arrangement described in the patent in this case. By the new arrangement, the patentees bring into contributory and effective co-operation with a carburetter, and the machinery for supplying atmospheric air thereto, the earth and its even temperature below the surface, and obtain protection from the efflux of gas from the carburetter and its accumulation in the frequently visited location of the motor, and from the danger of consequent explosion, and also secure, by the passage of the gas from the carburetter through a cooler medium, the preliminary condensation which makes the use of the gas in the building, and its passage through the distributing pipes, safe, convenient, and valuable.

" It is no impeachment of the patent to say that this is only making use of the natural state of the ground, or the natural laws, which, operating below the surface, make such new location desirable, as a matter of mere judgment. It is more than that. It brings into conjoint operation and effect new elements, working actively, and also operating passively to produce the result, and to produce the ultimate and final result in a better manner, — in a manner which combines safety with convenience and utility, as had never before been done. The most important inventions ever made consist in subordinating natural elements, or controlling natural laws, to the production of useful results. I cannot doubt that the invention of the patentees was patentable, as truly so as it is abundantly proved to be greatly useful and valuable."

The judge held also that the arrangement was new, and that it was infringed by the defendants.

Subsequently, this patent was before Judge Shepley.[1] He

burners, said carburetter being placed within a vault, by itself, separate from the building to be lighted, the whole arranged and connected with pipes, substantially as herein described and set forth."

[1] Gilbert, &c. Mfg. Co. *v.* Walworth Mfg. Co., 9 O. G. 746 (1876).

held that the preliminary condensation mentioned above could not be considered as a part of the invention, inasmuch as the patentee omitted it from his specifications and claim, and gave no directions for effecting it, despite variations of temperature. He held, also, that the patentee's isolation of the carburetter had been anticipated; and he remarked upon its patentability as follows:—

"I am not prepared to say that the new arrangement and location, constituting a new form or mode of combination, . . . taking into consideration the new and useful result claimed for it, was not patentable, if it was novel."

CALKINS *v.* BERTRAND, 6 Biss. 494.

N. D. of Ill., 1875. Blodgett, J.

Patent granted to J. R. Smith, April 24, 1860, reissued to J. Gerber, April 26, 1870. Improvement in cultivators.

The claim of the reissued patent was:—

"*First*, an auxiliary frame carrying two or more shovel standards on each side, as shown, *when said frame is hinged to the pole between the evener and the neck-yoke*, as described, for the purposes set forth."

The gist of the invention thus claimed was putting the plough-beam forward of the evener, whereby a "long swing" was obtained, and objects in the way could be avoided. The court met the objection raised by the defence to the patentability of this change of situation as follows:—

"The suggestion that this is not a change of result, but is only a change in degree, is, I think, not sustained by the proof. The long radius, in other words, secures a practicable cultivator which can be guided along the side of a crooked row of plants so as to avoid disturbing them, while the short beams would seem to be practically useless, except in straight, or nearly straight, rows. This is a practically new result, and the proper subject of a patent as such. . . . The machines of Ganse & Whitehall, shown in the proofs, which antedate the Smith patent, show the shovel-beams hinged back of the evener, producing a jerky motion, and rendering it almost, if not wholly, impossible to guide the shovels so as to avoid hills out of line, or stones, roots, or other obstacles in the direct line."

CARSTAEDT *v.* THE UNITED STATES CORSET CO.,
13 Blatch. 119.

S. D. of N. Y., 1875. Shipman, J.

"Improvement in take-up mechanism for looms for weaving irregular fabrics." Patent reissued to Hugo Carstaedt, Nov. 19, 1872.

The patentability of the invention described in the second claim was attacked. That claim ran thus:—

"The needles or points *k*, *k*, fixed on a stationary bar *K*, and arranged as specified, so that the fabric, being drawn by the take-up proper, is continuously carried across the needles, to be received by their points and to be arrested when a reverse movement of any part of said fabric is commenced, substantially," &c.

The object was to prevent, in the weaving of irregular fabrics, a difficulty thus described by the patentee:—

"The cloth being more full in some parts of the fabric than in others, and the take-up not having a firm hold upon the cloth, the cloth wrinkles and doubles itself towards the centre."

Said the court:—

"In order to obviate this fault, the take-up must be placed as close as possible to the needle-bar, which must also be placed as near as may be to the felt of the cloth. The complainant's needle-bar is placed in this relation to the cloth and to the take-up, and by means of such position it is enabled to accomplish a result which had previously been *unattained* in corset-weaving; namely, the arresting of the fabric when it is released from the tension of the take-up, and so holding the cloth that it is prevented from doubling up in the centre, and by this result the mechanical weaving of irregular fabrics is now successfully practised. The combination which produces this new and useful result is not simply a combination of the old needle-bar and the take-up, but the position of the needle-bar and its relation to the take-up and to the edge of the cloth has been so changed that a new combination of devices has been in fact created, and the new combination has accomplished a new and useful result which 'was not attained by the action of the old devices,' as they were arranged with relation to each other prior to the date of the plaintiff's invention. Hailes *v.* Van Wormer, 7 Blatch. 452; Marsh *et al. v.* Dodge & Stevenson Mfg. Co., 5 Official Gazette, 398.

"It is said that this change of position of the needle-bar required no inventive skill: . . . yet, prior to the plaintiff's invention, corset-weav-

ing was not successfully practised upon the looms which were then in use, and favorable results were only obtained after the complainant's needle-bar was applied to the existing looms," &c.

See also Knox *v.* Murtha, *ante*, page 104. And see page 478.

CHANGE OF FORM.

WOODCOCK *v.* PARKER, 1 GALL. 438.

D. OF MASS., 1813. STORY, J., AND A JURY.

Story, J., to the jury:—

"It is not necessary to defeat the plaintiff's patent that a machine should previously have existed in every respect similar to his own; for a mere change of former proportions will not entitle a party to a patent. If he claim a patent for a whole machine, it must in substance be a new machine; that is, it must be a new mode, method, or application of mechanism, to produce some new effect, or to produce an old effect in a new way."

DAVIS *v.* PALMER, 2 BROCK. 298.

D. OF VIRGINIA, 1827. MARSHALL, C. J., AND A JURY.

Infringement of a patent for an improvement in ploughs, which consisted in changing the shape of the mould-board, as thus described by the patentee:—

" . . . Instead of working the moulding part, or face of the mould-board, to straight lines, my improvement is to work it to circular or spheric lines."

Then follow particular directions as to distances, angles, &c.

Marshall, C. J., on the question of patentability, instructed the jury as follows (after quoting from the act of 1793, "And it is hereby enacted and declared, that simply changing the form or the proportion of any machine shall not be deemed a discovery"):—

"In construing this provision, the word 'simply' has, we think, great influence. It is not every change of form and proportion which is declared to be no discovery, but that which is *simply* a change of form

or proportion, and nothing more. If by changing the form and proportion a new effect is produced, there is not simply a change of form and proportion, but a change of principle also. In every case, therefore, the question must be submitted to the jury," &c.

DANE *v.* THE CHICAGO MANUFACTURING Co., 3 Biss. 380.

N. D. of Illinois, 1872. Blodgett, J.

Infringement of a patent granted to Conrad Gersten, Jan. 25, 1859, and reissued to Dane & Westlake, Sept. 16, 1867, for an "improvement in lanterns."

The important question in the case concerned the patentability of the improved cone or deflector used in the complainant's lantern. The complainant's lantern — or rather the lower part of it, which only was in question — may be described as follows: Upon the top of the oil-cup was a cylindrical metallic ring or band, divided into two compartments by a horizontal plate. The lower compartment had its walls perforated for the admission of air, and it was called the cooling-chamber, its office being to prevent the heating of the oil in the oil-cup. Above the horizontal plate forming the top of this cooling-chamber, the ring was again perforated for the admission of air into the upper compartment, in order to supply the flame with oxygen; and into the ring at this point fitted the deflector, — a cone-shaped covering of glass or metal, having at its centre a slot for the flame to pass through. The office of the deflector was to concentrate upon the base of the flame all the air that entered the flame-chamber. A wick-tube led from the oil-cup into this upper chamber, and so nearly through the slot in the deflector that the flame was above the apex of the deflector. The ring extended above the base of the deflector (being at this point also pierced by small openings for the passage of air to the flame). Into the top of the ring, immediately above the deflector, fitted the glass shade or globe of the lantern, which thus served as a chimney also.

In lamps (not lanterns) in use before Gersten's invention all these parts were found, but the flame-chamber and the cone were smaller, and a chimney fitted upon the ring, as the globe fitted upon the ring in Gersten's lantern. Therefore, all that

Gersten did was to extend the base of his cone or deflector until it touched the walls of the globe, so that the globe operated as a chimney. It was necessary that no space should be left between the deflector and the globe (or chimney in the old lamps); for if it were so left, the draught would not be sufficient to consume the rock-oils for which Gersten's lantern was intended.

Said the court: —

" . . . No experimenter or inventor had determined just how far outwardly the base of the cone should extend; but all had recognized the inexorable necessity of making the cone form a substantially tight bottom to the chimney, by which alone a draught through the cone could be obtained. Gersten did this, and nothing more, so far as the cone is concerned. . . . It required a mere mechanical alteration, and not an invention, to expand the base of the cone until it met and filled the walls of the globe at the base of the globe. . . ."

IN RE GREELEY, 1 HOLMES, 284.

D. OF MASS., 1873. SHEPLEY, J.

Appeal on a rejected application for a patent for an improvement in suspender-straps. A prior English patent described a link, fastened by a button-hole opening in a direction parallel to the link. Greeley's suspender was almost exactly like this, except that the button-hole in it opened in a direction at right angles to the link. This change was an improvement.

Shepley, J.: —

" . . . The differences between the two devices are merely structural changes. Such structural changes of form and proportion, although they improve the operation without changing the mode of operation, and produce a much better result, but one of the same kind, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius."

EPPINGER *v.* RICHEY, 14 BLATCH. 307.

S. D. OF N. Y., 1877. SHIPMAN, J.

Infringement of a patent for an "improvement in plug and bunch tobacco," dated June 17, 1873. The claim of the patent was for

"plug or bunch tobacco made as herein described, the same consisting of a rope or strand, composed of a sweetened or prepared filler, enclosed in a binder, in turn enveloped in a wrapper, the said rope being coiled around a central core, forming a continuous part of the rope, and the bunch thus made being subjected to a pressure, as and for the purposes set forth."

The question was whether this, in the state of the art, was a patentable improvement. In the manufacture of plug chewing-tobacco, licorice or some other sweet and moist substance is used, in order that its qualities may be imparted to the tobacco; and the difficulty is that the tobacco thus moistened, if exposed to the air, is liable to ferment, or to be attacked by "dry rot."

"Before the date of the [plaintiff's] invention," said the court, "this kind of chewing-tobacco was made by enclosing strands of sweetened 'filler' tobacco in a binder. The wrapped tobacco was then spun upon a wheel, or twirled or rolled by hand into a roll, and, after being encased in a wrapper, was coiled and packed for market, or was subjected to extreme heat, and afterwards to pressure, before being put up in packages. Moisture was removed by this 'hot-house' process, and thus danger of fermentation was obviated, but the quality of the tobacco was made inferior. Another method of manufacture was by encasing the sweetened filler strands in an unsweetened binder, and also in a wrapper. The rope was then bent and braided, and the two ends of the braid were fastened by a cap of wrapper tobacco.

"The braids were subjected to sidewise pressure, but could not [this is important] be subjected to pressure endwise in consequence of their shape, and therefore were not pressed sufficiently to exclude the air, and the tobacco was liable to become mouldy. Each braid soon became quite dry in the pocket of the consumer, and lost its flavor."

The patentee formed his strand, in the ordinary way, of "filler" tobacco treated with licorice, enveloped in a "binder" of a brighter and larger leaf; the binder, in turn, being rolled in a "bright wrapper leaf" used in its natural condition.

"The rope or strand thus made [being a sort of long, flexible cigar] is coiled into a bunch around a central core, one end of the rope, either single or doubled, serving for the core." "The coil . . . thus made," the specification continued, "is . . . loose and unfinished. . . . The next step is to finish it, which is effected in the polishing-pot or finisher, — a strong receptacle of suitable shape and size to contain a number of plugs, provided with a follower forced down upon the plug or plugs in the pot by hydrostatic pressure or other sufficiently powerful agency. The bunches are first placed in the pots on end, and the follower is then forced down with great pressure upon them. After being allowed to set for about twenty minutes, the follower is removed, and the bunches are taken out and replaced in the pot on their sides, and side by side, and pressed again in like manner. . . . In conclusion, I wish to state that I do not here broadly claim plug or bunch tobacco put up in coils with a central core and then subjected to pressure; nor do I claim, separately, the combination of a filler, binder, and wrapper."

The claim itself we have given above.

The court said: —

"The important question which arises in the case is as to the patentability of the invention. A rope of strands of sweetened filler, enclosed in a binder, which in turn is enveloped in a wrapper, antedated the patent, and is disclaimed. Plug tobacco had always been coiled and braided in various forms, and had been subjected to pressure. The peculiarity of the invention is in the form and shape of the coil. Can any particular method of coiling, although both endwise and sidewise pressure are thereby made available for the purpose of excluding air, and although the method enables the consumer to use the whole coil in its desired state of moisture, be the subject of a valid patent?

"The argument of the defendants' counsel is, that the combination of filler, binder, and wrapper is old and is disclaimed, which is true; that subjecting a coiled rope of such tobacco to pressure is old and is disclaimed, which is true; that coiling or twisting a moist rope of tobacco has always been practised, which is also true; that the particular form of the coil is a matter of fancy; and that the form of the coil cannot involve the exercise of the inventive faculty. This is the precise question which is at issue.

"The article of plug tobacco has been long in use, and has been in constant demand. As it has been prepared for market, it has been liable to spoil in warm and damp weather, and to grow mouldy in any temperature. . . . The evils were notorious, but no remedy was found until this invention was made. . . . Two facts exist in this case. One

is, that an important improvement has been attained; the second is, that the improvement is in a staple article which has been manufactured in this country for a long series of years," &c. "The utility of the patented article has been evinced by its large sales, and by the unanimity with which rival tobacconists have commenced its manufacture. . . . Without giving to the general use of the invention, as a test of its patentability, any greater importance than the Supreme Court, in the case of Smith *v.* Goodyear Dental Vulcanite Co. (3 Otto, 486), indicate should be given to this circumstance, I am of opinion that the facts in the case fully establish the conclusions (1) that, however simple the change in the method of manufacture apparently may have been, yet it was a change which required invention for its accomplishment; and (2) that the improvement resulting from the changed method of manufacture has been so great that the article which is produced is, within the meaning of the Patent Acts, a new and useful article of manufacture."

PEARL *v.* THE OCEAN MILLS, 11 O. G. 2.

D. of Mass., 1877. Shepley, J.

Pearl's reissued patent, for an "improvement in bobbins and spindles for spinning-machines," No. 6036, dated Sept. 1, 1874.

Judge Shepley thus described the invention:—

"The device of Pearl consists in a combination of a modified form of the ring-spindles with a modified form of the bobbins, having frictional or adhesive bearings, uniting them to the spindles, and carried with it. This modified or improved spindle was shortened in the blade, and instead of extending, as before, substantially to the upper end of the bobbin, was only made of sufficient length above the bolster to enable an adhesive bearing, which he provided in the centre of the bobbin, to hold the bobbin firmly on the spindle.

"He correspondingly lightened the lower part of the spindle and whirl below the bolster, without destroying the proper proportional relation of the parts of the spindle to each other, necessary to insure steadiness of rotation.

"He also modified the form of the bobbin, making it of a light or thin shell, retaining the lower frictional bushing or adhesive bearing at the bottom, and adding a frictional adhesive bushing in the centre of the bobbin, the lower and the central bushings sustaining the bobbin on the spindle, in place of the former mode of sustaining it by adhesive bearings at the top and bottom of the bobbin. He added a plug, re-

enforce, or bushing also at the top of his bobbin, not having apparently any function in combination with the spindle, with which it did not come in contact, but only as one mode of strengthening the bobbin itself."

On the patentability of these changes Judge Shepley remarked as follows (after saying that mere change of form is not patentable):—

"No more difficult task is imposed upon the court in patent causes than that of determining what constitutes invention, and of drawing the line of distinction between the work of the inventor and the constructor. The change from the old structure to the new may be one which one inventor would devise with the expenditure of but little thought and labor, and another would fail to accomplish after long and patient effort. It may be one which one whose mind is fertile in invention will suggest almost instantaneously, when the skilled hand of the constructor will fail to reach the apparently simple result by the long and toilsome process of experiment.

"It may be one which, viewed in the light of the accomplished result, may seem so simple as to be obvious almost to an unskilled operative, and yet the proof may show that this apparently simple and obvious change has produced a result which has for years baffled the skill of the mechanical expert, eluded the search of the discoverer, and set at defiance the speculations of inventive genius.

"The change described in the specification of Pearl is a change in the form of the spindle, and a change in the form of the bobbin. It involves in the case of the bobbin a change in the location of the upper adhesive bearing from the top to about the centre of the bobbin. Without a knowledge of the results accomplished by these changes, they might at first glance appear to be merely structural changes.

"Nothing has a greater tendency to prove that these changes involve some functional difference beyond mere mechanical perfection and adjustment than the greatly improved result attending the change when viewed in connection with the failure of the many experiments previously made to accomplish similar results by mere structural changes, like those, for example, of diminishing the weight of the spindle in all its parts. It does seem impossible to reconcile the greatly improved results attained by the invention of Pearl with the theory that no functional, but only a mere structural, change was effected. Even if Pearl fails to describe accurately the precise law which governs the proper relations and proportions of the parts of the spindle as affected by the elements of leverage, gravity, friction, centrifugal force, and the transverse strain in one direction upon the spindle, yet if he has obtained

the practical result, and taught others how to accomplish it, he has made a patentable invention, however imperfectly he may understand the philosophy of it.

"And the defendants have none the less availed themselves of his invention, although by adding another change (whether structural merely or functional), by bringing the upper bolster nearer to the bobbin, they have still further improved upon the old device."

The opinion is not sufficiently full upon the matter of prior devices to warrant our taking up that subject.

CLOUGH *v.* GILBERT & BARKER MANUFACTURING CO., 15 O. G. 1009.

S. D. OF N. Y., 1878. BLATCHFORD, J.

The first claim of Clough's patent, dated June 14, 1870, No. 104,271, for improvement in gas-burners, held to be anticipated by burners called the Horace R. Barker burners.

Clough's patent said: —

"The object of my improvement is to adapt the slitted or bat-wing burner to the burning of air-gas. Said improvement consists, first, in perforating the base of the burner-tube with small holes or passages for gas to escape at the base of the burner, and surrounding the burner with a tube open at the top, but closed at the bottom, and united to the burner below the perforations in the burner-tube. . . . These improvements, by furnishing a regulated supply of gas outside of the burner, but directed to the tip of the burner by the surrounding tube, give steadiness and increased illuminating power to the flame of the bat-wing burner, and make it a desirable burner for burning air-gas. . . ."

He claimed

"1. . . . the bat-wing burner perforated at the base in combination with the surrounding tube, substantially as described."

Said the court: —

"The combination covered by the first claim of the plaintiff's patent is, I think, found in the Horace R. Barker burners, the existence of which prior to the plaintiff's invention is satisfactorily proved. In those burners, the burner was a bat-wing burner perforated at the base. The perforations did not consist of small holes, but the stem of the burner was slitted all the way down to the base, allowing the gas to escape through the whole length of the slit. There was a surround-

ing tube united to the burner below the lower end of the slit. The burner-stem had a cone near its top, and when the surrounding tube was screwed so as to be in a certain position with reference to such cone, the effect was to direct to the tip of the burner the supply of gas coming through the slit below, the surrounding tube being open at the top and closed at the bottom, and the flame was thickened, and a ring of flame was formed. The structure and mode of operation of the combination were the same as those of the combination covered by the first claim of the plaintiff's patent.

"The fact that the perforations in the Horace R. Barker burner existed not only at the base, but were continued in the form of a slit all the way up, makes no difference.

"Nor does it make any difference that the Horace R. Barker burner had a cone near its top. The first claim of the plaintiff's patent is broad enough to cover the Horace R. Barker burner, and that claim must be held to be invalid for want of novelty."[1]

ISAACS *v.* ABRAMS, 14 O. G. 861.

D. OF MASS., 1878. CLIFFORD AND LOWELL, JJ.

Marcus C. Isaacs's patent of August, 1876, No. 180,717, for an improvement in railway-track brooms.

Lowell, J.: —

" . . . He declares in his specification that 'heretofore brushes for cleaning railroad tracks have been made with a broom of even face; that is, the brush of the broom, of whatever material made, has been of uniform length.' He describes his improvement to consist of making the brush of unequal lengths; one part adapted to brushing the surface of the rail, and the other longer part to clearing either side of the rail, according to its construction. The claim is for 'a railway-track broom, constructed with a brush of uneven face, — that is, one portion of the brush longer than the other, — substantially as and for the purpose set forth.'

"The defendant has argued that, brushes with a uniform surface being well known, no invention was required to construct one with an uneven surface. We cannot take this view of the case. It is not invention to change one well-known material for another, or to apply a well-known process, without some adaptation more than every skilled mechanic

[1] This decision has been reversed by the Supreme Court, Clough *v.* Barker, 22 O. G. 2157; 106 U. S. 166.

could apply, to a new art or subject; but a change in the form of a machine or instrument, though slight, if it works a successful result, not before accomplished in a similar way in the art to which it is applied, or in any other, is patentable. There is evidence that this improvement did accomplish such a result, and that it was accepted and adopted by the trade and went into general use."

This decision is open to criticism.

CRANDALL *v.* RICHARDSON, 19 O. G. 1628.

S. D. OF N. Y., 1881. BLATCHFORD, J.

Improvements in children's carriages.

Head-note: "Whether the frames of a child's carriage are the profiles or the outlines of horses, or are solid, or whether they are in the form of horses or of eagles, or of any other bird or animal, is a matter purely of taste or design, and, so far as any mechanical effect or result in the combination is concerned, is of no importance."

See also—

SANGSTER *v.* MILLER, *ante*, page 92.
AIKEN *v.* DOLAN, *ante*, page 95.
STROBRIDGE *v.* LINDSAY, *ante*, page 175.
PACKING COMPANY CASES, *ante*, page 186.
GLUE CO. *v.* UPTON, *post*, page 267.
BUSSEY *v.* WAGER, *post*, page 456.
THE DOUBLE-POINTED TACK CO. *v.* THE TWO RIVERS MFG. CO., *post*, page 473.
JONES *v.* VANKIRK, 2 Fish. 586.
WICKS *v.* STEVENS, 2 Wood. & M. 310.

ENGLISH CASES.

HULLETT *v.* HAGUE, 2 B. & AD. 370.

COURT OF KING'S BENCH, 1831.

Kneller's patent of Nov. 28, 1828, for an apparatus for evaporating sugar, and the like, by forcing atmospheric air through it.

The defence set up a prior patent, of Knight & Kirk, which

accomplished the same objects; but the court (Lord Tenterden, C. J., delivering the judgment) held that there was a patentable difference between the two methods. He described both patents, beginning with that of Knight & Kirk, as follows: —

"This was, in substance, an invention of a process for the more rapid crystallization and for the evaporation of fluids at comparatively low temperatures; this object being effected by means of a coil of pipes lying at the bottom of the vessel, perforated with small holes, and thus operating on the liquid, or by a shallow cullender placed at the bottom of the vessel. It was proved that a pipe employed and acted upon in the manner described in the specification, namely, by forcing the air at the end of it, would accomplish that object. . . . Kneller . . . does not claim . . . the principle, but the apparatus by which the principle of causing evaporation is to be carried into effect. . . . The method . . . is to have a large horizontal tube (near the surface of the liquid) into which there are introduced a number of small perpendicular tubes, descending through the liquid to the bottom of the vessel, and having their lower ends exactly on a level, and parallel to the surface of the fluid. The air is then forced by the blowing apparatus from the open end of the large tube to the other end which is closed, and as soon as the large tube is filled, the air descends through the smaller tubes to the bottom of the vessel, and bubbles up through the liquid, and the evaporation is thereby kept up constantly and equally in all parts. It appears to us that this is a method or apparatus perfectly distinct from the other, and for that method or apparatus the patent was taken out."

WALTON *v.* POTTER, 4 SCOTT N. R. 91; 3 M. & G. 411; WEB. 584.

COMMON PLEAS, 1841.

Walton's patent of March 27, 1834.

The invention was of a new material for making cards for carding wool, &c. Thin sheets of india-rubber (sliced from a block with a sharp knife) were cemented to linen cloth, and wire dents were inserted in the rubber.

The defence set up a patent leather of one Hancock, made as follows: —

"A piece of cotton cloth was stretched on a board and coated with a compound of india-rubber and glue. It was then covered with a layer of carded cotton, upon which a fresh coating of the compound was spread. A second piece of cloth was placed over all, and the

material was compressed between plates of metal passed through rollers, thereby forming the patent leather."

The india-rubber, by this treatment, entirely lost its character as such, so as to be incapable of reproduction as caoutchouc by any known chemical means. Moreover, this substance had been tried as a carding material, and had not been successful.

Held, that this was no anticipation of plaintiff's invention. Tindal, C. J., Coltman, Erskine, Maule, JJ.

Erskine, J.: —

" . . . There are, therefore, two objections to the identifying of Hancock's plan with the plaintiff's plan: first, that the composition which he makes use of is not india-rubber, but india-rubber mixed up with other substances, which destroy its elasticity; and, next, that that composition when thus made is inserted between two non-elastic substances, instead of being next to the teeth of the card, which appears to me to be the main principle of Mr. Walton's improvement."

In another case,

WALTON *v.* BATEMAN, WEB. 613 (1842),

where this patent was again supported, Creswell, J., said to the jury: —

"I think that there is a new principle developed, carried out, and embodied in the mode of using that principle, and in availing himself of that which is sufficient to sustain the patent-right in this case."

MACNAMARA *v.* HULSE, CAR. & M. 471.

NISI PRIUS, 1842.

The plaintiff's invention was of a wooden pavement block "in the form of two solid rhombs, placed one in front of the other in opposite directions, so that each side of one of the plaintiff's blocks was bevelled both inwards and outwards."

The defence set up a prior pavement "in which each block was to have two bevels inwards and two bevels outwards on the same side of the block." And one block of this kind, if cut in two, would be the same as two of the plaintiff's blocks.

Held, by Lord Abinger, C. B., that this was an anticipation.

HILLS *v.* LONDON GASLIGHT CO., 5 H. & N. 312.

EXCHEQUER OF PLEAS, 1860.

Hills's patent of Nov. 28, 1849, No. 12,867, claiming (in substance),—

"1. The purifying of coal gas from sulphuretted hydrogen, &c., by 'passing it through the *precipitated or hydrated oxides of iron*, from whatever source obtained,' and made into a porous material by being mixed with sawdust," &c.

The defence set up as an anticipation the patent of one Croll (1840), claiming the use of oxides generally for the same purpose. Upon this point the court (through Bramwell, B.) stated and adopted the argument for the plaintiff, as follows (p. 362):—

"'It is true Croll said "oxides of iron," and it may be true that he meant all oxides. Take it to be so, that is not such a statement as precludes invention and discovery by the plaintiff, because there are many oxides, the hydrated and anhydrous, the natural and the artificial, some of which will and some of which will not answer the purpose, and therefore it is a matter of investigation and experiment to see which will.' Upon that argument it is impossible for us to say, as a matter of law, that it cannot be the subject of invention, and I think it may be made abundantly manifest in this way: Suppose Croll had said, 'Some of the oxides will do,' would the court in that case, as a matter of law, say there can be no investigation and invention on the part of the plaintiff? But let us take the case a little further. Suppose he had said, 'Some substances of which iron is the base, or into which iron largely enters,' would that be enough? If it would, why would not it do to say, 'some metallic substance;' and if that would do, why not say 'something'? The truth is, that, as a matter of law, assuming that a person says, 'Something will do, and something will not do,' it is impossible for the court to say that it is not a matter of research and experiment to ascertain what will do. It may be said that Croll does not say some oxides, but 'the oxides of iron.' But if it be true that the expression 'some oxides' does not preclude invention and discovery, how can saying that 'oxides will do,' which is the truth and something more, be such a statement as to preclude all further invention and discovery?

" . . . Upon the mere comparison of these two instruments Croll has not anticipated the plaintiff. . . . I need scarcely say that we do not decide in any degree contrary to Bush *v.* Fox, 5 H. L. Cas. 707.

"Further, we hold that there are certain cases in which, upon the mere collocation of the two specifications, or the specification of a patent and a previous written document, the court may say that the patentee has been anticipated. . . . I do not mean to say that the court . . . could not take upon themselves to say that iron is heavy, or that it will fall if left without support, because these are familiar properties of matter which all must know; but the court cannot know, and is not bound to know, which oxide of iron will purify gas from sulphuretted hydrogen."

A similar question arose in regard to Laming's patent of Nov. 4, 1847, No. 11,944. The court thus treated it (p. 367):—

"It was also objected that the mere application of the hydrated oxides to absorb the sulphuretted hydrogen from coal-gas is not the subject of a patent, that property of it being previously well known. With that we do not agree. The answer is, that the question is not properly stated. The application of the hydrated oxide is the principle. If a man were to say, 'I claim the use of hydrated oxide of iron for the purification of coal-gas,' without saying how it is to be applied, it is possible the objection might be well founded; but here the plaintiff says, 'I claim it in the manufacture of gas in the way I have described,' and he shows how it may be used. Therefore this objection fails. So in like manner does the next, namely, that the renovation of the hydrated oxide of iron by exposure to the air, being well known previously, was not the subject of a patent. We deal with that in the same way."[1]

This patent was also sustained by Lord Westbury, Lord Chancellor, in the case of Hills *v.* Evans, 4 De G., F. & J. p. 299.

POUPARD *v.* FARDELL, 18 W. R. 127.

VICE-CHANCELLOR MALINS, 1869.

Patent for a skid.

The difference between the patentee's skid and one previously used by the Royal Artillery was, that a "tail-piece," which in the latter skid was used only to hang the skid to the gun (there being an eye or hole in it), was longer in the patentee's skid, and

[1] Cf. Steiner *v.* Heald, *post*, page 292.

served the different office of keeping the skid in place when it was struck by the wheel. The patent was sustained.

Other English cases under this head are, —

HUDDART *v.* GRIMSHAW, Web. 85.
DOBBS *v.* PENN, 3 Ex. 427.
BETTS *v.* MENZIES, 10 H. L. Cas. 117.
BETTS *v.* NEILSON, L. R. 3 Ch. 429; L. R. 5 H. L. 1.

Other cases of anticipation may be found in Chapter III.[1]

See also the following cases, *post*: —

RUSSELL *v.* COWLEY, page 275.
BROWN *v.* HALL, page 322.
WHITNEY *v.* MOWRY, page 327.
ROBERTS *v.* DICKEY, page 328.
ROBERTS *v.* SCHREIBER, page 333.
THE UNION PAPER-COLLAR CO. *v.* VAN DEUSEN, page 335.
GROSJEAN *v.* THE PECK, STOW, & WILCOX CO., page 342.
IRWIN *v.* DANE, page 352.
RUBBER-STEP MFG. CO. *v.* METROPOLITAN R. R. CO., page 356.
COLGATE *v.* W. U. TEL. CO., page 359.
COLGATE *v.* GOLD & STOCK TEL. CO., page 359.
MUNSON *v.* THE GILBERT & BARKER MFG. CO., page 362.
WINANS *v.* THE SCHENECTADY, &C. R. R. CO., page 416.
WINANS *v.* EATON, page 419.
TUCK *v.* BRAMHILL, page 428.
TARR *v.* WEBB, page 437.
ROSS *v.* WOLFINGER, page 448.
INGELS *v.* MAST, page 450.
BLAKE *v.* RAWSON, page 444.
BLAKE *v.* ROBERTSON, page 447.
WILLIAMS *v.* THE BOSTON & ALBANY R. R. CO., page 468.
THE DOUBLE-POINTED TACK CO. *v.* THE TWO RIVERS MFG. CO., page 473.
BEATTY *v.* HODGES, page 477.
PUTNAM *v.* YERRINGTON, page 518.
MITCHELL *v.* TILGHMAN, page 594.
TILGHMAN *v.* PROCTOR, page 594.
LIVINGSTON *v.* JONES, page 658.
ADAMS *v.* JONES, page 660.
JONES *v.* MOREHEAD, page 660.

[1] And see Stow *v.* Chicago, 104 U. S. 547; Gosling *v.* Roberts, 106 U. S. 39.

The following cases, less important for our purpose, we have been obliged to omit: —

HOVEY *v.* STEVENS, 1 Woodb. & M. 290 (1846). Knife-grinding machinery.

HEINRICH *v.* LUTHER, 6 McLean, 345 (1855). Shears.

GOODYEAR *v.* N. Y. GUTTA-PERCHA, &c. Co., 2 Fish. 312 (1862). India-rubber.

HOWE *v.* WILLIAMS, 2 Fish. 395 (1863). Sewing-machine.

POTTER *v.* MULLER, 1 Bond, 600 (1864). Sewing-machine. See also 2 Fish. 102, and 4 Blatch. 206.

POTTER *v.* WHITNEY, 3 Fish. 77 (1866). Gun.

BIGELOW *v.* MATTHEWS, 7 Blatch. 77 (1869). Soda-water fountain.

ROGERS *v.* SARGENT, 7 Blatch. 507 (1870). Wire-staple.

SINGER *v.* BRAUNSDORF, 7 Blatch. p. 533 (1871). Sewing-machine.

DOUGHTY *v.* DAY, 9 Blatch. 262 (1871). Hoop-skirt.

BALDWIN *v.* SCHULTZ, 9 Blatch. 494 (1871). Straw bonnet.

THE PLASTIC SLATE-ROOFING, &c. Co. *v.* MOORE, 1 Holmes, 167 (1872). Roofing.

SANFORD *v.* MESSER, 5 Fish. 411 (1872). Sewing-machine.

YOUNG *v.* LIPPMAN, 9 Blatch. 277 (1872). Hoop-skirt.

JENKINS *v.* JOHNSON, 9 Blatch. 516 (1872). Steam globe valves.

UNION PAPER-BAG Co. *v.* NIXON, 6 Fish. 402 (1873). Paper bag.

BARCLAY *v.* THAYER, 12 Blatch. 107 (1874). Bracelet.

HAMILTON *v.* ROLLINS, 5 Dill. 495 (1877). Saw-mill.

SNOW *v.* TAYLOR, 14 O. G. 861 (1878). Collar-cutting.

ABBE *v.* CLARK, 13 O. G. 274 (1878). Toy.

FOOTE *v.* FROST, 14 O. G. 860 (1878). Bag-tie.

ADAMS *v.* ILLINOIS MFG. Co., 18 O. G. 412 (1879). Lantern.

ELASTIC TRUSS Co. *v.* PAGE, 16 O. G. 1045 (1879). Truss.

GORDON *v.* ANTHONY, 16 Blatch. 234 (1879). Photographic shield.

THE ODORLESS EXCAVATING APPARATUS Co. *v.* CLEMENTS, 16 O. G. 854. Apparatus for cleaning privies.

ASHCROFT *v.* BOSTON & LOWELL R. R. Co., 97 U. S. 189 (1877). Valve.

MUNSON *v.* THE MAYOR, &c. OF NEW YORK, 18 Blatch. 237 (1880). Bond Register.

THE BRIDGEPORT WOOD-FINISHING Co. *v.* HOOPER, 18 Blatch. 459 (1880). Polishing process.

WARING *v.* JOHNSON, 19 Blatch. 38 (1881). Check-book.

BOYKIN, CARMER, & Co. *v.* BAKER & Co., 9 Fed. Rep. 699 (1881). Fertilizer.

SAWYER *v.* MILLER, 12 Fed. Rep. 725 (1882). Cotton-gin.

CHAPTER III.

INGENUITY.

61. In this chapter we have collected those cases in which the patentability of an improvement is disputed on the ground that, taken by itself, it does not pre· ppose invention. It is referred not so much to any particular prior thing, as to the knowledge of things and of their relations, which men in general possess. These cases, of course, are closely allied to others, especially to those which we have designated by the terms *Anticipation* or *Identity*. In fact, we have hesitated to place them in a division by themselves. A few important cases, however, seemed incapable of any other disposition, and many less important cases properly belonged with them. Consequently we have put them all into this chapter, making such references in other chapters that no mistake or confusion, we trust, will arise from our classification.

In regard to this phase of patentability we can add nothing to the tests already proposed in the Introduction to this book and in the first chapter.

62. We have made one subdivision, by placing at the end of the chapter a few cases in which the alleged invention consisted not in any improvement of an article, but in an improved form of putting it up, or preparing it for sale. Chief among these cases is that of the Glue Co. *v.* Upton, *post*, page 267.

KNEASS *v.* SCHUYLKILL BANK, 4 WASH. C. C. 9.

D. OF PENN., 1820. WASHINGTON, J.

"The improvement or application I wish to secure," said the specification, "is to print copperplate on both sides of the note or bill, or copperplate on one side and letterpress on the other, or letterpress on both sides of a bank-note or bill, as an additional security against counterfeiture."

This was an action for infringement; and the defendants pleaded the general issue, objecting, among other things, that the improvement patented was not an invention.

The court said: —

" . . . What is the discovery for which this patent was granted? Printing with copperplates on the reverse face of bank-notes, &c. And can it be contended that this is not an art? Is not every species of printing an art? But it is contended that printing, either with types or copperplate, is not new. . . . In answer 'to which objection,' it is conclusive to observe that the court cannot *judicially* take notice of it, because it is precisely that kind of defence of which the plaintiff was entitled to notice," &c.

This case is mentioned as an authority by Mr. Justice Strong, in Smith *v.* Goodyear Dent. Vul. Co., *post*, page 497. He said: "In Kneass *v.* Schuylkill Bank, the use of steel plates instead of copper for engraving was held patentable."

This statement is incorrect. In Kneass *v.* Schuylkill Bank, the defendants used steel plates; and the court said that *if the use of steel plates was a patentable improvement* upon the use of copper plates, then the defendants did not infringe the plaintiff's patent. There is no other foundation than this for Mr. Justice Strong's remark, and for the frequent citation of this case in support of a proposition which it does not contain. The report is meagre and obscure, and the case does not possess the importance as an authority commonly attributed to it.

WOOD *v.* UNDERHILL, 5 How. 1 (1846).

The court below held that the following specification was so insufficient as to proportions that the patent was void: —

"Take of common anthracite coal, unburnt, such quantity as will best suit the kind of clay to be made into brick or tile, and mix the same, when well pulverized, with the clay before it is moulded; that clay which requires the most burning will require the greatest proportion of coal-dust; the exact proportion therefore cannot be specified; but, in general, three-fourths of a bushel of coal-dust to one thousand brick will be correct. Some clay may require one-eighth more, and some not exceeding a half-bushel. The benefits resulting from this composition

are the saving of fuel and the more general diffusion of heat through the kiln, by which the whole contents are more equally burned. If the heat is raised too high the brick will swell, and be injured in their form. If the heat is too moderate, the coal-dust will be consumed before the desired effect is produced. Extremes are therefore to be avoided."

The Supreme Court (Taney, C. J., delivering the opinion) held that the circuit judge erred in instructing the jury that this specification was "too vague and uncertain to support the patent;" adding, however, this qualification to their opinion:—

"It may be, indeed, that the qualities of clay generally differ so widely that the specification of the proportions stated in this case is of no value; and that the improvement cannot be used with advantage in any case, or with any clay, without first ascertaining by experiment the proportion to be employed. If that be the case, then the invention is not patentable. Because, by the terms of the act of Congress, the inventor is not entitled to a patent unless his description is so full, clear, and exact as to enable any one skilled in the art to compound and use it. And if from the nature and character of the ingredients to be used they are not susceptible of such exact description, the inventor is not entitled to a patent. But this does not appear to be the case on the face of this specification. And whether the fact is so or not is a question to be decided by a jury, upon the evidence of persons skilled in the art to which the patent appertains."

WILSON *v.* JANES, 3 BLATCH. 227.

S. D. OF N. Y., 1854. NELSON AND BETTS, JJ.

In this case there is a *dictum* by Judge Betts, that an invention which consisted in

"placing the fire-chamber in the middle of the oven, so that the latter may receive the heat of three sides thereof at once," is not patentable. "The plaintiff does not," he said, ". . . show any peculiarity of construction in his oven or fire-chamber, or point out any shape or size of the parts, or method of arrangement, that is original with him, other than leaving the space behind the fire-chamber open, as a part of the entire oven; that is, instead of forming three ovens or compartments around the fire-chamber, he removes the partitions behind the fire-chamber, and makes a single cooking-space, instead of the

three spaces into which that part of the stove in common use is divided. We are not convinced, if this be an original idea with the plaintiff, that the change is a patentable discovery," &c.

THE MUSCAN HAIR MANUFACTURING CO. *v.* THE AMERICAN HAIR MANUFACTURING CO., 4 BLATCH. 174.

S. D. OF N. Y., 1858. HALL, J.

Head-note: "Whether a claim embracing the use of any metallic sulphate, in connection with any alkali, or any sulphate having an alkaline base, could be sustained upon proof that substantially the same proportions of other sulphates than those named in the specification would not produce the required result, *Quære*."

JUDSON *v.* MOORE, 1 FISH. 544.

S. D. OF OHIO, 1860. LEAVITT, J., AND A JURY.

J. Judson's reissued patent of Jan. 10, 1854.

The object of this invention was to lessen the rocking movement of steam-engines, and also to prevent their sudden increase or decrease of motion. Any change in the amount of steam generated in the boiler increases or decreases the pressure upon the valve through which the steam passes from boiler to cylinder, and thus causes a greater or less amount of steam to pass from one to the other. Likewise, any decrease of resistance (of load to be moved, for instance) to the pressure in the cylinder produces less resistance to the passage of steam into the cylinder; and an *increase* of resistance to the action of the piston produces the opposite result. The patentee's object was to make these changes gradual instead of sudden, to make them pass into each other; and this he accomplished by forming the passages controlled by the governor-valves so that their areas, or the sum of their areas, should gradually increase in capacity from the closed to the open position. Thus, as the pressure upon the valve diminished, its capacity to let in steam increased; and as pressure upon it increased, its capacity to let in steam decreased; so that the passage of steam was made gradual instead of abrupt.

In his charge to the jury, Judge Leavitt said: —

"I think there can be no question . . . that this plaintiff has described an invention that is patentable under our laws. The invention is obviously an improvement on the structures before known as governor-valves, and is not a combination."

In another suit on this patent, before the same judge,

JUDSON *v.* COPE, 1 Fish. 615 (1860),

the jury were instructed on the point that utility is evidence of invention, as follows: —

"The court held, and I still think, correctly, that if the evidence as to novelty and originality involved the question in any serious doubt, proof of the actual performance of the valve itself was competent to go to the jury upon the question of the novelty of the invention. It will be obvious that where there is doubt upon the question of novelty, and where the evidence of the witnesses leaves it uncertain whether the principle of the valves was identical, that evidence of the superior performance and utility of the patented improvement would have a direct bearing upon the question of novelty. In other words, if the jury are satisfied that the invention patented produces a result decidedly and clearly different from any which had been produced by the action of any prior valve, and that it was decidedly superior to any other in its operation, it would certainly afford a ground for the presumption that the thing itself had not been known before. . . .

"If the jury are satisfied that any of the old valves, concerning which testimony has been given, have this principle of graduation throughout all their range of opening, of course it will lead them to the conclusion that the invention is not new and original. If they should find that this principle had been previously known and in use, though not carried into entire perfection, and yet be satisfied that the principle was clearly and perfectly known and understood beforehand, such proof, I apprehend, would go directly to the question of the novelty of this invention. If, on the other hand, they believe it is a new discovery and application of a new and important principle to the control of steam-engines, first invented and carried to perfection by this patentee, although there may have been imperfect contrivances before which did not accomplish the purpose, the claim of novelty on the part of the patentee is sustained." [1]

[1] See *post*, page 316.

BURR *v.* DURYEE, 1 WALL. 531 (1863).

Wells's patent for a hat-machine.

This case is exceptional. It covers forty-eight pages in the report, where it is illustrated by numerous elaborate diagrams. At the trial the defendants produced a beaver-skin and the necessary machines, and manufactured a hat in court for the benefit of the learned judges. The patent was sustained. Ingersoll, J., in the case of Burr *v.* Cowperthwait,[1] thus described the principle of the machine which it covered: —

"It is clear that before the discovery of Wells no machine was known or used that did, by any means, *direct* a sheet of fur on to a section of a revolving, exhausted, perforated cone, or other form, parallel with the axis, so as to form a bat of fur on the cone, or other form, of the desired shape and thickness, in properly regulated quantities, at the will of the operator.

"By the machines before known and in use, although bats of fur for making hat-bodies were sometimes formed by means of machinery on a perforated exhausted cone, yet, by such machines, no sheet of fur was *directed*, by the organization of the machine, on to the perforated cone or other form in a line parallel with its axis, so as to form the bat of fur thick where desired, and thin where desired, at the will of the operator. By such machines, the fur was deposited on the exhausted cone by the power of gravity, or the power of the exhaust, or by the combined power of both, and not by the power of the machine, *directing* how and in what manner the fur should be distributed on the cone."

JACOBS *v.* BAKER, 7 WALL. 295 (1868).

Four patents granted to the plaintiff in 1859 for *improvements in the construction of prisons*. They covered, (1) a secret passage around the outside of an iron jail; (2) prison-walls made of iron plates; (3) a method of joining iron plates; (4) an arrangement of iron cells.

Mr. Justice Grier delivered the opinion of the court as follows: —

"The Patent Act of 1836 enumerated the discoveries or inventions for which patents shall be issued, and describes them as 'any new and useful art, machine, manufacture, or composition of matter.'

[1] 4 Blatch. p. 168.

"We have been at some loss to discover under which category to class the four patents which are the subjects of this bill. The complainant alleges that he has invented a new and useful improvement in the construction of *jails*. Now, a jail can hardly come under the denomination of 'a machine;' nor, though made by hands, can it well be classed with 'manufactures;' nor, although compounded of matter, can it be termed a 'composition of matter,' in the meaning of the Patent Act. 'But if the subject-matter be neither a machine nor a manufacture, nor a composition of matter, then,' says an author on the subject of patents, 'it *must* be an art, for there can be no valid patent except it be for *a thing made*, or for the art or *process of making* a thing.' Now, without attempting to define the term an 'art' with logical accuracy, we take as examples of it some things which, in their concrete form, exhibit what we all concede to come within a correct definition; such as the art of printing, that of telegraphy, or that of photography. The art of tanning leather might also come within the category, because it requires various processes and manipulations. The difficulty still exists, however, under which category of the Patent Act an improvement in the construction of jails is to be classed, or whether under any.

"The Patent Act of 1842 gives a copyright for 'new and original designs for manufacture, whether of metal or other material, for bust, statue, &c., or any new and original shape or configuration of any article of manufacture, to any inventor who shall desire to obtain an exclusive property to make, use, and vend the same, or *copies* of the same.'

"Now, although the complainant might contend (as one would suppose from the immense number of plans, designs, and drawings with which the record in the case has been incumbered) that his patent could be supported under this act, yet still the difficulty remains, whether the erection of a jail can be treated as the infringement of a *copyright*.

"But waiving all these difficulties as hypercritical, and assuming the correctness of the positions taken, that whatever is neither a machine, nor a manufacture, nor a composition of matter, must (*ex necessitate*) be 'an art;' that a jail is a thing 'made;' and that the patent is for the '*process* of making it,'—let us examine the case as presented by the bill and answer.

"The bill relies upon four several patents, which it sets forth. They are dated January 7th and 20th December, 1859; 21st February and 24th July, 1860. It would seem from the quick succession of these patents, and before the plans for building jails which they severally suggested could well be put practically into operation, and before any

inquiry was made as to how other persons constructed jails, that as a new idea came into the complainant's mind, he immediately proceeded to the Patent Office to get it patented."

The learned judge then goes on to say that the improvements sought to be patented were not new. The evidence on this head is not reported or discussed.

TYLER *v.* BOSTON, 7 WALL. 327 (1868).

The patent was for a new compound oil thus made: "By measure, crude fusel-oil, one part; kerosene, one part;" and this combination, the patent said, might be varied by using in place of kerosene an equal quantity of naphtha or of crude petroleum: "the exact quantity of fusel-oil which is necessary to produce the most desirable compound must be determined *by experiment.*" In regard to this last statement, Mr. Justice Grier remarked as follows: —

"Now, a machine which consists of a combination of devices is the subject of invention, and its effects may be calculated *a priori;* while a discovery of a new substance by means of chemical combinations of known materials is empirical, and discovered by experiment. Where a patent is claimed for such a discovery, it should state the component parts of the new manufacture claimed with clearness and precision, and not leaving the person attempting to use the discovery to find it out 'by experiment.' The law requires the applicant for a patent-right to deliver a written description of the manner and process of making . . . his new-discovered compound. The art is new, and therefore persons cannot be presumed to be skilled in it, or to anticipate the result of chemical combinations of elements not in daily use.

"The defendants used a burning-fluid composed of naphtha 72 and fusel-oil 28 parts; and expert chemists proved that 72 parts *in bulk* of naphtha was the *substantial equivalent* of 28 parts of kerosene.

"This term 'equivalent,' when speaking of machines, has a certain definite meaning; but when used with regard to the chemical action of such fluids as can be discovered only by experiment, it only means *equally good.*[1] But while the specification of the patent suggests the substitution of naphtha for crude petroleum, it prescribes no other pro-

[1] *Vide ante*, page 65.

portion than that of equal parts by measure. The explanation that kerosene must be replaced by an *equal quantity* of naphtha does not alter the case."

BARRY *v.* GUGENHEIM, 1 O. G. 382.

E. D. of Penn., 1872. McKennan, J.

Barry's reissued patent of Oct. 6, 1868, for a machine for making tin cans.

Head-note: "Where the seam between the body and the cover of a metallic can had been closed by compression between revolving swages so adjusted that their bevelled faces were parallel to each other: *Held*, that a change in the adjustment which destroys the parallelism of these faces, for the purpose of producing a wider and smoother seam, belongs to the category of mechanical skill."

WHEELER *v.* CLIPPER MOWER AND REAPER CO., 10 Blatch. 181.

S. D. of N. Y., 1872. Woodruff, J.

Infringement of C. Wheeler, Jr.'s mowing and reaping machine patents, reissued and numbered respectively 875, 877, 879, 2610, 2632.

Among other defences, the defendants set up as patentable improvements three changes made by them in the plaintiff's machine; but the court held that they were improvements in the way of superior workmanship only, not inventions, and therefore infringements of the plaintiff's patents.[1]

The first was the addition of a curved toe to a shoe, which in the Wheeler machine was attached to the finger-bar, and supported by a caster-wheel, placed in the centre of the machine, between the driving-wheels. The office of the shoe was to slide over the ground, and thus, through the mediation of the finger-bar, to regulate, by the inequalities of the surface passed over by the shoe, the height at which the cutter-bar operated. The shoe in the Wheeler machine had a rudimentary toe; the full-grown

[1] Although this case was one of infringement merely, it raised some important questions of patentability, which can be stated briefly. We therefore give it a place.

toe developed by the Clipper machine enabled the shoe to pass over obstructions which otherwise it would have ploughed into.

The second improvement was the omission of the caster-wheel and the attachment of the shoe directly to the cutter-bar, so that the position of the cutter-bar was always regulated by the shoe; whereas in the Wheeler machine the caster-wheel, as it passed over or into inequalities in the surface, raised or lowered the shoe. The advantage gained by this improvement was that the position of the cutter-bar was always determined by the inequalities over which it passed, and never (as was sometimes the case in the Wheeler machine) by inequalities lying in the path of the caster-wheel, but not extending to that of the cutter-bar.

The third change was an instance of mechanical equivalents: an arrangement of two levers, so that they might be operated as one, instead of two levers separately operated, as in the Wheeler machine.

In answer to certain parts of the argument for the defence, the court reiterated several propositions of law which are beyond question.

1. That it is not necessary to the validity of a patent that the contrivance it describes should have been made or used by the patentee. It is sufficient, if, from the specification and drawings, it is possible for one having the ordinary knowledge of the art concerned to construct and use the contrivance patented.[1]

2. That a device is patentable, though it is of no value in itself, but valuable only when used in connection with some previously existing machine.

3. That if the inventor of several new devices, all of which are useful in themselves, has applied for and receives a patent for the combination of them, erroneously thinking that such combination was useful, and it turns out not to be so, he is still at liberty to "surrender his original patent, and have it reissued in parts, which shall claim the respective new and useful devices or combinations of devices; pointing out, of course, in his specification, some mode or manner in which they may be reduced to practical use or value."

[1] *Vide post*, page 643.

HAWES *v.* WASHBURNE, 5 O. G. 491.

N. D. OF N. Y., 1872. WOODRUFF, J., AND A JURY.

Patent for a hotel register, in which the sides of the pages were used for printed advertisements, and the middle for the names of guests.

Woodruff, J., charged the jury that the patent was for a structure; that directories containing

"entries along every page, either by interleaving or by running an advertisement along the bottom or the top through the whole book, . . ." bear "no more analogy to this hotel-register than a newspaper, or than the idea of advertising in the fields and on the fences," &c. "But when a new combination is made, bringing about a new result, as here, if it be true, bringing to the eyes of the strangers that visit the town or city where it is kept, by a new combination,[1] a new result is produced in communicating to them information and furnishing the advertisers with a chance and probability that they may thereby obtain patronage, then it becomes patentable. It would be a new structure, a new arrangement of the material for advertising, a new mode of bringing things together that are sought to be brought together for a useful purpose."

Verdict for the plaintiff.

HAWES *v.* COOK, 5 O. G. 493.

N. D. OF N. Y., 1873. HUNT, J.

Hunt, J., said that he was bound by the above decision of Woodruff, J.; and accordingly he sustained the patent without discussion of the case.

HAWES *v.* GAGE, 5 O. G. 494.

N. D. OF N. Y., 1871. WOODRUFF, J.

The patent was for interleaving the register with bibulous (blotting) paper, upon which advertisements were printed. The question of patentability was not directly raised.

[1] This paragraph in the report is as here given.

GUIDET *v.* BARBER, 5 O. G. 149.

D. OF N. J., 1873. NIXON, J.

In this case it was decided that a pavement of stone blocks, of which the sides lying in the direction of the street are smooth and fit closely together, but the sides lying across the street are chamfered, so that there are spaces between them in which horses' feet may take hold, is a patentable invention.

The Guidet patent was reissued, and the reissue (No. 4106) came before the Supreme Court in the case of

GUIDET *v.* BROOKLYN, 105 U. S. 550 (1881).

Mr. Chief Justice Waite, delivering the opinion of the court, said: —

"The invention of Guidet covered by his reissued patent may fairly be stated thus: 'Take stone blocks in the form of parallelopipeds, with the ends sufficiently smooth, and the sides sufficiently rough, and put them together in a street pavement so that the ends will be parallel to the street, and the sides at right angles.' How large the blocks should be, how smooth the ends, or how rough the sides, is nowhere stated. All that is left to the judgment and skill of him who does the work.

"The evidence leaves no doubt whatever in our minds that pavements made of blocks of stone broken into the general form of parallelopipeds, and set on edge with their ends parallel to the street, and their sides across it, were in use long before the date of Guidet's invention. This is conceded, in fact, both in the original patent and the reissue. . . . The difficulty had been, undoubtedly, that the spaces between the sides of the blocks, in ordinary use before his invention, were not sufficient to furnish a firm foothold for draught animals, especially after the surfaces had been worn smooth. How to remedy this defect was the problem to be solved. Formerly it had been done, as is said in the reissued patent, by interposing between the adjoining blocks thin strips of wood or stone. As a substitute for this, he chamfered the edges of the broad sides, and thus got the advantage of placing the blocks close against each other, and keeping the pavement firm, while he secured on the surface the necessary open joint to furnish a good foothold. That, as it seems to us, was all there was of his invention, and we are by no means inclined to hold it was not patentable to him. By taking the block of stone in ordinary use, and substituting the chamfered edge on the broad side for the narrow strip of wood or stone, he got the space

needed for the joint, and he solidified the pavement by bringing firmly together the stones that furnished the surface to be used for travel.

"But after he had obtained his patent, he seems to have found that, by selecting blocks sufficiently rough on their sides, the joints could be made open enough for all practical purposes without chamfering, and so in his reissue he abandoned that feature of his patent, and claimed for rough-side surfaces only. In this way, as it seems to us, he left the field of invention, and entered that of mechanical skill only. Pavements of stone in the form of parallelopipeds being confessedly old, he has really done no more than suggest the best kind of stone to be used in that way. The pavements in Rochester and Buffalo, which it is agreed antedated his invention, were laid in all substantial respects like his. The quality of the stone was different, and the side surfaces were comparatively smoother than his, though to some extent they were rough. He, as has already been seen, does not say what degree of roughness is required. The effect of his specification and claim is, that if blocks are selected with their sides rough enough, joints can be made that will furnish a suitable foothold without the use of strips, and without chamfering. It is true that in Rochester and Buffalo sand may have been used to some extent to keep the blocks apart, but that was only another way of doing what it is agreed had been done before. What he did was to show that, if stone were used with rougher side-surfaces than those found in the old pavements, all artificial means of keeping the transverse joints open might be abandoned, and the requisite surface secured. This was simply carrying forward the old idea, and doing what had been done before in substantially the same way, but with better results. The change was only in degree, and consequently not patentable. Clearly the reissued patent cannot be sustained."[1]

[1] This decision is open to doubt. It may be that the reissue claimed what the original patent did not fairly include, and was therefore invalid. As to the patentability, however, of the improvement, described in the reissue, much may be said. So far as appears, roughened edges had been used before simply for the sake of cheapness and for convenience. They had not been used with the *intention* or with the *result* of obtaining a pavement such as the patentee had in view. He perceived the possibility of so using them; and his improvement, though in one sense a change in degree, was not a change in the degree of *effect* already produced, for it introduced an entirely new effect. The patentee made use of the roughened edges for a new purpose. *Vide post*, page 281.

NEEDHAM *v.* WASHBURN, 7 O. G. 649.

D. OF MASS., 1874. CLIFFORD AND LOWELL, JJ.

In this case there is a *dictum* by Clifford, J., to the effect that car-wheels having been made by placing a heated tire of cast-steel in a mould, and then pouring in molten cast-iron through a single opening at the centre of the mould, thus welding the iron and steel, it was not a patentable improvement to introduce the molten iron through openings, or a series of openings, made just inside of the heated tire.

RUBBER-TIP PENCIL CO. *v.* HOWARD, 20 WALL. 498 (1874).

Patent of J. B. Blair, dated July 23, 1867, for "a new and useful rubber-head for lead-pencils,"— a new manufacture.

The improvement consisted in making a hole somewhat smaller than the diameter of the pencil in a piece of india-rubber, and inserting the end of the pencil therein.

The claim was for "as a new article of manufacture, an elastic, erasive pencil-head, made substantially in manner as described." What that manner was appears from the opinion of the court, delivered by the Chief Justice. It runs as follows: —

". . . Blair's patent was for a 'new manufacture,' being a new and useful rubber-head for lead-pencils. It was not for the combination of the head with the pencil, but for a head to be attached to a pencil, or something else of like character. It becomes necessary, therefore, to examine the description which the patentee has given of his new article of manufacture, and determine what it is, and whether it was properly the subject of a patent.

"It is to be made of rubber, or rubber and some other material, which will increase its erasive properties. This part of the invention alone could not have been patented. Rubber had long been known, and so had rubber combined with other substances, to increase its naturally erasive qualities. It is to be of any convenient external form. It may have a flat-top surface, or its top may be of a semicircular or conical shape, or any other that may be desirable. This would seem to indicate clearly that the external form was not a part of the invention. . . .

"Again, the head is to have in it longitudinally a socket to receive one end of a lead-pencil or a tenon extending from it. This socket is

to be cylindrical, or of any other proper shape. Usually, the inventor says, he made it so as to extend part way through the head; but, if desirable, it might be extended entirely through. It must be within one end, but any particular location at the end is not made essential. This, clearly, is no more than providing that the piece of rubber to be used must have an opening leading from one end into or through it. This opening may be of any form and of any extent longitudinally. The form, therefore, of the inside cavity is not more the subject of the patent than the external shape.

"Any piece of rubber with a hole in it is all that is required thus far to meet the calls of the specifications, and thus far there is nothing new, therefore, in the invention. Both the outside and inside may be made of any form which will accommodate the parties desiring the use. But the cavity must be made smaller than the pencil, and so constructed as to encompass its sides, and be held thereon by the inherent elasticity of the rubber. This adds nothing to the patentable character of the invention. Everybody knew when the patent was applied for that if a solid substance was inserted into a cavity in a piece of rubber smaller than itself, the rubber would cling to it. The small opening in the piece of rubber not limited in form or shape was not patentable; neither was the elasticity of the rubber.

"What, therefore, is left for this patentee but the idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself, the rubber will attach itself to the pencil, and when so attached become convenient for use as an eraser?

"An idea of itself is not patentable, but a new device by which it may be made practically useful, is. The idea of this patentee was a good one, but his device to give it effect, though useful, was not new. Consequently he took nothing by his patent." [1]

[1] Whether or not the decision of this case is right, the reasoning of the opinion is open to criticism. Many combinations of old elements are patentable, not because invention was shown in the means by which the combination is effected, but because invention was shown in bringing together component parts apparently dissimilar; and these inventions are often of the highest class, the most difficult to make, and the most useful when made. The line of reasoning pursued in this case, as we understand it, would be fatal to patents for such inventions. *Vide ante*, pages 31, 32, 33.

VOGLER *v.* SEMPLE, 7 Biss. 382.

N. D. of Ill., 1877. Blodgett, J.

Vogler's reissued patent of Jan. 11, 1877, for an improvement in trunks, being a "removably hinged tray," thus described by the court: —

"The parts being so arranged and combined as to admit of the ready removal of the tray from the trunk, and yet so adjusted as to allow the tray to be turned up on its hinges, into or against the cover or top. This is accomplished by the peculiar form of the hinge, — one leaf of which is permanently fastened to the tray, and the other so arranged as to be inserted in sockets, which are firmly fixed to the back wall of the trunk; the whole being so arranged as to admit of a ready removal of the hinged tray from the trunk, and so adjusted as to allow it an up-and-down play."

This tray had three advantages: 1st, It was easily removed; and, 2d, It was removable by a "straight vertical lift," which did not disarrange the contents; 3d, It had free play up and down, so that it adapted itself to the pressure above and beneath it.

It was held that this invention was patentable, and not anticipated by a device for a removable tray hinged to the top of the trunk by slots and pins, but not capable of being fastened to the body of the trunk.

ANDREWS *v.* CARMAN, 13 Blatch. 307.

E. D. of N. Y., 1876. Benedict, J.

Infringement of a patent reissued to Nelson W. Green, May 9, 1871, numbered 4372. The claim was for

"the process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water, without removing the earth upwards, as it is in boring, substantially as herein described."

Before Green had invented this "driven-well," as it is called, there were but two kinds of wells, both constructed upon the same principle; namely, the ordinary domestic well, and the artesian well. Both are made by sinking the well-pit until a water-bearing stratum of earth is reached, whence the water flows into the well-pit. The ordinary well stops when this point is

reached. The artesian well is sunk until it reaches a stratum where the water is under such pressure that it will flow into the well-pit and up through it to the surface; whereas in the ordinary well it has to be pumped or drawn up to the surface. In each case "the pit has uniformly been made by loosening the earth or rock and removing it upwards and out upon the surface, either by means of the spade, or the drill or auger, and the sand-bucket."

The plaintiff's process was a simple but an entirely new one. It was to pierce the earth with a small, hollow air-tight tube of iron, slightly contracted at the end, until the proper stratum was reached; then by means of a pump to exhaust the air from the tube and from the water-bearing stratum into which the tube projects. The water rushes in and up to fill the vacuum, and a constant and unlimited supply of water is obtained. The court held that the claim, construed in the light of the specification to which it referred, was neither for a process of making a well-pit, nor for an instrument or device, and still less (as was contended) for a process of making a hole in the ground, but for the application of a principle, which the court thus stated: —

"I therefore understand this patent to be a patent for a process, and that the element of novelty in this process consists in the driving of a tube tightly into the earth, without removing the earth upwards, to serve as a well-pit, and attaching thereto a pump, which process puts to practical use the new principle of forcing the water in the water-bearing strata of the earth from the earth into a well-pit, by the use of artificial power applied to create a vacuum, in the manner described."

Beside the obvious advantages of the driven-well, it has this advantage also, — water from the surface or from intervening strata cannot flow into it, but only the purer water from the deep stratum where the tube ends.

Upon the point that the new principle had previously been in some sort of undiscovered operation, the court made the following sagacious remarks: —

"It is of course true that, prior to Green's invention, water had been pumped from a hole in the ground, and from a small hole. Doubtless, it is also true that in some such case, where a pump had been inserted in a small hole, for the purpose of raising therefrom the water

found therein, the principle of Green's invention may at times have been called into operation. No such case is here proved; but if such fact were proved, Green's right to a patent would not thereby be defeated. A chance operation of a principle, unrecognized by any one at the time, and from which no information of its existence, and no knowledge of a method of its employment, is derived by any one, if proved to have occurred, will not be sufficient to defeat the claim of him who first discovers the principle, and, by putting it to a practical and intelligent use, first makes it available to man."

This patent was also sustained by Nelson, J., in Andrews *v.* Wright, 13 O. G. 969.[1]

ANDREWS *v.* CROSS, 19 BLATCH. 294.

N. D. OF N. Y., 1881. BLATCHFORD, C. J.

Blatchford, J., also sustained the driven-well patent, saying:—

"The evidence in the present case shows that any person, by using a pump, applied as directed, on the tube directed, in the well constructed as directed, will put to practical use what is in Andrews *v.* Carman defined to be the 'new principle.'

"Although the specification does not state what such new principle is, the evidence in the present case shows what it is, and that it is certainly and effectively developed, to the end of obtaining a copious, continuous, and unfailing supply of good water, and that it is what is thus set forth in Andrews *v.* Carman. It may be that the inventor did not know what the scientific principle was, or that, knowing it, he omitted, from accident or design, to set it forth. That does not vitiate the patent. He sets forth the process or mode of operation which ends in the result, and the means for working out the process or mode of operation. The principle referred to is only the why and the wherefore. That is not required to be set forth. . . . An inventor may be ignorant of the scientific principle, or he may think he knows it, and yet be uncertain, or he may be confident as to what it is, and others may think differently. All this is immaterial, if by the specification the thing to be done is so set forth that it can be reproduced."

[1] In the case of Green *v.* French, 11 Fed. Rep. 501, Nixon, J., sustained the driven-well patent.

ADAMS *v.* THE JOLIET MANUFACTURING CO., 12 O. G. 93.

N. D. OF ILL., 1878. BLODGETT, J.

H. A. Adams's patent of Oct. 15, 1872, for improvement in corn-shellers.

The claim was: —

"The combination with a corn-sheller of a series of wings, wheels, or projections, so arranged on a shaft as to revolve in the same direction the corn is running, and so placed relative to the throats as to force into the machine all misplaced or hesitating ears, substantially," &c.

A prior device, for the same purpose (that is, to prevent the ears from piling up at the throat of the machine, instead of passing into it), had similar projections, revolving in the *opposite* direction; but this device was not successful, whereas the plaintiff's was successful, and the change made by him, though it consisted simply in reversing the motion of the beaters or wings, was held to be patentable.

TUSSELL *v.* SPAETH, 14 O. G. 377.

D. OF N. J., 1878. NIXON, J.

Lovatt's patent for "improvement in skates," reissued to Tussell, May 30, 1876, No. 7151.

"Movable clamps," said the court, "had been used to hold the skate to the sole and to the heel of the boot, and were retained in position by bolts and nuts, the mechanism for the toe and heel being separate and acting independently one of the other. But here [*i. e.* in Lovatt's device], by the use of a single adjustable screw operating upon the lateral clamps, these clamps are caused to grasp the sole and heel of the boot with all the force necessary and requisite for firmly holding the skate to the foot. . . . I am of the opinion that Lovatt . . . brought out the true principle of clamp-fastening in skates, although he did not employ the most efficient instrumentalities for embodying and exhibiting the principle."

TERHUNE *v.* PHILLIPS, 99 U. S. 592 (1878).

The only description of the invention contained in the report is as follows: "It appears by the specification . . . that the invention . . . 'has for its object to provide a means for connecting the ends of the horizontal and vertical members of a show-case frame; and to that end it consists in a metallic corner-piece, provided with sockets adapted to receive the ends of the different members, whereby the same are firmly connected at the corners of the case.'"

We quote in full the opinion of the court, delivered by Mr. Justice Swayne: —

"The determination of this case is controlled by Brown *et al. v.* Piper, 91 U. S. 37. We cannot fail to take judicial notice that the thing patented was known and in general use long before the issuing of the patent. The substitution of metal for wood was destitute both of patentable invention and utility. The admission of improper testimony, if it occurred, was therefore immaterial. The case of the appellant [the patentee], as it appears in the record, without any testimony, is clear and conclusive against him."

BOWKER *v.* DOWS, 15 O. G. 510.

D. of Mass., 1878. Lowell, J.

Horace L. Bowker's patent of July 24, 1877, No. 193,476 for an improvement in sirups and mineral waters.

The improvement consisted in adding to such liquids a small quantity of saponine extracts, in order to "create and sustain a sparkling frothy foam or bead on any drink containing carbonic acid gas, when drank from the bottle or fountain." Directions for obtaining the extract (from soap-bark, &c.) were given in the specifications, and also directions as to the proportions in which it should be used. The objection that the discovery was not patentable being taken, Judge Lowell said: —

"We are of opinion that it is clearly a case of a patentable discovery of a new use in a combination to produce a better result than was known before."

EVERETT *v.* THATCHER, 16 O. G. 1046.

N. D. OF OHIO, 1878. BAXTER, J.

Baker's patent for a clapboard joint and siding for houses, reissued Jan. 19, 1869, No. 3268, held not valid. The alleged invention is described only in the following passage from the opinion of the court: —

"It is simply a piece of weather-boarding, grooved on one edge and bevelled on the other. The invention is not such a new and useful improvement in that branch of mechanism as in our judgment makes it patentable."

ALBRIGHT *v.* THE CELLULOID HARNESS-TRIMMING CO., 12 O. G. 227.

D. OF N. J., 1878. NIXON, J.

A. Albright's reissued patent, No. 5155, dated Nov. 26, 1872, for an improvement in the manufacture of rubber-coated harness-trimmings, consisting in dies, which, when a rubber-coated ring, or other like article, was placed between them, polished, trimmed, and finished it, — thus doing in one operation what previously had required several operations. Therefore, of course, held patentable.

LORILLARD *v.* RIDGEWAY, 16 O. G. 1231.

E. D. OF PENN., 1879. MCKENNAN, J.

Seidler's patent, reissued Oct. 24, 1876, No. 7362.

We cannot do better, and need not do more, than to quote the head-notes: —

"1. Tobacco having been marked by pressing into its surface metallic or other hard substances, the imprint of which was left upon the tobacco, it was no invention to provide such plates with prongs or projections, and allow them to remain upon the tobacco.

"2. Letters and other distinguishing marks having been produced upon tobacco, to put such marks upon a metallic tag, if greater prominence was desired, was readily suggested to the common mind, and did not rise to the dignity of an invention."

In an earlier case before the same judge, Lorillard *v.* McDowell, 11 O. G. 640 (1877), which was a motion for an interlocutory injunction, the patent was sustained, the invention not being limited by proof of the prior devices set forth in the first-quoted head-note.

PEARCE *v.* MULFORD, 102 U. S. 112 (1880).

Infringement of a patent reissued to Lewis J. Mulford and others, Feb. 24, 1874, for an "improvement in chains and chain links for necklaces," &c. The claims were: —

"1. An ornamental chain for necklaces, &c., formed of alternate closed links A, and open spiral links B, substantially as shown and described.

"2. The open spiral link B, formed of coils of tubing, substantially as shown and described."

There was no novelty in chains formed of alternate closed links and open spiral links, nor in chains formed of spiral links only, nor in chains formed of split rings "sprung" into each other. The novelty, therefore, of the plaintiff's invention consisted, if at all, in the use of gold tubing (itself an old article) for the open spiral links.

"Tubing itself, as understood in the jeweller's art," said the court, "is made by compressing a strip of gold around a brass or copper wire, and then forcing it through a draw-plate, the holes in which decrease gradually in diameter until the edges of the gold strip are completely united. The copper wire is then eaten out by an acid, and the tubing is complete. Both the product and the process have long been well known," the court continued. "And so have been spiral rings formed of gold tubing. The tubing, before the wire is removed, is wound into coils around a mandrel, and cut into desired lengths. The coils may then be pressed together by a wire and annealed, the wire having been removed, or the compressing and annealing process may be omitted. Such spirals have a certain degree of elasticity, which enables them to be sprung upon other links, and when thus sprung into other closed or open spirals they will form a chain. The well-known serpent bracelet was such an open spiral, such a double link, and several of them, sprung together alternately with closed links, would have formed a chain identical in principle with that of the patentee. There certainly is nothing patentable in merely reducing the size of the

bracelet so as to adapt it to use in a necklace. The record also contains evidence that other spiral rings or links made of gold tubing, some of them open and some closed, by soldering, were made before 1873. It is to be observed that the second claim in the patent is not for any process of making a link; not for making tubing or winding it into spiral form; not for tying or annealing the coils when they have been wound: but for an open link consisting of one or more coils of tubing of the proper length, so as to form a double spring link, into each end of which is soldered a small shot to give the link a finish. This is all the description the specification gives of the link. It is not intimated that the coils must be brought into close contact with each other, or annealed, and it is simply said the links may be colored or polished. The form of the link, when made of gold tubing, is all that is attempted to be patented. The constituents are not. The patentee has testified that as long as he had known anything about the manufacture of jewelry he had known tubing to be used in the art; that for many years he had known shot put into the ends of such tubing, and that for a number of years he had known links formed of tubing with shotted ends. We think, therefore, the evidence sufficiently establishes that the second claim is void for want of novelty in the alleged invention.

"The first claim read in connection with the description given in the specification and drawings is for an ornamental chain, consisting of solid links and open spiral links made of tubing, the latter being finished before they are sprung into the solid links, and the connection being made thus springing the links together. In considering whether this can be sustained, it is necessary to observe what was the state of the art and what was known when Cottle claims to have invented the device for which he obtained the patent. Chains having alternate open and closed links, the open links being spiral and sprung into the closed links, were known. So were chains made entirely of spiral links, and even of open spiral links. A chain had also been made and worn, and it was for sale in the stores, the links of which were hollow. They were made solid, with copper wire inside. The copper wire was then destroyed, leaving the links hollow, and they were then sprung together to form a chain. The chain was thus composed of open spiral links made of hollow metal; that is, of tubing. It is true, as appears from the model which is an exhibit in the case, the two ends of the spiral were bent outward and the coils were soldered together after the links had been sprung into each other. Still, when thus sprung into each other, they made a chain formed of open spiral links of tubing. The soldering was a distinct and after process. Omitting that process and the outward deflection of the ends, and alternating the links with other

links made closed and solid, the chain would have been substantially the same as that of the complainants. We cannot think the advance which the patentee made upon that can be called invention. Leaving the links open after they have been sprung into closed links, there being no novelty in the links themselves, cannot be patentable. It is nothing more than the exercise of ordinary mechanical skill. If in one of the complainants' chains, after the links had been joined, a person should solder the spirals together or to the closed rings, it could hardly be maintained that a new chain had been invented. Or if, when thus soldered, the soldering should be removed, the change would not deserve to be regarded as a product of invention. Yet this is substantially what the patentee has done. His chain may have been an improvement on the chains that preceded it. In some particulars it doubtless was. It left the elasticity of the spiral gold tubing more free by releasing the link from the attachment of the soldering, and it enabled the chain to be freely taken in pieces without injury to its structure. But all improvement is not invention, and entitled to protection as such. Thus to entitle it, it must be the product of some exercise of the inventive faculties, and it must involve something more than what is obvious to persons skilled in the art to which it relates."

THE COLLINS CO. *v.* COES, 3 FED. REP. 225.

D. OF MASS., 1880. LOWELL, J.

L. J. & L. E. Smith's reissued patent, No. 5294, dated Feb. 25, 1873, for an improvement in monkey-wrenches.

The court:—

" . . . Loring Coes, one of the defendants, made . . . the great improvement in these tools more than forty years ago. . . . He arranged a rod parallel to the main bar, and upon this rod worked the movable jaw by means of a rosette, which did not move up and down, but remained constantly in a convenient position close to the thumb of the operator. Coes made a plate of iron, called the step-plate, which fitted over the main bar, and projected on one side to receive the rod, which was pivoted into it. On the side towards the hand, this step-plate had a recess operating as a ferrule, to receive the wooden handle or sleeve, which was shipped over the iron bar and secured by a nut at the end. The handle and its nut kept the step-bar in place.

" The improvement set forth in the reissued patent of the plaintiffs

may be said to consist of cutting the step-plate in two, lengthwise, and putting a screw-thread upon the part nearest the hand, which thus becomes a nut, having a recess for the wooden handle. The utility of this change is said to be (1) that the step-plate is secured by the upper nut, independently of the nut at the end of the handle, and thus, if the handle becomes loose, the smooth and regular working of the rod on the step-plate is not affected; (2) that by securing the step-plate to the main bar, or iron body of the wrench, by this independent nut, much of the strain, which in Coes's wrench is brought upon the wooden handle, which is the weakest part of the tool, is transferred to the solid iron bar. The evidence bears out this claim of utility. . . .

"It is ably argued for the defendants that the mere addition of a nut to the Coes wrench has not invention enough to be patentable. Considering, however, that the change, simple as it is, was not made for some twenty-five years after Coes's wrench was patented, and came into common use, and that there appears to be a value in it which others have obtained in a different way, it seems to me that the combination is new and useful in the sense of the patent law."

Alleged anticipation: The "Dixie wrench" "was sometimes made with a nut, into which the handle of the wrench was inserted. . . . But there is no reason to suppose that the assignor of the plaintiffs knew of this form of wrench, which had been superseded by the Coes tool long before their original patent was granted. [Of what importance is this fact? The existence of the wrench as a tool once in public use, and not the patentee's knowledge of it, is the criterion.]

"Nor does it appear that the 'Dixie' wrench, with a recessed nut, was well known to all competent mechanics. [The same criticism applies.] This was not a Coes wrench. It had no rod parallel to the bar; but the movable jaw was worked upon the bar itself, — a form of tool which no one has been willing to use since Coes's invention was made public. Therefore, the plaintiffs' wrench is not, or was not, when made, such a mere obvious appropriation of the Dixie nut for the use of the Coes wrench as to be an alternative fairly within the knowledge of a constructor."

DENSMORE *v.* SCOFIELD, 102 U. S. 375 (1880).

Patent reissued to J. & A. Densmore, May 29, 1866.

The alleged invention consisted in combining two large wooden tanks with an ordinary railway car, for carrying oil, in such a manner that the tanks should form a part of the car itself (thus

avoiding the extra weight of barrels, &c., placed upon a complete car), and so arranged that the weight of the tanks should come directly, or nearly so, over the car-trucks. The patent claimed: 1. The two tanks, or their equivalent, in combination with the car, substantially, &c. 2. The two tanks, or their equivalent, when placed over the trucks, in combination, &c., substantially, &c. 3. The frames, bolts, and cleats, combined with the tanks, man-holes, man-heads, faucets, and runway, in combination with tanks and car.

The defence established the following points in evidence:—

1. That in 1863, and prior to that, oil was carried in whaling casks, permanently fastened to a car by spikes and cleats;

2. That in 1871, and thereafter, wooden casks, like the complainants', were not used, because they leaked, and, consequently, were apt to be burned; that a long iron tank, boiler-shaped, and placed horizontally upon the car, had gone into universal use, being tighter and stronger than the wooden tank; and,

3. That in loading freight cars it always had been the custom to place the weight as nearly as possible over the trucks.

This evidence being uncontradicted, the court (Swayne, J., delivering the opinion) remarked as follows:—

"This testimony leaves nothing of the substance of the plaintiffs' alleged invention. No one, we apprehend, would seriously contend for a moment that what is left is sufficient to constitute the basis of a valid patent. Brown *v.* Piper, 91 U. S. 37, and the authorities there cited. But irrespective of this testimony, and of any testimony, upon looking this reissue in the face, and examining its several claims by their own light, we find nothing that brings any of them within the sphere of what is properly patentable. There is no novelty and no utility. It does not appear (to use the language of appellants' brief) that there was 'a flash of thought' by which such a result as to either was reached, or that there was any exercise of the inventive faculty, more or less thoughtful, whereby anything entitled to the protection of a patent was produced. It strikes us that the entirety and all the particulars of the summary and the claims are frivolous, and nothing more."

WASHBURN & MOEN MANUFACTURING CO. *v.* HAISH, 4 Fed. Rep. 900.

N. D. of Ill., 1880. Drummond, J.

Many patents of William D. Hunt and of others for barbed-wire fences were in suit. The object of all these inventions was a fence armed with sharp points to prick the skins of beasts coming in contact with it, and thus to repel them without injuring them.

This was one of fifteen cases brought by the plaintiff, and there was a great array of counsel. The inventions are not described in the report;[1] nor are the devices alleged to anticipate them. Many witnesses having testified to the existence of barbed-wire fences in the past, the court quoted from Coffin *v.* Ogden, 18 Wall. 120, on the point of anticipation, as follows: ". . . The burden of proof rests upon him [the defendant], and every reasonable doubt should be resolved against him;" and the court also cited and quoted from Webster Loom Co. *v.* Higgins, 16 O. G. 675; Howe *v.* Underwood, 1 Fish. 175;

[1] But in a later case, a motion for rehearing, Washburn, &c. Co. *v.* Haish, 7 Fed. Rep. 906, where it was contended only that the reissues were not for the same inventions as the original patents, we find the following facts:—

(As we have said, the object of all these inventions was a fence having barbs of some kind, which would prevent cattle from breaking through it, as they could and did break through the ordinary wire fences, which were thus described by the court:—

"Wires had been used for fencing for many years before the date of these patents, and they were made single or double, of single wires, or of single wires twisted together. These did not fully answer the purpose, as it was not difficult for cattle to push through them.")

The Hunt reissue, No. 6976, described small spur-wheels, strung upon the wires of a fence. The spurs were sharpened, and the wheels had openings at the centre for the wires to pass through.

The *Kelley* patent, No. 6902. The barbs, said the court, "are cut in a diamond form from a plate by machinery, or otherwise, and each provided with a hole, so as to be strung on the wire at proper distances apart, and then they are compressed laterally upon the wire by a blow of a hammer or otherwise, so as to fasten them upon the wire. . . .

"*Glidden* reissue, No. 6913, . . . described the use of two wires coming together at various points, at which spurs are coiled around them, and which are spread apart between the coils, so as to prevent the latter from moving longitudinally on the wires. Equidistant between the posts is a slotted tube containing a coiled spring, the object of which was to keep the wires at a proper tension as affected by heat or cold. . . . The number of coils is not material."

Hayden *v.* Suffolk Mfg. Co., 4 Fish. 103; Goodyear *v.* Day, 2 Wall. Jr. 283.

On the question of patentability the court remarked as follows:—

"The testimony as to the state of the art shows that fence-wire and wire fences, and wires for such purposes, composed of two or more strands twisted or laid together, were old at the time these inventors entered the field; also, that fences had been, long before Hunt's invention, armed with spikes, or other sharp projecting points, for the purpose of making them more effective in resisting . . . animals or other intruders. . . . It must be conceded both from the proofs in these cases, and from these common facts within the knowledge and observation of all intelligent persons, that the idea of furnishing a fence or wall with some kind of sharp spikes or prickers is old. The ordinary picket fence, the device of spikes on area railings to prevent loungers from leaning against them, the placing of broken glass, pottery, or sharp stones or spikes upon the tops of walls, to protect fruit-gardens, are well-known illustrations of what we refer to.

"The most that can be said of these old devices, as applicable to these patents, is that they narrow the field for the exercise of inventive faculty, and limit the range of the patents. . . .

"There is no doubt that a device, in order to be patentable, must be the result of inventive genius. The mere mechanical adaptation of old things to new uses is not usually invention, unless in combinations; and yet it is extremely difficult in many cases to say just where the inventive faculty asserts itself as the controlling force; and the authorities furnish us no satisfactory test to apply and determine this question; although there is usually little difficulty in determining, as a matter of fact, in each case, whether a device is or is not in some degree the result of invention. If there is any invention required, then the law will not attempt to measure its extent or degree. If, for instance, the proof had shown that wire, provided with barbs, spurs, or prickers, was a well-known article used for other purposes than fencing, there would be no difficulty in saying that it did not require invention or the exercise of the inventive faculty to substitute it for fencing purposes in place of plain wire, which had been used before.

"But we cannot say that the inventive or creative faculty is not required in devising a mode by which plain fence-wire can be armed with spurs so as to make it available as an effective fencing material. The proof does not show that such wire was known and applied to other uses. No one, so far as this record shows, had made or used it before for any other purpose; so that, to our minds, it seems quite

clear that it required invention to devise and produce a barbed wire which could be practically used for fencing purposes.

"In the absence of any other test, the courts have seemed to assume that the fact of the acceptance of a new device or combination by the public, and putting it into extensive use, was evidence that it was the product of invention; or, as one of the counsel for the plaintiff expressed it, 'utility is suggestive of originality.'"

In confirmation of this view, the court then cited, and quoted from, Smith *v.* Goodyear Dent. Vul. Co., 93 U. S. 486; Eppinger *v.* Richey, 14 Blatch. 307; Isaacs *v.* Abrams, 14 O. G. 861; Stanley Works *v.* Sargent, 8 Blatch. 344; and concluded as follows:—

"Tested by the rule of utility here suggested, this record abundantly shows that the device in question has been accepted by the public to an extent which has hardly heretofore followed the most successful inventions. Its utility must be considered as a conceded fact. From what has already been developed, it is clear that it has made possible the cultivation of the extensive prairies of the West, the pampas of Brazil, and the steppes of Russia, where, before the introduction of this cheap mode of fencing, it was impossible; and it has even to a great extent already superseded the use of wooden fences in the timbered portion of the country; and the question is, to whom but these inventors is the public indebted for this widely useful device?"

BRUMMIT *v.* HOWARD, 3 FED. REP. 801.

D. OF MASS., 1880. LOWELL, J.

Patent of Brummit, No. 177,466, dated May 16, 1876. The patent claimed "the method of utilizing the leather of old card clothing by heating it with gum tragacanth, and resetting it with teeth reversely to the original teeth, substantially as described."

The court:—

"... The actual discovery relied on is that of turning the leather so as to present a different side to the old tooth-setting machine, and, then, as the teeth are always set at an angle, the new holes will run across the old holes. If set in the same direction, it would be impossible to prevent their working into and enlarging the old holes."

The exhibit alleged to anticipate this invention was thus described by the court: —

"The exhibit differs from the clothing made under the plaintiff's patent in this, that, instead of turning the piece of leather round, the operator has turned it over, so that the teeth now come out at the flesh side, instead of the grain side, of the leather. In the plaintiff's opinion, this mode of manufacture is not so good as his; but it seems to have worked well, and if we omit from his claim the gum tragacanth, which the defendants do not now use, and which the complainant insists is not essential to his claim, this exhibit clearly anticipates it, because it utilizes old card clothing by resetting it with teeth reversely to the original teeth." [1]

NEW YORK GRAPE-SUGAR CO. *v.* AMERICAN GRAPE-SUGAR CO., 10 FED. REP. 835.

N. D. OF N. Y., 1882. WALLACE, J.

Head-note: "The employment of sheet-metal as a lining for the bottom of a vessel to contain liquids involves no invention."

ARTICLE OF SALE.

LANGDON *v.* DE GROOT, 1 PAINE, 203.

S. D. OF N. Y., 1822. LIVINGSTON AND VAN NESS, JJ.

The specification said: —

"This improvement consists in folding the thread and floss cotton into skeins or hanks of a convenient quantity for retailing, with a sealed wrapper round the same, and a label containing the number and description of the article."

Mr. Justice Livingston: —

"The invention is for folding the thread and floss cotton in a manner a little different from the ordinary mode, in which form the cotton will sell quicker and higher by twenty-five per cent than the same cotton

[1] Compare this case with that of Adams *v.* The Joliet Mfg. Co., *ante*, page 252.

put up in the common way. The cotton thus folded is imported from the factory of Holt, in England. The article itself undergoes no change; and the whole of the improvement — for it is a patent for an improvement — consists in putting up skeins of it, perhaps of the same size in which they are imported, decorated with a label and wrapper; thus rendering their appearance somewhat more attractive, and inducing the unwary, not only to give it a preference to other cotton of the same fabric, quality, and texture, but to pay an extravagant premium for it. When stripped of these appendages, which must be done before it is used, the cotton is no better in any one respect than that of Holt's retailed in the way put up by him.

"Now, that such a contrivance . . . may be beneficial to a patentee, if he can exclude from the market all other retailers of the very same article, will not be denied; and if to protect the interest of a patentee, however frivolous, useless, or deceptive his invention may be, were the sole object of the law, it must be admitted that the plaintiff has made out a satisfactory title to his patent. But if the utility of an invention is also to be tested by the advantages which the public are to derive from it, it is not perceived how this part of his title is in any way whatever established. Is the cotton manufactured by himself, which is put up in this way? The very label declares it to be that of another man. Is anything done to alter its texture, or to render it more portable, or more convenient for use? Nothing of this kind is pretended. Does the consumer get it for less than in its imported condition? The only ground on which the expectation of a recovery is built is, that he pays an enormous additional price, for which he literally receives no consideration.

"It is said that many ornamental things are bought of no intrinsic value, to gratify the whim, taste, or extravagance of a purchaser, and that for many of these articles patents are obtained. This may be so; but in such cases there is no deception, no false appearances, and the article is bought to be used with all its decorations and ornaments, which may have been the principal inducements to the purchase, and which will last as long as the article itself. In this the sight or pride of the party is gratified. But here it is the cotton alone which it is intended to buy; and the little label and wrapper appended to it, and which constitute the whole of the improvement, however showy, are stripped off and thrown away before it can be used. And when that is done, which may be done at the very moment of its purchase, the cotton is no better, whatever the buyer at the time may think, than when it first left the factory.

"When Congress shall pass a law, if they have a right so to do, to encourage discoveries by which an article, without any amelioration of

it, may be put off for a great deal more than it is worth and is actually selling for, it will be time enough for courts to extend their protection to such inventions, among which this may be very fairly classed."

PENNSYLVANIA SALT-MANUFACTURING CO. *v.* GUGENHEIM, 3 Fish. 423.

E. D. of Penn., 1868. Grier, J.

George Thompson's patent, reissued April 16, 1867, in three divisions, numbered respectively 2569, 2570, 2571.

Two of the reissues were for "improvements in the manufacture of caustic alkali," and one was for an "improved process of putting up caustic alkali."

The result of the invention was to bring into common use, in the making of soap, what before had been merely an article of the laboratory. Caustic alkali is difficult to keep, because of its tendency to seize carbonic acid and moisture from the air, and thus to become a solution of carbonate of soda; and also because it destroys most substances which it touches. For these reasons, before the patentee's invention it was not used in soap-making. Soap was made chiefly in large factories by taking the soda-ash of commerce, making it caustic by boiling it with lime, and then treating the solution of caustic soda with fat. This was a nice chemical operation, which could not be carried on in families.

The patentee's invention was thus described by the court (Grier, J.):—

"He conceived the idea of forming the lye or solution of hydrate of soda by the use of carbonate of soda and lime, and then to syphon off the lye, and evaporate down this clear lye until the caustic soda (hydrate of soda) reached a solid state. In this condition it could be melted at a temperature near to the degree of redness, and moulded or broken. But the trouble was how to keep this article in its caustic state, and how to overcome its tendency to pass back to the condition of a carbonate, and also to avoid its destructive action upon other substances. The idea then occurred to him to divide the solid caustic soda into such small portions as would answer for a single ordinary operation, and seal up hermetically each portion by itself as soon as

produced. His first experiments were tried by moulding the solid fused caustic soda into one-pound pieces, and enclosing each in an air-tight envelope composed of paper or muslin, saturated with rosin, and dipped in tar or varnish. He also then adopted the plan of at once sealing up the caustic soda in tin, soldering it in small hermetical one-pound enclosures, as soon as produced. Finally, Thompson adopted the plan of preparing an iron case or mould, made tight at the joints by infusible cement, and at once pouring the hot fused soda into it, and immediately sealing it up. By these several means he produced an article of uniform strength that could be safely transported, which could be certainly used in the manufacture of soap in families, by merely adding a fixed quantity of water and fat, and which material could not pass back to the state of a carbonate. . . ."

" The testimony . . . clearly establishes the fact of the novelty and practical utility of Thompson's invention or discovery, and his improvement in the art. It is therefore the proper subject of a patent."

This is the only reference — if it be one — to the patentability or ingenuity of the improvement. This aspect of the patent, however, was discussed in the succeeding case of Penn. Salt-Mfg. Co. *v.* Thomas,[1] by McKennan, J., who followed the previous decision. He said: —

" . . . A patentable subject must involve some exercise of the inventive faculty, and it must not be merely the application of an old thing to a new use. It is undoubtedly true that small metal cans and infusible cement were in use before Thompson's invention, and that caustic alkalies were preserved from deliquescence by enclosure in air-tight packages of glass, iron, and wood; but still the fact remained that caustic soda was unavailable for general use, and especially for the domestic manufacture of soap. By Thompson's method it was invested with commercial properties and practical adaptabilities which did not pertain to it before. . . . The patentability of an alleged invention is in many cases most satisfactorily shown by its utility. In Webster on 'Subject-Matter,' 30, it is said: 'The utility, then, of the change, as ascertained by its consequences, is the real practical test of the sufficiency of an invention; and since the one cannot exist without the other, the existence of one may be presumed in proof of the existence of the other. Wherever the utility is proved to exist in any great degree, a sufficiency of invention to support the patent must be presumed.'"

[1] 5 Fish. 148 (E. D. of Penn., 1871).

The learned judge then quoted the following able remarks of Mr. Commissioner Mason, who granted the original application of the inventor: —

"'Had he discovered an ingredient which, mixed with alkali, would, without injury to its properties in other respects, have prevented it from a tendency to deliquescence, he would have made a patentable discovery. Is this not equally so? In fact, the packages of alkali, done up as proposed, may in substance be deemed a new commodity, a new article of merchandise; for although its constituent ingredients are the same as were before known and used, a new property has in reality been communicated to it. In point of fact, the article now offered for sale is the alkali without any tendency to deliquescence. This, though chemically not new, is so commercially, and is so proved by the affidavits filed.'"

This view of the improvement skilfully, and not unfairly, rescues it from the imputation of being a double use, to which otherwise it would be subject.

THE MILLIGAN, &c. GLUE CO. *v.* UPTON, 6 O. G. 837; 97 U. S. 3.

D. OF MASS., 1874. CLIFFORD, J.

Patent reissued to Milligan & Higgins, dated July 12, 1870, numbered 4072, for a new article of commerce, — comminuted glue.

By a rasping or grinding process, described in the original patent, the patentee reduced the flakes of glue to a powder, which was alleged by him to be a new article. Its patentability was defended on three grounds: first, that it was more soluble than the flakes, and consequently more conveniently used; secondly, that it was more easily and cheaply put up in small packages; and, thirdly, that its color was lighter and more pleasing to the eye than the color of ordinary glue. Admitting the truth of these assertions, and assuming that ground glue was not known before the patentee made it, Clifford, J., held, nevertheless, that it was not patentable,

"for the reason that the change effected by the described process does not involve the exercise of any invention or discovery. . . .

"Comminuted glue differs in no respect from the ordinary glue of

commerce, from which it is manufactured, except in the degree of its fragmentary condition. . . . Other substances of various kinds, it must be conceded, have been mechanically reduced in size in like manner, and inasmuch as such articles, or some of them, bear a close resemblance to glue in flakes, which is unchanged in any of its properties, I am of the opinion that the reduction of the glue, as manufactured in flakes, to small particles, as described in the . . . complainant's patent, does not involve the exercise of invention or discovery, without which it is clear the product of the described process or apparatus cannot be regarded as a patentable improvement."

In sustaining this decision, in Glue Co. *v.* Upton, 97 U. S. 3 (1877), the Supreme Court (Mr. Justice Field delivering the opinion) said : —

"A distinction must be observed between a new article of commerce and a new article which, as such, is patentable. Any change in form from a previous condition may render the article new in commerce; as powdered sugar is a different article in commerce from loaf sugar, and ground coffee is a different article in commerce from coffee in the berry. But to render the article new in the sense of the patent law, it must be more or less efficacious, or possess new properties by a combination with other ingredients; not from a mere change of form produced by a mechanical division.

"It is only where one of these results follows that the product of the compound can be treated as the result of invention or discovery, and be regarded as a new and useful article. The three advantages attributed to comminuted glue over the flake glue were, previous to the alleged invention of Goddard, recognized as following from a division of soluble objects into small particles, in the treatment of a great variety of articles in constant use in the kitchens of families and in pharmacy. When certain properties are known to belong generally to classes of articles, there can be no invention in putting a new species of the class in a condition for the development of its properties similar to that in which other species of the same class have been placed for similar development; nor can the changed form of the article from its condition in bulk to small particles, by breaking, or bruising or slicing, or rasping, or filing, or grinding, or sifting, or other similar mechanical means, make it a new article, in the sense of the patent law."

REED *v.* REED, 12 BLATCH. 366.

N. D. OF N. Y., 1874. WALLACE, J.

G. Reed's patent of March 11, 1873.

The claim was: —

"... A new article of manufacture, barrel-head linings prepared in the manner specified, when bundled, as shown and described."

The lining of a barrel-head is a strip of wood applied to the chimb (*i. e.*, that part of the staves which projects above the barrel-head and forms the rim of the barrel) after the barrel has been packed, in order to support the chimb and to keep the head in place.

The plaintiff's linings differed from others previously used only in that they were crimped or bent by a suitable machine, so as to take on the curved shape of the barrel.

The reason for crimping them was to obviate the necessity of soaking or steaming the linings in order to bend them to the shape of the barrel when the time came to apply them. Linings which were thus soaked or steamed required more nails to keep them in place after they became dry, and were more liable to split than the patentee's linings. He made, therefore, an article more valuable for the purpose than any in use before it; but the machine or process by which his linings were crimped was the same as that used to crimp barrel-hoops. The court, therefore, held that this was a case of double use, not involving invention, and they described the patentee's lining as

"an article which is, in all its essential features, a crimped machine-made hoop on a small scale, except that it is of uniform width and thickness, and has rectangular ends. It is a hoop adapted to fit inside instead of outside the staves of the barrel, and to support the chimb instead of the body of the barrel."

The court further held that the patentability of the article was not redeemed by that portion of the specification relative to bundling the linings, which ran as follows: —

"I accomplish another result, that is, that I can pack the linings in square bundles ready for the market, and that each lining will always retain its circular form, owing to the corrugated condition of the fibres, and at the same time I dispense with soaking."

The corrugation of the fibre was the result of the crimping. On this point the court said: —

"The hoops could be bundled as well as the linings, and are usually transported in bundles, but not so tidily or compactly as the linings, owing to their bevel and greater length. The sole merit of this feature of the improvement is that it renders the commodity more attractive to purchasers and more convenient for the purposes of sale. There is nothing in this result that is patentable. If the subject of the patent was a machine which accomplished the result of manufacturing a product more convenient for transportation and sale, as an article of trade, than that which had preceded it, such result might be important and controlling as determining the utility of the invention. But no such test is applicable, when the product itself is the subject of the patent."

BUZZELL *v.* FIFIELD, 7 FED. REP. 465.

D. OF MASS., 18Ɛ.. LOWELL, J.

Buzzell's patent, No. 178,994, dated June 20, 1876, for an improvement in abrasive paper, for finishing the heels and edges of boots and shoes. The paper was coiled in rolls and sold to manufacturers, who, cutting it into pieces of the length which they desired, used it upon the peripheries of wheels. The manner of preparing it was as follows: The paper (cloth might be used) was first covered with powdered glass, sand, emery, or other abrasive material, "after which said strip is moulded so as to cause said abrasive surface to have a convex form, transversely and longitudinally" (quoted from the specification).

The court: —

"Now I am convinced by the evidence that sand-paper had been moulded in a comparatively imperfect manner, but so as to be actually applied to and used upon this class of finishing wheels with effect, before the time of his [Buzzell's] discovery. One Busell did this with a block and mallet, long before well known to shoemakers, and used by them in moulding leather.

"The patentee has described no better way; he has merely directed that the thing should be done. It is, therefore, in my opinion, no answer to Busell's anticipation to say that his strips would never have become articles of commerce. They served the purpose, and would

if now for the first time made or used, though not good enough to find a sale, be an infringement of the patent, and they, therefore, invalidate it."

SELIGMAN *v.* DAY, 14 BLATCH. 72.

S. D. OF N. Y., 1876. JOHNSON, J.

Philip Lippman's patent, dated Sept. 30, 1873, No. 143,359. The patent claimed,

"as a new article of manufacture, a covered corset-clasp, the cloth of which forms a marginal flap or flaps along its length, suitable for, and adapted to, being sewn upon the corset, substantially as described, and for use in the place of broken, injured, or worn-out clasps or cloth, as herein set forth."

Such corset-clasps did not differ from those which formed a part of new corsets; and it was also in evidence that, when corset-clasps have become worn, they are "frequently, and as matter of business, removed and replaced by new ones, sewn on to the old corsets by means of the flaps."

"These," said the court, "in a legal sense, are the uses to which the patentee contemplates that his article shall be put; but he insists, inasmuch as he manufactures these clasps with covers, as a separate article of trade, in assorted sizes, and applicable by purchasers to the making or mending of corsets generally, that a quality of patentable novelty is imparted, not exactly to the article itself, but to the manufacture of the article. It is the thing made that is patentable or not. The use made of it is not patentable. The right to make the thing involves the right to use it, when made, at the pleasure of its owner. To make and sell a part of a known thing, as a separate article, is not patentable. If knife-blades had never been made and sold separately from their handles, or the handle separately from the blades, it would not be patentable to introduce either of those manufactures."

ALCOTT *v.* YOUNG, 16 Blatch. 134.

S. D. of N. Y., 1879. Blatchford, J.

Infringement of a patent granted to J. Wesley Webber, Aug. 17, 1869, the claim of which was as follows: —

"The accompanying or fastening one or more fire-lighters, A, to or with the bundle of the common article of manufacture known as bundle or kindling wood, the fire-lighter to be suitably moulded or pressed, and to be made of a combustible material, such as resin or tar, the ingredients of which I do not claim, my invention consisting wholly of accompanying or fastening a fire-lighter, A, to or with the bundle, or at the string, B, of the bundle of the common article of manufacture known as bundle or kindling wood."

Blatchford, J.: —

". . . I do not think that the subject-matter of the claim is a patentable invention. On the part of the plaintiffs, it is sought to distinguish this case from cases in which inventions have been held not to be patentable by the contention that, in this case, the uniting of the fire-lighter with the bundle of kindling-wood contributes towards the common result of lighting a fire, and that expense is saved and convenience is promoted. It may be true that, as a matter of trade, a bundle of kindling-wood with a fire-lighter inserted in it, or attached to it, will sell more readily than a bundle of kindling-wood alone, or than a bundle of kindling-wood separately and a fire-lighter separately; and that a bundle of kindling-wood with a fire-lighter inserted in it, or attached to it, will bring a higher price than a simple bundle of kindling-wood.

"It may also be true that the Webber bundle has the advantages in use that are claimed for it. But there is no patentable invention in accompanying the bundle with the kindler by attachment or insertion. It might as well be claimed that it was a patentable invention to tie a match to a cigar, or a straw for drinking to a drinking-glass, or a fork to a can of food. The case is not unlike that of Langdon *v.* De Groot (1 Paine, 203). . . . In the present case, the purchaser of the Webber bundle gets a bundle of kindling-wood and a fire-lighter. He gets no more than if he purchased the two separately. . . . The mere aggregation of the two things is not a patentable combination. Until the kindler is lighted, there is no joint result consequent on the aggregation of the two. The lighting or combustion of the Webber kindler presents nothing new in contrast with the lighting or combustion of a kindler which was never tied to or inserted in the bundle."

KING *v.* TROSTEL, 16 O. G. 956.

S. D. OF WISCONSIN, 1879. DRUMMOND, J.

King's patent of June 30, 1874, for a method of putting up plastering-hair in bales.

Theretofore plastering-hair had been put up in large parcels, from which such a quantity as the customer called for was taken; but by reason of the filthiness of the hair it was a disagreeable task thus to separate it. The patentee put up the hair in small parcels, pressed and fastened together in one bale. He said:—

"I first place a bushel of hair in a paper sack loosely, or only so far as may be readily done by hand. Several of these one-bushel packages are then placed side by side in a baling-press. I use for this purpose the baling-press heretofore patented to me. They are thus compressed forcibly together, so that the bale produced will be a compact, firm bale, occupying only about one-fifth of the original bulk. The paper bags which still envelop the individual bushels of the bale keep said bushels separate, and serve at the same time to protect the hair."

The claim ran thus:—

"As an article of manufacture, the bale, B, of plasterer's hair, consisting of several bundles, A, containing a bushel each by weight, enclosed or encased in paper bags of similar material, united, compressed, and secured to form a package, substantially as specified."

The court said:—

"The question is whether the plaintiff is entitled to a patent for putting plasterer's hair in packages, and fastening them together in the manner described so as to constitute a bale. I am of the opinion that he is not. It is not necessary to decide in this case whether taking the whole package together, compressed in a baling-press which has been patented to him, as he states, it is such an article as the patent law protects, because I do not understand that the bale of the defendants, which is claimed to be an infringement of the plaintiff's patent, has been compressed in the same manner as the bale of the plaintiff, and therefore, strictly speaking, it is not the bale described by the plaintiff. If the plaintiff's patent is construed so as to include any mode of pressure by which the bale is formed out of small packages of plasterer's hair, as his counsel seems to claim, then I think the patent cannot be sustained; because a person can put most articles of merchandise in

distinct and separate packages, and then compress them together, and that would infringe the patent of the plaintiff, if the construction be as broad as has been intimated.

"It may be true that this mode of putting up plasterer's hair has met a want in the trade; but, after all, independent of the particular mode of compression by the apparatus which the plaintiff speaks of in his specifications, it was nothing more than a method which any person might adopt, and which did not require any inventive skill.

"It is something which might occur to any person, to take almost any article of merchandise, put it in separate parcels and bind them together. It is the exercise of the ordinary skill possessed by any person.

"I had occasion some years ago to examine the principle involved in this case very fully, in a bill filed to protect a package which was claimed to be a new article of manufacture for enclosing lard. There were many claims to that patent. All of the claims were rejected except one, which was sustained as a new article of manufacture. It appeared in that case that the article produced a revolution in the trade in lard, which was put up in such a way as to stand all climates, and so as it could be transported any distance without injury.

"With a good deal of hesitation and doubt as to the correctness of the ruling of the court in that case, one claim of the plaintiff's patent was sustained. The case never went to the Supreme Court, the parties having acquiesced in the decision of the court and settled their controversy.

"I am not willing to go beyond that case, nor to encourage patents for such things as this, and to hold that nobody else can take plasterer's hair and make it up into small parcels, and bind them together no matter how, and to say that any one who does this infringes the patent of the plaintiff."

See also —

MAGIC RUFFLE CO. *v.* DOUGLASS, *ante*, page 91.
WOOSTER *v.* CALHOUN, *ante*, page 197.
COLLAR CO. *v.* VAN DEUSEN, *post*, page 335.
FAULKS *v.* KAMP, *post*, page 367.
SAWYER *v.* BIXBY, *post*, page 326.

ENGLISH CASES.[1]

RUSSELL *v.* COWLEY, Web. 463.

Exchequer, 1834.

Whitehouse's patent of Feb. 26, 1825, for a new mode of making gas-pipes.

The report[2] says:—

"Sir James Scarlett . . . described the two former modes of making gas-pipes,[3]—the one by boring in a lathe out of the solid, the other by turning up the edges of a flat plate, so as to make them lap over, and then heating the iron to a welding heat, when the metal could be united by means of hammers, and the use of a mandrel or metal rod inserted within the tube, for the purpose of keeping it of a circular form, and resisting the blows applied to the metal.

"The invention of Whitehouse, which had been assigned to the plaintiff, consists in turning up a piece of plate of iron so that the edges abut on each other, or nearly so, heating the iron so prepared, and drawing it, when at a welding heat, through dies having a conical hole, which admits a rather larger tube on one side than on the other, and by the compression which the edges receive in the drawing the tube becomes perfectly formed and welded, without the use of the mandrel.

"The effect of this mode of manufacturing tubes produced a complete revolution in the trade, at once reducing the price of tubes by one-third; besides, the tubes so made are of much greater length and greater uniformity, both internally and externally, and the trade of making tubes came immediately after the patent almost entirely into the hands of the plaintiff."

This was held to be a patentable invention. Lord Lyndhurst, C. B., saying:—

"The invention, as I understand it . . . is to make pipes of this description without the use of the mandrel, that it is to weld them

[1] On the general subject of Ingenuity.

[2] Of the case at *Nisi Prius*, page 459.

[3] These modes and the plaintiff's invention are more shortly stated in Higgins' Digest, page 24, as follows: "Before the patent . . . iron tubes were made by drawing them through rollers, a mandrel being placed inside the tube so as to form an internal support. The patent in question was granted for a process of manufacturing iron tubes by drawing them through fixed dies or holes *without the use* of a mandrel. The tubes made by this process were of greater length, were more uniform, and could be manufactured at a cheaper rate than by the old process."

without hitting them upon any solid surface, or without hammering them upon any solid surface; and though that seems to be a very simple invention, it has been productive of great advantages; inasmuch as it has enabled the manufacturer to construct pipes for gas and other purposes very correctly, and also of lengths much beyond what could be done previously to this discovery."

It was alleged by the defence that this invention was anticipated by James & Jones's patent of July 26, 1811, for an improvement in the manufacture of gun-barrels. On this point, Parke, B., said: —

" . . . The whole turns on the meaning of the specification. If it is, as alleged by the Attorney-General, a claim for every mode of uniting pipes by passing iron [*sic*] heated to a state of welding heat, then it is bad, because there was a mode before in existence . . . described in James & Jones's specification, by which the same thing might be done; but if the claim is, as was alleged on the part of the plaintiff, a claim only of a different mode of making iron pipes in the particular manner described, by passing that iron in a state of welding heat through a circular hole, without any mandrel or internal support, then it certainly is not the same thing that was done before." And he so construed the specification.

Alderson, B., thus described the difference between the two processes: —

"When you examine the specification that the plaintiff has put in, after making it clear that the iron is first brought into the form of a long cylindrical tube, the operation then is thus described: 'This tube is then put into a hollow fire, heated by a blast, and when the iron is upon the point of fusion it is to be drawn out' (that is, the tube) without any mandrel. . . . In James & Jones's patent I find the process just the reverse; for, after describing that the tubes are to be heated to a proper heat, the mandrel is to be expeditiously put in, then the beating it by the hammer, as described, is consecutive," &c.

HELLIWELL *v.* DEARMAN, Web. 401, note; Higgins' Digest, No. 46.

Queen's Bench, 1842.

The following patent was supported: —

"The object of the plaintiff's invention was the rendering fabrics waterproof, but at the same time leaving such fabrics

pervious to air. Before the plaintiff's patent a solution of alum and soap was made, and the fabric to be rendered waterproof was immersed therein. By this means a waterproof surface was produced on the fabric, but it was not of a lasting nature; it wore off. According to the plaintiff's invention, the fabric was immersed first in a mixture of a solution of alum with some carbonate of lime, and then in a solution of soap. The effect was, that by the first impression every fibre became impregnated with the alum, the sulphuric acid of the alum being neutralized by the carbonate of lime; and by the second immersion the oily quality rendering it repellant of water was given to every fibre, so that every fibre was rendered waterproof instead of the surface only; but the whole fabric continued pervious to air."

(The report of this case is as above given, both in Webster's Patent Cases and in Higgins' Digest.)

WALLINGTON *v.* DALE, 7 Ex. R. 888; 23 L. J. Ex. 49.

Exchequer Chamber, 1852.

G. Swinbourne's patent, enrolled May 24, 1848.

The patent was for a new process of making gelatine. Formerly gelatine was made by subjecting strips of hide to the action of caustic alkali, or by reducing the strips to pulp in a paper machine, and then purifying the pulp by the use of blood.

The plaintiff's specification said:—

"I take the parts of hides, usually called glue pieces, and my process commences by reducing the whole into shavings, or thin slices or films, by any suitable instrument. [He then recommended the ordinary carpenter's plane for the purpose, and continued:] The shavings are to be soaked for about five or six hours in cold water, at the end of which time the water is to be changed; and such changing is to be repeated two or three times each day until no smell or taste is to be detected either in the water or in the shavings. The shavings are then to be subjected to heat, with a quantity of water sufficient to cover them when pressed down in any suitable vessel, . . . the heat applied . . . not to exceed that of boiling water. The gelatine, when thus dissolved, is to be strained through linen or other fabric, subject to a slight pressure by the hands. The product . . . thus obtained is to be run in thin films on to a smooth surface of slate to set, and then

removed on nets to dry, and the dry gelatine is to be cut up by an isinglass cutter."

The defendants objected that this improvement was not patentable. The court, however, sustained the patent; Pollock, C. B., delivering the opinion, but not discussing the question of patentability.

FOX *v.* DELLESTABLE, 15 W. R. 194.

MALINS, VICE-CHAN., 1866.

Dictum by the Vice-Chancellor to the following effect:—

A tubular rib for umbrellas being in use, it is no invention to make such a rib with one side open, like a trough.

WHITE *v.* TOMS, 37 L. J. CH. 204; 17 L. T. R. N. S. 348.

MALINS, VICE-CHAN., 1867.

J. White's patent of April 27, 1864, No. 1055, for "improvements in ladies' mourning-bonnets and hat-falls." The patentee simply made falls for bonnets so that both sides should be alike. A fold of crape was to be applied on both sides of a fall above the bottom fold, instead of on one side only, as had theretofore been done, and the edges of the folds were to be pressed down so as to hide the stitches.

Malins, V. C.:—

"Whereas formerly the fold was sewn on one side only, now it is sewn on both sides, so that whichever way it is turned it has a good side outwards. There is no invention in it. However meritorious as an improvement, which might probably have been registered for one or two years, it is not the subject of a patent."

PARKES *v.* STEVENS, L. R. 5 CH. APP. CAS. 36; 18 W. R. 232.

LORD HATHERLEY, LORD CHANCELLOR, 1869.

J. Parkes's patent of Oct. 10, 1865, No. 2615, for a railway-station lamp. "The door was formed of a light framework of metal containing one pane of glass, and was opened by being

slid on the surface of the globe so as to overlap the adjoining pane." "The panes were segments of a sphere." The question of patentability arose with regard to this door. It was thus stated and decided by the Lord Chancellor: —

"It was argued before me that the sliding-door was in itself a novelty as applied to a spherical lamp; but many instances were given of glass in the shape of a cylinder having been made to slide over glass; and it is impossible to say that a sliding-door can be the subject of a patent because it is spherical and not cylindrical."

FREARSON *v.* SLOE, 9 Ch. D. 48.

Jessel, M. R., 1878.

Frearson's patent of July 12, 1870, No. 1971.

A curved nick in a screw-head, having its greatest depth at the centre, the value of the invention arising from the depth of the nick at that point, is patentable.

A screw-head so made was proved to have advantages over all other kinds of screw-heads. The screw-driver could take a firmer hold upon it, and was less apt to break it.

Other less valuable English cases are: —

Simpson *v.* Holliday, L. R. 1 H. L. 315; 35 L. J. Ch. 811.
Elliott *v.* Aston, 1 Web. P. C. 222.
Sturtz *v.* De la Rue, 1 Web. P. C. 33; 5 Russ. 322.
Campion *v.* Benyon, 3 B. & B. 5; 6 B. Mo. 71.

See also —

Stainthorp *v.* Elkinton, *ante*, page 86.
Hussey *v.* Bradley, *ante*, page 89.
Magic Ruffle Co. *v.* Douglass, *ante*, page 91.
Knox *v.* Murtha, *ante*, page 104.
Waterbury Brass Co. *v.* Miller, *ante*, page 106.
Bailey Washing, &c. Co. *v.* Lincoln, *ante*, page 108.
Carew *v.* Boston Elastic Fabric Co., *ante*, page 111.
Bridge *v.* Brown, *ante*, page 113.
The Stanley Works *v.* Sargent, *ante*, page 116.
Stuart *v.* Shantz, *ante*, page 125.
Renwick *v.* Pond, *ante*, page 128.

PLATT *v.* THE U. S. PATENT BUTTON, &c. Co., *ante*, page 182.
DECKER *v.* GRIFFITH, *ante*, page 136.
FRINK *v.* PETRY, *ante*, page 142.
DALTON *v.* JENNINGS, *ante*, page 142.
GOULD *v.* BALLARD, *ante*, page 166.
In re APPLICATION OF JAMES ARKELL, *ante*, page 170.
PACKING CO. CASES, *ante*, page 186.
WOOSTER *v.* CALHOUN, *ante*, page 197.

Also —

THE UNION PAPER-COLLAR CO. *v.* VAN DEUSEN, *post*, page 335.
THE SAME *v.* WHITE, *post*, page 351.
THE SAME *v.* LELAND, *post*, page 339.
IRWIN *v.* DANE, *post*, page 352.
BROWN *v.* DEERE, *post*, page 521.
COLGATE *v.* THE W. U. TEL. CO., *post*, page 359.
COURSE *v.* JOHNSON, *post*, page 363.
TARR *v.* WEBB, *post*, page 437.
ROGERS *v.* ENNIS, *post*, page 467.
PERRY *v.* CO-OPERATIVE FOUNDRY CO., *post*, page 521.
NEWALL *v.* ELLIOTT, *post*, page 684.
PUTNAM *v.* YERRINGTON, *post*, page 518.
FOOTE *v.* SILSBY, *post*, page 564.
HARTLEY'S CASE, *post*, page 604.
ADAMS *v.* EDWARDS, *post*, page 650.
LIVINGSTON *v.* JONES, *post*, page 658.
ADAMS *v.* JONES, *post*, page 660.
JONES *v.* MOREHEAD, *post*, page 660.
DUNBAR *v.* ALBERT FIELD TACK CO., 4 Fed. Rep. 543.
ROOT *v.* E. N. WELCH MFG. CO., 17 Blatch. 478.
PERFECTION WINDOW CLEANER CO. *v.* BOSLEY, 2 Fed. Rep. 574.

See also the Appendix for a list of comparatively unimportant cases on this subject.

CHAPTER IV.

NEW USE AND DOUBLE USE.[1]

63. STRICTLY speaking, a "new use" is a use different from that with which it is compared, — different in the sense that invention was required to reach it, and therefore it is patentable; whereas

[1] It is often hard to determine whether the facts of a particular case make it one of combination, or of substitution, or of new use; for these three classes, the first two especially, run into each other, and certain cases might apparently be referred to one of them as rightly as to another. Thus, in the case of Stimpson *v.* Woodman, the subject of the patent was a machine for "boarding or pebbling" leather; that is, impressing designs upon it by means of an engraved roller, operated by machinery. It was proved that before the patentee's alleged invention a *smooth* roller had been worked by similar machinery in order to press leather, and an engraved roller had been worked by hand, in order to stamp designs upon it. In this case, therefore, the patentee might have been held either (1) to have combined the engraved, handworked roller with the automatic mechanism of the smooth roller, or (2) to have substituted the engraved roller in place of the smooth roller. *Post*, page 429.

This patent, however, hardly could be called an instance of new use. But there is an English patent which might be referred to any of the three classes. It is set out in the case of Jordan *v.* Moore, L. R. 1 C. P. 624 (1866). Byles, J., thus described and disposed of the alleged invention: —

"Can the application of wooden planking to the iron frame of a vessel (without any peculiarity in the nature of that planking) be the subject of a patent? We think it cannot. It is not only the *substitution* of one well-known and analogous material for another, that is, wood for iron, to effect the same purpose, on an iron vessel, but it is [also a *new use*, namely] the application of the same old invention — namely, planking with timber, which was formerly done on a wooden frame — to an analogous purpose, or rather the same purpose on an iron frame;" and he might have added: it is also a combination of wooden planking and iron frame. The noted English case of Crane *v.* Price, *post*, page 376, is another instance.

It is possible, however, to state a few rules, which will be of some assistance in referring these cases to their proper categories: —

1. As between substitution and combination, it is substitution only when there is already an existing combination, from which the patentee withdraws one element, and into which he puts another. But where elements are simply put together, or one is added to another, it is a case of combination.

2. As between substitution and new use, it is a case of substitution when

a "double use," as it is called, is a second employment of some process or contrivance so like to the previous employment of it, that, given the first, inventive genius was not needed to attain the second, — the skill of the workman was sufficient for that purpose. The second use, therefore, is not patentable; it is not a "new use," but an imitative or "double use." A new use, then, is, and a double use is not, patentable.

64. Again, it is often said that an analogous use is not, but a non-analogous use is, patentable. An analogous use means a use between which and that alleged to anticipate it there is a logical connection of such a character that the second use is fairly to be inferred from the first by one who was familiar with it. The first use logically includes the second.[1] The transition from the existing use to the analogous use involves no surprise, and no exercise of any uncommon mental process. Whereas, a non-analogous use is one not so connected with that to which it is referred as to be plainly deducible from it. In this case, the transition from the first to the second use is not such as could fairly be expected from the skilled workman. Knowledge of the first use cannot be said to carry with it a knowledge of the possibility or practicability of the second use. The second use, when suggested, is in the nature of a surprise; it is reached by a mental jump, so to say; it requires the genius of the inventor to attain it.

65. In fact, the three definitions just stated follow each other in a natural order, the second limiting the first, and the third explaining the second.

A new use — a use referable to inventive genius, a non-analogous use — is patentable. A double use — a use referable to the skill of the workman, an analogous use — is not patentable.

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the improvement of an old contrivance, rather than the new use of the device imported, so to say, is the gist of the invention.

3. As between combination and new use, it is a case of combination when the patentability of the new contrivance depends upon the co-action of its elements; of new use, when it depends upon the new employment of some one element.

According to these rules, the improvement in the case of Stimpson *v.* Woodman would belong to combination rather than to substitution.

The improvement in the English case belongs to substitution rather than to combination, to substitution rather than to new use, to combination as well as to new use, — on the whole, then, to substitution.

[1] In Brown *v.* Piper, *post*, page 349, the Supreme Court say of an analogous use: "The thing was *within the circle* of what was well known before, and belonged to the public."

66. Lord Chief Justice Cockburn thus stated the matter:[1] —

"Although the authorities establish the proposition that the same means, apparatus, or mechanical contrivance cannot be applied to the same purpose, or to purposes *so nearly cognate and similar*, as that the application of it in the one case naturally leads to application of it when required in some other, still the question in every case is one of degree, whether the amount of affinity or similarity which exists between the two purposes is such that they are substantially the same, and that determines whether the invention is sufficiently meritorious to be deserving of a patent."

This was in the Court of Exchequer Chamber. When the same case came before the House of Lords,[2] Mr. Justice Blackburn said: —

"In order to bring the subject-matter of a patent within this exception [to the statute against monopolies], there must be *invention* so applied as to produce a practical result. And we quite agree with the Court of Exchequer Chamber that a *mere* application of an old contrivance in the old way to an analogous subject, *without any novelty or invention* in the mode of applying such old contrivance to the new purpose, is not a valid subject-matter of a patent. . . . In every case arises a question of fact, whether the contrivance before in use was so similar to that which the patentee claims that there is no invention in the differences, if any, between the old contrivance and that for which the patentee claims a monopoly; and if there is none, there arises a farther question of fact, — namely, whether the purpose to which the contrivance was before applied and the new purpose are so analogous or cognate that there is no discovery or invention in the new application; whether, in short, it is a *mere* application or not. For if there is invention or discovery producing a practical benefit, as in the case of Crane *v.* Price (1 Web. 377), it is the valid subject of a patent. And we think it always must be a question of degree, — a question of more or less, — whether the analogy or cognateness of the purposes is so close as to prevent their being an invention in the application. Mr. Grove, in his very able argument, contended, we believe correctly enough, that if there was any real invention, though a slight one, producing a practical beneficial result, the patent was good."

67. In the case of Tucker *v.* Spaulding,[3] the patent was for an improvement in saws. The defendants, in the Circuit Court, offered in evidence a patent to one Newton, "for cutting tongues

[1] Harwood *v.* Gt. N. Ry. Co., 2 B. & S. p. 208; *post*, page 385.

[2] 11 H. L. Cas. p. 666.

[3] 13 Wall. 453.

and grooves, mortices," &c., and they proposed to prove that the processes of the plaintiff and of Newton were substantially the same.

This evidence being rejected, the defendants moved for a new trial. In granting the motion, the Supreme Court (Mr. Justice Nelson delivering the opinion) said:—

"The court, in rejecting the patent of Newton, seems to have been mainly governed by the use which was claimed for it, and also that no mention is made of its adaptability as a saw. But if what it actually did *is in its nature the same as sawing, and its structure and action suggested to the mind of an ordinarily skilful mechanic this double use to which it could be adapted without material change*, then such adaptation to the new use is *not* a new invention, and is not patentable."

Invention in the Means of Application.

68. Sometimes, however, the question of new or double use takes a different shape. It is admitted that the new purpose to which some old contrivance or process has been applied is an analogous purpose; but it is asserted that invention was shown in *adapting* the old contrivance or process to its new use. And this contingency is provided for in the passage just quoted[1] by the words "without material change." It is obviously of importance not to confuse invention that is shown in such adaptation with invention that is shown in the selection or conception of a new use. In fact, however, such confusion often arises from the different senses in which the term "application," in its various forms, may be understood. Thus, if one says: "There is sometimes invention in applying an old contrivance to a new use," he may mean either that invention consists in the fact that such an application is made, or that invention consists in the manner in which it is made.[2] In one case, invention is said to reside in conceiving or discovering the idea of applying the old contrivance to the new use; in the other case, it is said to reside in the device whereby the old contrivance is enabled to operate in its new situation.

69. In practice, however, it is not always possible to discriminate between cases where the new purpose is not analogous, and

[1] And also, as the reader will have observed, in the propositions of Mr. Justice Blackburn.

[2] For an example, see the case of Penn *v.* Bibby, *post*, page 390, where the Lord Chancellor misunderstood the language, which he quotes, of Lord Campbell.

the new application is therefore patentable, and those other cases where the new purpose is an analogous one, but invention is shown in adapting the old contrivance to the new purpose; for the two sets of cases sometimes run into each other.

In fact, it does not often happen that invention is shown *in the manner* of adapting a contrivance to some *analogous* use; but the case supposed is possible, and may easily occur when the inventive adaptation is an alternative one; that is, a mode better than the obvious one. Such a case would not be one of new use, strictly speaking, but practically it would be considered as such.

New Use without Alteration.

70. At any rate, it is clear on principle that the simple transfer of a process or of an article to a new situation may be patentable, for it may not follow as a matter of obvious reasoning from the old use that the contrivance will work well in the new use. The second use, so far from being cognate with or analogous to the first use, may have required "inventive genius" for its conception. Cases which illustrate this proposition we shall cite presently. We are, however, bound to state that a different doctrine may be found in the *dicta* of the Supreme Court, — at least with regard to machines. Thus, in the case of Roberts *v.* Ryer[1] they say: —

"It is no new invention to use an old machine for a new purpose. The inventor of a machine is entitled to the benefit of all the uses to which it can be put, no matter whether he had conceived the idea of the use or not."

The case, however, in which this *dictum* occurs was not in any sense one either of new or of double use, though it is treated as such in the opinion of the court. Furthermore, in the same volume of Supreme Court reports, the leading case of Brown *v.* Piper,[2] presently to be set forth, is found; and in that case, one of double use, the non-patentability of the second use is rightly rested on the ground that the second use did not imply invention. The court say of the alleged invention: —

"This was simply the application by the patentee of an old process [really an apparatus] to a new subject, without any exercise of the

[1] 91 U. S. 150.

[2] 91 U. S. 37.

inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent law."

71. Judge Story, in the cases of Howe *v.* Abbott[1] and Bean *v.* Smallwood,[2] — in both of which the patent was plainly for a double use, — went out of his way to state broadly that no second use of a process or machine, without alteration of it, can be patentable. But the illustrations which he gave show that he was contemplating merely the analogous use of an old process or machine. And the same remark applies to an earlier case decided by the same judge.[3]

From another point of view, also, modifications of or additions to an old contrivance, in order to fit it for a new use, are necessary to be considered, though they do not amount to invention, for they tend to show that the new use is not an analogous use.

72. The subject of new use was treated by Clifford, J.,[4] as follows: —

"Invention or discovery is required as the proper foundation of a patent; and where both are wanting, the applicant cannot legally secure the privilege.

"Consequently, where the claim rests merely upon the application of an old machine to a new use or to a new purpose, or upon the application of an old process to a new result, the patent cannot be sustained, because the patentee under those circumstances has not invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others, for which *alone* a patent can be legally granted. Judge Story held, nearly twenty years ago, in Bean *v.* Smallwood (2 Story, 408), that the application of an old machine to a new purpose was not patentable; and the same principle has since been adopted in the highest court in England and in the Supreme Court of the United States. Kay *v.* Marshall, 8 Cl. & Fin. 245;[5] Phillips *v.* Page, 24 How. 167.[6]

[1] 2 Story, 100.
[2] 2 Story, 408.
[3] Ames *v.* Howard, 1 Sumner, 482.
[4] Bray *v.* Hartshorn, 1 Cliff. 538.

[5] This is a peculiar case. The real invention of Kay seems to have consisted in doing two things: first, macerating flax, so that its fibres should be

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[6] This case decides only that its particular instance of a second use was not patentable. *Vide post*, page 318. The general proposition stated by Mr. Justice Clifford is neither found in it nor implied by it.

"New contrivances, though applied to old objects, are patentable; but old contrivances, whether the objects to which they are applied are new or old, are not patentable, because the mere application of the contrivance, without more, involves neither invention nor discovery. . . . Particular changes, however, may be made in the construction and operation of an old machine, so as to adapt it to a new and valuable use not known before, and to which the old machine had not been, and could not be, applied without these changes; and under these circumstances and conditions, if the machine, as changed and modified, produces a new and useful result, it may be patented and upheld under existing laws. Losh *v.* Hague, Web. Pat. Cas. 207; Hindm. on Pat. 95.

"Such change in an old machine may consist alone of a new and useful combination of the several parts of which it is composed, or it may consist of a material alteration or modification of one or more of the several devices which enter into its construction, or it may consist in adding new devices; and whether it be one or another of the suggested modifications, if the change of construction and operation actually adapt the machine to a new and valuable use, not known before, and to which the machine had not been applied, and, without the change suggested, was not in any degree fitted to be applied, and actually produces a new and useful result, then the case falls within the rule already laid down, and a patent may be granted for the same and be upheld. Phillips *v.* Page, 24 How. 166; Norman on Pat. 25. . . . Respectable authorities may be found which advance the doctrine that

shortened for spinning; second, altering the relative positions of the drawing and retaining rollers, so that they should not be more than two and a half inches apart, which was the distance that separated the rollers in *cotton*-spinning machines. The maceration of the flax made its fibres of the same length as the cotton fibres, so that the same arrangement of rollers became possible. But the specification stated the two things as separate inventions; and the court therefore held that it was no invention to transfer the roller arrangement from the spinning of cotton to the spinning of flax *in its changed condition*.

Mr. Webster has the following note on this patent: —

"The real defect was not in the subject-matter, but in the subject-matter as disclosed on the face of the letters-patent and in the specification. The result of the invention was the introduction of a new mode of spinning, which has since been applied to many other manufactures, and the placing the flax on a similar footing with the cotton manufacture. No one can doubt inventions such as those being the subject-matter of letters-patent; but Kay, and his great forerunner, Arkwright, in the other branch of the manufactures of the country, both failed to secure to themselves the full benefit of their industry and ingenuity from the same cause, — namely, a defective specification." Webster on Patents, p. 409, note.

the new use of an old machine or invention may be so different from that to which the machine has been applied, and may so clearly produce a new article of machinery, that the inventor or discoverer may be entitled to a patent; but it is not necessary to decide the point at the present time, and it is accordingly dismissed with the remark that other authorities affirm that an inventor is fairly entitled to any profits arising from the unforeseen applicability of his invention as an equivalent for the risk he incurs of ill success and corresponding loss.[1] Coryton on Pat. 63, 64."

From this it appears that Mr. Justice Clifford was uncertain whether the new use of an old machine could be supported solely on the ground that it was a non-analogous use, without there having been any exercise of invention in order to adapt the old machine to its new use.

73. Before citing some of the cases in which the non-analogous use of an old machine or other article, without alteration thereof or addition thereto, was held patentable, it might be well to consider the tests proposed by Mr. Justice Clifford for determining the patentability of a new use. It is to be observed that he does not clearly distinguish between changes necessary to fit an old contrivance for a new use that imply invention, and changes for the same purpose that do not. It is obvious that an old contrivance might be applied to some analogous use, thereby, perhaps, producing a new effect, and yet the change or addition necessary to adapt the old contrivance to its new use might be such as

[1] Judge Lowell, in a recent case (Dunbar *v.* Albert Field Tack Co., 4 Fed. Rep. 543), went even further than Mr. Justice Clifford; and he said broadly that "if an old machine or process is put to a new use, invention is positively excluded, although the new use may apparently be very remote from the old, requiring experiment to ascertain its practicability, and though the actual operation of the machine or process may not be exactly the same in the new as in the old application, provided no new means are in fact employed."

In a still later case, however (Moffitt *v.* Rogers, 8 Fed. Rep. 147), the same judge remarked as follows:— "I do not mean to say that a patent cannot possibly be supported for a process or method which consists only of applying an old contrivance to a new use. Many of the ablest writers and jurists assert that such a claim is possible. I have never seen a case in which a patent of this sort has been sustained, and there are some in which it has been rejected. If one is ever supported, it will be when the new use is so remote from the old use that a court or jury can say that a new idea has been discovered." And yet, a few years before, the learned judge had himself supported such a patent on the ground here indicated by him. This case we shall notice presently; it is that of Munson *v.* The Gilbert, &c. Mfg. Co., 18 O. G. 194.

any one skilled in the art concerned could supply. In such case, therefore, there would be no invention in selecting or conceiving the new use, and none in adapting the old contrivance to it.

It is probable, however, and fairly suggested by the language, that the modifications which Mr. Justice Clifford intended as furnishing ground for a patent, by fitting the old contrivance to its new use, must be such as to imply invention.

74. The fact is, that in almost every instance some modification of or addition to the old contrivance will be required to fit it for its new use. If such modification or addition is too difficult for the skilled workman, and requires invention to produce it, then the new use is patentable upon that ground; and this, according to the authorities we have mentioned, is the only case in which a new use is patentable.

If, however, the modifications of the old contrivance necessary to adapt it for its new use are such as any one skilled in the art to which it belongs could supply, when the new use was suggested to him, then the patentability of the alleged invention depends entirely upon the character of the new use to which the old contrivance is put, — as much so as when no such modification is necessary. This last case, where no modification at all is needed, is the third possible case of new or double use, and consists in the simple transfer of a contrivance from one situation to another.

Enlargement without Alteration.

75. We may add, in this connection, that mere enlargement of an apparatus or device, even though it thereby be enabled to produce a new effect, does not necessarily constitute invention. This point was decided by the Supreme Court in the case of Phillips *v.* Page,[1] where the patent was for an improvement in a portable circular saw-mill, which consisted in the manner of "affixing and guiding the circular saw." The same device had been used before in sawing shingles and other small articles. The patentee by enlarging it made it useful in sawing logs. A defective specification prevented his claiming it as a machine for sawing logs; but the court held that, had he not so been pre-

[1] 24 How. 164.

cluded, such a claim would be invalid. The enlargement of the apparatus necessary to adapt it for the new use did not change its identity, and there was no other alteration of it. A very similar case is the recent one of The Planing Machine Co. *v.* Keith,[1] where it was held that the new use of a machine to plane heavy planks, it having before been used to plane small things, and its adaptation thereto by *enlargement* and *strengthening* of its parts, was not a patentable invention.

Examples of New Use without Alteration.

76. We proceed now to set forth certain cases in which an old contrivance modified not at all, or modified without exercise of invention, has been applied to a non-analogous and therefore patentable use.

An early case is that of Knight *v.* The Baltimore & Ohio R. R. Co.,[2] before Taney, C. J., and a jury. The patent, granted originally in 1829, was for an improvement in car-wheels, namely, the introduction of end-bearings, the office of which was to diminish lateral friction. The learned Chief Justice took the view of the law for which we have contended, holding that where the new use is non-analogous, it is patentable, but that where the new use is analogous, invention must be shown in adapting the old contrivance to the new use in order to make it patentable. He said: —

"The public use of end-bearings, for the purpose of transferring friction from the shoulders to the ends of the axles on a cotton-mill or other stationary machine, before the patent of 1829, as described in the testimony, will not render the plaintiff's patent void, provided the jury find that he was the original inventor of the combination he claims *in relation* to railway carriages, and that his invention is useful in the transportation of burthens and passengers on railways. But if before his first patent was obtained, the same principles in the same combination which he describes as his improvement were in public use in ordinary carriages upon common roads, the plaintiff was not entitled to a patent for applying the same thing to railway carriages, *unless the improvement he claims contains something new and material, either in principle, in combination*, or in the mode of operation, in order to adapt it to its new use."

[1] 101 U. S. 479.

[2] 3 Fish. 1.

77. In the case already referred to,[1] decided by Judge Lowell, the claim was as follows: —

"The *application and use* of the meter-wheel with its case and contents as an air-blast apparatus, operated by weights or otherwise, not meaning to claim the method of using the meter for measuring gas."

The object was to drive a current of air through a reservoir containing benzole or other hydrocarbon, for the purpose of generating an illuminating gas or vapor therefrom. It thus appears that the claim was, in so many words, for the *new use* of the old machine, without modification thereof. Judge Lowell said: —

"We think the slight change [a change not in the thing, but in the use of it], obvious perhaps to an inventor, of admitting air into a meter, and using the meter-wheel as an air-pump, although it had before been used with similar machinery to increase the force of the gasometer, was a patentable invention." [2]

78. In the celebrated English case of Crane *v.* Price,[3] a patent was held valid for the new use of the hot blast with anthracite coal in smelting iron, it having before been used with bituminous coal for the same purpose. This case, however, is somewhat discredited.[4]

79. The new use for shirt-collars of a fabric previously used for maps and other like purposes was held patentable by Judge McKennan, on the ground that it was a non-analogous use, as appears from his opinion. He said: —

"It is true that paper and muslin, or linen cloth, were before united and used as a fabric for maps, &c.; but this was not analogous to the use to which Hunt adapted them, nor was it in any wise suggestive of his invention. He was the first to discover the adaptability of this material to a use *not cognate* to any to which it had before been applied, and, by appropriate manipulation, to give it a useful and practical form. He thus not only supplied the public with a new article of manufacture, but he demonstrated unknown susceptibilities of the material

[1] Munson *v.* The Gilbert & Barker Mfg. Co., 18 O. G. 194.

[2] In the case of Conover *v.* Roach (4 Fish. p. 16), Hall, J., said to the jury: —

"When the inventor has obtained a patent for his invention, he is entitled to the exclusive use of it, if that invention is a machine, for all the uses and purposes to which that machine, *without the exercise of any inventive power*, can be usefully applied."

[3] Web. 393.

[4] *Post*, page 378.

out of which it was made. This is something more than the mere application of an old thing to a new purpose. It is the production of a new device by giving a new form to an old substance, and by suitable manipulation making its peculiar properties available for a use to which it had not before been applied, thereby distinguishing it from all other fabrics of the class to which it belongs.

"This seems to me to involve an exercise of the inventive faculty, and, in view of the great practical benefits resulting from it, to invest the product with special patentable merit."[1] (*Post*, page 351.)

80. Where the new use works a chemical change, it is perhaps more likely to be non-analogous than where the new use is of a machine; but it is not apparent why a different rule should prevail in the case of machines. The National Filtering Oil Co. *v.* The Arctic Oil Co.[2] is a case in which the use of bone-black, by filtration, to purify petroleum, it having previously been used to purify water and rancid oils, was held patentable by Judge Blatchford.

81. We come now to an English and to an American case, which, taken together, excellently illustrate a non-analogous use. The English case is that of Steiner *v.* Heald.[3] The patent in suit was Steiner's, of Feb. 7, 1844, for "a new manufacture of certain coloring matter called garancine."

Before the plaintiff's invention, madder dye was obtained from fresh madder in the following manner: The madder was first ground to powder, and then put into a bottle of hot water, along with cloth and other absorbents, which took up the coloring matter; the cloth, &c., being taken out, there was found in the bottle a residuum, called *spent* madder, supposed to be valueless, though it was known that it still contained coloring matter. Subsequently it was discovered that, by the application of heat and acids to *fresh* madder, the whole coloring matter could be extracted. The dyestuff so obtained, called garancine, differed from the ordinary madder dye.

The plaintiff discovered that by a similar application of heat and acids garancine could be extracted from *spent* madder also, and this garancine was exactly like the other.

On these facts at the trial below, the judge instructed the jury to find for the defendant. The plaintiff excepted to the ruling,

[1] See also Poillon *v.* Schmidt, *post*, page 321.

[2] 8 Blatch. 416.

[3] 6 Ex. 607 (1851).

and the exception was sustained by the court, the opinion being delivered by Patteson, J., who said: —

"If . . . the patent be good, it must be on account of the old contrivance being applied to a new object under such circumstances as to support the patent.

"Now, 'spent madder' might be a very different thing from 'fresh madder' in its properties, chemical and otherwise. Or it might be in effect the same thing as 'fresh madder' in its properties, chemical and otherwise, with the difference only that part of its coloring matter had been already extracted.

"Again, the properties, chemical and otherwise, of both might or might not have been known to chemists and other scientific persons, so that they could tell whether 'fresh madder' and 'spent madder' were different things, or substantially the same thing. . . . We think, therefore, that the learned judge was wrong in treating the conclusion to be drawn from the evidence as matter of law, and that the exception is well pointed in treating it as matter of fact which should have been left to the jury, with such observations, of course, as the learned judge might think proper to make for their assistance."

This opinion implies the true distinction to be drawn in such cases; that is, applying it to the facts of this case, if spent madder were so unlike fresh madder that there was no analogy between the two as regards extracting dyestuff from them, then the application of the old process to the new material — spent madder — was the fruit of invention, and therefore patentable. In the American case, precisely the state of facts contemplated by the court in this case arose. We refer to Spill *v.* The Celluloid Mfg. Co.[1]

82. Spill's patent, No. 101,175, dated March 22, 1870, for an improvement in the manufacture of xyloidine, an artificial substance, and its compounds, was in question. The second claim only was in suit. It ran thus: "The process of bleaching xyloidine in the manner herein specified."

Before Spill's invention, the ordinary means of bleaching were applied only to fibrous material, which was useful merely by reason of its being fibrous; and it was supposed that xyloidine (or pyroxyline), which is very different in composition from the old bleachable material, and but slightly fibrous (not at all so after the bleaching process is completed), could not be bleached;

[1] 18 Blatch. 190.

but the patentee discovered that the ordinary bleaching agents would act upon xyloidine in the course of its manufacture, if applied (quoting from the specification)

"directly after the removal of the acids, and before removing it from the vat. This I do by any of the well-known means, preferring a solution of chlorine, or a solution of chloride of lime or soda, which I add to the xyloidine, making use of alternate stirrings and rests, . . . until the xyloidine is whitened," &c.

This discovery, though simple, was not obvious, for a reason stated by the plaintiff's expert and quoted in the opinion, as follows: —

"The theory of ordinary bleaching is that the coloring-matter of goods to be bleached is of a complicated and unstable character, and is destroyed by the powerful chemical action of the bleaching agents, chlorine, oxygen, &c. Inasmuch as pyroxyline, in its manufacture, has been exposed to the action of some of the most powerful chemical agents which are known, it is unreasonable to suppose that any of the unstable coloring-matter could be left in it. The bleaching of pyroxyline has often been proposed and attempted. It was especially desirable in this art; but it is my opinion that a chemist would exhaust all other theories before he would think of ordinary bleaching agents for the purpose."

The patent was sustained.

Cases of Principles involving a New Use.

83. There is another class of cases which directly contradict the theory that no new use of an old machine, without alteration thereof or addition thereto, can be patentable. We mean those cases where some new law of nature or property of matter — a principle — is discovered, and the method of employing it involves the use of an old contrivance. In such case, the patentability of the discovery depends upon the practical application of the principle discovered, and it makes no difference whether the mechanism or apparatus used for the purpose be new or old. An instance is the celebrated case of Le Roy *v.* Tatham,[1] where the discovery was of an unknown property in lead; namely, that when lead is melted its particles will, at a certain temperature, reset.

[1] 22 How. 132.

This property was made use of to construct lead pipe, but the mechanism employed was an old one, formerly used, perhaps (the report is not clear), for making lead pipe, — certainly used for other purposes. In this case, therefore, the discoverer was entitled to a patent for his new process of making lead pipe, though the mechanism used was old. We need not pursue these cases any further in this connection. They are treated fully in the chapter on Principle, page 527.

84. In many of the cases above stated some slight change in the old contrivance or some additional device was necessary in order to fit the old contrivance for its new use; but in none of them was the validity of the patent maintained upon that ground. It could not be so maintained, for the invention resided not in such modification of, or addition to, the old contrivance, but in the discovery that the old contrivance was susceptible of the new application.

What is an Analogous Use.

85. When, however, we come to inquire what is an analogous or a non-analogous use, it is plain, from the nature of the subject, that no criteria can afford much assistance.

In other cases of patentability, as, for instance, cases of combination, there are, as we shall see, certain tests of invention, such as a new effect or a new mode of operation; but in cases of a new use we are referred directly to the fundamental inquiry, Is the new use an analogous use, *i. e.* is it fairly deducible from that with which it is compared, so as to be within the range of the workman's skill; or did it require invention to pass from the old use to the new use?

86. Utility, of course, *under the conditions stated* in the first chapter,[1] is evidence of invention here, as elsewhere. A case where it was so held is that of Penn *v.* Bibby.[2] The invention was the use of wooden bearings for the shafts of screw-propellers, by placing fillets of wood upon the inner surface of the bearing, so as to prevent the shaft from coming in contact with the metal of the bearings, and so as to allow the water freely to flow between the shaft and the inner surfaces of the metal bearings, thereby keeping the wood constantly lubricated.

[1] Page 62.

[2] L. R. 2 Ch. App. 127.

The defence set up as anticipating this invention the well-known use of wooden bearings for grindstones and common water-wheels. The Lord Chancellor (Lord Chelmsford) said: —

"... It would be an extraordinary fact if an invention of this kind, so long wanted, and of such great utility, should have been lying in everybody's way who knew anything of the construction of a water-wheel or grindstone, and yet should never before have been discovered."

87. There is another consideration, also, which often assists the inquiry into the nature of a new use, namely, the fact that experiments were necessary in order to prove the possibility of applying the old contrivance to the new purpose; for the fact that such experiments were necessary tends to show that the new use was not analogous to the old use, but required inventive thought to conceive, as well as experiments to prove, the possibility of its successful employment. This consideration was much relied upon by Judge Blatchford in The National Filtering Oil Co. *v.* The Arctic Oil Co., *ante*, also in The Locomotive, &c. Co. *v.* The Erie Railway Co.,[1] and, again, in Strong *v.* Noble,[2] where he held that the new use of a well-known tubular knit fabric, namely, its use to cover whip-handles, was patentable. He said: —

"... In the present case, the points of advantage ... are ornament, economy, and durability. It could not be told necessarily, *a priori*, without experiments, that these advantages would accompany the application of the knit fabric as a covering for the whip."

88. From the same opinion we quote what may be called an extreme view of the doctrine of new use, — extreme, that is, in the latitude accorded to the patentability of new uses: —

"Although a tubular knit fabric was old, and although a whip was old, and although the idea of covering a whip and a whip-handle with something was old, it by no means follows that the application in the manner shown by the specification of such a knit fabric to the covering of a whip so as to produce a whip or a whip-handle covered with such a fabric ... is merely applying the knit fabric to a new use, in the sense in which, in the law of patents, the mere application of an old article to a new use is held not to be the subject of a patent. Such applications are of this character, — using an umbrella to ward off the rays of

[1] 10 Blatch. 292.

[2] 6 Blatch. 477.

the sun, it having been before used to keep off the rain; eating peas with a spoon, it having been before used to eat soup with;[1] cutting bread with a knife, it having been before used to cut meat with. To apply the principle here invoked, to avoid the first claim of the patent, would render void the mass of patents that are now granted.

"There is scarcely a patent granted that does not involve the application of an old thing to a new use, and that does not, in one sense, fail to involve anything more. But the merit consists in being the first to make the application, and the first to show how it can be made, and the first to show that there is utility in making it."

The Rule of Analogy in the Supreme Court.

89. That the principles laid down by Blatchford, J., do not obtain in the Supreme Court of the United States appears from the decision in a recent case,—perhaps the most important case on the subject in this country,—namely, Brown *v.* Piper,[2] to which we have referred already. The patent was for a sort of ice-box device, used to preserve fish. The court found that substantiall, the same thing had previously been used for preserving corpses, and also, on a small scale, for freezing ice-cream; and they held that its use as a fish-preserver, in relation both to the corpse-preserver and to the ice-cream freezer, was a double or analogous use, and therefore not patentable.

The difference between an ice-cream freezer and a fish-preserver, as to their objects, is so great, although the device in each may be substantially the same, that this decision might be interpreted to mean that *whenever* an old device is put to operate in a new situation, and even for a new purpose, if there is no inventive change necessary to adapt it to the new use, then there can be no invention in the transfer, and the new use is not patentable. But, as we have already stated, no such proposition is laid down in the opinion of the court, which declares that the new use was

"simply the application by the patentee of an old process [*apparatus*, rather] to a new subject, *without any exercise of the inventive faculty*, and without the development of any idea which can be deemed new or original in the sense of the patent law."

[1] This is a favorite illustration, originated, we believe, by Lord Abinger. *Vide post*, page 301.

[2] 91 U. S. 37.

90. Whether, in this particular case, there really was or was not invention in using an enlarged ice-cream freezer as a fish-preserver, it is plain that there might be a new use of the ice-cream freezer, which, not requiring any alteration thereof or addition thereto, should, nevertheless, be so non-analogous, if we may use that expression, to the original use, that no court could hold it to be within the purview of the workman's judgment or skill,—could hold, in other words, that it did not imply invention, that is, patentability. Thus, if the discovery were made that an enlarged ice-cream freezer might, by means of a vacuum produced by it, or otherwise, be made to serve as a ventilator for rooms, such a new use could not be termed an analogous use, and it could not be said that invention was not required to perceive it.[1]

As bearing upon the actual case in the Supreme Court, it is further to be observed that a new effect or result, the preservation of fish, was obtained by the new use. It was brought about, to be sure, by the same means, namely, freezing, which also rendered the device efficacious as an ice-cream machine; but to make a device designed to prepare ice-cream serve, not to prepare, but to preserve, fish is to produce a new effect. And many authorities hold that a new use producing a new effect or result is patentable.

91. This case, therefore, suggests three degrees of analogy. 1. Starting with the corpse-preserver, we have the same device

[1] An even plainer case is the actual one of Tilghman *v.* Morse (9 Blatch. 421), where the patent was for a method of engraving glass by projecting upon it a jet of sand and steam. This was alleged to be a double use of a contrivance or process, thus described by Judge Blatchford: "Grave reference is made on the question of novelty to patents granted for projecting a stream of sand combined with a jet of steam from a locomotive engine, for the purpose of driving cows from the track of a railroad; and the learned expert, who makes an affidavit on the subject, says, with great truth, that the only difference between such use, in combination, of a jet of steam and a stream of sand, and the use by the plaintiff of the combination of a jet of steam with a stream of sand, is that in the former case the sand, after having had velocity imparted to it, came in contact with cows, while in the latter case it comes in contact with glass, stone, &c. This is the only difference; but in this difference lies the distinction between the two. No one, from observing the temporary operation of the process on the animal, would infer that he could, by the same means, produce the results which the plaintiff describes. Nor is there any resemblance in kind between those results and the result produced on the animal."

A less grotesque case is that of Spill *v.* The Celluloid Mfg. Co., already stated. See also Irwin *v.* Dane, 9 O. G. 642.

applied to preserve fish. This is an analogous use, producing no new effect, and therefore it is not patentable. 2. Starting with the ice-cream freezer, we have the same device applied to the preservation of fish. Here is a new effect, the *preservation* of fish, as compared with the *preparation* of ice-cream; but the device operates in the same way, and, said the Supreme Court, the new use is an analogous use, and therefore not patentable. 3. We have, by supposition, an enlarged ice-cream freezer used to ventilate rooms. Here is a new effect, and a use which no one could term analogous; and if not analogous it was inventive, and if inventive, then patentable.

On the whole, then, we conclude that this case does not imply that no new use, without modification of the thing used, can be patentable. Such a rule, as we have shown, would violate the fundamental principle of the patent law, — that invention is that on account of which a patent is granted. But the case establishes a stricter limit for analogous uses than that laid down by Judge Blatchford; and in so doing it also implies that the production of a new effect or result (new in kind, that is) is not sufficient to prove that the new use required inventive genius for its conception.

Summary.

92. We may sum up the principles which govern this class of cases as follows: 1. A non-analogous, in other words, a non-inferrible or deducible, use is patentable. 2. Invention may be shown in the means whereby the old contrivance is adapted to the new use, and the new use may be patentable on that account. 3. Such means of adaptation, though not implying invention, may tend to show that the new use is a non-analogous use. 4. Experiments made to ascertain the practicability of the new use are strong evidence to prove that invention was required to conceive of it; in other words, that it is a non-analogous, and therefore patentable, use.

93. It is scarcely necessary to add that the existence of an analogy between the old and the new use cannot be determined by the seeming similarity of the two uses, or by the fact that they are both connected with the same object or class of objects. This is true, for the obvious reason that the new use may depend for its efficacy upon some property in the old contrivance or pro-

cess, or in the new object to which it is applied, entirely different from any called into play by the former use. Furthermore, despite the external similarity of the two uses, the knowledge and judgment of one skilled in the art where the new use is made might lead him to suppose that the new use was impossible; whereas the genius of the inventor discovers the hidden cause which reverses this rational but incorrect judgment, and discloses the practicability of the new use. The English and American dye cases, already stated, illustrate this truth. So, also, the case of Irwin *v.* Dane,[1] where, by a slight change, the bell and tube in a kerosene lamp, formerly used to conduct the products of combustion back to the flame, were employed by the patentee to carry off those products and to introduce fresh air.

Additional English Cases.

94. Before leaving this subject, it might not be amiss to notice certain other English cases. In an early case,[2] it was decided that the use on railway carriages of wheels previously used on ordinary carriages was not patentable.[3] In this case, Lord Abinger, C. B., instructed the jury as follows:—

"The learned counsel has stated to you, and very properly, and it is a circumstance to be attended to, that Mr. Losh has taken out his patent to use his wheels on railways. Now, he says, the wheels made by Mr. Paton, or by the other workmen who were called as witnesses, were never applied to railways at all.

"That opens this question, whether or not a man who finds a wheel ready made to his hand, and applies that wheel to a railway, shall get a patent for applying it to a railway. There is some nicety in considering that subject. The learned counsel has mentioned to you a particular case,[4] in which an Argand lamp burning oil having been applied for singeing gauze, somebody else afterwards applied a lamp supplied with gas for singeing lace, which was a novel invention, and for which an Argand lamp is not applicable, because gas does not burn in the same way as oil in an Argand lamp. But a man having discovered by the application of gas he could more effectually burn the cottony parts of the gauze by passing it over the gas, his patent is good. That was the application of a new contrivance to the same purpose; but it is a differ-

[1] 2 Biss. 442.

[2] Losh *v.* Hague, 1 Web. P.C. 207.

[3] A similar decision was made by Judge Story in the case of Winans *v.* B. & P. R. R. Co., 2 Story, 412.

[4] Hall *v.* Boot, Web. 100.

ent thing when you take out a patent for applying a new contrivance to an old object, and applying an old contrivance to a new object, — that is a very different thing. If I am wrong, I shall be corrected.

"In the case the learned counsel put, he says, if a surgeon goes into a mercer's shop, and sees the mercer cutting velvet or silk with a pair of scissors with a knob to them, he, seeing that, would have a right to take out a patent in order to apply the same scissors to cutting a sore or a patient's skin. I do not quite agree with that law. I think if the surgeon had gone to him and said, 'I see how well your scissors cut,' and he said, 'I can apply them instead of a lancet by putting a knob at the end,' that would be quite a different thing, and he might get a patent for that; but it would be a very extraordinary thing to say that because all mankind had been accustomed to eat soup with a spoon, that a man could take out a patent because he says you might eat peas with a spoon. The law on the subject is this: that you cannot have a patent for applying a well-known thing which might be applied to fifty thousand different purposes, for applying it to an operation which is exactly analogous to what was done before.

"Suppose a man invents a pair of scissors to cut cloth with; if the scissors were never invented before, he could take out a patent for it. If another man found he could cut silk with them, why should he take out a patent for that? I must own, therefore, that it strikes me, if you are of opinion this wheel has been constructed, according to the defendant's evidence, by the persons who have been mentioned, long before the plaintiff's patent, that although there were no railroads then to apply them to, and no demand for such wheels, yet that the application of them to railroads afterwards by Mr. Losh will not give effect to his patent, if part of that which is claimed as a new improvement by him is in fact an old improvement, invented by other people, and used for other purposes. That is my opinion on the law, and on that I am bound to direct you substantially."

95. In the case of Boulton *v.* Bull,[1] Buller, J., said: —

"Suppose the world were better informed than it now is how to prepare Dr. James's fever-powder, and an ingenious physician should find out that it was a specific cure for a consumption, if given in particular quantities, could he have a patent for the sole use of James's powders in consumptions, or to be given in particular quantities? I think it must be conceded that such a patent would be void; and yet the use of the medicine would be new, and the effect of it as materially different from what is now known as life is from death. So in the case of a late

[1] 2 H. Bl. 487.

discovery, which, as far as experience has hitherto gone, is said to have proved efficacious, that of the medicinal properties of arsenic in curing agues, could a patent be supported for the sole use of arsenic in aguish complaints? The medicine is the manufacture, and the only object of a patent; and, as the medicine is not new, any patent for it, or for the use of it, would be void."

The more recent case of Harwood *v.* The Great Northern Railway Co.[1] is perhaps the most important English authority upon this subject. It is too complicated to be summarized here, but a full abstract of it will be found among the cases *post*, at page 385.

Illustrations of Analogous Use.

96. We may add the following illustrations of analogous use, taken from the English and from the American decisions:—

In an early and important English case, Brunton *v.* Hawkes,[2] the patent was for making ships' anchors in one piece. It being proved that mushroom anchors, that is, anchors for mooring stationary vessels, as lightships, and also the common hammer and pickaxe, were made in substantially the same form, the court held that there was no invention in the improvement patented. In the case of Course *v.* Johnson,[3] Judge McKennan held that it was no invention to transfer from an alcohol lamp to a kerosene stove certain devices which, in their new situation, fulfilled no new office. Mr. Justice Field, in the case of Knox *v.* Quicksilver Mining Co., held that the application to limekiln furnaces of a device used in quicksilver furnaces was not patentable.[4] Between a barrel-head lining and a barrel hoop there is such an analogy that it is no invention to apply to the one a crimping or bending process that has been applied to the other. Reed *v.* Reed.[5] There is the same analogy between a pepper-box and a box to hold blueing, so that it is no invention to perforate the top of a blueing-box in the way that a pepper-box was perforated, and for the same object. This was the decision of Woodruff, J., in the case of Sawyer *v.* Bixby.[6]

97. To make whips in sections, as fish-poles are made, and, as it was proved, a travelling agent had made one whip for show,

[1] 11 H. L. Cas. 654.
[2] 4 B. & Ald. 540.
[3] 16 O. G. 719.
[4] 3 Sawyer, 422; 14 O. G. 897.
[5] 12 Blatch. 366.
[6] 9 Blatch. 361.

but not for use, is not invention, according to Judge Lowell.[1] But in this case he held that there was invention in the device by which the close union of joints required in the whip was effected. The idea of impressing figures upon a paper collar is anticipated by that of impressing figures on smooth enamelled surfaces. Judge Blatchford so decided in the case of the Union Paper-Collar Co. *v.* Van Deusen.[2] To use as an *escape*-valve, in an organ, a valve which formerly had been used as a supply-valve in pedal organs, is not invention. This decision was made in the English case of Willis *v.* Davison.[3]

98. Finally, it was held by McKennan, J., that, given a portable machine for extinguishing fires by discharging a stream of carbonic-acid gas and water, it is no invention to make a different machine for the same purpose by applying therein a device used before in a soda-water fountain.[4] It is true, as the learned judge remarked, that the only difference between the two uses is that

"in the one case a stream of this water is directed into a vessel where it may be used as a beverage, and in the other upon a mass of ignited matter;"

but the distinction here noted reminds us of that taken by an expert in the case of Tilghman *v.* Morse, *ante*, between the cow to be scared and the glass to be engraved.

Newly discovered Function or Property.

99. We come now to the consideration of a few very difficult cases, not logically separable, perhaps, from others involving a new use, which, however, for the sake of clearness, we have reserved to be treated by themselves. We mean those cases where some new property has been discovered in an old article or contrivance, so that a new employment of it becomes possible, and others in which it is discovered that a benefit unforeseen by

[1] American Whip Co. *v.* Hampden Whip Co., 1 F. R. 87.

This decision, at first sight, appears open to doubt, fishing-poles and whips are in general so differently used; but when the use of a fly-rod, for salmon or trout fishing, is considered, the step from a jointed fishing-rod to a jointed whip seems less difficult.

[2] 10 Blatch. 109. See also 23 Wall. 530.

[3] 1 N. R. 234.

[4] The N. W. Fire Extinguisher Co. *v.* The Philadelphia Fire Extinguisher Co., 6 O. G. 34.

the inventor of a patented thing springs from the use of it, or may, under certain circumstances, do so.

100. In the first place, we shall, at the cost of redundancy, refer the reader again to those three principles, of which, so often in the course of this book, we have ventured to remind him. They are: 1. That a benefit to the public is the consideration for which a patent is granted; 2. That an inventive idea is that on account of which a patent is granted; 3. That a patent should be commensurate with the invention or discovery to protect which it is granted.

101. In view of these principles, it is plain that the following propositions need no argument to support them:—

(*a*) A newly discovered benefit, if it result from the ordinary use of the contrivance (whether patented or not) which produces it, is not patentable; and this whether the newly discovered benefit is in degree or in kind.

(*b*) But a newly discovered property in some existing article or contrivance (whether patented or not), whereby it can be put to a new use, is good ground for a patent.

(*c*) So, also, if a patent describe a process or a contrivance in such a manner that an unforeseen benefit, or, rather, its possible occurrence, is included thereby, — but so included that its happening or not is a mere matter of chance, — then a subsequent discoverer of it is entitled to a patent.

102. (*a*) In the first of the cases here supposed, it may be that the second discoverer has shown real invention;[1] but the benefit which would result from his patent the public are already in possession of. Moreover, the patent of the first inventor (assuming that the contrivance is patented), in order to be commensurable with his invention, should cover every benefit which must spring from the use of it, although of some of the benefits, or of the value of some one of them, he may be ignorant. If his invention be more manifold in its usefulness than he thought, he is none the less entitled to have a patent covering every form of usefulness which the actual employment of it calls into play.

103. In the case of Tinker *v.* Wilber Eureka Mower & Reaper Mfg. Co.,[2] it was found that, in a mowing-machine, rollers in-

[1] This is not probable, however. It is much more likely that he will have used mere observation.

[2] 1 Fed. Rep. 138.

tended by the patentee simply to roll down the grass to be mowed also discharged the office of preventing the grass from tangling with the machine at the sides of it. It was held that the invention included the use of the rollers for this purpose, as well as for that contemplated by the patentee; but inasmuch as he had neglected to cover this use of the rollers by the terms of his patent, the defendant could not be held for infringing it.[1] See also Stow *v.* Chicago, 104 U. S. 547.

104. In The Bailey Washing & Wringing Machine Co. *v.* Lincoln,[2] the patent was for a wringing-machine. Claim No. 5 was for —

"Rollers for washing or wringing machines made of, or covered with, vulcanized rubber or any other elastic substance or compound impervious to water, when used in combination with an adjusting spring or springs."

It was found afterward that india-rubber was far superior to any other substance for this purpose; and the point being taken that the patentee was not aware of its peculiar value, Lowell, J., before whom the case was tried, remarked as follows: —

"It does appear to be true that he either did not understand the full value and scope of his machine, or was induced or obliged not to claim it. Taking the strongest view against him, namely, that he was not informed of the peculiar value of india-rubber as a covering for the rollers, but thought any flexible material would do as well, or nearly as well, still he points out india-rubber as the covering which he considers the best; and no one who should afterwards discover its peculiar value could patent its use in the same combination."

105. In another case before the same judge, Richardson *v.* Lockwood,[3] a *reissued* patent for the Davidson syringe[4] was in suit. The claim ran as follows: —

"So forming the connection between the bulb and its flexible tube that the bulb can be used separately with a jet pipe as well as with its flexible tube, thus adapting the syringe to all the various operations for which it may be required, as described."

[1] "A patentee is entitled to all the necessary and legitimate results attained by his invention, including even such as were unexpected." Wells *v.* Jacques, 5 O. G. 364.

[2] 4 Fish. 379.

[3] 4 O. G. 398.

[4] *Vide* Morey *v.* Lockwood, 8 Wall. 230.

Judge Lowell, in supporting the patent, said: —

"It may be that the Davidsons did not perceive all the advantages which this mode of connection would give to a syringe. In their *caveat* they seem to consider that the chief value of making the syringe in parts is, that it may be easily cleaned and dried. But if they made the syringe, for whatever purpose, in this way, it seems to us they can allege that no one else is entitled to a patent for making one in that way." [1]

106. (*b*) We pass now to the second of the propositions above stated. The leading English case upon the point is that of Muntz *v.* Foster.[2] The patentee had discovered, in a composition of zinc and copper previously used for ordinary purposes, a peculiar property, namely, slight, and but slight, oxidation in sea-water. He applied the compound to the new use of a sheathing for ships' bottoms. In this situation it was very valuable, inasmuch as it oxidized, or rusted, enough to prevent accretion of barnacles upon it, but not enough to destroy it. This new use of the old compound was held patentable. It is plain that in this case the patentee made a real discovery, as much as if he had found the same valuable property in a hitherto unknown substance. Moreover, it is equally clear that he conferred a benefit upon the public, inasmuch as he pointed out the valuable use of an old compound, of which use the public was ignorant. If, however, the compound had already been applied to ships' bottoms, because it was a strong material, for instance, and in ignorance of its peculiar property of slight oxidation in sea-water, then it would not have been patentable to a discoverer of that property; for in the case supposed the discoverer would have conferred upon the public nothing of which they were not, though ignorantly, already in possession. Moreover, he would have discovered neither a material nor an unused property in a material, but simply a physical truth, which, by itself, is not patentable.[3]

107. It is true that, if the compound was itself the subject of a patent, no one could use it for any purpose without infringing; but we apprehend the subsequent discoverer could obtain a patent for *his* use of it, just as an improvement upon a machine

[1] See also Tetley *v.* Easton, 2 C. B. N. S. 706. And see page 598.
[2] 2 Web. P. C. 96, a *Nisi Prius* case, but one of unquestioned authority.
[3] *Post*, page 529.

is patentable, though the machine with the improvement cannot legally be used by the patentee of the improvement without license from the patentee of the machine. As Judge Shepley remarked in the case of Jenkins *v.* Walker,[1] —

"The patenting a material for one purpose does not necessarily invalidate patenting it for another different and not analogous purpose;"

and he referred to the English case of Newton *v.* Vaucher,[2] where the patentee had discovered a new property in soft metal, so called; namely, that it is "incompetent to take up the motion of heat by friction." This made it very valuable for lining the inner part of boxes to support gudgeons or axles; for by its use heating and abrasion were prevented. The new use was held patentable, although substantially the same material had been used as a packing for the pistons of hydraulic engines, in order to exclude air and water.

108. In the case of Colgate *v.* The Western Union Telegraph Co.,[3] Judge Blatchford held that an "improvement in insulating submarine cables," by covering the wire with a solution of gutta-percha, was patentable. Gutta-percha was not new, but, as the learned judge remarked, —

"The gist of the invention is the discovery of the fact that gutta-percha is a non-conductor of electricity, and the application of that fact to practical use by combining gutta-percha, by the means specified, with a metallic wire, in the manner described, and then using the cable formed by such combination for the purpose of conducting electricity along the enclosed wire. . . . The claim is valid even though a metallic wire covered with gutta-percha existed before the plaintiff's invention,[4] if it was not known that gutta-percha was a non-conductor of electricity, and could be used to insulate the wire. The use by the patentee of the wire so covered to conduct electricity was not a double use of the covered wire, even though the covered wire existed before."[5]

[1] 1 Holmes, 120.
[2] 6 Exch. 859.
[3] 15 Blatch. 365.
[4] Supposing, we presume, that such covered wire had not been used to transmit electricity, though in ignorance of its value as an insulator. In case the wire had so been used, the patent, we apprehend, would not be valid.
[5] In a subsequent suit upon the same patent, Judge Blatchford (16 Blatch. 503) held that the patent would still be valid, even though it were proved that the patentee was not the first discoverer of the insulating

109. The discovery of a new power or function in a machine or other contrivance stands upon the same footing. But in such a case the patent must be, not for the machine or contrivance, but for the *art* of using it to produce the new result.[1]

110. (*c*) As to the third proposition, it is true that anticipation is proved when it is shown that the public might have had the benefit of the invention in question, — that they had access to it;[2] but so much cannot be affirmed when neither the possible existence of a certain benefit nor the means to produce it have been stated or indicated in any way. It is not sufficient that a process or a contrivance has been described, in the production or in the use of which, it is afterward discovered, the benefit in question may be chanced upon. In the case of Ransom *v.* Mayor of New York,[3] Hall, J., made some remarks which are in point, though they were in regard to the novelty of a combination. He said: —

"If the parties who made the combination, although seeing with the eye perceived not, or hearing with the ear understood not, what would be the result of this combination, they added nothing to their own stock of knowledge; and the fact, if observed by other men (if they understood it not), added nothing to the knowledge of science upon that subject. Therefore the invention was not made until the parties contriving, or others observing the existing combination, saw that it could be made available for the purpose of producing a result similar to the one which the plaintiffs have mentioned in their specification."

111. In the case of The Atlantic Giant Powder Co. *v.* Rand,[4] the patent was for a mixture of nitro-glycerine with infusorial earth, or other absorbent substance, the object being absorption of the nitro-glycerine, whereby the dangerous qualities of liquid nitro-glycerine are got rid of. Judge Blatchford held that this patent was not anticipated by one for a mixture of nitro-glycerine and gunpowder, which did not contemplate the advantages resulting

property of gutta-percha. In this case the decision was put upon the ground that the contrivance described — the cable of peculiar construction — was new and patentable; that it was a matter, not of construction, but of invention, to apply the known principle, that gutta-percha was an insulator, to the practical purpose of a submarine cable.

[1] *Vide* Elastic Fabrics Co. *v.* East Hampton Rubber-thread Co., 1 Holmes, 372; also Conover *v.* Roach, 4 Fish. 12.

[2] *Vide* chapter on Prior Knowledge or Use, *post*, page 621.

[3] 1 Fish. 252.

[4] 16 Blatch. 250 and 289 (1879).

from the plaintiff's patent, and which, if its directions were followed, might or might not lead to their attainment. He said (page 289): —

"The prior description, to invalidate the patent, must be such as to show that the article described in the patent can be certainly arrived at by following the prior description; and it is not enough to show that by the lucky accident of taking gunpowder of the proper quality a compound may be obtained which is like that indicated by such description."[1]

112. A singular case is that of The Eagleton Mfg. Co. *v.* The West, Bradley, & Cary Mfg. Co.[2] The patent was for a process of japanning helical steel springs. It was found that the heat used in the process had the beneficial effect of tempering the steel; but this effect was unknown to the patentee. Wheeler, J., remarked upon the patent as follows: —

"It is said in argument that it is not necessary he should have known the full effect of the process he invented in order to uphold the patent; and that, if he invented japanning, it might not be necessary for him to know that japanning would temper. It is doubtless true that an inventor need not know all the uses to which his invention is capable of being put, and equally true that there must be some patentable invention patented before any use of it can be covered by the patent. Here japanning by itself was not patentable. Eagleton described no mode of japanning which would temper or strengthen the steel. The temper and strength are produced by the heat altogether, and not at all by the japan. He did not even mention that the japan was to be applied with heat. . . . He did not invent or discover anything patentable of which any one use can be made, and, *a fortiori*, not anything of which more than one use could be made."

If, however, the japanning had been a patentable invention, and the application of heat, in terms or by the necessity of the case, had been included in the process, — in that case, we conceive, the invention would cover tempering the steel springs.

113. There is an important case in the Supreme Court (Jones *v.* Morehead[3]), where not a prior patent, but a prior article, was held to contain, *in posse* as it were, a later improvement, and therefore to anticipate it. The alleged invention consisted in

[1] See also Hussey *v.* Bradley, 2 Fish. p. 376, *ante*, page 90; and Kelleher *v.* Darling, 14 O. G. p. 675.

[2] 17 O. G. 1504.

[3] 1 Wall. 155.

making the cases of door-locks double-faced, — that is, finished on both sides, so that either side might be used as the outside; and thus the lock could be used as a left-hand or as a right-hand lock; whereas before this invention locks were made to be used as left-hand locks only, or as right-hand locks only. The defence produced several locks taken from doors on the outside of public buildings in the city of New York. These locks were finished on both sides, apparently for the single purpose of protecting the inside; but they were capable, by being turned upside down, of use as right or left hand locks indifferently, although they were not intended for such use; and it did not appear that the possibility of it had ever occurred to any one. The Supreme Court, however, overruled the decision of the circuit judge,[1] and held that these locks anticipated the plaintiff's invention.[2]

PARK *v.* LITTLE, 3 WASH. 196.

D. OF PENN., 1813. WASHINGTON, J., AND A JURY.

A patent for alarm-bells on fire-engines.

We quote from the report: —

"The specification states the bell to be attached to a horizontal piece of iron, fixed into an upright elastic piece, the vibrations of which are regulated by a ball of four or five pounds on the top; the whole frame being fastened on the engine, and the bell made to ring by the motion of the wheels on which the engine is fixed. These bells were used on the Philadelphia fire hose engine . . . for the purpose of informing the members at night where to find it."

Washington, J., instructed the jury as follows: —

". . . The question is not whether bells to give alarm or notice are new, but whether the use and application of them to fire-engines, to be rung, not by manual action, but by the motion of the carriage, for the purpose of alarm or notice, is a new invention or improvement of an old one. The power of steam is not new, and yet its application for propelling boats would be considered as such. Nevertheless, you must decide on the evidence [it is not reported] whether the application of these bells to fire-engines is new.

[1] Mr. Justice Grier. *Vide* Livingston *v.* Jones, 1 Fish. 521.

[2] *Vide post*, page 660.

"As to the question of its utility, it is proved that the plaintiff has received fifty dollars from one fire company in Baltimore for the privilege of using his invention; and the fire insurance companies of this city, by voting sums of money to the Philadelphia fire company, on account of their using them, is [*sic*] some evidence of their opinion."

KNIGHT *v.* BALTIMORE & OHIO RAILROAD CO., TANEY, DECIS. 106; 3 FISH. 1.

D. OF MD., 1840. TANEY, C. J., AND A JURY.

Infringement of a reissued patent, granted originally in 1829, for improvement in railroad car-wheels.

The specification: —

"And in order to get rid of the lateral friction caused by the collars or shoulders of the axles, the ends of all the axles are to be reduced to a point, and plates of steel so fixed, either in a frame or on the sides of the carriage, so as that the ends of the axles would work at a point against those plates, by which arrangement we avoid nearly all the friction occasioned by collars in the common way, and perhaps some of that produced by the flanges of the road-wheels against the side of the rails; and, in order to enable this improvement to be applied to the curvature of the road, there must be left sufficient room for the main axle to play within these collars, and also between the small rollers."

The defence having set up that this was but a double use of an old device, the court charged the jury as follows: —

". . . That the public use of end-bearings for the purpose of transferring friction from the shoulders to the ends of the axles on a cotton-mill, or other stationary machine, before the patent of 1829, as described in the testimony, will not render the plaintiff's patent void, provided the jury find that he was the original inventor of the combination he claims in relation to railway carriages, and that his invention is useful in the transportation of burdens and passengers on railways. But if, before his first patent was obtained, the same principles in the same combination which he describes as his improvement were in public use in ordinary carriages upon common roads, the plaintiff was not entitled to a patent for applying the same thing to railway carriages, unless the improvement he claims contains something new and material either in principle, in combination, or in the mode of operation, in order to adapt it to its new use."

HOWE *v.* ABBOTT, 2 STORY, 190.

D. OF MASS., 1842. STORY, J.

The patent was for "an improvement in the application of . . . palm-leaf or brub-grass to the stuffing of beds, mattresses," &c.

It was proved that the process described was identical with that in common use to prepare hair, Manilla grass, &c., for the same purposes.

Story, J.:—

". . . It is . . . the mere application of an old process and old machinery to a new use. It is precisely the same as if a coffee-mill were now for the first time used to grind corn.

"The application of an old process to manufacture an article to which it had never before been applied, is not a patentable invention. There must be some new process or new machinery used to produce the result."

BEAN *v.* SMALLWOOD, 2 STORY, 408.

D. OF MASS., 1843. STORY, J.

Patent for improvements in rocking-chairs. There were three claims. The first two were admitted not to be new. The third was for

"the manner of reclining the back of the seat at any angle required, by the lock-plates and notches in the hanging-plates, which receive them, as before described."

The report contains no account of the plaintiff's device, or of the devices alleged to anticipate it, other than what appears in the opinion of the court, as follows:—

"The third . . . claim, upon the testimony of Mr. Eddy, which is admitted to be true, is equally unsupportable. He says that the same apparatus stated in this last claim has been long in use, and applied, if not to chairs, at least in other machines, to purposes of a similar nature. If this be so, then the invention is not new, but at most is an old invention, or apparatus, or machinery, applied to a new purpose. Now, I take it to be clear that a machine, or apparatus, or other mechanical contrivance, in order to give the party a claim to a patent therefor, must in itself be substantially new. If it is old and well

known, and applied only to a new purpose, that does not make it patentable. A coffee-mill applied for the first time to grind oats, or corn, or mustard, would not give a title to a patent for the machine. A cotton-gin applied without alteration to clean hemp would not give a title to a patent for the gin as new. A loom to weave cotton yarn would not, if unaltered, become a patentable machine as a new invention by first applying it to weave woollen yarn. A steam-engine, if ordinarily applied to turn a grist-mill, would not entitle a party to a patent to [*sic*] it, if it were first applied by him to turn the main wheel of a cotton factory. In short, the machine must be new, not merely the purpose to which it is applied. A purpose is not patentable, but the machinery only, if new, by which it is to be accomplished. In other words, the thing itself which is patented must be new, and not the mere application of it to a new purpose or object."

WINANS *v.* BOSTON & PROVIDENCE RAILROAD CO., 2 Story, 412.

D. of Mass., 1843. Story, J.

The patent was for an improvement in the axles of railway *and other wheeled carriages.* It being shown that the improvement as applied to *wheeled carriages other than railway carriages* was not new, the patent was held invalid by Story, J.

PITTS *v.* WHITMAN, 2 Story, 609.

D. of Maine, 1843. Story, J.

The report does not state clearly what the invention was, but we take the following description of it from the report of a later case, Pitts *v.* Wemple, 1 Biss. 87, tried before Drummond, J., and a jury:—

"A new and improved combination of machinery for separating grain from the straw and chaff as it proceeds from the threshing-machine. The chief feature was the endless belt or apron, provided with a series of narrow wooden compartments, of a sufficient height above the apron to permit the grain which was separated from the straw and chaff by the agitation of the machine when in operation to fall through into the cells. By this means the straw and chaff were

carried along on the tops of the boxes, and kept from being commingled with the grain below, until, by the action of the machine, the compartments were carried forward, and emptied the separated grain into the fan-mill, and the straw and chaff passed off over the end of the apron."

At the trial before the district judge, the counsel for the defendants asked for the following instruction: —

"If an endless belt of troughs or cells was known and used at the time of, and prior to the supposed invention of [the plaintiffs], then the mere application of an endless belt of troughs or cells to the new purpose of separating straw and grain, in a machine for threshing and cleaning grain, is not the subject of a patent. . . ."

The judge refused to give this instruction, and on appeal to the Circuit Court, Story, J., sustained the refusal as follows: —

". . . If this combination was new, and invented by the patentees, then it was valid in point of law. . . . And this disposes, in effect, of the next objection [*i. e.* to the refusal of the instruction quoted]; for if the combination was new, it is a patentable matter, although a part of the apparatus might have been applied to similar purposes in other and different machines. Under such circumstances, it would not be a mere application of an old apparatus to a new purpose, but a new combination of machinery, incorporating in part an old apparatus for a new purpose. The third instruction [that quoted], asked [*sic*] and refused by the court, is objectionable in several respects. It proceeds upon the assumption of the existence of facts, which it was no part of the duty of the court to assume or affirm. It undertakes to put a construction upon the invention, as claimed by the patentees, which is not . . . correct. It separates the consideration of the endless belt of troughs from the other machinery, with which it was combined, as though it were claimed as a distinct invention, and not in combination, and asks the court to give an instruction founded upon that supposition. It was no part of the duty of the court thus to break up the case into fragments, or to give an instruction as to abstract points not actually presented by the state of the cause."

In the suit mentioned above, before Drummond, J., the validity of the patent was not contested, but the defendants sought to limit it. For this purpose they set up, as showing the state of the art, Lane's patent. This patent, apparently, was that on which the defendants relied in the case before Judge Story; for we learn from the report of the case before Judge Drummond

that the invention covered by it was as follows: An endless apron proceeding from the threshing-machine to an endless sieve connected with a fan-wheel. It had no compartments, and its office was simply to transport the grain mixed with chaff and straw from one machine to the other.

The plaintiff's apron, on the other hand, separated the grain from the straw *in transitu*. Judge Drummond held, therefore, that the Lane patent did not affect the plaintiff's. He said: —

"It is because the apron, with its appliances and combinations, the moment the grain and straw and chaff proceed from the threshing-machine, produces the process of separation, and thus has a different force or function from that of Lane's apron, that the plaintiff's first, second, and third claims[1] can be considered valid.

"If the apron of the plaintiff's machine is not constructed for that purpose, and does not produce that result, — that of separation, — then these first three claims cannot be sustained consistently with the validity of Lane's patent.

"But it is said that Lane's patent can have no influence in this case, because his machine was not a practicable machine. This may be true, and still it cannot be disputed but that Lane invented the combination of an endless apron with a threshing-machine, and a winnower for the purpose of carrying the straw and grain from the one to the other; and any one would have the right to use such an apron as that of Lane's for a similar purpose, and by other machinery or improvements (not including that of the plaintiffs) he might have a practical machine, and by so doing he would not infringe as to the plaintiff's apron. This is so because the machine of Lane might not have been practicable from some other defect in the machine which had nothing to do with the office of the apron as a conveyer or carrier. Whether Lane's machine was a practicable machine is a question of fact for the jury. It is not necessary that it should have been actually used for the purpose contemplated; but it must have been capable of such use, and a mechanic of competent skill should be able in the then state of the art to construct the machine so as to produce the result from a mere inspection and examination of the . . . letters-patent.

"A man may obtain a patent for an invention, and let it lie in the

[1] The claims were: "1. The construction and use of an endless apron, divided into troughs or cells in a machine for cleaning grain, operating substantially in the way described. 2. The revolving rake for shaking out the straw, and the roller for throwing it off the machine, in combination with such a revolving apron, as set forth. 3. The guard slats in combination with a revolving apron, as set forth."

Patent Office without use, and no one else would have the right to use such invention, because it is his property; but while this is true as a matter of law, still, in ascertaining whether the machine is capable of use, it may become important to know that the inventor had never made or used the machine, because the presumption is that a person obtains a patent for something practical, and not for a mere experiment."

This patent was sustained on the same ground by McLean, J., in the case of Pitts *v.* Wemple, 6 McLean, 558.

JUDSON *v.* MOORE, 1 FISH. p. 555.

S. D. OF OHIO, 1860. LEAVITT, J.

In this case the patent was for a valve for steam-engines. (*Vide ante*, page 237, where the invention is described.)

On the subject of new use, Judge Leavitt comparing the plaintiff's valve with the prior valve of one Thom, said: —

"As for Thom's valve, it provided for certain openings, but not throughout the whole range of motion. It was designed to be used on railway locomotives, and it never has been used otherwise. . . . The mere use of a mechanical structure for a different purpose is not of itself patentable, and if Judson had merely adopted Thom's valve, and applied it to another purpose, without addition or improvement, he would not be entitled to a patent, — that is, if he had merely applied it to other than railway purposes, he could not be entitled to a patent; but if his valve be a different structure, applicable to *all* engines, and producing a new and useful result, it *is* a patentable subject; and if Judson has changed the structure of the Thom valve, and it has been applied to a new and useful purpose, the knowledge of the prior valve would not affect the originality of Judson's valve."

BRAY *v.* HARTSHORN, 1 CLIFF. 538.

D. OF MASS., 1860. CLIFFORD, J.

Bray's patent of Aug. 5, 1854, for a

"certain new and useful improvement in spring rollers or fixtures for the hanging and balancing of house-curtains, maps, and drawings, and for other similar uses."

The invention consisted in the combination of (1) a tubular, or hollow, curtain-roller, (2) a long, spiral spring within the roller, for the purpose of balancing the curtain in any position in which it might be placed, and (3) a weighted bar or tassel.

The claim was: —

"Providing the tubular or hollow curtain-roller with a long spiral spring within it, when said spring is used for the purpose not merely of drawing up the curtain by its recoil, as that is not new, but of balancing it in any position in which it may be placed, substantially as herein described."

A verdict having been given for the plaintiff, the defendant moved for a new trial, on the ground, chiefly, that this was but a new use of an old invention, "to wit, the use of the old spiral spring in balancing a curtain in any position in which it may be placed."

Clifford, J. (after laying down the propositions quoted *ante*, page 286), said: —

". . . Recurring to the language of the application in this case, it will be seen that the claim is not for the use of an old machine, in any sense in which that phrase is employed or understood in the decisions of the courts."

The learned judge then quoted the claim given above, and continued: —

". . . He claims to be the original and first inventor of the combination described in his patent, and of course it is not absolutely necessary that any one of the elements or devices so combined should be new, provided the combination is new, and produces a new and useful or better result. Having confined his claim to a mode of balancing curtains in the manner and by the means described, it is not sufficient to defeat his patent, if it produces a new and useful result, to prove that other and different modes of balancing curtains were known prior to his invention. His patent, as limited and defined, cannot be defeated, unless it be shown that, prior to his invention, curtains had been balanced substantially in the same manner by substantially the same means, or mechanism so operating as to produce substantially the same result.

"Respectable authorities may be found which advance the doctrine that the new use of an old machine or invention may be so different from that to which the machine has been applied, and may so clearly produce a new article of machinery, that the inventor or discoverer may

be entitled to a patent; but it is not necessary to decide the point at the present time, and it is accordingly dismissed, with the remark that other authorities affirm that an inventor is fairly entitled to any profits arising from the unforeseen applicability of his invention as an equivalent for the risk he incurs of ill-success and corresponding loss. Coryton on Pat. 63, 64."

PHILLIPS *v.* PAGE, 24 How. 164 (1860).

The patent was for an improvement in a portable circular saw-mill, consisting in

"the manner of affixing and guiding the circular saw, by allowing end-play to its shaft, in combination with the means of guiding it by friction rollers, embracing it near to its periphery, so as to leave its centre entirely unchecked laterally."

This device had been used before for sawing shingles and other light materials. The patentee designed it for sawing ordinary logs. A defective specification, however, prevented his claiming it as a machine for that purpose; but the court, Nelson, J., delivering the opinion, held, that were he not so precluded, the alleged invention was not patentable, it being merely the application of an old organization to an analogous use. The enlargement of the apparatus did not change its character; and the patentee claimed no new appliances for adapting the old contrivance to its new use.[1]

"It may very well be," Mr. Justice Nelson said, "if he had set up in his claim the improvements or particular changes in the construction of the old machine, so as to enable him to adapt it to the new use, and one to which the old had not and could not have been applied without these changes, the patent might have been sustained. The utility is not questioned, and for aught there appears in the case, such improvements were before unknown, and the circular saw-mill for sawing logs the first put in successful operation."

[1] *Vide* Planing-Machine Co. *v.* Keith, a similar case, *ante*, page 201.

TREADWELL *v.* PARROTT, 5 BLATCH. 369.

S. D. OF N. Y., 1866. NELSON, J.

Patent of Daniel Treadwell, granted Dec. 11, 1855, reissued Feb. 4, 1862, for an "improvement in the manufacture of cannon."

Treadwell's alleged invention consisted in hooping with bands of wrought-iron a cast-iron cannon. The interior diameter of the hoops was less than the exterior diameter of the barrel by a $\frac{1}{1000}$ part of the latter. The hoops were heated to a high degree of heat, and when thus expanded they were put around the cannon. In cooling, they contracted, and formed a homogeneous mass with the cast-iron cannon.

The claims were as follows: —

"*First.* In making a cannon consisting of a body (in which the calibre is formed), the walls of which are of one piece, surrounded by rings, hoops, or tubes, in one or more layers, placed upon said body, under great strain, by which said body is compressed, and the natural equilibrium of the molecules or particles of which it is composed, disturbed by their being brought nearer together; and this is accomplished in the manner herein set forth, namely, by making the hoops smaller than the part which they are to surround, and then expanding them by heat, and suffering them to shrink or contract after having been put in their places.

"*Second.* I also claim the method of securing the hoops to the body of the gun, and the several layers of hoops to each other, by screw-threads, when they shrink to their places, as above described."

It was proved that such hoops had been applied in the same way to a wrought-iron cannon, or rather to a cannon "the body of which was not entirely of cast-iron, longitudinal strips of wrought-iron being immersed in the metal in the casting of the cast-iron body."

But the court said: —

"I agree that although the use of wrought-iron hoops in the way stated, and used for strengthening the barrel of a gun, had been known as early as 1834 or 1840, yet, if the patentee was the first to apply the device to a cast-iron gun, he must be regarded as the original inventor, and entitled to a patent; and that the application of it to a wrought-iron gun, or a barrel composed of a combination of cast and wrought

iron, prior in point of time, would not of itself be an objection.[1] Hence, I lay out of the case the Thiery gun as a defence to this patent; but the state of the art as found in this publication is important in another branch of the case;"

namely, in reference to the English patent of Frith, granted in 1843. This patent described the same process as the plaintiff's, except that it did not state the exact difference in diameter which should exist between the hoop and the barrel. It called, however, for "firm adhesion," produced in the manner described; and the evidence was that an intelligent mechanic, employed in the business, considering the state of the art as established by the Thiery and other inventions, would know to what extent wrought-iron bands might be distended by heat without impairing their elasticity. The walls of the Frith gun and the walls of Treadwell's gun were about equally thick; and so were their respective hoops. Moreover, the court construed the patent of Treadwell, as embracing not only the precise difference in diameters stated by him, but any difference which would accomplish the object desired.

The value of this process is thus explained: Hollow cylinders do not increase in strength in proportion as the thickness of their walls increases; but, after a considerable degree of thickness, the gain in strength is very slight. This law is called, after its discoverer, "Barlow's law." The court held that the Frith cannon was an anticipation of the plaintiff's.

WEST *v.* THE SILVER-WIRE AND SKIRT MANUFACTURING CO., 5 BLATCH. 477.

S: D. OF N. Y., 1867. SHIPMAN, J.

"Whether a brass wire in the form of a spiral, with a thread of catgut running through it and forming a cone, used as a hoop for women's skirts, would be patentable, in view of the fact that the large strings of bass-viols were previously formed in the same way, except that the wire in the hoop was heavier and stiffer than that in the string for the musical instrument, *quære*."

[1] Is not this *dictum* incorrect? It would seem that this was a clear case of double or analogous use.

POILLON *v.* SCHMIDT, 6 BLATCH. 209.

S. D. OF N. Y., 1869. BLATCHFORD, J.

Gale's patent, dated July 21, 1857, for a process of making pistons and other steam joints steam-tight.

It consisted in using a grooved surface with an opposing smooth surface; the grooves to be made either on the surface of the piston or on the interior surface of the cylinder. Directions were given for the best shape, size, and relative position of the grooves; but the grooved surfaces were not claimed as a part of the invention, they having been used before, as the specification stated, for a similar purpose in *air*-engines.

Before the patentee's invention it was always supposed that two contiguous smooth surfaces could be rendered steam-tight only by their actual contact, or by the interposition of some kind of elastic packing; but the patentee effected the object as follows: —

"The steam, as it is let into the cylinder, rushes in between the piston and cylinder, and fills up the grooves and the intervening space between the piston and cylinder, where it practically forms a complete packing. The steam which fills the grooves and intervenes between the piston and cylinder also acts as a cushion, partially to relieve the piston and cylinder from contact and friction."

The defence was the prior invention of the air-engine, already mentioned, in which similar grooves filled with air formed a packing that made the engine air-tight. As to which Blatchford, J., remarked as follows: —

". . . It is insisted . . . that the grooves and the grooved surfaces being alike in the two, and the air and the steam, as used, being equivalents for each other, there is no patentable novelty in using the grooves in connection with steam, but that it is merely the application of an old apparatus to a new use. Opposed to these suggestions is the fact that, until this patent was issued, the idea was not promulgated that steam could be made self-packing, and the publication in the 'Schauplatz,' that air could be made self-packing in an air-engine, remained before the world ten years prior to [the patentee's] invention, without that being suggested which is now asserted to be so obvious, in view of [the air-engine].

"The invention as set forth in the specification is a highly meritorious

and useful one, and one which a court will desire to sustain, if consistent with the principles of law.

"The claim is to the 'method herein described of causing steam to become a packing to itself, in steam cylinders or other parts of steam machinery, by allowing the steam to act in one or more grooves, substantially as specified.' It is not possible to mistake the tenor and purport of this claim. . . . It is a claim to an art or process. It is not a claim to the grooved surfaces. But it is a claim to the process of the self-packing of steam, used in steam machinery, when effected by allowing the steam to act in one or more grooves, as described in the specification. Gale [the patentee], undoubtedly, was the first to discover that steam could be made to pack itself, and that it could be made to do so by causing it to act in the way described, in one or more grooves.

"The grooves used in an air-engine were, indeed, old. But it by no means followed, because air would work successfully in the apparatus of Cavé, that steam could be made to pack itself, or to do so by means of grooves, or to do so in the apparatus of Cavé.

"There was room for experiment as to the capability of steam to act in that way, and as to the character of the grooves to be used, and as to what space might or might not be left between the contiguous surfaces. And it does not detract from the novelty or patentability of the invention, that in carrying it out in practice the use of grooves like those in Cavé's apparatus was found beneficial.

"The claim is not to all methods of causing steam to become a packing to itself, in steam machinery, but to the method described in the specification, whereby the property of steam discovered by Gale is made to subserve a useful purpose, by being carried into effect in a practical mode. The newly discovered property of steam, and the practical adaptation of it to a useful end, by the means described, is the invention made and claimed." (He goes on to compare this case with that of Le Roy *v.* Tatham, 22 How. 132.)

BROWN *v.* HALL, 3 BLATCH. 401.

S. D. OF N. Y., 1869. BLATCHFORD, J.

Patent for an improvement in paint-cans. The claim was: —

"The employment of strengthening wire within the bead, as and for the purpose herein shown and described."

Blatchford, J., said: —

". . . The point of the invention . . . is placing a wire within a bead or semicircular projection, near the top edge of the body of the can, and at such a distance from such top edge that the cover, when the same is on, comes down close to the upper side of the bead. The object of the wire in the bead is to strengthen the sides of the can, and prevent them from collapsing by the side pressure of weight of contents. The liability of a can of paint to collapse, when held by a bail, is pointed out, and the cause assigned is the great weight of the paint. The specification states that the invention is claimed 'as new in the construction of paint-cans;' and the patent is granted for an 'improvement in paint-cans.' But the specification states that no covered vessel, so far as the patentee is aware, has ever been made having a wire secured within a bead, near and below the mouth, as shown by him. If a can so constructed be old as a structure, it is of no consequence what substance was or was intended to be carried or contained within it, provided it employed within a bead, located substantially in the same place, a wire to strengthen the can against side pressure from its contents, and prevent the wall from collapsing by such side pressure.

". . . A witness for the defendants . . . shows that . . . [prior to the plaintiff's invention] he made vessels for freezing ice-cream, the vessel . . . having an exterior bead from three-fourths of an inch to an inch and three-fourths from the top, and a wire inside of the bead to strengthen or stiffen the vessel, the cover going down on the outside to the bead. This ice-cream freezer had no bail or handle by which it could be held up or carried. It had a handle on the top of the cover by which to revolve it in a freezing composition. The plaintiff's paint-can is described . . . as provided with a handle by which it can be lifted or carried. . . . The wire was twined and then covered with solder in the bead, as nearly as could be, so as to make a smooth interior surface, and to prevent the rusting of the wire.

"It is quite apparent that, as a structure, having a wire within the bead to give strength and prevent the collapsing of the walls of the vessel from side pressure, the patented can and the ice-cream freezer are alike. This is irrespective of any handle or bail. The claim of the patent does not embrace a handle or bail. . . . In the paint-can, when lifted, the pressure on its sides would be outward from within, while in the ice-cream freezer, when revolved in the freezing composition, — which was the way of using it as stated by Price, — the pressure would probably be that of the freezing composition exerted inwardly from without. But this makes no difference.

"Whether an amendment of the claim to introduce the handle or bail as an element in the combination would distinguish the can from the ice-cream freezer, is a point not necessary or proper now to be determined. The only point I now decide is, that in claiming the employment of a strengthening wire within the bead, for the purpose described in his patent, the patentee was anticipated by the ice-cream freezer, and that the claim is void for want of novelty."

STRONG *v.* NOBLE, 6 BLATCH. 477.

S. D. OF N. Y., 1869. BLATCHFORD, J.

E. F. Woodbury's patent of Dec. 18, 1866, for an improvement in whips, which consisted in covering the handle with a knit fabric. The claims were for (1) a whip having the handle so covered; and (2) covering the handle or other portion of a whip with a tubular knit fabric. Directions were given for drawing on and fastening the knit fabric. But the process was a very simple one. This improvement, though manifestly a case of double use, was held to be patentable by the court, as follows: —

"Although a tubular knit fabric was old, and although a whip was old, and although the idea of covering a whip and a whip-handle with something was old, it by no means follows that the application, in the manner shown in the specification, of such a knit fabric to the covering of a whip, so as to produce a whip or a whip-handle covered with such a fabric, . . . is merely applying the knit fabric to a new use, in the sense in which, in the law of patents, the mere application of an old article to a new use, is held not to be the subject of a patent."[1]

TUCKER *v.* SPAULDING, 13 WALL. 453 (1871).

The plaintiff's patent claimed the forming of recesses or sockets in saws or saw-plates for detachable or removable teeth on circular lines, and in combination with these recesses, teeth having their base or bottom parts formed on circular lines. At the trial in the Circuit Court the defendant offered in evi-

[1] The rest of the opinion is quoted *ante*, page 296.

dence a prior patent to one Newton, having "cutters of the same general shape and form, including circular base, as the saw-teeth of the other patent, attachable to a circular disk, and removable as in the other, but attached by screws or nuts; the claim being "for cutting tongues and grooves, mortices," &c. The defendant also offered to prove that the processes of the two patents were substantially similar. The Circuit Court having rejected this evidence, the defendant appealed to the Supreme Court, which granted a new trial; Miller, J., who delivered the opinion, remarking as follows: —

". . . The court, in rejecting the patent of Newton, seems to have been mainly governed by the use which was claimed for it, and also that no mention is made of its adaptability as a saw. But if what it actually did is in its nature the same as sawing, and its structure and action suggested to the mind of an ordinarily skilful mechanic this double use, to which it could be adapted without material change, then such adaptation to the new use is *not* a new invention, and is not patentable."

THE NATIONAL FILTERING OIL CO. *v.* THE ARCTIC OIL CO.,
8 Blatch. 416.

S. D. of N. Y., 1871. Blatchford, J.

The patent claimed "the use of bone-black [charred bones finely ground] for purifying petroleum or coal oils by filtration." The description of the process was in very general terms as follows: —

"The filter is made of wood and iron, of any suitable form or height. The filter is filled up with the bone-black, as high as may be necessary according to the quality of the oil. The oil is run in on top of the filtering material, and allowed to filter through the perforated bottom of the filter, where it is collected. The operation is continued by feeding the oil into the top of the filter as fast as it runs through the filtering material, until the filtered oil shall begin to assume a dark color, when the operation is suspended, and the filter replenished by fresh material."

Blatchford, J.: —

"I do not think the various publications adduced by the defendants anticipate the invention on the point of novelty. It is true that they state that animal charcoal, prepared from the bones of animals, will

render filthy water inodorous; that rancid oils are deprived of their smell and taste by repeated filtration through a stratum of such charcoal; that bone-black will render colorless, water charged with almost any vegetable or animal solution; that bone-black is used as a decoloring agent in various chemical purposes; and that the yellowish tint of oil of olives may be removed by mixing with it animal charcoal, and the oleine be obtained colorless by subsequent filtration. But notwithstanding all this, it was impossible to tell without experiment whether coal-oil or petroleum could be filtered through bone-black at all, much less so as to produce a useful result."

SAWYER *v.* BIXBY, 9 BLATCH. 361.

S. D. OF N. Y., 1872. WOODRUFF, J.

The alleged improvement consisted in perforating one end of a box, intended to hold "bluing," or other powders, and covering the perforations with wax, wafers, paper, or other substance, properly secured, and removable when the contents of the box are to be used.

Woodruff, J.:—

" . . . Pepper-boxes, sand-boxes," &c., " either of which are [*sic*] exactly adapted to the distribution of powder of any kind, are not new, and are not claimed to be new. . . . The closing of packages of various forms, and of bottles, by wax or wafer," &c., " is no more new than the other; and when these, or either of them, are applied to the openings in the plaintiff's boxes, they produce no new result. They close the openings, and that is all; they are old means, and produce their old and obvious well-known result. In combination there is no other effect; each performs the same office in the same manner as it does when employed for any other purpose, and precisely as it must, whatever be the form of the package, or the particular use to which the package is applied. The employment of these instrumentalities in putting up packages for transportation is therefore the exercise of judgment in selecting, not of invention, or devising or combining. At most, it consists in applying old devices to a new use, which, when it involves no new means, and produces no new effect, is not patentable, notwithstanding it may be useful to combine the two results by uniting the two instrumentalities."

It was also proved that the plaintiff's box was not new even for the object to which he applied it.

MOWRY *v.* WHITNEY, 14 WALL. 620 (1871).

Whitney's patent (dated April 25, 1848), for an improvement in the process of making cast-iron railroad wheels, thus described in the specification: —

"My improvement consists in taking railroad wheels from the moulds in which they are ordinarily cast, as soon after being cast as they are sufficiently cool to be strong enough to move with safety, or before they have become so much cooled as to produce any considerable inherent strain between the thick and thin parts, and putting them, in this state, into a furnace or chamber that has been previously heated to a temperature as high as that of the wheels when taken from the moulds. As soon as they are deposited in this furnace or chamber, the opening through which they have been passed is closed, and the temperature of the furnace or chamber and its contents gradually raised to a point a little below that at which fusion commences, when all the avenues to and from the interior are closed, and the whole mass left to cool no faster than the heat it contains permeates through, and radiates from, the exterior surface of the materials of which it is composed.

"By this process, all parts of each wheel are raised to the same temperature, and the heat they contain can only pass off through the medium of the confined atmosphere that intervenes between them and the walls of the furnace or chamber; consequently, the thinnest and thickest parts cool simultaneously together, which relieves them from all inherent strain whatever when cold."

The patentee stated that he used anthracite coal to heat the furnace, but he provided for the use of other kinds of fuel. He declared that, however the heat is produced, the furnace must be so constructed that the operator can control the amount of heat admitted into it, and he disclaimed the annealing of castings in the ordinary way, or the invention of any particular form or kind of furnace in which to perform the process.

It will thus be seen that the object of the plaintiff's invention was to cause the thin and the thick parts of the wheel to contract equally, and so to avoid the inherent strain between the periphery or tread and the inner parts of the wheel, caused by unequal contraction. Several earlier processes to accomplish this object had been patented, but none of them had been entirely successful; and the difficulty was completely overcome only by the plaintiff's invention, which, therefore, was of great value.

The court: —

"Annealing some kinds of castings was known and practised before 1847, . . . and various modes of annealing plain castings had been described by scientific writers both in this country and abroad before that time. But there is no evidence that we have been able to discover that cast-iron car-wheels had ever been subjected to an *annealing* process, in connection with slow cooling, before the process was discovered or invented by Whitney. In all the experiments made for annealing other castings the object sought was different, and in them all, as well as in the process described in the publications given in evidence,[1] the effect upon the annealed metal or glass was not to leave them in the condition in which it was sought to bring car-wheels, with the crystallization or chill of the periphery unimpaired, and the plate or thin part unaffected by strain. Cast-iron railroad wheels are castings of a peculiar kind. The methods of slow cooling, or of annealing and slow cooling, which were applied to other castings before 1847, were not adapted to their peculiarities, or to what they needed. They are not homogeneous throughout. They are of different thickness in their several parts, and hardened at the tread, while the plate and hub are not crystallized, but are soft and tough.

"These different qualities of the different parts it is necessary to preserve, and what was needed when Whitney's invention was made was to preserve them, and at the same time relieve against any strain, caused by unequal cooling, which might impair the strength of the wheel."

ROBERTS *v.* DICKEY, 4 Fish. 532.

W. D. of Penn., 1871. Strong and McKennan, JJ.

Patent of E. A. L. Roberts, dated Nov. 20, 1866.

The invention was of a process for increasing the productiveness of oil-wells. Oil lies in crevices and seams of the rock,[2] and the patentee's object was to open new crevices and to clear out those old ones from which oil had flowed into the well, until they became clogged. This he accomplished as follows: A flask of powder is let down to the bottom of the well, or to that portion of it which passes through the oil-bearing rock; the flask being a

[1] The evidence as to anticipation is not reported.

[2] Apparently the patentee discovered this fact. *Vide* opinion of the court, *post*, page 330.

little less in diameter than the bore of the well. The well is then flooded (if not already full of water), so that the effect of the explosion shall be confined to the vicinity of the flask by the weight of the column of water upon it; this being done, the powder in the flask is ignited by fulminating powder, electricity, or other means used to explode shells, &c., under water; and the explosion opens new avenues and clears old ones for the passage of oil into the well. The patentee claimed

"the above-described method of increasing the productiveness of oil-wells, by causing an explosion of gunpowder, or its equivalent, substantially as above described."

Strong, J.: —

". . . Now that such an invention, if it was novel, was a proper subject for a patent, hardly admits of question. It was a new and useful art. It was a process combining instrumentalities before known, but not employed together, to accomplish a new and useful result. . . . There are many cases in which the materiality of an invention, whether it be a machine or a process, can be judged of only by its effect on the result, and this effect is tested by the actual improvement in the process of producing an article, or in the article itself introduced by the alleged invention." (The learned judge then refers to Curtis, § 9, and Webster, p. 30.)

". . . It was insisted at the argument that the claim of the patentee is for that which is known and denominated as a double use, and it was urged that if Roberts was the first to use torpedoes in oil-wells with success, it was only obtaining a different fluid from what had been obtained before by the same means. This argument proceeds under a misapprehension of the subject of the patent. It would be of weight were the invention claimed only the application of an old and known process to a new use. But that is not what was patented. It has already been seen that the invention claimed is not the employment of explosive materials as a mechanical force, nor is it enclosing such materials in flasks of specified forms, or any particular mode of merely producing an explosion. Nor is it simply causing an explosion in a well, or under water. Nor is it a result, — obtaining oil. It is doing these things under peculiar and novel arrangements. It is a process of which some or all [*sic*] these things are a part — instruments or agencies in the process. Until, then, it is shown that the process, as described in the specification, was known as a process before this patent was issued, and that it had been applied in the same way to some use cognate to that to which this patentee applied it, the argument of the defendant,

that the claim is only for a new use of an old thing, or, in other words, for a double use, must fail. It is an incorrect view of the patent to consider it as an attempt to secure the exclusive use of a well-known mechanical force operating in the usual manner, and applied by familiar mechanical devices, for a purpose existing in the mind of the operator, in the same way in which it had been applied for other purposes, by other operators.

"It has been further urged that all Roberts discovered was that the seams or rifts in oil-bearing rock would, if opened by a blast, yield oil, and that this was merely a discovery of a law of nature, a geological truth, and not the invention of a new art or manufacture. If this were all, doubtless it would not have been patentable. But it was not all. He devised a mode of turning to practical account this geological truth; and if the means thus devised were novel, if the process was the product of invention and was useful, it was a proper subject for a patent."

In an earlier part of the opinion we find the following remarks upon the same subject:—

"Construing the claim in connection with the specification, the method claimed appears to be definitely and distinctively set out. Plainly, it is only one of many methods that might be adopted, having its essentials distinguishing it from others, and constituting its individuality. The patent is therefore not obnoxious to the objection successfully made against the eighth claim of the Morse patent in O'Reilly *v.* Morse, 15 How. 62. . . . If this were a claim for any mode, or all modes, of increasing the productiveness of oil-wells, or any mode, or all modes, of blasting, or for any or all modes of causing explosions in oil-wells, there would be some resemblance to the eighth claim of Morse's patent. But the explosion of the cartridge and the flask in the well are only parts of the patentee's process or practical method of increasing the production of the well. Every other process, though securing the same results, is left open for the appropriation of other inventors."

On the point of anticipation the court remarked as follows:—

"He [the defendant] has given in evidence a description of the employment of a percussion blast for sinking a shaft in the Mansfelt copper mine, in Saxony, published by Dr. Karsten, at Berlin, in 1834, in the 'Archiv für Mineralogie, Geognosie, Bergbau und Hüttenkunde.' The description of that operation, so far as it is necessary to state it, is substantially this: A miner's shaft had been sunk to the depth of over a hundred feet; it then partially filled with water, so that the work of further excavation was impeded. In order to draw off this

water, a bore-hole, three inches in diameter, was pierced from the bottom of the shaft, with a view to opening a connection with an existing underground gallery.

"The bore-hole, however, in consequence of a mistake in calculation, did not intersect the gallery, but passed about twenty inches from its side. Attempts were then made to blast the rock from the inside of the gallery so as to connect it with the bore-hole; but the attempts were only partially successful. The rock was fractured, and so much water escaped from the bore into the gallery as to compel the retreat of the workmen. An elongated cartridge, containing two and a half pounds of powder, was then constructed, with a diameter a little less than that of the bore. It was made water-tight, and fitted with percussion-caps on its upper end, protected against displacement, yet so arranged as to be easily exploded. It was then lowered by means of a cord to its place opposite the gallery, about one hundred and fifty feet below the surface. A ram or punch of the exact diameter of the bore-tube (three inches), attached to the end of a bore-rod in length about twenty-five fathoms, and weighing about nine hundred pounds, was then let down to within a quarter of a fathom of the cartridge, so that by its fall through that distance the percussion-caps might be exploded, causing a blast. At the time there were thirteen fathoms of water in the bore. When the bore-rod and ram were let fall, the cartridge was exploded, and the fractured side of the bore was successfully blown out into the gallery.

"This operation, undoubtedly, had some points of resemblance to the Roberts process. It was a mode of blasting under water in a deep bore of small diameter, and some of its details are like those made use of by this patentee. But we have already seen that the invention now claimed is not that of any mode of blasting in wells or under water. Nor does it consist in any of the details which it has in common with the Mansfelt mine operation. Considered as processes, combinations, and arrangements of details, there are very marked and substantial differences to be observed. In the first place, the objects sought to be accomplished, and the results attained, are entirely unlike. What was attempted in the . . . Mansfelt mine was the destruction of the bore by blowing out its side, thus rendering it incapable of gathering and retaining water.

"What is sought and attained by the Roberts process is, not the destruction of the well, but an increase of its capacity to gather and hold oil from the reservoirs surrounding it. And the modes of operation are also unlike. To say nothing of the structure of the flasks, or torpedoes containing explosive material, and nothing of the modes of ignition, the tamping contemplated and used in the Roberts invention

is entirely novel. In the Mansfelt mine operation the tamping made use of was an iron rod and ram weighing nine hundred pounds, the ram fitting the bore-tube, and the whole weight dropped a quarter of a fathom upon the cartridge. It is true there was also water in the bore, in depth thirteen fathoms; but the water does not appear to have been relied upon for tamping. The bore was not filled as it is in the Roberts invention, and the presence of water was accidental, unavoidable, and plainly undesired. It was apparently no essential element of the process in the mind of the operator. Certainly it was not consciously employed as such, and there is nothing in the description that suggests the probability of using effciently mere water-tamping for blasts in deep bores, much less anything that can serve as 'a direction for doing or practising the thing,' which the Roberts process does accomplish through the agency of filling the wells with water. It is, in our judgment, one of the distinctive and most valuable features of the Roberts invention that it reveals and makes use of the sufficiency of water-tamping alone for deep underground blasting or vertical bores of small diameter, and that it has applied this discovery, not to the destruction, but to the enlargement, of the capacity of wells designed for the collection of subterranean fluids.

"The specification of the patent states it as an essential element in the process, and claims it particularly. There is nothing in the Berlin publication that revealed it. To an inventive mind that publication may have been suggestive, but it often happens that most ingenious and useful inventions are the development of ideas suggested in some way to the mind of the inventor. They are not the less novel on that account.

"There are other elemental differences between the Boltze operations and the method of this patentee, among which are the arrangements of the latter for locating and suspending the torpedo at the proper position in the bore, so that it may be exploded opposite the oil-bearing rock, — neither above nor below. These are important requisites, inasmuch as the bore of oil-wells is often sunk through the strata of such rock, at some distance below. There was no such arrangement, nor any equivalent therefor, in the operation at the Mansfelt mine. The explosion was necessarily made at the bottom of the bore, and there were no instrumentalities for suspending the cartridge after the tamping-rod and ram were introduced; for the ram, being three inches in diameter, must have filled the bore-tube, and interfered with the cord by which the cartridge was lowered.

"It is, however, unnecessary to dwell upon these differences. It is enough that the employment for tamping of a superincumbent column of water filling the bore, of sufficient gravity to give a lateral direction

to the explosive force of the torpedo, and the use of such tamping alone, distinguishes the Roberts method or process radically from the operations described in the *Archiv* by Dr. Karsten."

Other less important prior inventions and abandoned experiments are discussed in the opinion at some length.

There was a later suit on this patent, namely,

ROBERTS *v.* SCHREIBER, 2 FED. REP. 855.

W. D. OF PENN., 1880. STRONG, J.

The patent (reissued for the second time, Jan. 6, 1875, and numbered 6258) was again sustained.

The claim of this reissue is not reported, but the court said that it was "almost identical" with that of the original patent. The devices here relied upon by the defence, and not presented in the earlier case, were as follows: 1. That of George W. Beardslee. (We quote from the opinion.)

"In 1844, at Rochester, New York, he excavated an ordinary well six feet in diameter, and twelve to fifteen feet down to limestone rock of a peculiar formation, and then from two to five feet into the rock. The strata were thick, — two or three feet, — and without fissures. Finding it difficult to blow out the rock by ordinary blasting, he drilled a two-inch hole in the centre of the excavation to the depth of four or five feet, without striking the water he anticipated. He then put a charge of powder in a tin case into the hole, and fired it by a fuse. When fired, the water had risen over the hole, as he says, three or four feet. The result of the explosion was, he thinks, to reach a substratum of water, for which he was seeking. Before the blast, he could bail out the well with a bucket, and afterward he could not. It would, we think, be a very unwarranted conclusion to draw from Beardslee's evidence that his experiment was an anticipation of Roberts's process. The well was in no sense an artesian well. The cartridge was thirteen or fourteen inches long, and it was of such a diameter as to fill the hole during its length. It was not arranged in a position having particular reference to the place where the effect of an explosion was desired. It rested on the bottom of the hole, without being suspended. Obviously it was a case of ordinary blasting. The proportion to which the hole was filled with powder — about one-third — is the proportion required and ordinarily adopted in common blasting (1 Knight's Mechanical Dictionary, 295). Plainly the purpose was to blow out the rock above the cartridge into the well. We fail to see the identity of

such a process with exploding a torpedo many hundred feet below the surface of the ground, and below the top of the rock through which an artesian well has been sunk, and exploding it at the exact point in the well where the effect of such an explosion is desired with a water-tamping sufficient to confine the effect to the vicinity of its location. But this is not all of Beardslee's testimony. It does not appear that he repeated his experiment for years. In May, 1865, after Roberts had applied for a patent, he went to the oil region, having meanwhile made experiments and manufactured apparatus to determine the best method of firing, and then experimented in firing torpedoes in oil-wells. . . . His trials were substantial failures. Evidently he did not regard them as anything more than experiments, and unsuccessful ones," &c.

2. "Mr. Thomas, in 1858, made an application of a blast in a bore-hole sunk in the bottom of an ordinary well. The well was sunk about eighty feet through clay, the inside diameter being six feet and four inches. When the rock was reached, some water was found. The excavation was then continued some fifteen or sixteen feet through solid rock, the water somewhat increasing. A bore-hole about four inches in diameter was then sunk from the centre of the bottom thirty-seven feet deep. The water increased during this process. A cartridge, of powder was then placed in the bottom of the bore-hole and exploded by a fuse leading to a cartridge through a gas-pipe. The cartridge was an india-rubber tube made to fit the hole, and it contained about twelve feet of powder. The water filled the hole above the cartridge, and a foot or two was in the bottom of the well. There was no other tamping. The result of the blast seemed to be some increase in the water. A second blast was then made, after the hole had been extended five or six feet deeper; but there was still an insufficiency of water. In regard to this experiment, it is to be observed that it had the characteristics of ordinary blasting. The blast was at the bottom of the hole. The hole was filled by the cartridge twelve feet,—about one-third of its depth,—the proportion to common blasting. There was an open space above of about thirty-six square feet. It might have been expected that the rock between the blast and that open space would have been broken and lifted, if not blown out. A much greater quantity of rock has been moved in some cases. The second blast below seems to indicate such an intention.

"However this may have been, Thomas's was a single experiment. He never repeated it. . . . It seems never to have occurred to him, or to any person who saw it, that it was a process that was useful, or that could be applied to artesian wells hundreds of feet deep, — some of them fifteen hundred or more, — of uniform bore from the surface of the

ground. Though it was tried in public and was somewhat remarkable in its character, it never suggested to Mr. Thomas or to any one that it could be applied to increase the productiveness of oil-wells, though some successful process of causing explosions at particular points in such wells was very much needed and very much considered. It may, we think, very properly be denominated an abandoned experiment, never perfected so as to reveal the process Roberts afterward discovered."

Other less important devices are discussed in the opinion, but none of them was successful; whereas by the process of Roberts the yield of oil was increased at least fifty per cent. "The cause that works such results," said Judge Strong, "cannot be the same as that exhibited in the abandoned experiments."

Another patent (No. 47,458, dated April 25, 1865), for a method of exploding gunpowder in artesian wells, was also in suit, and its novelty was contested; but the prior devices set up are not of sufficient importance to require description here.

THE UNION PAPER-COLLAR CO. *v.* VAN DEUSEN, 10 BLATCH. 109.

S. D. OF N. Y., 1872. BLATCHFORD, J.

There were many patents in suit. One of them claimed "as a new article of manufacture" an embossed paper collar.

The embossing consisted in figures formed on the collar by elevations and depressions in its surface, so as to make it an exact imitation of a linen collar. A method of producing this result was described, but the patentee did not confine himself to it.

Another patent claimed as *a new article of manufacture* a paper collar "ornamented by printing or otherwise marking on the surface plain or colored devices." There were no directions as to how the printing was to be done; and it was proved that printing had been done before on a smooth, white enamelled surface.

Both patents were adjudged invalid on the ground that there was no invention in producing upon an old fabric an effect which had been produced before upon similar fabrics, there being noth-

ing new in the appliances by which the effect was produced. Blatchford, J.:—

"If experiments were necessary before an embossed or a printed collar, of the fabric and surface indicated, could be produced, resulting in overcoming difficulties which were met with, the invention really consisted in the means or process of producing the embossed or printed collar; but the specifications and the collars produced alike fail to indicate any novelty in any such means or process, or any difficulties which can be overcome by following specific methods of operation.

"Calling the thing produced a new article of manufacture confers upon it no quality of patentable novelty, when there is no such novelty in the process or instrument for producing the embossed or printed collar, and when the substance of the whole invention claimed is merely embossing or printing on a surface imitating starched linen."

Another patent was for folding a turn-over collar of paper, or of paper and cloth, so that the line of folding should be regular, and space for a necktie should be left between the folded parts. These objects were accomplished either by impressing the line of folding by means of a die or pointed instrument, or by turning the collar over the edge, running in a curved line, of a pattern or block. But it was shown that long before this alleged invention shapers of steel had been used to impress the lines of paper envelopes before they were folded, and of the tops and bottoms of paper and cardboard boxes; and, again, that collars of paper or of cloth had been folded over the curved edge of a block; so that this patent also fell through.

A third patent had two claims, — one for a wristband or cuff of paper, the other for making such cuff reversible. The cuff was new or peculiar only in the material — the paper — of which it was made; and the court, having decided that the patentee was not the inventor of that material, held, of course, that this claim for the cuff was invalid. The other claim was supported, the form of the cuff being new and effectual. The only description of it in the opinion is as follows: —

"It has six button-holes, three on each end, the middle and outer ones alone being necessarily in use at any one time, and the inner ones being capable of being left to be first used when the wristband or cuff is reversed. There is something new, useful, and patentable in such a construction."

This decision was affirmed by the Supreme Court in the case of

COLLAR CO. *v.* VAN DEUSEN, 23 WALL. 530 (1874).

In this case but two patents were relied on: that for the fabric; and the Gray patent, for turning and folding the collars. Upon the first, the court, through Mr. Justice Clifford, remarked as follows: —

"Improvements in the manufacture of paper have often been made, and it may be that the discovery at that period of the constituents for making such paper, or of the process by which paper possessing the described properties could be produced, would have been the proper subject of a patent. Sufficient appears to show that the patentee learned from his experiments that he wanted paper of the qualities described in the reissued patent, and the evidence proves that he said so to the paper manufacturer; but it is clear that he did not communicate any information to the manufacturer respecting the process by which such paper could be produced, nor did he give the manufacturer any directions upon the subject. Information of the kind he could not communicate, for the best possible reason, which is, that he was utterly destitute of any knowledge as to the constituents of such paper or the process by which it could be manufactured. Such paper was eventually produced by the manufacturer to whom the patentee applied to make the attempt, after many experiments as to the character of the materials suited to the end, and as to the mode of operation best adapted to effect the desired result, without any assistance whatever from the patentee.

"Good paper collars may unquestionably be manufactured from that product, but it is nevertheless true that the patentee is not entitled to a patent for the collars as a new manufacture, for several reasons: 1. Because he did not invent either the product or the process by which the product is obtained. 2. Because the collars, apart from the paper of which they are made, are identical in form, structure, and arrangement with collars previously made of linen, paper of different quality, and other fabrics. 3. Because it appears that the patentee is not the original and first inventor either of the paper or of the process by which the paper is made, or of the collar which is denominated a new manufacture.

"Articles of manufacture may be new in the commercial sense when they are not new in the sense of the patent law. New articles of commerce are not patentable as new manufactures, unless it appears in the given case that the production of the new article involved the exercise

of invention or discovery beyond what was necessary to construct the apparatus for its manufacture or production. Glue Co. *v.* Upton, 6 Official Gazette, 840.

"Nothing short of invention or discovery will support a patent for a manufacture any more than for an art, machine, or composition of matter, for which proposition there is abundant authority in the decisions of this court. Hotchkiss *v.* Greenwood, 11 How. 265; Phillips *v.* Page, 24 How. 167; Jones *v.* Morehead, 1 Wall. 162; Stimpson *v.* Woodman, 10 Wall. 121.

"Suffice it to say that it is not pretended that the original patentee invented either the paper or the process; but the claim in argument is that he was the first person to conceive the idea that paper possessing the described qualities was desirable for the purpose of making such collars, and that inasmuch as he was not a paper manufacturer he had a right to employ trained skill to produce the desired product, and that he, under the circumstances, should be regarded as the actual inventor, because he made known to the manufacturer that paper of such qualities would be useful, and because he employed the manufacturer to engage in the effort to produce the desired article; but the patentee communicated no information to the manufacturer as to the constituents or ingredients to be used, or as to the mode of operation by which they were to be compounded in order to produce the desired result.

"Where a person has discovered a new and useful principle in a machine, manufacture, or composition of matter, he may employ other persons to assist in carrying out that principle; and if they, in the course of experiments arising from that employment, make discoveries ancillary to the plan and preconceived design of the employer such suggested improvements are in general to be regarded as the property of the party who discovered the original principle, and they may be embodied in his patent as part of his invention.

"Doubt upon that subject cannot be entertained; but persons employed, as much as employers, are entitled to their own independent inventions; and if the suggestions communicated constitute the whole substance of the improvement the rule is otherwise, and the patent, if granted to the employer, is invalid, because the real invention or discovery belongs to the person who made the suggestions."[1]

As to the folding patent, the evidence to show that it had been anticipated is set out at length in this opinion; but the point is so clear, that we think it unnecessary to add anything to what has already been said.

[1] Agawam Company *v.* Jordan, 7 Wall. 602.

UNION PAPER-COLLAR CO. *v.* LELAND, 1 HOLMES, 427.

D. OF MASS., 1874. LOWELL, J.

The first patent mentioned in the preceding case had been reissued [1] so as to claim the "imitative surface" of the paper collar, as well as the ornamentation upon it.

Said the court:—

"It will be seen that the present form of the patent follows the suggestion, if it be one, of the court, and does lay claim to the imitative surface itself, as used for making collars, and thus avoids, as is contended, the reasoning of that case.

"But the evidence, in the case at bar, discloses that paper, as well as linen, was embossed, in various modes and for many uses, before the date of Lockwood's patent. There is the English patent of De la Rue, taken out in 1834, for embossing paper in parallel lines; and one granted to John Evans, in 1854, for ornamenting paper with an imitation of the patterns of textile fabrics. It may be doubted whether Evans produced upon his paper the surface as well as the ornaments of textile fabrics; but there is proof that paper, made in imitation of such fabrics, including linen, was well known and in use for paper-hangings and some other purposes. Samples are produced from papers actually made before 1859 which are of this character. It is said that these imitations are not very well done; but they appear to have been accepted as good enough for the purposes for which they were used, and the patent is not for any improvement in the imitation or in the mode of producing it.

"Collars and similar articles made of paper were patented to Walter Hunt in 1854 as a new manufacture, and Lockwood was the owner of this patent when he made the improvement now in controversy. In this state of the art, collars and cuffs made of paper being known, and paper embossed in various modes, some of which were imitations of the surface of textile fabrics, being known, we are of opinion that there was in 1859 no patentable novelty in the application of paper embossed in imitation of linen to the making of collars and cuffs. Hotchkiss *v.* Greenwood, 11 How. 248."

[1] The reissue was dated Jan. 24, 1873. The number is not stated.

AMERICAN SADDLE CO. *v.* HOGG, 1 HOLMES, 133.

D. OF MASS., 1872. SHEPLEY, J.

Patent for an improved harness-saddle pad.

The improvement consisted in making an impervious bearing-surface of vulcanized rubber or of gutta-percha. It had the advantages (1) of protecting the stuffing of the pad from animal exudations; (2) of preventing galls on the horse's back, by reason of the smooth rubber surface; and (3) of possessing a curative property for galled backs, owing to the sulphur used in vulcanizing the rubber. This was held to be a patentable invention.

A previous patent for a rubber horse-collar was admitted in evidence to show the state of the art; but the defendants, having neglected to set it up in their answer, were unable to take advantage of it as anticipating the invention of the assignor to the complainant; otherwise, the court intimated, the complainant's patent would have been held invalid, the rubber in the horse-collar being used in the same way and for the same purposes as that in the saddle-pad.

DENNIS *v.* CROSS, 3 BISS. 389.

N. D. OF ILLINOIS, 1872. BLODGETT, J.

Patent of Charles Waters, dated July 17, 1855, for a "spring-catch and lips," as applied to securing the glass globe of a lantern to the bottom thereof, held invalid, inasmuch as such catches had previously been used for securing the oil-cup to the bottom of the lantern.

GALLAHUE *v.* BUTTERFIELD, 10 BLATCH. 232.

S. D. OF N. Y., 1872. WOODRUFF, J.

Patent reissued to the plaintiff, July 6, 1869.

One claim ran as follows: —

"The combination in a pegging-machine of a gauge for the edge of the sole to rest against, and an awl-carrier driven by a spring, substantially as herein described." [1]

[1] The gauge is not described in the report otherwise than in the claim for it as a separate device, which ran as follows: "The use in a pegging-

In regard to this combination, the court said:—

"It was not claimed by the complainant's counsel on the hearing, that if this claim be regarded simply as a claim to 'combination,' as such, it was valid, and for this reason: a gauge operated in the same manner, and produced the same effect, by whatever means the awl-carrier was driven; and the awl-carrier driven by a spring operated in the same manner, and produced the same effect, by whatever means the boot or shoe was brought to the proper position for receiving the peg. In such case (mere 'combination' being the subject of the patent), the doctrine proceeds upon the ground that the parts are old, and that nothing new results from their contiguous or contemporaneous action which is due thereto. But where one or more of the parts are new, and the combination is for that reason made to produce a new result, in the greater rapidity and economy with which the shoe can be pegged, — as where the use of the new device of driving the awl-carrier by the spring made to operate automatically cannot be usefully employed without the gauge, — then there is something more than mere aggregation, in the sense above stated. Then there is a new result, due to the employment of the awl-carrier driven by a spring, and operating automatically in connection with a gauge, without which it could not be operated to produce the advantageous results contemplated, and in fact attained, by the use of both. All machines are, in a certain sense, combinations; but it is not true of machines, as such, that because every one of its members performs in it the identical office which it would perform howsoever used, the conjoint action in their new combination may not produce a result new and useful, and never before attained. In this view, I deem this claim valid."

A question of double use also arose in this case on another claim of the same patent, which ran thus: —

"Making the gauge, against which the edge of the sole bears, adjustable, for the purpose of enabling the shoe to be so adjusted as to have two or more rows of pegs inserted therein."

In regard to this the court said: —

"The Briggs hand-machine [a prior machine] had, as already stated, an adjustable gauge; but it was only adapted to one change. This enabled the workmen to insert two rows of pegs only; and it was

machine of a gauge arranged in relation to the part that supports the boot or shoe, to form a bearing for the edge of the sole, and thus insure the insertion of the pegs at a uniform distance from the edge of the sole, without the use of patterns, substantially as described."

not adjusted in the same manner as was that of Gallahue. The former was attached to the machine by a screw, which, being loosened, permitted it to be turned so as to present to the edge of the shoe, first its longer and then its shorter end. The gauge of Gallahue was attached by a screw, which, being loosened, permitted the gauge (in which was a slot through which the screw was inserted) to be drawn forward or to be pushed back so as to regulate the insertion of pegs at any desired distance nearer or more remote from the edge of the sole. But this construction of a gauge was not novel; and the circumstance that it was here applied to a pegging-machine, and guided the shoe so that any number of rows of pegs could be inserted, does not make it patentable, except when used with other devices so as to constitute either a new machine or a new and patentable combination. In such machine or combination it may be a part of the complainant's invention; but the making of the gauge adjustable not being new, the mere application of it to a new use is not separately and independently patentable. Others of the claims of the patent may embrace all to which the patentee is entitled in respect to the use of the gauge; but the claim to the mere making of the gauge adjustable, as expressed in this claim, I think, cannot be separately sustained."

Of a prior machine, made by one Whittemore, the court said: —

"it was an abandoned experiment, within the rule on that subject, not brought into effective operation, cast aside and taken apart, and, without any intention to reconstruct it, portions of its machinery were appropriated to other uses, and the remaining parts were wholly useless as a machine for any purpose within the purview of the invention of Gallahue."

GROSJEAN *v.* THE PECK, STOW, & WILCOX CO., 11 BLATCH. 54.

S. D. OF N. Y., 1873. BLATCHFORD, J.

Grosjean's reissued patent of July 16, 1867, for "an improvement in spoons and forks."

The invention consisted in giving such a form to the handles of spoons, &c., formed of *sheet-metal*, that they should be rigid and strong, and also of good shape, and thus resemble the handles in silver and plated ware. This was done by imparting

"one or more of the following characteristic peculiarities, viz.: *First.* A central corrugation or hollow ridge, extending along the central part

of the narrow portion of the handle, and vanishing or ending in the central part of the broad portion, or palm, of the handle, by tapering sidewise and flatwise, in contradistinction to spreading sidewise to the rim of the said palm.

"*Second.* A central corrugation or hollow ridge, extending along the central part of the narrow portion of the handle, and vanishing or ending in the central part of the bowl (or the substitute thereof), by tapering sidewise and flatwise, in contradistinction to spreading sidewise to the rim of the said bowl or its substitute.

"*Third.* Two lateral corrugations or hollow beads, extending into the palm of the handle, and along the narrow part of the handle, with a space between them which may be occupied by one or the other of the central hollow ridges above described, or by a central hollow ridge having the terminal peculiarities of both those above described."

The question arose whether this was a patentable improvement upon former spoons, and, more especially, upon a candle-snuffer which was set up by the defence.

The court said: —

"The change and its consequences, from the former sheet-metal spoon, as well as from the snuffers, were considerable and important. A spoon of sheet-metal, with a corrugation, was found in existence; but the species of corrugation was not such as to develop in the spoon the properties and results desired by the plaintiff, as expressed by him in his patent, — that is, that the handle should have not only the requisite stiffness for practical use, but should be, at the same time, of good shape and finish, so as to resemble, in rigidity and appearance, the solid thick handle of a silver or plated spoon, and be capable of being formed of one piece with the bowl of the spoon by swedging in dies.

"These properties and results were capable of being derived from applying to the handle of the spoon the species of corrugation suggested by the snuffers. But this species of corrugation in the snuffers was not applied to what can properly be called a handle in the snuffers, in the sense in which the part of a spoon which is not the bowl of the spoon is called the handle of the spoon. In the snuffers, the part outside of the line of junction crossed by the corrugation is of equal width with the part inside of such line of junction. In the spoon and fork, the part outside of such line of junction is very much narrower than the part inside of such line of junction. The wide-spread metal outside, in the snuffers, of such line of junction had to be narrowed in width very considerably, not only absolutely, but so as to be very narrow compared with the width of metal inside of such line of junction; and it is very

difficult to say that it did not require experiment and invention to determine, by a practical test, whether it was possible to apply usefully, in the narrow part of the handle of the spoon, the species of corrugation found in the snuffers. It is true that the object of the use of this species of corrugation in the snuffers was to resist a strain, and to counteract a tendency to bend or break, and to strengthen weakness; and that the same object exists in the use in the spoon, of the same species of corrugation. But the object of every corrugation of thin metal, applied as in the snuffers and the spoon, is to resist strains, and to counteract tendencies to bend or break, and to strengthen weakness. . . .

"I cannot resist the conclusion that the new application in the spoon, of the method of corrugation found in the snuffers, is not merely a double use, and that it involves something beyond the mere skill of a constructor, in adapting such method to a new occasion, . . . and not a mere analogous occasion or purpose. . . . There is a new method of operation, as well as a new effect developed in the spoon as compared with the snuffers, in applying to the spoon the method of corrugation found therein. The surface of the bottom of the bowl in the snuffers is flat with the part outside of the bowl, and the corrugation runs in its whole length along a flat plane. But in the spoon and fork the corrugation runs through a curving handle on one side of the line of junction, and into a curving part on the other side of such line of junction. The relations to each other of the two parts through which the corrugation extends in the snuffers is thus different from the relations to each other of the two parts through which the corrugation extends in the spoon and fork. A principle of bracing is developed, by the combination of the corrugation with the curvature in the handle, and the reverse curvature in the other part, of the spoon or fork, which introduces a new mode of operation in the combined action of the corrugation and the two curvatures, and produces a new effect, as compared with the mode of operation and the effect found in the snuffers, where no such curvatures exist."

Beside the above, there is in the opinion a long and minute description of the snuffers.

BOSTON ELASTIC FABRICS CO. *v.* EAST HAMPTON RUBBER-THREAD CO., 1 HOLMES, 372.

D. OF MASS., 1874. SHEPLEY, J.

The patent of Liveras Hull, dated Jan. 23, 1863, for an "improved machine for cutting caoutchouc."

The claim was as follows: —

"I claim my improved caoutchouc cutting-machine, having its several parts constructed and arranged in manner and so as to operate substantially as described, such machine not only having a single drum or cylinder to support, and a revolving knife to cut, a sheet of caoutchouc as explained, but having machinery for traversing the rotary knife, with reference to the drum, and also having machinery for moving such knife toward and away from the drum, as specified."

The gist of the improvement really made by the patentee was the new use of a prior machine, rendered possible by a slight change in that machine. The court, however, held that the patent described and claimed, not an *art*, but a *machine*, and that it was anticipated by the prior invention referred to, namely, the "Middletown" machine.

The court then described this machine and the plaintiff's invention as follows: —

"The mode of cutting on the Middletown and other machines, called sometimes bottle-machines, was to construct a bottle or a tube of rubber upon a cylindrical drum or a drum which was a *frustum* of a cone; the revolving circular knife cut a strip of rubber from this tube or bottle; the knife, as it traversed along the drum, cutting one continuous strip, which was afterward, in another machine, cut into narrower filaments or strips. But if a thin sheet of rubber, several times longer than the circumference of the drum, be wound about the drum, 'in a spiral or watch main-spring curve,' and the knife or rotary cutter be forced into the strip, so as to cut at once through all the layers of the caoutchouc, although the path cut by the rotary cutter will be a helix extending around the main drum from end to end, it will be found, on removal of the piece of caoutchouc from the drum, that such piece of caoutchouc will be cut lengthwise from end to end of it in a series of parallel strips. This Hull discovered. He invented no new machine, but he operated an old machine in a different manner, and produced a new and different result. *That he did not make a patentable invention we are not disposed to*

decide;[1] but the discovery of a new mode of operating an old machine to produce a new result does not give him a right to the monopoly of the old machine. Broadly as courts are disposed to construe patents for the sake of upholding a meritorious invention, yet when it is too clear to admit of a doubt that the patent is for a machine, the court cannot change it into a patent for an art."

THE NORTHWESTERN FIRE-EXTINGUISHER CO. *v.* THE PHILADELPHIA FIRE-EXTINGUISHER CO., 6 O. G. 34.

E. D. of Penn., 1874. McKennan, J.

Carlier & Vignon's patent (No. 88,844), reissued to Dawson Miles, July 16, 1872, numbered 4994.

The date of the invention was June, 1862.

"Its object," said the court (p. 39), "is to render available for the extinguishment of fires carbonic-acid gas and water in mechanical union with each other, and propelled by the elasticity of the gas. This is accomplished by means of a mechanical structure, consisting of a strong metallic vessel containing a solution of an alkali in water; a plug or lid fitting into an opening in the top of this vessel, with which is combined a tube extending into the alkaline solution, and containing an acid suitable for evolving carbonic-acid gas, and provided with a smaller tube or rod, extending above the top and down to the bottom of the acid-chamber, by lowering which an orifice in the bottom of the acid-chamber may be opened, and the acid and alkali be brought immediately into contact; a stop-cock to control the discharge of the contents of the strong vessel; a hose and nozzle to give direction to them; and handles or loops to facilitate the transportation of the apparatus."

It was proved by the defence that the plaintiff's machine was not the first for this purpose; a machine made by one Graham, to which we shall recur, having anticipated it. The plaintiff, therefore, was restricted to the peculiar contrivance, different from Graham's, by which the gas and water were mixed in and discharged from his extinguisher. But it was proved that substantially the same device was used in soda-water fountains. In one case, the gas and water were discharged from a faucet into a hose for putting out fires, and in the other case they were dis-

[1] The italics are ours. *Vide ante*, page 308.

charged from the faucet into a tumbler, for a beverage. These uses, it would seem, are not analogous;[1] but the court held otherwise, remarking: —

"It must be observed that there is a marked analogy in the means employed and the result produced by both machines up to the point of divergent application. The function of both is the prompt generation of carbonic-acid gas and the impregnation of water with it, and the same projectile force is employed to expel the acidulous water from the vessel containing it. In the one case, a stream of this water is directed into a vessel where it may be used as a beverage, and in the other upon a mass of ignited matter. This difference, then, in the ultimate application of the same agencies, marks the line of distinction between them.

"Now, the art of extinguishing fires by means of carbonic-acid gas and water intermingled was not new, for it had previously been practised by Graham; and the real question, therefore, is, Does the application of old mechanical devices, without material change, to a use in which they were not employed before, but which was known, and had been practised, constitute a patentable invention? A decisive answer to this question is furnished by Mr. Justice Story in Bean *v.* Smallwood (2 Story, 408), where he thus states the law: 'Now, I take it to be clear that a machine or apparatus or other mechanical contrivance, in order to give the party a claim to a patent therefor, must in itself be substantially new. If it is old and well known, and applied only to a new purpose, that does not make it patentable.'"

Judge McKennan then quoted from Curtis on Patents (3d ed. § 56), and he concluded as follows: —

"It is apparent, therefore, that where an effect or result has been before produced, the mechanical agencies by which it is reproduced, if they are not in themselves new, are not the subject of a patent. This rule is decisively applicable to the present case, both as to the result achieved and the means employed to effectuate it."

As to Graham's prior machine for putting out fires, the defence was that it was an abandoned experiment. The facts in regard to it were as follows: It was invented by Dr. Graham in 1837. He applied for a patent; but his application was rejected, Nov. 25, 1837, on the false ground that his invention was incompatible with the employment of any mechanical auxiliaries whatever.

[1] *Vide ante*, page 303.

This decision was reaffirmed in the December following, on the 29th of which month an amended specification was filed, and the case stood thus until December, 1851, when a model, drawing, and third specification were filed, and the application was renewed, and finally rejected. During all this time the inventor was very poor. The several specifications and the drawing were in evidence in this case, and it was contended that they, of themselves, proved the priority of the invention, being a *publication* thereof. This the court held that they were not, — not being published, but only printed, and incidentally accessible in the Patent Office; but the court held that they were "valuable guides in ascertaining the date of the invention, the design of the inventor, and the principle, intended functions, and mode of operation of his mechanism," and that they must, therefore, be considered in connection with it.

The publicity and success of the invention were proved by evidence of a trial made by Dr. Graham in 1852 or 1853, "in the presence of a large number of witnesses," when a fire was "promptly arrested" by the use of his apparatus; moreover, its practicability was proved by a trial of it in court, where a stream of gas and water was thrown to a distance greater than that mentioned by Dr. Graham in his specifications.

The court, therefore, held that he had invented a successful apparatus, which the error of the Patent Office and his poverty prevented him from making and selling: —

"An experiment may be a trial, either of an incomplete mechanical structure, to ascertain what changes or additions may be necessary to make it accomplish the design of its projector, or of a completed machine, to illustrate or test its practical efficiency. Obviously, in the first case, the incompleteness of the inventor's efforts, if they were then abandoned, would have no effect upon the rights of a subsequent inventor. But if the experiment proves the capacity of the machine to effect what its inventor proposed, the law assigns to him the merit of having produced a complete invention. . . . The most that can be predicated of his inaction is that he abandoned his invention to the public; although I do not affirm this hypothesis. But if he did, it will not reduce his matured invention to the grade of a mere experiment, and open the way to the complainants to appropriate the title of first inventor."

BROWN *v.* PIPER, 91 U. S. 37 (1875).

Patent, No. 732, dated March 19, 1861.

The alleged invention consisted "in a method of preserving fish and other articles in a chamber, and cooling the latter by means of a freezing mixture, so applied that no communication shall exist between the interior of the preserving chamber and that of the vessels in which the freezing mixture is placed." After stating that the patentee does not claim to have invented "the means of artificial congelation, or to have discovered that no decay takes place in animal substances so long as they are kept a few degrees below the freezing point of water," and that the apparatus may be made in various ways and shapes, the specification describes an apparatus as follows: —

"A box of wood or other suitable material, surrounded by a packing of charcoal or other non-conducting substance, is to be provided, and the fish in small quantities laid in it on a rack. Metallic pans filled with a freezing mixture, such as salt and ice, are then to be set over them, and a cover shut over the pans. In about twenty-four hours, the freezing mixture having been changed once in twelve hours, the fish will be frozen completely through. After being frozen, the fish or meat may, if desired, be covered with a thin coating of ice; and this coating may be preserved by applying the substances named, which will exclude the air, and prevent the juices from escaping by evaporation. The fish are then *to be packed closely* in a large preserving box, which is enclosed in a still larger box, the space between the boxes being filled with charcoal or other non-conducting material to exclude the heat.

". . . I do not desire to be understood as confining myself to the specific apparatus above described, nor to the use of either or both the preliminary processes of freezing and cooling; but I have described the mode of operation, which, by experience, I have found best for preserving the most delicate varieties of fish.

". . . What I claim as new, and desire to secure by letters-patent, is preserving fish or other articles in a close chamber by means of a freezing mixture, having no contact with the atmosphere of the preserving chamber, substantially as set forth."

Swayne, J., delivered the opinion of the court, holding that the alleged invention was merely the application to a new subject of an old process, — for preserving corpses, — set forth in the defendant's answer, and thus described by the learned judge: —

"The apparatus . . . was an outer case with a close-fitting lid. The case was made double, there being a partition to within four or five inches, more or less, of the top of the outer one, leaving a space between the two of several inches, which was to be filled with ice. There was a false bottom with holes in it in the inner compartment; it rested upon ledges, which kept it four or five inches above the bottom; the intervening space was a receptacle for ice; the corpse was deposited upon a false bottom; a tray was placed over it, and under the lid. The tray was four or five inches deep, used to contain the freezing mixture, and had a flange to prevent the mixture from escaping. Proper outlets were provided for the passage of the water from the melting ice. There was no communication between the tray containing the freezing mixture and the inner compartment containing the body. Swartz, an intelligent and unimpeached witness, . . . testified that he was an undertaker, and had used the apparatus for about twenty years, sometimes with ice under the false bottom, and sometimes without it. In either case, he applied a sufficient degree of cold to prevent putrefaction before interment. He thought the bodies were sometimes frozen, but was not certain. The material point in his business was the prevention of decay for the time being, and that was always accomplished.

"Here was the application of the requisite degree of cold exactly in the manner called for in the specification of the appellee. This is hardly denied; but it is insisted that the process was never applied by the witness to the preservation of fish and meats.

"The answer is, that this was simply the application by the patentee of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent law. The thing was within the circle of what was well known before, and belonged to the public. No one could lawfully appropriate it to himself, and exclude others from using it in any usual way, for any purpose to which it may be desired to apply it. This is fatal to the patent. Ames *v.* Howard, 1 Sumn. 487; Howe *v.* Abbott, 2 Story, 194; Bean *v.* Smallwood, id. 411; Winans *v.* B. & P. R. R. Co., id. 412; Hotchkiss *et al. v.* Greenwood *et al.*, 11 How. 248."[1]

The learned judge then went on to say that the court would take judicial notice of the ordinary ice-cream freezer, although it was not set forth in the defendant's answer, and that it anticipated the plaintiff's alleged invention.

[1] *Vide ante*, page 207, where this case is discussed.

"In the former [the ice-cream freezer], as in the apparatus of the appellee, 'the freezing mixture' has 'no contact with the atmosphere' of the chamber where the work is to be done. If the freezer be full, and the preserving chamber be full, there would be room for but little air in either. If either were only partially full, the vacuum would be filled with that substance. The cold is generated by the same materials, and applied under the same circumstances. If the cream were taken out of the freezer, and fish put in, there would be, in all substantial respects, the same apparatus, process, and result. If the preserving chamber were as tight as the freezer, either might be convertibly used for the purpose of the other."

THE UNION PAPER-COLLAR CO. *v.* WHITE, 7 O. G. 698.

E. D. OF PENN., 1875. MCKENNAN, J.

W. Hunt's patent, reissued Oct. 22, 1872, No. 5109, for an invention thus stated by the court:—

"A shirt-collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the fabric thus made cohesive."

As to its patentability, the court said:—

"It is true that paper and muslin, or linen cloth, were before united, and used as a fabric for maps, &c.; but this was not analogous to the use to which Hunt adapted them, nor was it in any wise suggestive of his invention. He was the first to discover the adaptability of this material to a use not cognate to any to which it had before been applied, and, by appropriate manipulation, to give it a useful and practical form. He thus not only supplied the public with a new article of manufacture, but he demonstrated unknown susceptibilities of the material out of which it was made. This is something more than the mere application of an old thing to a new purpose. It is the production of a new device by giving a new form to an old substance, and, by suitable manipulation, making its peculiar properties available for a use to which it had not before been applied, thereby distinguishing it from all other fabrics of the class to which it belongs. This seems to me to involve an exercise of the inventive faculty, and, in view of the great practical benefits resulting from it, to invest the product with special patentable merit."

The claim ran as follows: —

"A shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper."

The defence asserting that this was a claim for an "abstract result," the court remarked as follows: —

"Certainly, it is the settled law that a mere principle or result or mode of operation is not patentable. . . . Is the claim in this patent obnoxious to this objection? In one sense it is for a result, but only in the sense in which any fabric or device is the result of the means employed to produce it. It is not for the mere result of a union of paper and muslin in a shirt-collar independent of the corporeal substance which embodies it; but it is for a thing fabricated in a given form, for a specific purpose, and out of materials so united that the combined fabric is impressed with the peculiar qualities which belong to each of its constituents. A collar made of these materials in mere juxtaposition is not within the range of the patentee's conception; but when they are incorporated so as to constitute substantially a single fabric, and are used for the purpose for which he was the first to discover their adaptability, it is an invasion of his right.

"The claim is not, then, for the mere effect resulting from a union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing of it; but it covers the use of it for making collars where its constituents are incorporated with each other so that the textile strength of the one is made available to re-enforce the fragility of the other. And such original application of it to the production of a most useful article the inventor can lawfully claim to appropriate."

IRWIN *v.* DANE, 9 O. G. 642.

N. D. of Ill., 1876. Drummond and Blodgett, JJ.

Five patents of John H. Irwin, for improvements in lamps and lanterns.

1st. No. 65,230, dated May 28, 1867.
2d. No. 73,012, dated Jan. 7, 1868.
3d. No. 89,770, dated May 4, 1869.
4th. No. 86,549, dated Feb. 2, 1869.
5th. No. 99,443, dated Feb. 5, 1870.

The first patent covered a new mode of supplying air to the burner. Above the flame of the lamp, at a proper distance to catch the heated air rising from it, was an inverted bell or funnel, from which a curved tube was carried downward to a close reservoir, surrounding the oil-pot, and communicating directly with the cone of the burner.

"It was necessary that the bell or funnel, the tube, and the reservoir into which the tube entered, should be close, and have no apertures for the escape of the air therefrom, except at the exit into the burner; the object being to create such an arrangement of the parts as that the sole supply of air should be forced through the funnel and pipe into the reservoir, and thence to the burner, as the same was needed to secure combustion."

The second patent was for an addition (in combination with the devices of the first patent), which rendered the lamp a portable, out-door lantern. It consisted in a "protector," as the patentee called it. This was an ordinary glass globe, surrounding the flame, and extending upward nearly to the mouth of the bell.

The third was for several devices (in combination with the above), thus described by the court: —

"The theory of Mr. Irwin seems to have been, and is, that the products of combustion, such as carbonic-acid gas, steam, and other matters, rise with the current of air to the top of the protector, and are there thrown off from the outside of the rising column, and pass out over the top of the protector, and between it and the bell; while the air which passes into the bell is mostly pure atmospheric air, uncontaminated by, and unmixed to any considerable extent with, the products of combustion. In order to secure the exit of these products of combustion from the top of the lantern, a sufficient space is left between the protector and the bell, which is occupied by the perforated rim, *g*; and the top of the rim is so curved or deflected in and upward as to prevent currents of external air from passing down the globe and extinguishing the flame. The globe also rested upon a perforated plate or disk, E, which formed the bottom of the globe, and which also by its perforations admitted the air freely, so that the same could become heated, and crowd, so to speak, into the bell so as to create the blast required for furnishing the air to the burner."[1]

[1] The fourth and fifth patents (for minor improvements) involve nothing of value for our purpose.

It was proved by experiment in court that both the space between the globe or protector and the bell, and the perforations at the bottom of the globe, were necessary: the first, for the escape of the products of combustion; the second, for the requisite supply of air. These devices of Irwin resulted in a brilliant, steady light; and his lantern could be swung rapidly, in a lateral or vertical direction, without extinguishing or diminishing the flame. His devices were intended for lamps burning kerosene oil.

"He claims broadly," said the court, "the invention of the bell and tube, or tubes, for the purpose of producing the results aimed at; and the important question in this case is, Does the evidence shown entitle him to this broad claim?"

Funnels and tubes were old, and so was an air-chamber at the base of the burner, through which air was supplied to the flame.

"Cassel and Cribfield had both conducted the air into an air-chamber through tubes [whence leading does not appear], and drawn the same by means of an induced blast through the burner, the globe acting as a chimney to induce the blast."

Irwin dispensed with the chimney, and obtained his draught by other means, as we have seen.

In all the other prior devices shown (they are not specifically described in the report), the bell and tube, in various forms, were used to catch the products of combustion, and either to return them to the flame or else to collect them in a condensing reservoir.

Of these prior devices the court said: —

". . . Although upon trial of this case we had various exhibitions and experiments tending to show that by very slight alterations these old smoke-consumers could be made to perform substantially the function of Irwin's device, yet it is most palpably evident that none of the inventors ever intended they should perform such functions. They never intended that their bells and pipes should be the sole source for the supply of air to support combustion, which is the leading idea in the Irwin device," &c.

So much for Irwin's first patent. As to the second, — that for the globe, — the court, remarking that globes had been used

before only to protect the flame from draughts or as a shade, decided that Irwin's globe performed an additional function: —

"It directs the rising current of air into the funnel; and by keeping the rising column of air surrounded and isolated from the external air, assists in heating it, and thereby causes it to rise more rapidly and freely into the bell, and by its pressure in the tubes produces a stronger and more steady blast. This is a new function performed by this globe, and as such, it seems to us, entitles Irwin to a patent upon the globe in combination with the bell and tubes, . . . because it not only secures a better operation of the bell and tubes, but it makes the bell and tube operative under circumstances where they would not be operative without the globe."

The third patent: —

"The same line of remark will apply to the perforated plate E, forming the bottom of the globe.

"Galleries and other devices for holding the bottom of the globes, and holding the globe in its place, were old, but this perforated plate, while allowing the entrance of an ample supply of air into the globe, at the same time breaks up the currents by the perforations, so as to prevent the rush of an air-current, which would extinguish or endanger the flame; and as an element for securing the perfect and complete operation of the Irwin device as a practical operative lantern, we think the plate E may be considered as a patentable device when used in the combination and for the purposes shown."

STEAM-GAUGE & LANTERN CO. *v.* MILLER & CO., 8 FED. REP. 314.

D. OF CONN., 1881. SHIPMAN, J.

Two of the patents, No. 8611 and No. 8598, were reissues of two original patents, numbered respectively 73,012 and 89,770, which were sustained in the preceding case. The decision in that case was followed here.

MANN *v.* BAYLISS, 10 O. G. 789.

N. D. OF OHIO, 1876. EMMONS, J.

Patent for improvement in harvesters, namely: —

"The stationary concave receiver, I, having a continuous surface, arranged as described, at the side of a harvesting machine, having an elevated side-delivery, so as to receive the cut grain from the elevating and delivery apparatus, and collect the same into gavels preparatory to their being discharged from the machine."

This device having been used before in connection with a horizontal delivery, the court held that its use with an elevated delivery, though a new, was not a patentable, use. (The case turned mainly on a question of infringement.)

KEYSTONE BRIDGE CO. *v.* PHŒNIX IRON CO., 95 U. S. p. 276 (1877).

In this case there was an *obiter dictum* by Mr. Justice Bradley, to this effect: —

Spike-heads, nail-heads, bolt-heads, &c., having been formed by *upsetting* and compressing, that is, "by placing the ends, after the bars have been rolled into proper shape and size, and the ends heated, into a die-box of the regular form, and then firmly locking them in place, and with great power pressing them up endwise, with a movable head-die, until the hot iron fills the die-box," "probably" a patent for so upsetting and compressing chords to support the trusses of a bridge, would not be valid.

RUBBER-STEP MANUFACTURING CO. *v.* METROPOLITAN RAILROAD CO., 13 O. G. 549.

D. OF MASS., 1878. SHEPLEY, J.

The Keene invention.

The court: —

"The Keene invention consists in covering the tread of a carriage-step with a vulcanized-rubber clothing, having an undulating surface, whereby projections of rubber are presented upward to receive the

pressure of the foot, and also in providing a permanent surface to the step resilient under the foot, the coating of rubber being somewhat adhesive to the foot, thereby having a tendency to prevent slipping in either dry or wet weather; and in snowy or sleety weather, when trodden upon, adhering ice or snow is broken by the yielding of the rubber projections under pressure, and loosened upon the removal of the pressure of the foot, by reason of the resiliency of the rubber, so as to be readily brushed off.

"The fact that rubber had been used as a soling to stirrups and applied to shoe-soles does not establish any anticipation of this invention. The use of iron treads, with channels running to the margin, for door-steps and stairs, or for carriage-steps, did not anticipate this invention. The metal projections became slippery, instead of adhesive to the foot by wear, and there was no resiliency, under the pressure of the foot, to effect the removal of the snow and ice.

"The rejected application for a patent of Charles Ray is not of itself a bar to the patent of Keene, there being no evidence in the case that the alleged prior invention of Ray was ever perfected or brought to actual use, and not abandoned and never revived by the original inventor. The Corn-Planter Patent, 23 Wall. 181, 210."

The court also held that Keene's invention was not anticipated by Chaffee's (described in Brown *v.* Rubber-Step Mfg. Co.,[1] 13 O. G. 369). Chaffee's invention was a flexible door-mat, having ridges of rubber for scraping dirt from the feet, and spaces to contain the dirt so scraped off. Of this invention, in the suit referred to, Judge Shepley said: —

"Three things only are necessary, and these are indispensable, to constitute the thing secured by the patent. *First*, a flexible gum mat; *second*, flexible gum ridges, to serve as scrapers; *third*, cells, or enclosed spaces, to contain the dirt."

Judge Shepley then showed that the two devices were dissimilar in purpose and in result, — the mat being intended and fitted to hold the dirt scraped from the foot, and the step having the effect of throwing off, or letting out, dirt so deposited; the ridges of the mat being flexible and yielding, to allow the foot to slip over them easily, whereas the projections in the step "are designed . . . to give a firm, frictional bearing for the foot, and to prevent any slipping or sliding over the surfaces of the elevations, and not intended 'to serve as scrapers to clean the feet.'"

[1] This was a suit for infringement of the Chaffee patent by use of the Keene device.

THE AMERICAN MANUFACTURING CO. *v.* LANE, 14 BLATCH. 438.

S. D. OF N. Y., 1878. BLATCHFORD, J.

A patent granted July 14, 1863, to A. Stewart Black, for improvements in tempering umbrella ribs and similar articles.

The invention was one by which the ribs could be tempered equally in all parts, and tempered and straightened at the same time. That part of the device which accomplished the second of these two results is all that we need consider.

The claim embracing it read as follows: —

"1. Constructing the tempering die with a square hole, corresponding in size to the wire to be tempered, in order that the wire may be straightened in all directions, and the flattened portions of the wire be brought in line with each other, as and for the purposes specified."

In regard to this claim, and the invention alleged to anticipate it, the court remarked as follows: —

"The whole tenor of the specification shows that the meaning of the claim is that the hole or groove shall be of such size and shape as to allow the body of the wire to go through and be straightened while it is being tempered, and also to allow the flattened parts of the wire to go through and be kept in line with themselves and with the body of the wire. For a round wire a square hole will accomplish all of these results. The corners of the square are merely supplementary spaces for the passage of the wider parts. . . . It is contended by the defendants that the first claim claims merely a die with a square hole, as a structure, and that if a square hole in a metallic die is shown to have existed before, the first claim is void for want of novelty. But the fair construction of the first claim, in connection with the body of the specification, is a claim to the mode or process of tempering and straightening a rib which has a body, and flattened portions other than such body, by drawing the rib through a straight hole or groove in a heated metallic die, of the proper size and shape to at once embrace closely the body of the rib, and yet, by supplemental spaces in the groove, to allow such flattened portions to pass through freely and be brought in line with each other. . . . The invention is declared to be one of an improvement in tempering the rib. . . . The square hole or groove may have existed before and been used for the purpose of drawing through it square bars or strips of metal, to compress them and straighten them; but such prior existence and use of the square groove does not anticipate the invention claimed in the first claim of the Black

patent, as such invention is above defined. In such aspect, the use of the square groove in the manner and for the purpose indicated in such first claim is not the mere use of an old thing for a new purpose, or the mere application of the square groove to a new use."

COLGATE *v.* THE WESTERN UNION TELEGRAPH CO., 15 BLATCH. 365.

S. D. OF N. Y., 1878. BLATCHFORD, J.

COLGATE *v.* THE GOLD & STOCK TELEGRAPH CO., 16 BLATCH. 503.

S. D. OF N. Y., 1879. BLATCHFORD, J.

Simpson's patent of May 21, 1867 (No. 65,019), for "an improvement in insulating submarine cables," which consisted in making gutta-percha solvent, and applying it, with a brush or by immersion, to a telegraph wire, so as to form a uniform and compact covering thereon. The claim was: —

"The combination of gutta-percha and metallic wire in such form as to incase a wire or wires, or other conductors of electricity, with the non-conducting substance (gutta-percha), making a 'submarine-telegraph cable' at once flexible and convenient, which may be suspended on poles in the air, submerged in water, or buried in the earth to any extent, for atmospheric and submarine telegraphic communication, and for other electric, galvanic, and magnetic uses, as hereinbefore described."

"It is manifest," said the court, in the first of the above cases, "that the gist of the invention is the discovery of the fact that gutta-percha is a non-conductor of electricity, and the application of that fact to practical use by combining gutta-percha, by the means specified, with a metallic wire, in the manner described, and then using the cable formed by such combination for the purpose of conducting electricity along the enclosed wire. The point of the invention is not the mere mechanical covering of a metallic wire with gutta-percha, as a mechanical protection from abrasion or injury from without, or for any purpose aside from a use of the covered wire as a conductor of electricity. . . . The claim is valid even though a metallic wire covered with gutta-percha existed before the plaintiff's invention, *if it was not known that gutta-percha was a non-conductor of electricity and could be used to insulate*

the wire.[1] The use by the patentee of the wire so covered to conduct electricity was not a double use of the covered wire, even though the covered wire existed before."

1. These remarks were in answer to the assertion of the defence, that the claim of the patent included any wire so covered by gutta-percha that the gutta-percha confines electricity to the wire.

The court disposed of the two remaining objections to the patentability of the invention as follows: —

2. "It is further contended . . . that as it was known that resins and gums, as a genus of articles, were electric insulators, it did not require or involve any invention, when gutta-percha became known, to cover wire with it, to insulate the wire. It is very easy for wisdom, after an event, to say that it was a natural conclusion that gutta-percha would be an insulator, from the known insulating properties of gums and resins generally. But the evidence in this case shows that although gutta-percha was known, and the means of softening and manipulating it were known, many experienced men engaged in the business of telegraphy groped about, experimenting first with one device, and then with another, in the fruitless effort to secure a practical means of crossing watercourses with lines of telegraph wires, until it was at length found out that gutta-percha was the needed insulator. It is also shown that Faraday, the distinguished scientist, announced to the world as a new thing the fact that he had discovered that gutta-percha was a good electrical insulator. The position taken is therefore untenable.

3. "Equally unsound is the view urged on the part of the defendant, that the use of gutta-percha instead of india-rubber to insulate a wire was a mere change of material, and an obvious substitution, and therefore not patentable. The cases of the door-knob and the button and the wagon-reach have no application to a case like the present. Those who were seeking a practically perfect insulator had india-rubber

[1] The italics are ours. In the second of these cases the court remarked on this point somewhat differently, as follows: —

"The affidavits of the experts for the defendant, and the argument of its counsel, are largely founded on the erroneous view that Simpson's patent is invalid if he was not the first discoverer of the insulating property of gutta-percha. It is true that in the former case it was held on the evidence that Simpson was the first discoverer of the insulating property of gutta-percha, being prior to Faraday, and the publication in 'Dingler's Journal' not being an account of a completed invention; but, as before stated, the claim of the patent is not for that discovery, but is for the means and manner by which that discovery is made use of to construct such a cable as the specification describes, for such use as is specified."

and tried it, and found it not to be what was needed. The present case is not merely one of producing a better or cheaper or more durable article to attain the same result, nor is it one falling within the principle that a change involving only mechanical skill is not patentable."

Next came the defence of anticipation. The invention chiefly relied upon in this regard was that of John I. Craven. Judge Blatchford said that he had concluded that this invention was not prior to Colgate's; but he does not state the evidence.

There was also set up, in both cases, an extract from a German work, 'Dingler's Polytechnic Journal,' of 1848; and, in the second case, an extract from the 'Bremen Gazette,' of Dec. 19, 1847.'

The first was as follows:[1] —

"Insulation of the wires of electric telegraphs. The public papers announce that the experiments which the Prussian government is having tried at present in respect to the most serviceable mode of constructing electric telegraphs are turning out very favorably for the laying of the wires underground in coatings of gutta-percha, so that probably all public telegraphs will be laid in this manner. . . . If the insulation of the wires underground, discovered by Lieutenant Siemens, keeps good, all important towns can easily be connected with the capital."

This, Judge Blatchford said,

"gives an account merely of experiments then in progress, and not of a completed invention, even if the part of it in question was published prior to Simpson's invention, and it does not set forth the insulating or non-conducting property of gutta-percha for use with a telegraphic wire under water."

The 'Bremen Gazette' extract was as follows: —

"The trials which the government here is at this time causing to be made, concerning the introduction of electro-magnetic telegraphs best answering the purpose, do result in the highest degree in favor of laying the wires underground in coatings of gutta-percha, so that probably all government telegraphs will be constructed in this manner," &c.

Judge Blatchford said: —

"It is very manifest that the article in the 'Bremen Gazette' conveys no more information than the article in 'Dingler's Journal,' so that this

[1] From this point the quotations are from the second of the two cases.

defence was passed upon in the former case. Neither of them describes, or would enable any person to construct, a telegraph cable consisting of a telegraph wire covered, as Simpson's specification states, 'on all sides with a uniform coating of gutta-percha,' such cable being 'flexible and convenient,' and capable of being 'suspended on poles in the air, submerged in water, or buried in the earth.' All this is embraced within the definition of the invention and the construction of the claim given in the former case. There must not only be insulation by means of gutta-percha, but insulation 'by the means specified,' and 'in the manner described.'

"The extent of the article in the 'Bremen Gazette' is that the wires are laid 'underground in coatings of gutta-percha,' and thus insulated. How the coatings of gutta-percha are applied, or what their extent is, is not stated; nor is it said that the wire is covered on all sides with the coating, or that the covered wire is flexible, or is capable of being suspended on poles in the air, or submerged in water. . . .

"The foregoing observations apply also to the Rutter patent of Dec. 23, 1847 [not otherwise described in the opinion], except that the wire cords of Rutter were flexible. As pointed out by Mr. Burrill, in his affidavit, the Rutter patent does not describe or suggest the insulating or non-conducting property of gutta-percha for use with a telegraph wire under water, nor does it describe a wire completely covered with a uniform coating of gutta-percha, and adapted for use as a submarine telegraph cable, or even as a subterranean cable. . . . Undoubtedly, if the structure of Simpson, as described and claimed by him, was described in a publication, or patented of a date earlier than Simpson's invention, but stated to be made for underground or aerial use, and not stated to be made for submarine use, it could not be subsequently patented for submarine use. But as Simpson was the first inventor of such structure, he has the right, under his patent, to the exclusive use of it for all telegraphic or electric uses to which it is adapted."

MUNSON *v.* THE GILBERT & BARKER MANUFACTURING CO., 18 O. G. 194.

D. of Mass., 1878. Lowell, J.

John C. Pedrick's patent of March 13, 1855, No. 12,535. The fourth claim, that in suit, was as follows: —

"The application and use of the meter-wheel, with its case and contents, as an air-blast apparatus, operated by weights or otherwise, not meaning to claim the method of using the meter for measuring gas."

The object was to drive "a current of air through a reservoir, containing benzole or other hydrocarbon, for the purpose of generating an illuminating gas or vapor therefrom."

Said the court: —

"Two English patents are produced, which, taken together, would have made up, perhaps, the air-blast apparatus of Cunningham. In Lowe's patent, he recommends the use of a weight to drive a gas-meter; but his purpose appears to us to have been to increase and regulate the action of the gasometer, and not to make an air-blast apparatus. Critchett, on the other hand, admitted air into his apparatus for certain purposes, but did not have an air-pump at all resembling the plaintiff's.[1]

"We think the slight change, obvious perhaps to an inventor, of admitting air into a meter, and using the meter-wheel as an air-pump, although it had before been used with similar machinery to increase the force of the gasometer, was a patentable invention.

"The claim itself is attacked as too broad. It is said to claim a mere use or result. The language is not very well chosen; but we think, taking the claim and specification together, it is intended to claim the meter itself as described for the purposes set forth, contra-distinguished from an ordinary meter for measuring the flow of gas. Possibly it may have been intended to claim such a meter used as an air-pump in other combinations of machinery, if it should be found useful in any such; and there is nothing in the record to show that such a claim might not be supported."

COURSE *v.* JOHNSON, 16 O. G. 719.

W. D. OF PENN., 1879. MCKENNAN, J.

The invention was of a stove in which kerosene oil was the fuel.[2]

The second claim ran thus: —

"The attaching of one or more air-guides, cones, or deflectors in the diaphragm, C, and the adjustment of the same in the stove or range, F, substantially," &c.

[1] *Vide ante*, page 291.

[2] The name of the grantee of this patent, as well as its date and number, are not stated in the report.

The court held that the devices mentioned in this claim, having been used in lamps where alcohol was burned, were not patentable in the patentee's kerosene stove.

"The use of kerosene oil to produce both heat and light was not new, nor is any new function performed by the devices employed by the patentee to feed the lamp-flame with air and to promote and govern the escape of the products of combustion. The application of old mechanical devices, without material change, to a use in which they were not employed before, but which was known and had been practised, does not constitute a patentable invention. Bean *v.* Smallwood, 2 Story, 408."

The third claim was for an air-space between the oil-holder and the stove, to prevent radiation of heat from the burners to the oil in the holder below. In regard to this, the court said: —

"An air-chamber . . . around the wick-tubes and below the burner is an indispensable adjunct to every petroleum-burning lamp to supply the air needed for combustion. Hence it is found in most of the exhibits produced in evidence, and doubtless its contemplated use was as a reservoir of air to supply the burners; but at the same time it 'prevents the heat from being thrown' upon the oil-holder. It is the same device operating in the same way and producing the same result with that embraced in this claim, and therefore the complainant cannot appropriate it as his exclusive property."

The fifth claim: —

"The insulation of the lamp or oil-holder by non-contact with the heater, stove, *or range*."

"In simple phrase," said the court, "the import of this is, that the body of the stove and the oil-holder are to be made in detached parts, which are not to be placed in contact with each other. 'Insulation' is effected by making the legs of the stove long enough to allow the lamp to be placed under it without touching. The object is to avoid the transmission of heat from the stove to the oil-holder by conduction. To call this invention is to misapply the term."