

THE
LAW OF PATENTS

AS ILLUSTRATED BY
LEADING CASES

WITH DISCUSSION OF PRINCIPLES,
ANNOTATIONS, IMPORTANT STATUTES
AND RULES

BY
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OF
THE DISTRICT OF COLUMBIA AND NEW YORK BARS

IN TWO VOLUMES

VOLUME II

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STATUTES.

Patents, how issued, attested and recorded.

§ 4883. All patents shall be issued in the name of the United States of America, under the seal of the patent office, and shall be signed by the Commissioner of Patents, and they shall be recorded, together with the specifications, in the patent office in books to be kept for that purpose.

All patents for inventions signed by David L. Hawkins, Second Assistant Secretary of the Interior, or any other Assistant Secretary of the Interior, shall have the same force, effect, and validity as though the same had been signed by the Secretary of the Interior in person at the date on which they were respectively executed.

[Note: The second part of this statute arose from *Marsh v. Nichols*, 128 U. S. 605, 32 L. ed. 538, 9 Sup. Ct. 168, where a patent had been held invalid because not signed, in accordance with the law, by the Secretary of the Interior.]

Contents and duration.

§ 4884. Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof.

Date of Patent.

§ 4885. Every patent shall issue within a period of three months from the date of the payment of the final fee, which fee shall be paid not later than six months from the time at which the application was passed and allowed and notice thereof was sent to the applicant or his agent; and if the final fee is not paid within that period the patent shall be withheld.

Penalty for falsely marking or labeling articles as patented.

§ 4901. Every person who, in any manner, marks upon anything made, used, or sold by him for which he has not obtained a patent, the name or any imitation of the name of any person who has obtained a patent therefor, without the consent of such patentee, or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any such patented article the word "patent" or "patentee," or the words "letters patent," or any word of like import, with intent to imitate or counterfeit the mark or device of the patentee, without having the license or consent of such patentee or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any unpatented article the word "patent" or any word importing that the same is patented, for the purpose of deceiving the public, shall be liable, for every such offense, to a penalty of not less than one hundred dollars, with costs; one-half of said penalty to the person who shall sue for the same, and the other to the use of the United States, to be recovered by suit in any district court of the United States within whose jurisdiction such offense may have been committed.

RULES OF PRACTICE.

[Rule 164 provides for a notice of allowance in accordance with the provisions of R. S., §§ 4885, 4893 and 4897;

165 for withdrawal from issue upon the approval of Commissioner for further action and thereupon for a new notice of allowance in case the application be again allowed;

166 that when the application is withdrawn on request of the applicant such withdrawal will not stay the period of one year running against the application, that is, will not prevent abandonment within that time;

167 carries into effect the provisions of R. S., §§ 4885 and 4935, providing for the date of the patent and the final fee, and the withholding of the patent if the final fee be not paid, and that no patent shall be antedated, a provision which formerly obtained;

168 is substantially in the terms of R. S., § 4884, with a condition relating to the term of design patents;

169 relates to the delivery to the patentee or the attorney of record or to the party designated;

170 to correction of error in letters patent. See Part X.]

[For Statutes and Rules of Practice on applications of the prior art, etc., see Part II.]

402. *KOKOMO FENCE MACH. CO. v. KITSELMAN* 189 U. S., 8, 47 L. ed. 689, 23 Sup. Ct. 251 (1903, Patent No. 502,025).

On writ and cross-writ of certiorari to the United States Circuit Court of Appeals for the Seventh Circuit.

Statement of the Case.

This was a suit in the circuit court of the United States for the District of Indiana for infringement of claims 1, 2, 3, 9, 10, 11, 15 and 20 of Letters Patent No. 356,322, issued January 18, 1887, to Alva L. Kitzelman and Davis M. Kitzelman for an improvement in wire-fabric machines; of claims 1 and 2 of Letters Patent No. 289,507, issued December 4, 1883, to W. J. Davisson for an improved machine for making wire fabrics; of claims 2, 3 and 4 of Letters Patent No. 357,067, issued February 1, 1887, to Theodore M. Connor for improvement in machines for forming netted wire fabrics; and of claims 1 and 10 of Letters Patent No. 505,607, issued September 26, 1893, to John C. Pope, for wire-fabric machines.

Defendants denied patentable novelty of each of the patents, and also denied infringement, and alleged that they constructed their wire fabrics as licensees under and pursuant of Letters Pat-

ent No. 502,025, issued to W. D. Whitney, December 24, 1895, for improvements in wire-fabric machines.

The cause was heard by District Judge Baker, who held that the claims of the four patents sued on were for specific constructions, which defendants did not use, and that there was no infringement of either of the Letters Patent, and dismissed the bill. The case was carried to the United States Circuit Court of Appeals for the Seventh Circuit, and that court, one of its members dissenting, reversed the decree, and held that the defendants had infringed the first, second, eleventh and fifteenth claims of the patent issued to the Kitselmans. 108 Fed. 632.

The writ of certiorari was granted on the petition of the Kokomo Fence Company, and afterward the cross-writ on the petition of the Kitselmans. The machine company alleged error in the judgment of the court of appeals sustaining and finding infringement of the Kitselman patent, and the Kitselmans alleged error in that court in not sustaining and finding infringement of the Davisson, Connor and Pope patents. * * *

Mr. Chief Justice Fuller delivered the opinion of the court:
* * *

The statement is given in full, with eleven pages of drawings in the report of the case. 108 Fed. 632.

The Kitselman and Pope patents described portable machines. The Davisson and Connor patents describes stationary machines. The Kitselman and Pope patents were intended to be operated by hand and the Davisson and Connor patents were intended to be operated by power. But the essentials of the mechanism were not dependent upon the circumstances of their being embodied in either a stationary or a portable machine, or in a power or a hand machine. * * *

In the Kitselman specifications and drawings, plans of picket-and-slat fencing and of the common form of wood fence held together by wires, as made by that machine, were shown. The Middaugh and Wilcox machine made wire-and-picket fence. The Kitselman machine made diamond-mesh, and wire-and-picket fence. But the diamond-mesh fabric was old, as shown not only in the Davisson patent but in many others antedating those in suit, as, for instance, that of Nesmith of April 4, 1854.

The diamond-mesh fabric had been woven while the machine was in a standing position. The Middaugh and Wilcox patent made wire-and-picket fence in the field. Kitselman converted the stationary into a portable machine by setting it on end and mounting it on a truck; and he converted the portable machine, as he himself says, by disposing the parts "in a horizontal instead of a vertical position," and mounting "the same on suitable bearings to provide a stationary machine for indoor use." The

mechanism and operation were the same. Whatever its merits, it was not in itself primary invention to mount a machine for making diamond-mesh fencing on a truck, and using it in the field, as the old machine had been used to make wire-and-picket fences. The getting up and walking was not new, though the machine may have gone at a better gait and made a better fence.

When Kitselman made his original application, his nineteenth claim read:

“In a wire-fabric machine, the combination of a track, a carrying-frame geared to the track and having the twisting devices and the reels, and pawl-and-ratchet mechanism for feeding the frame and its devices, substantially as described, for the purpose set forth.”

This claim was rejected by the patent office on reference to the Fultz patent of May 13, 1884, and the Watson patent of July 21, 1885.

Fultz's was a patent for “an upright machine for making or weaving fence composed of wire and pickets, and may be used, movably, along the line where the fence is to be made, or stationary.”

Watson's was a patent for a wire-fence machine, the invention relating—“to that class of fence-machines in which the pickets and wires are bound together and the fence put up in one operation.”

Kitselman acquiesced in the rejection and withdrew his nineteenth original claim, and can not now reasonably claim a construction which would protect his machine as a pioneer field-machine.

The first, second, eleventh and fifteenth claims of the Kitselman patent were held by the circuit court of appeals to be infringed. We repeat these claims as follows:

“1. In a wire-fabric machine, a series of sectional twistors, each of which comprises a central section for carrying a warp-wire, and having rotary movement imparted thereto, and the shifting sections for carrying the weft-wire, and receiving rotary motion from the central section to form the twist, substantially as and for the purpose herein described.

“2. In a wire-fabric machine, the combination of a series of sectional twistors geared together for simultaneous rotation, and each comprising a central portion movable only on its axis and side portions capable of a compound movement—that of rotation on their axes—and of a shifting longitudinal movement, substantially as described, for the purpose set forth.

“11. In a wire-fabric machine, a series of twistors connected for simultaneous operation, and each consisting of a central section and the side section, in combination with the spools car-

ried by the side sections, the central section of each twister being provided with a longitudinal opening for the passage there-through of the warp-wire, substantially as described.

"15. In a wire-fabric machine, the combination of a series of rotary twisters geared directly together for simultaneous operation, each twister having a central section capable of rotary movement only, and two side sections which are capable of a shifting movement independently of the central section in opposite directions simultaneously, whereby the said shifting sections of one twister are adjusted to register with the central sections of twisters on opposite sides of the same, substantially as described, for the purpose set forth.

It is obvious, as said by complainants' expert—"that the terms 'sectional twisters,' 'twistors' and 'rotary twistors,' used in the several claims under consideration, refer to the same three-part twister devices."

In Kitselman's original application, the first claim called for a "series of sectional twistors geared directly together;" the second, for "a series of sectional twistors capable of sliding movement with relation to each other and geared for simultaneous rotation;" the third, for "the series of sectional twistors comprising the central hub-section and the two side sections disposed on opposite sides of the central section, the hub-section being stationary, while the side sections are capable of shifting movement;" the fourth, for "the series of sectional twistors, each of which comprises a longitudinally-immovable section and two sections which have longitudinal movement;" the fifth, for "the series of sectional twistors, each of which comprises the central portion carrying the warp-wires and the shifting side sections which carry the weft-wires."

The first and second claims were rejected, and thereupon erased, and others substituted, which were likewise rejected (the Nesmith patent of 1854 being cited), were withdrawn, and the numbers of original claims 3, 4, and 5 were changed to 1, 2 and 3. The latter were then rejected on reference to the Smith British printed publication of 1876, withdrawn, and claim 1 as it now stands submitted. * * *

The two substituted claims above mentioned as rejected on reference to Nesmith, and withdrawn, read as follows:

"1. In a wire-fabric machine, a series of rotary twistors geared directly together for simultaneous rotation and each having two sections which are capable of a sliding movement, substantially as described, for the purpose set forth.

"2. In a wire-fabric machine, the combination of a series of rotary twistors geared directly together, substantially as described, for the purpose set forth." * * *

In view of what passed in the patent office, and the state of the art, we can not regard the Kitzelman patent as a pioneer patent, but think its claims must be limited in their scope to the actual combination of essential parts as shown, and can not be construed to cover other combinations of elements of different construction and arrangement. * * *

Considering the complainants and Whitney as alike having improved on the prior art, the question is whether the specific improvements of the one actionably invaded the domain of the other. The presumption from the grant of the letters-patent is that there was a substantial difference between the inventions. * * *

We perceive no reason to decline acceptance of these findings of the circuit court, and agree with that court in the conclusion that the machines lack that identity of means and identity of operation which must be combined with identity of result to constitute infringement.

As we have before stated, the circuit court of appeals concurred with the circuit court that, unless the patents sued on embodied a pioneer invention, the defendant's machine was so differentiated from either of the others that the charge of infringement could not be maintained. The circuit court held all complainants' patents to be only improvements on the prior art, and dismissed the bill on the ground of non-infringement.

The circuit court of appeals held that the Kitzelman patent was entitled to be treated as embodying primary invention and to such liberal construction as brought defendants' machine within it. The decree of the circuit court was therefore reversed because, in the opinion of the circuit court of appeals, certain claims of the Kitzelman patent were infringed.

For the reasons given in treating of the Kitzelman patent we think that none of complainants' patents embodied primary invention, and we concur with both the courts below that, this being so, the differences in means and operation between defendants' machine and the others were such that there was no infringement.

It does not seem necessary for us to enumerate these differences in respect of the other three patents. This was well done in the circuit court, and the circuit court of appeals accepted the view of that court as to the absence of infringement if primary invention did not exist. We are content with that conclusion.

Decree of the circuit court of appeals reversed; decree of the circuit court affirmed, and mandate to that court accordingly.

403. KELLY v. CLOW, 89 Fed. 297, 32 C. C. A. 205 (1898).

Before Woods and Showalter, Circuit Judges, and Baker, District Judge.

Baker, District Judge (after stating the facts as above). It is manifest that the patentee was simply a gleaner in a field already well harvested, and therefore the claim that a broad construction should be given to the patent is inadmissible. In view of the numerous prior American and English patents relating to water-closets disclosed in the record, it clearly becomes our duty to give the patent a construction no broader than its terms plainly require. The patent is for a combination every element of which is old, and all that is claimed for it is that it obviates some objectionable features found in other similar constructions. Similar combinations are found in many prior patents, but all of the elements found in complainants' combination, it is claimed, are not shown to have been used together in any one of the prior patents in the same relation to each other. It is insisted that the novelty of the combination can only be destroyed by showing that all of its elements have been used together before, and in the same relation to each other. The contrary is well established. *Thompson v. Boisselier*, 114 U. S. 1, 11. 5 Sup. Ct. 1042; *Hill v. Wooster*, 132 U. S. 693, 10 Sup. Ct. 228; *Burt v. Evory*, 133 U. S. 349, 10 Sup. Ct. 394; *Pickering v. McCullough*, 104 U. S. 310; *Florsheim v. Schilling*, 137 U. S. 64, 11 Sup. Ct. 20; *Adams v. Stamping Co.*, 141 U. S. 539, 12 Sup. Ct. 66; *Deere & Co. v. J. I. Case Plow Works*, 9 U. S. App. 567, 6 C. C. A. 157, and 56 Fed. 841; *Lumber Co. v. Perkins*, 53 U. S. App. 66, 94, 25 C. C. A. 613, 616, and 80 Fed. 528, 531. * * *

404. DRESNAHAN v. TRIPP, ETC., LEVELLER CO., 72 Fed. 920, 19 C. C. A. 237 (1900).

Before Putnam, Webb, and Aldrich, Judges.

Putnam, J.: * * *

These are appeals from decretal orders granting ad interim injunctions in suits on a patent for an invention. The only question relates to infringement, and this depends on the extent of the patentee's invention and the construction to be given to the claim in issue. Consequently the general rules which govern us are those stated by this court in *Hatch Storage-Battery Co. v. Electric Storage-Battery Co.*, (C. C. A.; in an opinion passed down on March 16, 1900), 100 Fed. Rep. 975.

There is so much literature in the courts in this circuit with reference to the patent in suit that we need not state the facts at length. The only claim in issue is the first one, as follows:

"1. A machine for beating out the soles of boots and shoes, provided with two jacks, two molds, and means, substantially as

described, having provision for automatically moving one jack in one direction while the other is being moved in the opposite direction, whereby the sole of the shoe upon one jack will be under pressure, while the other jack will be in a convenient position for the removal of the shoe therefrom."

For the proper construction of this claim it will be necessary to refer to claim 4, as follows:

"4. In a machine for beating out the soles of boots and shoes, the combination of a mold or die; a vertically-movable jack; a crank; a toggle mechanism connecting said crank and jack, and having provision for the movement of the latter; a crank-shaft; a cam secured to said crank-shaft, and provided with an abrupt shoulder; a driving-shaft; gearing for connecting said crank-shaft and said driving-shaft; a rocker-shaft; a stop-arm secured to said rocker-shaft, and engaging with the shoulder upon said cam to stop the machine; a treadle secured to said rocker-shaft; a spring connecting said treadle with a stationary part of the machine; a brake-shoe operated by said treadle, and acting upon said brake-wheel; and a suitable clutch mechanism for applying power to the driving-shaft when the shoe has been released from contact with the brake-wheel, and the stop-arm has been disengaged from the shoulder of said cam."

Claim 1 has relation, by its express terms, to that part of the machine which has a duplicated mechanism. Claim 4 has relation to a part of the machine which does not necessarily involve a duplicated mechanism. Each claim may well cover a distinct invention. To hold that claim 1 necessarily involves the details which are set out in claim 4, which details may be used in a machine with only one jack and one mold, would be to so limit claim 1 that in effect it would be no broader than claim 4. This is practically the substance of the contention of the appellants. If the patentee's invention is broader than that set out in claim 4, the limit which the appellants thus seek to place on claim 1 would be contrary to the rule so steadily applied in the circuit, that claims ought to be construed, where they reasonably may be, to cover the entire invention of the patentee. The contention is also opposed to the general rule of construction, applicable where there are several claims, to the effect that, if some of the claims are limited to details, those which remain are *prima facie* not to be fettered by insisting that they contain, as necessary elements, the particulars which are specifically covered elsewhere.

An examination of the history of the decisions of this court with reference to this patent will show that these rules have been applied by us to the construction of claim 1, and that we have not understood that claim 1 has relation to the mechanism

which lies between the crank-shaft spoken of in claim 4 and the source of power. Without detailing the features as to which the appellants claim that their machine differs from the machine covered by the patent in suit, it is sufficient to say that they all relate to the portion last named, and not to those elements which lie between the crank-shaft and the jacks, and which secure the simultaneous motion of one jack in one direction while the other is being moved in the opposite direction, as pointed out in claim 1.

The first decision to which we need refer is that of the circuit court, passed down on September 9, 1892, in *Cutcheon v. Herrick*, C. C., 52 Fed. 147, 148. In that case there was a decree for the complainant. The case came before this court on appeal in *Herrick v. Leveller Co.*, 8 C. C. A., 475; 60 Fed. 80, where the opinion was passed down on October 12, 1893. There the decree of the court below was affirmed in a per curiam, which adopted its opinion. Those opinions were expressed in such general terms that a question arose with reference to the construction of claim 1, which came before this court again in *Bresnahan v. Leveller Co.*, 19 C. C. A. 237, 72 Fed. 920, where an opinion was passed down on February 14, 1896. We said, at pages 923, 924, 72 Fed., and page 241, 19 C. C. A., as follows:

“Claim 1 of the patent in suit is a very broad one, and, as we held it valid, it would seem that no method of making the connection between the actuating-jacks and the crank-shaft, by means well known in the arts at the date of the patent, would evade it. We are also unable to perceive that the discussion in relation to the treadles and their connections is pertinent, as there is nothing in the letter of claim 1, or in the opinions of either this court or the circuit court in the former case, which makes any automatic stop movement, or any other stop movement, an element. There was nothing in that case in either court which called for any elements except those stated in the claim; and these, as explained by the circuit court in the extract we have made from its opinion, cover the first device in which both of the operations of compressing and clearing were performed automatically, and specify no elements, except two jacks, two molds, and means for automatically moving one jack in one direction while the other is being moved in another direction.”

Then we proceeded to show that the words in claim 1, “substantially as described,” did not effectually limit it. The patent was again before us in *Bresnahan v. Leveller Co.*, C. C. A., 99 Fed. 280, where, in an opinion passed down on January 10, 1900, we firmly adhered to what we had before determined, and stated that the new proofs then before us “should not narrow the claim as interpreted in” our prior decisions.

There is nothing indefinite in the extracts we have given from our opinions, except the fact that the relations of the word "automatically" in claim 1 were not, in terms, explained, although we think they can be gathered from what we said, so far as the word relates to that claim. The appellants insist that this word, as used in this claim, relates to the entire mechanism intervening between the treadle with which the machine is started, and the lasts; but there is nothing which necessitates this construction. It is plain, on examining our opinion in *Bresnahan v. Leveller Co.*, that we regarded the pith of claim 1 as relating to the "method of making the connection between the actuating-jacks and the crank-shaft." We stated that we were unable to perceive that the discussion in relation to the treadles and their connections was pertinent, and this was not limited by the fact that we afterward referred to the stop movement, which had been particularly brought to our attention. Very few machines are perfectly automatic. Occasionally we have had before us a machine in which the mere presentation of the blank to be worked on caused the mechanism to commence its operation and complete it, and then to cease operating, all without any other human intervention; but neither of the machines now before us is automatic, in the entire sense of the word, notwithstanding the contention of the appellants to the contrary. In the patented machines, when constructed with all the details described in the specification and covered by all the claims, not only must the work be presented to the machine, but human intervention is necessary at the treadle to set the machine in operation every time a blank is introduced for compression. It follows that in this machine the word "automatically" is not used in such a strict sense that it may not yield to a just construction of the claims; and therefore it may as well be applied to any part of the patented machine as to the whole of it, when necessary to give full effect to the invention. In the appellants' machine, the portions to which claim 4 relates are so constructed as to require the constant intervention of human agency at the treadle during the entire round of operation. This, however, has no relation to the mechanism between the crank-shaft and the jacks, because, so far as that part of the appellants' machine is concerned, it has "provision for automatically moving one jack in one direction while the other is being moved in the opposite direction," all substantially as described in the patentee's specification, and as covered by claim 1. This "provision" consists of the crank-shaft, with a pair of toggles, or their equivalent, and the incidental details of each, all of which constitute the "means substantially as described" in the claim.

As, therefore, in our previous opinions we have sustained the validity of claim 1, and held it to be broad, and given it substantially the same effect as we now give it, there was not only sufficient in the prior litigation, according to the rules applicable under these circumstances, to justify the court below in granting the injunctions now appealed against, but there was enough, in view of the necessity of giving patents protection during their short terms of existence, to require that the court should have entered the decretal orders which it did enter.

One or more of the pending suits out of which these appeals arose were brought against infringers who were simply users, having purchased machines from the infringing manufacturers. Under these circumstances, these parties rely on the principles announced in *Westinghouse Air-Brake Co. v. Burton Stock-Car Co.*, 23 C. C. A., 174; 77 Fed. 301, decided by this court on October 9, 1896. An examination of the opinion in that case will show that the circumstances which the court relied on were peculiar. The same was the fact with reference to the other citations made to us by the appellants, the most important of which were referred to in the opinion filed in the circuit court in the same case. *Westinghouse Air-Brake Co. v. Burton Stock-Car Co.*, C. C., 70 Fed. 619, where it was shown, moreover, that there was no danger that that complainant could not be made entirely good by the payment of damages equivalent to a license fee. There was nothing to indicate that that complainant's market was jeopardized in any general sense. To apply decisions in such special cases to ordinary users would be to destroy the patentee's market, and to ignore the recognized rules which the equity courts so frequently apply in order to protect the substantial values of patents by using in their behalf ad interim injunctions.

In each case the judgment is as follows:

The decree of the circuit court is affirmed, and the costs of appeal are awarded to the appellee.

405. *KNAPP v. MORSS*, 150 U. S. 221, 37 L. ed. 1059, 14 Sup. Ct. 81 (1893, Patent No. 233,240).

[The purpose and function of the invention are set forth at length in the opinion of the court. The structure may be understood without detailed description of the parts which are referred to by the reference letters.

The claim especially in suit was of the type including reference letters (now seldom employed) and read as follows:

2. In combination with the standard a and ribs c, the double braces e², sliding blocks f' f², and rests h' h², substantially as and for the purpose set forth.

After discussing the patent in suit and the prior art, the court said:

“It is conceded by the appellee that all of the elements of the second claim are old, except ribs c, which, it is claimed, constitute the new and patentable feature of the Hall invention;

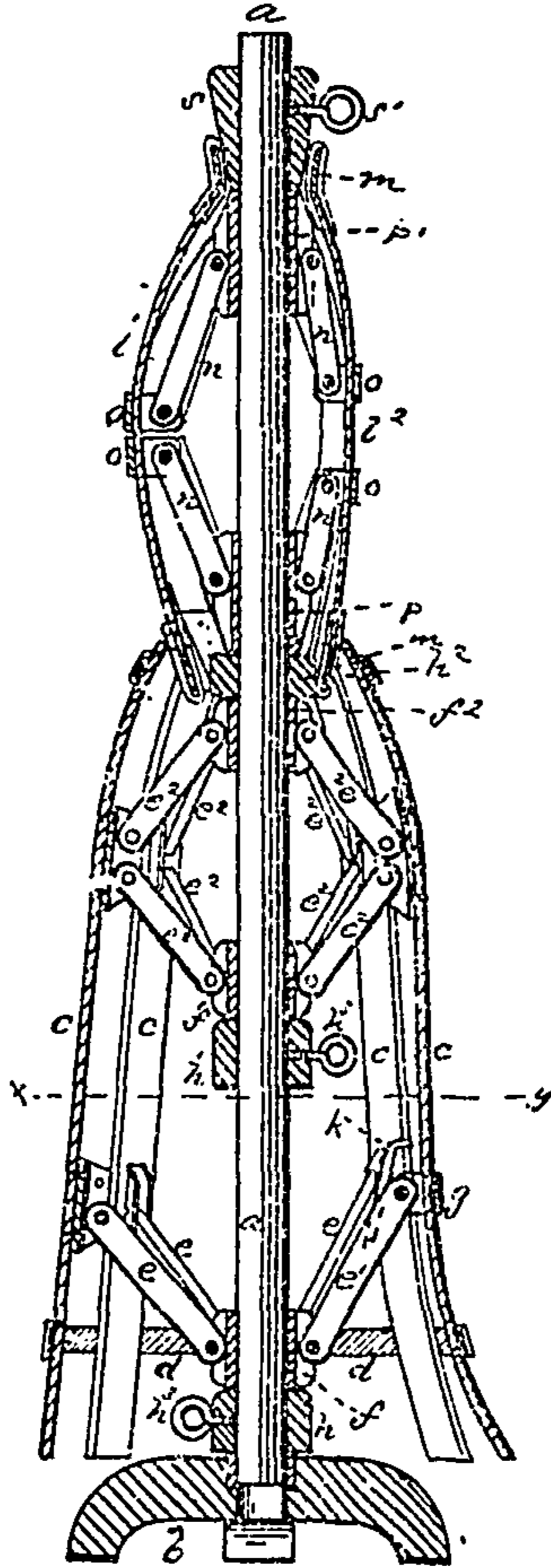


Fig. 2

but, from the foregoing brief review of the prior art, we think it clearly shown that the ribs c do not constitute any new feature. They are shown in the Everett invention; in the Wilson patent, where it is said there may be as many as necessary; and in the common umbrella; also in the Ferris device for a

corset exhibitor, where the function performed by the ribs constitute the chief feature of the invention; and in the Balch reel short ribs are used, which might be lengthened to adapt the device to the dress form patented by Hall."

In reply to the appellee's claim that a new result has been obtained, the court in discussing Webster Loom Co., and its application, said:—

"But we do not consider the Hall patent as coming within the principle there laid down, for the reason that the standard, the double braces, sliding blocks on the standard, and the rests to hold the blocks, as well as the ribs which constitute the combination of the second claim, were not only found in the prior devices, but they separately and in combination with such devices performed the same function, and operated in substantially the same way as in the Hall patent. The combination of old elements which perform no new function and accomplish no new result does not involve patentable novelty. *Mosler Safe & L. Co. v. Mosler*, 127 U. S. 361, [32 L. ed. 184]; *Hailes v. Van Wormer*, 87 U. S. —, 20 Wall. 353, 368 [22 L. ed. 241, 248]; *Reckendorfer v. Faber*, 92 U. S. 348 [23 L. ed. 719]; *Pickering v. McCullough*, 104 U. S. 310, 318 [26 L. ed. 749, 751]; *Peters v. Hanson*, 129 U. S. 541 [32 L. ed. 742]."

The court, therefore, found the patent invalid and in any event not infringed. It should be noted also that Mr. Justice Brown and Mr. Justice Shiras dissented, finding as much invention in this patent as in a number of cases decided by the Supreme Court.]

Mr. Justice Jackson delivered the opinion of the court. * * *

The invention relates to improvements in dress-forms, by means of which every part of the device is rendered adjustable, so that it may be applied to a dress of any size or style and fill it out perfectly in order that trimming may be placed upon it. * * *

The second claim of the patent reads as follows:

"2. In combination with the standard a and ribs c, the double braces e², the sliding blocks f¹ and f², and rests h¹ and h², substantially as and for the purposes set forth. * * *

In determining the proper construction to be placed upon the second claim of the patent it is necessary to consider the action of the Patent Office upon the original application of the patentee, and also examine the prior art. In his original application the patentee sought to secure the following claims:

"1. A dress-form consisting essentially of a central standard, one or more series of adjustable ribs, and corresponding series of braces or stretchers hinged to one or more runners or sliding blocks upon said standard and having their outer ends connected

with said ribs, whereby the dress-form may be expanded and contracted, substantially as and for the purpose set forth.

"2. In combination with the standard a, rest h, sliding block f, and braces e, the ribs c and elastic band d, substantially as and for the purpose described."

These broad and general claims were rejected by the patent office for the following reasons:

"The first claim is rejected on Patents No. 202,713 Everett, April 23, 1878, and No. 207,351, Ferris, August 27, 1878 (both in Dummies and Hangers).

"There is no novelty in the elements of the second claim, in view of the above patents, in connection with the elastic band shown in No. 75,864, Keffer, March 17, 1868 (Blocking and Stretching hats), which band is there used in the same way and for the same purpose as in applicant's device."

The patentee acquiesced in the rejection, and thereupon accepted his patent with its specific claims, the second of which is alleged to be infringed.

It is well settled that the second claim must be read and interpreted with reference to the rejected claims and to the prior state of the art, and can not be so construed as to cover either what was rejected by the patent office (*Shepard v. Carrigan*, 34 O. G., 1157; 116 U. S., 593; *Sutter v. Robinson*, 38 O. G., 230; 119 U. S., 530), or disclosed by prior devices.

A brief reference to the prior state of the art will serve to show what limitations should be placed upon the claim in question. * * *

But aside from these prior patents, the state of the art is perhaps more clearly illustrated in the device used for opening and shutting a common umbrella. In this device are found all the elements of the combination of the second claim. There are the standard, the collar with the rest, the double braces, and the ribs. Because the upper ribs are elongated so as to hold the fabric which covers them, it can not be said that the double braces are different in principle and operation from those used in the patent in controversy. It would require but ordinary mechanical skill to convert a skirt-form into an umbrella, or an umbrella into a skirt-form like that described in the Hall patent.

It is conceded by the appellee that all of the elements of the second claim are old, except ribs, c, which, it is claimed, constitute the new and patentable feature of the Hall invention; but, from the foregoing brief review of the prior art, we think it clearly shown that the ribs c do not constitute any new feature. They are shown in the Everett invention; in the Wilson patent, where it is said there may be as many as necessary; and in the common umbrella; also in the Ferris device for a corset-exhibi-

tor, where the function performed by the ribs constitutes the chief feature of the invention; and in the Balch reel short ribs are used, which might be lengthened to adapt the device to the dress-form patented by Hall.

But it is urged on behalf of the appellee that the Hall patent differs from all previous devices in presenting a structure which, as an entirety, is radially expansible in all directions from a common center, so as to preserve the symmetry of the form, whatever its diameter may be, and by the combination of the patent a new and useful result is thus attained which involves patentable novelty. In support of the validity of the patent the principle stated in *Webster Loom Co. v. Higgins*, 48 O. G., 1119; 105 U. S., 591, is invoked. In that case it was laid down by the court, as a general rule, though not an invariable one—"that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention."

But we do not consider the Hall patent as coming within the principle there laid down, for the reason that the standard, the double braces, sliding blocks on the standard, and the rests to hold the blocks, as well as the ribs, which constitute the combination of the second claim, were not only found in the prior devices, but they separately and in combination with such devices performed the same function, and operated in substantially the same way as in the Hall patent. The combination of old elements which perform no new function and accomplish no new results does not involve patentable novelty. *Mosler Safe Co. v. Mosler*, 43 O. G., 1115; 127 U. S., 251; *Hailes v. Van Wormer*, 20 Wall., 353, 368; *Reckendorfer v. Faber*, 92 U. S., 347; *Pickering v. McCullough*, 21 O. G. 73; 104 U. S. 310, 318; *Peters v. Hanson*, 47 O. G. 945; 129 U. S. 541.

The use and purposes sought to be accomplished by the Hall patent were the radial expansion of the dress-form, but it is well settled by the authorities that the end or purpose sought to be accomplished by the device is not the subject of a patent. The invention covered thereby must consist of new and useful means of obtaining that end. In other words, the subject of a patent is the device or mechanical means by which the desired result is to be secured. *Carter v. Hyde*, 16 Pet. 519; *LeRoy v. Tatham*, 14 How. 156; *Corning v. Burden*, 15 How. 252; *Barr v. Duryea*, 1 Wall. 531; *Fuller v. Yentzer*, 49 O. G. 531. 94 U. S. 288.

Tested by these authorities the validity of the patent in question must be ascertained, not from a consideration of the purposes sought to be accomplished, but of the means pointed out for the attainment thereof, and if such means, adapted to

effect the desired results, do not involve invention, they can derive no aid or support from the end which was sought to be secured. All that Hall did was to adapt the application of old devices to a new use, and this involved hardly more than mechanical skill, as was ruled in *Aron v. Manhattan Railway Co.*, 49 O. G. 1365, 132 U. S. 85, where it was said:

“The same device employed by him (the patentee) existed in earlier patents; all that he did was to adapt them to the special purpose to which he contemplated their application, by making modifications which did not require invention, but only the exercise of ordinary mechanical skill; and his right to a patent must rest upon the novelty of the means he contrived to carry his idea into practical application.”

There is another test as to the validity of the second claim. If the Balch, Everett, Wilson or Ferris patents, or even the umbrella, were subsequent in date to that of the Hall patent, they would constitute an infringement thereof, for the rule is well established that “that which infringes, if later, would anticipate if earlier.” *Peters v. Active Mfg. Co.*, 47 O. G. 948, 1219, 129 U. S. 530, 537; *Thatcher Heating Co. v. Burtis*, 39 O. G. 587, 121 U. S. 286, 295; *Grant v. Walter*, 47 O. G. 1220, 148 U. S. 554; *Gordon v. Warder*, 65 O. G. 1403, 150 U. S. 47.

If, however, the patent could be sustained at all, it would have to be restricted and confined to the specific combination described in the second claim as indicated by the letters of reference in the drawings, and each element specifically pointed out is an essential part thereof. *Duff v. Sterling Pump Co.*, 23 O. G. 1622, 107 U. S. 639; *Newton v. Furst & Bradley Co.*, 38 O. G. 104, 119 U. S. 373; *Bragg v. Fitch*, 39 O. G. 529, 121 U. S. 478; *Crawford v. Heysinger*, 42 O. G. 197, 123 U. S. 589; *Dryfoos v. Wiese*, 42 O. G. 490, 124 U. S. 32.

For if not so restricted by the letters of reference the effect would be to make the claim coextensive with what was rejected in the Patent Office.

If any validity could be conceded to the patent, the limitation and restriction which would have to be placed upon it by the action of the Patent Office, and in view of the prior art, would narrow the claim, or confine it to the specific structure therein described, and as thus narrowed there could be no infringement on the part of appellants if a single element of the patentee's combination is left out of the appellants' device. *Sargent v. Hall Safe Co.*, 31 O. G. 661, 114 U. S. 63; *Eddy v. Dennis*, 95 U. S. 560; *McCormick v. Talcott*, 20 How. 402. * * *

Our conclusion, therefore, is that the Hall patent is invalid, and further, if it could be sustained at all, it would have to be in the most restricted form, and thus restricted, it is not in-

fringed by the appellants. It follows, therefore, that in each case the judgment of the courts below must be reversed, and the cause remanded, with direction to dismiss the bill. So ordered.

The Chief Justice did not sit in this case and took no part in its decision.

Mr. Justice Brown (with whom was Mr. Justice Shiras) dissenting.

In the construction of his device Hall took the principle of the common umbrella and of an adjustable reel for unwinding yarn, and by adding to it ribs and elastic bands, adapted it to an entirely different purpose, namely, to the construction of an adjustable dress-form, which has largely supplanted those previously in use. While the changes made were not radical in their character I think they were such as to involve invention within the rule stated in *Webster Loom Co. v. Higgins*, 105 U. S. 580, 591; *The Barbed Wire Patent*, 143 U. S. 275; *Gandy v. Main Belting Co.*, 59 O. G. 1106, 143 U. S. 587, and *Topliff v. Topliff*, 145 U. S. 156, and that the change made by the defendant in using a collar fixed to the standard for the upper sliding block, and a nut and threaded standard for the lower sliding block and rest of the Hall patent, was in fact the substitution of well-known equivalents, and does not exonerate them from the charge of infringement.

406. *McCLAIN v. ORTMAYER*, 141 U. S. 419, 35 L. ed. 800, 12 Sup. Ct. 76 (1891).

Brown, J.: * * *

This was a bill in equity for the infringement of two letters patent granted to appellant, McClain, viz., patent No. 259,700, issued June 20, 1882, for a "pad for horse-collars," and patent No. 267,011, issued November 7, 1882, for an improvement upon the same. Another patent, numbered 298,626, issued May 13, 1884, to J. Scherling for a "pad fastening," and assigned to the appellant, was originally included in the suit, but was abandoned upon the argument in this court. * * *

The claims of this patent were:

"(1) As an attachment to a horse-collar pad or other harness pad, and as a means of adjustably attaching a pad to a horse-collar or other part of harness, the elastic single roll or single curved spring, S, constructed, arranged, attached, and operating substantially in the manner shown or described, and for or with the purposes set forth.

“(2) The combination, with a horse-collar pad, of elastic single roll or single curve spring, S, substantially in the manner shown or described, and for the purposes set forth.” * * *

Mr. Justice Brown, after stating the facts as above, delivered the opinion of the court.

1. The defense to the first patent was rested principally upon the question of the infringement. Defendants, in their answer, admitted that they had as a corporation and individually manufactured and sold sweat-pads for horse-collars under letters patent issued to defendant Ortmyer; “that is to say, sweat-pads adapted to be fastened or secured to the collar by a simple hook, made of wire, arranged to clasp the front roll of the collar, but not in any way having or employing the pretended inventions and improvements described and claimed in said several letters patent, or either of them.”

This patent to Ortmyer, numbered 331,813, exhibits a horse-collar, a sweat-pad, a hook, made of wire, “its curved or hooked portion being so bent or formed as to clasp the outer or exposed part of the front roll of the collar, and so as to have a broad bearing thereon.” The hook is connected to the pad in such a manner as to be joined or hinged thereto, so as to be capable of being turned in the fold of the leather. Says the patentee: “To apply the pad to the collar it is only necessary to arrange it underneath the collar in the usual manner, first raising the hooks, D, D, and then pushing them downward, so that they will clasp the front roll of the collar.”

It is evident from this patent and from the entire testimony that the defendants made use of a single hook, D, embracing the front roll of the collar only, while the appellant, McClain, has limited himself, perhaps unnecessarily, to the elastic springs, s, s, which the drawings and the whole tenor of the specification show to be double, and intended to be clasped around both the fore and after wales of the collar. While the patentee may have been unfortunate in the language he has chosen to express his actual invention, and may have been entitled to a broader claim, we are not at liberty, without running counter to the entire current of authority in this court, to construe such claims to include more than their language fairly imports. Nothing is better settled in the law of patents than that the patentee may claim the whole or only a part of his invention, and that, if he only describe and claim a part, he is presumed to have abandoned the residue to the public. The object of the patent law in requiring the patentee to “particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery” is not only to secure to him all to which he is entitled, but to apprise the public of what is still

open to them. The claim is the measure of his right to relief, and, while the specification may be referred to to limit the claim, it can never be made available to expand it. Thus in *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 278, the manufacture of round bars, flattened and drilled at the eye, for use in the lower chords of iron bridges, was held not to be an infringement of a patent for an improvement in such bridges where the claim in the specification described the patented invention as consisting in the use of wide and thin drilled eye bars applied on edge. In delivering the opinion of the court, Mr. Justice Bradley observed: "It is plain, therefore, that the defendant company, which does not make said bars at all, [that is, wide and thin bars], but round or cylindrical bars, does not infringe this claim of the patent. When a claim is so explicit the courts cannot alter or enlarge it. If the patentees have not claimed the whole of their invention, and the omission has been the result of inadvertence, they should have sought to correct the error by a surrender of their patent, and an application for a reissue. * * * But the courts have no right to enlarge a patent beyond the scope of its claim as allowed by the Patent Office, or the appellate tribunal, to which contested applications are referred. When the terms of a claim in a patent are clear and distinct (as they always should be), the patentee, in a suit brought upon the patent, is bound by it. He can claim nothing beyond it."

Similar language is used in *Railroad Co. v. Mellon*, 104 U. S. 112, in reference to a patented locomotive wheel. In *Masury v. Anderson*, 11 Blatchf. (U. S.) 162, 165, it was said by Mr. Justice Blatchford: "The rights of the plaintiff depend upon the claim in his patent, according to its proper construction, and not upon what he may erroneously suppose it covers. If at one time he insists on too much, and at another on too little, he does not thereby work any prejudice to the rights actually secured to him." Other cases to the same effect are *Merrill v. Yeomans*, 94 U. S. 568; *Burns v. Meyer*, 100 U. S. 671; and *Sutter v. Robinson*, 119 U. S. 530, 7 Sup. Ct. 376.

It is true that, in a case of doubt, where the claim is fairly susceptible of two constructions, that one will be adopted which will preserve to the patentee his actual invention; but if the language of the specification and claim shows clearly what he desired to secure as a monopoly, nothing can be held to be an infringement which does not fall within the terms the patentee has himself chosen to express his invention. The principle announced by this court in *Vance v. Campbell*, 1 Black (U. S.) 427, that, where a patentee declares upon a combination of elements which he asserts constitute the novelty of his invention,

he cannot in his proofs abandon a part of such combination and maintain his claim to the rest, is applicable to a case of this kind, where a patentee has claimed more than is necessary to the successful working of his device.

Applying these familiar principles to the case under consideration, we are forced to the conclusion that the curved hook of the defendant is not an infringement of the double spring described in the plaintiff's specification and claim. While a single spring or hook embracing the fore wale of a collar may be equally as efficacious, the patentee is no more at liberty to say that the spring encircling the after wale is immaterial and useless than was the patentee in *Vance v. Campbell* to discard one of the elements of his combination upon the same ground. This was evidently the theory of the patentee himself, since a little more than two months after this patent was issued, in a letter to the patent office of September 2, 1882, in which he made application for his second patent, covering the single-roll spring, he stated that "the single-roll spring must be conceded to be a structure positively and unequivocally different from the two-roll spring." There being no infringement of this patent, there can be no recovery upon it.

2. The second patent was principally contested upon the ground of want of invention. In his specification the patentee states it to be an improvement upon his prior patent, but differing materially from it in the fact that "this spring has but one curved portion, intended for the fore roll only of the collar, instead of a curved portion for the fore roll and one for the back roll." It seems from his letter to the Patent Office of September 2, 1882, to which reference has already been made, that in endeavoring to practice the invention in his prior patent he found that the two-roll spring was not generally applicable to collars of different sizes, as it had been supposed it would be; as the rolls in collars of different sizes and of different makes varied so much that, while it would make a pad applicable to collars of different sizes for light work, the same pad could not be used on collars for heavy work, and hence the invention proved to be imperfect. This resulted in the invention of the single-roll spring of his second application.

Practically the only novelty consists in cutting the double-roll spring in two, and using the fore roll only. While this enables the pad to be located on the collar more readily than when two springs were used, the roll performs the same function as in the prior patent, and the patent can only be sustained upon the theory that the discarding of the after roll involved invention. What shall be construed as invention within the meaning of the patent laws has been made the subject of

a great amount of discussion in the authorities, and a large number of cases, particularly in the more recent volumes of reports, turn solely upon the question of novelty. By some, "invention" is described as the contriving or constructing of that which had not before existed; and by another, giving a construction to the patent law, as "the finding out, contriving, devising, or creating something new and useful, which did not exist before, by an operation of the intellect." To say that the act of invention is the production of something new and useful does not solve the difficulty of giving an accurate definition, since the question of what is new, as distinguished from that which is a colorable variation of what is old, is usually the very question in issue. To say that it involves an operation of the intellect, is a product of intuition, or of something akin to genius, as distinguished from mere mechanical skill, draws one somewhat nearer to an appreciation of the true distinction, but it does not adequately express the idea. The truth is, the word cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not. In a given case we may be able to say that there is present invention of a very high order. In another we can see that there is lacking that impalpable something which distinguishes invention from simple mechanical skill. Courts, adopting fixed principles as a guide, have by a process of exclusion determined that certain variations in old devices do or do not involve invention; but whether the variation relied upon in a particular case is anything more than ordinary mechanical skill is a question which cannot be answered by applying the test of any general definition.

Counsel for the plaintiff in the case under consideration has argued most earnestly that the only practical test of invention is the effect of the device upon the useful arts: in other words, that utility is the sole test of invention, and, inferentially at least, that the utility of a device is conclusively proven by the extent to which it has gone into general use. He cited in this connection certain English cases, which go far to support his contention. These cases, however, must not be construed in such way as to control the language of our statute, which limits the benefits of patent laws to things which are new as well as useful. By the common law of England, an importer—the person who introduced into the Kingdom from any foreign country any useful manufacture—was as much entitled to a monopoly as if he had invented it. Thus in *Darcy v. Allin*, Nov 178, it is stated that, "where any man, by his own charge and industry, or by his own wit or invention, doth bring any new trade into the realm, or any engine tending to the

furtherance of a trade that never was used before, * * * the king may grant to him a monopoly patent * * * in consideration of the good that he doth bring by his invention to the commonwealth;" citing several instances of skill imported from foreign countries. In *Edgebury v. Stephens*, 1 Webst. Pat. Cas. 35, it was said: "The act [of monopolies] intended to encourage new devices useful to the kingdom, and whether learned by travel or by study it is the same thing."

It is evident that these principles have no application to the patent system of the United States, whose beneficence is strictly limited to the invention of what is new and useful, and that the English cases, construing even their more recent acts, must be received with some qualification. That the extent to which a patented device has gone into use is an unsafe criterion, even of its actual utility, is evident from the fact that the general introduction of manufactured articles is as often effected by extensive and judicious advertising, activity in putting the goods upon the market, and large commissions to dealers, as by the intrinsic merit of the articles themselves. The popularity of a proprietary medicine, for instance, would be an unsafe criterion of its real value, since it is a notorious fact that the extent to which such preparations are sold is very largely dependent upon the liberality with which they are advertised, and the attractive manner in which they are put up and exposed to the eye of the purchaser. If the generality of sales were made the test of patentability, it would result that a person, by securing a patent upon some trifling variation from previously known methods, might, by energy in pushing sales or by superiority in finishing or decorating his goods, drive competitors out of the market, and secure a practical monopoly, without in fact having made the slightest contribution of value to the useful arts. The very case under consideration is not barren of testimony that the great success of the McClain pads and clasping hooks—a large demand for which seems to have arisen and increased year by year—is due, partly at least, to the fact that he was the only one who made the manufacture of sweat-pads a specialty; that he made them of a superior quality, advertised them in the most extensive and attractive manner, and adopted means of pushing them upon the market, and thereby largely increased the extent of their sales. Indeed, it is impossible from this testimony to say how far the large sales of these pads is due to their superiority to others or to the energy with which they were forced upon the market.

While this court has held in a number of cases, even so late as *Magowan v. Packing Co.*, 12 Sup. Ct. 71 (decided at the present term), that in a doubtful case the fact that a patented

article had gone into general use is evidence of its utility, it is not conclusive even of that, much less of its patentable novelty.

In no view that we have been able to take of the case can we sustain the second McClain patent. We do not care to inquire how far it was anticipated by the various devices put in evidence, showing the use of a similar spring for analogous purposes, since we are satisfied that a mere severance of the double spring does not involve invention, at least in the absence of conclusive evidence that the single spring performs some new and important function not performed by it in the prior patent. The evidence upon this point is far from satisfactory, and the decree of the circuit court must therefore be affirmed.

407. McCARTY v. LEHIGH, ETC., R. CO., 160 U. S. 110, 40 L. ed. 358, 16 Sup. Ct. 240 (1895, Patent No. 339,913).

Brown, J.:

* * * * *

These claims differ from each other principally in the fact that the flanges Q at the ends of the lower bar G, as well as the pillars H, constituting elements in the third claim, are not found in the fourth; while the fourth describes the plates P, which are stated in the third claim to be "bolted to the ends of said bars under the same," as—

"secured beneath the bars F G at their ends, and notched or grooved on their sides at a, to receive the columns B of the side irons, substantially as and for the purpose set forth."

There is no suggestion in either of these claims that the ends of the bolster rest upon springs in the side trusses, although they are so described in the specification and exhibited in the drawings. It is suggested, however, that this feature may be read into the claims for the purpose of sustaining the patent. While this may be done with a view of showing the connection in which a device is used, and proving that it is an operative device, we know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim and avoid a defense of anticipation, we should never know where to stop. If, for example, a prior device were produced exhibiting the combination of these claims plus the springs, the patentee might insist upon reading some other element into the claims, such for instance as the side frames and all the other operative portions of the mechanism constituting the car-truck, to prove that the prior device was not an anticipation. It might also require

us to read into the fourth claim the flanges and pillars described in the third. This doctrine is too obviously untenable to require argument.

* * * * *

There is another consideration which leads to the same conclusion. The original application, made by McCarty, contained among other things a broad claim for—

“a truck bolster provided on its ends with supporting and guiding plates, substantially as and for the purpose set forth.”

This claim, being obviously too broad in view of the prior patents, was amended so as to read as follows:

“A truck-bolster provided at its ends with plates which are notched to fit upon vertical parts of the frame so as to serve as guides and supports for said bolster, substantially as set forth.”

This claim having been apparently rejected, the patentee abandoned his broad claim for a notched plate, and claimed only a plate in combination with the other features of his bolster, which was finally allowed. His acquiescence in the rulings of the Patent Office in this particular indicates very clearly that he should be restricted to the combination claimed, and that the case is not one calling for a liberal construction. * * *

[See especially for infringement, discussion and construction, *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 24 L. ed. 344, Mr. Justice Bradley restricting to “wide and thin” bars as claimed; *Lehigh, etc., R. R. Co. v. Mellon*, 104 U. S. 112, 26 L. ed. 639, Mr. Justice Woods restricting the patent to the claimed “curved flange” in combination with “a rounded corner to fit said curved flange.”]

408. *MORLEY SEWING MACHINE CO. v. LANCASTER*, 129 U. S. 263, 32 L. ed. 715, 9 Sup. Ct. 299 (1889).

* * * Blatchford, J.:

This is a suit in equity, brought November 6, 1882, in the circuit court of the United States for the District of Massachusetts, by the Morley Sewing-Machine Company and the Morley Button-Sewing Machine Company against Charles B. Lancaster, for the alleged infringement of letters patent No. 236,350, granted January 4, 1881, to James H. Morley, E. S. Fay, and Henry E. Wilkins, on the invention of said Morley, on an application filed June 23, 1880, for an improvement in machines for sewing buttons on fabrics. The machine of the defendant is constructed in accordance with the description contained in letters patent No. 268,369, granted November 28, 1882, to Joseph Mathison, William D. Allen, and C. B. Lancaster, on the invention of said Mathison, for improvements in machines for securing buttons to material, on an application filed August 1, 1882. * * *

There are 18 claims in the patent, only four of which are relied upon by the plaintiffs, namely, claims 1, 2, 8, and 13, which are as follows: "(1) The combination, in a machine for sewing shank-buttons to fabrics, of button-feeding mechanism, appliances for passing a thread through the eye of the buttons and locking the loop to the fabric, and feeding mechanism, substantially as set forth. (2) The combination, in a machine for sewing shank-buttons to fabrics, of a needle and operating mechanism, appliances for bringing the buttons successively to positions to permit the needle to pass through the eye of each button, and means for locking the loop of thread carried by the needle to secure the button to the fabric, substantially as set forth." "(8) The combination, in a machine for sewing buttons to fabrics, of button-feeding and sewing appliances, substantially as set forth, and feeding appliances and operating mechanism, whereby the feeding devices are moved alternately different distances to alternate short button stitches with long stitches between the buttons, as specified." "(13) The combination, with button-sewing appliances, of a trough, appliances for carrying the buttons successively from the trough to the sewing devices, and mechanism for operating said appliances and sewing devices, as set forth." The defendant's machine is known as the "Lancaster Machine."

The Morley machine contains and is made up of three main groups of instrumentalities: (1) Mechanism for holding the buttons in mass, and delivering them separately, in proper position, over the fabric, so that they may be attached to it by the sewing and stitching mechanism; (2) the stitching mechanism; (3) the mechanism for feeding the fabric along, so as to space the stitches and consequently the buttons when sewed on. * * *

It satisfactorily appears that the Morley machine was the first one which accomplished the result of automatically separating buttons which have a shank from a mass of the same, conveying them in order to a position where they can be selected by the machine, one after another, and, by sewing mechanism, coupled with suitable mechanism for feeding the fabric, be sewed thereto at prescribed suitable distances apart from each other. The machine performs automatically these three functions of selecting, sewing and spacing. The problem to be performed was to select from a mass of buttons, furnished with heads, and with wire eyes projecting therefrom, single buttons, and to present them in succession to the needle of a sewing mechanism, so that the needle could pass through the eye and secure it to the fabric. Machinery existed before for selecting from a mass wood-screw blanks, horse nails, and pins, and delivering them to other machinery; but, in such constructions, the shank

of the article being heavier than its head, the tendency was for the articles to arrange themselves in the way with the shanks downward, the heads being supported on the top surface of the way. With such buttons as are used in the two machines in controversy, as the heads are much heavier than the shanks and the eyes combined, the buttons will not naturally arrange themselves with their shanks downward. It is therefore necessary to have some means for turning each button into such a position that a plane passing through its eye shall be perpendicular to a plane passing through the long axis of the sewing needle, so as to insure the passage of the needle through the eye. No machine existing prior to Morley's is shown to have accomplished that operation.

The substance of the defense in the case is that there are certain specific differences between the button-feeding mechanisms in the two machines, and also certain specific differences between their sewing mechanisms; and hence that there is no infringement. This was the view taken by the circuit court in its opinion. 23 Fed. 344.

Morley, having been the first person who succeeded in producing an automatic machine for sewing buttons of the kind in question upon fabrics, is entitled to a liberal construction of the claims of his patent. He was not a mere improver upon a prior machine, which was capable of accomplishing the same general result: in which case his claims would properly receive a narrower interpretation. This principle is well settled in the patent law, both in this country and in England. Where an invention is one of a primary character, and the mechanical functions performed by the machine are, as a whole, entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate mechanisms which go to make up the machine.

In *McCormick v. Talcott*, 20 How. 402, 405, the inquiry was whether McCormick was the first person who invented, in a reaping machine, the apparatus called a "divider," performing the required functions, or whether he had merely improved an existing apparatus, by a combination of mechanical devices which performed the same functions in a better manner. This court, speaking by Mr. Justice Grier, said: "If he" (the patentee) "be the original inventor of the device or machine called the 'divider,' he will have a right to treat as infringers all who make dividers operating on the same principle, and performing the same functions by analogous means or equivalent combinations, even though the infringing machine may be an improvement of the original, and patentable as such. But if the invention

claimed be itself but an improvement on a known machine by a mere change of form or combination of parts, the patentee cannot treat another as an infringer, who has improved the original machine by use of a different form or combination, performing the same functions. The inventor of the first improvement cannot invoke the doctrine of equivalents to suppress all other improvements which are not mere colorable evasions of the first."

So, also, in *Railway Co. v. Sayles*, 97 U. S. 554, 556, this court, speaking by Mr. Justice Bradley, said, in regard to brakes for eight-wheeled railroad cars: "Like almost all other inventions, that of double brakes came when, in the progress of mechanical improvement, it was needed; and, being sought by many minds, it is not wonderful that it was developed in different and independent forms, all original, and yet all bearing a somewhat general resemblance to each other. In such cases, if one inventor precedes all the rest, and strikes out something which includes and underlies all that they produce, he acquires a monopoly, and subjects them to tribute. But if the advance towards the thing desired is gradual, and proceeds step by step, so that no one can claim the complete whole, then each is entitled only to the specific form of device which he produces, and every other inventor is entitled to his own specific form, so long as it differs from those of his competitors, and does not include theirs. These general principles are so obvious that they need no argument or illustration to support them."

The same view was directly applied in *Clough v. Barker*, 106 U. S. 166, 177, 1 Sup. Ct. 188, 198, to the Clough patent for an improvement in gas-burners. The first claim of that patent was for "the bat-wing burner, perforated at the base, in combination with the surrounding tube, substantially as described." The second claim read thus: "In combination with the bat-wing burner, perforated at the base, the surrounding tube, the tubular valve for regulating the supply of external gas to the burner, substantially as described." It appears that in no prior structure had a valve arrangement been applied to regulate the flow of gas in such a combination as that covered by the first claim of the patent. It was therefore held, that the patentee was entitled to the benefit of the doctrine of equivalents, as applied to the combination covered by the second claim. In the defendant's burner, the regulation was made by a tubular valve on the outside of the perforations, instead of on the inside, as in the patent, but performing its work by being screwed up or down, as in the patent. This court said: "Although in the Clough structure the burner and surrounding tube revolve together in adjusting their position in reference to that of the tubular valve, so as to let in or turn off the supply of gas through the perfora-

tions, and although in the Clough structure the flame revolves by the revolution of the burner, and although in the defendant's burners the revolution of the surrounding tube regulated the supply of gas through such perforations, and neither the burner nor the flame revolved, the defendants' valve arrangement must be held to have been an equivalent for that of Clough to the full extent to which that of Clough goes, involving, perhaps, patentable improvements, but still tributary or subject to the patent of Clough. It is true that that patent describes the tubular valve as being inside of the burner-tube; but Clough was the first person who applied a valve regulation of any kind to the combination to which he applied it, and the first person who made such combination; and he is entitled, under decisions heretofore made by this court, to hold as infringements all valve regulations, applied to such a combination, which perform the same office in substantially the same way as, and were known equivalents for, his form of valve regulation." See, also, *Duff v. Pump Co.*, 107 U. S. 636, 639, 2 Sup. Ct. Rep. 487.

The same doctrine was applied by this court in *Valve Co. v. Valve Co.*, 113 U. S. 157, 5 Sup. Ct. 513, to the Richardson patent, the claim of which was: "A safety-valve, with the circular or annular flange or lip, cc, constructed in the manner, or substantially in the manner, shown, so as to operate as and for the purpose herein described." It appeared that Richardson was the first person who made a safety-valve which, while it automatically relieved the pressure of steam in the boiler, did not, in effecting that result, reduce the pressure to such an extent as to make the use of the relieving apparatus practically impossible, because of the expenditure of time and fuel necessary to bring up the steam again to the proper working standard; and that his valve was the first which had a strictured orifice leading from the huddling chamber to the open air, to retard the escape of the steam, and to enable the valve to open with increasing power against the action of the spring, and to close suddenly, with small loss of pressure in the boiler. It was held that that claim covered a valve in which were combined an initial area, an additional area, a huddling chamber beneath the additional area, and a strictured orifice such as that above mentioned, the orifice being proportioned to the strength of the spring. It was also held that, under the claim of a second patent, namely, "the combination of the surface beyond the seat of the safety-valve, with the means herein described for regulating or adjusting the area of the passage for the escape of steam, substantially as and for the purpose described," the patentee was entitled to cover the combination, with the surface of the huddling chamber and the strictured orifice, of a screw-ring to

be moved up or down to obstruct such orifice more or less, in the manner described. It was further held that both of the patents were infringed by a valve which produced the same effects in operation by the means described in Richardson's claims, although the valve proper was an annulus, and the extended surface was a disk inside of the annulus; the Richardson valve proper being a disk, and the extended surface an annulus surrounding the disk; and although the valve proper of the defendant had two ground joints, and only the steam which passed through one of them passed through the stricture, while, in the Richardson valve, all the steam which passed into the air passed through the stricture; and although in the defendant's valve the huddling chamber was at the center, instead of at the circumference, and was in the seat of the valve, under the head, instead of in the head, and the stricture was at the circumference of the seat of the valve, instead of being at the circumference of the head. These conclusions were based on the fact, stated in the opinion of the court, that no prior structure was known or recognized as producing any such result as that produced by Richardson's apparatus; that the prior structures never effected the kind of result attained by his apparatus, because they lacked the thing which gave success; and that, taught by Richardson, and by the use of his apparatus, it was not difficult for skilled mechanics to take the prior structures, and so arrange and use them as to produce more or less of the beneficial results first made known by him. The doctrine thus applicable to a machine patent is of a kindred character with that applied in this country and in England to a patent for a process.

In *Tilghman v. Proctor*, 102 U. S. 707, the claim of Tilghman's patent was for "the manufacturing of fat acids and glycerine from fatty bodies by the action of water at a high temperature and pressure." In the opinion of this court, delivered by Mr. Justice Bradley, the claim was sustained as a claim for a process, irrespective of the particular mode or form of apparatus for carrying it into effect, inasmuch as the patent described a practical and useful mode of carrying it into effect. It was said in the opinion (page 721): "Had the process been known and used before, and not been Tilghman's invention, he could not then have claimed anything more than the particular apparatus described in his patent; but, being the inventor of the process, as we are satisfied was the fact, he was entitled to claim it in the manner he did." It was also held that, in such a case, a person who subsequently discovers a new mode of carrying out the patented process is not entitled to use the process without the consent of the patentee.

Reference was made in the opinion in that case to the decision in *Neilson v. Harford*, 1 Webst. Pat. Cas. 295, which related to Neilson's patent for the process of applying a blast of heated air to anthracite coal in a smelting furnace, by forcing such blast through a vessel situated between the blowing apparatus and the furnace, and heated to a red heat, the form of the heated vessel being stated by the patent to be immaterial. On this question this court said: "That a hot blast is better than a cold blast for smelting iron in a furnace, was the principle or scientific fact discovered by Neilson; and yet, being nothing but a principle, he could not have a patent for that. But, having invented and practically exemplified a process for utilizing this principle, namely, that of heating the blast in a receptacle between the blowing apparatus and the furnace, he was entitled to a patent for that process, although he did not distinctly point out all the forms of apparatus by which the process might be applied, having, nevertheless, pointed out a particular apparatus for that purpose, and having thus shown that the process could be practically and usefully applied. Another person might invent a better apparatus for applying this process than that pointed out by Neilson, and might obtain a patent for such improved apparatus; but he could not use the process without a license from Neilson. His improved apparatus would, in this respect, stand in a relation to the process analogous to that which an improvement on a patented machine bears to the machine itself."

In regard to the case of *Neilson v. Harford*, this court, speaking by Chief Justice Taney, in *O'Reilly v. Morse*, 15 How. 62, 115, 116, said, in reference to the opinion of the court of exchequer in that case, delivered by Baron Parke: * * * [Here quoting as hitherto given.]

This court also said in *Tilghman v. Proctor* (page 728): "If the mode of applying the process is not obvious, then a description of a particular mode by which it may be applied is sufficient. There is, then, a description of the process and of one practical mode in which it may be applied. Perhaps the process is susceptible of being applied in many modes, and by the use of many forms of apparatus. The inventor is not bound to describe them all in order to secure to himself the exclusive right to the process, if he is really its inventor or discoverer. But he must describe some particular mode, or some apparatus by which the process can be applied with at least some beneficial result, in order to show that it is capable of being exhibited and performed in actual experience."

The English doctrine is to the same effect. In the case of *Curtis v. Platt*, before Vice-Chancellor Wood, in 1863, reported in a note to *Adie v. Clark*, 3 Ch. Div. 134, the vice-chancellor

said (page 136), in regard to a patent for an improvement in spinning-mules: "When the thing is wholly novel, and one which has never been achieved before, the machine itself which is invented necessarily contains a great amount of novelty in all its parts; and one looks very narrowly and very jealously upon any other machines for effecting the same object, to see whether or not they are merely colorable contrivances for evading that which has been before done. When the object itself is one which is not new, but the means only are new, one is not inclined to say that a person who invents a particular means of doing something that has been known to all the world long before has a right to extend very largely the interpretation of those means which he has adopted for carrying it into effect." In the same case, on appeal before the lord chancellor (Lord Westbury), (page 138), the views of Vice-Chancellor Wood were concurred in.

In *Badische Anilin v. Levinstein*, 24 Ch. Div. 156, 171, in regard to a patent for improvements in the production of coloring matters for dyeing and printing, Mr. Justice Pearson said: "Where a patent is taken out for a process for arriving at a known result (I mean, a result known before the patent is taken out for the process simpliciter), any other person may take out a patent for another process, or may use another process without taking out a patent, without any infringement of the process first taken out. But when a patent is taken out for a new result not known before, and there is one process described in the patent which is effectual for the purpose of arriving at that new result at the time when the patent is taken out, the patentee is entitled to protection against all other processes for the same result; and no person can, without infringing upon his patent, adopt simply a different process for arriving at the same result." As authority for this view, he cites the cases of *Jupe v. Pratt*, 1 Webst. Pat. Cas. 146; *Househill Co. v. Neilson*, Id. 685; and *Curtis v. Platt*, ubi supra, in *Goodeve's Pat. Cas.* 102. He decided in favor of the plaintiff.

On appeal to the court of appeal, 29 Ch. Div. 366, the decree was reversed, Lords Justices Bowen and Fry being in favor of a reversal, and Lord Justice Baggallay against it. On further appeal to the house of lords, 12 App. Cas. 710, the decision of the court of appeal was reversed, and the decision of Mr. Justice Pearson was restored, Lord Halsbury (Lord Chancellor), Lord Herschell, and Lord Macnaghten sitting in the case and concurring. In the judgment given by Lord Herschell, it is stated that all the judges of all the courts were agreed on the question of infringement.

A recent and instructive case is that of *Proctor v. Bemis*, 36 Ch. Div. 740, in regard to a patent for self-acting mechanism for supplying fuel at intervals to, and distributing it over the surface of, a fire. The court of first instance held the patent to be valid, and to have been infringed. In the court of appeal, Lords Justices Cotton, Bowen, and Fry unanimously affirmed the decision, and held that a patent for a combination of known mechanical contrivances, producing a new result, was infringed by a machine producing the same result by a combination of mechanical equivalents of such contrivances, with some alterations and omissions, which did not prevent the new machine from being one which took the substance and essence of the patented invention; but that, where the result was old, and the novelty consisted only of improvements in a known machine for producing a known result, the patentee must be tied down strictly to the mode which he had described of effecting the improvements. Lord Justice Cotton, after referring to the case of *Curtis v. Platt*, 3 Ch. Div. 135, note, said (page 757): "Where there is no novelty in the result, and where the machine is not a new one, but the claim is only for improvements in a known machine for producing a known result, the patentee must be tied down strictly to the invention which he claims, and the mode which he points out of effecting the improvement. But here the throwing coal onto the furnace by the intermittent radial action of a flap or door was new. Nothing of the kind had been done before. It is true, there had previously been imperfect machines for feeding furnaces automatically, but that had not, previously to this machine, been done by any intermittent radial action of a flap or door, as is done by the plaintiff. In my opinion, therefore, the opinions expressed by the judges with reference to mere improvements in an old machine for an old purpose cannot apply to a case like this, where there was not only novelty in the machine, but novelty in the result to be produced by that machine." Lord Justice Bowen said (page 764): "Now, I think it goes to the root of this case to remember that this is, as was described by one of the counsel, really a pioneer invention; and it is by the light of that, as it seems to me, that we ought to consider the question whether there have been variations or omissions and additions, which prevent the machine which is complained of from being an infringement of the plaintiff's. With regard to the variations, I take precisely the same view that the Lord Justice Cotton has taken; and I will not travel over the ground again. With regard to the additions and omissions, it is obvious that additions may be an improvement, and that omissions may be an improvement; but the mere fact that there is an addition, or the mere fact that

there is an omission, does not enable you to take the substance of the plaintiff's patent. The question is not whether the addition is material, or whether the omission is material, but whether what has been taken is the substance and essence of the invention. That seems to me to be the true test, as propounded by the house of lords in *Clark v. Adie*, 2 App. Cas. 315, 320." Lord Justice Fry said (page 766): "The pith and substance of the plaintiff's invention is, in my judgment, putting coals upon a fire by an intermittent radial action, an invention which, it may be remarked, reproduces with great exactitude the action of the human arm in placing coals upon a fire." Also (page 768): "In the present case we have these broad features of likeness: that in both machines the motion is a radial motion, in both machines it is an intermittent motion, in both machines it is of course produced by means of a radius, in both machines that radius is moved in one direction by tappets, and the same radius is moved in the opposite direction by a spring. All those broad features of the machines are in common; but there is this difference: that in the plaintiff's machine a shaft is impelled by the tappets and by the spring, whereas in the defendant's machine the radius itself is impelled by the tappets and the spring. It follows that the radius in the plaintiff's is attached to the shaft, whereas the radius in the defendant's works on a pin. That is the broad distinction between them. The result, however, appears to me to be substantially the same; by substituting the pin for the shaft as the center on which the radius acts, and by impelling the radius itself instead of impelling the shaft fixed to the radius, you have produced in substance precisely the same radial action by the same means. You drive your radius in one direction by tappets, and you drive it in the other direction by the spring, and you produce the same result, namely, the feeding of coal by a radial motion made intermittent in one direction by the operation of the tappets, and in the other direction by the spring. I think, therefore, that we have a new combination for a new object, and that the gist of that combination has been taken by the defendant, and that, consequently, there is an infringement."

Applying these views to the case in hand, Morley having been the first inventor of an automatic button-sewing machine, by uniting in one organization mechanism for feeding buttons from a mass, and delivering them one by one to sewing mechanism and to the fabric to which they are to be secured, and sewing mechanism for passing a thread through the eye of the button, and securing it to the fabric, and feeding mechanism for moving the fabric the required distances to space the buttons, another machine is an infringement, in which such three sets of mechan-

ism are combined, provided each mechanism, individually considered, is a proper equivalent for the corresponding mechanism in the Morley patent; and it makes no difference that, in the infringing machine, the button-feeding mechanism is more simple, and the sewing mechanism and the mechanism for feeding the fabric are different in mechanical construction, so long as they perform each the same function as the corresponding mechanism in the Morley machine, in substantially the same way, and are combined to produce the same result.

The view taken on the part of the defendant in regard to the question of infringement is that, inasmuch as the Lancaster machine uses different devices in its mechanisms which correspond to those referred to in the first, second, eighth, and thirteenth claims of the patent, those claims are to be limited to the special devices described in the patent, which make up such combinations, although both machines contain the same main group of instrumentalities which, when combined, make up the machine. But, in a pioneer patent, such as that of Morley, with the four claims in question such as they are, the special devices set forth by Morley are not necessary constituents of the claims. The main operative features of both machines are the same. In each there is a receptacle for shank-buttons in a mass; in each the mass of buttons passes in order into a conveyer-way; and in each the buttons conveyed to the sewing mechanism are presented successively with their shanks in a horizontal position, so as to allow of the passage of the needle through the eye. In the Morley machine, the buttons are carried along the raceway with their shanks downward, and are turned over by proper devices, so that the needle can enter the eye. In the Lancaster machine, the buttons travel along the raceway with their shanks upward, and the twisted shape of the raceway causes the buttons to be presented properly in succession to the needle. The only difference is that in the Morley machine there is an active operating device for turning the buttons, in the shape of a button-wheel, which receives them, and shuts off the column, and takes one at a time out of the raceway; while in the Lancaster machine there is a passive device for accomplishing the same result of turning the buttons, and there is no button-wheel, but there is a spring gate at the end of the raceway, which shuts off the column and, with the addition of other devices, allows one button at a time to be withdrawn from the raceway. But in the Morley patent a modification is described, whereby the button-wheel is dispensed with, and a spring gate, as in the Lancaster machine, is employed, and an active device is used to open the spring gate, and discharge the button; while in the Lancaster machine an active instrumentality is used to effect

the same result, in combination with the sidewise movement of the raceway, and in connection with the fact that the needle enters the eye of the button and passes a thread through it. As to the mechanism for feeding the fabric, it is substantially the same in the two machines, for in each the needle operates to feed the fabric, while inserted in it, and it makes no difference that in the Morley machine the two needles swing like an inverted pendulum, while in the Lancaster machine the single needle swings in a straight line.

The principal difference relied on by the defendant is in regard to the sewing or stitching mechanism, based upon the difference in the kind of stitch used in the two machines for fastening the button to the fabric. The two stitches are, indeed, different, specifically considered. Morley uses the chain stitch. In the Lancaster machine, the stitch is made by looping the thread upon itself, and putting the bight of the loop around the shank of the button, so as to prevent the loop from pulling out, as it would otherwise do. The Morley patent, however, is not for any particular kind of stitch, or for any particular kind of mechanism for making such stitch. When the form of the stitch is changed, the instrumentalities for making it must change. Morley says, in his specification, that different means for making a stitch may be employed, as well as other feed mechanisms. The contention of the defendant in regard to the sewing mechanism rests upon the proposition that the convolution or concatenation of thread which makes up the stitch in the Lancaster machine is different from that which is found in the Morley machine. In each machine, however, the buttons are spaced at the proper distances apart by the feeding mechanism which moves the fabric along, and the feeding device is moved alternately different distances, to alternate short stitches with long stitches between the buttons. In each machine the button is taken possession of by the sewing mechanism, and the needle in each enters the eye of the button. In the Lancaster machine, however, the thread is so looped as to embrace also the shank of the button; and thus, if the button were not present in the Lancaster machine, the lock-stitch would not be formed, but merely a succession of loops, which could be pulled out of the fabric. But this convolution or concatenation of the thread to form the fastening of the stitch, and the particular device which forms such convolution or concatenation, are not made, by the Morley patent, elements which enter into the claims in question. Those claims are not for a result or effect, irrespective of the means by which the effect is accomplished. It is open to a subsequent inventor to accomplish the same result, if he can, by substantially different means. The effect of

the rule before laid down is merely to require that, in determining whether the means employed in the Lancaster machine are substantially the same means as those employed in the Morley machine, the Morley patent is to receive a liberal construction, in view of the fact that he was a pioneer in the construction of an automatic button-sewing machine, and that his patent, especially in view of the character and terms of the four claims in question, is not to be limited to the particular devices or instrumentalities described by him, used in the three main elements of his machine, which, combined together, make it up. This is the principle applied by this court in *Valve Co. v. Valve Co.*, 113 U. S. 157, 5 Sup. Ct. 513.

In all three of the main mechanisms used in the Lancaster machine the means employed in it are substantially equivalents of those employed in the Morley machine. There is in each a hopper, containing the mass of buttons, and an inclined conveyer-way leading from the hopper to the sewing mechanism. The only question in regard to the button-feeding mechanism is, whether the means employed in the Lancaster machine for turning the buttons so that the eyes will come into the path of the needle, are within the means employed for the same purpose in the Morley machine. In the Morley machine there is a flexible, corrugated strip of metal, which is oscillated to and fro, and operates to roll the buttons over, so that their shanks will occupy a groove at the bottom of the trough. In the Lancaster machine, the reciprocating brush which sweeps over the bottom of the hopper in which the buttons lie in a mass, operates in an equivalent way with the corrugated strip of the Morley machine, and causes the shanks, which stand upward, of the buttons which have been rolled over by its action, to enter slits in a metal plate, which converge in the single conveyer-way. The only difference is that in the Morley machine the shanks are caused to lie in one direction at one time in their path, and in the Lancaster machine the same result is accomplished by equivalent devices at another time. As to the instrumentalities employed in the two machines for bringing the buttons one by one so that their eyes will stand in a horizontal position, ready to receive the needle, the buttons in the Morley machine pass down the conveyer-way with their eyes pointing downward, and occupying the groove, and from the conveyer-way they enter one by one into a button-wheel, which, by revolving, turns them 180 deg., and they are then received into a carrier which further turns them 90 deg., so as to get the eye into a horizontal plane. In the Lancaster machine, it is not necessary to turn the buttons more than 90 deg., because they have been so rolled over by the brush in the hopper that their eyes point

upward and enter the slits, and the conveyer-way is twisted and so turns the button that its eye will occupy a horizontal plane, ready to receive the needel. Then the needle, entering the eye of the button, pulls the button out of the conveyer, and the latter moves out of the way, leaving the button in the possession of the sewing mechanism. These instrumentalities are the equivalents of each other, the differences being merely formal, active instrumentalities being employed in one case to turn the buttons, and in the other that end being accomplished by the twisting of the conveyer-way. To employ a curved path to change the plane occupied by a body passing along that path was well known in mechanics, and is a device shown in the Morley patent for turning the buttons from a nearly vertical position to a horizontal position, by a corresponding variation in the inclination of the conveyer-way. The only difference in the particular devices in the two machines in this respect results from the fact that in the Morley machine the buttons pass from the hopper with their shanks downward, while in the Lancaster machine they pass with their shanks upward. From this it results that, while the means employed in the two machines are substantially the same to effect the same result, active agents can be used in the one case, while passive agents are used in the other, to effect the same turning of the button. Indeed, in the modified form of construction suggested in the Morley specification, there is a spring gate for holding the buttons up, while in the Lancaster machine there is a similar spring; the only difference being that in the Morley machine the spring gate is opened by a special device, while in the Lancaster machine the button itself opens the spring when the button-holding contrivance moves out of the way. In that modification of the Morley arrangement, as the specification states, the button-wheel and the plunger are dispensed with, and it is not necessary to turn the button 180 deg. on a vertical axis. So, in this respect, the only difference between the two machines is that in the Morley machine the spring gate is opened by an active device, while in the Lancaster machine the conveyer-way is moved sidewise by an active device, leaving the button behind, which opens the spring gate because the needle has entered the eye of the button.

In regard to the sewing mechanism in the two machines, a sewing-needle, with thread, is employed in each to fasten the buttons to the fabric. In each the thread is continuous, and follows the fabric as that is moved along by the mechanism which feeds it. The Morley machine employs the common stitch. In the Lancaster machine there is a peculiar stitch, in which a loop is drawn around the shank of the button, and thus the stitch

is locked against being drawn out; but, notwithstanding the new convolution or concatenation of thread used in the Lancaster machine to secure the shank of the button to the fabric, the sewing mechanism of that machine is a substantial equivalent for the corresponding mechanism of the Morley patent. The invention of Morley in that respect did not consist in the peculiarity of the stitch, but in the combination of the needle, and the mechanism for operating it, with a button having a shank and an eye, the eye being held in a horizontal plane in the path of the needle, so that the thread carried by the needle could secure the button to the fabric. It is immaterial, in so securing the button, whether or not a loop is passed over the head of the button. The defendant's device and arrangement may be an improvement, and the subject of a patent, but nevertheless the use of it involves the plaintiff's invention. It may be true that the defendant's peculiar form of stitch was unknown before; and it may also be true that his arrangement for carrying the buttons with their eyes upward, and turning the eyes into a horizontal plane by the twisting of the conveyer-way, was not before known. Of course, they were not before known in a machine for automatically sewing buttons to a fabric, because Morley's machine was the first to do that. But still the defendant employs for the above purposes known devices, which, in mechanics, were recognized as proper substitutes for the devices used by Morley to effect the same results. Thus, in the Lancaster machine, the brush for rolling over the buttons is the obvious equivalent of the corrugated plate in the Morley machine. The mode of operation used in the Lancaster machine for rolling over the buttons so that their shanks shall point in a particular direction before entering the main conveyer-way is the same mode of operation found in the Morley machine, where the corrugated plate rolls the buttons over during their passage to the grooved conveyer-way, so that their shanks shall all point in the same direction. In the Lancaster machine the action resulting from the twisted way is a mechanical equivalent for the button-wheel, the punch, and the carrier used in the Morley machine to turn the eye into the proper plane for the needle to enter it; and the specific difference in the devices in this respect becomes less when the modification described in the Morley patent is used, so that in each of the two machines the button is turned only 90 deg. on a horizontal axis, and in each of them a spring gate is employed, opened in the one case by an active device, while in the other case an active device moves the conveyer away from the particular button which is being held by the needle. In this sense the mechanical devices used by the defendant are known substitutes or equivalents for those employed

in the Morley machine to effect the same result, and this is the proper meaning of the term "known equivalent," in reference to a pioneer machine such as that of Morley; otherwise a difference in the particular devices used to accomplish a particular result in such a machine would always enable a defendant to escape the charge of infringement, provided such devices were new with the defendant in such a machine, because, as no machine for accomplishing the result existed before that of the plaintiff, the particular device alleged to avoid infringement could not have existed or been known in such a machine prior to the plaintiff's invention.

It results from these views that the decree of the circuit court must be reversed, and the case be remanded to that court, with a direction to enter a decree in favor of the plaintiff, sustaining the validity of claims 1, 2, 8, and 13 of the plaintiff's patent, and adjudging that those claims have been infringed by the defendant, and ordering a reference to a master to take an account of profits and damages in respect to such infringement, and awarding to the plaintiffs a perpetual injunction in respect to the four claims above mentioned, and to take such further proceedings as shall be according to law, and not inconsistent with this opinion.

409. REECE BUTTON-HOLE MACHINE COMPANY v. GLOBE BUTTON-HOLE MACHINE COMPANY, 61 Fed. 958, 10 C. C. A. 194 (1894, First Circuit).

The claims especially pertinent are the following:

5. In a button-hole sewing-machine, a framework for the needle-bar and looper and a bedplate to hold the material, combined with two cams and with mechanism between the said cams and framework, whereby the needle-bar, by the movements imparted to it longitudinally and laterally of a button-hole by the said frame, is caused to travel backward in a substantially straight line until near the eye of the button-hole, then backward and outward and inward, then forward and inward to follow the contour of the edge of the enlarged eye part of the button-hole, and then forward substantially in a straight line along the other side of the button-hole, as set forth.

12. The frame-work a and bed-plate a', and the cloth-clamping mechanism movably connected with the bed-plate, combined with the cutting-bed and means for moving the cutting-bed and frame longitudinally with relation to the cloth-clamping mechanism, the said cutting bed being provided with inclines or projections to act upon the clamp and spread the button-hole as

the relative positions of the bed-plate and frame-work are changed longitudinally, substantially as described.

18. The frame of a sewing-machine constructed with two arms, one arm carrying above the cloth-plate a reciprocating needle-bar having a periodical rotary motion, and the other arm carrying below the cloth-plate a looping mechanism having a rotary motion in unison with that of the needle-bar, substantially as described.

In the above drawings a represents an overhanging movable frame-work mounted on the stationary bed-plate a'. The needle-bar has two needles, an eye-pointed cloth-penetrating needle d and a larger and longer eye-pointed over-edge or slit needle d'. One of these needles will run along the side of the button-hole and the other will play down through the slit which is cut to make the button-hole. It will be obvious that the needles must travel down one side of the button-hole and then turn at the bottom and go up the other side and then go around the eye of the button-hole. It is the relation of the principal parts which gives this action to these needles, the functions being indicated in the above quoted claims.

The needle-bar is operated through an eccentric b driving the arm c' and operating the needle through the connection c³. The main shaft a² which carries the eccentric b also carries a disk f. Behind the disk f are additional mechanical parts operated through the disk f to reciprocate the rod f⁹ attached at its lower end to the rear end of a lever g pivoted at g' upon an arm a³ fixed to the movable frame-work a. These parts act upon the looper mechanism g⁴, it being the object to operate this looper mechanism so as to give it an irregular motion in such time with relation to the eccentric b which moves the needle-bar, as to enable the needles and looper to properly cooperate in the formation of the stitch, all the said eccentrics being operated by the same shaft.

The bracket arm of the movable frame a, at the front, is provided with a pinion d² having a tubular axle d³ extended upward and fitted loosely into the lower end of the bracket arm. The pinion d² is engaged by the teeth of the sector e which at proper times will be made to partially rotate the needle-bar b'. d⁵ represents a guide-plate, shown in Fig. 1. At the front side of this guide plate and pivoted upon it at d⁷ is a loop spreader d⁸ having an irregular groove d⁹ into which enters a pin b⁶ of the needle-bar to cause the pin to actuate the spreader during each descent of the needle-bar so that the fork point or end d¹⁰ of the spreader will catch upon the thread of the over-edge needle d' between the cloth and the eye of the said

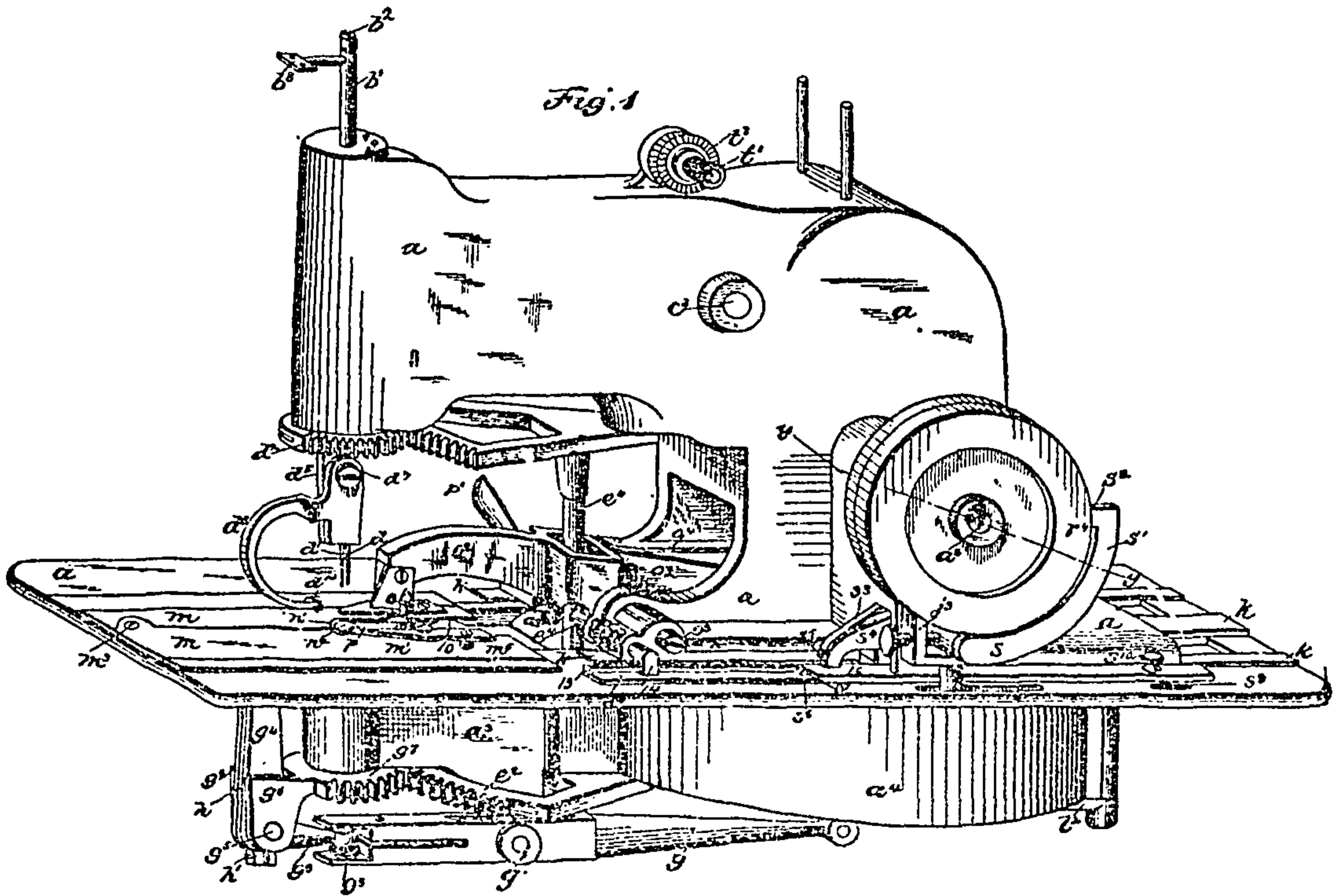


Fig. 1

needle and carry it backward over the edge of the material, the said spreader laying the thread of the needle d' back far enough over the edge being overstitched and upon the surface of the material immediately under the path of descent of the work-penetrating needle d which is shorter than the needle d' so that the work-penetrating needle, before penetrating the material, enters the loop so formed and laid upon it by the spreader.

It will be observed that even if it be somewhat difficult to follow these reference letters the general idea of the manner in which this stitch is being made along the button-hole may be understood.

As previously indicated,

The gears d^2 g^7 , in connection with the needle-bar b' and looper-actuating mechanism, are moved or turned progressively in unison by means of sectors.

The sector e , that engages the pinion d^2 , is pivoted at e' upon the bracket-arm of the frame-work a , and the sector e^2 at e^3 on a circular casing, a^4 , affixed to and forming a portion of the movable frame-work, and these two sectors are joined together by a rod or connection, e^4 , which causes them to move simultaneously in the same direction at the same speed.

The lowermost sector, e^2 , has a backwardly-extended arm, e^5 (see Fig. 5), provided with a roller pin or stud, e^6 , that is extended through a slot, e^7 , in the said casing a^4 , and extended into a groove, 4 , at the under side of the grooved cam or disk j , mounted upon a hollow stud, a^5 , of the said casing, the said groove being of the proper shape to hold the sectors, pinions, needle-bar, needles, and looper in position for all the stitching mechanism to travel horizontally along the straight sides of the button-hole slit, and at the proper time, as when the eye part or enlarged end of the button-hole is being stitched, to gradually move the said sectors so as to progressively turn the pinions, needle-bar, and looper, so that the penetrating-needle will travel in a circle about the enlarged end or eye of the button-hole. During this semi-rotation of the needle-bar the over-edge needle travels slower than the penetrating-needle, and in the arc of a smaller circle.

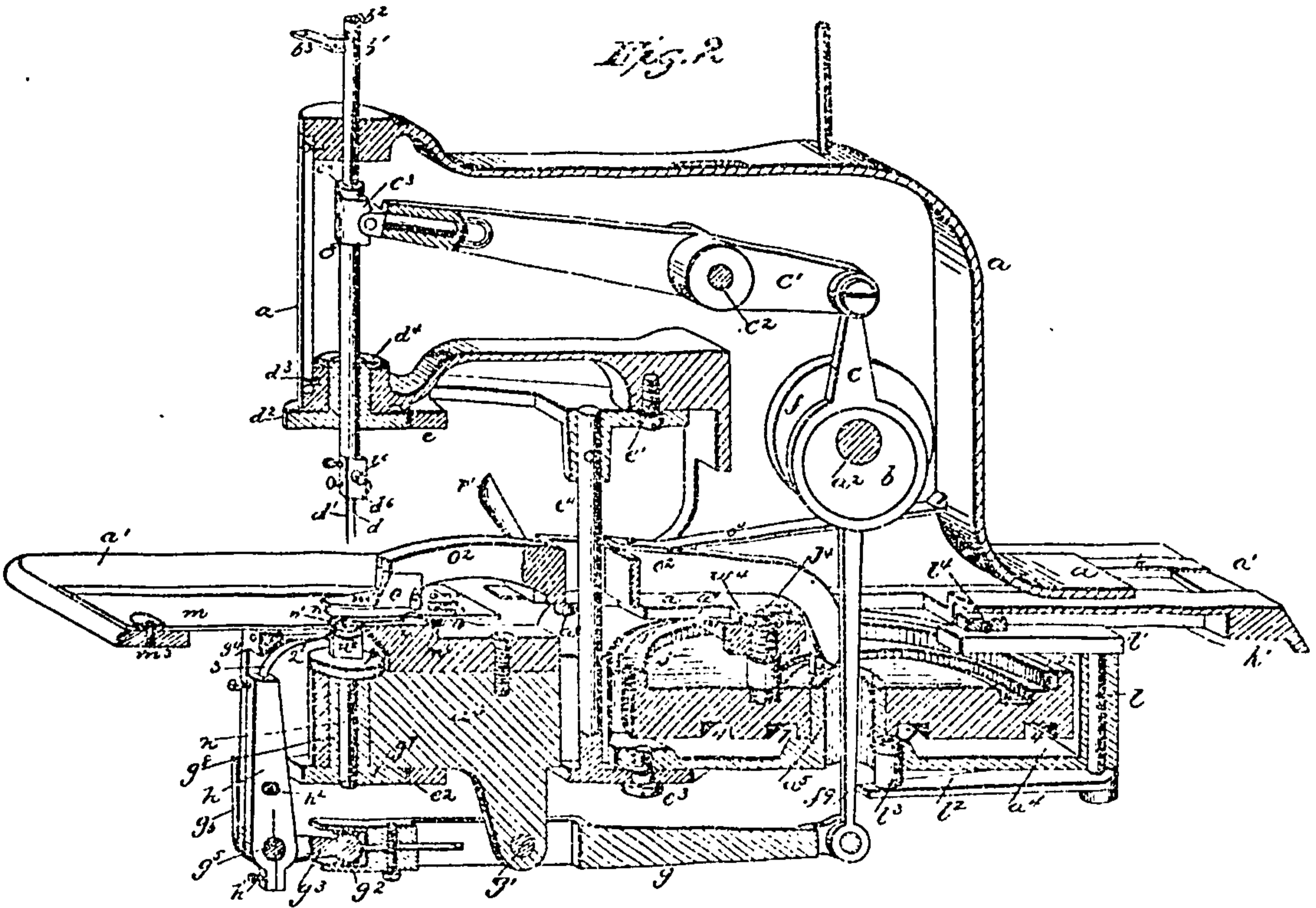
The movable frame-work a a^3 a^4 , which carries the stitching and cutting mechanisms, is mounted upon the flat and narrow elevated ledges k of the stationary bed-plate, so as to be moved backward and forward thereon in the direction of the length of the button-hole slit for a distance equal to the length of the longest button-hole to be stitched on the machine. In addition to this forward-and-backward movement, the said frame-work and its connected parts are also moved laterally or vibrated

about the stud j^4 as a center, as the needles (one edge of one side of the button-hole slit having been stitched) are to pass around the eye of the button-hole to stitch the other straight and parallel side of the said button-hole slit, the said stud j^4 being fixed in the stationary plate a' and resting in the groove b at the upper side of the disk j , as in Fig. 2.

The forward motion of the movable frame a a^3 a^4 and connected needle-bar and looper mechanism is produced by the cam-groove b at the top of the cam-disk j , into which extends the roller pin or stud j^4 , connected with the fixed bed-plate a' .

Rotation of disk j , containing groove b , the said groove receiving the stud j^4 of the fixed plate, causes the said disk and frame-work, in which its carrying stud is mounted, to slide longitudinally. The flat or smooth bottom part, a^0 , of the frame a , resting on the elevated smooth ledges k of the plate a' , may be moved forward thereon or be vibrated or moved laterally thereon, at suitable times, about the stud j^4 as a fulcrum, different parts of the frame-work so vibrated about the said stud occupying at different times different positions longitudinally with relation to the said stud, according to the part of the groove b occupied by the stud j^4 .

Connected with the casing a^1 of the movable frame is a rock-shaft, l , having two arms, l^1 l^2 . The lower arm, l^2 , has a pin or roller-stud, l^3 , which is extended through the slot l^5 in the casing a^1 and made to enter the cam-groove 7 at the under side of the said cam-disk j . The other arm, l^1 , of the said rock-shaft l has a pin or stud, l^4 , that enters the groove k' at the lower side of the fixed bed-plate a' and at the rear of the stud j^4 . The cam-groove 7 of the rotating disk j , having its carrying-stud or axis made as a fixed part of the movable frame a^1 (see Figs. 2 and 3), acts upon the stud l^3 of the arm l^2 of the rock-shaft l and turns the said rock-shaft l , and as the pin l^4 , carried by the arm l^1 , bears upon or rests against the fixed or immovable bed a' , it results that the rock-shaft l must move away laterally from the slot k' of the fixed plate a' , thus carrying with it the movable frame-work a a^3 a^4 , vibrating the latter and all the stitch-making parts laterally more or less in the arc or a circle about the fixed stud j^4 . The extent of the forward and vibratory movements of the stitching parts depends upon the disk j and the shape of the grooves b 7 therein, they acting to change the position of the movable frame and needle-bar, to enable the needles (one side of the button-hole having been stitched) to pass about the rounded end or eye of the button-hole, ready to be again moved horizontally along and parallel with the opposite side of the button-hole next to be stitched. In



other words, the resultant action of the two cam-grooves 6 7 is such as to cause the axis of the needle-bar b' to travel in a path corresponding in shape with the straight part and rounded eye of a button-hole.

If now the above claims be read the purpose of the invention will be understood and the bearing also of the amendments required, as stated in the opinion, and the essential question decided in this important case.]

* * *

Before Colt, Putnam and Nelson, Judges.

Putnam, J.:

The bill in this case was framed with reference to two patents, but one was withdrawn before the hearing in the court below, so that all we now have to consider are claims 5, 11, 12, 13 and 18 of No. 240,546, issued to John Reece April 26, 1881. The main question relates to the proposition that this patent can in no event cover a machine of which the frame is stationary and the plate moves. It grows out of the fact that in the specification and claims are many expressions indicating that the frame moves and the plate is fixed. A part of the preamble is as follows:

"This invention relates to sewing-machines for stitching button-holes, and is an improvement upon that class of the said machines wherein the stitching mechanism is made to travel first along one side of the button-hole slit, then about the eye and along the other side of the slit."

The fifth claim also contains the following:

"Whereby the needle bar, by the movements imparted to it longitudinally and laterally of a button-hole by the said frame, is caused to travel backward, etc."

Other expressions of like character appear, with more or less positiveness and fullness, in nearly all the other claims and in various parts of the specification, and nowhere throughout the patent is found any indicating that the frame might be fixed and the plate movable.

Theoretically, an inventor, in taking out a patent under the statutes of the United States, subtracts and adds nothing from or to his actual invention. The proceedings recognize his incipient ownership, and theoretically they constitute only a division of time, by which there is carved out of the entire estate a holding for a period of years for the inventor, and the fee is left to the public. Thus his patent is not at all akin to the King's grant, which must be expressed "*ex speciali gratia, certa*

scientia, et mero motu regis," or be interpreted against the subject who receives it. Except for the provisions which, for public interest, require in a patent a description and claim, the same unrestricted rules of the common law would protect an inventor's statute right as are relied on to support a trade-mark or business good-will. Nevertheless, with reference to patents, the courts are necessarily subject to the restraints arising from the incorporation into them of the description and claim which the statutes require. In interpreting these, however, the rule must be accepted that it is to be presumed the inventor did not intend to split up his invention. This is only an application of the ordinary rule of interpretation, that transactions are to be construed in the light of all the circumstances and of the apparent purposes of the parties to them. Specifications and claims have not yet fallen into such settled forms as to enable the courts to construe them in any considerable part with such certainty as they construe many words and phrases in formal instruments at the common law, but on the whole the entire subject-matter must be taken together for effectuating the true purpose of the transaction, as contracts and wills, which are so frequently drawn informally, are usually construed.

The ordinary rule that if by a literal construction an instrument would be rendered frivolous and ineffectual, and its apparent object frustrated, a different exposition will be applied, if it can be supported by anything in it, requires that words which relate to what may be held non-essentials, however much multiplied, shall not be permitted unnecessarily to control the sense. For the most part such words are merely illustrative or are used through inadvertence. On the other hand, it is true that words and phrases, which might have been omitted on the presumption that they relate to non-essentials, may be introduced in such direct and positive manner as to leave the courts no option, except to regard them as affecting the objects and limitations of the instrument in question. Especially may this be so when words which otherwise might be regarded as unimportant are introduced by the way of amendment. This is a common rule, which, perhaps, has been illustrated more frequently with marine insurance policies than elsewhere. There is no doubt that if into an instrument which has been prepared and submitted additional words are subsequently introduced by mutual consent greater effect may sometimes be attributed to such words than otherwise would be given them, for they then become the immediate language selected by the parties, and may be assumed to have been especially within their intention.

The leading rule which we have given has been constantly restated by the text-writers and the courts as having full application to patents. They make use of such expressions as—

“*Ut res magis valeat quam pereat;*”

that—

“a patent should be construed in a liberal spirit, sustaining the just claims of the inventor;”

that the titles by which patents are held—

“should not be overthrown upon doubts or objections capable of a reasonable and just solution in favor of their validity;”

that—

“in construing a patent the court will remember that the specification and claims are often unskillfully drawn,”

and that—

“the claim shall be construed, if possible, to sustain the patentee’s right to all that he has invented.”

It is true the general rules we have stated include the subordinate principle, which applies everywhere, that they are not to be—

“carried so far as to exclude what is in the patent, or to interpolate anything which it does not contain.”

It is impossible, however, to carry this to the extent of applying to patents as fully as it is applied to instruments in general the maxim *enumeratio unius exclusio alterius*. With the aid of the doctrine of equivalents the courts are constantly interpolating in specifications and claims what they do not contain in the same sense in which the letter of ordinary instruments is required to contain matter on which the parties rely. To extend, in disregard of this, the rule against interpolations to any particular case requires either that the claims relate to such mere matters of form or detail that interpretation by exclusion becomes just and reasonable or that the specifications and claims be so phrased as in fact to contain a clearly intended exclusion or the equivalent thereof. In the opinion of the Court the ingenious presentation of the defense in this case overlooks this last principle. The defense claims that on account of the numerous expressions to which we have referred the patentee was limited to machines in which the frame travels and the plate remains at rest. It must be conceded that, taking these specifications and the claims as a whole, they show that Reece had present in his own mind at the time of his application a machine with a movable frame and a fixed plate; but if this is all there is of it, and if this is sufficient to establish the defense, the question arises, where does the doctrine of equivalents come in?

The most important parts of the case at bar are within the

four corners of the principles we have stated. The Court has no doubt that Reece was the inventor of nearly everything, if not everything, demanded by the Reece Button-Hole Machine Company in the case at bar, and was entitled to a patent therefor; and the question is whether, by reason of the peculiar phraseology of his specification and claims, as first drawn, or by reason of the making of certain amendments during the progress of his application through the Patent Office, Reece, notwithstanding the rules of interpretation entitled him to a favorable construction, has limited himself to a mechanism in which the frame travels, or whether, if he has thus expressed the literal terms of his patent, he has further so limited himself as to deprive himself of the benefit of the law of equivalents with reference to a machine in all respects a copy of his actual invention as shown in his patent, except as to the non-essential characteristic that the frame remains at rest and motion is given to the plate.

There may be reasons for finding that Reece was the inventor of the entire machine with numerous functions in somewhat the same way in which Morley was such inventor as determined in *Morley Sewing Machine Company v. Lancaster*, 47 O. G. 267, 129 U. S. 263. It is, however, so clear that Reece's claims do not cover the machine as a whole, but only various parts of it, that all the propositions made in his behalf having a different aspect fail to assist us. Yet in some particulars Reece was clearly far in advance of those who preceded him and entitled to the full benefit of whatever may be deduced from that fact. In *Baltimore Traction Company v. Baltimore Belt Railroad Company*, 151 U. S. 137, 144, the Court said:

"But when in a class of machines so widely used as those in question it is made to appear that at last, after repeated and futile attempts, a machine has been contrived which accomplishes the result desired, and when the Patent Office has granted a patent to the successful inventor, the court should not be ready to adopt a narrow or astute construction, fatal to the grant."

In *Miller v. Eagle Manufacturing Company*, 66 O. G. 845, 151 U. S. 186, 207, the Court, in laying down the latest, and, to our thinking, the best expression of the rule touching so-called pioneer patents, being in fact a rule, which covers all such and all others, used the following language:

"The range of equivalents depends upon the extent and nature of the invention. If the invention is broad or primary in its character, the range of equivalents will be correspondingly

broad, under the liberal construction which the courts give to such inventions.”

The practical effect of this defense is to maintain in substance, that the entire novelty of Reece's fifth claim, which we will use for illustration, turns on the fact that the plate is fixed and the frame moves. In other words, Reece stands no better, practically, on the construction put by the defense on this claim than if he had found a stitching mechanism in all respects the same as that invented by him, with all the elements which go into it, but anticipating him and had combined it with a fixed plate. As this alone might not have been patentable, and as, moreover, the principle of his stitching mechanism is clearly such that the relative movements as between it and the plate form an essential matter, while the absolute movements—that is, whether the plate moves or the frame moves—are non-essential, the proposition of the defense, if maintained, destroys, through the phraseology of the application and claims touching matters thus non-essential, the entire value of this most important, useful, and hitherto profitable invention. A suggestion of such triviality on the part of the Patent Office as is involved in a construction which will produce such a result cannot be well presumed. Among all the cases brought to our attention we have seen none that goes to this extent with reference to the class of inventions described in the extract from *Miller v. Eagle Manufacturing Company*, *ubi supra*, nor do we think any can be found which has authority to bind us.

The citations which we have made from *Baltimore Traction Company v. Baltimore Belt Railroad Company*, *ubi supra*, and *Miller v. Eagle Manufacturing Company*, *ubi supra*, and others which we will hereafter make use of, ought plainly to lay out of the case all rules of interpretation found in the decisions of the courts, or in text-books, which appertain solely to inventions plainly and essentially narrow, and ought thus to sift out easily and render it unnecessary for us to examine a considerable number of the authorities brought to our attention.

We lay aside at this stage all decisions growing out of the fact that amendments were made in the application on its passage through the Patent Office. This includes *Union Metallic Cartridge Company v. United States Cartridge Company*, 30 O. G. 771, 112 U. S. 624, and all others of that character. We do not mean by this, however, to reject in considering this first question what was thus made new; but we take the specification and claims as they now stand, without reference to the fact that they were changed at any stage. We also lay aside all those in which the court after all, with the aid of the entire case, came

down to the essence of the invention and held in substance that the claims covered it fully. Among others of this class appear to be *Brooks v. Fiske*, 15 How. 212; *Klein v. Russell*, 19 Wall. 433; *Goodyear Dental Vulcanite Company v. Davis*, 19 O. G. 543, 102 U. S. 222; *Béné v. Jeantet*, 47 O. G. 402, 129 U. S. 683, and *Gordon v. Warder*, 65 O. G. 1403, 150 U. S. 47. This sifting leaves, however, a number of cases which, if they stood alone, might be regarded as carrying so far the effect of a literal construction of specifications and claims as to compel us to find for the defense on the proposition in question. Those on which the defense relies, which use the most striking expressions, are *Keystone Bridge Company v. Phoenix Iron Company*, 12 O. G. 980, 95 U. S. 274; *Fay v. Cordesman*, 25 O. G. 1276, 109 U. S. 408, 420; *Yale Lock Manufacturing Company v. Sargent*, 35 O. G. 385, 117 U. S. 373, 378, and *Dryfoos v. Weise*, 42 O. G. 490, 124 U. S. 32, 37, and we may also add *Burns v. Meyer*, 100 U. S. 671, and *Huber v. Nelson Manufacturing Company*, 44 O. G. 234, 148 U. S. 270, 291. Another extreme case of the same character is *Brown v. Stilwell & Bierce Manufacturing Company*, 57 Fed. 731, decided by the Court of Appeals in the Sixth Circuit. Against these cases it is sufficient to put *Winans v. Denmead*, 15 How. 330. That so far as concerns the case at bar this decision is still recognized as law, is apparent from the fact that it is cited without disapproval of any part of it in *Sewall v. Jones*, 9 O. G. 47, 91 U. S. 171, 183; *Eddy v. Dennis*, 95 U. S. 560, 569; *Werner v. King*, 13 O. G. 176, 96 U. S. 218, 230; *Western Electric Company v. LaRue*, 55 O. G. 571, 139 U. S. 601, 606, and *Hoyt v. Horne*, 145 U. S. 302, 309. In *Werner v. King* and *Hoyt v. Horne* it is cited and accepted with reference to the very pith of the matters which we are now considering. It will be noticed that *Winans v. Denmead* is thus reaffirmed at later dates than the cases on which the defense relies, and that it comes much closer to the case at bar than any one of them is too apparent to need any explanation at length. In fact the analogy is as close as could be expected to be found in any cases whatever. *Winans v. Denmead* related to the peculiar construction of cars for the transportation of coal, and the patent was granted in 1847, after the enactment of all the statute provisions the existence or re-enactment of which the defense can rely on. The specification described only a conical form, and the claim, page 342, was by its letter strictly limited to the frustum of a cone. There was nothing whatever in the patent to show that the patentee ever had in his mind any form except the conical. The alleged infringement was by use of the octagonal form. Yet

the Court made the clear distinction appearing on page 343, as follows:

"Undoubtedly there may be cases in which the Letters Patent do include only the particular form described and claimed. *Davis v. Palmer*, 2 Brock. 309, seems to have been one of those cases; but they are in entire accordance with what is above stated. The reason why such a patent covers only one geometrical form is not that the patentee has described and claimed that form only. It is because that form only is capable of embodying his invention, and consequently if the form is not copied the invention is not used. Where form and substance are inseparable it is enough to look at the form only. Where they are separable, where the whole substance of the invention may be copied in a different form, it is the duty of courts and juries to look through the form for the substance of the invention, for that which entitled the inventor to his patent, and which the patent was designed to secure. Where that is found there is an infringement, and it is not a defense that it is embodied in a form not described and in terms claimed by the patentee."

The Court further remarked (which is a general rule applicable to the case at bar) as follows:

"Patentees sometimes add to their claims an express declaration to the effect that the claim extends to the thing patented, however its form or proportions may be varied; but this is unnecessary. The law so interprets the claim without the addition of these words."

It is not necessary for us to reconcile case by case the expressions relied on by the defense, which, as interpreted by it, are not in harmony with the conclusions or the expressions in *Winans v. Denmead*. Very likely they can all be harmonized by following out the distinctions made by us in our references to *Baltimore Traction Company v. Baltimore Belt Railroad Company*, *ubi supra*, and *Miller v. Eagle Manufacturing Company*, *ubi supra*, and by noting the peculiar circumstances of each case. In fact, we think there is nothing to be deduced from any of the decisions which goes beyond the illustrative paragraph in *Walker on Patents* (2d ed., sec. 350), as follows:

"But where a patentee states in his specification that a particular part of his invention is to be constructed of a particular material, and states or implies that he does not contemplate any other material as being suitable for the purpose, it is not certain that any other material will be treated by a court as an equivalent of the one recommended in the patent."

However this may be, *Winans v. Denmead* leaves sufficient

room for the application to the case at bar of the general rules of construction and those relating to equivalents, which we have stated.

Some of the most important inventions in special arts have come from persons unskilled in those arts, and who therefore had no knowledge of the possible equivalents, so that it would involve improbability to assume that they had present in their own minds at the time of the application any matters of form except those incorporated in it. The rules cited from *Winans v. Denmead*, *ubi supra*, are needed to protect not only this class, but all others who have made valuable inventions, and who through their own ignorance or for any other reason have not understood or have overlooked possible equivalents. Without attempting the unnecessary discussion of case by case, it is enough that almost every patent in which this question can arise lies between the expressions in *Winans v. Denmead*, *ubi supra*, on the one hand, and those relied on by the defense, on the other. *Winans v. Denmead* clearly goes as far in its direction as the case at bar. Applying the principles of construction and the law of equivalents already stated, in the way in which we are bound to apply them, there is not sufficient in any or all of the expressions in the patent at bar relied on by the defense to justify us in holding that they amount to such a positive exclusion, arising either from the nature of the invention or from the necessary force of the words themselves, as will defeat a charge of infringement of all the claims in controversy, merely on account of a change in the relative movements of the parts, involving in itself no invention and producing no result essentially new. Some of the cases relied on by the defense strengthen these conclusions by the reflex light of the distinctions they make. *Snow v. Lake Shore & Michigan Southern Railway Company*, 25 O. G. 1280, 121 U. S. 617, held the patentee strictly to the details of his combination in question, because, as shown, page 630, those details, for the reasons there stated, were essential parts. *Sargent v. Hall Safe & Lock Company*, 31 O. G. 661, 114 U. S. 63, 86, runs back, so far as this point is concerned, to *Union Water-Meter Company v. Desper*, 101 U. S. 332, and so, also, does *Fay v. Cordesman*, 25 O. G. 1276, 109 U. S. 408, 421, already cited. In *Union Water-Meter Company v. Desper* (page 336) the Court stated, touching a certain crank-shaft which was in question, that it could not say that it was an immaterial part of the combination, and continued:

“The patent as it stands, occupies very narrow ground. It requires the presence of every one of the elements specified in the combination secured by it.”

On page 335 this rule of interpretation is applied generally to combinations, and in this form the rule is traced through to the latest case named. What is meant by the word "combination" here and in *Fay v. Cordesman* (pages 420, 421) may not be easily determined; but it is very certain Reece invented something more than a mere combination as it existed in those cases.

The *Corn-Planter Patent*, 6 O. G. 692, 23 Wall. 181, also supports the conclusion which we have reached. The Court said, page 221:

"The only pretense on which it [that is, the alleged infringing machine] can be claimed to be different is that the framework of which it is constructed is not the kind of framework described by Brown in his specification—namely 'without gearing, without spoked wheels, and other expensive fixtures, and resembling a drag or sled more than it does a carriage or wagon in its main or general construction.' By this description Brown was evidently attempting to show how simple and cheaply the thing could be made, not that it was to be confined to that specific form. It might as well be contended that he intended to confine his invention to wood, and that a machine made of iron or other metal, though made in precisely the same form, would not be an infringement, because it would not have the same quality of cheapness and simplicity which he describes."

Hoyt v. Horne, 59 O. G. 1,764, 145 U. S. 302, is still more striking. In that case the Supreme Court seems to have met and overruled a defense as nearly like that at bar as appears possible with reference to two different patents. The words in the claim in that case—

"consisting in circulating the fibrous material and liquid in vertical planes,"

page 304, refer back to the improvement itself, limit it grammatically and literally, and, so far as the mere letter of the claim is concerned, were apparently quite as material a part of it as the words in question in the case at bar. Yet, page 308, the court rejected them, for the reasons there stated, and which need not be recited in this opinion.

The preamble of the patent already cited has been brought especially to the attention of the court, in that it specifically points out the invention as relating to the class of machines—

"wherein the stitching mechanism is made to travel, etc."

There is ground for maintaining that this word "travel" in this connection had in mind the relative motions, as it is frequently thus used by persons accustomed to mechanical operations, and also that this part of the preamble had in mind a

classification of machines as between those in which the material is held firmly to the plate and the relative movements are automatic, aided by a reciprocating needle-bar, and those in which the material is turned by the hand. It is, however, not necessary to determine this. The preamble states that Reece's invention was an improvement on the class of machines which it names, whatever that class may be; but this does not exclude the truth that it would be an improvement on every other class of machines to which it could be applied. Still, keeping in mind the distinction between a broad invention and a narrow one, it does not follow that because the inventor, if his invention was of the former class, declared it to be available for a certain use or machine, and had present in mind only that specific use or machine, it might be taken by others without restriction for other uses or other machines. On the other hand, the rule is clear that ordinarily a patentee who is first to make an invention is entitled to his claim for all the uses and all the advantages which belong to it, so far as the new application does not itself involve further invention. *Roberts v. Ryer*, 10 O. G. 204, 91 U. S. 150, 157; *Stowe v. Chicago*, 21 O. G. 790, 104 U. S. 547, 550; *Miller v. Eagle Manufacturing Company*, 66 O. G. 845, 151 U. S. 186, 201. The rule was laid down clearly, although perhaps as a dictum, in *Western Electric Company v. LaRue*, already referred to, 55 O. G. 571, 139 U. S. 601. On page 606 the court, in connection with a reference to *Winans v. Denmead*, said that a certain expression in it, which the Court quotes—
“amounts to a declaration that the application of the patented device to another use, where such new application does not involve the exercise of the inventive faculty, is as much an infringement as though the new machine were an exact copy of the old.”

Indeed, the whole of the case at bar, so far as we have gone, might on sound principles be put on the single proposition of what is known as the “rule of double use,” so far as it can be availed of to protect the patentee of a broad invention.

We now come to the effect of the fact that the claims and specification were amended during the progress of the application through the Patent Office. It must be admitted, as already said, that what is thus done may have a special weight beyond the effect of the same words appearing in the application as originally drawn, because whatever may be inserted or stricken out under such circumstances may ordinarily be regarded as especially selected by the parties to the transaction. It is as though by agreement the phrases thus made were emphasized. Nevertheless it defeats the very essence of this rule to extend it to

what was inserted inadvertently or to push the construction of what was thus inserted in one direction, when it is plain from the whole transaction that the parties inserting were looking in another.

There is a further consideration, which cannot be overlooked. In transactions between private parties, and indeed in ordinary transactions between the public authorities and private parties resulting in contracts or grants, the rules of equity may be invoked on a proper judicial issue to correct or supply what is erroneous or was omitted through inadvertence; but if the position of the defense is correct and the decisions of the Supreme Court touching this point lay down so rigid a rule as the defense maintains the case of a grant of a patent can not be relieved on this account and in this particular, except it be by application for a reissue, which is not a judicial proceeding, nor in any of its phases as far-reaching as the relief granted in equity with reference to other matters. Courts ought, therefore, to be the more careful under circumstances like those at bar to give a patentee the benefit of all the equities which can be raised in his behalf, by any reasonable implication, from what appears on the face of the amendments or from the transaction as it passed through the Patent Office.

A suggestion may here be made, that the public at large is not prejudiced by anything in the history of any amendment, except so far as the result appears on the face of the patent; and this does not show either the fact or time of amendment. If these elements influence any one, it is only that one who examines the file wrapper; and on such examination he ascertains not only the time and fact of amendment, but the circumstances under which the amendment was made, and therefore cannot be prejudiced, if these circumstances are taken into account in considering its effect. We propose to take them into account in the present instance, and in so doing we consider that we violate no rule of law and prejudice no public or private right.

The case shows numerous amendments at various stages: but we have no occasion to consider any of them except the following: The first claim at one stage contained the words—
“and means to change the relative positions of the bed-plate and frame-work longitudinally.”

These were objected to by the Examiner for the following specific reason given by him:

“as no means is shown and described for moving the bed-plate relatively to the frame-work, as the claim would seem to imply.”

Thereupon the words objected to were stricken out, and those were inserted which now appear:

“and means to move such frame-work longitudinally upon said bed-plate.”

For the same specified reason a similar change was made in the eleventh claim. The twelfth claim was also required to be amended by including means for moving the cutting-bed and frame longitudinally, on the ground, specified by the Examiner, that otherwise the combination covered by the claim would be inoperative and incapable of accomplishing any useful result or function. The thirteenth claim, which was objected to by the Examiner as being for an incomplete combination, was largely modified, the expression which now appears, touching “the movable framework,” being inserted with others. The fifth claim was amended only by inserting the words “of a buttonhole,” where they appear after the word “laterally.” The eighteenth claim is entirely new. Whatever other amendments there were need not be noticed.

The patent office record shows no reason for requiring these amendments, so far as concerns the effect of the question we are now discussing, except those already stated. The specification did show one method of putting the invention and all its parts into practical operation. The theory of the Examiner was that the claims must be limited to correspond with the form of operation explained. The extracts which we have made from *Winans v. Denmead*, 15 How. 330, and other citations which might be made, establish the well-known rule that this was erroneous, unless as a mere matter of detail in the practice of the patent office, depending on the varying judgments of different examiners as to the clearness with which the operation of machines should be set out.

No question of novelty was made and no other issue which brought to the attention of the inventor any matter of substance. In *Ball & Socket Fastener Company v. Ball Glove Fastening Company*, 58 Fed. 818, this court, in considering the principle now under consideration, said:

“The rule touching the effect of such amendments has been several times laid down by the Supreme Court in patent causes, although it is only a peculiar application of the general principles of law relative to the interpretation of instruments. In the case at bar the amendments relate to the very pith and marrow of the alleged improvement, touch directly the question of novelty, and were understandingly and deliberately assented to, so that the rule of interpretation referred to undoubtedly applies.”

We do not see that the law requires us at present to go any further or to qualify this statement of the rule, although, of course, its application where the invention is in mere matter of form or detail would be more freely made than where it is of a broad character.

The following cases we believe are all where this rule has come before the Supreme Court, the first being *Leggett v. Avery*, 17 O. G., 445, 101 U. S. 256, decided October term, 1879, and the last *Morgan Envelope Company v. Albany Perforated Wrapping Paper Company*, 67 O. G., 271; in which the opinion was passed down by the Supreme Court March 19, 1894. *Leggett v. Avery*, so far as it appertains to this rule, contains only dicta, as in that case there had been an actual disclaimer, on an application for a reissue, of the whole of five claims in the original patent, and the case turned on the effect of that express disclaimer. In *Sargent v. Hall Safe & Lock Company*, 31 O. G., 661, 114 U. S. 63; *Shepard v. Carrigan*, 34 O. G., 1157, 116 U. S., 593; *Sutter v. Robinson*, 38 O. G., 230, 119 U. S., 530; *Crawford v. Heysinger*, 42 O. G., 197, 123 U. S., 589; *Watson v. Cincinnati, Indianapolis, St. Louis & Chicago Railway Company*, 49 O. G., 1843, 132 U. S. 161; *Roemer v. Peddie*, 49 O. G., 2187, 132 U. S., 313; *Phoenix Caster Company v. Spiegel*, 50 O. G., 1591, 133 U. S., 360; *Yale Lock Manufacturing Company v. Berkshire National Bank*, 51 O. G., 1291, 135 U. S., 342; *Dobson v. Lees*, 53 O. G., 740, 137 U. S., 258; *Corbin Cabinet Lock Company v. Eagle Lock Company*, 65 O. G., 1066, 150 U. S., 38; *Knapp v. Morss*, 65 O. G., 1593, 150 U. S., 221, and the latest case, *Morgan Envelope Company v. Albany Perforated Wrapping Paper Company*, there were direct issues of novelty, or of interference, based on specific prior patents or pending applications, to which the inventor yielded. Therefore in each of these cases there was a fair issue, formulated and understood by the applicant for the patent, requiring him clearly to yield directly a portion of what he claimed, and the effect of his yielding could not be mistaken.

In *Union Metallic Cartridge Company v. United States Cartridge Company*, 0 O. G., 771, 112 U. S., 624, the issue was no less distinct, although it came in a different form. It appeared that the patentee had applied on a reissue for the same subject-matter which was disallowed him by the Supreme Court; but the point was distinctly made by the Commissioner that it involved "a substantially new and different invention" from anything embraced in the original patent. In *Goodyear Dental Vulcanite Company v. Davis*, 19 O. G., 543, 102 U. S., 222, which was decided with express reference to *Leggett v. Avery*, *ubi supra*, it appeared, page 228, that the subject of controversy at the patent

office was distinctly as to what the invention covered and as to what claim should be allowed. The Court said there could be no doubt what the patentee understood he had patented, and that both he and the commissioner regarded it to be—
“for a manufacture made exclusively of vulcanites.”

The issue was plain, formal, and essential; yet the court did not rest the case wholly on that proposition, but mainly on the ground that what occurred at the patent office tended to confirm the conclusions to which the court had otherwise arrived in interpreting the patent. In *Royer v. Coupe*, 62 O. G., 318, 146 U. S., 524, an entire claim was rejected, and the rejection acquiesced in. This was also apparently put on the ground of want of novelty; but however that may have been the essence of the transaction was plainly the same as though there had been a formal disclaimer after a patent had been obtained, as was the case in *Leggett v. Avery*, *ubi supra*. In no place has the rule been thoroughly discussed by the Supreme Court and its modifications, limitations, and practical application determined. It has grown up without much discussion from *Leggett v. Avery*, *ubi supra*, which was a case on a reissue, and, as already said, involved a formal disclaimer of five specific and entire claims. Under all the circumstances the case at bar is clearly distinguishable in that it presented no direct issue of novelty or invention, and the amendments came in only incidentally and in reference to an incidental matter.

In conclusion, therefore, touching all which appears on the face of the patent with reference to the movability of the frame and the fixedness of the plate, including whatever emphasis can be added by reason of the acquiescence of Reece in the amendments proposed at the patent office, we do not find enough to require us to refuse to give him the benefit of the favorable rules we have explained.

We now come to the especial consideration of the several claims. The fifth claim was the successful conclusion of numerous and expensive efforts to stitch automatically a buttonhole in the form in which it is ordinarily desired—that is, with an eye. This had never been accomplished. Those machines whose work in stitching was automatic were unable to form the eye, and those which formed the eye accomplished this only with the aid of the clumsy and slow operation of turning the material with the hand. We do not think it necessary, either with reference to this claim or any other, to proceed at length on the question of novelty. The single fact that so valuable a patent as this, where so large interests were at stake and such heavy expenditures had been made in vain, as is shown by the record, for accomplishing

what Reece accomplished, had received the continuous and uniform acquiescence of the public and the trade for a period of nearly ten years, and until the efforts of the respondents below, affords sufficient reason for not prolonging this opinion by an analysis of the alleged anticipatory matters, or by detailed explanations in support of our conclusions that none of them in fact anticipated Reece. This line of defense has been pressed mainly against the fifth claim; but clearly the device to which it relates accomplished what none of the older buttonhole-machines accomplished, and it, its method of operation, and its purpose lie in a different field from the invention of Bonnaz and from all the other earlier mechanisms except those appropriate to the stitching of buttonholes.

The essential feature of this claim is the so-called compound movement given the needle-bar, the result of simultaneous longitudinal and lateral motions. This alone was of course old and common in the arts; yet the suggestion of its application to this purpose, combined with the mechanism devised therefor, constitutes a patentable invention of a fundamental character, highly meritorious, and one to be protected by a liberal construction. So far as this claim is concerned, we have no doubt that the rules which we have laid down fully apply, and that Reece is entitled to the benefit of the invention, without reference to the relative movements as between the frame and the plate.

The elements specified in the fifth claim do not constitute an operative mechanism without the aid of a reciprocating needle-bar, or something which will supply its need, and perhaps, also, not without the spreader. The eighteenth claim covers a reciprocating needle-bar and the twelfth a spreader, and each is fully explained in the specification. The fifth claim falls within that class where reference may be made to the specification to supply in a claim what it is plain to every one skilled in the art is a necessary incident. *Seymour v. Osborne*, 11 Wall. (U. S.) 516, 547; *Day v. Fair Haven & Westville Railway Company*, 49 O. C., 1364, 132 U. S., 98, 102. However, no question was raised on this account, and we refer to the matter simply in order to make clear our conception of the scope of the claim.

Infringement of the fifth claim is hardly contested, except on the ground of the propositions touching its construction and effect which we have rejected; and, so far as concerns it, we must order a decree for the complainant below.

The eleventh, twelfth, and thirteenth claims relate to the cutting and spreading mechanisms and the "stop" devices. They are undoubtedly to be construed as in combination with a stitcher in a button-hole machine; and Reece was the first to thus combine all these elements in such way that all should be operated,

each in their proper order, by mere mechanical power. The defense urged against these claims is mainly the same as that urged against the fifth. Having disposed of what could be raised by that defense, the court considers the alleged structural differences between Reece and the infringing machines as not material. The majority of the court are of the opinion that Reece has made these operations of cutting, spreading, and stopping automatic in combination with the machine as a whole, and that his invention in that respect is so fundamental and meritorious as to require the application to the eleventh, twelfth, and thirteenth claims of the same rules which we have applied to the fifth.

In view of the state of the art the eighteenth claim can not be broadly construed, and it must be held to be fully limited by the words "substantially as described." This limitation, however, relates to what concerns this particular device. *Lake Shore & Michigan Southern Railway Company v. National Car Brake Shoe Company*, 26 O. G., 915, 110 U. S., 229, 235. Therefore we find nothing in these words which restricts this claim to a machine in which the frame moves. To give such an effect to the word "carries" as is claimed is more for the pundit than the courts. It is as commonly used in all kindred matters to mean supporting without movement as supporting with it. We are not required to give it a narrow interpretation for the purpose of depriving the inventor of any part of his invention. Nor are we constrained by any well-settled or just rule of construction to import phraseology from other claims for the same purpose. Except in the particulars covered by these propositions, we do not understand that there is any question of infringement of this claim even when narrowly construed.

Decree of the circuit court reversed. Case remanded to that court with instructions to enter a decree for an injunction and an account on claims 5, 11, 12, 13, and 18 of appellant's patent, No. 240,546, issued to John Reece April 26, 1881, and for further proceedings in accordance with law.

410. *M'CORMICK v. AULTMAN & CO.*, 69 Fed. 371, 16 C. C. A. 259 (1895, Sixth Circuit).

Before Taft, Lurton and Severens, Judges. * * *

Taft, J.:

These are appeals from decrees dismissing two bills brought to restrain the future infringement of two patents and to recover damages for past infringements. * * *

The Gorham binder was, as already stated, the first one in the history of the art which successfully bound grain in the field with twine automatically. There is abundant evidence to show

that the binder did actual and satisfactory field-work on farms in 1874, in 1875, and in later years. After 1875 Gorham made one or two changes in the machine. He dispensed with the flexible leather strap and substituted a metallic trigger or finger in its stead, operating the trip-lever by a rock-shaft, upon which this finger was mounted, instead of by the cord attached to the leather strap. He reduced the number of teeth on each segment from four to three. From 1878 until the present time automatic twine-binders have been in the most extensive use throughout the civilized world. * * * The original Gorham binder was a heavy crudely-constructed machine and bore little superficial resemblance to the modern lightly-constructed but strong and smoothly-running twine-binder; but an examination of its parts and their operation convinces us that in it is the modern twine-binder modified only by the mechanical and economical skill of the manufacturer and the tributary inventive faculty of a mere improver.

On the whole case we are satisfied that the Gorham binder was a primary or pioneer patent of the highest merit, that it attained a result wholly new in a new way, and that in the consideration of alleged infringements of it the patentee is entitled to all the liberality of treatment accorded to that comparatively rare class of patents. With respect to such a patent the well-settled rule is that the patentee who has by the success of his patent pointed out the combination of functions needed to reach the new result, and has claimed the combination of mechanical parts performing those functions, may enjoin the use of another machine producing the same result where the second machine differs from the first only in a substitution for parts or elements in the patented device of parts or elements which, though different in form and kind, perform the same functions in substantially the same way. It may be that the substituted parts are well-known equivalents of those shown in the patent for the performance of the functions to which they are respectively applied, in which case there is manifestly no inventive faculty shown in the change; or it may be that, being shown by the successful operation of the patent the exact nature of the functions to be performed by a part of the patented device, the infringer by the use of his inventive faculty hits upon something as a substitute which will perform the same functions more completely and satisfactorily. In the latter case he is a tributary inventor; but he is none the less an infringer if he uses the whole machine, with his substituted part, to accomplish the same new result. The rule as to infringements of pioneer inventions which point the way to new products or results is analogous to that applied in cases of infringements of process patents, in which the discoverer is only required to point out one practical method of using his process and

is permitted to claim tribute from all who thereafter use the process, whether with his apparatus or with a different or improved means. In *Morley Sewing Machine Co. v. Lancaster*, 47 O. G., 267; 129 U. S., 263, 290; 9 Sup. Ct., 299, the Supreme Court said:

“Where an invention is one of primary character, and the mechanical functions performed by the machine as a whole are entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate mechanisms which go to make up the machine.”

See, also, *Consolidated Valve Co. v. Crosby Valve Co.*, 113 U. S. 157; *Royer v. Belting Co.*, 135 U. S. 319; *Union Paper Bag Machine Co. v. Murphy*, 97 U. S., 120; *Sessions v. Romadka*, 145 U. S., 29; *Clough v. Barker*, 106 U. S., 166; *Winans v. Denmead*, 15 How., 330; *McCormick v. Talcott*, 20 How., 402, 405; *Chicago & Northwestern Railway Co. v. Sayles*, 97 U. S. 554, 556. * * *

It is further pressed upon the court that the mere fact that the claims of the Gorham patent are expressed by reference to the lettered parts of the machine, as shown in the drawings, must lead to a literal and formal construction of the claims and limit their scope exactly to the form of the device used and suggested by Gorham. This was the view of the learned justice who delivered the opinion in the court below, and he cited the cases of *Weir v. Morden*, 125 U. S. 106, and *Hendy v. Iron Works*, 127 U. S. 375, in support of his conclusion. We are unable to concur in this application of those cases. They did not involve pioneer or even meritorious patents. They were for devices which were at the best mere improvements on previous well-known devices, and no matter what the claims had been they would have been limited to the particular forms therein described. In the latter case the court found that there was no invention or patentability in the elements claimed, and as an additional reason for holding the patent invalid suggested that the element claimed was linked in combination with a particular form of cylinder by letter reference to the drawings, and, therefore, that in such a case the combination was limited to the particular character of the cylinder. Certainly neither of these cases establishes a hard and fast rule that where a patentee claims the combination of certain elements shown in his patent, describing them by reference-letters in the drawings, he thereby deprives himself of the benefit of the liberal doctrine of equivalents applicable to pioneer patents, if otherwise he is entitled to its application. See *Delemater v. Heath*, 20 U. S. App., 14, 7 C. C. A. 279, 58 Fed. 414. Whether he specifically claims in his patent the benefit of equivalents or not, the law allows them to him according to the nature of his patents.

If it is a mere improvement on a successful machine—a mere tributary invention—or a device the novelty of which is confined by the past art to the particular form shown, the range of equivalents is narrowly restricted. If it is a pioneer patent with a new result, the range is very wide and is not restricted by the failure of the patentee to describe and claim combinations of equivalents. Nothing will restrict the pioneer patentee's rights in this regard save the use of language in his specification and claims which permits no other reasonable construction than one attributing to the patentee a positive intention to limit the scope of his invention in some particular to the exact form of the device he shows, and a consequent willingness to abandon to the public any other form should it be adopted and prove useful. Instances of such a limitation may be found in *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, and in *Brown v. Manufacturing Co.*, 6 U. S. App. 427, 16 U. S. App. 234, 6 C. C. A., 528, 57 Fed. 731; but there is no such limitation in the patent under discussion, and the rule applies which was so fully explained in *Winans v. Denmead*, 15 How., 330, where the court said:

“Patentees sometimes add to their claims an express declaration to the effect that the claim extends to the thing patented, however its form or proportions may be varied. But this is unnecessary. The law so interprets the claim without the addition of these words.”

Again, in *Goodyear Dental Vulcanite Co. v. Davis*, 102 U. S., 222-230, the Supreme Court said that a patentee was protected against equivalents whether he claims them or not. A most satisfactory discussion of this general subject may be found in the opinion of the circuit court of appeals of the first circuit in *Reece Button Hole Mach. Co. v. Globe Button Hole Mach. Co.*, 10 C. C. A. 194, 61 Fed. 958, where Judge Putnam on behalf of that court examines the two lines of cases of which *Winans v. Denmead* and the *Keystone Bridge Case* are respective types and reconciles them, so far as they may be reconciled. See, also *Keystone Manufacturing Co. v. Adams*, 151 U. S. 139; *Miller v. Manufacturing Co.*, 151 U. S., 186.

With respect to the third, tenth, and eleventh claims we therefore conclude that they are valid and that the defendants infringe them, unless by the application for reissue and the subsequent abandonment of it either the scope of the claims was narrowed to a literal reading of them or the validity of the claims was entirely destroyed. The effect of this reissue application we shall consider later.

We come now to consider the twenty-fifth and twenty-sixth claims. They are as follows:

“25. The combination of arm Q on shaft K” with arm R’

and bent arm R" on rock shaft R, and carrying the projecting cord-arm r"', to force the cord from the knot-tying device, substantially as described.

"26. The combination of arm Q on shaft K" with arm R' and bent arm R" on rock-shaft R, carrying the knife r for cutting the cord, and arm r"' for forcing the cord off the hook, substantially as described."

These claims relate to the tying mechanism, and to that part of it only by which the knot, after it is tied, is stripped off of the knotting or tying bill and the cord connecting it with the cord-holder is cut. * * *

We think that the state of the art was such, with reference to knotters and strippers, at the time when Gorham invented his knotter-bill knife and stripper that he is not entitled to claim as an infringement of his knife and stripper any device substantially different in form from that which he used. It is true that the knife and stripper of the defendants are moved by the shaft which also moves the knotter-shaft and that in Gorham's the knife and stripper are moved by the knotter-shaft, and that this states generally the difference between the two; but, considering the prior art, it does not state the difference with sufficient detail to prove or disprove their likeness for the purpose of deciding the question of infringement. No claim is made that the knotter-bill itself is an infringement, and we are limited in this discussion to the question whether the knife and stripper infringe. Were Gorham's knotter-bill and his knife and stripper pioneer patents, the resemblance between them and the same parts of defendants' machine would be sufficient, perhaps, to justify regarding them as equivalents; but they are not pioneer devices. Gorham and the defendants or their licensor, Appleby, were acquainted with the prior art, and with that in view they reached the same result, and one not new, in different ways. One improved on one device and the other on another. We are considering Gorham's stripper and cutter in its character as an independent device for performing the function it discharges in his machine. The twenty-fifth and twenty-sixth claims are not for a combination of all the parts of his machine to accomplish his new result. If they were, the knotter and stripper in Gorham's machine would, of course, be an equivalent of the defendants' as an element of the combination. Considered alone, however, and not in combination, as it must be under these claims, we hold that the defendants do not infringe it.

We come now to the question what effect, if any, shall be given to the application for reissue which was made by Gorham's widow, Helen M. Gorham, in 1881?

* * *

An examination of the file-wrapper and contents of the re-issue application satisfies us that the Examiner in the patent office, held, in effect, by the rejection of the above claims that the third, tenth and eleventh claims of the original patent, which we have found to be valid and to state the gist of the pioneer patent which Gorham invented, were anticipated in the prior art.

* * *

We find from the evidence in the record and the circumstances that the action of the counsel for Mrs. Gorham and the complainant in withdrawing the application for reissue was with no intention of abandoning their alleged right to a wide construction of the claims of the original patent. We do not find in the file wrapper and contents any statements by complainant's grantor which merely as evidence upon the construction of the original patent and its claims would either limit or narrow them.

It is contended by counsel for the appellee that the abandonment of the application for reissue and the return of the patent after a rejection of the claims in the original patent create an estoppel against the patentee, which prevents him from thereafter relying on those claims or asserting a monopoly under them. * * *

Mr. Justice Matthews used this language:

"A comparison of the patent, as granted, with the application, very conclusively establishes the limits within which the patentee's claims must be confined. He is not at liberty now to insist upon a construction of his patent which will include what he was expressly required to abandon and disavow as a condition of the grant. *Shepard v. Carrigan*, 34 O. G., 1157, 116 U. S., 593, 6 Sup. Ct., 493, and cases there cited."

It is difficult to see how such a principle can apply in the case of an application for a reissue which is not carried to the point of surrender of the patent and the acceptance of a new patent. Nothing is granted to the patentee which he did not have before, and there is therefore no privilege or benefit moving from the government to the patentee upon which an estoppel can be founded. * * *

In *Peck v. Collins*, 103 U. S., 660, the question was whether, under the patent laws in force in 1866, a patent had any validity a reissue of which had been applied for to the patent office and rejected. It was held, in accordance with the decision of *Moffitt v. Garr*, 1 Black, 273, that the application for the reissue involved a surrender of the old patent at the time of the application. At the close of the opinion Mr. Justice Bradley used this language:

"Since the surrender of the patent in this case, the patent laws have undergone a general revision by the act of July 8, 1870 (ch. 230). In the fifty-third section of that act (being the section

relating to the surrender and reissue of patents), a new clause was introduced, declaring that the surrender 'shall take effect upon the issue of the amended patents;' and this clause it retained in section 4916 of the Revised Statutes. What may be the effect of this provision in cases where a reissue is refused, it is not necessary now to decide. Possibly it may be to enable the applicant to have a return of his original patent if a reissue is refused on some formal or other ground which does not affect his original claim. But if his title to the invention is disputed and adjudged against him, it would still seem that the effect of such a decision should be as fatal to his original patent as to his right to a reissue."

It will be observed that this remark of Mr. Justice Bradley was not necessary to the decision of the case before the court. It was a *semble*, and is so referred to in the head note of the case. The question has never since been considered and decided by the Supreme Court. The members of this court have difficulty in reaching a conclusion upon the question thus suggested. It is one of much importance to all persons engaged in the procuring of patents and the remedying of their defects by applications for a reissue. Upon its answer turns the validity or invalidity of an otherwise very valuable and meritorious patent in this case. We think it proper, therefore, to certify to the Supreme Court for its instructions the following question, based on the facts as above stated:

"If a patentee applies for a reissue of his patent, and includes among the claims under the new application, the same claims as those which were included in the old patent, and the examiner of the patent office rejects some of such claims, and allows others, both old and new, does the patentee, by abandoning his application for a reissue, and by procuring a return of his original patent, hold his patent invalidated as to those claims which the examiner rejected?" * * *

[The Supreme Court answered in the negative. See *infra*.]

The result of our discussion of this case leads to an affirmance of the decree of the court below in so far as it holds that the twenty-fifth and twenty-sixth claims of the Gorham patent are not infringed and that the Baker patent is invalid for the want of novelty. We differ with the court below, however, in the view which it took of the third, tenth, and eleventh claims of the Gorham patent, and we think that unless by the subsequent application of the reissue these claims were invalidated the defendants' machine infringed them and the complainants are entitled to recover damages therefor.

We shall hold the case, therefore, until the question as to the effect of the application for a reissue has been submitted to the

Supreme Court and that Court's instructions thereon are certified to us; and it is so ordered.

411. CHICAGO, ETC., RAILWAY v. SAYLES, 97 U. S. 554, 24 L. ed. 1053 (1878).

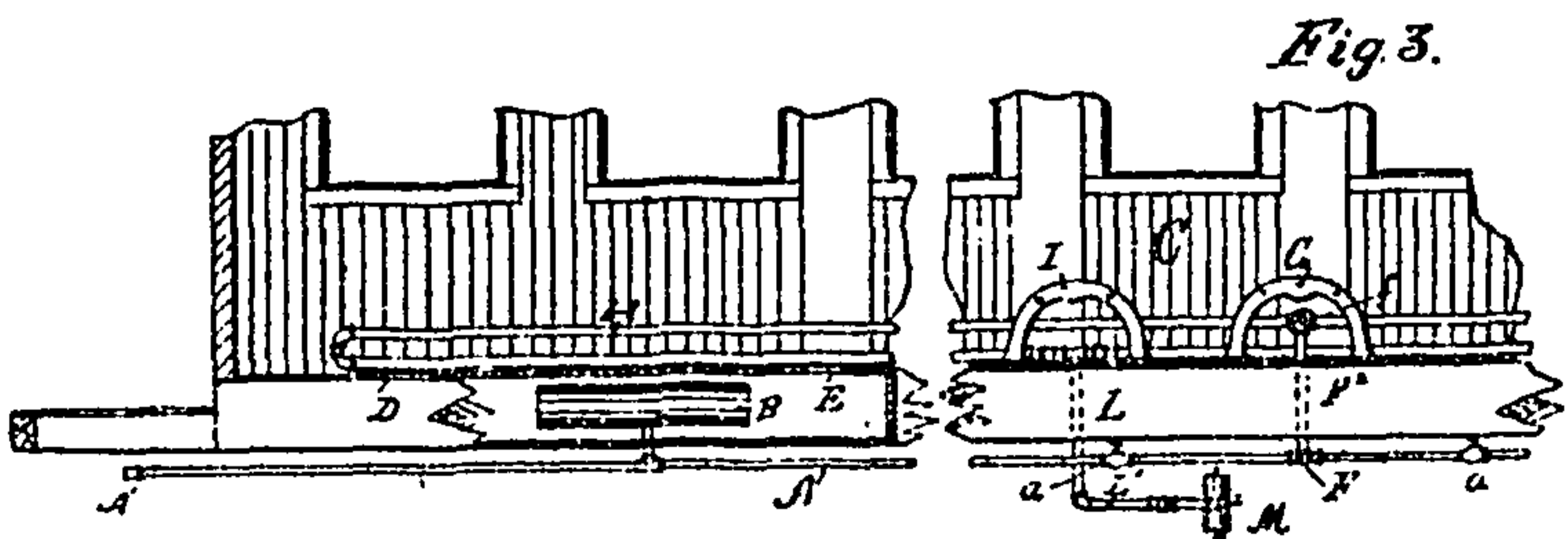
Bradley, J.: * * *

It will be observed that we have given particular attention to the original application, drawings, and models filed in the patent office by Thompson and Bachelder. We have deemed it proper to do this, because, if the amended application and model, filed by Tanner five years later, embodied any material addition to or variance from the original—any thing new that was not comprised in that—such addition or variance can not be sustained on the original application. The law does not permit such enlargements of an original specification, which would interfere with other inventors who have entered the field in the mean time, any more than it does in the case of reissues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has, in the mean time, gone into public use. * * *

412. MICHIGAN CENTRAL R. CO. v. CONSOLIDATED CAR-HEATING CO., 67 Fed. 121, 14 C. C. A. 232 (1895, Sixth Circuit, Patent No. 329,017).

Before Taft, Lurton and Severens, Judges.

Severens, D. J.:



[A is a supply pipe, B a hot water cylinder communicating with the inside of the car C through heat registers D and cold air registers E in the floor of the car. F is a cross from which, toward each side of the car, extend pipes. F² is an upright pipe leading from the side pipe extending under the seat G and governed by a valve f directing the steam into the upper

courses of the coils H running along each side of the car. Under the seat I are return bends which connect by the usual T's with pipes such as shown at L. L¹, which communicate with a steam trap M and drain the coils H.

The opinion sets forth the changes in the specification which were employed to give force and operative meaning to the claims, of which the following first claim of the patent is the broadest:

"1. A system of piping for heating railway passenger cars, consisting of a supply-pipe extending longitudinally under the central portion of a car communicating with steam drums or coils inclosed in chambers under the floor of such car, in combination with pipes extending from the central portion of said supply-pipe to the upper courses of coils of pipe along the side of such car, and escape pipes from the central portion of the lower courses of said coils, communicating with and draining into a steam-trap under the floor of the car, substantially as and for the purpose set forth."]

* * *

The principal question discussed upon the argument was the one fact of whether Cody invented the improvements, or whether Martin invented them and Cody was a workman simply constructing the apparatus under Martin's directions. But another question arises and is presented upon the appellants' contention that Cody so changed his specification during the pendency of his application as to show another invention from that originally described, and give to his combination utility and value, and but for which it would be practically valueless. As has been stated, one of the problems which in 1883 confronted those who were seeking to construct an operative system was to devise an arrangement of the steam-pipes such as would provide for the ready escape of air and water, so that they would not obstruct the circulation and thereby prevent the free flow of steam through the pipes.

Cody's application was made on the 11th day of August, 1884, and the patent issued to him and Hayes, as assignee, on the 27th day of October, 1885. In his specification he said nothing about inclining the members of the side coils of his steam-pipes HH downward from the center of the car, where steam is taken in, to the end of the car, and also inclining downward the return-pipes as they come back to the center and connect with the pipe which carries their contents downward to the trap; and the drawings filed with the specification, and which by the provisions of § 4884 of the Revised Statutes, become part thereof, not only fail to show any such inclination, but, on the contrary, show the outrunning and returning pipes to be parallel with the floor

of the car and with each other. Neither of his claims mentioned any inclination of these pipes. If the specification had done so, that feature could have been read into the claims, for the claims refer to the specification, which, as we have already said, includes the drawings; but as the specification gives no indication of such feature of construction, but do indicate parallel pipes, the claims must be construed accordingly. Claim 2, as the claims now stand, was originally claim 1, and was rejected at the Patent Office upon a reference to a patent to Slingland of September 4, 1883, which showed a steam-supply extending up through the floor of the car and connecting with the middle of the upper member of a coil of pipes extending from the middle of the ends of the car, and returning thence to the center and descending to the bottom of the steam-generator, whereby the condensed steam was taken into the generator. On February 7, 1885, Cody's specification and claims were amended, and the substance of original claim 1 was made claim 2; but nothing was said about inclining the pipes. Claim 2, as it then stood, was again rejected on other references showing certain means for discharging the water of condensation. On the 9th day of March following Cody radically amended his specification in respect to this subject, saying:

"Second. I supply hot steam to the upper courses of coils in the car, at or near the center, longitudinally, on both sides of the car, this steam traveling both ways to the end of the car, in pipes inclined downward toward the ends of the car, and on its return it travels from the ends of the car, in the lower courses of the pipes which incline downward to the center of the car, where they connect with a common waste-pipe."

This was but a short time prior to the application of Martin showing a device of similar character to that contained in Cody's amendment, Martin's application having been filed March 30, 1885, and the proof unquestionably shows that the device had been in use a year or two prior to either application. There is no suggestion in the bill that Cody's invention had been made prior to his application, and upon the face of it the presumption would be that the invention was contemporaneous with the application. The claim was afterward further amended, upon objection to its form, so as to stand as it appears in the patent. By the rule of construction to which we have already referred this second claim, by reference to the specification as it now stands, is for the invention of a combination which includes as an element side coils constructed so as to dip from the center of the car to the ends and back to the center, whereby effectual drainage and a free flow of steam are secured.

By § 4892 of the Revised Statutes the applicant is required

to make oath that he believes himself to be the original inventor of the improvement for which he solicits a patent. Cody made such oath on making his original application, but did not make oath in respect to the matter brought in by the amendment. No doubt, it is competent to amend the specification while the application is pending, so long as it is done within the scope of the original application; but it is not competent, under color of this privilege, to introduce new matter. Systems of car-heating in use at the time of Cody's alleged invention, such as Sewall's and Martin's, showed substantially the same combinations as his, except that they did not contain this characteristic element. It is true some of the parts of those systems were susceptible of mechanical improvement—such, for instance, as the substitution of a better kind of trap for discharging the condensed water, but which involved no change in the principle of the combination. We are therefore to inquire whether the matter of the amendment in this case was new. As we have said, this peculiarity of construction did not appear in any part of the application originally. It is admitted by the appellee that it is an essential feature of the patent. It is said by its counsel, in his brief:

“Another element in the problem was caused by the fact that cars seldom stood upon level tracks when cut out from the train, and very frequently were on inclines during the running of the train. In order to meet this condition, it became necessary to permit steam to enter at the highest point in the car system, from the train pipe, and to give it sufficient decline, and trapping it at the lowest point, so as to permit, at all times, all of the water to run out at the trap, and not to accumulate in the pipes at the lower end of the car, or upon the lower side. An incline of only a couple of inches would be sufficient, but would not show in a patent office drawing, unless greatly proportionally exaggerated.

It may be observed in passing that the difficulty incidentally suggested in this last sentence has no foundation. The combination could have been described in the written specification, and the imperfection of the drawings thus helped out. Besides, the drawings in other patents before us demonstrate that there was no insuperable difficulty in so making them as to show this peculiarity. The experts for the appellee lay stress upon this feature, and Cody himself testifies that without it his system would not be a successful and operative one, and he says:

“The reason is that a pipe that is perfectly level, running from end to end of the car, wouldn't work when one end of the car was lower than the other is. It would form a trap at the lower end of the car, and the condensed steam would not circulate.”

The leading case upon this subject is that of *Railway Co. v.*

Sayles, 97 U. S. 554. That case involved the validity of Tanner's patent for a brake to apply to double trucks under railroad-cars. Prior to the patent, and prior to the application therefor, various devices for the same purpose had been patented, but the desideratum was a system which could be operated from one end of the car. The original application for the Tanner patent did not show an invention which accomplished this, but an amendment made some years later showed such a device. It was held that the patent must be limited to the structure shown by the application. And it was said by Mr. Justice Bradley, delivering the opinion of the court, that if the amended application and model embodied any material addition to or variance from the original—anything that was not comprised in that—such addition or variance could not be sustained on the original application.

“The law does not permit such enlargements of an original specification, which would interfere with other inventors who have entered the field in the meantime, any more than it does in the case of reissues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has in the meantime gone into public use.”

In that case five years elapsed after the application was filed before the amendment was made. In this case a much less period intervened; but the length of time is not a controlling consideration, as is shown in the cases hereafter to be referred to.

It will be seen from the opinion in *Railway Co. v. Sayles* that the objection to new matter brought in by amendment of the specification stands upon the same ground as when it is introduced upon a reissue, and in respect to the latter the statute declares that it shall not be done. Rev. Stat., § 4916.

Following that case was that of *Eagleton Manufg. Co. v. West, Bradley & Cary Manufg. Co.*, in which there was an opinion at the circuit by Judge Wheeler, which is reported in 2 Fed. 774. The substance of his opinion was adopted by the Supreme Court in the same case, 111 U. S., 490, and the judgment affirmed. In that case the application for the patent sued on was made in July, 1868. The applicant died in February, 1870. The specification was amended in November, 1871, by the attorneys whom the patentee appointed in his life-time, but without any new oath by his administrators, and the patent finally granted. Originally the application was for a patent on japanned furniture-springs. Nothing was suggested in it about tempering the springs by the process of applying heat in japanning. By the amendment that mode of effecting the result was described. The claim was for

the japanned springs as a new article of manufacture, substantially as used for the purpose described. The original application was rejected because japanning was not new. Upon the amendment showing the new matter, whereby the springs were tempered in the japanning process described, the patent was granted. It was held, among other things, that as the amendment introduced new matter it should have been sworn to in that case by the administrators; that the only invention to which the application and oath of the patentee were referable was that of merely japanning steel furniture-springs; that the amendment was not a mere amplification of what had been in the patent before, and that the patent was void.

In the very carefully considered case of *Brush Electric Co. v. Julien Electric Co.*, 41 Fed. 679, was introduced a patent for a secondary battery element or electrode consisting of a plate constructed of materials therein described and having grooves, receptacles, or perforations therein. When the application was originally filed, neither the specification, drawings, nor claims mentioned "perforations" extending through the plate. Nearly a year afterward they were amended by the insertion of that term. Judge Coxe, in discussing the effect of this, said:

"The common meaning of 'perforation' is a hole or aperture passing through a body. It is argued that the patentee intended this meaning should be adopted, for he says: 'Fig. 8 shows a vertical section of a ribbed plate provided with slots or perforations extending through the plate.' And yet other parts of the specification would indicate that he intended no distinction between perforations and receptacles. As before stated, the language quoted first appeared a year after the original application was filed. The court has grave doubt, therefore, whether these facts do not bring the case within the rule laid down in *Railway Co. v. Savles*, 15 O. G. 243, 97 U. S., 563; *Kittle v. Hall*, 39 O. G., 707, 29 Fed. 508, and cases there cited."

Then, after pointing out that the words found in context with it meant cavities or cells, and that this was a sense in which the word "perforations" was sometimes used, he concludes:

"With considerable hesitation, I shall hold that these claims, as thus construed, are valid."

The question was again presented in *De La Vergne Refrigerating Mach. Co. v. Featherstone*, 49 Fed. 916; *Id.* 147 U. S. 209. There the applicant for a patent filed his application on the 24th day of November, 1875, and three days afterward died. The attorneys whom he had appointed amended the specification in December following, and the patent was granted on March 21, 1876. Just what the amendment was, does not appear; and Judge Blodgett, while expressing great doubt whether the changes

made in the specification did not vitiate the whole proceedings and render the patent void, yet placed his decision upon another ground. Upon an appeal from a decree dismissing the bill the Circuit Court of Appeals certified several questions to the Supreme Court for decision, among which was one which requested the opinion of that Court as to whether the amendment of the specification rendered the patent void. The certificate stated that it was—

“within the scope of the original oath and the invention described in said original specification and by way of limitation of the claims.”

The Supreme Court, responding to this question in an opinion by Mr. Chief Justice Fuller, after reciting the certificate as above, said:

“In *Eagleton Manufg. Co. v. West, Bradley & Cary Manufg. Co.*, 111 U. S. 490, 498, before referred to, the patent was held invalid because the authority given to Eagleton's attorneys ended at his death, and the patent was granted upon amendments made by the attorneys without any new oath by the administratrix. And Mr. Justice Blatchford, speaking for the Court, said that the file wrapper showed, ‘beyond doubt, that there was no suggestion, in the specification signed and sworn to by Eagleton, of the invention described in the amendment,’ and that ‘in view of the entire change in the specification, as to the invention described, the patent to be valid, should have been granted on an application made and sworn to by the administratrix. The specification, as issued, bears the signature of Eagleton, and not of the administratrix; and it is sufficiently shown that the patent was granted on the application and oath of Eagleton, and for an invention which he never made.’ In the case at bar there was not only no amplification of the original application by the amendment, but it was within the scope of the original specification, and a limitation and narrowing of the original claim, so that it was the identical invention sworn to by Boyle; and there was no more reason for requiring a new oath from his administratrix than there would have been for requiring it from Boyle himself.”

And it was held that the amendment did not render the patent void. From this it would seem to be the opinion of that court that the statute requiring an oath to an amendment by administrators, etc., does not apply to an amendment which would not require a new oath from the original applicant if he were still living, and, taken in connection with *Eagleton Manufg. Co. v. West, Bradley & Cary Manufg. Co.* above referred to, would seem to indicate the test to be whether the amendment is with-

in the scope of the original application or introduces new matter. As was said by Judge Woods in delivering the opinion of the Circuit Court of Appeals in *Western Electric Co. v. Sperry Electric Co.*, 7 C. C. A., 164; 58 Fed. 186, 196:

“So long as he [the inventor] did not change the structure of his device or his invention he had the right to change the specification.”

Robinson on Patents states the law thus:

“Amendments in substance can be made only within certain limits, and under certain prescribed conditions. No new matter can, under any circumstances, be introduced by amendment. New matter is that which is not found in the specification, drawings or model, as first filed, and which involves a departure from the original invention. Such matter must necessarily be a distinct art or instrument, or a new and separately patentable improvement on the old, and can be now presented only in a separate application. The scope of the amending power is limited to such alterations of description and assertion as do not affect the essential character of the invention or the person of the patentee. For a mistake in these the only remedy is by the issue of a new, original patent, upon an independent application. (§§ 561, 635.)”

Counsel for the appellee, in discussing this subject and excusing the insufficiency of the drawings to show this feature of the patented device, urges that they do not prevent—

“such variations in an apparatus, in form, shape, and proportions, as common sense or mechanical skill in that art would suggest. Rather, they are addressed to persons skilled in the art, who can supplement them with their technical knowledge.”

Admitting this to be so, and to be applicable to the written specification also, still it carries the doctrine to its verge; and, if the drawings and specification fail to indicate the device to those conversant with the art and having the mechanical skill peculiar thereto, they are insufficient and the patent does not include the device. Applying this as a further test, and bearing in mind what has already been said by us and claimed by the counsel for the appellee in respect to the problem of getting rid of pockets of air and the water of condensation, the conclusion is inevitable that the taking into the combination of the element of coils of pipe so arranged as to get rid of the difficulty was something new. Would it naturally occur to one possessing merely mechanical skill to arrange the coils in the effective way shown in the patent? If so, then there was nothing new in the nature of invention in the matter covered by the claim, for the obvious hints to the mechanic existed in the systems proposed to be improved upon. If not, it is clear that the invention was that

shown by the amendment of the specification and only that. The combination is useless without that feature and the bringing it in would be the last step in reaching success. If it was invention, it was an invention not hinted at in the original application, and if the patent is to be restricted to the substance of that application the claim is invalid because the invention was not useful.

As has been said, the bill does not allege an invention by Cody prior to the date of his application, and the latter does not carry the invention back to an earlier date. The evidence shows that the device as patented had been in public use for some time prior to the date of his application. If it be permissible, as contended, to maintain his patent upon evidence, dehors the proceedings in the patent office, that he had made the invention at an earlier date than is to be presumed from his application and patent, so as to carry it back to antedate the public use, the proof should be clear and unequivocal that he was the original inventor, (*Eagleton Manufg. Co. v. West, Bradley & Cary Manufg. Co.*, 2 Fed. 774, 777; *Rob. Pat.*, § 1026, note 14, and cases cited.) There is much evidence in this record upon that subject. Without here going into detail, it suffices to say that we have serious doubt whether Cody was the original inventor of the device represented by this combination of his patent. If the evidence in its favor were fortified by the presumption of validity afforded by the patent in ordinary cases, we might think it right that that should turn the scale and that this claim in the patent should be held valid; but the presumption does not apply in such circumstances and the burden of proof is on the other side. We do not think it is sustained. This defense is not specially pleaded in the answer; but it is not necessary that it should be. *Eagleton Manufg. Co. v. West, Bradley & Cary Manufg. Co.*, 2 Fed. 774, 780; *Id.*, 111 U. S., 490, 498. In that case, as here, the file-wrapper and contents were put in evidence by the plaintiff itself.

We are of opinion that the second claim can not be supported, in view of the history of that element of the combination, without which the invention is not useful, and that the patent, as to that claim, is therefore void.

The decree below should be reversed and the bill dismissed.

413. *UNITED SHIRT & COLLAR CO v. BEATTIE*, 149 Fed. 736, 79 C. C. A. 442 (1907, Second Circuit).

Before Wallace, Lacombe, and Coxe, Circuit Judges.

Coxe, Circuit Judge:

The Pine patent relates to improvements in machines for infolding the edges of cuff blanks by which the infolds are formed in the blanks and are pressed with the fabric folded back on

itself by the combined action of the support on which the blanks are placed, a templet defining the form of the blanks, and infolders actuated to carry the subtending edges of the blanks inwardly or over the defining edges of the templet. The infold thus formed is fixed in the blanks by pressure between the support and the infolders before the templet has been removed and the infolders withdrawn from the folded edges of the blanks. Two blanks are then placed together with the folded over edges concealed between them and united by a line of stitching along their folded edges, the stitching being done, of course, on another machine. The patented device may be used not only for folding cuffs but for collars and other similar articles. * * *

The combination here claimed contains the following elements in a machine for infolding cuff blanks: (1) A support for the blanks. (2) A templet, having expanding and contracting plates with edge portions bearing directly upon the blanks within the edge portions of the blanks. (3) Infolders constructed to move inwardly and outwardly for folding the edges of the blanks over the edges of the templet. (4) Means whereby the blanks may be fixed with a sharp fold by being pressed at the infolds between the support and the infolders after the templet has been contracted and withdrawn. An analysis of the other claims is unnecessary, further than to say that the fourth claim is specifically limited to "means for forcing the bed against the infolders," whereas the other claims are broad enough to include means for forcing the infolders down upon the support. The infolders of this claim are "constructed to move inwardly and outwardly on all sides simultaneously."

The operation of the machine is as follows: A blank is placed on the bed, or support, and the templet is brought down on the blank with the expanding plates resting thereon. By means of a lever these plates are moved outwardly over the blank. The folders are then moved inwardly carrying the edges of the blanks over the outer edges of the plates. The plates are then drawn out of the folds by reversing the lever. By means of a foot treadle the support is forced up pressing the infolds between it and the infolders. The templet is then raised and the infolders are moved outwardly leaving the blank smoothly and sharply folded on the support. The patentee takes pains to explain, what the law probably implies, that the machine can be made applicable to folding square corners and blanks of other forms and that other, equivalent means can be substituted for the pressing upward of the support without departing from the spirit of the invention.

We do not think that Pine has made a "pioneer invention," but we can not resist the conclusion that he has made a valuable improvement, which, for the first time, placed in the hands

of manufacturer of collars and cuffs a practical working device which does the work faster and better than previous devices. Though not entitled to a broad range of equivalents the complainants are entitled to protection against one who has admittedly appropriated the identical combination of three of the claims in controversy. Time will be saved if the concession be made at the outset that the elements of the claims, considered separately or in different environments, were, speaking generally, all old. The question here is was the combination old? That the claims cover a combination, and not an aggregation, we have no doubt, even though the operations of the separate elements do not synchronize. *Forbush v. Cook*, 2 Fish. Pat. Cas. 668, Fed. Cas. No. 4,931; *Heath Cycle Co. v. Hay* (C. C.) 67 Fed. 246; *Int. Recording Co. v. Dey* (C. C. A.) 142 Fed. 736, 744. * * *

The Boxley prior use has not been established beyond a reasonable doubt for the following reasons:

First. It is most improbable that a machine which could do the work of the Pine machine would be permitted to go out of existence when skillful men, knowing the needs of the business, were searching for such a machine.

Second. No writing supports the defendants' contention and human memory is not to be relied upon as to minute details of transactions occurring twenty-five years before. *Keasbey & M. Co. v. Carey Mfg. Co.* (C. C.) 139 Fed. 571, and cases cited.

Third. The omission of the pressing mechanism from the specification, which was prepared after the machine had been in operation and was well understood by the patent solicitor, is most significant, and the same is true of the 1882 patent to Boxley.

Fourth. The machine as constructed was not adapted to accomplish the pressing work, the edge portions of the templet plates, which were to force the infolders down upon the folded edges of the blanks to be pressed between them and the bed, were thin and flexible and were supported far from their operative edges. In other words, they were wholly unsuited to do the heavy work of pressing the edge portion of the folded blanks.

Fifth. Various other matters of construction in the Boxley machine tend to strengthen the conclusion that it was not intended to accomplish the purpose of the Pine machine in the particulars under discussion and that it was incapable of being so used as a practical operative device.

Of course, if it be true that Boxley, even though ignorant of the fact, had previously made a machine capable of doing the work of the Pine device in the same way, the patent of the latter cannot be sustained. But, on the other hand, if Boxley intending to accomplish a different result ignorantly stumbled upon a

structure which, in the light of Pine's achievement, can be distorted into a temporary and inefficient substitute for the successful machine, quite a different proposition is presented. If Pine did nothing more than take an old abandoned failure and, by the introduction of new and ingenious features, no matter how simple they may be, convert the rusty relic into a living machine which does the required work better, faster, cheaper than it was ever done before, he is entitled to the protection which his patent is intended to give. *Potts & Co. v. Creager*, 155 U. S. 597, 39 L. ed. 275; *Clough v. Barker*, 106 U. S. 166, 27 L. ed. 134. Pine seems to have added to the prior devices the one feature necessary to make the machine a marked commercial success.

414. *ANDERSON v. COLLINS*, 122 Fed. 451, 58 C. C. A. 669 (1903, Eighth Circuit).

Caldwell, Sanborn, Thayer. * * *

The Bender and Mueller patent is in evidence here to establish the statutory defense that Collins' combination had been patented prior to his invention or discovery thereof. U. S. Comp. St. 1901, p. 3394, § 4920; Act July 8, 1870 (16 Stat. 208, c. 230) § 61. But it is indispensable to the maintenance of this defense that the defensive patent should have been issued before the patentee under the patent in suit made his invention. As the patent to Bender and Mueller was not issued until after Collins conceived and perfected his patented device, nor until after he had applied for a patent for it, it is neither competent nor material evidence upon the issues in this case. *Bates v. Coe*, 98 U. S. 31, 33, 34, 25 L. ed. 68; *Du Bois v. Kirk*, 158 U. S. 58, 64, 15 Sup. Ct. 729, 39 L. ed. 895; *Walker on Patents*, § 55, p. 53.

The first patent to Collins (No. 585,909) is not an anticipation of the claims of his subsequent patent here under consideration (1) because the applications for the two patents were pending in the patent office at the same time, and (2) because the combination described and claimed in the second patent is not described or claimed in the application for the first patent. This application was filed on January 20, 1896, and the patent upon it was issued on July 6, 1897. The application for the second patent was filed on July 30, 1896, and it ripened into a patent on December 31, 1897. Both applications were pending in the patent office from July 30, 1896, until July 6, 1897. The specification and claims of the application for the first patent failed to disclose essential elements of the combination of the second patent, to wit (1) the housing of cage, and (2) the means by which the separating devices and the main supporting balls are secured and held in the housing. Even where each of several applications which subsequently ripen into patents to the same inventor dis-

closes all the inventions claimed in all the applications, and they are all pending at the same time, no one of the applications or patents can be used to anticipate any of the claims of the others which it does not itself claim and secure. *Ide v. Trorlicht, Duncker & Renard Carpet Co.*, 115 Fed. 137, 145, 53 C. C. A. 341; *Walker on Patents*, § 180; *Westinghouse Electric & Mfg. Co. v. Dayton Fan & Motor Co. (C. C.)* 106 Fed. 724, 726; *Suffolk Mfg. Co. v. Hayden*, 3 Wall. 315, 318, 18 L. ed. 76; *Graham v. McCormick (C. C.)* 11 Fed. 859; *Graham v. Mfg. Co. (C. C.)* 11 Fed. 138, 141. Much less can such an application and a patent upon it which fails to describe essential elements of a combination subsequently patented to the same inventor upon an application pending at the same time have the effect of anticipation.

Much has been said in argument and written in the briefs to show that the tenth claim of the patent in suit is so broad and general in its terms that it covers devices in which the main bearing elements are cylinders or wheels, and in which the separating devices are not rotatable; and that, when it is read in this way, the combination it describes is anticipated by several of the patents to which reference has been made. But the claims of a patent must be read in the light of the specification which accompanies them. The specification may always be referred to to restrict, though not to expand, the claims. And, when this tenth claim is read in the light of these familiar rules, its true construction limits it to a housing for the balls and the rotatable separating devices between them described in the specification, and when it is thus read no anticipation can be found in the prior patents.

When Collins conceived and constructed the device secured to him by the patent here in suit, the field for improvement in the art he was studying was narrow. Ball bearings were numerous and well known. Housings for the contents of roller races were common. But no housing had yet been constructed which held the main supporting balls and the rotatable separating devices between them both while they were within and while they were without the roller race in such a fixed relation to each other, to the housing, and to the walls of the roller race that, when the balls were in operation, there would be no sliding friction between any of the walls of the race and any of its contents, and no sliding friction between the balls themselves, or between them and the separating devices between them. Collins made a combination which first accomplished these results. His device may not have been a great improvement, but it was certainly a marked advance in the art, and, in view of the numerous less successful attempts to take the step he took which were rewarded with patents by the government, and in view of the evident

inability of those inventors and of the proprietors of mere mechanical skill to reach the point to which Collins attained, the title of inventor ought not to be denied him. His invention is one of those intermediate steps in the gradual progress of a useful art toward perfection which are evidenced by the great majority of patented inventions, and it falls within the familiar rules that a new combination of old elements by which an old result is attained in a more facile, economical, and efficient way may be protected by a patent (*National Hollow Brake-Beam Co. v. Interchangeable Brake-Beam Co.*, 106 Fed. 693, 707, 45 C. C. A. 544, 557; *Seymour v. Osborne*, 11 Wall. 516, 542, 20 L. ed. 33; *Rees v. Gould*, 15 Wall. 187, 189, 21 L. ed. 39; *Thompson v. Bank*, 53 Fed. 250, 252, 3 C. C. A. 518, 520; *Ide v. Trorlicht, Duncker & Renard Carpet Co.*, 115 Fed. 137, 143, 53 C. C. A. 341), and that, where the advance in the art is gradual, and several inventors make valuable improvements and form different combinations, which accomplish the desired result with varying degrees of success, each is entitled to his own combination, so long as it differs from those of his competitors, and does not include theirs (*National Hollow Brake-Beam Co. v. Interchangeable Brake-Beam Co.*, 106 Fed. 693, 712, 45 C. C. A. 544, 563; *Railway Co. v. Sayles*, 97 U. S. 554, 556, 24 L. ed. 1053; *McCormick v. Talcott*, 20 How. 402, 405, 15 L. ed. 930; *Stirrat v. Mfg. Co.*, 61 Fed. 980, 981, 10 C. C. A. 216, 217; *Griswold v. Harker*, 62 Fed. 389, 391, 10 C. C. A. 435, 438; *Adams Electric Co. v. Lindell Ry. Co.*, 77 Fed. 432, 440, 23 C. C. A. 223, 231; *Ide v. Trorlicht, Duncker & Renard Carpet Co.*, 115 Fed. 137, 143, 53 C. C. A. 341).

The combination of claims 5, 7, 8, 9, and 10 of letters-patent No. 595,696 was new, it was useful, it was the product of the intuitive genius of an inventor. These claims are infringed by the device constructed in accordance with the description in letters-patent No. 621,219, to George A. Burwell which the defendant is using, and the decree below is affirmed.

415. CONTINENTAL PAPER BAG COMPANY v. EASTERN PAPER BAG COMPANY, 210 U. S. 405, 52 L. ed. 1122, 28 Sup. Ct. 748 (1908, First Circuit). * * *

STATEMENT OF THE CASE.

This is a bill in equity to restrain the infringement of Letters-Patent No. 558,969, April 28, 1896, issued to William Liddell, for an improvement in paper-bag machines for making what are designated in the trade as self-opening square bags. The claims in suit do not include mechanism for making a complete bag, but only mechanism for distending one end of a tucked or bel-lows-folded paper tube made by other mechanism, and folding it down into a form known in the art as the "diamond fold." This

fold is flattened and pasted by other mechanism and forms a square bottom to the bag.

The bill is in the usual form and alleges infringement of the claims by the Continental Paper Bag Company, hereafter called the Continental Company, and prays for an accounting and an injunction.

The answer interposed the defense of non-jurisdiction of a court of equity, non-infringement of the Liddell patent by defendant (Continental Company) and want of invention.

The allegation of the answer as to the jurisdiction of the court is as follows:

"The defendant says, on information, advice and belief, that a court of equity has no jurisdiction to grant any prayer of the bill of complaint, even if the said Liddell patent, No. 558,969, were valid, and even if the defendant's paper-bag machines were to be held to infringe that patent, because the said patent No. 558,969, is a mere paper proposition which the complainant has never put into effect or use, and because it is contrary to equity to suppress a useful and established business, like that which the defendant is prosecuting with its paper-bag machines, at the request of a complainant which simply owns one paper-bag machine patent that has never been employed by that complainant in any way in any paper-bag machinery, and because the complainant in this case has a plain, adequate and complete remedy at law for any infringement which may have been done upon Liddell Letters-Patent, No. 558,969."

The circuit court adjudged the patent valid as to the first, second and seventh claims thereof; that the Eastern Paper Bag Company was the owner of the Letters-Patent; that Liddell was the original and first inventor of the improvements described in the claims, and that the Continental Company had infringed the same. It was also adjudged that the Eastern Company recover of the Continental Company the profit the latter had made or received by the infringement. An account was ordered and a perpetual injunction decreed. (142 Fed. 479.) The decree was affirmed by the circuit court of appeals. (150 Fed. 741.) Thus certiorari was then granted.

Mr. Justice McKenna delivered the opinion of the court.

The defense of want of invention in the Liddell machine is not urged here, because it is said that the decision of that question depends upon mechanical comparisons, too numerous and complicated to be conveniently made by a bench of judges, and because, though the Liddell patent approaches closely the prior art, it "perhaps covers a margin of differentiation sufficient, though barely sufficient, to constitute invention."

The two questions, therefore, which remain for decision are the jurisdiction of the court and the question of infringement. We will consider the latter question first. It does not depend, counsel for the Continental Company says—

“upon any issue of fact, but does depend, as questions of infringement—”

sometimes do, upon a “point of law.” This point of law, it is further said, has been formulated in a decision of this Court as follows:

“Where the patent does not embody a primary invention, but only an improvement on the prior art, and defendant’s machines can be differentiated, the charge of infringement is not sustained.”

Counsel for respondent do not contend that the Liddell invention is primary within the definition given of that term by petitioner. Their concession is that it is—

“not basic in the sense of covering the first machine ever produced to make self-opening square bags by machinery.”

They do contend, however, that it is one of high rank, and if it be given a—

“fair construction and scope, no matter whether we call it basic, primary or broad, or even merely entitled to be construed as covering obvious mechanical equivalents, the question of infringement of the claims in suit by petitioner’s machine becomes mechanically, and from a patent-law standpoint, a simple one, in spite of slight differences of operation, and of reversal of some of the moving parts.”

The lower courts did not designate the invention as either primary or secondary. They did, however, as we shall presently see, decide that it was one of high rank and entitled to a broad range of equivalents. It becomes necessary, therefore, to consider the point of law upon which petitioner contends the question of infringement depends.

The citation is from *Cimiotti Unhairing Company v. American Fur Refining Company*, 198 U. S. 399, and *Kokomo Fence Machine Company*, 189 U. S. 8, was adduced to sustain the proposition. But the whole opinion must be considered, and it will be seen from the language which we shall presently quote that it was not intended to say that the doctrine of equivalents applied only to primary patents.

We do not think it is necessary to follow counsel for petitioner in his review of other cases which, he urges, sustain his contention. The right view is expressed in *Miller v. Eagle Manufacturing Company*, 151 U. S., 186, 207, as follows:

“The range of equivalents depends upon the extent and nature of the invention. If the invention is broad and primary in

its character, the range of equivalents will be correspondingly broad, under the liberal construction which the courts give to such inventions."

And this was what was decided in *Kokomo Fence Machine Company, Cimiotti Unhairing Company v. American Fur Refining Company*, and *Computing Scale Company v. Automatic Scale Company*, 204 U. S. 609. It is from the second of those cases, as we have seen, that the citation is made which petitioner contends the point of law upon which infringement depends is formulated; but it was said in that case:

"It is well settled that a greater degree of liberality and a wider range of equivalents are permitted where the patent is of a pioneer character than when the invention is simply an improvement, may be the last and successful step, in the art theretofore partially developed by other inventors in the same field."

It is manifest, therefore, that it was not meant to decide that only pioneer patents are entitled to invoke the doctrine of equivalents, but that it was decided that the range of equivalents depends upon and varies with the degree of invention. See *Ives et al. v. Hamilton, executor*, 92 U. S., 426; *Hoyt v. Horne*, 145 U. S., 302; *Deering v. Winona Harvester Works*, 155 U. S., 286; *Walker on Patents*, § 362; *Robinson on Patents*, § 258.

We start, then, with the proposition that the Eastern Company may invoke for the Liddell patent the doctrine of equivalents, but without deciding now how broadly we proceed to the consideration of the question of infringement. Invention is conceded to the Liddell machine, as we have seen, by the Continental Company. The concession, however, is qualified by the assertion that it covers only a "margin of differentiation" from the prior art. The circuit court and the circuit court of appeals had a higher estimate of it. The circuit court said that the nature of its invention—

"was clear * * * was disconnected from what precedes it by such a hiatus, that, if the claims are as extensive as the invention, there is no difficulty so far as concerns the application to the case of the rules with reference to equivalents."

And answering the contention that it was the twentieth in the line of patents in its branch of the arts, and that it should be limited to the details described in its specifications, it was said that there was—

"such a hiatus between them and what appears on the face of the Liddell patent, that they have no effect either in narrowing or broadening the alleged Liddell invention.

The circuit court of appeals affirmed the decree of the circuit court. It was less circumstantial than the circuit court in de-

scribing the invention. It said, however, after stating the claims, that their breadth—

“would imperil the patent, were the real invention less broad; but the defendant (the Continental Company) has not pointed out, and we have been unable to find, any operative combination of a rotary cylinder and forming-plate oscillating thereon earlier than the patent in suit. If, therefore, the patent is valid, it has a wide scope, and the mechanical arrangement used by the defendant is fairly within its terms.”

The lower courts, therefore, found that the invention was a broad one and that the machine used by the Continental Company was an infringement. And these were questions of fact upon which, both of the courts concurring, their findings will not be disturbed, unless clearly wrong. (*Deslions v. La Compagnie Generale Transatlantique*, ante, p. —.) To decide the question of invention an examination of the prior art was necessary and a consideration of what step in advance of that art, if any, the Liddell patent was. To decide the question of infringement a comparison of the Liddell machine with the machine used by the Continental Company was necessary and a determination of their similarity or difference. What was involved in these inquiries of fact and the conclusions from them is indicated by a record of many hundred pages of expert testimony and exhibits.

We shall proceed, then, to consider upon what grounds the circuit court and the circuit court of appeals proceeded and their sufficiency to sustain the judgments rendered within the rule announced.

The bill alleges the infringement of claims 1, 2 and 7. The courts below selected claim 1 for consideration, as determinative of the questions arising, as well on the other two claims as on it. In this counsel for the Continental Company acquiesced. Claim 1 is as follows:

“In a paper-bag machine, the combination of a rotating cylinder provided with one or more pairs of side-forming fingers adapted to be moved toward or from each other, a forming-plate also provided with side-forming fingers adapted to be moved toward or from each other, means for operating said fingers at definite times during the formative action upon the bag-tube, operating means for the forming plate adapted to cause the said plate to oscillate about its rear edge upon the surface of the cylinder during the rotary movement of said cylinder, the whole operating for the purpose of opening and forming the bottom of the bag-tube, and means to move the bag-tube with the cylinder.”

“The pith of the invention,” the circuit court said—

“is the combination of the rotary cylinder with means of operating the forming-plate in connection therewith, limited, however,

to means which causes the plate to oscillate about its rear edge.”

The court expressed the opinion that the invention extended to every means by which that result could be attained, and rejected the contention of the Continental Company that the invention was no broader than the details described in the specification. The court said that it was unable to see upon what the proposition could be based. And further said that there was nothing in the prior art which either broadened or narrowed the Liddell invention.

“If any of the nineteen patents which had been put in evidence—”

the court added—

“pointed out any form of combining the forming-plate with a rotating cylinder, they would of course narrow what Liddell could claim; but they have nothing of that kind.”

And speaking of the claims and their limitation by the description, it was said:

“Nothing in the manner in which the claims are expressed adopts as the elements the detailed description contained in the specification. So far as the details of the description are concerned, they come within the ordinary rule of preferable method.”

We think it is clear that the court considered that Liddell sought to comply with § 4888 of the Revised Statutes. In other words, he filed a description of his invention, explained its principle and the best mode in which he “contemplated applying that principle,” and did not intend to give up all other modes of application. An inventor must describe what he conceives to be the best mode, but he is not confined to that. If this were not so most patents would be of little worth.

“The principle of the invention is a unit, and invariably the modes of its embodiment in a concrete invention may be numerous and in appearance very different from each other.” (Robinson on Patents, § 485.)

The invention, of course, must be described and the mode of putting it to practical use, but the claims measure the invention. They may be explained and illustrated by the description. They can not be enlarged by it. *Yale Lock Co. v. Greenleaf*, 117 U. S. 554. *Snow v. Lake Shore, etc., Railway Co.*, 121 U. S., 617, is a case where a claim was limited by a description of the device, with reference to drawings. The court, in rejecting the contention that the description of the particular device was to be taken as a mere recommendation of the patentee of the manner in which he contemplated to arrange the parts of his machine, said there was nothing in the context to indicate that the patentee contemplated any alternative for the arrangement of the parts

of the device. Therein the description is distinguished from the description in the Liddell patent. Liddell was explicit in the declaration that there might be alternatives for the device described and illustrated by him. He was explicit in saying that in place of the device for controlling the movement of the forming-plate relatively to the cylinder that the plate might "be moved or operated by any other suitable means."

This court said in *Cimiotti Unhairing Company v. American Fur Refining Company*, supra:

"In making his claim the inventor is at liberty to choose his own form of expression, and while the courts may construe the same in view of the specifications and the state of the art, they may not add to or detract from the claim."

See also *Howe Machine Co. v. National Needle Co.*, 134 U. S., 388, 394.

The discussion thus far brings us to two propositions: that infringement is not averted merely because the machine alleged to infringe may be differentiated from the patented machine, even though the invention embodied in the latter be not primary; and, second, that the description does not necessarily limit the claims. It is probably not contended abstractly by the Continental Company that the description necessarily limits the claims, but only in the case at bar as following from the first proposition, that is, as resulting from the alleged narrow character of the Liddell invention. A few words more may be necessary to develop fully the contention. Counsel separate the claims of the Liddell machine into divisions, and says that the fourth division of the claimed mechanism in each of the three claims alleged to be infringed is in exactly the same words, which words are:

"Operating means for the forming-plate, adapted to cause the said plate to oscillate about its rear edge upon the surface of the cylinder during the rotary movement of said cylinder."

And it is argued that neither claim designates "operating means," either by names or by reference letters or numerals, and recourse must therefore be had to the descriptive part of the specification to ascertain what "operating means" are meant, and then construe the claim as calling for those "operating means" or their equivalents. The other way, it is said, is to ignore the descriptive part of the specification—

"and to construe the claim as being satisfied by any 'operating means' which can perform the particular function designated in the claim."

Under the second method, it is insisted, identity of function constitutes infringement. Under the first method identity of function must be accompanied by substantial identity of char-

acter and substantial identity of mode of operation in order to constitute that result. The second method was adopted, it is urged, by the circuit court, and led it into the error of deciding that—

“Liddell’s alleged invention covers every method of combining the rotary cylinder with the forming-plate to oscillate about its rear edge on the surface of the cylinder, and the claims are as broad as the invention.”

It may be well before considering these contentions to refer again to the view which the circuit court and the circuit court of appeals had of Liddell’s patent. The circuit court said that the “pith” of the invention—

“is the combination of the rotary cylinder with means for operating the forming-plate in connection therewith, limited, however, to means which cause the plate to oscillate about its rear edge on the surface thereof—”

and distinguished the invention from the prior art, as follows:

“Aside from the cylinder and the forming-plate oscillating about its rear edge everything in these claims [the claims of the patent] is necessarily old in the arts.”

It was this peculiar feature of novelty, it was said, which clearly distinguished it from all that went before it. This conclusion was in effect affirmed by the circuit court of appeals. The latter court said that the folding of the bottoms of S. O. S. paper bags had been accomplished in the prior art—

“both by a folding-plate reciprocating upon a plane, and by the operation of fingers upon a cylinder. The folding-plate and the cylinder had never been combined. The complainant urges with much probability that the reason why they had not been combined lay in the difficulty of operating a pivoted folding-form upon the surface of a cylinder. Two circles external to each can be in contact at but one point while, in order that the folding-plate may operate, its end, as it moves upon a pivot, must remain for some distance in contact with the surface of the revolving cylinder. The problem may be solved by causing the pivot or axis of the folding-plate to yield away from the cylinder, or by causing the surface of the cylinder to be depressed away from the folding-plate. The patent in suit adopts the first device, the defendant’s machine the second, and the crucial question before the court is this: Under all the circumstances of the case, is the second method, as compared with the first, within the doctrine of equivalents?”

The court, as we have seen, concluded, from the character of the Liddell patent, that “the second method,” that is, the method of the Continental Company’s machine, was “within the doctrine of equivalents.”

Counsel, however, contends that the circuit court, in its decision, virtually gave Liddell a patent for a function by holding that he was entitled to every means to cause the forming-plate to oscillate about its rear edge.

The distinction between a practically operative mechanism and its function is said to be difficult to define. Robinson on Patents, § 144, et seq. It becomes more difficult when a definition is attempted of a function of an element of a combination which are the means by which other elements are connected and by which they co-act and make complete and efficient the invention. But abstractions need not engage us. The claim is not for a function, but for mechanical means to bring into working relation the folding-plate and the cylinder. This relation is the very essence of the invention, and marks the advance upon the prior art. It is the thing that never had been done before, and both the lower courts found that the machines of the Continental Company were infringements of it. It is not possible to say that the findings of those courts on that fact or on the fact of invention were clearly wrong, notwithstanding the great ability of the argument submitted against them.

2. The next contention of the petitioner is that a court of equity has no jurisdiction to restrain the—
“infringement of letters-patent the invention covered by which has long and always and unreasonably been held in non-use * * * instead of being made beneficial to the art to which it belongs.”

It will be observed that it is not urged that non-use merely of the patent takes jurisdiction from equity but an unreasonable non-use. And counsel concedes indulgence to a non-use which is “non-chargeable to the owner of the patent,” as lack of means, or lack of ability or opportunity to induce others to put the patent to use. In other words, a question is presented, not of the construction of the law simply but of the conduct of the patentee as contravening the supposed public policy of the law.

The foundation of the argument of the petitioner is, as we have intimated, the policy of the patent laws executing the purpose of the constitution of the United States to promote the progress of science and useful arts by securing for limited times to inventors the exclusive right to their respective discoveries. (Art I, § 8.) And it is urged that the non-use of an invention for seventeen years (of course, the whole term of the patent may be selected to test the argument) is not to promote the progress of the useful arts, and the contention is that equity should not give its aid to defeat the policy of the statute, but remit the derelict patentee to his legal remedy. The penalty does not seem to fit the case. It is conceded that the patent is not defeated; only that a particular remedy is taken away. It is conceded that the remedy at law remains. It is conceded, therefore, that a right

has been conferred, but it is said that it may be infringed, though the policy of the law is violated. The petitioner, further to sustain its side of the question, refers to the provision in § 4921, giving power to the courts to grant injunctions. The provision is:

“The several courts vested with jurisdiction of cases arising under the patent law shall have power to grant injunctions according to the course and principles of equity, to prevent the violation of any right secured by the patent, * * *”

and the petitioner cites *Root v. Railway Company*, 105 U. S. 183, 216, for the contention that the statute does not confer power to grant the injunction, except as incidental to some other equity.

It may be well, however, before considering what remedies a patentee is entitled to, to consider what rights are conferred upon him. The source of the rights is, of course, the law, and we are admonished at the outset that we must look for the policy of a statute, not in matters outside of it—not to circumstances of expediency and to supposed purposes not expressed by the words. The patent law is the execution of a policy having its first expression in the constitution, and it may be supposed that all that was deemed necessary to accomplish and safeguard it must have been studied and provided for. It is worthy of note that all that has been deemed necessary for that purpose, through the experience of years, has been to provide for an exclusive right to inventors to make, use and vend their inventions. In other words, the language of complete monopoly has been employed, and though at first only a remedy at law was given for a violation of the right, a remedy in equity was given as early as 1819. There has been no qualification, however, of the right, except as hereinafter stated. An exception which, we may now say, shows the extent of the right—a right so explicitly given and so complete that it would seem to need no further explanation than the word of the statute. It has, however, received explanation in a number of cases which bring out clearly the services rendered by an inventor to the arts and sciences and to the public. Those cases declare that he receives nothing from the law that he did not have before, and that the only effect of the patent is to restrain others from manufacturing and using that which he has invented. *United States v. Bell Telephone Company*, 167 U. S., 224, 249. And it was further said in that case that the inventor could have kept his discovery to himself, but to induce a disclosure of it Congress has, by its legislation, made in pursuance of the constitution, guaranteed to him an exclusive right to it for a limited time, and the purpose of the patent is to protect him in this monopoly—not to give him a use which he did not have before, “but only to separate to him an exclusive use.” And it was pointed out that the monopoly which he receives is only for a few years. The court further said:

“Counsel seem to argue that one who has made an invention and thereupon applies for a patent therefor occupies, as it were, the position of a quasi trustee for the public; that he is under a sort of moral obligation to see that the public acquires the right to the free use of that invention as soon as is conveniently possible. We dissent entirely from the thought thus urged. The inventor is one who has discovered something of value. It is his absolute property. He may withhold a knowledge of it from the public, and he may insist upon all the advantages and benefits which the statute promises to him who discloses to the public his invention.”

And the same relative rights of the patentee and the public were expressed in prior cases, and we cite them because there is something more than the repetition of the same thought by doing so. It shows that whenever this court has had occasion to speak it has decided that an inventor receives from a patent the right to exclude others from its use for the time prescribed in the statute.

“And for his exclusive enjoyment of it during that time the public faith is forever pledged. (Chief Justice Marshall in *Grant v. Raymond*, 6 Pet. 243, p. 242.)”

And, in *Bloomer v. McQuewan*, 14 How., 539, Chief Justice Taney said:

“The franchise which the patent grants consists altogether in the right to exclude every one from making use or vending the thing patented without permission of the patentee. This is all he obtains by the patent.”

In *Patterson v. Kentucky*, 97 U. S., 501, it was said that an inventor's own right to the use was not enlarged or affected by a patent. See also *Willson v. Rouseau*, 4 How., 646, 674; *Seymour v. Osborne*, 11 Wall., 516, 533; *Cammeyer v. Newton*, 94 U. S., 225; *Densmore v. Scofield*, 102 U. S., 375.

It may be said that these cases deal only with the right of a patentee, and not with the remedy, whether at law or equity, that he may, at any time, or in all his situations, be entitled to. And there is no case in this court that explicitly does so. However, in the three last cases cited it was decided that patents are property, and entitled to the same rights and sanctions as other property.

In *Bement v. National Harrow Company*, 186 U. S., 70, 90, adopting the language of the circuit court of appeals for the sixth circuit in *Heaton-Peninsular Company v. Eureka Specialty Company*, 77 Fed. 294, it was said:

“If he [a patentee] sees fit, he may reserve to himself the exclusive use of the invention or discovery. If he will neither use his device nor permit others to use it, he has but suppressed his

own, * * * his title is exclusive, and so clearly within the constitutional provisions in respect to private property that he is neither bound to use his discovery himself, or permit others to use it. The dictum found in *Hoe v. Knap*, 17 Fed. 204, is not supported by reason or authority."

In *Hoe v. Knap*, Judge Blodgett refused an injunction against the infringer, holding that—

"under a patent which gives a patentee a monopoly, he is bound to either use the patent himself or allow others to use it on reasonable terms."

In a number of the circuit courts of appeals it has been decided that as a consequence of the exclusive right of the patentee he is entitled to an injunction against an infringer, even though he (the patentee) does not use the patented device. The cases are inserted in the margin,* also decisions of the circuit court,† some of which define the right of a patentee and others holding that as incident to the right he is entitled to an injunction, though he had not used his invention.

Counsel for petitioner cites counter cases, which he contends are more direct authority‡

[**Edison v. Mt. Morris Co.*, 57 Fed. 642, 644 (2d Cir.); *Heaton-Peninsular v. Eureka*, 77 Fed. 294 (6th Cir.); *Crown Cork & Seal Co. v. Aluminum Stopper Co.*, 108 Fed., 845, 868 (4th Cir.); *Fuller v. Berger*, 120 Fed. 274, 277 (7th Cir.); *Lamson Consolidated Store Service Co. v. Hillman*, 123 Fed. 416, 422 (7th Cir.); *Victor Talking Machine Co. v. Fair*, 123 Fed. 425 (7th Cir.); *U. S. Seeded Raisin Co. v. Griffin*, 126 Fed., 364, 368 (5th Cir.); *Rupp v. Elliott*, 131 Fed. 730 (6th Cir.); *Munroe v. Railway Appliance Co.*, 145 Fed., 646, 648 (7th Cir.); *Filter Co. v. Jackson*, 140 Fed., 340, 343 (8th Cir.); *U. S. Fastener Co. v. Bradley*, 149 Fed. 222 (2d Cir.); *Rubber Tire Co. v. Milwaukee* 154 Fed., 358, 361 (7th Cir.); *Indiana Mfg. Co. v. J. I. Case Co.*, 154 Fed., 365 (7th Cir.).

†*Carr v. Rice*, 1 Fish., 198, 200 (N. Y.); *Wintermute v. Redington*, 1 Fish., 243 (Ohio); *Ransom v. Mayor*, 1 Fish., 255 (N. Y.); *Pitts v. Wemple*, 2 Fish., 15 (Ill.); *Whitney v. Emmett*, 1 Bald., 304; *Broadnax v. Central Stock Yard*, 4 Fed., 214, 216 (N. J.); in re *Brosnahan, Jr.*, 18 Fed., 62 (Justice Miller) (Mo.); *Consolidated Roller Mill Co. v. Coombs*, 39 Fed. 803 (Mich.); *Wirt v. Hicks*, 46 Fed., 71 (N. Y.); *Campbell v. Manhattan Railway*, 49 Fed., 930 (N. Y.); *Edison v. Mt. Morris*, 57 Fed., 642, 644 (N. Y.); *Masseth v. Johnston*, 59 Fed., 612 (Pa.); *Bonsack v. Smith*, 70 Fed., 383 (N. C.); *Columbia v. Freeman*, 71 Fed., 302, 306 (Mo.); *Wyckoff v. Wagner*, 88 Fed., 515 (N. Y.); *White v. Peerless*, 111 Fed. 190 (Pa.); *Brodrick v. Mayhew*, 131 Fed.

92 (Wis.); National Co. v. Daab, 136 Fed. 891, 895 (N. J.); Hoe v. Miehle, 141 Fed., 115 (N. Y.); Hartman v. Park & Son, 145 Fed., 358 (Ky.).

‡Isaacs v. Holland, 4 Wash., 54; Ogle v. Ege, 4 Wash., 584; Mott v. Bennett, 2 Fisher 642; Sullivan v. Redfield, 1 Paine 441; Magic Ruffle Co. v. Daughlas, 2 Fisher 333; Hoe v. Knap 27 Fed., 204; Germain v. Wilgus, 67 Fed., 600, C. C. A. Ninth Circuit; Campbell Printing Press Co. v. Duplex Printing Press Co., 86 Fed., 331; Robinson on Patents, vol. 1, § 43; Curtis on Patents, § 320 of the two first editions and § 406 of the third and fourth editions.]

He also reviews the cases cited by respondent, and contents that they are not relevant to the question in the case at bar, which is not that of the simple non-use of a patent, but a long and unreasonable non-use of it. Judge Aldrich, in his dissenting opinion in the court of appeals, excluded the cases as authoritative for a different reason than counsel expresses. The learned judge said:

“Simple non-use is one thing. Standing alone, non-use is no efficient reason for withholding injunction. There are many reasons for non-use which, upon explanation, are cogent, but when acquiring, holding and non-use are only explainable upon the hypothesis of a purpose to abnormally force trade into unnatural channels—a hypothesis involving an attitude which offends public policy, the conscience of equity, and the very spirit and intention of the law upon which the legal right is founded—it is quite another thing. This is an aspect which has not been considered in a case like the one here.”

Respondent attacks the conclusion of Judge Aldrich and that of petitioner, and insists that there is nothing in the record to show that the non-use of the patent was either unreasonable or sinister. A very strong argument is presented by respondent. Its counsel pointedly say that “there is no record evidence at all on the subject or character of complainants’ [respondents’] use or non-use,” and points out that neither the assignments of error on appeal to the circuit court of appeals nor the petition for rehearing in that court presented the question that the injunction should be denied on the ground of mere non-use or unreasonable non-use. Let us see what the courts say and what petitioner says. The circuit court says:

“We have stated that no machine for practical manufacturing purposes was ever constructed under the Liddell patent. The record also shows that the complainant, so to speak, locked up its patent. It has never attempted to make any practical use of it, either itself or through licenses, and apparently, its proposed policy has been to avoid this. In this respect it has not the com-

mon excuse of a lack of means, as it is unquestioned that the complainant is a powerful and wealthy corporation. We have no doubt that the complainant stands in the common class of manufacturers who accumulate patents merely for the purpose of protecting their general industries and shutting out competitors."

The comment of the circuit court of appeals is:

"The machine of the patent in suit is mechanically operative, as was shown experimentally for the purposes of this suit, but it has not been put into commercial use. No reason for the non-user appears in the evidence, so far as we can discover. The defendant's machine has been an assured commercial success for some years. It was suggested at the oral argument that an unused patent is not entitled to the protection given by the extraordinary remedy of an injunction. This contention was not made in the defendant's printed brief. While this question has not been directly passed upon, so far as we are informed, in any considered decision of the Supreme Court, yet the weight of authority is in favor of the complainant."

The cases were cited.

If these statements are to be reconciled it can only be by supposing that the circuit court inferred the motive of the respondents from the unexplained non-use of the patent. But petitioner has given its explanation of the purpose of respondent. Quoting Judge Aldrich, that the patent in suit has been "deliberately held in non-use for a wrongful purpose," petitioner asks:

"What was that wrongful purpose? It was the purpose to make more money with the existing old reciprocating Lorenz & Honiss machines and the existing old complicated Stilwell machines than could be made with new Liddell machines, when the cost of building the latter was taken into account. And this purpose was effective to cause the long and invariable non-use of the Liddell invention, notwithstanding that new Liddell machines might have produced better paper bags than the old Lorenz & Honiss machines or the old Stilwell machines were producing."

But, granting all this, it is certainly disputable that the non-use was unreasonable or that the rights of the public were involved. There was no question of a diminished supply or of increase of prices, and can it be said, as a matter of law, that a non-use was unreasonable which had for its motive the saving of the expense that would have been involved by changing the equipment of a factory from one set of machines to another? And even if the old machines could have been altered, the expense would have been considerable. As to the suggestion that competitors were excluded from the use of the new patent, we answer that such exclusion may be said to have been of the very essence of the right conferred by the patent, as it is the privilege

of any owner of property to use or not use it, without question of motive. *Connolly v. Union Sewer Pipe Co.*, 184 U. S. 546.

The right which a patentee receives does not need much further explanation. We have seen that it has been the judgment of Congress from the beginning that the sciences and the useful arts could be best advanced by giving an exclusive right to an inventor. The only qualification ever made was against aliens in the act of 1832. That act extended the privilege of the patent law to aliens, but required them—

“to introduce into public use in the United States the invention or improvement within one year from the issuing thereof—” and indulged no intermission of the public use for any period longer than six months. A violation of the law rendered the patent void. The act was repealed in 1836. It is manifest, as is said in *Walker on Patents*, § 106, that Congress has not “overlooked the subject of non-user of patented inventions.”

And another fact may be mentioned. In some foreign countries the right granted to an inventor is affected by non-use. This policy we must assume Congress has not been ignorant of, nor of its effects. It has, nevertheless, selected another policy; it has continued that policy through many years. We may assume that experience has demonstrated its wisdom and beneficial effect upon the arts and sciences.

From the character of the right of the patentee we may judge of his remedies. It hardly needs to be pointed out that the right can only retain its attribute of exclusiveness by a prevention of its violation. Anything but prevention takes away the privilege which the law confers upon the patentee. If the conception of the law that a judgment in an action at law is reparation for the trespass, it is only for the particular trespass that is the ground of the action. There may be other trespasses and continuing wrongs and the vexation of many actions. These are well-recognized grounds of equity jurisdiction, especially in patent cases, and a citation of cases is unnecessary. Whether, however, a case can not arise where, regarding the situation of the parties in view of the public interest, a court of equity might be justified in withholding relief by injunction we do not decide. Decree affirmed.

Mr. Justice Harlan thinks that the original bill should have been dismissed. He thinks the facts are such that the court should have declined, upon grounds of public policy, to give any relief to the plaintiff by injunction, and he dissents from the opinion and judgment.

416. DIAMOND RUBBER CO. v. CONSOLIDATED RUBBER TIRE CO.,
 220 U. S. 428, 55 L. ed. 527, 31 Sup. Ct. 444 (1911, Second
 Circuit. Patent No. 554,675). * * *

Fig. 1.

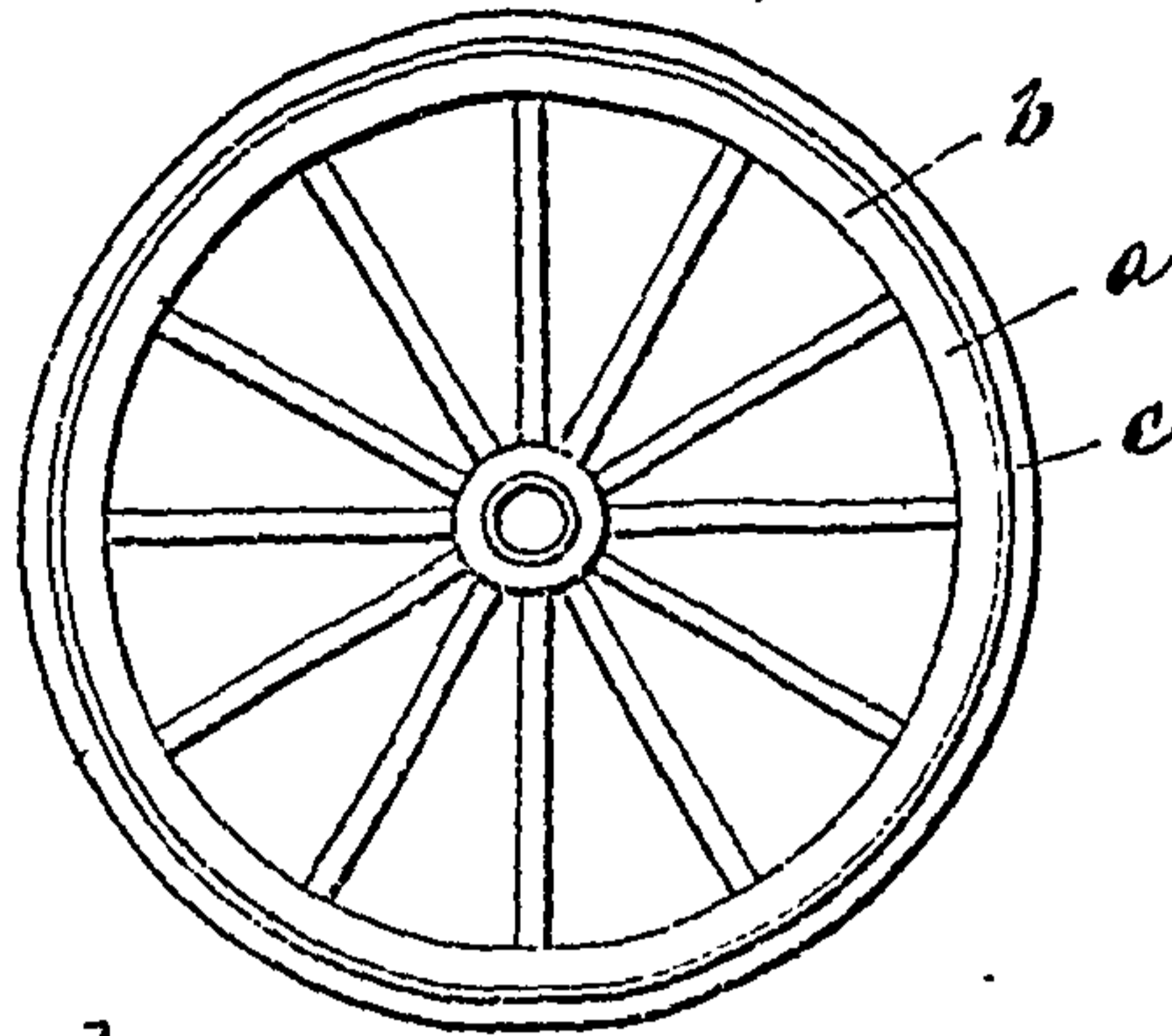


Fig. 2c

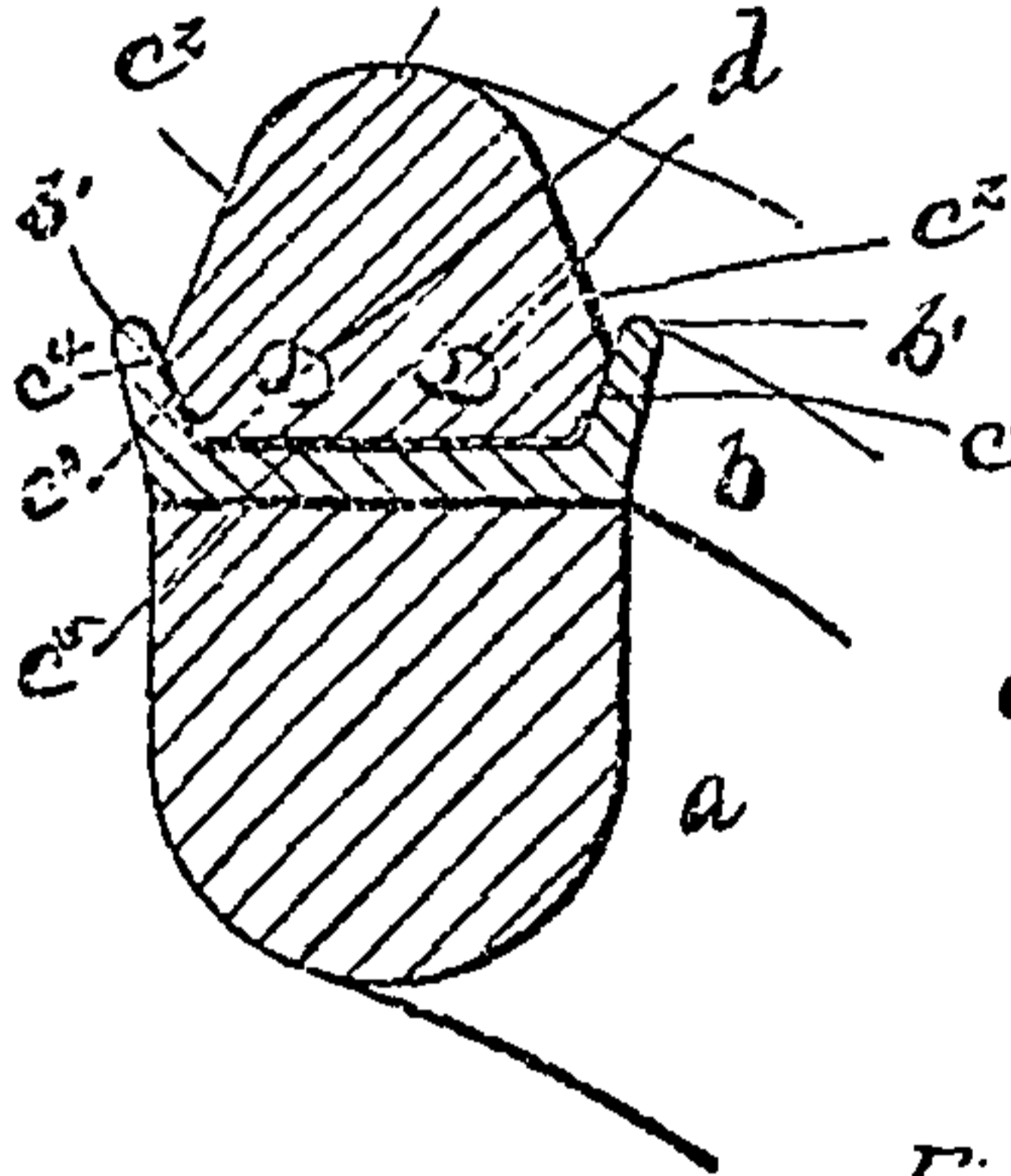


Fig. 4.

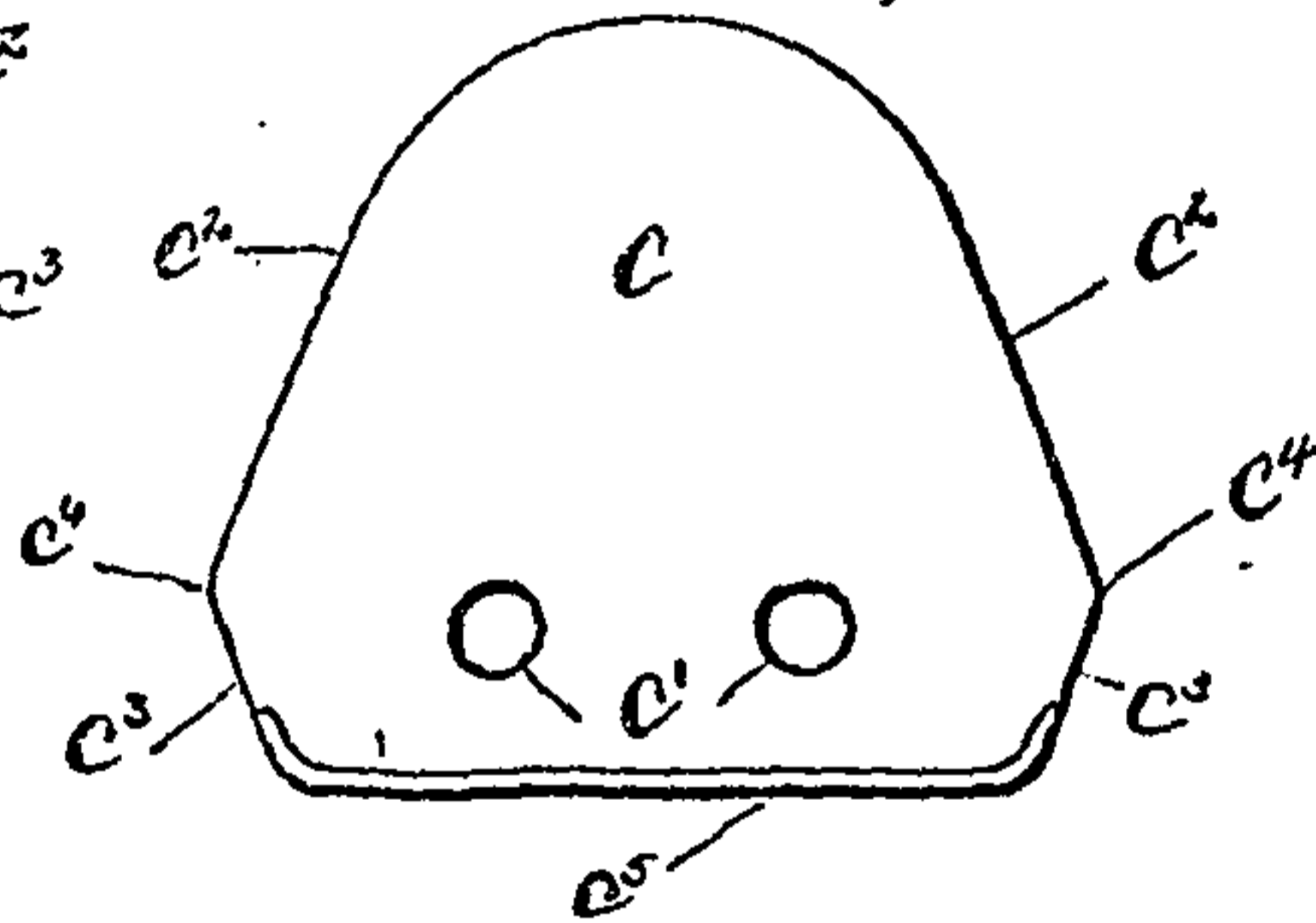
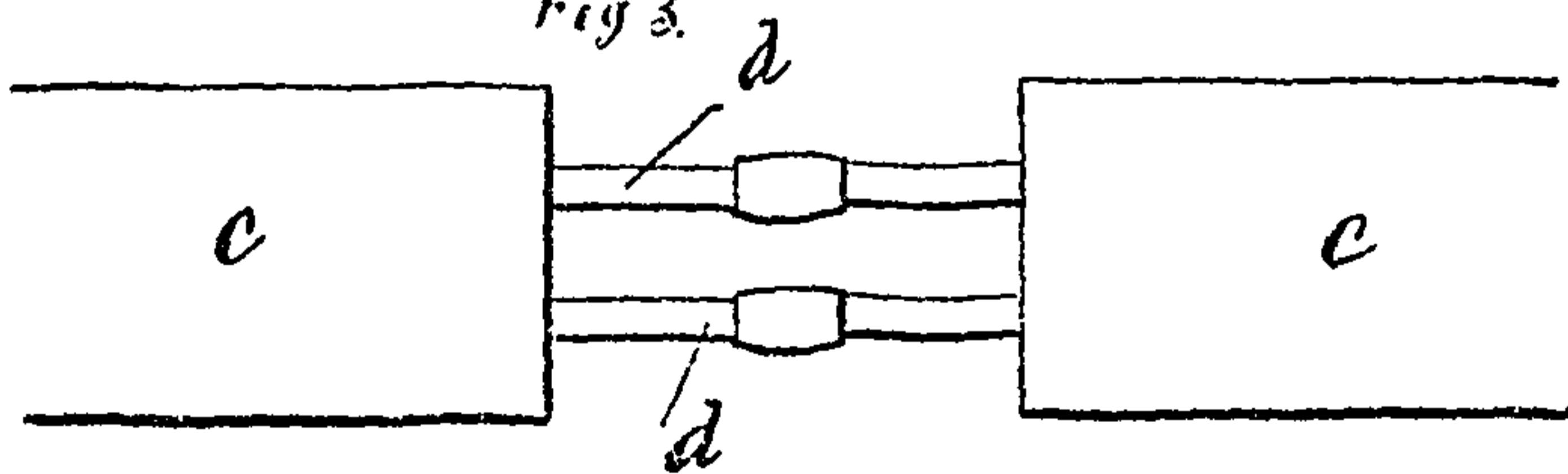


Fig. 3.



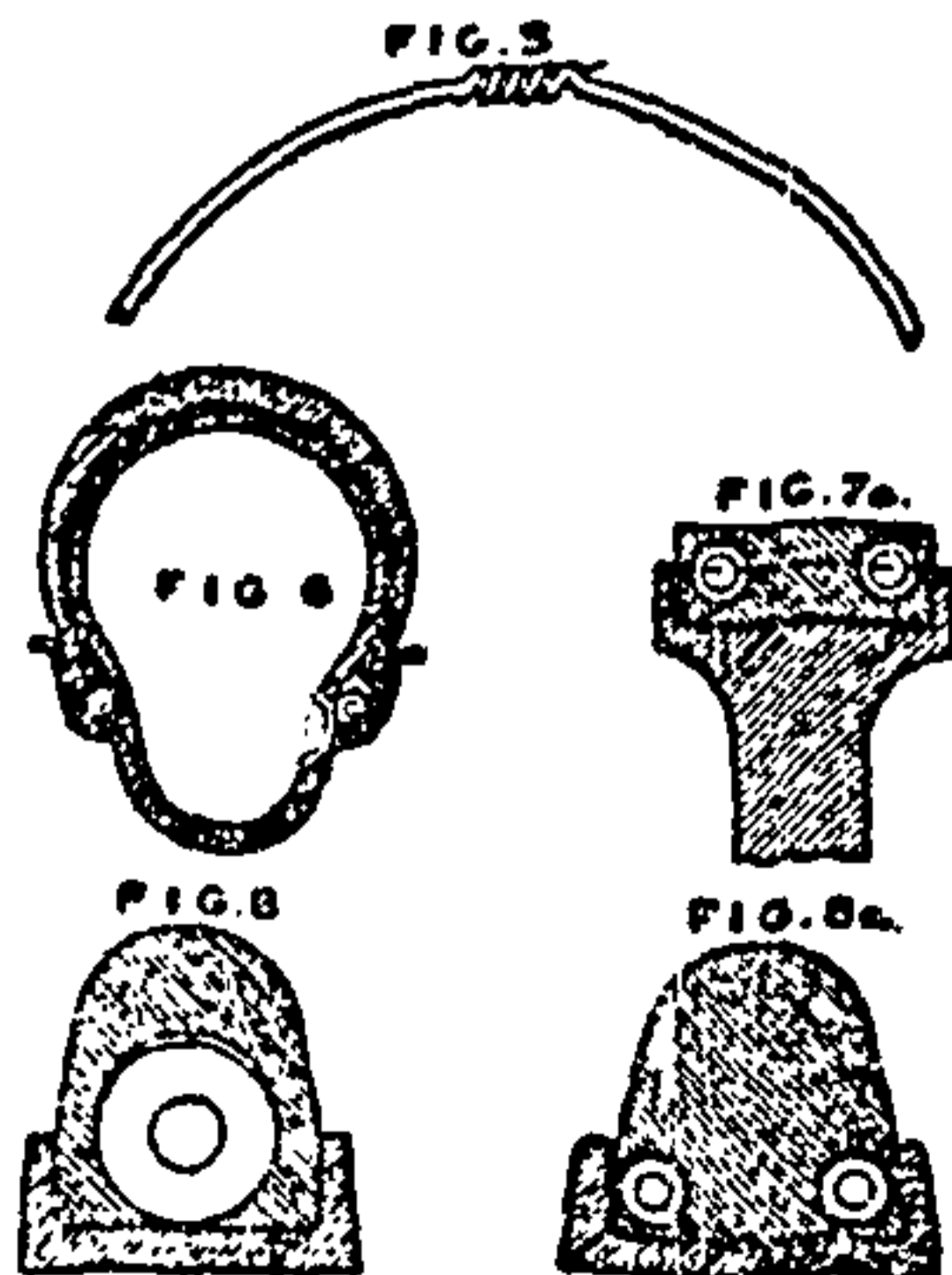
[The above are the figures of the Grant patent in suit. a, b and c respectively represent the wooden felly, the metallic rim, and the rubber tire. b' represents outwardly projecting flanges of the metallic rim. c c' are openings in the rubber tire through which are passed retaining wires d. c² represents the

preferable angle of the tire and c^3 the angle at the base of the tire forming, as the specification says, "with the lines c^2 an obtuse angle." The lines c^3 are less in length than the inside of the flanges b' so that the angles or corners c^4 fall below the outer periphery of the flange b' and in the channel between the flanges. c^5 is a canvas strip reinforcing the bottom of the tire, but in no case projecting up as far as the corner c^4 . The specification puts emphasis on these distinctions and the following claims show how the patent was carefully limited to the exact construction:

"1. A vehicle-wheel having a metallic rim with angularly-projecting flanges to form a channel or groove with tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said groove or channel and the outer portion having sides at an angle to the inner portion, the angle or corner between the outer and inner portions being located within the outer periphery of the flanges, and independent retaining-wires passing entirely through the inner portions of said tire and also within the outer peripheries of the flanges, substantially as described.

2. A vehicle-wheel having a metallic rim with outwardly-projecting flanges at an angle to the plane of said wheel so as to form a channel or groove having tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said tapered groove or channel, and the outer or exposed portions formed at an angle thereto, the angle or corner between the said portions being placed within the outer periphery of said flanges, openings extending entirely through the unexposed portion of said tire, and independent retaining-wires in said openings, and a reinforcing-strip of fibrous material placed at the bottom of said tire and wholly within said flanges, substantially as specified."

In the opinion it appears that reliance was placed upon two English patents, from one of which, 5924 of 1892, these figures were taken.



The following is the explanation given by counsel of the figures:

"The drawings of the Willoughby patent of March 26, 1892, No. 5,924, as to the flanged channel, show the flanges in three different positions as to the solid rubber tire. Fig. 8 shows the flange at right angles of the rim; Fig. 8a shows the flanges somewhat inwardly inclined with the two retaining-wires, and Fig. 7a shows the flanges vertical with two retaining-wires, the retaining-wires in Fig. 8a being below the outer periphery of the flanges, and the two retaining wires of Fig. 7a being centrally located, as to their openings, with the periphery of the flanges. In Fig. 6, however, which is a pneumatic tire (a tire when highly inflated is as solid as a rubber tire) the flanges are outwardly flaring and the two retaining-wires are substantially below the periphery of the flanges."]

Mr. Justice McKenna delivered the opinion of the court.

Writ of certiorari to review a decree of the circuit court of appeals of the second circuit sustaining a patent for an improvement in rubber tires issued to Arthur W. Grant, February 18, 1896. The patent, and those which it is contended anticipate it, have received full exposition in the opinion of that court. (157 Fed., 677. and 162 Fed., 892, affirming 147 Fed. 739.) It and they were also passed upon and the patent sustained in *Rubber Tire Wheel Co. v. Columbia Pneumatic Wagon Wheel Co.*, 91 Fed. 978, and in *Consolidated Rubber Tire Co. v. Finlay Rubber Tire Co.*, 116 Fed., 629; *Consolidated Rubber Tire Co. v. Firestone Tire and Rubber Co.*, 151 Fed., 237. See also *Rubber Tire Wheel Co. v. Milwaukee Rubber Works*, 142 Fed. 531, 533, and the same case, 154 Fed., 358, 362. It was held invalid in *Goodyear Tire & Rubber Co. et al. v. Rubber Tire Wheel Co.*, C. C. App. Sixth Circuit, 116 Fed. 363, reversing the circuit court, Judge Wing presiding. It was also declared invalid in *Rubber Tire Wheel Co. v. Victor Rubber Tire Co.*, 123 Fed., 85, following 116 Fed., 363, supra.

A further display of the patent and of its alleged anticipating devices would seem to be unnecessary, and that we might immediately take up a review of the divergent decisions. There is controversy as to whether they are divergent and irreconcilable in fundamental conceptions of the patent as well as in result.

We may say at the outset of this asserted conflict between the cases that the Court of Appeals of the Second Circuit considered that there was no antagonism between its decision and that of the Court of Appeals of the Sixth Circuit. It proceeded, as it in effect said, upon—

"new facts and features which have been added to or developed from the records in the earlier cases."

However, something more is required of us than the reconciliation of other cases, some consideration of the patent and the state of the art prior to it.

The patent was issued to Arthur W. Grant, February 18, 1896, and he declares in the specification he has invented—
“certain new and useful improvements in rubber-tire wheels * * * designed for use on ordinary vehicles, such as wagons, buggies, and carriages, * * * and consist in the construction of parts hereinafter described and set forth in the claim.”

The claims are as follows:

“1. A vehicle-wheel having a metallic rim with angularly-propelling flanges to form a channel or groove with tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said groove or channel and the outer portion having sides at an angle to the inner portion, the angle or corner between the outer and inner portions being located within the outer periphery of the flanges, and independent retaining-wires passing entirely through the inner portions of said tire and also within the outer peripheries of the flanges, substantially as described.

“2. A vehicle-wheel having a metallic rim with outwardly projecting flanges at an angle to the plane of said wheel so as to form a channel or groove having tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said tapered groove or channel, and the outer or exposed portions formed at an angle thereto, the angle or corner between the said portions being placed within the outer periphery of said flanges, openings extending entirely through the unexposed portion of said tire, and independent retaining-wires in said openings, and a reinforcing-strip of fibrous material placed at the bottom of said tire and wholly within said flanges, substantially as specified.”

It will be observed that the tire is composed of three elements: first, the channel or groove with tapered or inclined sides; second, the rubber tire adapted to fit into the channel or groove, and shaped as described; third, the fastening device, that is, the independent retaining-wires located as indicated. * * *

It is conceded that the claims are narrow, counsel saying that they are—

“limited closely to the specific construction of the Grant tire as it is actually shown and described in the patent.”

And a right to equivalents is disclaimed. Indeed, a certain merit is made of this as exhibiting at once the simplicity and perfection of the invention and the tribute paid to its excellence by respondent by exactly imitating it, instead of attempting to evade it. It is pointed out that the coaction of the parts is so

dependent upon their shape and relation that any alteration destroys their co-operation and the utility of the tire. There is strength in the contention, as we shall presently see.

Anticipating somewhat, we may say that the utility of the tire is not disputed; to what its utility is to be attributed is in controversy. The respondents, the Tire Company, contend that the tire is at once firm and mobile in its channel, "creeps" (moves slowly around the edge of the rim), and will yield laterally, and thus the lateral blows against it will be cushioned. It is further contended that if the tire be "tipped from its seat in the channel by a side blow" it "automatically restores itself to normal position when the side pressure is released." In other words, and in the language of one of the expert witnesses, the tire has the capacity to rise and fall and reseal itself under lateral strain, that is, to rise slightly from the rim on one side, independently of the other, when subjected to very great strain, and immediately reseal itself when such strain is removed. "It must be borne in mind," counsel say, "that the Grant tire is not cemented into the channel. This is an essential and important point. Any tire that is cemented in its channel is rigid and cannot 'creep' or yield to lateral blows. It is, therefore, easily and quickly destroyed. The absence of cement in the Grant tire is a vital characteristic." And, further, that Grant, "by omitting the cement and by permitting the tire to tip, to creep and to move in its channel, obtained a radically new and useful result." And it is insisted that this results because the tire is a new and patentable combination of parts coacting in the manner of a true combination to produce a new and useful result, and is not an aggregation of old elements or parts each performing its own function and nothing more. These propositions are combated by the Rubber Company, and it is insisted that the testimony is "conclusive and uncontradicted that the Grant tire, clamped to the tire or rim by the straining tension of the two wires," has not the capacity attributed to it, "and never could have." And it is said that "it is manifest that this question can be easily determined as a question of fact," and that the testimony "proves such asserted movement a myth and a fallacy." And, it is urged, that such capacity in the tire is not recited in the specifications of the patent, and was unknown to Grant.

This tipping capacity is made the pivot of the controversy. It was as to that that the courts of appeals of the sixth and second circuits disagreed either upon the difference of the testimony in the cases, or more deeply, on principle. The controversy and Grant's alleged ignorance of the tipping characteristic of the tire really present some anomaly. The tire has utility,

a utility that has secured an almost universal acceptance and employment of it, as will subsequently appear. It was certainly not an exact repetition of the prior art. It attained an end not attained by anything in the prior art, and has been accepted as the termination of the struggle for a completely successful tire. It possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent. Its simplicity should not blind us as to its character. Many things, and the patent law abounds in illustrations, seem obvious after they have been done, and, "in the light of the accomplished result," it is often a matter of wonder how they so long "eluded the search of the discoverer and set at defiance the speculations of inventive genius." (Pearl v. Ocean Mills et al., 11 O. G. 2, 2 Bann. & A. 469, Fed. Cas. 10,876.) Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. And it recognizes degrees of change, dividing inventions into primary and secondary, and as they are, one or the other, gives a proportionate dominion to its patent grant. In other words, the invention may be broadly new, subjecting all that comes after it to tribute (Railway Co. v. Sayles, 95 U. S. 554, 556); it may be the successor, in a sense, of all that went before, a step only in the march of improvement, and limited, therefore, to its precise form and elements, as the patent in suit is conceded to be. In its narrow and humble form it may not excite our wonder as may the broader or pretentious form, but it has as firm a right to protection. Nor does it detract from its merit that it is the result of experiment, and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities he is entitled to the rank and protection of an inventor. And how can it take from his merit that he may not know all of the forces which he has brought into operation? It is certainly not necessary that he understand or be able to state the scientific principles underlying his invention, and it is immaterial whether he can stand a successful examination as to the speculative ideas involved. (Andrew v. Croos, 8 Fed. 269; Eames v. Andrews,

122 U. S. 40, 55; *St. Louis Stamping Co. v. Quinby*, 15 O. G. 135; *Dixon Wood Co. v. Pfeifer*, 55 Fed. 390; *Cleveland Foundry Co. v. Detroit Vapor Stove Co.*, C. C. A. Sixth Circuit, 131 Fed. 853; *Van Epps v. United Box Co.*, C. C. A. Second Circuit, 143 Fed. 869; *Westmoreland Specialty Co. v. Hogan*, C. C. A. Third Circuit, 167 Fed. 327.) He must, indeed, make such disclosure and description of his invention that it may be put into practice. In this he must be clear. He must not put forth a puzzle for invention or experiment to solve, but the description is sufficient if those skilled in the art can understand it. This satisfies the law, which only requires as a condition of its protection that the world be given something new and that the world be taught how to use it. It is no concern of the world whether the principle upon which the new construction acts be obvious or obscure, so that it inheres in this construction.

This discussion may be broader than the contention of the Rubber Company requires; indeed, may imply a misunderstanding of it. The contention may only mean that Grant did not discern the manner of the operation of the elements which he combined, and therefore did not really invent anything, only assembled old elements, changing their relations somewhat and retaining their essential character and effect. We should be slow to infer such ignorance. It is difficult to suppose that the contriver of a successful device did not understand how it operated; that he saw nothing in it and committed it to the world without seeing anything in it, but a composition of wood, rubber and iron in certain relations without understanding or attempting to discover the law and principle of its organization and efficiency. Grant's situation demanded caution and knowledge. He was confronted by what has been termed a "crowded" prior art; he might expect to encounter litigation, and, even before litigation, he would have to satisfy the Patent Office of the novelty and utility of his device, and it is hard to believe that he did not know the co-operating law of the elements which he had combined and only unconsciously made use of it. We find the contention difficult to handle. When a person produces a useful instrument, to say that he did not know what he was about is at least confusing. To take from him the advantage of it upon nice speculation as to whether it was an ignorant guess or confident knowledge and adoption, might do him great injustice. His success is his title to consideration.

In our decision thus far we have assumed that the Grant tire is an invention, but as that is disputed we must examine its right to such distinction. The Rubber Company denies invention to it, and, considering that its pretension to such quality depends upon the possession of tipping power (including in this

reseating power), contests the existence of such power; and, even granting its existence, it is yet contended that anticipation may be demonstrated. In other words, it is insisted that if tipping power exist in the Grant patent it existed in prior patents, and that—

“the old art was crowded with numerous prototypes and predecessors of this Grant tire, with every thought and suggestion of novelty and utility that can be found in drawings and specifications of the Grant patent, or in the idealized contentions as to the patent by the visions and dreams of the experts and counsel for the patent.”

Two patents are selected to sustain the contention, out of what are said to be a large number of United States and foreign patents, with the comment that—

“if they do not show anticipation none of the others will show it, and if they do anticipate the Grant patent, it is entirely immaterial whether the others do or not.”

They are both English patents issued to Frank Stanley Willoughby. We copy from the Rubber Company's brief the figures of the Patent 5,924. * * *

The following is the explanation given by counsel of the figures: [See above.] * * *

There are resemblances and differences in the figures to those of the Grant patent and we have let the Rubber Company set forth the resemblances. The differences are substantial. To represent them we cannot do better than to quote the description given of them by Judge Thomas (91 Fed. 988), as follows:

“The Willoughby patent, No. 5,924, Fig. 8a, shows in combination wire connections, also described in the specification, very similar, save in location, to those used by Grant, and the figure shows also a very slight angle located slightly within the flanges. The rim, however, is of the clinger variety; that is, the flanges incline inwardly, and bind the rubber on each side. Such a tire thwarts the lateral play otherwise permitted to the rubber by the wires, and, although almost imperceptible angles appear, made by the sides of the rubber, they are not sufficient to give the immunity resulting from a well-defined angle whose vertex is within the flaring rim. Figs. 5a and 5c show rims shaped like the segment of a circle, in which are seated spherical rubbers held in place by a single wire. The rim is described in the specifications as U or V shaped. A V-shaped rim must have flaring flanges, but the rim is quite unlike that employed by Grant, and in the entire absence of the angle the functions attributed to the Grant tire seem to be absent. Indeed, the freedom of action permitted by the wire in the rim used by Grant

seems to be denied the tire, for the reason that the rubber is confined by the V-shaped channel.

"The Willoughby patent, No. 18,030, shows wire connection, flaring flanges and angle (see Figs. 26, 30, 31), and in mere coincidence of parts seems to be the nearest approach to the Grant tire. But look at these figures, and all possible conception of coincidence of function is dissipated at once. There is the flaring rim, in which is seated a rubber upon which is placed a steel outer tire, through which pass the openings and wires. The angle is far without the upper edges of the rim, and it appears that neither function ascribed to the Grant tire is obtained."

Willoughby Patent No. 18,030, has no relevancy whatever. It is true it has flanges upon the rim, flaring and at right angles, and it is illustrated by figures showing what may be called retaining-wires, to quote from the brief of counsel—

"above the periphery of the flanges, another substantially on a line with the periphery of the flanges, and three of the figures showing the retaining-wires substantially below the periphery of the respective flanges."

It is manifest that the relation of the retaining-wires to the periphery of the flanges is absolutely unimportant in the tire. Willoughby, describing his invention, says:

"The object of my present invention is as in my previous one to provide a metallic outer tire or armor to rubber which is of itself flexible."

The retaining-wires hold the metallic exterior to the rubber bed.

The utility of the Grant patent, therefore, was not attained in the Willoughby patent. The Rubber Company's conduct is confirmation of this. It uses the Grant tire, as we shall presently see, not the Willoughby tires. Let it be granted that they afforded suggestions to Grant, and that he has gone but one step beyond them. It is conceded, as we have said, that his invention is a narrow one—a step beyond the prior art—built upon it, it may be, and only an improvement upon it. Its legal evasion may be the easier (*Railway Co. v. Sayles*, supra), and hence we see the strength of the concession to its advance beyond the prior art and of its novelty and utility by the Rubber Company's imitation of it. The prior art was open to the Rubber Company. That "art was crowded," it says, "with numerous prototypes and predecessors" of the Grant tire, and they, it is insisted, possessed all of the qualities which the dreams of experts attributed to the Grant tire. And yet the Rubber Company uses the Grant tire. It gives the tribute of its praise to the prior art; it gives the Grant tire the tribute of its imitation as others

have done. And yet the narrowness of the claims seemed to make legal evasion easy. Why, then, was there not evasion by a variation of the details of the patented arrangement? Business interests urged to it as much as to infringement. We can find no answer except that given by the Tire Company:

“The patented organization must be one that is essential. Its use in the precise form described and shown in the patent must be inevitably necessary.”

That the tire is an invention is fortified by all of the presumptions, the presumption of the patent by that arising from the utility of the tire. And we have said that the utility of a device may be attested by the litigation over it, as litigation “shows and measures the existence of the public demand for its use.” (Eames v. Andrews, *supra*.) We have shown the litigation to which the Grant tire has been subjected.

We have taken for granted in our discussion that the Grant tire immediately established and has ever since maintained its supremacy over all other rubber tires and has been commercially successful while they have been failures. The assumption is justified by the concession of counsel. They do not deny the fact, but attribute it to “three subsequent discoveries and conditions” since the Grant patent, these being—

“(1) that the tire can be held in place and fixed upon its base by straining the wires to a clamping-point; (2) the production, by mechanical means, cheaply and expeditiously as a commercial product, of the channel-rim in straight lengths to be applied to the wheel; and (3) the improvement of the rubber itself; the demand of the public for a solid rubber tire, and the wealth of the complainant, advertising in the market, and pushing and exploiting the tire.”

The first ground is a somewhat distant assertion that the tire does not involve invention, but as to that we have sufficiently expressed opinion. The second ground is an inversion of cause and effect, and there is an obvious answer to the third ground. Without suitable rubber, there could have been no rubber tires, and the desire for them necessarily induced their manufacture, and Grant exercised invention to produce an efficient one. We can understand that some advertising was necessary to bring it into notice, and give it a certain use, but the extensive use which it attained, and more certainly the exclusive use which it attained, could only have been the result of its essential excellence, indeed, its pronounced superiority over all other forms. Here, again, in our discussion a comparison is suggested between it and other tires, and the inquiry occurs why capital has selected it to invest in and advertise and not one of the tires of the prior art if it be not better than they? But the effect of ad-

vertising is mere speculation; to the utility and use of an article the law assigns a definite presumption of its character, as we have seen, and which we are impelled by the facts of this record to follow.

To what quality the utility of the tire may be due will bear further consideration, if for no other reason than the earnest contentions of counsel. Aside from those contentions and the ability by which they are supported, we might point to what it does as a demonstration of its difference from all that preceded it, that there is something in it, attribute or force, which did not exist before—something which is the law of its organization and function, and raises it above a mere aggregation of elements to a patentable combination. And we may say in passing the elements of a combination may be all old. In making a combination the inventor has the whole field of mechanics to draw from. (*Leeds & Catlin v. Victor Talking Machine Co.*, 213 U. S., at page 318.)

The Tire Company gives a definition of the "something" as tipping and reseating power. The Rubber Company earnestly denies the existence of the power, and, as we have seen, the courts of appeals of the sixth and second circuits divided in opinion on its existence. We think such power is possessed by the tire. This is shown by the evidence, and was shown at the oral argument. And it is the result of something more than each element acting separately. It is not the result alone of the iron channel with diverging sides, nor alone of the retaining-bands or the rubber. They each have uses and perform them to an end different from the effect of either, and they must have been designed to such end, contrived to exactly produce it. There can be no other deduction from their careful relation. The adaptation of the rubber to the flaring channel, the shape of that permitting lateral movement and compression, the retaining-band, holding and yielding, placed in such precise adjustment and correlation with the other parts, producing a tire that "when compressed and bent sidewise shall not escape from the channel and shall not be cut on the flange of the channel," and yet shall "be mobile in the channel." We agree with the court of appeals that—

"this was not the result of chance or the haphazard selection of parts; his (Grant's) success could only have been achieved by a careful study of the scientific and mechanical problems necessary to overcome the defects which rendered the then-existing tires ineffective and useless."

This conclusion is not shaken by the testimony and argument urged against it.

The contention of non-infringement is very hesitatingly advanced, suggested rather than urged. It is conceded that infringement existed in the prior litigations, but it is said that if under the closer analysis of the Grant patent—

“as here presented, and as considered as contended for, if to be confined to exact angles and relations of angles and precise configuration of parts—”

the Rubber Company's device does not infringe. And this is attempted to be supported by the testimony of a witness who found, he said, in the Rubber Company's tire “the three fundamental mechanical elements” of the Grant patent in suit which, he interjected, were borrowed by Grant, “both individually and in combination, from the prior art long antedating his alleged invention,” and then proceeded to declare a difference between the “angles and relations of angles and precise configuration of parts,” to use counsel's language, of the two tires and briefly summarizing his conclusion, said that he did not—

“find the alleged invention, combinations and devices of either of the claims of the Grant patent in suit embodied in or contained in either of the exhibits introduced in evidence professing to represent the defendant's tire.”

We are unable to concur in the conclusion. The exhibits demonstrate the contrary. And we are fortified in this by the conduct of the Rubber Company in the circuit court. The defense of non-infringement was not there seriously urged. After considering to what extent the case, as presented, differed from the prior litigation, Judge Holt said:

“Of course, if your defense was that this defendant does not infringe, that would be an entirely different question, but the only question argued here is as to the validity of the patent.”

In the opinion of the court of appeals non-infringement received no attention, presumably because that defense was not pressed upon it.

The final contention of the Rubber Company is that the Grant patent having been declared invalid by the Circuit Court of Appeals of the Sixth Circuit and by the Circuit Court for the District of Indiana in the Seventh Circuit, the Rubber Company should not have been enjoined from the handling or sale of tires manufactured in the sixth and seventh circuits, and cites *Kessler v. Eldred*, 206 U. S. 285.

The court of appeals practically reserved the question. It modified the decree of the circuit court so far as it prevented the handling, using or selling tires and rims authorized by any judicial decree, recognizing, as it said, the applicability of *Kessler v. Eldred*. But it further said:

“Whether it should be given a broader interpretation is a question upon which we express no opinion, deeming it more prudent to wait until the facts are fully developed.

“There is no occasion for attempting at this time to anticipate the future for a contingency which may not arise. * * * To provide in a decree that a defendant is not enjoined from making, using and selling devices which do not infringe or which have been licensed, seems unnecessary. The doctrine of *Eldred and Kessler*, if carried to the extent contended for by the defendant, will introduce radical and far-reaching limitations upon the rights of patentees. These questions may not arise in the case at bar, but if they should, the court should have the facts, and all the facts, before attempting to decide them.”

We concur in these remarks.

Decree affirmed.

Mr. Justice Day and Mr. Justice Lurton took no part in the decision.

417. *SLY MFG. CO. v. RUSSELL & CO.*, 110 C. C. A. 625, 189 Fed. 61 (1911, Sixth Circuit. Patent No. 514,097).

Knappen, McCall and Slater.

Knappen, J.: * * *

The rule is well settled that where an applicant for a patent acquiesces in the rejection of the claims presented, and amends the same or substitutes others to meet the objections of the Patent Office, he must be deemed to have surrendered and disclaimed what he thus conceded, and is bound by the limitation so imposed; and that in such case it is immaterial whether the Patent Office was right or wrong in rejecting the original claims. *Shepard v. Carrigan*, 116 U. S. 593, 597, 29 L. ed. 723; *Roemer v. Peddie*, 132 U. S. 313, 317, 33 L. ed. 382; *Morgan Envelope Co. v. Albany Paper Co.*, 152 U. S. 425, 429, 38 L. ed. 500. This court has more than once enforced this rule. See *American Stove Co. v. Cleveland Foundry Co.*, 158 Fed. 978, 983, 86 C. C. A. 182; *Campbell v. American Shipbuilding Co.*, 179 Fed. 498, 103 C. C. A. 122; *Twentieth Century Heating Co. v. Taplin, Rice-Clerkin Co.*, 181 Fed. 96, 104 C. C. A. 156. The rule stated, however, rests upon the proposition that an applicant by submitting to the demands of the Patent Office, and thereby surrendering a claim or limiting its breadth, is deemed to have abandoned the feature so surrendered and to have dedicated it to the public, and thereby become estopped from asserting that the claim so allowed has the breadth of the rejected claim. It is the general rule that abandonment of an invention is not to be presumed, but must be clearly proven (*Ide v. Trorlicht, etc., Co.* [8th Circuit] 115 Fed. 137, 53 C. C. A. 341); and no reason is apparent why

this rule does not apply to an alleged abandonment through amendment of claims in the Patent Office. * * *

In view of these considerations, and taking into account the fact that rejection was not actually declared by the examiner, we think the applicant was not by that communication put to an election between abandoning the separating element or having his claim disallowed, and that he did not exercise such election. In reaching this conclusion we assume that the statement in the examiner's letter—"The exact object to be accomplished must be clearly set forth"—did not relate to the chambered heads. We also assume that the applicant understood that the aggregation referred to by the examiner related to the inclusion in one claim of the elements thereof relating to the crushing feature and the separating feature respectively. It may well have been that the applicant recognized a degree of plausibility in the suggestion that the inclusion in the claim of the detailed construction of the cylinder heads constituting the separator feature with the detailed description of the crushing element constituted aggregation, and was willing to so restate his claim as to avoid that criticism. But in doing so he did not limit the scope of his claim. On the other hand, he broadened it. Instead of a claim as originally drafted, limited as respects the separating feature to chambered heads having the detailed construction stated therein, he presented and procured the allowance of a claim including as one of its elements the chambered heads of the general description and having the functions and method of operation described in the specifications.

2. We do not understand the defendant to contend that the claim in question, as redrafted, covers merely an aggregation of elements. To prevent misapprehension, however, we state that in our opinion it is not subject to such criticism. When the complete machine of the patent is used the crushing and separating elements do, in our opinion, co-operate to produce a new, final and unitary result, to wit, the complete separation of the cinder from the iron and the ejection of the former from the mill and the leaving of the latter therein. This constitutes invention. *National Cash Register Co. v. American Cash Register Co.*, 53 Fed. 367, 371, 3 C. C. A. 559; *Walker on Patents* (4th Ed.) § 33.
* * *

As stated by Judge Severens in *Penfield v. Chambers*, 92 Fed., at page 638, 34 C. C. A., at page 587:

"The rule applicable to the determination of equivalency depends upon the importance and the breadth of the original invention, and does not depend upon the question whether it was the first in the field relating to that subject, but upon the degree of advancement which the invention has made in newness of

discovery and utility; for there may be as much merit in bringing on a large illumination from a feeble start, as in the conception of the first beclouded idea which may have originated the course of study and discovery along that line. The rule is not a hard and fast one, but measures equivalents by looking to see what has been accomplished before, and finding whether the combination, read broadly, had been anticipated, or whether, having reference to what had already been shown, the claim must be limited to the precise construction in order to save it as being new; for the constant rule is to give to the inventor the benefit of all that he has invented. If he has improved only a little, he has only a correspondingly narrow standing ground. If he has improved much and widely, the area of the field in which he is to be protected is enlarged to the limits of what his invention has made his own."

In *Bundy Mfg. Co. v. Detroit Time Register Co.*, 94 Fed. at page 540, 36 C. C. A. at page 391, Judge (now Mr. Justice) Lurton said:

"To be entitled to the benefit of the doctrine of equivalents, it is not essential that the patent shall be for a pioneer invention in the broad sense of that term. If his invention is one which has marked a decided step in the art, and has proven of value to the public, he will be entitled to the benefit of the rule of equivalents, though not in so liberal a degree as if his invention was of a primary character."

In *McSherry Mfg. Co. v. Dowagiac Mfg. Co.*, 101 Fed. 716, 41 C. C. A. 627, this court, likewise speaking through Judge Lurton, held that the patentee, although not a pioneer inventor, but an improver only, is entitled to a reasonable range of equivalents, measured by the advance he has made over older machines, and is not limited to the specific form claimed and described unless he has expressly so limited himself, or unless such limitation is necessary in order to save his patent from anticipation. See, also, *Winans v. Denmead*, 15 How. 330, 14 L. ed. 717; *Metallic Extraction Co. v. Brown* (8th Circuit), 104 Fed. 345, 43 C. C. A. 568; *Vrooman v. Penhollow* (6th Circuit), 179 Fed. 296, 307, 102 C. C. A. 495. In the latter case Judge Severens thus stated the rule:

"We do not doubt that where the thing described in a claim has been declared by the inventor to be the only one, or has treated it as the only one appropriate to represent his invention, or the character of the associated elements is such as necessarily to require that particular form, in all such cases the patentee will be bound by his description. But where there are no such considerations, and there is simply and only a description of one form of a thing which would perform the same office in other

forms, the court will apply the general rule above stated and accord him his monopoly in all equivalent forms. In such a case the general rule prevails, and there is no ground for treating the case as exceptional."

Sly's invention marks in our opinion a long step in the art to which it applies, and is entitled to a reasonable breadth of equivalents. No invention in the prior art was adapted with any substantial effectiveness to the treatment of iron cupola cinder.

The so-called "stave-mill," which was specially designed for cleaning castings, and which, before the invention of the Sly machine, was used by foundry men, in connection with their business, for the treatment of iron cinder, was slow in operation and lost from 18 to 35 per cent. of the iron. The Sly machine is rapid in operation, recovers nearly all the iron, and appears not only to have been successfully used by foundry men in connection with their own business, but to have been bought and used with commercial success by others than foundry men for the purpose of the recovery of metal from refuse of brass foundries and old iron cinder heaps bought for the purpose. * * *

The Sly device has proved highly successful and commercially profitable. While sales of the machine were at first slow, they amounted to \$40,000 for the year immediately prior to the coming upon the market of the machine of which defendant's is a sample. We are convinced that it is the first successful and satisfactory recoverer of iron from cupola cinder, for which it was specially designed, and for which purpose, as we understand the record, the alleged infringing machine is used by defendant. * * *

In view of this situation, we do not think the patentee should be held limited in the precise form of his crushing agent as described in the patent, in the absence of words of express limitation thereto. We do not construe the language of the specifications and claim as expressly so limiting it.

It is urged, however, that defendant's hexagonal crusher does not perform the functions of the rolling troughed crusher of the patent, and so cannot be considered the equivalent thereof. It is, of course, true that for one thing to be the equivalent of another it must perform the function of that other, and the function must be performed in substantially the same way by the alleged equivalent as by the thing of which it is alleged to be the equivalent. But is not necessary that this function be performed in identically the same way, or to the same extent. As applied to this case, the defendant's hexagonal crusher, theoretically at least, does not perform, to the same extent as Sly's troughed crusher, the function of carrying the crushed material

to the upper side of the crusher and dumping the same before it. It appears, however, that in the practical operation of the Sly crusher very little material is carried up and dumped in front of the crusher through the action of the troughs therein—as only the finer material would be so carried up—and it is apparent that the faces of the defendant's hexagonal crusher (which in defendant's machine are each about $4\frac{1}{2}$ inches wide) do—and especially when brought into relation with the sides of the cylinder—perform, to an appreciable extent, the same function of carrying forward the crushed material and again dumping it in front of the revolving crusher, which could not be the case with a cylindrical crushing agent. Both the troughed crusher of the patent and defendant's hexagonal crusher are loosely placed in the cylinder, and both turn or roll therein in substantially the same way. Both have a striking action upon the material.

In view of the advance made by Sly in the invention of the combination in question, the fact that the form of crusher adopted by him was not necessary to the obtaining of the patent, but, on the contrary, was old in the art; that the crushing was but one element in and one step toward the result to be accomplished; and in view of the extent to which, in practical operation, the defendant's crusher performs the functions of that element of the patent, we are constrained to hold the complainant's patent infringed by the defendant's machine.

The decree of the Circuit Court is accordingly reversed, with directions to enter the usual decree for an accounting. As the patent has expired, there is no occasion for injunction.

418. AMERICAN FIBRE CO. v. BUCKSKIN FIBRE CO., 72 Fed. 508, 18 C. C. A. 662 (1896, Sixth Circuit. Patent Nos. 511,789 and 216,108).

Before Taft, Lurton and Hammond, Judges. * * *

Taft, J., delivered the opinion of the court.

While the action of the court with respect to the Scott patent has been assigned for error, no argument pointing out the error of the court below in its decision thereon has been made orally or on the brief. Where counsel for an appellant or a plaintiff in error files a brief and makes an oral argument and does not allude in either to one or more of his assignments of error, he must be taken to have waived them. This court cannot be expected to examine the assignment of error and find the reasons for reversal itself. The action of the court below in so far as it sustained the demurrer to that part of the bill seeking to restrain an infringement of the Scott patent must therefore be affirmed.

We have only to consider, therefore, the correctness of the court's ruling in sustaining the demurrer to the bills so far as they sought a remedy against the infringement of the McLauchlin patent. The rule is now well settled that a defendant to a patent infringement bill may raise the question on demurrer whether the alleged invention as disclosed by the specification of the patent is devoid of patentable novelty or invention. (*Richards v. Chase Elevator Co.*, 158 U. S. 299; *West v. Rae*, 33 Fed. 45.) It is also well settled that in considering the question of the validity of a patent on its face the court may take judicial notice of facts of common and general knowledge tending to show that the device or process patented is old or lacking in invention and that courts may refresh and strengthen their recollections and impressions of what facts were of common and general knowledge at the time of the application for the patent by reference to any printed source of general information which is known to the court to be reliable and to have been published prior to the application for the patent. (*Brown v. Piper*, 91 U. S. 38.)

The presumption from the issuance of the patent is that it involves both novelty and invention. The effect of dismissing the bill upon demurrer is to deny to the complainant the right to adduce evidence to support that presumption. Therefore the court must be able from the statements on the face of the patent and from the common and general knowledge already referred to to say that the want of novelty and invention is so palpable that it is impossible that evidence of any kind could show the fact to be otherwise. Hence it must follow that if the court has any doubt whatever with reference to the novelty or invention of that which is patented it must overrule the demurrer and give the complainant an opportunity by proof to support and justify the action of the Patent Office. This is the view which has been taken by the Supreme Court and the most experienced patent judges upon the circuit. (*New York Belting & Packing Co. v. New Jersey Rubber Co.*, 137 U. S. 445; *Eclipse Manufacturing Co. v. Adkins et al.*, 36 Fed. 554; *Blessing v. Jno. Trageser Steam Copper Works*, 34 Fed. 753; *Bottle Seal Co. v. De La Vergne Bottle and Seal Co.*, 47 Fed. 59; *Indurated Fibre Industries Co. et al. v. Grace et al.*, 52 Fed. 124; *Goeble v. American Railway Supply Co.*, 55 Fed. 825; *Hanlon v. Primrose*, 65 O. G. 134, 56 Fed. 600; *Dick v. Oil Well Co.*, 25 Fed. 105; *Kaolatype Co. v. Hoke*, 39 O. G. 589, 30 Fed. 444; *Coop v. Dr. Savage Institute*, 47 Fed. 899; *Krick v. Jansen*, 52 Fed. 823; *Bodwell v. Houseman*, 58 Fed. 870; *Darock v. C. & N. W. R. R.*, 69 Fed. 468; *Henderson v. Tompkins*, 60 Fed. 758.)

Referring to his previous decision, Judge Blodgett said in the case of *Eclipse Mfg. Co. v. Adkins et al.*, 36 Fed. 556:

“In *West v. Rae*, 33 Fed. 45, this court sustained a demurrer to a bill charging infringement of a patent on a device for protecting woolen blankets from insects by incasing them in paper bags, on the ground that within the common knowledge it was old to wrap or incase woolens in paper to protect them from dust or insects. At the time I announced the decision in that case I stated that its effect might be to encourage counsel to demur to bills for infringement of patents in cases where they, from their special knowledge of the art, might be of opinion that the device covered by the patent was old. And my anticipations in that respect have been fully realized, as that decision has already produced in this court quite a bountiful crop of demurrers in this class of cases. But the court must meet each case as it arises, and in sustaining demurrers like this, keep strictly within the field of common knowledge. The practical difficulty and danger is in defining where special knowledge leaves off and common knowledge begins. The judge must always be careful to distinguish between his own special knowledge, and what he considers to be the knowledge of others, in the field or sphere where the device in question is used. But when the judge before whom rights are claimed by virtue of a patent can say from his own observation and experience that the patented device is in principle and mode of operation only an old and well-known device in common use, he may act upon such knowledge. The case must, however, be so plain as to leave no room for doubt; otherwise injustice may be done, and the right granted by the patent defeated, without a hearing upon the proofs. The judge must on all such questions vigilantly guard against acting upon expert or special knowledge of his own, instead of keeping strictly within the field of general or popular knowledge. While I do not intend to lay down a rule, I am free to say that I should not feel justified in holding a patent void for want of novelty on common knowledge, unless I could cite instances of common use which would, at once, on the suggestion being made, strike persons of usual intelligence as a complete answer to the claim of such patent.”

In *Krick v. Jansen* (52 Fed. 823), Judge Townsend said that a demurrer should not be sustained to a bill for infringement of a patent unless the want of patentable novelty was “palpably manifest.”

Is it within common knowledge that the process described by *McLauchlin* in his specification is old? We think not. In his specification *McLauchlin* refers to the prior art and admits that the treatment of matted fiber for the purpose of using the same in place of cloth and of giving it the flexibility necessary for that purpose by rubbing or crushing it between knobbed rollers was old; but he points out that by such processes as had

theretofore been used the surface of the fiber was abraded, and the material itself thereby lost, in a large measure, its strength. The process which McLauchlin sought a patent for was that of first moistening the sheets of matted fiber and then pounding them in a dampened and crumpled condition. The moistening was to be done with a mixture of twenty parts of water and one part gelatin. The question is whether it is a matter of common knowledge that the way to render wood-fiber paper soft and pliable without injury to its strength or smoothness of surface is to moisten it with a thin water solution of gelatin, to crumple it and pound it in a moistened condition, and then to dry and smooth it. It is of course generally known that the moistening of fiber of any kind will make it for the time being more flexible; but common knowledge would probably lead us to suppose that the moistening of such a material as paper, while it would for the time render it more flexible, would make its surface very much more subject to abrasion and render the whole texture very liable to injury and destruction.

Possibly a review of the art by an expert will show that to treat paper in a moistened condition by pounding or irregular pressure for the purpose of rendering it flexible without loss of strength was old; but such a process is not within our common knowledge. Certainly, to use Judge Blodgett's standard, we cannot cite instances of common use of this process or a similar process which would at once, on the suggestion being made, strike persons of usual intelligence as a complete answer to the claim of such patent. The court below referred to a leather-machine for making leather more flexible by pounding. It seems to us that the very great difference between the character of leather and paper is enough to show that the use of a device with respect to one does not indicate its useful application to the other. Again, allusion is made by the learned judge in his opinion to an article in the *Polytechnic Review*, vol. 3, page 40, 1877, in which the following statement is made of Japanese uses of paper:

"Paper is also often used as a substitute for cloth, for umbrellas, rain-coats, etc., and even for dress cloth 'shibu' and the 'Ye-no-abura' are the means employed for rendering the paper waterproof. This cloth is generally made of paper alone, by beating it to make it soft, and impregnating it with gummy substance, to make it more resistant to the action of water."

The learned judge also referred to the description of the making of paper cloth in Japan given in the second volume of the *Encyclopedia of Chemistry* published in 1879, page 534. That description is as follows:

"The mode in which paper cloth 'warranted to wash' is made in Japan is thus described: Take some of the paper called

'Hosho' or some of the best 'senka,' and dye it of the color required. Boil some of the roots called 'kon-niaku-no-dama,' with the skins on. Try them with the inner portion of a rice-stalk; when it penetrates easily they are sufficiently boiled. Peel them, let the water run off, and then pound them into a paste. Spread this paste on either side of the paper, and let it dry in the sun till quite stiff. Then sprinkle water upon it till it is thoroughly damp, and leave it in that state for a night. The next morning roll it upon a bamboo, of the thickness of the shaft of an arrow, and force it with the hands from either end into a crimple in the center; unroll it, and repeat this process two or three times, rolling it from each side and corner of the paper. Then crimple it well in the hands by rubbing it together till it becomes quite soft, and then sprinkle water on it again to damp it. Pull it out straight and smooth, fold it up, and pound it with a wooden mallet. It may then be put into water as much and as often as is desired without sustaining injury, having become a strong and lasting material. Boxes, trays, and even saucepans may be made of this cloth, and saucepans thus manufactured sustain no injury over a strong charcoal fire. Bags may be made of it, in which wine may be put, and heated by insertion in boiling water. Paper thus prepared may be used for papering windows and without being oiled will withstand the rain."

It is well settled that in taking judicial notice of matters of common knowledge the court may refresh its recollection by reference to standard works. (*Brown v. Piper*, 91 U. S. 38.) In that case a patent had been issued for the process of freezing fish and keeping them in a frozen state of preservation in a close chamber by means of a freezing chamber having no contact with the preserving-chamber. There the court took judicial notice of the fact that the ice-cream freezer as a matter of common knowledge and use by the people throughout the country was operated on substantially the same principles, and having thus pointed out one well-known instance easily within the actual knowledge of the court it referred to articles in the encyclopedia showing the preservative effect of cold, a principle belonging to the general domain of knowledge and science. But in this case the learned judge at the circuit was not able to point, within his personal knowledge, to any process similar or analogous to that here patented. He was obliged to refer to descriptions of processes used in Japan, which we may reasonably suppose did not refresh his recollection with respect to the process there described. They were not instances of a process generally in vogue in the same or kindred arts well known to ordinary life. Indeed, from the description it is very doubtful whether much light is thrown upon the Japanese processes by the descriptions above given. It is

also doubtful whether the paper "warranted to wash" is like the material produced by the complainant's process. It is by no means clear that the process described in the Polytechnic Review is one which involved the dampening of the paper and the pounding of it in a dampened state. We are clearly of opinion that there was sufficient doubt about the novelty, utility, and invention of the complainant's process to require the overruling of the demurrer and a hearing of these questions upon issues made by the answer and proof.

It is also contended that the process described is a mere mechanical process, an aggregation of functions within the limitation of *Brown*, in the case of *Risdon Iron and Locomotive Works v. Medart*, 158 U. S. 68. In that case the patent was for an invention announced by the Supreme Court, through Mr. Justice Brown, in *Medart v. Risdon Iron and Locomotive Works*, 158 U. S. 68. The patent was for a process in manufacturing belt-pulleys formed of a wrought-metal rim and a separate center, usually a spider and usually made of cast metal. The process of manufacture was set forth in detail and consisted of the following steps: first, centering the pulley-center or spider; second, grinding the ends of the arms concentrically with the axis of the pulley; third, boring the center; fourth, securing the rim to the spider; fifth, grinding the face of the rim concentric with the axis of the pulley; sixth, grinding or squaring the edges of the rim. It was held that on the face of the specification and claims the patent was not for the mechanism employed nor for the finished product of manufacture, but was, in effect, for a process of solely mechanical steps, and that a valid patent could not be granted for the mere operations of a piece of mechanism, or, what was the same thing, for the function or functions of a machine. We do not think that the present case comes within the principles announced. The treatment of paper in this instance is of a character to change its quality, giving it new and useful attributes. The moistening of it and the treatment in a moistened condition is more or less chemical in its character.

In *Cochrane v. Deener*, 94 U. S. 780, which Mr. Justice Brown cites in *Risdon Iron and Locomotive Works v. Medart*, the patent was for a process in manufacturing flour which consisted in passing the ground meal through a series of bolting-reels composed of cloth of progressively finer meshes, which passed the superfine flour and retarded the escape of the fined and lighter impurities, and by which the superfine flour was separated, and the impurities were so eliminated so as to produce superfine flour, was held to be valid, and the patent was not limited to any special arrangement of machinery. In that case Mr. Justice Bradley said:

“A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process, may or may not be new or patentable; while the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.”

It seems to us that the present case is clearly within that of *Cochrane v. Deener* and even more nearly to be likened to a chemical process than was that.

The third objection made to the validity of the patent is one which can only be made in three of the cases appealed from—to wit, those in which the Seymour Scott patent was also made a part of the bill. It is said that the Seymour Scott patent so clearly anticipates the McLauchlin patent on the face of the specification that the McLauchlin patent must be held to be bad. We do not think that without evidence it is clear that the material in the Scott patent is to be subjected to the breaking-rollers while in a dampened condition, though this might be developed by proof of the process of paper-making referred to in the Scott patent. There is nothing in the Scott patent with reference to the crumpling of the paper or the pounding of it in its crumpled condition. The crumpling of the paper is not expressly made a part of the claim, but it is described as a part of the process, and if an essential part of the process then it should be read into the claims. The specification in the Scott patent requires the paper to be subjected to “suitable size;” that of the McLauchlin patent requires that the paper shall be moistened by a thin solution of gelatin, preferably one part in twenty. What “suitable size” is in the Scott patent and whether it would suggest the use of the thin solution of gelatin mentioned in the McLauchlin patent are all questions upon which the court cannot now pass without evidence of experts in paper-making before it.

The decree in these various cases dismissing the bill as to the McLauchlin patent will be reversed, with directions to overrule the demurrers and require answers, while the decrees in so far as they dismiss the bills on the Scott patent are affirmed.

In view of the fact that this result shows that it was unnecessary for the complainant to bring his second actions the order as to costs will be that the costs of the appeals in the three cases (Nos. 332, 333, and 336) in which bills were filed on the McLauchlin patent alone will be taxed to the appellees, while in the

three cases (Nos. 334, 335, and 337) in which the three cases were filed on both the Scott and the McLauchlin patents the costs will be taxed to the appellants, and it is so ordered.

419. NATIONAL ENAMELING, ETC., CO. v. NEW ENGLAND ENAMELING CO., 151 Fed. 19, 80 C. C. A. 485 (1906, Second Circuit).

Before Wallace and Coxe, Circuit Judges, and Holt, District Judge. * * *

Holt, District Judge:

This suit was brought to restrain the alleged infringement of United States patent 527,361, dated October 9, 1894, granted to Hubert Claus for an improvement in enameling metal ware. The patent contains 13 claims. Claims 1 to 7, inclusive, are for the finished enameled article as a new article of manufacture. Claim 8 is for the enamel itself as prepared, and before it is applied to the surface of the metal. Claims 9 to 13, inclusive, are process claims. The court below held that claims 1, 2 and 3 were invalid, that claims 4, 5, 6, 7, and 8 were valid and infringed, and that claims 9, 10, 11, and 12 were not infringed. Claim 13 was not involved in this suit. The defendant's appeal brings up for review the portion of the decree which held that claims 4, 5, 6, 7, and 8 were valid and infringed.

The art of enameling metal is old. Many different formulas and substances are used to form the enamel, but the usual process is substantially as follows: Certain ingredients, usually a mixture of silica or sand, and of other substances having a fluxing property to produce glass when mixed with sand and subjected to heat, are mixed together mechanically. This mixture is called by enamellers the "mix." The mix is then subjected to a high degree of heat and fused, resulting in a vitrified or glassy mass. This is called the "frit." The frit is then put in a mill and ground fine, with a mixture of clay and water, resulting in a liquid paste. This is called the "dip." The metal article to be enameled is then dipped in the paste, dried, and subjected to a very high temperature in an oven or muffle. In some cases more than one dipping and burning takes place. The result is, if the operation is successful, a metal article with its surface covered with an adherent coat of metal.

Prior to about 1892 iron ware had been commonly used for enameling. It was until then cheaper than steel. About that time improved processes in the manufacture of steel were adopted, which resulted in making steel cheaper than iron. It is claimed by the complainants in this case that before Claus made the invention described in his patent there were no means known of successfully producing commercially satisfactory single-coated mottled steel enameled ware, that Claus' invention accomplished

that result, and that Claus' patent was taken out for that invention.

The claims in the Claus patent involved in this appeal are as follows:

"4. As a new article of manufacture, a metallic article having a coat of enamel of an intensely alkaline nature permeated by metallic oxides, substantially as described.

"5. As a new article of manufacture, a steel or homogeneous iron article having a single coat of mottled enamel on a partly oxidized metallic surface, substantially as described.

"6. As a new article of manufacture, a metallic article having a mottled coat of alkaline enamel and within said enamel metallic oxides extending from the outer surface of the enamel inwardly, substantially as described.

"7. As a new article of manufacture, a steel or homogeneous iron article having a mottled coat on a partly oxidized metallic surface and having metallic oxides extending from the outer surface of the enamel inwardly, substantially as described.

"8. An enamel for surfaces having therein a preponderance of alkaline constituents together with metallic oxides, substantially as described." * * *

The question, in construing the meaning, in clauses 4, 6 and 8 of this patent, of the references to alkalinity, is what Claus meant by the expression "an article of manufacture having a coat of enamel of an intensely alkaline nature," or "an article of manufacture having a mottled coat of alkaline enamel," or "an enamel for surfaces having therein a preponderance of alkaline constituents," * * * and that, therefore, his claims in this patent should be interpreted as meaning, so far as the description refers to the alkalinity of the enamel, an enamel made from a mix containing a large preponderance of such alkaline ingredients as feldspar. But in my opinion the difficulty with this theory of construction is that Claus did not apply for any patent for the formula described in his patent, or for a mix made of alkaline ingredients, or of such ingredients as feldspar. * * *

The rule is fundamental, in the construction of patents, that the claim in the patent is the measure of the invention. The specification may be referred to to explain any ambiguity in the claim, but it can not be referred to for the purpose of expanding or changing the claim. *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 24 L. ed. 344; *McClain v. Ortmayer*, 141 U. S. 419, 12 Sup. Ct. 76, 35 L. ed. 800. The requirement of the patent law that a patentee shall claim in his patent the exact invention is not only to enable the public to use it after the term of the patent has expired, but is also for the purpose of enabling any one to determine what the invention is, which is protected

by the patent, and what processes which are not protected by the patent may be used in the same manufacture. A person who discovers a new and useful invention does not obtain a monopoly under the patent laws unless he claims his invention in his patent. Even if he describes his invention in the specifications, and then claims as his invention something he has not invented, his patent is good for nothing. * * *

The fifth and seventh claims of this patent are for a new article of manufacture made of steel or homogeneous iron. The evidence shows that the only possible novelty which can reside in these claims is found in its characteristic as a steel article as distinguished from an iron article. Iron articles having a single coat of mottled enamel on a partly oxidized surface, and having metallic oxides extending from the outer surface of the enamel inwardly had been commonly manufactured for many years before this patent was taken out. It is argued that until this patent was taken out a single coat of mottled enamel could not be successfully applied to steel. There is no doubt, upon the evidence, that iron can be more easily enameled than steel, and that, when it became desirable commercially to use steel instead of iron for enameled ware because it had become cheaper, a good deal of difficulty was found in accomplishing the result. * * *

The defendant's experts have manufactured and put in evidence in this case such ware, manufactured under the Quinby & Whiting patent, and under the Niedringhaus patent, and I see no reason to doubt that these processes, under which iron ware was treated by a single coat of mottled enamel, can be successfully applied to steel. The fact that some manufacturers did not know at first how to do it, and that successful results might not always have been obtained, even when the formulas were followed, does not prove that it could not be done.

The evidence shows clearly that success or failure in the manufacture of enameled articles depends very largely, not only upon the formula employed, but also upon the degree of heat used, the length of time of the exposure of the heat, and generally upon the skill and experience of the men who conduct the operation. The mere application of a process for enameling iron to the enameling of steel involves no invention if the same result is obtained. In this case it must be borne in mind that the claims under consideration upon this appeal are not claims for a process or for an improved result. The claims are for a completed article of manufacture. If these claims are valid, they cover any article of manufacture which has the qualities described in the claims. It is of no consequence how they are produced if the articles have such qualities,

and it is of no consequence whether, when produced, they are superior or inferior in quality. If these claims are valid, the complainants have a monopoly of any article of manufacture which has the qualities described in the claim. It is not a question, therefore, in this case, whether the single-coated mottled steel enameled ware which the Ironclad Company manufactured under the Quinby & Whiting process, or under Comstock's process, or which the defendant manufactured under the Quinby & Whiting process or the Niedringhaus process or which the defendant's experts have made and put in evidence in this case, was as handsome and attractive ware or as good ware as that made by the complainants, or which might be made under the Claus patent. If the previously existing patents instructed those skilled in the art how to make it, whether it was in fact made or not, it was not patentable as a new article of manufacture. * * * The evidence shows that all enamellers are constantly trying new formulas, and that a few formulas succeed while most of them fail. Why some succeed and others fail no one knows. All the experts agreed that, in the present state of chemical science, it is impossible to state what chemical action takes place when glass is produced by the fusion of sand and certain fluxing substances. All that is known is that the ingredients are fused and glass results.

I conclude that the claims in controversy are invalid for want of novelty, and cover nothing which was new in the prior state of the art, and that consequently the portions of the decree appealed from should be reversed, with costs.

Wallace, Circuit Judge (concurring).

I will briefly state some of the reasons which lead me to the conclusion reached by Judge Holt. The process of Claus may be such an improvement in the art of enameling metal as would sustain a patent. But the claims in controversy are not for a process. They are, all of them, for a new article; and there is no claim for the mix itself as a new article. If the article described in the respective claims was old before Claus devised his mix, or if such article, whether it had been actually made or not, could have been made without any exercise of inventive faculty, it was not new in a patentable sense. * * *

The claims for a new article of manufacture cannot be limited by anything which appears in the specification to the real invention of Claus. It is only when a new process introduces new characteristics into the manufactured article by which it can be identified and distinguished from all preceding manufactures that the article itself becomes patentably new. * * *

I can not agree with the argument for the appellees, which prevailed with the court below, that the alkaline characteristics

of the enamel of the claims are to be determined solely by the constituents of the mix. Undoubtedly claims 4, 5, 6 and 7 refer to the enamel in its completed state, after the coat has been dried upon the metal, and claim 8 refers to the enamel when it is ready to be coated upon the metal. It seems plain that the identifying characteristics of the enamel are those which then exist in it. If it can be found that it is then alkaline, or intensely or preponderatingly alkaline, by the litmus test or any test which those skilled in the art can apply, the claims are satisfied so far as they refer to the alkaline characteristic. In the specification the term "enamel" is applied to the coating in all stages of its manufacture, to the mix, to the molten and ground or pasty mass when ready to be applied as a coating, and to the coating after it has been applied to the metal. In one sense the mix is an enamel. It is an inchoate enamel. But the enamel of the claims is the perfected article. The proportions of the ingredients of the mix disappear in the frit or mass, and are no longer capable of being traced. The quality of the enamel depends upon the influence of what occurs in the smelter and what survives the smelter, and can be found in the frit. If Claus thought that in all stages subsequent to the mix his compound was alkaline because of the alkaline qualities of the mix, and that to know the mix, therefore, was to know the final enamel, he was grossly ignorant; but his ignorance does not require those skilled in the art to suppose that the quality of the enamel, either after it has been applied to the metal or when it is ready to be applied to the metal, is to be ascertained by testing the quality of the mix. They could rightfully assume that it was to be found by testing the quality of the completed enamel, either by such a test as was applied to it by complainants' expert, 'Banks, or by the defendant's expert, or by some other test known to the art. Such a test would show the alkalinity of the frit, but would not show the alkalinity of the mix. A test of the alkalinity of the frit would, therefore, seem to be the best criterion of the alkalinity of the enamel.

Courts lean toward reading into the claims of a patent such limitations as will save the real invention as disclosed by the specification and the prior state of the art. But when the claims are drawn in broad and nebulous terms, with the apparent purpose of enabling the patentee to monopolize an important industry, the courts should be slow in attempting to sustain their validity by narrowing them beyond the boundaries which are clearly warranted by the specification.

420. DURAND v. SCHULZE, 61 Fed. 819, 10 C. C. A. 97 (1894, Third Circuit). * * *

Before Acheson, Circuit Judge, and Butler and Wales, District Judges.

Wales, District Judge:

This is a suit brought for infringement of letters patent No. 253,371, dated February 14, 1882, for manufacture of colors or dye stuffs, granted to Horace Koechlin, and by him assigned to the appellants. The specific charge against the defendants is that they imported, used, and sold coloring matter embodying and containing the invention described and claimed in the patent. The defendants denied infringement, alleging that the patent was for a process only (which they did not use), and not for a product. The circuit court sustained this defense, and dismissed the bill of the complainants. The claim of the patent reads as follows:

"I claim the improvement in the manufacture of coloring matter consisting in the production of violet coloring matters by the action of nitroso derivatives of the tertiary amines on tannin, or equivalent reaction, substantially as described."

As it was not proved that the defendants had used the process, the only question that was considered and decided by the circuit court was whether the claim covered both the process and the product. One and the same patent may cover both a process and its product, but, if the patentee choose to restrict himself to one by his claim, he cannot include the other also by a reference to other parts of his specification. It is well known that patentees, generally, make a much broader statement of the novelty of their invention in the body of the specification than they limit themselves to in the claim, which latter is held to be the distinctive feature of a patent. By the act of congress of 1836, the applicant for a patent was, for the first time, required to "particularly specify and point out the part, improvement or combination which he claims as his own invention or discovery." In *Merrill v. Yeomans*, 94 U. S. 568, the court said:

"In practice, this allegation of the distinct matters for which he (the applicant) claims a patent comes at the close of the schedule or specification. * * * This distinct and formal claim is therefore of primary importance in the effort to ascertain precisely what it is that is patented."

In *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 278, it was said by the court:

"When the terms of a claim in a patent are clear and distinct (as they always should be), the patentee, in a suit brought upon a patent, is bound by it," citing *Merrill v. Yeomans*.

By the act of 1870, under which the patent in suit was issued, the requirement in regard to the claim is still more strict, the language of the act being that the applicant shall "particularly point out and distinctly claim the part," etc. In *Mahn v. Harwood*, 112 U. S. 360, 5 Sup. Ct. 174, and 6 Sup. Ct. 451, the court said:

"The taking out of a patent which has (as the law requires it to have) a specific claim is notice to all the world, of the most public and solemn kind, that all those parts of the art, machine, or manufacture set out and described in the specification, and not embraced in such specific claim, are not claimed by the patentee—at least, not claimed in and by that patent. If he has a distinct patent for other parts, or has made application therefor, or has reserved the right to make such application, that is another matter not affecting the patent in question. But, so far as that patent is concerned, the claim actually made operates in law as a disclaimer of what is not claimed, and of all this the law charges the patentee with the fullest notice. * * * Of course, what is not claimed is public property."

Again, in *Burns v. Meyer*, 100 U. S. 671, the court said, in reference to the claim of a patent:

"It defines what [the patent office], after a full examination of previous inventions and the state of the art, determines the applicant is entitled to. The courts, therefore, should be careful not to enlarge, by construction, the claim which the patent office has admitted, and which the patentee has acquiesced in, beyond a fair interpretation of its terms."

In *White v. Dunbar*, 119 U. S. 51, 7 Sup. Ct. 72, Mr. Justice Bradley, speaking for the court, said:

"The context may undoubtedly be resorted to for the purpose of better understanding the meaning of the claim; but not for the purpose of changing it and making it different from what it is. The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as evasive of the law, to construe it in a manner different from the plain import of its terms."

The above extracts from adjudged cases show how closely a patentee is held to his claim in describing the invention for which he has sought and obtained his patent, and exhibit a marked unanimity of judicial opinions in relation to this provision of the patent law. In the apt words of Judge Dallas, in rendering the decree of the circuit court (60 Fed. 392), the law prescribes "that the claim must be taken as defining precisely what the invention covered by the patent is, and, hence, the true question is, not what the patentee might have claimed, but what

he has claimed; the latter, not the former, being made the measure of his rights." Koechlin might have claimed a product, if his description of his invention be true. He says: "Other coloring matter can be made by similar reactions. The product, as well as the method of producing the same, constitutes a part of the invention, which comprises, therefore, the preparation and the coloring matters above mentioned;" but, when he comes to his claim, he limits his invention to the method by which the coloring matters are to be produced, namely, "by the action of nitroso derivatives," etc. Disconnected from what precedes it, there is no hint in the claim that the "violet coloring matters" are a new production, which has been invented or discovered by the patentee; and from this omission to claim the product, as well as the method of making it, the inference is reasonable that he would be satisfied with a patent for the process. Other portions of the specifications may, as was said in *White v. Dunbar*, be resorted to, "for the purpose of better understanding the meaning of the claim; but not for the purpose of changing it and making it different from what it is." The words "manufacture" and "production," as used in the claim, are not the names of things but of acts. The claim indicates the mode and manner of doing certain things, or of making certain combinations, in order to produce certain results, and is for the improved process of obtaining those results, i. e., in manufacturing and producing them. It is not stated that violet coloring matters have never before been produced, or that they could not be produced by other processes than those described in the claim. The claim is for "the improvement in the manufacture of coloring matters," and describes the improvement as "consisting in the production of coloring matters by the action of nitroso derivatives," etc. The improvement, that is, the process, is claimed as new, but not the product. The contention that, in the Koechlin patent, the product inheres in the process, and that, therefore, the claim of the one necessarily includes the other, cannot be sustained on principle or authority. The claim is single, and is either for a process or a product; otherwise, if the claim is divisible, one part being for a process, and another part for a product, it would be a double claim, and as such in danger of being held void for ambiguity. The applicant for a patent may separately claim both a process and a product, but cannot properly claim them in one claim. They are the proper subjects of separate and distinct claims. *Merrill v. Yeomans*, 1 Bann. & A. 55, Fed. Cas. No. 9,472; *Goodyear v. Rubber Co.*, 2 Cliff. 371, Fed. Cas. No. 5,583. The decree of the circuit court is affirmed.

421. WELSBACH LIGHT CO. v. UNION INCANDESCENT LIGHT CO.,
101 Fed. 131, 41 C. C. A. 255 (1900, Second Circuit).

* * * Before Wallace and Shipman, Circuit Judges.

Per Curiam:

That part of the order appealed from restraining the defendant, during the pendency of the action, from selling any incandescent mantles "except such as shall be shown to have been coated by others," can only be justified upon the theory that the patent for infringing which the suit was brought was a patent for a product or manufacture, and not one for a process. If it was a patent for a process, it would not be infringed by selling the product, and no conditions should have been annexed to the exercise of the vendor's rights. The broad proposition that the vendor of a product which has been made in infringement of a patented process is an infringer, or liable to any extent to the patentee, is untenable and does not require discussion. The patentee's remedy is against the manufacturer. *Merrill v. Yeomans*, 94 U. S. 568, 24 L. ed. 235.

The patent in suit (No. 407,963) was granted July 30, 1889, to Frederick Lawrence Rawson and William Stepney Rawson for "production of incandescent mantles." We entertain no doubt that it is one for a process, and not for a product. It describes a method of producing the Welsbach mantle, and treating it after ignition so as to render it sufficiently hard and resistant to allow of transportation without danger of breakage. The method described consists in stretching the mantle upon a mandrel and igniting it, then shaping it against the mandrel by a blowpipe flame, and then coating it with paraffin, or other similar material. The patent contains two claims, which are as follows:

"(1) The herein-described improvement in strengthening incandescent mantles, consisting in coating the completed mantle with paraffin, or other suitable material, substantially as set forth. (2) In the manufacture of incandescent mantles, the method of forming said mantles, which consists of first stretching the impregnated knitted mantle upon a mandrel, then burning the mantle, then shaping the mantle against the mandrel by means of a blowpipe flame, and finally coating the mantle with paraffin, or other suitable material, substantially as set forth."

The first claim covers merely the final part of the process, and the second covers the entire process. It is unfortunate that an invention of such great merit and value is not adequately protected by the claims of the patent; but so it is, and any person is at liberty to vend or use the invention without accountability to the patentee, except he also be the manufacturer or a contributory infringer. The order must, as to the part referred to, have been inadvertently made, and should be modified by eliminating that part.

422. APPLETON MFG. CO. v. STAR MFG. CO., 60 Fed. 411, 9 C. C. A. 42 (1894, Seventh Circuit. Patent No. 290,571).

Before Woods and Jenkins, Circuit Judges, and Bunn, District Judge.

Woods, Circuit Judge (after stating the case):

The utterances of the supreme court upon the question whether or not a mechanical process is patentable are not in clear harmony: *Corning v. Burden*, 15 How. 267; *O'Reilly v. Morse*, Id. 62; *Tilghman v. Proctor*, 102 U. S. 707; *Lawther v. Hamilton*, 124 U. S. 1; *Cochrane v. Deener*, 94 U. S. 788; *Brown v. Piper*, 91 U. S. 37. In *Lawther v. Hamilton*, the process was for extracting oil from oleaginous seeds, and was not entirely mechanical; but the improvement for which the patent there considered was granted consisted merely in the omission of a mechanical part of the process, namely, the grinding of the seeds under muller stones, and the patent was sustained, though not in the broad and general sense of the claim; the process being held to be "limited by the clear terms of the specification, at least so far as the crushing of the seed is concerned, to the use of the kind of instrumentality described." In *Cochrane v. Deener*, the original process and the patented improvement which was in issue, comprising the use of an air blast, related to the manufacture of flour, and were entirely mechanical in character and operation.

"A process," it was there said, "is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence."

But in *Corning v. Burden*, quoted with approval in *Tilghman v. Proctor*, it is said:

"A process *eo nomine* is not made the subject of a patent in our act of congress. It is included under the general term 'useful art.' An art may require one or more processes in order to produce a certain result or manufacture. The term 'machine' includes every mechanical device or combination of mechanical powers and devices to perform some function or to produce a certain effect or result. But where the result or effect is produced by chemical action, by the operation or application of some

element or power of nature or of some substance to another, such modes, methods, or operations are called processes. A new process is usually the result of discovery, a machine of invention. * * * It is when the term 'process' is used to represent the means or method of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations. But the term 'process' is often used in a more vague sense, in which it cannot be the subject of a patent. Thus we say that a board is undergoing the process of being planed, grain of being ground, iron of being hammered or rolled. Here the term is used subjectively or passively, as applied to the material operated upon, and not to the method or mode of producing that operation, which is by mechanical means, or the use of a machine, as distinguished from a process. In this use of the term it represents the function of a machine, or the effect produced by it on the material subjected to the action of the machine. But it is well settled that a man cannot have a patent for the function or abstract effect of a machine, but only for the machine which produces it."

In general harmony with these propositions are the numerous cases of which, in *Pennsylvania R. Co. v. Locomotive, etc., Truck Co.*, 110 U. S. 490, 4 Supt. Ct. 220, it is said:

"It is settled by many decisions of this court, which it is unnecessary to quote from or refer to in detail, that the application of an old process or machine to a similar or analogous subject, with no change in the manner of application, and no result substantially different in its nature, will not sustain a patent, even if the new form or result has not been before contemplated."

In *Brown v. Piper*, 91 U. S. 37, a patent for a method of preserving fish in a closed chamber by means of a freezing mixture was held to have been anticipated by a like method practiced by undertakers for the preservation of dead bodies; and, to the proposition that the process had never before been applied to the preservation of fish and meats, the court said:

"The answer is that this is 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."

And so, in *Howe v. Abbott*, 2 Story 190, Fed. Cas. No. 6,766, a patent for the process of curling palm leaf for mattresses was held invalid in view of the fact that hair had been prepared by the same means for analogous uses. Justice Story said:

"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 some new machinery used to produce the result. If the old spinning machines to spin flax were now first applied to spin cotton, no man could hold a new patent to spin cotton in all modes, although he had invented none."

In *Fuller v. Ventzer*, 94 U. S. 288, where the claims, though in terms for the function or result of the operation of the mechanism described, were construed, in order to uphold the patent, to be for the mechanism itself, it is said:

"Patents for a machine will not be sustained if the claim is for a result, the established rule being that the invention, if any, within the meaning of the patent act, consists in the means or apparatus by which the result is obtained, and not merely in the mode of operation, independent of the mechanical devices employed; nor will a patent be held valid for a principle or for an idea, or any other mere abstraction. *Burr v. Duryee*, 1 Wall. 531."

And in *Roberts v. Ryer*, 91 U. S. 150, 157, is this expression:

"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."

To same effect, see *Stow v. Chicago*, 104 U. S. 550; *Heald v. Rice*, Id. 755; *Stimpson v. Woodman*, 10 Wall. 117; *Tucker v. Spalding*, 13 Wall. 453.

It being, as we suppose, well settled that a patent for a machine covers its use for all purposes, whether anticipated by the patentee or not, and that the functions or methods of operation of mechanical devices may not be patented, it would seem to follow that processes, which are to be effected wholly by mechanical means, in order to be patentable must be capable of being distinguished from the method of operation or mere function of the mechanism necessary for their accomplishment. Whether or not such processes are possible is a question primarily for inventors; the courts can decide only whether a particular process presented for consideration is of that character. The processes now in question were designed for—

"Reducing and separating corn in the stalk at a single operation, so that the grains will be separated from the cob, and at the same time the stalk, husk, and cob are cut up or comminuted and [made] ready for use as stock food—ensilage."

The means specified for accomplishing these results are entirely mechanical, consisting of a combination of machines and devices long well known, and we find it impossible to see any dis-

inction between the processes and the mere functions or mode of operation of the mechanism itself; and the same objection manifestly would apply if other devices were substituted for those described. But, if we waive the objection stated as one which under the decisions and dicta of the cases cited may or may not be tenable, and consider these processes in the light of the prior art in proof, we are constrained to find them devoid of patentable novelty. A completely analogous process is shown by the patent of Ford, Sullivan & Gregg, which is upon machinery designed for cutting, separating, and threshing wheat and other small grains. It is insisted, however, that cornstalks and ears in the husk resemble trees more than wheat, oats, rye, or barley, and that the process shown for the treatment of the latter afforded no suggestion for the treatment of the other by the same or similar method; though it is admitted that if the cutting device of the Goddard patent were substituted for cutting device of the Ford, Sullivan & Gregg machine—a substitution which would not involve invention—it would make of it an operative machine upon which the processes of the Goddard patent might be completely performed. But as our conclusion rests only in small measure upon the patent of Ford, Sullivan & Gregg, we do not stop to consider further the force of the arguments in respect to it.

The first two steps of the process covered by Goddard's first claim are identical with the two steps which constitute the process of the second claim, and the fair presumption is that those two steps were first conceived or discovered, and that the third was devised later. The first inquiry in logical order, therefore, is whether or not in the two steps common to both claims there was a patentable discovery. The proof to the contrary is convincing. The only feature of novelty asserted is that Goddard was the first to conceive or discover that the shelling of corn, either wholly or in part, could be done by means of a feed cutter; and "this fact," says the appellant's expert, "lies at the bottom of his invention or process." The same witness testified that "it has long been a practice among farmers to chop up ears of corn with an axe to fit it for feed for cattle;" that he did not know "that corn was ever cut in the stalk, husk, or ear, with a feed cutter;" though he admitted that upon the cutters shown in the patents of Miller, Neff, Wentzel, and others, referred to in the prior art, without any change of parts or construction, the process of Goddard's claim could be performed. Though not explicitly so stated, we think it inferable from this testimony that the practice of farmers was to chop up for feed the unhusked ears of corn, and it would seem entirely probable, because so manifestly practicable, if, indeed, the fact may not

be affirmed upon common knowledge within the cognizance of the court, that the cutting was done upon the old-fashioned cutting-boxes, as well as with axe or hatchet; and if corn and husk and stalk together were not cut in the same way, and especially by means of the improved and patented cutters after they came into use, it was because an obvious and important utility for which the inventions were adapted was blindly overlooked or purposely rejected. On account of late planting, early frosts, and for other reasons, growing corn is often cut when the grain upon the ears is too immature to ripen after cutting into a merchantable article, and in that condition the farmer, already possessed of a cutter adapted for the purpose, needed no inventive suggestion to enable him to subject the stalk and ear together to the very process of which appellant would have a monopoly. It is hardly to be believed, in the absence of proof, that since the introduction of improved cutters, designed to reduce the entire product of the corn plant into a condition fit to be fed to cattle, they have not been used more or less to chop cornstalks and ears of corn by a single operation, affording complete illustration of Goddard's second process, both in respect to its operation and result. And this proposition does not rest on probability alone. The Harvey machine, patented in 1867, which is in evidence, though called a straw cutter, was expressly designed "for cutting not only hay, straw, cornstalks, etc., but also ears of corn and other vegetable products;" another part of the specification being that "when the material to be cut is of a coarser quality, such as cornstalks, ears of corn," etc., certain arms of the device were to be lengthened. While, therefore, it is not explicitly said that the cutter of that patent was designed to operate upon the unseparated ears and stalks, the obvious possibility of its being so used left no room for patentable novelty in a suggestion of that method; and whether Harvey's design was that the corn and stalks should be treated separately or together, and whether the practice with that and like machines was one way or the other, the result of the operation or process necessarily was the cutting of the stalks, ears, and cobs into disks, and the more or less complete shelling of the corn. It cannot be true, therefore, that Goddard was the first to discover that corn could be shelled by means of feed cutters, though he may have been the first to perceive how completely the shelling had been and could be accomplished in that way, and that by separating the shelled corn, when of good quality, from the comminuted mass of other materials, as they came from the cutters, the clean product could be made a merchantable commodity. To accomplish that, it was only necessary to add to Miller's cutter, or any other of the devices adapted to cutting cornstalks, or

stalks and ears, a screen or sieve, which might be vibrating or revolving or stationary. They were well-known devices, of common use in threshers, as illustrated by the patent of Ford, Sullivan & Gregg, which, if it did not contain an obvious suggestion that corn in the husk and on the stalk could be treated by the method which it embodied, did show plainly enough how the process of the second claim could be carried to the third step, constituting the first claim of the patent, simply by annexing to the feed cutters adapted to chop cornstalks and ears of corn some form of screen or separator. As was said of the Grant patent in *Grant v. Walter*, 148 U. S. 547, 556, the most that can be said of the Goddard patent is that it is a discovery of a new use for old devices, which does not involve patentability. The decree of the circuit court should be affirmed, and it is so ordered.

423. COMPUTING SCALE CO. v. AUTOMATIC SCALE CO., 204 U. S. 609, 51 L. ed. 645, 27 Sup. Ct. 307.

Day, J.: * * *

It is true that many valuable inventions seem simple when accomplished, and yet are entitled to protection. The books abound in cases showing inventions involving only small departure from former means, yet making the difference between a defective mechanism and a practical method of accomplishing results. In such cases a decision in favor of invention as distinguished from mere mechanical improvement has not infrequently resulted, in view of the fact that the device has made the difference between an impracticable machine and a useful improvement displacing others theretofore occupying the field. *Krementz v. The S. Cottle Co.*, 148 U. S. 556; *Consolidated Brake Shoe Co. v. Detroit Steel & Spring Co.*, 47 Fed. 894; *Star Brass Works v. General Electric Co.*, 111 Fed. 398.

In the present case it nowhere appears in the testimony, nor is it claimed in the specifications of Hayden's patent, that the prior mechanisms of horizontal construction were impracticable or inefficient. There is no suggestion that Hayden's invention has been the last step between an inoperative machine and one practically operative and useful. There is no showing that it has been generally accepted in the trade and displaced the former machines used for the same purpose. Without resort to the record in the Patent Office, we think it is plain that the invention is but a small advance upon others already in use.

Broadly considered, the elements of Hayden's invention were in the horizontal machines, and the idea of vertical construction was old. Considering this invention in the light of what occurred in the Patent Office in connection with the other considerations already referred to, and the state of the art at the

time, we think Hayden's invention can only be sustained to a limited extent.

Before taking up the record as disclosed in the file-wrapper and contents we may premise that it is perfectly well settled in this court by frequent decisions that where an inventor, seeking a broad claim which is rejected, in which rejection he acquiesces, substitutes therefor a narrower claim, he cannot be heard to insist that the construction of the claim allowed shall cover that which has been previously rejected. *Corbin Cabinet Lock Co. v. Eagle Lock Co.*, 150 U. S. 38-40, and cases there cited.

A late statement of the rule, and one as favorable to the inventor as the previous cases would admit, is found in *Hubbell v. United*, 179 U. S. 77, 80, as follows:

"An examination of the history of the appellant's claim, as disclosed in the file-wrapper and contents, shows that, in order to get his patent, he was compelled to accept one with a narrower claim than that contained in his original application; and it is well settled that the claim as allowed must be read and interpreted with reference to the rejected claim, and to the prior state of the art, and cannot be so construed as to cover either what was rejected by the Patent Office or disclosed by prior devices. *Leggett v. Avery*, 101 U. S. 256; *Shepard v. Carrigan*, 116 U. S. 593; *Knapp v. Morss*, 150 U. S. 221, 227.

"It is quite true that where the differences between the claim as made and as allowed consist of the mere changes of expression, having substantially the same meaning, such changes, made to meet the views of the Examiners, ought not to be permitted to defeat a meritorious claimant. While not allowed to revive a rejected claim by a broad construction of the claim allowed, yet the patentee is entitled to a fair construction of the terms of his claim as actually granted."

Looking to the record in the Patent Office, we find that claim 1, as originally presented, read as follows:

"1. In a spring-balance computing-scale, the combination of a suitably-supported vertical non-rotatable casing provided with a price-index, a vertical rotatable computing-cylinder journaled in said casing, provided with cost computations, a spring-supported load-pan supported from said casing, and means connected with said pan and cylinder for rotating the cylinder as the pan is lowered under pressure, substantially as and for the purpose set forth."

The examiner rejected this claim upon the patent of Smith, No. 545,616, price-scales, and in view of the patent of Turnbull, No. 378,382, spring-scales, saying, "It would not involve invention to arrange upon Turnbull's scales a vertical stationary casing having within it a revolvable computing-chart, the axis being

connected with the index-carrying shaft P shown in the Turnbull patent."

To this the applicant, through his attorneys, replied:

"The first portion of the Examiner's letter is not understood, as there are no modifications referred to in lines 6 to 26 of page 3. A reconsideration of the claims is requested, for the reason that it is believed that the references cited do not anticipate any of the claims. In both of the references cited a rack-bar extending transversely of the center of rotation of the computing-chart serves, by means of engagement with a pinion at the axis of the computing-chart, to rotate the latter. This is entirely different from applicant's construction, and it is not seen that the references are pertinent to the issue. Certainly, the references neither singly nor taken together anticipate the structure set forth in the claims, and there can hardly be any question that the construction which applicant shows is a substantial improvement in the art. It is hoped that all the claims may be allowed."

But the Examiner again rejected claims 1, 8 and 9 upon the references of record, and held that it would not involve invention to arrange upon the vertical shaft of Turnbull's scale a computing-chart and inclosing case having the characteristics of Smith's scale. To this the attorneys for applicant answered:

"These claims are canceled, not because considered unallowable, but because it is not desired to prosecute an appeal, in view of the fact that the allowed claims appear to cover the invention as it would be constructed in practice. The cancellation is made, therefore, without prejudice to the claims which remain."

The sixth claim was allowed upon the suggestion of the Examiner, as follows:

"In a spring-balance, the combination of a non-rotating frame providing an external casing and having means for supporting it from above, weighing-springs secured at their upper ends to rigid parts of said frame, a vertically-movable runner which is suspended from the lower ends of said springs and is provided with means to support the load, a chart-drum rotatably mounted within said casing on a vertical axis and having external horizontal rows of value-indicating figures computed at different rates, said casing having a sight-opening through which portions of said value-indicating rows may be seen, and corresponding rate-indicating figures on the outer face of said frame adjacent to the value-indicating rows on the chart-drum and mechanism for translating the vertical movement of the runner into the rotary movements of the chart-drum."

It was afterwards stated by the Examiner:

"Upon consideration of claim 6 preparatory to the declaration of interference it is found that the claim does not clearly and pat-

entably distinguish from the scale shown in the patent to Herr, No. 651,801, June 12, 1900, price-scales, and it is therefore necessary to reject the claim. It is believed, however, that the claim may be rendered allowable by inserting 'depending' before 'means' in line 6."

and, accordingly, the word "depending" was inserted in the claim, so as to make it in its present form. How this added anything to the patentability of the mechanism described it is difficult to perceive, in view of the presence of "depending means to support the load" in all scales of this class.

The general rule, as stated, as to the effect of a patentee striking out a broad claim and accepting a narrow one, is conceded by the learned counsel for appellant, but it is contended that if an inventor presents a broad claim and strikes it out and then presents and obtains an equally broad claim, he loses no right by such action, and may justly claim his allowed claim to be a broad one and have relief accordingly. But we think the action of the Department in this case cannot be thus eliminated. Claim 1, as presented, had contained the words "a spring-supported load-pan supported from said casing, and means connected with said pan and cylinder for rotating the cylinder as the pan is lowered under pressure," and as allowed there was inserted "a spring-supported load-bearing and cylinder-revolving rod suspended from said casing, and connecting means between rod and computing-cylinder, whereby by longitudinal movement of the rod rotary movement is imparted to said cylinder, substantially as and for the purpose set forth." This limitation to specific means is certainly a narrowing of the claim.

It was accepted, as the patentee said, "in view of the fact that the allowed claims appear to cover the invention as it would be constructed in practice."

We cannot think it was the intention of the Department, after requiring the insertion of "a spring-supported load-bearing and cylinder-revolving rod" and "connecting means between rod and computing-cylinder" to secure the rotary movement of the inner cylinder as a means of saving claim 1, to then permit the claim to be granted broadly in allowing other claims. And we believe it would be a more reasonable construction of the letter of the applicant to say that he recognized that his invention, "as constructed in practice," must have read into it to sustain the claim, the specific means shown for translating the vertical movement of the runner into the rotary movement of the chart-drum, rather than as saving a right to construe a claim broadly as including in one claim what had just been refused in another.

It is to be noted that Hayden, in his specifications, says:

“The spiral rod passing through the lower ends of the casing and serving, by means of its connection with the two cylinders, to rotate the computing-cylinder is regarded as the essence of this feature of the invention, however, regardless of the precise details of connection between cylinders and rod.”

In view of the action of the Patent Office in this case and the acquiescence of the applicant, considered also in view of the state of the art, in our opinion it is necessary to have this novel element of the invention read into them in order to save the claims of Hayden's patent.

Conceding that this spiral rod and its connections with the cylinder in the manner and for the purposes stated is a novel feature in the combination and entitled to protection, it is of that narrow character of invention which does not entitle the patentee to any considerable range of equivalents, but must be practically limited to the means shown by the inventor. The distinction between pioneer inventions permitting a wide range of equivalents and those inventions of a narrow character, which are limited to the construction shown, has been frequently emphasized in the decisions of this Court. (*Cimiotti Unhairing Co. v. American Fur Refining Co.*, 198 U. S. 399, 406, and cases therein cited.)

* * *

424. *SUFFOLK CO. v. HAYDEN*, 70 U. S. 315, 18 L. ed. 76 (1865, 1866).

* * *

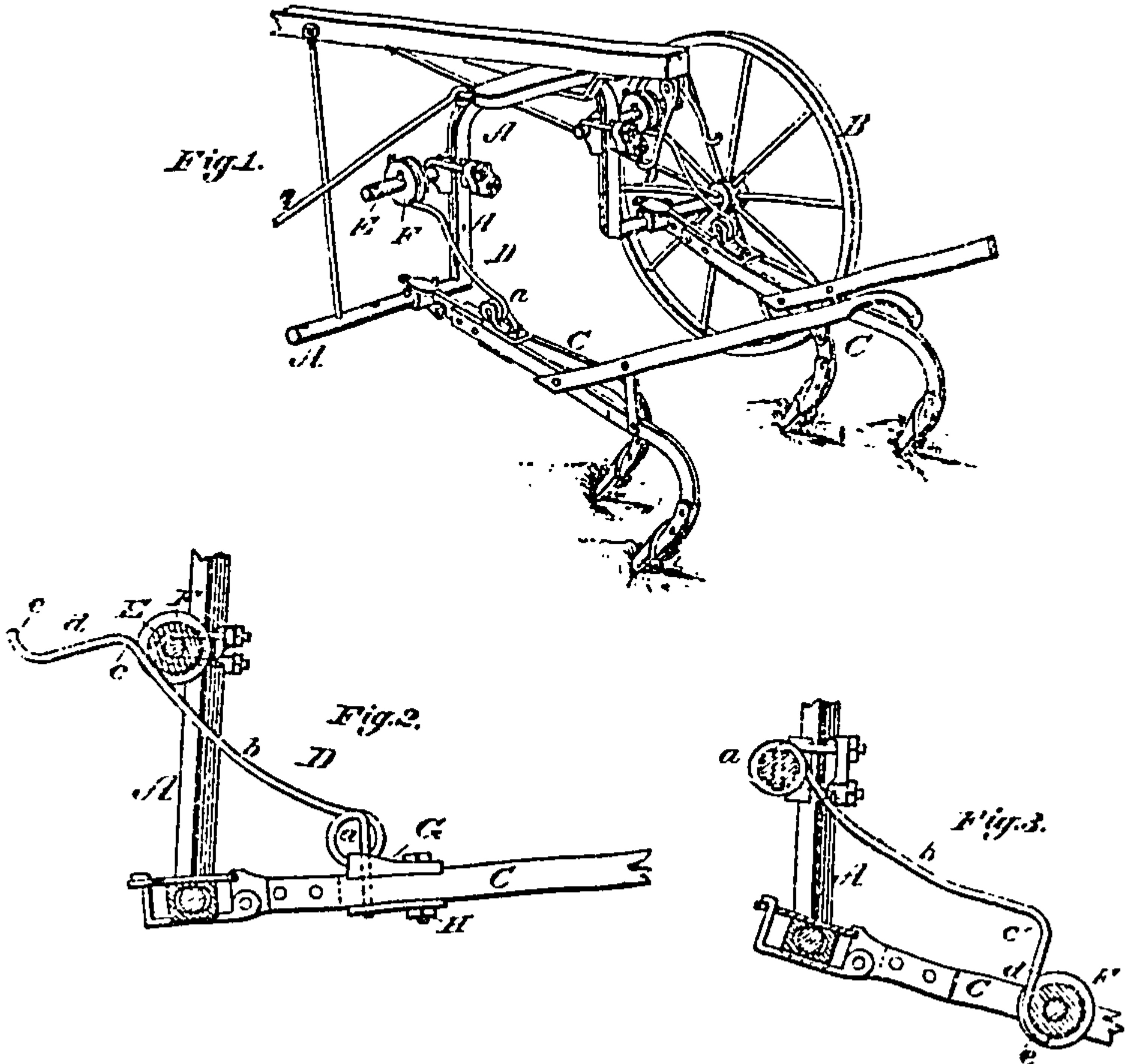
This original application before the commissioner for a patent, among other things, for an improvement in the screen of the long trunk, not having been acted upon by that officer, a new application was made by Hayden, separately, for this improvement, and which resulted in the patent of 1st December, 1857, on which the present suit is brought.

We do not perceive any objection to this proceeding. It simplified the application, and disembarrassed it from its connection with other improvements claimed; and, doubtless, hastened the granting of the patent. The office, however, subsequently acted upon this original application, and, on the 11th September, 1860, granted a patent to the plaintiff, and, as is alleged, for the same improvement embraced in the patent of the 1st December, 1857, the one in question. And it is insisted that, for this reason, this prior patent for the same improvement is void. This is, obviously, a misapprehension. The last, not the first, is void.

We may add, on looking at the patent of 11th September, 1860, it does not appear that it was granted for the same improvement. It is a patent for a combination of this improvement with other devices. * * *

Judgment affirmed.

425. MILLER v. EAGLE MFG. CO., 151 U. S. 186, 38 L. ed. 121, 14 Sup. Ct. 310 (1893).



[The above figures illustrate the preferred form of the attachment and its application to a cultivator.

A is the arched axle, B the wheels, C the beams, free to swing vertically and laterally as usual, D are springs having a coil a, a curved arm b, with an outer end which terminates in a sharp point or shoulder c followed by a short arm d at the end of which is a sharp bend or curl e.

When the shovels are in the ground, as shown, the portion d of the spring bears beneath the roller and serves to hold the beam down. When the shovels enter to the full depth desired, the end e of the spring encounters the roller and serves to check the descent and to suspend the beam. When the beam is raised the spring continues to urge or hold them down until the bend or angle c of the spring passes the roller, whereupon the spring instantly changes its action, and tends to lift the beam.

Claim 1, for example, describes the relation of the structure in both patents.

“1. In combination with a vertically-swinging beam or drag-bar, a spring, substantially as described and shown, arranged to urge the beam downward when in action and urge it upward when it is lifted above the operative position.”]

Mr. Justice Jackson delivered the opinion of the court.

The appellee, as assignee of letters patent No. 222,767, dated December 16, 1879, and No. 242,497, dated June 7, 1881, issued to Edgar A. Wright, for certain new and useful improvements in wheeled cultivators, brought this suit against the appellants, who were the defendants in the court below, for the alleged infringement thereof. * * *

In his original application, filed May 23, 1879, Wright fully described his improved device for use in connection with cultivators, and claimed for it, not only its lifting and depressing action, but also its lifting power, which increased as the beams were raised.

An interference with other pending applications being anticipated as to the broad claims of the invention, the application was divided, on November 12, 1879, for the purpose of obtaining one patent for the lifting and depressing effect of the spring on the beams, and another for the lifting power of the spring, increasing as the beams rise; the latter being sought upon the original application, while the former was based upon the divisional application of November 12, 1879. Patent No. 222,767, for the double effect or duplex action of the improved spring, was granted on December 16, 1879; and thereafter, on June 7, 1881, patent No. 242,497, for the single effect of increased lifting force in raising the plow beams, was granted, after interference had been disposed of. * * *

The novelty of Wright's invention consists, as held by the court below, in the application of a double-acting spring to assist the operator in either lifting the plow beams, or the plows attached thereto, or in sinking them deeper in the earth, as occasion might require, while the cultivator is in service. The first patent, issued in 1879, covered both the lifting and depressing actions or operations, while the second patent covered only the lifting effect. The spring device which was designed to accomplish these effects or operations, is the same in both patents. The drawings in each of the patents are identical, and the specification in each is substantially the same. Under these circumstances can it be held that the second patent has any validity, or must it be treated as having been anticipated by the grant of the 1879 patent? If, upon a proper construction of the two patents—which presents a question of law to be determined by the court (*Heald v. Rice*, 104 U. S. 749), and which does not seem to have been passed upon and decided by the court below—they

should be considered as covering the same invention, then the later must be declared void, under the well-settled rule that two valid patents for the same invention cannot be granted either to the same or to a different party.

Thus, in *Manufacturing Co. v. Hayden*, 3 Wall, 315, it was held that where two patents, showing the same invention or device, were issued to the same party, the later one was void, although the application for it was first filed; thereby deciding that it is the issue date, and not the filing date, which determines priority to patents issued to the same inventor on the same machine.

In *James v. Campbell*, 104 U. S. 382, the court say: "It is hardly necessary to remark that a patentee could not include in a subsequent patent any invention embraced or described in a prior one, granted to himself, any more than he could an invention embraced or described in a prior patent granted to a third person; indeed, not so well, because he might get a patent for an invention before patented to a third person in this country, if he could show that he was the first and original inventor, and if he should have an interference declared. * * * If he was the author of any other invention than that which the specification describes and claims, though he might have asked to have it patented at the same time, and in the same patent, yet if he has not done so, and afterwards desires to secure it, he is bound to make a new and distinct specification for that purpose, and make it the subject of a new and different patent." When a patentee anticipates himself, he cannot, in the nature of things, give validity to the second patent.

In *Lock Co. v. Mosler*, 127 U. S. 355, 8 Sup. Ct. 1148, it was held that, a patent having issued for a product as made by a certain process, a later patent could not be granted for the process which results in the product.

In *McCreary v. Canal Co.*, 141 U. S. 467, 12 Sup. Ct. 40, it was held that where a party owned two patents, showing substantially the same improvement, the second was void; the court saying: "It is true that the combination of the earlier patent in this case is substantially contained in the later. If it be identical with it, or only a colorable variation from it, the second patent would be void, as a patentee cannot take two patents for the same invention."

In *Underwood v. Gerber*, 149 U. S. 224, 13 Sup. Ct. 854, it was ruled that where a patentee obtained two patents on the same day, upon applications filed on the same day, they could not be treated as one patent with two claims, and that the complainant, in suing upon the second, or the one having the latest

number, could not use the first, or the one with the earlier number, to help sustain the action.

In *Odiorne v. Nail Factory*, 2 Mason 28, the reason for the rule since established by the above-cited cases was stated to be that the power to create a monopoly is exhausted by the first patent, and for the further reason that a new and later patent for the same invention would operate to extend or prolong the monopoly beyond the period allowed by law.

The result of the foregoing and other authorities is that no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ; that the second patent, although containing a broader claim, more generic in its character, than the specific claims, contained in the prior patent, is also void; but that where the second patent covers matter described in the prior patent, essentially distinct and separable from the invention covered thereby, and claims made thereunder, its validity may be sustained.

In the last class of cases it must distinctly appear that the invention covered by the later patent was a separate invention, distinctly different and independent from that covered by the first patent; in other words, it must be something substantially different from that comprehended in the first patent. It must consist in something more than a mere distinction of the breadth or scope of the claims of each patent. If the case comes within the first or second of the above classes, the second patent is absolutely void.

It is insisted on the part of the appellee that "whether this invention shall be protected in part of its features by one patent, and as to the rest by another, or shall be completely protected by a single patent, is a matter which concerns solely the patent office and the inventor." Under the rule announced in the foregoing authorities, this proposition cannot be sustained.

The second and principal contention of the appellee is that the patent of 1881 covers a distinct and separate invention from the first, and, in support of that proposition, the appellee relies upon the rule announced in *Garratt v. Seibert*, 98 U. S. 77; *Sewall v. Jones*, 91 U. S. 190; and *Merrill v. Yeomans*, 94 U. S. 568. These cases do not, however, establish the appellee's position.

In *Garratt v. Seibert* the arrangement for the operation of the device in the second patent was entirely different from the original patent. In *Sewall v. Jones* it was held that there might be a patent for the process, and one for the product. In *Merrill v. Yeomans* it was held that where a patent described an apparatus, a process, and a product, and the claims covered only the apparatus and the process, the law provided a remedy by

a surrender of the patent and a reissue, for the purpose of embracing the product.

A single invention may include both the machine and the manufacture it creates; and in such cases, if the inventions are really separable, the inventor may be entitled to a monopoly of each. It is settled, also, that an inventor may make a new improvement on his own invention of a patentable character, for which he may obtain a separate patent; and the cases cited by the appellee come to this point, and to this point only: That a later patent may be granted where the invention is clearly distinct from, and independent of, one previously patented.

It clearly appears from a comparison of the two patents, and their respective specifications and drawings, that the first function or object of the patent of 1879, relating to the lifting power of the spring, is identical with the sole object or function covered by the patent of 1881, and that the improved device and combination for the accomplishment of the lifting operation are identical in both patents.

The invention covered by the first patent, as stated in the specification, consists in a spring which serves the double purpose of lifting or holding down the plows at will; and it is further stated that one spring may be adapted to serve all, or either one or more, of the offices above enumerated.

The patent of 1879 thus embraces both the lifting and the depressing effects or operations of the spring device, while that of 1881 seeks to cover only the increased lifting effect of the same device. The first patent clearly includes the second. No substantial distinction can be drawn between the two, which have the same element in combination, and the same spring arrangement and adjustment to accomplish precisely the same lifting effect, increasing as the beams are raised from their operative positions. The matter sought to be covered by the second patent is inseparably involved in the matter embraced in the former patent; and this, under the authorities, renders the second patent void.

If the two patents in question had been granted to different parties, it admits of no question that the last would have been held an infringement of the first, for the reason that the patent of 1879 just as clearly includes as a part of the invention the increased lifting effect of the spring device, increasing as the beams are raised, as that disclosed in the patent of 1881. It certainly did not involve patentable novelty to drop or omit from the patent a claim for the depressing action of the spring arrangement which might be effected by any mere mechanical contrivance.

This view of the case is sustained by the statement in the specification forming a part of the patent of 1881, in which it is said: "The springs represented in the drawings are adapted to serve the double purpose of holding the beams down, and of lifting them, or assisting to lift them, when they are raised above the operative position. No claim is made, in the present case, to this duplex action of the springs, nor to the peculiar form or arrangement of the springs, otherwise than as regards the feature of exerting or increasing a maximum strain on the beams, as the latter rise; the peculiar construction of the spring being already covered in a patent hitherto granted to me."

This statement admits that the peculiar construction of the spring device, by means of which the lifting effect was to be accomplished, was already covered in a patent previously granted to the patentee; referring to the patent of 1879. In thus admitting the existence of a prior patented device, identical with that described in the second specification and drawings, it is difficult to understand upon what principle the patentee can be allowed to withdraw from the operation of such prior patent, one of its distinct elements, and make it the subject of a second distinct patent. It is not the result, effect, or purpose to be accomplished which constitutes invention, or entitles a party to a patent, but the mechanical means or instrumentalities by which the object sought is to be attained; but a patentee cannot so split up his invention for the purpose of securing additional results, or of extending or of prolonging the life of any or all of its elemental parts. Patents cover the means employed to effect results. *Pencil Co. v. Howard*, 20 Wall. 507; *Fuller v. Yentzer*, 94 U. S. 288.

The prior invention covered the means, and the only means, by which the results sought by the patent of 1881 were to be accomplished; and it is settled that the patentee of such prior device would be entitled to all of its uses, whether described or not. *Roberts v. Ryer*, 91 U. S. 150; *Stow v. Chicago*, 104 U. S. 547. Under these authorities, a single element or function of a patented invention cannot be made the subject of a separate and subsequent patent; and it therefore follows that this increased lifting effect of the spring device, sought to be covered by the 1881 patent, being clearly shown and described in the specification, drawings, and claims of the 1879 patent, was not the subject-matter of a valid patent.

This conclusion is in no way affected by the reservation attempted to be made in the 1879 patent, of the "broad idea of a lifting spring which acts with increasing force as the beam rises," for the reason that the broad idea sought to be reserved is embodied in identically the same mechanical device constituting the invention and covered by the first patent, which completely

occupies all the ground that was reserved. The spring and its connecting apparatus are the same in each patent, and the claims of the first covered the double automatic action—upward or downward. There is nothing in the specification or claims to indicate that in the first patent the lifting action is in any degree slighter or weaker as the beam rises than in the second patent; on the contrary, both specifications clearly indicate that the spring device acts with increasing force in each patent as the beam rises.

In addition to this, it distinctly appears that every claim of the 1881 patent could have been properly included and made a part of the claims of the 1879 patent. With the exception of the first broad claim of the 1881 patent, each of the other claims include the spring device with the limiting and qualifying words, “substantially as described,” and, by virtue of its reference to the specification, the lifting element of the spring device is shown to be the same in each patent. There is nothing in either patent, or the specification or claims thereof, to indicate that there is any greater or stronger lifting action in the one than in the other. It is thus shown that one and the same mechanical device, which covers the entire invention, is described in each of the patents; and the effort to secure a second patent on one part thereof, or on its function, after such part or its action had been clearly described and covered by a prior patent, cannot be sustained.

To hold, under these circumstances, that the first and second patents, in respect to the lifting effect of the same spring device, present distinct inventions, or that both are valid for the same invention, would involve the drawing of distinctions too refined for the practical administration of the patent law. * * *

Tested by this rule, and in view of the prior devices and the great variety of springs in use previous to the granting of his patent, Wright cannot be treated as a pioneer in the art. Neither can he nor his assignee be allowed to invoke the doctrine of equivalents, such as the courts extend to primary inventions, so as to include all forms of spring devices and adjustments which operate to perform the same function or accomplish the same result. * * *

Our conclusion on the whole case is that the patent of 1881 is anticipated by that of 1879; that the first claim thereof is anticipated by the Brown patent; that the patent of 1879, in view of the state of the art, is to be limited and restricted, if it has any validity at all, to the specific spring therein described; and, as thus restricted, it is clearly not infringed.

We are therefore of opinion that the decree of the court below should be reversed, and the cause remanded, with directions to dismiss the bill; and it is accordingly so ordered.

426. BENJAMIN v. DALE, 158 Fed. 617, 85 C. C. A. 439 (1907, Second Circuit. Patents No. 721,774 and No. 721,777).

Lacombe, Coxe, Ward.

Per Curiam: * * *

We concur, also, in the conclusion that "there is sufficient mechanical invention shown in the Benjamin patents to make the patents valid." They disclose a novel, ingenious, and meritorious invention. Examination of the claims above quoted will show that there is but little difference between the structures shown in the two patents. Claims 5 and 7 of the first patent cover the combination which has been called in argument the cluster unit, without any cover. Claim 32 brings in the cover with an opening opposite each socket, the sockets being separated electrically from the cover by air spaces. The second patent shows the same cluster unit, the same cover, and the same openings; insulating bushing having taken the place of air spaces. In view of this the Circuit Court held that:

"It is very doubtful whether the second patent is not to be regarded as invalid because anticipated by the first patent. * * * As I understand the rule the patent numbered first takes precedence of the other."

This is a correct statement of the general rule, defendants citing *Underwood v. Gerber*, 149 U. S. 224, 13 Sup. Ct. 854, 37 L. ed. 710; *Writing Machine Co. v. Elliott & Hatch Book-Type-writer (C. C.)*, 106 Fed. 507; *Willcox & Gibbs S. M. Co. v. Machine Co.*, 93 Fed. 206, 35 C. C. A. 269; and *Crown Cork & Seal Co. v. Standard S. Co.*, 136 Fed. 841, 69 C. C. A. 200. But where the patentee has had an application pending for the allowance of the later numbered patent at the time when the earlier numbered patent was issued, and especially when it was through no fault of his that his original application for a single patent was split up and a plurality of patents issued, an exception is made to the enforcement of this rule. *Electrical Co. v. Brush Co.*, 52 Fed. 137, 2 C. C. A. 682; *Thomson-Houston El. Co. v. Elmira & H. R. Co.*, 71 Fed. 404, 18 C. C. A. 145; *Independent Electric Co. v. Jeffery Mfg. Co. (C. C.)*, 76 Fed. 989. As was stated in *Badische Anilin Co. v. Klipstein (C. C.)*, 125 Fed. 554:

"It would be a failure of justice if the patentee of a meritorious invention should be deprived of the fruit of his labors because an arbitrary rule of the Patent Office has brought about complications not contemplated."

This case is a striking example of the unfortunate result of too close adherence to rule. Benjamin came to the Patent Office with a meritorious invention—a simple one which was quite sufficiently described in a brief specification. The specification and

the drawings showed his cluster-unit, by itself and also made practically a commercial article by the use of a cover and a switch; varieties of cover with and without bushing being shown. He asked for seven claims. The logical way would have been to include the genus and its varieties in the same patent, and half a dozen claims would have covered every possible combination which he was entitled to hold. But by the time the Patent Office got through with him Benjamin was the holder of four separate patents granted upon divisional applications split off from his original one; the four patents containing together 98 claims. It does not seem just that the patentee, who was powerless to obtain any modification of the rule for dividing applications, should be made to suffer from such misdirected energy. There seems sufficient authority to warrant a construction, which will hold that these two patents, based on a single original application and issued on the same day are to be treated as a single one, containing the five claims above quoted. * * *

427. THOMSON-HOUSTON ELECTRIC CO. v. OHIO BRASS CO., 80 Fed. 712, 26 C. C. A. 107 (1897, Sixth Circuit). * * *

We come now to the second assignment of error in these cases—namely, that the patents relied on are void because the inventions covered by them were patented in prior patents to the same patentee. The circumstances make this question different, as it arises on the two patents, and we shall first consider whether Patent No. 424,695 is void by reason of the prior issue of Patent No. 397,451. We are clearly of opinion that it is not. The application for No. 424,695 was filed more than a year before that for the Patent No. 397,451. The inventor expressly states in his specification in No. 397,451 that his invention is an improvement on the switch and trolley devices and combinations shown in the application which subsequently resulted in Patent No. 424,695. An examination of the drawings and specification leaves no doubt that this statement is true. With respect to the switch or switch-plate in the patent of later application and earlier issue the inventor added to the simple switch-box center ribs and side contractions of the extremities of the passage-ways for the purpose of more certainly directing the trolley-wheel in entering and leaving the switch in the way in which it should go. With respect to the trolley arm the improvement consisted in making it of adjustable length. The claims, all of them, include and refer to one or the other of these improvements. Now it is not material to this discussion whether these improvements are patentable or not. They are expressly claimed as improvements and no attempt is made by the patentee to cover anything but them. If inventions at all, then they are separable from the old

switch and trolley combinations, and if they are not inventions the patents are void and cover nothing.

Since the case of *O'Reilly v. Morse*, 15 How. 61, 121, 133, it has been well settled that a patent may issue for an improvement on an earlier invention either to the original inventor or to a stranger. Of course no one can use the improvement without right or license to use the fundamental invention; but, on the other hand, the right to use the original invention does not confer the right to use the improvement without license from the tributary inventor. We do not understand this general doctrine to be denied; but it is said that if, by some chance, the application for the fundamental patent is delayed in its course through the Patent Office until a patent on the avowed improvement has issued then the patent on the fundamental invention is void. In cases where the delay in the issuing of the patent for the main invention can not be charged to the laches or fraud of the patentee such a rule would be a hard one, and unless it is required by the express words of the statute or by the express holding of the Supreme Court we should be inclined, if possible, to avoid declaring it to exist. The contention of counsel for the defendant in this behalf instead of having the support of the authority of the Supreme Court is in the teeth of two decisions of that tribunal.

In *Suffolk Co. v. Hayden*, 3 Wall., 315, an inventor applied for a patent on improvements in the interior arrangements of an elongated trunk previously in use for cleaning cotton. While this application was pending he applied for an improvement on the form of the trunk—i. e., its external form—and in his second application he described the improvement in the interior arrangements of the trunk without making any claim as to it. A patent issued on the second application before one was issued on the first, and the point at issue before the court was whether the prior patent on the later application describing but not claiming the improvement for which a patent had first been applied for avoided the later patent on the earlier application for this improvement, and it was held that it did not. In disposing of the contention that the second patent was void the Supreme Court said:

“The first point of the plaintiff in error is that the description in the patent of March, of the improvement patented the December following, and on which the present suit is brought, and omission to claim it in such earlier patent, operated as an abandonment or dedication of it to the public, and that for this reason the subsequent patent of 1st December was void. But the answer to this ground of defense is that it appeared that Hayden, the patentee, had pending before the Commissioner of Patents an application for this same improvement at the time he described

it in the specification of the 17th of March, which was doubtless the reason for not claiming it in this patent. The description in no sense affected this application thus pending before the commissioner, and, while it remained before him, repelled any inference of abandonment or dedication from the omission to again claim it."

The same question arose again in the Barbed-Wire Patent Case, 143 U. S. 280, 12 Sup. Ct. 443, 450, and is stated and disposed of in Mr. Justice Brown's opinion in that case as follows:

* * *

[See *infra*.]

It will be observed that the case at bar is stronger than either of the cases cited, because in the application for the patent on the improvement not only is no claim made for the main invention, but the applicant expressly states that he has an application pending for the main invention necessarily described in describing the improvement, but not claimed, and thus shows beyond peradventure that he has no intention of abandoning or dedicating to the public his main invention. The authority and effect of these two cases counsel for defendant seeks to meet by the claim that the ground upon which he contends that the second patent in the cases before the court must be void was not presented to the court and was not considered by it. He says that the second patent for the main invention is void, not because it was dedicated to the public in the first patent, but because the effect of the second patent is to extend the monopoly of the first patent beyond the statutory period. The argument runs thus: The monopoly of the first patent, the one for the improvement, can legally be of no longer duration than seventeen years; but the improvement can not be used except as applied to the main invention, and as the later patent (the one for the main invention) does not expire until some time after the expiration of the patent for the improvement the monopoly of the improvement patent is in fact extended until the expiration of the later patent (the one for the main invention) and so exceeds the statutory seventeen years. It may be conceded that it is doubtful whether the case of *Suffolk Co. v. Hayden* on its facts presented the question thus raised by counsel, because the two patents there under consideration were improvements on different parts of the same machine, and it did not appear that the earlier patent might not have been used without also using the later patent, and possibly the same thing is true of the Barbed-Wire Patent Case. However this may be, we can not yield to the argument based on such a distinction, because we cannot accept its minor premise—to wit, that the later granting of the patent for the main invention ex-

tends the monopoly of the earlier improvement patent. The patent for the improvement expires in seventeen years. After that any one may use the improvement without infringing the patent issued upon it. If he uses the improvement without a license to use the main invention, he is liable for the infringement, not of the patent for the improvement, but of the patent for the main invention, and in estimating the damages for the same the value of the main invention, and not that of the improvement, would be the basis for estimating the damages.

It can make no difference in considering this question whether the patent for the improvement issues to the patentee of the main invention or to another. The right of the public to use the improvement when the patent on it expires is exactly the same whether the patentees of the two inventions are the same or not, because in each case the improvement can only be used with the license of the patentee of the main invention. If the patentee of the improvement is a stranger to the main invention, it is manifest that he can derive no benefit from the limitation upon the use of his invention after his patent expires because of the patent on the main invention. Why, then, does he derive an advantage if he happens to own the main patent? The only advantage conferred by the issue of the patent for the main invention is the legitimate monopoly for the statutory period of that invention and of no other. Did the personality of the owner of two different patents affect the validity of either then the anomalous result would follow that the owner of one patent would avoid it by acquiring ownership of another. According to the argument of counsel the patentees of the earlier improvement patent and of the later main patent being the same person the main patent is void. Let us suppose that they were different persons, but that, by mesne assignments, the two patents became the property of one person. The effect upon the public use of the improvement patent is exactly the same as if the now owner had been the inventor and patentee of both. Does the unity of title avoid the main patent, which was valid before? It must do so if the argument of counsel for defendant in this behalf is to be followed, for the effect of the unity of title is "to extend the monopoly" of the earlier improvement patent in the sense in which counsel uses that phrase. To our minds this conclusion is *reductio ad absurdum*. The fact that a patent for an improvement may expire before the patent for the main invention is the result of several circumstances—one that a patent may be taken out for an improvement on a patentable invention, another that there is no limitation by statute upon the time within which a patent may issue upon an application after it is filed, provided the applicant is not guilty of violating the two

years' restriction imposed by the statute, and a third that the course of an application for a generic or broad invention may legitimately take longer in its course through the patent office than a comparatively unimportant improvement on that invention.

The case upon which counsel for defendant chiefly relies to support his argument is *Miller v. Manufacturing Co.*, 66 O. G. 845, 151 U. S. 186, 14 Sup. Ct. 310, where it was held that when two patents issued to the same patentee for the same invention the second patent was void for the reason that the new or later patent would prolong the monopoly beyond the period allowed by law. As pointed out by Mr. Justice Jackson, this was not a new doctrine, and found support in a number of earlier cases cited by him. The patents under consideration in that case were for a peculiar form of spring which when connecting the plow-beams of a plow with the upright portion of the axle assisted the operator in lifting the plow-beams when above the level and in depressing them when below it, and the patent first issued covered the spring thus used. The spring thus used had the additional function of increasing its lifting force and action the higher the beams were raised. The second patent was taken out to cover this feature of the spring. In effect the only difference between the patents was that the earlier patent covered a spring with both a depressing and a lifting function, while the second patent covered exactly the same spring with a lifting function increasing in force as the spring rose above the level. Now the function of the spring described in the second patent was necessarily present in the spring as it was shown in the earlier patent, for no change in form of the spring was suggested in either patent by which it might serve the purpose and claim of the first patent and discharge the functions therein described without also at the same time discharging the function which was supposed to distinguish the second patent and its claim from the first. In other words, the division of the original application into two patents was nothing more than an attempt to patent as two separate inventions the same device when discharging different functions. The opinion of Mr. Justice Jackson distinctly recognizes that—

“where the second patent covers matters described in the prior patent, essentially distinct and separable from the invention covered thereby and claims made thereunder, its validity may be sustained”—
and—

“that an inventor may make a new improvement on his own invention of a patentable character, for which he may obtain a separate patent”—

and—

“that a later patent may be granted where the invention is clearly distinct from and independent of one previously patented.”

It is of course true that if an improvement is an invention separable from the generic invention the latter is an invention distinct and separable from the improvement. Hence it follows from the propositions above quoted from the opinion in the case of *Miller v. Manufacturing Co.*, that a patent for a generic invention is not avoided by the fact that a prior invention has been issued for a distinct improvement on that invention, provided always that the language of the application for the first patent and the circumstances of filing it are not such as to dedicate the generic invention to the public. The case of *Miller v. Manufacturing Co.*, therefore, instead of sustaining the claim made for it, is distinctly an authority to the contrary. We are of opinion that Patent No. 424,695 is not rendered void by Patent No. 397,451. We are strongly fortified in this conclusion by the most satisfactory opinion of Judge Wallace, speaking for the Circuit Court of Appeals of the Second Circuit, upon exactly the same question. *Thomson-Houston Electric Co. v. Elmira & H. Ry. Co.*, 18 C. C. A. 145, 71 Fed. 396, affirming the decree of Judge Coxe in the circuit court in the same case. 69 Fed. 257.

We come now to the question whether Patent No. 495,443 is rendered void by the prior issue of Patent No. 424,695. This presents much more difficulty than the question just disposed of. In this case the drawings and specifications of the two patents are substantially alike, and show a car, a track, a post on top of the car, a swinging and hinged arm pivoted on the post, with a contact-wheel at its outer end. A spring is secured to the lower end of the swinging arm, and to the spring is attached a weight which works in suitable vertical grooves down through the roof to the front platform, within reach of the driver. The swing and weight maintain the contact of the outer end of the swinging arm with the overhead conductor. Switches in the overhead conductor are maintained immediately over the point in the track where track-switches occur. The trolley post and arm are in such positions and of such size that the point of contact of the outer end of the arm and the overhead conductor is back of the front wheels of the car. This is for the purpose of imparting to the trolley-wheel as it enters the switch in the overhead conductor the direction already taken by the front wheels of the car in entering the switches upon the track. The spring and weight working in vertical grooves are intended to keep the trolley-arm in the vertical plane of the longitudinal center of the car and thus to make its contact-wheel more certain to follow in the overhead switch the direction of the car as it turns

into a track-switch. It is shown by the evidence that the inventor first used in his combination a spring attached to the top of the car to secure contact, and then a spring attached to the foot of the trolley-post, and finally the spring and weight arrangement shown in the drawings of the patents. The claims of the second patent in question are for the broad claims of a combination, in an electric railway, of a car, a track, an overhead conductor, a post and swinging hinged arm on the car, and a tension-spring for maintaining contact between the arm and the conductor, and the language of the specification shows that it was the intention of the inventor to make this cover the generic invention.

The claims of the first patent that embrace the whole combination include the weight as part of the means for maintaining upward pressure of the arm against the conductor. There are five claims of the first patent that cover the whole combination and include a spring or weight to perform the function of keeping the trolley-arm in the center line of the car. Now this same spring and weight in the drawings discharge the function of maintaining the upward pressure of the swinging arm. The contention of the counsel for the complainant is that the first patent was a patent for the special and improved form of the invention, including the spring and weight with their upward pressure and centralizing tendency, and that the second patent, though using the same drawings and specification, shows by the language of the latter and its claims that it was intended to cover, and did cover, a combination with a spring without a weight in such a position that it need only discharge the function of maintaining the upward pressure of the arm without the centralizing tendency, and that the modification of the drawings and specification to show such a tension-spring is only the work of a skilled mechanic.

To the objection that the last five claims of the earlier patent are exactly the same as the broad claims of the later patent with the mere statement of a necessary centralizing function of the same spring always present in it, it is answered that the second patent was intended to cover springs that had no centralizing tendency, and that the use of the function in describing the spring therefore is a limitation of the claim showing it to be a special form of spring. It is argued, therefore, that, as the claims of the first patent do not cover any of the broad claims of the second patent based on a simpler combination of parts than that shown in the drawings, the second patent may be held to be a separate generic invention, while the earlier patent is merely for improved forms of the same invention entitled to a separate patent. We think the case on these two patents much nearer Miller

v. Manufacturing Co. than the case on the two patents already considered, but we are unwilling, upon an appeal from a preliminary injunction heard upon affidavits and without a full review of the art and without a fuller argument and closer consideration of the claims and specification, to decide the question mooted. The questions are whether, in determining the separability of the inventions, we may consult evidence dehors the record, and whether, in considering the gist of the second patent, we may supply such variations in the form of the combination shown in the drawings and specification suggested by mere mechanical skill as would make it one not covered by the first patent, but a simpler and more generic form, and whether the claims of the second patent are limited to the devices actually shown by the words "substantially as described."

The main invention is confessedly a meritorious one, and we shall be loath to declare it void because of a mistake in the patent office proceedings, if we can by any reasonable construction of the patents do otherwise. The second patent was sustained as valid after a full hearing on the merits before so good and experienced a patent judge as Judge Townsend of Connecticut. *Thomson-Houston Electric Co. v. Winchester Ave. Ry. Co.*, 71 Fed. 192. This certainly justified the court below in assuming the validity of the patent on a motion for preliminary injunction. It is well settled that on appeals like this this court will ordinarily look into the case merely to see whether the discretion of the court below in issuing or withholding the order of preliminary injunction has been abused, and that only in exceptional cases in which a controlling question of law may be as fully and fairly considered as upon final hearing, and the court has no doubt upon it, will it finally dispose of the injunction and the case on a hearing like this *Duplex Printing-Press Co. v. Campbell Printing-Press & Manufg. Co.*, 16 C. C. A. 220, 69 Fed. 250; *Mayor, etc., v. Africa*, 23 C. C. A. 252, 77 Fed. 501. Questions on appeals of this character are ordinarily to be treated in this court from the standpoint from which they were viewed by the circuit court, and the decision on the merits by a circuit court of another circuit sustaining the patent is therefore usually of controlling weight here, as it should be in the court below.

In an appeal from a preliminary injunction on this same patent the Circuit Court of Appeals of the Second Circuit affirmed the order without examining or deciding the validity of the patent, justifying its course in this regard by the statement that in another cause, heard upon a voluminous record by Judge Townsend, the patent had been sustained. (*Thomson-Houston Electric Co. v. Kelsey Electric Railway Specialty Co.*, 22 C. C. A. 1, 75 Fed. 1005.)

The orders of preliminary injunctions appealed from in both cases are accordingly affirmed, at the costs of the appellant, the defendant below.

428. UNION TYPEWRITER CO. v. SMITH, 181 Fed. 966, 104 C. C. A. 430 (1910, Third Circuit).

Before Lanning, Circuit Judge, and Bradford and McPherson, District Judges.

Lanning, Cir. J.:

The following are conceded facts in this case:

On May 2, 1890, James D. Daugherty filed an application for a patent for improvements in type-writing machines. On June 1, 1891, he voluntarily canceled certain of the claims then standing in the application, giving notice in his letter of cancellation that the canceled claims would be made the subject of a divisional application within a few days. On June 9, 1891, the divisional application was filed, in which he said:

"I do not make any claim in this application to the pivoted shifting-frame carrying the type-bars, whereby either the upper or lower case of type are brought to the printing-point, as this is made the subject-matter of my pending application filed May 2, 1890."

The divisional application was allowed in Patent No. 457,258 on August 4, 1891. The remaining claims of the application filed May 2, 1890, appeared in Patent No. 470,990, which was allowed March 15, 1892, and in which claims a pivoted shifting-frame carrying type-bars is an element. It is to be noted, however, that the two claims 37 and 38, hereinafter quoted, were not included in 470,990 notwithstanding Daugherty, as early as January 21, 1892, in an interference proceeding on his application for 470,990, had been found by the patent office to be entitled to them.

On March 8, 1892, just a week before patent 470,990 was allowed, Daugherty filed an application for another patent for improvements in type-writing machines, containing fifty-three claims. It was sworn to on March 4, 1892. In it he said:

"My invention relates to type-writing machines, and it consists in certain improvements in the construction of the parts shown and described in patents No. 457,258, dated August 4, 1891, and No. 470,990, dated March 15, 1892, both of which are granted to me."

How the date of allowing patent 470,990, or its number, came to be inserted in the application, does not appear, nor is it material. The application also contained the following language:

"The type-bar-shifting frame, 12, has its outer ends pivoted between vertical lugs, which extend from opposite sides of the base, A, and which is shifted at its inner end for the purpose of bringing the proper character at the outer end of the type-bars, 9, to the printing-point, as fully described and shown in the said patents [that is, in patents 457,258 and 470,990] The type bars each carry several characters and are of the same construction substantially as that shown and described in the said patents [that is patents 457,258 and 470,990] as are also the key-levers, 14, neither of which need therefore be more fully or particularly referred to in this application, as they form no part of the present invention."

On April 26, 1892, more than a month after patent 470,990 had been allowed, Daugherty eliminated from the application the above italicized sentence. On July 9, 1892, nearly three months after patent 470,990 had been allowed, and after the fifty-three claims of the application filed March 8, 1892, had been reduced by rejections and cancellations to thirty-six in number, Daugherty eliminated from the application the words, "as fully described and shown in the said patents," with which the sentence immediately preceding the italicized sentence ends, and substituted therefore the following:

"The frame differs radically from that described in said patents, in that a shifting-frame pivoted between its ends is not herein used for carrying the type, but the type are carried by the frame, 12, which is pivoted at its outer end in this instance, and has its inner free end shifted by means of a lever, H, and arm, J, as before described."

With the amendment containing this last-mentioned elimination, Daugherty also added two wholly new claims. The amendment was verified by his supplemental oath, because, as he said, "the claims presented were not originally in the case." These two claims, being 37 and 38, appeared with the other thirty-six claims in Patent No. 481,477, allowed August 23, 1892. They are the claims, and the only claims, now in suit. They read as follows:

"37. In a type-writer, the combination, with a series of individual pivoted type-bars carrying two or more type, of a vertically-shifting frame for sustaining said bars and suitable means for shifting said frame to bring either of the type in proper position to make an impression.

"38. In a type-writer, the combination, with a series of type-bars, provided with two or more type, of a vertically-shifting frame for sustaining said type-bars concentrically, a series of key-levers connected with said type-bars, and a series of keys for operating said levers."

From these conceded facts it will be observed:

1. That in his divisional application, which ripened into patent 457,258, Daugherty disclaimed a pivoted shifting-frame carrying the type-bars, saying that such a claim was the subject-matter of the application which subsequently ripened into patent 470,990.

2. That in his patent 470,990 there are claims which include such a pivoted shifting-frame, though claims 37 and 38 were omitted therefrom.

3. That when the application for patent 481,477 was first filed it declared that the pivoted type-bar-shifting frame therein mentioned was fully described and shown in patents 457,258 and 470,990, and that the type-bars and key-levers therein mentioned were substantially of the same construction as those of said patents, and that the type-bars and key-levers formed no part of the invention described in the application for patent 481,477.

4. That after the application for patent 481,477 was first filed, and after patent 470,990 had been allowed, the application for patent 481,477 was amended in such manner as to include what had not before been claimed therein, by changes in the specification and by adding claims 37 and 38.

Daugherty admits that all the elements of these two claims are found in patent 470,990. The complainant's counsel, also, in their brief, say:

"There can be no doubt that these claims, taken in their plain ordinary meaning, cover broadly the forms shown in both Daugherty patents; they embody the broad combination disclosed in both these patents and in defendants' machine, and could properly be drawn in either."

With these concessions before us, we think the decree of the circuit court should be affirmed. The combinations of the claims in suit were disclosed in the proceedings for patent 470,990, issued to the same inventor nearly three months before the claims in suit were filed. We think it was too late then to amend the specification in the application for patent 481,477 in such manner as to open the way for adding claims 37 and 38. The application for 481,477 was not a divisional application of 470,990. It was for improvements in the construction of certain parts of 470,990. Up to July 9, 1892, reference was made in the application for 481,477 for the construction and method of operation of the type-bar-shifting frame to patents 457,258 and 470,990, where, it was said, they were "fully described and shown," and the type-bars and key-levers were declared to "form no part of the present invention." The interjection into the application for 481,477, on July 9, 1892, of claims 37 and 38 for combinations to effect certain methods of type action, was recognized by Daugherty as

an amendment not within the scope of his application as filed on March 8, 1892, for otherwise he would not have accompanied it with his supplemental oath. These claims, properly interpreted, are not for—

“improvements in the construction of the parts shown and described in Patents No. 457,258, dated August 4, 1891, and No. 470,990, dated March 15, 1892,”

but are, as both Daugherty and the counsel for the complainant admit, for combinations disclosed in patent 470,990. Indeed, we think the circuit court has correctly concluded—

“that the claims of the patent in controversy, upon any such reading of them as is contended for, are inclusive of claims 1 and 2 of No. 470,990.”

See opinion of that court, 173 Fed. 288. If the claims of 470,990 were narrower than Daugherty's real invention, or if claims 37 and 38 were omitted from that patent by mistake, the error or mistake should have been corrected in a reissue. It can not be corrected, as we understand the patent law, by inserting the broader claims to which he might have been entitled on a reissue of 470,990 in a patent for improvements in the construction of certain parts of 470,990.

We think the decree of the circuit court should be affirmed, with costs; and it is so ordered.

499. NATIONAL HOLLOW B. B. CO. v. INTERCHANGEABLE B. B. CO.,
106 Fed. 693, 45 C. C. A. 544 (1901, Eighth Circuit).

Before Caldwell, Sanborn, and Thayer, Circuit Judges.

Sanborn, Circuit Judge, after stating the case as above, delivered the opinion of the court.

Four of the fourteen claims in issue upon these appeals involve the cardinal principle of the appellants' hollow metallic brake beam. The remaining ten relate to slight improvements and minor details of construction. * * *

The patentee claimed his combination in these words: [Patent No. 361,009.]

“(2) The combination, in a brake beam, of a hollow beam, a strut, end plugs or caps, 8, and a truss rod, 3, which extends through the caps, 8, and is provided with nuts, substantially as and for the purposes specified.” * * *

He claimed his second combination in these words: [Patent No. 480,194.]

“(1) A metallic brake beam, consisting of a compression member, a tension member, and an interposed strut; the compression member having a camber, and the beam structure containing means of adjustment whereby the camber of the com-

pression member is produced and the resiliency of the beam made available.

“(2) A metallic brake beam, consisting of a hollow compression member, a tension member, and an interposed strut; the compression member having a camber, and the beam structure, containing means of adjustment whereby the camber of the compression member is produced and the resiliency of the beam made available.”

“(7) In a trussed brake beam, the combination of a tension member having threaded ends and nuts therefor, a strut, and a cambered compression member, which maintains the tension of the parts and prevents the rotation of the nuts, substantially as specified.” * * *

A patent is a contract by which the government secures to the patentee the exclusive right to vend and use his invention for a few years, in consideration of the fact that he has perfected and described it and has granted its use to the public forever after. The general rules for the interpretation of grants and contracts govern its construction, and the equitable principle that one who has derived great benefit from the performance of a contract ought not to be allowed to escape its burdens without cogent reasons is not inapplicable in its exposition. Among the primary rules for the construction of a contract are these: The court should put itself in the place of the parties at the time it is made, and should read its terms in the light of the facts and circumstances which then surrounded them. When the intention of the parties is manifest, it should control, regardless of inapt expressions and technical rules. In cases of doubtful validity or of ambiguous terms, that construction should be adopted which sustains and vitalizes the agreement, rather than that which destroys or paralyzes it. Prior negotiations are merged in the contract, and, while they may be considered to interpret its purpose, they must not be permitted to contradict or modify its express meaning. Let us read and interpret these patents in the light of these principles.

* * * * *

A machine or combination which is not designed by its maker, nor actually used nor apparently adapted to perform the function of a patented machine or combination, but which is discovered in a remote art and was used under radically different conditions to perform another function, neither anticipates nor limits the scope of the patent. *Ansonia Brass & Copper Co. v. Electrical Supply Co.*, 144 U. S. 11, 18, 12 Sup. Ct. 601, 36 L. ed. 327; *Topliff v. Topliff*, 145 U. S. 156, 161, 12 Sup. Ct. 825, 36 L. ed. 658; *Potts v. Creager*, 155 U. S. 597, 608, 15 Sup. Ct.

194, 39 L. ed. 275; *Westinghouse v. Air-Brake Co.*, (C. C.) 59 Fed. 581, 590; *Walk. Pat.* (2d Ed.) p. 54, § 68.

The solemn grants of great franchises cannot be stricken down by testimony so flimsy and unsatisfactory. The memory of men is too brief and fleeting, too easily swayed by chance and by interest, to permit the recollection of one or two witnesses, prompted by presently prepared pictures of the proof desired, to condition the validity of valuable patents that have stood unchallenged for years. Unsupported oral testimony of a prior use is always open to suspicion, and it cannot prevail over the legal presumption of validity which accompanies the patent, unless it is sufficient to establish such a use beyond a reasonable doubt. The testimony relative to the use of this Wabash beam is not of that character, and it will not be further considered. *Mast, Foos & Co. v. Dempster Mill Mfg. Co.*, 82 Fed. 327, 332, 27 C. C. A. 191, 195, 49 U. S. App. 508, 516; *In re Barbed-Wire Patent*, 143 U. S. 275, 12 Sup. Ct. 443, 450, 36 L. ed. 154; *Deering v. Harvester Works*, 155 U. S. 286, 300, 15 Sup. Ct. 118, 39 L. ed. 153; *Miller v. Handley*, (C. C.) 61 Fed. 100, 102.

* * * * *

No one of these devices has the caps, the tension member with threaded ends passing through the ends of the compression member, or the nuts on the ends of the tension member, which constitute such essential elements of the combination of Hien. No one of them has the capability of producing, adjusting, and maintaining the rigidity of the structure, the spring of the beam, or the coning of the shoe by the simple expedient of turning the nuts on the ends of the tension rod; and no one of them is the mechanical equivalent of Hien's invention.

Many other patents and references were introduced in evidence in the progress of this cause, but none which illustrate more fully or more clearly than those already noticed the state of the art when the combinations described in the four claims now under consideration were secured; and the question of their patentability arises upon the facts which have now been stated.

The second claim of the first patent to Hien is for a combination of old mechanical elements in a new way. It is not for new elements, but for a new method of combining old elements; and a new combination of old elements, whereby a new and useful result is produced, or an old result is attained in a more facile, economical, and efficient way, may be protected by patent as securely as a new machine or composition of matter. *Seymour v. Osborne*, 11 Wall. 516, 542, 548, 20 L. ed. 33; *Gould v. Rees*, 15 Wall. 187, 189, 21 L. ed. 39; *Thomson v. Bank*, 53

Fed. 250, 252, 3 C. C. A. 518, 520, 10 U. S. App. 500, 509. The prior art discloses no combination of the elements of Hien's brake beam in the way which he describes. In other words, the method of combination of the old devices which he presented was new. Nowhere in the history of the art can the tension member, with threaded ends passing through the ends of the hollow metallic compression member, and through caps thereon, secured in place by nuts on its ends, by the mere turning of which the rigidity of the structure, the resilience of the compression member, and the coning of the brake shoes to the tread of the wheels may be produced, adjusted, and maintained, be found. Yet this is the principle of his invention, the mode of its operation, the peculiar combination of devices which distinguishes it from other brake beams. *Burr v. Duryee*, 1 Wall. 531, 510, 17 L. ed. 650. * * *

The patent itself is prima facie evidence of the novelty of his combination, and if that issue was doubtful this presumption would entitle it to a construction which would sustain, in preference to one which would destroy, the grant it evidences. In five years after Hien disclosed his invention and obtained his patent, his brake beam was in use on 85 percent. of the railroads controlling 80 percent. of the cars using iron brake beams in this country, and in 11 years from the date of his patent more than 1,000,000 of his brake beams had been made and sold. It is true that the extensive use of a machine or combination which is clearly without novelty does not dispense with that statutory requirement, and that it will not alone sustain a patent. *McClain v. Ortmyer*, 141 U. S. 419, 428, 12 Sup. Ct. 76, 35 L. ed. 800; *Duer v. Lock Co.*, 149 U. S. 216, 223, 13 Sup. Ct. 850, 37 L. ed. 707; *Olin v. Timken*, 155 U. S. 141, 155, 15 Sup. Ct. 49, 39 L. ed. 100; *Klein v. City of Seattle*, 77 Fed. 200, 204, 23 C. C. A. 114, 118, 44 U. S. App. 741, 748. But where the question of novelty is fairly open for consideration under the law, the fact that a patented device or combination has displaced others which had previously been used to perform its function, and has gone into immediate and general use, is pregnant and persuasive evidence that it involves invention. *Smith v. Vulcanite Co.*, 93 U. S. 486, 495, 23 L. ed. 952; *Loom Co. v. Higgins*, 105 U. S. 580, 591, 26 L. ed. 1177; *Manufacturing Co. v. Adams*, 151 U. S. 139, 143, 14 Sup. Ct. 295, 38 L. ed. 103; *Magowan v. Packing Co.*, 141 U. S. 332, 342, 12 Sup. Ct. 71, 35 L. ed. 781; *Graphophone Co. v. Leeds*, (C. C.) 87 Fed. 873; *Topliff v. Topliff*, 145 U. S. 156, 164, 12 Sup. Ct. 825, 36 L. ed. 658. The peculiar combination of devices which distinguishes the brake beam of Hien from all those which went before it; its superior lightness, compactness, simplicity, and adjustability; the presumption of va-

lidity accompanying his patent; the fact that his combination had not suggested itself to any mechanic skilled in the art during 12 years of diligent search and effort for improvement; the facility and rapidity with which it took the place of old devices and went into immediate and extensive use as soon as it was disclosed—all these facts converge upon the mind with compelling force to prove that the striking and effective improvement he made was the production, not of the skill of the mechanic, but of the intuitive genius of the inventor. Thomson v. Bank, 53 Fed. 250, 3 C. C. A. 518, 10 U. S. App. 500; Griswold v. Harker, 62 Fed. 389, 393, 10 C. C. A. 435, 439, 27 U. S. App. 122, 152; Loom Co. v. Higgins, 105 U. S. 580, 591, 26 L. ed. 1177; Consolidated Safety-Valve Co. v. Crosby Steam-Gauge & Valve Co., 113 U. S. 157, 179, 5 Sup. Ct. 513, 28 L. ed. 939; Magowan v. Packing Co., 141 U. S. 332, 341, 343, 12 Sup. Ct. 71, 35 L. ed. 781. In re Barbed-Wire Patent, 143 U. S. 275, 281, 283, 12 Sup. Ct. 443, 450, 36 L. ed. 154. The combination of mechanical devices found in the second claim of the first patent to Hien was novel and useful, and the patent which secured it is valid. * * *

Now, the function or result of the operation of a machine or combination is not patentable under our laws, and therefore the camber in the beam could not be monopolized by means of a patent. The means, the mechanical device, by which that camber was produced and that alone, was capable of protection by such a franchise. Fuller v. Yentzer, 94 U. S. 288, 24 L. ed. 103; Pencil Co. v. Howard, 20 Wall. 498, 507, 22 L. ed. 410; Miller v. Manufacturing Co., 151 U. S. 186, 201, 14 Sup. Ct. 310, 38 L. ed. 121; Knapp v. Morss, 150 U. S. 221, 228, 14 Sup. Ct. 81, 37 L. ed. 1059; Carver v. Hyde, 16 Pet. 513, 519, 10 L. ed. 1051; Le Roy v. Tatham, 14 How. 156, 14 L. ed. 367; Corning v. Burden, 15 How. 252, 14 L. ed. 683; Burr v. Duryee, 1 Wall. 531, 17 L. ed. 650. Again, since a function is not patentable, a combination of functions is not; nor is a combination of mechanical devices or elements and one of the functions of that combination. It is a combination of mechanical elements, and of such elements alone, that may be protected by the grant of a patent, and for this reason the combination of the mechanical elements described in the first patent and the camber produced by that combination was not patentable under the acts of congress. * * * When he has plainly described and claimed his machine or combination, and has secured a patent for it, he has the right to every use to which his device can be applied, and to every way in which it can be utilized to perform its function, whether or not he was aware of all these uses or methods of use when he claimed and secured his monopoly. Roberts v. Ryer, 91 U. S. 150, 157, 23 L. ed. 267; Miller v. Manufacturing

Co., 151 U. S. 186, 201, 14 Sup. Ct. 310, 38 L. ed. 121; Goshen Sweeper Co. v. Bissell Carpet-Sweeper Co., 72 Fed. 67, 19 C. C. A. 13, 37 U. S. App. 555; Frederick R. Stearns & Co. v. Russell, 85 Fed. 218, 226, 29 C. C. A. 121, 129; Manufacturing Co. v. Neal, (C. C.) 90 Fed. 725; Tire Co. v. Lozier, 90 Fed. 732, 744, 33 C. C. A. 255, 268. * * *

Reason has approved, and the decisions of the courts established these rules:

One who invents and secures a patent for a machine or combination which first performs a useful function is thereby protected against all machines and combinations which perform the same function by equivalent mechanical devices; but one who merely makes and secures a patent for a slight improvement on an old device or combination, which performs the same function before as after the improvement, is protected against those only who use the very device or improvement he describes or mere colorable evasions thereof. In other words, the term "mechanical equivalent," when applied to the interpretation of a pioneer patent, has a broad and generous signification, while its meaning is very narrow and limited when it conditions the construction of a patent for a slight and almost immaterial improvement. Adams Electric R. Co. v. Lindell R. Co., 77 Fed. 432, 440, 23 C. C. A. 223, 231, 40 U. S. App. 482, 498; Stirrat v. Manufacturing Co., 61 Fed. 980, 981, 10 C. C. A. 216, 217, 27 U. S. App. 13, 42; McCormick v. Talcott, 20 How. 402, 405, 15 L. ed. 930; Railway Co. v. Sayles, 97 U. S. 554, 556, 24 L. ed. 1053; Brill v. Car Co., 90 Fed. 666, 33 C. C. A. 213, 62 U. S. App. 276. But the great majority of patents falls between these two extremes. They are neither for pioneer inventions nor for improvements so slight as to be almost immaterial. While they do not evidence the first or the last step in the progress of the art to which they relate, they often mark signal advances and protect useful improvements. The doctrine of mechanical equivalents conditions the construction of all these patents, and in determining questions concerning them the breadth of the signification of the term is proportioned in each case to the character of the advance or invention evidenced by the patent under consideration, and is so interpreted by the courts as to protect the inventor against piracy and the public against unauthorized monopoly. Schroeder v. Brammer, (C. C.) 98 Fed. 880; McSherry Mfg. Co. v. Dowagiac Mfg. Co., 41 C. C. A. 627, 101 Fed. 716, 721; Bundy Mfg. Co. v. Detroit Time-Register Co., 94 Fed. 524, 36 C. C. A. 375; Miller v. Manufacturing Co., 151 U. S. 186, 207, 14 Sup. Ct. 310, 38 L. ed. 121; Penfield v. Chambers Bros. Co., 92 Fed. 639, 647, 34 C. C. A. 579, 587; McCormick Harvesting Mach. Co. v. Aultman, Miller &

Co., 69 Fed. 371, 16 C. C. A. 259, 37 U. S. App. 299; Muller v. Tool Co., 77 Fed. 621, 630, 23 C. C. A. 357, 366, 47 U. S. App. 189, 204. The doctrine of mechanical equivalents is governed by the same rules and has the same application when the infringement of a patent for a combination is in question as when the issue is over the infringement of a patent for any other invention. Schroeder v. Brammer, (C. C.) 98 Fed. 880; Imhaeuser v. Buerk, 101 U. S. 647, 653, 25 L. ed. 945; Griswold v. Harker, 62 Fed. 389, 391, 10 C. C. A. 435, 437, 27 U. S. App. 122, 150; Thomson v. Bank, 53 Fed. 250, 253, 3 C. C. A. 518, 521, 10 U. S. App. 500, 509; Seymour v. Osborne, 11 Wall. 516, 542, 548, 20 L. ed. 33; Gould v. Rees, 15 Wall. 187, 189, 21 L. ed. 39; Fay v. Cordesman, 109 U. S. 408, 420, 3 Sup. Ct. 236, 27 L. ed. 979; Water-Meter Co. v. Desper, 101 U. S. 332, 25 L. ed. 1024; Gage v. Herring, 107 U. S. 640, 2 Sup. Ct. 819, 27 L. ed. 601; Machine Co. v. Murphy, 97 U. S. 120, 24 L. ed. 935; National Cash Register Co. v. American Cash Register Co., 53 Fed. 367, 373, 3 C. C. A. 559, 565, 3 U. S. App. 340, 357; Belding Mfg. Co. v. Challenge Corn Planter Co., 152 U. S. 100, 14 Sup. Ct. 492, 38 L. ed. 370. Mere changes of the form of a device or of some of the mechanical elements of a combination secured by patent will not avoid infringement, where the principle or mode of operation is adopted, unless the form of the machine or of the elements changed is the distinguishing characteristic of the invention. Watch Co. v. Robbins, 64 Fed. 384, 396, 12 C. C. A. 174, 187, 22 U. S. App. 601, 634; New Departure Bell Co. v. Bevin Bros. Mfg. Co., (C. C.) 64 Fed. 859. * * *

Where the advance towards the desideratum is gradual, and several inventors form different combinations which accomplish the desired result with varying degrees of operative success, each is entitled to his own combination so long as it differs from those of his competitors and does not include theirs. Railway Co. v. Sayles, 97 U. S. 554, 556, 24 L. ed. 1053; McCormick v. Talcott, 20 How. 402, 405, 15 L. ed. 930; Stirrat v. Manufacturing Co., 61 Fed. 980, 981, 10 C. C. A. 216, 217, 27 U. S. App. 13, 42; Griswold v. Harker, 62 Fed. 389, 391, 10 C. C. A. 435, 438, 27 U. S. App. 122, 150; Adams Electric Ry. Co. v. Lindell Ry. Co., 77 Fed. 432, 440, 23 C. C. A. 223, 231, 40 U. S. App. 482, 498. * * *

It is true that if a patentee acquiesces in the rejection of his claim on references cited in the patent office, and accepts a patent on an amended claim, he is thereby estopped from maintaining that the amended claim covers the combinations shown in the references, and from claiming that it has the breadth of the claim that was rejected. Roemer v. Peddie, 132 U. S. 313, 317, 10 Sup. Ct. 98, 33 L. ed. 382; Morgan Envelope Co. v. Al-

bany Perforated Wrapping Paper Co., 152 U. S. 425, 429, 14 Sup. Ct. 627, 38 L. ed. 500; Brill v. Car Co., 90 Fed. 666, 668, 33 C. C. A. 213, 215, 62 U. S. App. 276, 282; Railroad Co. v. Kearney, 158 U. S. 461, 469, 15 Sup. Ct. 871, 39 L. ed. 1055; Knapp v. Morss, 150 U. S. 221, 14 Sup. Ct. 81, 37 L. ed. 1059; Crawford v. Heysinger, 123 U. S. 589, 8 Sup. Ct. 399, 31 L. ed. 269. But this is the limit of the estoppel. One who acquiesces in the rejection of his claim because it is said to be anticipated by other patents or references is not thereby estopped from claiming and securing by an amended claim every known and useful improvement which he has invented that is not disclosed by those references. The only limitation, therefore, imposed upon the second claim of the patent to Hien by the rejection of the original claim, was that he was thereby estopped from maintaining that it covered the devices disclosed in the references cited by the examiner, which the latter believed were within the limits of the claim first presented. * * *

There are cases wherein the form of a device is the principle of the invention. There are other cases wherein the state of the prior art and the specific terms of the specification and drawings leave no doubt of the intention of the applicant to restrict his claim to the specific form of the device or element he points out. In such cases claims of patents are sometimes limited to the specific forms of the devices pointed out by letters or numbers in the claims or specifications. Weir v. Morden, 125 U. S. 98, 107, 8 Sup. Ct. 869, 31 L. ed. 645; Railroad Co. v. Kearney, 158 U. S. 461, 469, 15 Sup. Ct. 871, 39 L. ed. 1055; Crawford v. Heysinger, 123 U. S. 589, 8 Sup. Ct. 399, 31 L. ed. 269; McCormick Harvesting Mach. Co. v. Aultman, Miller & Co., (C. C.) 58 Fed. 773; Newton v. Manufacturing Co., 119 U. S. 373, 7 Sup. Ct. 369, 30 L. ed. 442; Bragg v. Fitch, 121 U. S. 478, 7 Sup. Ct. 978, 30 L. ed. 1008; Dryfoos v. Wiese, 124 U. S. 32, 8 Sup. Ct. 354, 31 L. ed. 362; Hendy v. Iron Works, 127 U. S. 370, 375, 8 Sup. Ct. 1275, 32 L. ed. 207. But this is not a case of that character. * * *

The description in a specification or drawing of details which are not, and are not claimed as, essential elements of a combination, is the mere pointing out of the better method of using the invention. City of Boston v. Allen, 91 Fed. 248, 249, 33 C. C. A. 485, 486. A reference in a claim to a letter or figure used in the drawing and in the specification to describe a device or an element of a combination does not limit the claim to the specific form of that element there shown, unless that particular form was essential to, or embodied the principle of, the improvement claimed. Sprinkler Co. v. Koehler, 82 Fed. 428, 431, 27 C. C. A. 200, 203, 54 U. S. App. 267, 272; McCormick

Harvesting Mach. Co. v. Aultman, Miller & Co., 69 Fed. 371, 393, 16 C. C. A. 259, 281, 37 U. S. App. 299, 343; Muller v. Tool Co., 77 Fed. 621, 23 C. C. A. 357, 47 U. S. App. 189; Delemater v. Heath, 58 Fed. 414, 424, 7 C. C. A. 279, 284, 20 U. S. App. 14, 30; Reed v. Chase, (C. C.) 25 Fed. 94, 100; Walk. Pat. (3d. ed.) § 117a. That interpretation which sustains and vitalizes the grant should be preferred to that which strikes down and paralyzes it. Reece Button-Hole Mach. Co. v. Globe Button-Hole Mach. Co., 61 Fed. 958, 962, 10 C. C. A. 194, 198, 21 U. S. App. 244, 363; Consolidated Fastener Co. v. Columbian Fastener Co., (C. C.) 79 Fed. 795, 798; American Street Car Advertising Co. v. Newton St. Ry. Co., (C. C.) 82 Fed. 732, 736; McSherry Mfg. Co. v. Dowagiac Mfg. Co., 41 C. C. A. 627, 101 Fed. 716, 722. One who appropriates a new and valuable patented combination cannot escape infringement by uniting or operating its elements by means of common mechanical devices which differ from those which are pointed out for that purpose, but which are not claimed in the patent. Deering v. Harvester Works, 155 U. S. 286, 302, 15 Sup. Ct. 118, 39 L. ed. 153; City of Boston v. Allen, 91 Fed. 248, 249, 33 C. C. A. 485, 486; Schroeder v. Brammer, (C. C.) 98 Fed. 880. The application of these principles to the case at bar compels the conclusion that this grant was not limited to the exact geometrical form of the caps shown in the drawing which accompanies it, nor to the specific devices there pointed out for the purpose of fastening the elements of the combination it protects to each other, and leaves no avenue of escape from the conclusion that the appellee is guilty of an infringement of the second claim of the patent. The variation in the form of the caps which the appellee has introduced constitutes no improvement on the patented combination, is an immaterial change in obvious mechanical devices that were neither essential to nor claimed by the patentee, and served only to point unerringly to the reason of its being. The appellee's brake beam still has every element and every attribute of Hien's combination. It was made for the same purpose, and it accomplished the same result by the same means. * * *

The defense to these claims came to this court sustained by letters patent No. 609,396, issued to Francis B. Aglar, on August 23, 1898, and by the established rule that where the chancellor has considered conflicting evidence, and made his finding and conclusion thereon, they must be taken to be presumptively correct, and unless an obvious error has intervened in the application of the law, or some serious mistake has been made in the consideration of the case, the findings and decree should not be disturbed. Mann v. Bank, 86 Fed. 51, 53, 29 C.

C. A. 547, 549, 57 U. S. App. 634, 637; *Tilghman v. Proctor*, 125 U. S. 136, 8 Sup. Ct. 894, 31 L. ed. 664; *Kimberly v. Arms*, 129 U. S. 512, 9 Sup. Ct. 355, 32 L. ed. 764; *Furrer v. Ferris*, 145 U. S. 132, 134, 12 Sup. Ct. 821, 36 L. ed. 649; *Warren v. Burt*, 58 Fed. 101, 106, 7 C. C. A. 105, 110, 12 U. S. App. 591, 600; *Plow Co. v. Carson*, 72 Fed. 387, 383, 18 C. C. A. 606, 607, 36 U. S. App. 448, 456; *Trust Co. v. McClure*, 78 Fed. 209, 210, 24 C. C. A. 64, 65, 49 U. S. App. 43, 46; *Exploration Co. v. Adams*, (C. C. A.) 104 Fed. 404, 408. In the consideration and decision of the issues of law and fact here involved, these presumptions have neither been overlooked nor disregarded. But the state of the art of constructing brake beams in 1887, when the first patent to Hien was issued, the proceedings in the patent office, the terms of the patent, the peculiar combination of devices it secures, the obvious value and usefulness of the invention, and the plain appropriation of it by the appellee, have swept these presumptions away, and forced our minds inexorably to the conclusion that no mechanical equivalent of the combination of Hien's first patent is found in the prior art, and that the appellee's brake beam is such an equivalent. * * *

Moreover, its brake beam lacks the specific lugs and notches described in claims 3, 4 and 5 of patent No. 480,194, and for these reasons its use is not an infringement of any of the five claims of this patent under consideration. The absence from a device that is alleged to infringe a patented combination of a single element of that combination is fatal to the claim of infringement. *Adams Electric R. Co. v. Lindell R. Co.*, 77 Fed. 432, 451, 23 C. C. A. 223, 242, 40 U. S. App. 482, 515. * * *

There are some mechanical devices so obvious and appropriate for the performance of their accustomed functions that the common knowledge and experience of those unskilled in mechanics, to say nothing of those learned in the art, at once suggests their use when the results which they customarily attain are desired. Projections or lugs on approaching jaws or flanges, for the purpose of limiting their closing, are surely among these contrivances. The moment the want of this limitation is felt, projections on the jaws or flanges naturally occur to those unskilled, as well as to those skilled, in the art, as the most obvious and appropriate means to fill the want. There can be neither discovery nor invention in applying a remedy so plain to, or in combining a contrivance so obvious with, an old mechanical device which needs it. There was, therefore, no invention in interposing the inwardly projecting lugs between the flanges of this clamp, or in combining them with the old elements of that device, to limit the closing of the flanges, in order that they might not bind the chain, and that the yoke and

bolt might grip the beam with a spring clamp; and for this reason the second claim of patent No. 430,755 is void for want of patentable novelty. *Hollister v. Manufacturing Co.*, 113 U. S. 59, 72, 73, 5 Sup. Ct. 717, 28 L. ed. 901; *Manufacturing Co. v. Mellon*, 58 Fed. 705, 7 C. C. A. 439, 19 U. S. App. 239.

The discussion of the numerous issues presented in these suits is now completed. In accordance with the conclusions which have already been announced, the decree in *Chicago Railway Equipment Company v. Interchangeable Brake-Beam Company* must be affirmed, and the decree in *National Hollow Brake-Beam Company and Chicago Railway Equipment Company v. Interchangeable Brake-Beam Company* must be reversed, and that suit must be remanded to the court below, with directions to enter a decree in favor of the appellants and against the *Interchangeable Brake-Beam Company* for an infringement of the second claim of letters patent No. 361,009, and for the usual injunction and accounting, and to take such further proceedings in that suit as shall not be inconsistent with the views expressed in this opinion; and it is so ordered.

430. *HARDINGE CONICAL MILL CO. v. ABBE ENGINEERING CO.*, 195 Fed. 936, (C. C. A.) (1912, Second Circuit. Patent No. 908,861).

* * *

Before Lacombe, Coxe, and Noyes, Circuit Judges.

Lacombe, Circuit Judge (after stating the facts as above):

(1) The patent sued upon is No. 908,861, issued January 5, 1909, to H. W. Hardinge for apparatus for disintegrating ores and other materials. The material to be reduced is placed in a revolving cone-shaped tumbling barrel which is rotated around its axis. The patentee states that when lumps or pieces of ore are thus rotated, the larger pieces remain in the part of the barrel having the greatest diameter, while the smaller pieces are pushed towards the apex; the result being the arranging of the pieces or bodies in the barrel according to size, and the pieces being successively smaller toward the outlet opening, which is at the apex. The advantages of such an arrangement, in facility of disintegration and economy of power, are pointed out. The patentee states that metal or flint balls may be used to effect disintegration of the ore, or this may be accomplished by the lumps of ore themselves.

Complainant put the patent in evidence and also introduced a stipulation accompanied with a blueprint and some correspondence all showing quite clearly what the defendant's apparatus is. It called no expert and rested its case.

(2) The defendant, although the answer had set up an extensive prior art, put in no testimony whatever: it did not even