

NEW VIABILITY IN THE DOCTRINE OF ANALOGOUS ART

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BACKGROUND

To be judged patentable, an invention must be new, [n.1] useful [n.2] and unobvious. [n.3] When considering whether a patent claim is obvious, a trier of fact will determine the scope and content of the prior art. [n.4] An inventor is charged with "full knowledge . . . of the prior art in the field of his endeavor . . . and knowledge from those arts reasonably pertinent to his particular problem." [n.5] Consequently, cited references from analogous arts will be considered in determining whether an asserted claim is obvious. [n.6]

However, not all art is considered in making a determination of obviousness. The doctrine of analogous art may be used to demonstrate that prior art relates to an entirely different field. [n.7] Under those circumstances, an inventor cannot be charged with that field's knowledge, and may overcome an assertion that the subject matter of the patent claim is obvious, and hence, unpatentable. [n.8]

Technically, all public knowledge, by definition, is available to an inventor. [n.9] The doctrine of analogous art is a doctrine wherein it is recognized that to expect a party to be aware of every teaching in every art is unrealistic. [n.10] It is an attempt to readjust an obviousness analysis to reflect that reality. The relevance of certain prior art is not denied; for public policy reasons, an inventor is just not charged with certain knowledge.

The doctrine of analogous art was introduced by the United States Supreme Court in 1895. [n.11] In *Potts* the Court stated that "if the relations between two uses is remote, and especially if the use of old devices produced a new result, it may at least involve an exercise of inventive faculty." [n.12]

Further refinement of the doctrinal test was made by the Court in the *Calmar* decision under *Graham v. John Deere*. [n.13] At issue was a claim to a pump sprayer used with insecticide bottles. [n.14] It was contended that a reference relating to a pouring spout did not render the claim obvious. [n.15] As in *Potts*, the fields of the inventor and the cited reference were defined in order to determine their relative proximity. [n.16] The insecticide bottle was not categorized as belonging to the insecticide field. Rather, the Court found the bottle to be properly classified as mechanical closure art. [n.17]

The Calmar inquiry went beyond the Potts analogous field analysis by explicitly considering whether the cited art addressed the problem the inventor sought to solve. [n.18] Under this evaluation it was found that pouring spouts addressed the same problems as insecticide spray mechanisms. [n.19]

Characterizing analogous art involves a fact specific determination [n.20] that is by definition, somewhat subjective. [n.21] As in Calmar, the courts have tended to define what comprises analogous art in a very broad manner. [n.22] Decisions subsequent to Calmar expressed its principles in various ways. Some were made on the basis of whether references were reasonably pertinent to the inventor's problem. [n.23] Others discussed similarity of elements, problems and purposes, [n.24] or similarities and differences in structure and function. [n.25] Still others reached their result on the basis of what was deemed the "invention as a whole." [n.26] All cases shared the common thread of emphasizing the problem the inventor addressed.

In re Wood [n.27] set forth the current formulation of the test that is used to determine if art may be considered analogous. The Wood decision applied a two-part inquiry in making a decision as to whether a reference is analogous art; (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. [n.28]

RECENT CASES

In summary, a court must first define the inventor's field of endeavor. Full knowledge by the inventor of all prior art in the field of his endeavor is presumed. [n.29] If the reference falls within this defined field, the reference is analogous. If not, a court must then define the problem that the inventor addressed. A reference is reasonably pertinent to the problem the invention attempts to solve if both the inventor and the cited reference have the same aim. [n.30]

The courts have rather consistently adopted the test set forth in Wood. [n.31] Under it, the courts have continued the broad analogous art approach of Calmar. [n.32] Between 1979 and 1992, virtually every utility patent claim examined by those courts has been found to be analogous under that test. [n.33] Some practitioners have come to consider an assertion of analogous art to be a virtually insurmountable obstacle in any attempt to prove unobviousness. [n.34]

The year 1992 brought the first intimation of viability of the doctrine of analogous art. The courts were beginning to define the field of the inventor's endeavor, and the problem the inventor sought to overcome, in a narrower manner. The case of *Stoller v. Ford Motor Co.* [n.35] gave the first suggestion of change. In *Stoller*, the patent owners brought suit against Ford for infringement of their patent for a seat headrest. [n.36] *Stoller's* headrest

consisted of a pillow that could be manipulated and then held in a given position by frictional force. This was accomplished by frictionally and pivotally connecting an elongated rigid member to the interior of the headrest pillow by means of a hinge. [n.37] Ford cited a combination of six prior art references under which it maintained that the Stoller patent would have been obvious to one of ordinary skill in the art, and requested summary judgment. [n.38] Stoller contended that some references were from non-analogous art, and hence did not render the invention obvious. [n.39]

The Rising and Terracini references described headrests specifically directed at automobiles. Rising disclosed a vertical member within a channel which could be offset to frictionally lock a headrest in a raised or lowered position. [n.40] The Terracini headrest could also be raised and lowered vertically, by means of a rod/sleeve device, with its position maintained by means of screw/nut combination. [n.41] The McDonald reference alluded to a headrest with application in either an automobile or an airplane. Positioning in McDonald was accomplished by a frictional pivot comprising spring washers in conjunction with a nut and bolt combination. [n.42] The Golden and Johnson references disclosed headrests with application in dental and surgical chair art. The Golden headrest was adjusted by means of a clamp to engage or disengage a tubular shaft on which the headrest was positioned. [n.43] Johnson employed a frictional device for positioning of the headrest that consisted of either a spring biased round member or a rubber U-shaped member. [n.44] The Gagnier reference disclosed an automobile sun and glare shield which was rotated through the use of a frictional hinge. [n.45]

The District Court saw Stoller's problem as developing a headrest that could be rotated solely by manipulating the pillow, yet would remain in position during use. Stoller had defined his field as a headrest that could be adapted for positioning above a seat. The District Court noted Stoller had not limited his claim to that of automobile headrests. [n.46]

Applying the first step of the test enunciated in Wood, the District Court adopted Stoller's definition of his field. Under this definition, it found Johnson, McDonald, and Rising to be clearly within Stoller's field of invention. [n.47]

Golden and Terracini did not employ frictional devices for positioning of headrests, however, they were found to be pertinent, if not actually within Stoller's field. Stoller was estopped from attacking the relevance of Terracini and Golden. During prosecution, Terracini was cited by the Examiner. Stoller did not object to its relevance to his field of endeavor. Likewise, when the Examiner cited Dorton, which, like Golden dealt with an adjustable chair, Stoller again did not argue that it was not analogous art. Terracini and Golden were therefore found to be pertinent art. [n.48]

Since Gagnier dealt with a sun visor, it was not found to be within the field of headrests. [n.49] Further inquiry was made under the second step of the Wood test. The District Court found that a question of material fact existed as to whether a person skilled in headrest art would look to a rotatable sun visor to solve the problem of rotatable headrests, [n.50] and therefore denied Ford's motion for summary judgment. [n.51]

Stoller is of interest for the court's narrow definition of the inventor's field and problem. The court could have viewed both headrests and sun visors as objects requiring positioning, or as being relatively close arts within the field of automobile engineering. The *In re Warner* [n.52] court found pencils used for writing to be analogous to a cosmetic stick applicator. [n.53] The fields of cosmetic art and writing art were deemed to be contained within the larger field of pencil art. The court there stated that those of ordinary skill in cosmetic pencil art would be aware of, and reasonably turn to, writing art. [n.54] Under this view, the Gagnier reference would have been found analogous. This suggested construction would have been more in keeping with prior decisions.

Under the second step of the Wood test, the inventor's problem was defined to be rotatable headrests, rather than frictional pivoting and positioning of an object. Both the Stoller and Gagnier patents made use of friction hinges to position an element by manual manipulation of that element. In comparison, in *Tapco Products Company v. VanMark Products Corporation*, [n.55] a piano hinge of a blacksmith's jig was found to be analogous to a flat-topped hinge of a machine that bends sheet metal. [n.56] Had the problem in Stoller been defined in the broad manner of Tapco, [n.57] no question of fact would have been presented as to the relevance of the Gagnier reference, and Ford's summary judgment motion would have been granted. The narrow construction of Stoller's problem, was a departure from previous cases, and created a question of fact where none formerly would have existed.

In re Clay, [n.58] heard by the Federal Circuit later that year, served to affirm that Stoller was not necessarily an isolated decision made by the District Court, but was indicative of a changing philosophy regarding the scope of what constituted analogous art. Clay presented a similar departure from past decisions, evidencing a shift from past broad constructions of inventor's fields and problems.

Clay's invention was a process for storing refined liquid hydrocarbon product in a storage tank having a dead volume between the tank bottom and the outlet port. This was accomplished by filling the dead volume space with a gelation solution which gelled after placement, and which, when in place, did not contaminate the hydrocarbon product. [n.59] The examiner rejected Clay's claims as unobvious over a combination of two references; Hetherington and Sydansk. [n.60] The Hetherington reference disclosed a method of displacing dead space liquid by use of impervious bladders. [n.61] The Sydansk reference employed a gel similar to that of Clay. It was used to reduce the permeability of hydrocarbon-bearing formations by filling the anomalies in those formations, resulting in improved oil production. [n.62]

The Board affirmed the Examiner's determination, finding that while neither reference alone would describe Clay's invention, the combination of them rendered it obvious over the prior art. Hetherington taught the filling of dead space with mass. Sydansk taught that the gel in question would be impervious to hydrocarbons once it gelled. Further, the Board found the anomalies filled by Sydansk were similar enough to the dead space being filled by Hetherington so as to suggest combining the references. [n.63]

Clay argued that Sydansk was non-analogous art. The Federal Circuit applied the Wood test to determine if the Sydansk reference could properly be considered. It rejected the PTO's broad interpretation of the field of both Sydansk and Clay being that of the petroleum industry, and instead found that Clay's field was the storage of liquid hydrocarbons, while that of Sydansk was petroleum extraction. [n.64]

Since the Sydansk reference was not within Clay's field of endeavor, further inquiry was made under the second step of the Wood test. The Federal Circuit did not find the Sydansk reference to be reasonably pertinent to the problem Clay sought to resolve. It reasoned that Clay sought to effect the displacement of liquid product from the dead volume of a storage tank. Sydansk, in contrast, was concerned with filling a geologic anomaly so as to improve petroleum flow. Further, it found that the structures in each that were to be filled by the gel were not similar, one being porous rock and the other being the bottom of a storage tank. Likewise, the process in each operated at markedly different temperatures and pressures. Accordingly, the CAFC reversed the Board's decision. [n.65]

As in Stoller, the inventor's field of endeavor and the inventor's problem were construed more narrowly than in prior cases. While both oil production and hydrocarbon storage are both within the broader petroleum field, the CAFC characterized them as entirely separate fields. Previously, in *Revlon, Inc. v. Carson Products Co.*, [n.66] the CAFC found dehairing of animal hides and human hair treatments to be within the same field of endeavor. [n.67] If the Revlon court had employed the reasoning of both Stoller and Clay, those fields, although related, would not have necessarily been found to be analogous. [n.68]

Similarly, the problems faced by Clay and Sydansk were distinguished. Alternatively, the CAFC could have adopted the Board's broad definition, as both inventions dealt with filling voids, albeit of different types and under differing conditions. The case of *In re Heldt* [n.69] had affirmed a Board decision that a reinforcing structure directed to a sewage disposal system was analogous to an elongated tube placed in a golf club bag. It found the problem in both the claim and the cited reference to be thin walled tubes subject to impact. [n.70] It cannot be argued that the tubes in each application would not be utilized under disparate applications and operating conditions. [n.71]

Both Stoller and Clay represent claims that would have been rejected under the broader construction of analogous art employed prior to 1992. By narrowing the scope of the art considered, Clay's claims were allowed and the validity of Stoller's claims created a sufficient question of fact so as to deny Ford its motion for summary judgment.

The CAFC also heard two cases in 1992 where the results were predicated solely on the second step of the Wood test. Under past analysis, rejection of claims in both instances would have been affirmed on the basis of Wood's first step; being in the same field as the cited references. These cases serve as further indication of a new propensity towards limiting what is defined as the inventor's field of endeavor.

In re Bolduc [n.72] was an appeal of a decision of the Board affirming an Examiner rejection of Bolduc's claims as unobvious over the prior art. The invention at issue was a means by which two chemical compounds could be maintained separately in an aerosol dispensing device until just prior to use. Bolduc's container was filled with one compound; a second compound was placed in an ampule, and held in place at the bottom of the container by a rod which was attached to the container's valve. When the valve actuator was depressed, the rod crushed the ampule and released its contents.

The Examiner cited two references against Bolduc's invention; Cronan and Bellocchio. The Cronan patent disclosed a container with a breakable ampule. In contrast to Bolduc, the ampule in Cronan was held against the wall of the container. Further, rather than breaking the ampule by crushing, the Cronan container held a weight which broke the ampule when the container was shaken, thereby mixing the two compounds. The Bellocchio patent disclosed a fire extinguisher. The extinguisher also contained two compounds, kept separated prior to use by encapsulating one in an ampule. The ampule was located at the end of a rigid dip tube, and was broken by it when the actuator was depressed. The Board affirmed the Examiner's rejection, finding it would have been obvious to combine the teachings of the two cited references.

The CAFC, directed its inquiry as to whether the Bellocchio reference could be considered analogous art. Under the first step of the Wood test, it defined Bolduc's field of endeavor as being aerosol preparations, which are by definition pressurized. Despite the Board's contentions to the contrary, the CAFC found the Bellocchio fire extinguisher did not fit into this category prior to being activated. It next inquired under the second step of the Wood test as to whether the Bellocchio reference was reasonably pertinent to the problem faced by Bolduc, and found that it was, as both inventions involved keeping two compounds separated until just prior to use.

The Board's characterization of the Bellocchio reference as an aerosol preparation, would have been more in keeping with prior interpretation by the CAFC of what constituted an inventor's field. As an example, in In re Reuter, [n.73] the court found parachutes to be within the field of endeavor of self-inflating flexible gliding wings. [n.74] Both were airfoils used for different purposes, yet both behaved in the same manner when actuated. [n.75] The Bellocchio extinguisher, when activated, was clearly a preparation of the same genus as that of Bolduc. [n.76]

While the CAFC ultimately did characterize the Bellocchio reference as reasonably pertinent to Bolduc's problem, the point to be noted in this case is the narrow interpretation of the inventor's field. Had the court followed the analysis of its prior cases, the Bellocchio reference would have been found to be within the scope of the prior art under the first step of the Wood test, ending further inquiry.

In re Nettel [n.77] was analyzed in a similar manner. Nettel's invention was plastic cleanout extension adaptor that was inserted in the end of a plastic sewer pipe to mount flush with the surrounding surface of a cement floor or wall construction. The Examiner had rejected the Nettel claims as obvious over Terry in view of Pannella. The Terry

patent involved an electrical outlet box structure. A portion of the box was set to extend above floor level, and then cut flush to floor level after the concrete floor was poured. A receptacle holder could then be inserted so as to be flush with the floor. The Panella patent disclosed a cleanout plug assembly which could be inserted into a sewer cleanout pipe for closing and sealing the pipe. The Board affirmed the Examiner's rejection. Nettel argued that Terry was not analogous art in that a plumber was not likely to apply the teachings of an electrician's art to his own problem.

The CAFC focused on the problem confronting Nettel and applied the second step of the Wood test; whether the prior art was reasonably pertinent to the problem being addressed by the inventor. The CAFC affirmed the Board's finding that the problem of placing conduit within a concrete slab and providing access to it was common to both the electrical and plumbing fields of endeavor. Conventional installations in both fields necessitated breaking out the floor surface around the end of the extension once the floor was in place. It found the teaching of Terry was therefore analogous and properly combined with Panella.

Nettel appears to be the only case decided by CAFC in 1992 where the prior art was found to be analogous. This result was reached under the second step of the Wood test. Yet, the field, rather than the problem, could have been defined as conduit installation, ending the analysis at that point. This broad definition would have encompassed all building art with involvement in that endeavor. Support for this contention can be found in *ITT Corporation v. United States*. [n.78] There, the court found fiber optics and electrical technology to be within the same art because of the similarities between the fields. [n.79] The connectors in question, used in both fields, were analogous because differing end use did not negate the point that the installations were alike. [n.80]

Both Nettel and Bolduc demonstrated that the CAFC's recent reluctance to unduly broaden a patentee's field would not result in removing public knowledge from the public domain. Rather, the second step of the Wood test, even when applied to a narrow definition of the problem, serves as a check on the first step. The two steps used in tandem assure the competing policies underlying patent grants will both be served. An inventor's field of endeavor need not be defined in an excessively broad manner in order to prevent the monopolization of public information. Likewise, by employing more reasonable definitions of field and problem, assurance is given that protection for true innovation is available. This will encourage would be inventors to invest the necessary time and resources into their undertakings.

Wood expressed the rationale behind the rule of non-analogous art as being "the realization that an inventor could not possibly be aware of every teaching in every art." [n.81] *In re Oetiker* [n.82] expressed the thought that common sense was necessary in deciding what fields would be looked to in searching for a solution to a problem. Oetiker's invention was for an improvement to a metal clamp by addition of a preassembly hook. The hook served two purposes; it maintained the preassembly condition of the clamp, and it disengaged automatically when the clamp was tightened. Oetiker already held an earlier patent on the metal clamp itself. [n.83]

The application was rejected by the Examiner as being obvious over Oetiker's earlier patent in view of the Lauro patent. The Lauro patent disclosed a plastic hook and eye fastener for use in garments. The Lauro fasteners were affixable to clothing by sewing. The Examiner felt that as garments usually use hooks, "a person faced with the problem of unreliable maintenance of the pre- assembly configuration of an assembly line metal hose clamp would look to the garment industry art." [n.84] Oetiker contended that Lauro was non- analogous art and there was no suggestion to combine the teachings of the two patents. Further, Oetiker argued that a person of ordinary skill in his field would not look to garment art for a solution. [n.85]

The Board affirmed the rejection, without adopting the reasoning of the Examiner, stating that both the Lauro patent and Oetiker's claim related to hooking problems, and that a disengageable catch is an "everyday mechanical concept." [n.86] No other references were cited to support this argument. [n.87] Finding that the Board could not justify its holding, the CAFC reversed. [n.88]

In applying the second step of the Wood test to the issue at hand, the CAFC noted the subjective aspects of the determination of whether an inventor would inquire into another given field, and stated that this determination must be realistic. [n.89] Garment art was clearly not within the applicant's field of endeavor, yet the problem could have been construed to be analogous. Instead, the CAFC noted there was no realistic motivation for the inventor to look to garment art for a solution to the problem. [n.90]

The courts have, in the past, found solutions to problems in widely disparate fields to be analogous. As far back as 1889, the Supreme Court found a patent for opening and closing gates on a railroad car to have been anticipated by similar devices in the arts of venetian blinds and transoms. [n.91] The second step of the Wood test charges an inventor with "knowledge from those arts reasonably pertinent to the particular problem with which the inventor was involved." [n.92] Previously, this has been treated as an objective awareness. [n.93] An inventor was deemed to have knowledge of related art whether or not he or she was actually cognizant of its existence or relevance. Oetiker may signify that when applying the reasonableness requirement of Wood, the approach will be tempered with, as the Oetiker court stated, "common sense," and by recognition that an inventor could not possibly be aware of all of the enormous amount of information that is theoretically available, even if it is pertinent to the problem.

The doctrine of analogous art applies to design patents as well as utility patents. [n.94] However, a different standard is used to determine whether cited art is analogous. The inquiry does not address the utility of the article, but whether the appearance or shape of certain ornamental features in one article would suggest the application of those features to another. [n.95]

Ex parte Pappas [n.96] dealt with an Examiner rejection of a design patent. The Pappas claim consisted of an ornamental design for a feed bunk where there were inclined corners at the junctures between the interior and vertical side surfaces and the interior flat

bottom surface of the bunk. The structure was of a type where "one upstanding leg is generally perpendicular to a base portion to define a corner configuration between the leg and the base portion." [n.97] The Examiner rejected the claim as obvious over the Lien patent in view of the Architectural Handbook. The Lien patent did not incorporate inclined corners, but these were illustrated in the Architectural Handbook.

Pappas argued that the Architectural Handbook was not analogous art. The Board applied the Glavas test and found, in view of the broadness of Pappas' claim, structures of the type shown in the Handbook were analogous. The Board therefore sustained the Examiner's rejection. [n.98]

The Pappas result was consistent in its analysis with prior decisions regarding design patents. [n.99] However, this is not dispositive of any general tendency towards a return to broader analysis. Even in 1992, the Board had consistently defined analogous utility art broadly. Any indications of change were at the Federal Circuit level.

It is difficult to predict if and how the CAFC will adjust its appraisal of design art solely on the basis of its recent decisions regarding utility art. Different standards apply to the two areas. In design patents, where the issue pertains only to appearance, narrowing of analogous art categories will probably have no impact. This is because where no question of utility is involved, all objects with similar appearance are "reasonably pertinent" to the problem. [n.100]

Where the question is one of form, references from other fields may involve "material modifications of the basic form of one article in view of another." [n.101] Thus, whether there was access to other references becomes an issue. It is probable that the recognition implicitly expressed regarding utility art, that an inventor does not necessarily have access to all information, will be applied in design art, rendering the court more amenable to narrowing the breadth of references it considers in the design form area.

FUTURE TRENDS

Encouragement of inventiveness was one of the founding principles of the United States. Article I, § 8, cl. 8 of the Constitution empowers Congress "To promote the Progress of Science and the useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries." By offering the incentive of a monopoly to an inventor, the framers of the Constitution sought to stimulate scientific progress for the general benefit of all.

To be balanced against this aim is the potentiality that through misapplication of the patent system, a monopoly could be secured on knowledge already in the public domain. Decreasing collective public wisdom would be in direct contravention of the policies underlying the granting of patents.

While Congress determines what constitutes patentable matter, it is the courts that apply judicially created standards to determine whether or not a claim falls within congressionally mandated parameters of patentability. Whether a claim is obvious, and hence unpatentable, turns upon the court- defined scope of the prior art. Too broad a reading of what constitutes analogous art discourages invention. Too narrow a reading creates the risk of awarding monopoly rights to public matter. A reasonable balance must be struck between the two ends of the spectrum.

The intention of the doctrine of analogous art is to reflect the realities of circumstances, and to limit citing of references to those to which the inventor would have reasonably had access. Yet the courts have traditionally tended to construe analogous matter in a broad manner. Broad construction tends to ignore the situation that in an age where vast stores of information are available, an inventor may theoretically, but not literally have access to art that is germane to his field or problem.

The CAFC has recently demonstrated a willingness to take a more pragmatic approach in its evaluation of what constitutes analogous art. Cases decided in 1992 all indicate a shifting in the balance between policies in favor of the patent owner. In a sense, this shift also serves the public. A tendency to read analogous art broadly would discourage the investment of time and resources into experimentation that leads to innovation. Without experimentation, even if information is theoretically available in one art, it is possible its application in another field may never come to fruition. By somewhat narrowing the field of art considered in determining obviousness, the courts promote the underlying intent of the patent system.

In the past, it may have been questioned whether non-analogous art was indeed a viable doctrine. The 1992 decisions finally answer that question in the affirmative.

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[n.1]. 35 U.S.C.A. § 101 (West 1984).

[n.2]. Id.

[n.3]. 35 U.S.C.A. § 103 (West 1984).

[n.4]. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The Graham court cited other factors in determining obviousness: differences between the prior art and the claims at issue, the level of ordinary skill in the pertinent art, commercial success, long felt but unsolved needs, and failure of others. Id. at 17.

[n.5]. In re Antle, 444 F.2d 1168, 1171-72, 170 U.S.P.Q. 285, 287-88 (C.C.P.A. 1971).

[n.6]. See e.g., I.U. Technology Corp. v. Research-Cottrell, Inc., 641 F.2d 298, 304, 209 U.S.P.Q. 545, 551 (5th Cir.1981) (references from cement chemistry art considered in determining obviousness of invention relating to scrubber sludge waste disposal art).

[n.7]. See Ronald B. Hildreth, Patent Law: A Practitioner's Guide 96 (1988).

[n.8]. See In re Pagliaro, 657 F.2d 1219, 1224-25, 210 U.S.P.Q. 888, 892 (C.C.P.A. 1981) (cited reference not considered as it did not relate to the inventor's problem or field of endeavor).

[n.9]. See Geo. J. Meyer Mfg. Co. v. San Marino Elec. Corp., 422 F.2d 1285, 1288, 165 U.S.P.Q. 23, 25-26 (9th Cir.1970) (reasoning existence of modern overlapping fields requires broad interpretation of what constitutes available knowledge).

[n.10]. Union Carbide Corp. v. American Can Co., 724 F.2d 1567, 1572, 220 U.S.P.Q. 584, 588 (Fed.Cir.1984); In re Pagliaro, 657 F.2d 1219, 1224, 210 U.S.P.Q. 888, 892 (C.C.P.A. 1981); In re Wood, 599 F.2d 1032, 1036, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979).

[n.11]. See Potts v. Craeger, 155 U.S. 597, 602-03 (1895) (holding revolving cylinder used for disintegration was not analogous to cylinders used for crushing or grinding).

[n.12]. Id. at 608.

[n.13]. 383 U.S. 1, 26 (1966).

[n.14]. Graham, 383 U.S. at 26.

[n.15]. Id. at 35.

[n.16]. Id.

[n.17]. Id.

[n.18]. Id.

[n.19]. Graham, 383 U.S. at 35 ("Closure devices in such a closely related art and pouring spouts for liquid containers are at the very least pertinent references.").

[n.20]. Graham, 383 U.S. at 17 ("The § 103 condition . . . lends itself to several basic factual inquiries.").

[n.21]. Graham, 383 U.S. at 18 ("What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context.").

[n.22]. See *Twin Disc, Inc. v. United States*, 10 Cl.Ct. 713, 733, 231 U.S.P.Q. 417, 427 (1986) ("The trend is clearly to widen the scope of the prior art that can be considered relevant."); *Geo. J. Meyer Mfg. Co. v. San Marino Elec. Corp.*, 422 F.2d 1285, 1288, 165 U.S.P.Q. 23, 26 (9th Cir.1970) ("Questions arising in a particular industry [may be] answered . . . by those trained in scientific fields having no necessary relationship to the particular industry."); *Gerner v. Moog Indus., Inc.*, 383 F.2d 56, 59, 155 U.S.P.Q. 232, 234 (8th Cir.1967) ("prior art . . . includes earlier devices whether or not in related areas to patented device"), cert. denied, 390 U.S. 922 (1968).

[n.23]. See *Burland v. Trippe Mfg. Co.*, 543 F.2d 588, 593, 191 U.S.P.Q. 667, 670-71 (7th Cir.1976) (references from other fields relating to fastening devices are reasonably pertinent to vehicle mountings); *In re Way*, 514 F.2d 1057, 1061, 185 U.S.P.Q. 580, 584 (C.C.P.A. 1975) (forging of welding rods not reasonably pertinent to forging of piercer points for metal working apparatus); *In re Ellis*, 476 F.2d 1370, 1372, 177 U.S.P.Q. 526, 527 (C.C.P.A. 1973) (non-clogging shoe scrapers are reasonably pertinent to floor gratings).

[n.24]. See *Skega Aktiebolag v. B.F. Goodrich Co.*, 420 F.2d 1358, 1359, 164 U.S.P.Q. 333, 334 (6th Cir.1970) (a similarity of elements, problems and purposes between securing rubber tires to metal rims and securing lifting means to ball mill shells), cert. denied, 400 U.S. 825 (1970); *Aerotec Indus. of Cal. v. Pacific Scientific Co.*, 381 F.2d 795, 802, 155 U.S.P.Q. 52, 57 (9th Cir.1967) (a similarity of elements and purposes

between vehicle shoulder harnesses and trolley catchers), cert. denied, 389 U.S. 1049 (1968).

[n.25]. See *Continental Oil Co. v. Cole*, 634 F.2d 188, 193, 209 U.S.P.Q. 361, 365 (5th Cir.1981) (discerning dissimilarities is as important as noting similarities), cert. denied, 454 U.S. 830 (1981); *Stevenson v. International Trade Comm'n*, 612 F.2d 546, 550, 204 U.S.P.Q. 276, 280 (C.C.P.A. 1979) (similarities and differences in structure and function must be considered); *In re Ellis*, 476 F.2d 1370, 1372, 177 U.S.P.Q. 526, 527 (C.C.P.A. 1973) (similarities in structure and function carry far greater weight than Patent Office classifications).

[n.26]. See *In re Van Wanderham*, 378 F.2d 981, 988, 154 U.S.P.Q. 20, 25 (C.C.P.A. 1967) (invention was flow system, not means of quenching steel); *In re Grout*, 377 F.2d 1019, 1021, 153 U.S.P.Q. 742, 744 (C.C.P.A. 1967) (invention was fastening means, and not honeycomb foundation supporting means for beekeepers).

[n.27]. 599 F.2d 1032, 202 U.S.P.Q. 171 (C.C.P.A. 1979).

[n.28]. *Id.* at 1036, 202 U.S.P.Q. at 174.

[n.29]. *In re Antle*, 444 F.2d 1168, 1171-72, 170 U.S.P.Q. 285, 287-88 (C.C.P.A. 1971).

[n.30]. See *Finish Eng'g Co., Inc. v. Zerpa Indus., Inc.*, 806 F.2d 1041, 1043-44, 1 U.S.P.Q.2d 1114, 1116 (Fed.Cir.1986) (genuine issue of material fact as to whether batch distillation art is reasonably pertinent to lined tank art); *Revlon, Inc. v. Carson Products Co.*, 803 F.2d 676, 678, 231 U.S.P.Q. 472, 473 (Fed.Cir.1986) (reference relating to dehairing animal hides pertinent to human hair treatment), cert. denied, 479 U.S. 1018 (1986); *In re Deminski*, 796 F.2d 436, 442, 230 U.S.P.Q. 313, 315 (Fed.Cir.1986) (claim and cited reference do not both address the problem of removing valves from compressors); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 U.S.P.Q. 871, 876 (Fed.Cir.1983) (cited reference and claim both address problems of electrostatic buildup and leakage).

[n.31]. See *Jurgens v. McKasy*, 927 F.2d 1552, 1558, 18 U.S.P.Q.2d 1031, 1036 (Fed.Cir.1991) ("[N]onobviousness is a conclusion of law based upon the factual underpinning stated in *Graham* . . ."), cert. denied, 112 S.Ct. 281 (1991); *In re Deminski*, 796 F.2d 436, 442, 230 U.S.P.Q. 313, 315 (Fed.Cir.1986) (stating determination of obviousness is made under the two-step test enunciated in *Wood*); *Shelcore, Inc. v. Durham Indus., Inc.*, 745 F.2d 621, 625, 223 U.S.P.Q. 584, 587 (Fed.Cir.1984)

(reasoning child safety seat addressed the same problem as driving simulator toy and was therefore analogous); *Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 1572, 220 U.S.P.Q. 584, 588 (Fed.Cir.1984) (stating standard for determining obviousness required determination of whether similar problem addressed in both claim and reference); *In re Keller*, 642 F.2d 413, 425, 208 U.S.P.Q. 871, 881, (C.C.P.A. 1981) (finding pacemaker used for study of mammalian hearts analogous to therapeutic pacemaker for human hearts as both addressed same problem); *I.U. Technology Corp. v. Research-Cottrell, Inc.*, 641 F.2d 298, 305, 209 U.S.P.Q. 545, 552 (5th Cir.1981) (holding cement chemistry art addressed same problem as stabilizing fly ash and scrubber sludge in cementitious composition and was therefore analogous).

[n.32]. See *Chisum*, 2 Patents § 5.03[1] (1991) ("The Supreme Court cases since *Potts* . . . indicate a clear trend to expand the area of analogous art that must be considered prior art.").

[n.33]. See *Revlon v. Carson Prods. Co.*, 803 F.2d 676, 678, 231 U.S.P.Q. 472, 473 (Fed.Cir.1986) (dehairing animal hides analogous to human hair treatment), cert. denied, 479 U.S. 1018; *In re Sovish*, 769 F.2d 738, 742, 226 U.S.P.Q. 771, 773 (Fed.Cir.1985) (hermetically sealing engine distributor cap analogous to hermetically sealing conduit junction box); *In re Mlot- Fijalkowski*, 676 F.2d 666, 670, 213 U.S.P.Q. 713, 716 (C.C.P.A. 1982) (penetrant system analogous to carbonless copying). But see *Finish Eng'g Co. v. Zerpa Indus.*, 806 F.2d 1041, 1043, 1 U.S.P.Q.2d 1114, 1116 (Fed.Cir.1986) (issue of fact exists as to whether batch distillation art is analogous to lined tank art); *In re Pagliaro*, 657 F.2d 1219, 1224-25, 210 U.S.P.Q. 888, 892 (C.C.P.A. 1981) (cited reference does not address beverage decaffeination); *John Zink Co. v. National Airoil Burner Co., Inc.*, 613 F.2d 547, 553-54, 205 U.S.P.Q. 494, 499-500 (5th Cir.1980) (references relating to smoke control not analogous to smokeless flare stack gas burner).

[n.34]. See *Kayton*, 2 Patent Practice 5-33 (1989) ("[A] non-analogous art attack on the propriety of the rejection is almost always doomed to failure"); Richard G. Berkley, *Some Practical Aspects of Amendment Practice in the Electronic-Mechanical Arts*, 327 *Prac. Law Inst.* 189 (1991) ("[A]rguments that a reference should be discounted because it is 'nonanalogous' art have met with little success, and it is usually not productive to traverse a rejection on that basis.").

[n.35]. 784 F.Supp. 506, 23 U.S.P.Q.2d 1263 (N.D.Ill. 1992).

[n.36]. *Id.* at 508-09, 23 U.S.P.Q.2d at 1264.

[n.37]. *Id.* at 509-10 n.1, 23 U.S.P.Q.2d at 1264 n.1.

[n.38]. Id. at 509, 23 U.S.P.Q.2d at 1265.

[n.39]. Id. at 513, 23 U.S.P.Q.2d at 1269.

[n.40]. Id.

[n.41]. Id. at 514, 23 U.S.P.Q.2d at 1269.

[n.42]. Id. at 513, 23 U.S.P.Q.2d at 1269.

[n.43]. Id. at 513, 23 U.S.P.Q.2d at 1268.

[n.44]. Id.

[n.45]. Id. at 514, 23 U.S.P.Q.2d at 1268.

[n.46]. Id. at 514-15, 23 U.S.P.Q.2d at 1269.

[n.47]. Id. at 514, 23 U.S.P.Q.2d at 1269-70.

[n.48]. Id. at 515, 23 U.S.P.Q.2d at 1270.

[n.49]. Id.

[n.50]. Id.

[n.51]. Id. at 521, 23 U.S.P.Q.2d at 1275.

[n.52]. 379 F.2d 1011, 154 U.S.P.Q. 173 (C.C.P.A.), cert. denied, 389 U.S. 1057 (1968).

[n.53]. Id. at 1014, 154 U.S.P.Q. at 176.

[n.54]. Id. at 1014, 154 U.S.P.Q. at 175-76.

[n.55]. 446 F.2d 420, 170 U.S.P.Q. 550 (6th Cir.1971), cert. denied, 404 U.S. 986 (1971).

[n.56]. Id. at 427, 170 U.S.P.Q. at 555 (finding both belong to "machine designing generally").

[n.57]. See *Koppers Co., Inc. v. S&S Corrugated Paper Mach. Co., Inc.*, 517 F.2d 1182, 1189, 185 U.S.P.Q. 705, 711 (2d Cir.1975) (Bread packing machine and box stacking machine are packing devices in a relatively close art).

[n.58]. 966 F.2d 656, 23 U.S.P.Q.2d 1058 (Fed.Cir.1992).

[n.59]. Id. at 657-58, 23 U.S.P.Q.2d at 1059.

[n.60]. Id. at 658, 23 U.S.P.Q.2d at 1059-60.

[n.61]. Id. at 658, 23 U.S.P.Q.2d at 1060.

[n.62]. Id.

[n.63]. Id.

[n.64]. Id. at 658-59, 23 U.S.P.Q.2d at 1060.

[n.65]. Id. at 659-60, 23 U.S.P.Q.2d at 1061.

[n.66]. 803 F.2d 676, 231 U.S.P.Q. 472 (Fed.Cir.), cert. denied, 479 U.S. 1018 (1986).

[n.67]. *Id.* at 678, 231 U.S.P.Q. at 473.

[n.68]. See *In re Mlot-Fijalkowski*, 676 F.2d 666, 670, 213 U.S.P.Q. 713, 716-17 (C.C.P.A. 1982) (penetrant system for detecting surface discontinuities was analogous to carbonless copy and image producing arts because all were part of underlying dye chemistry art).

[n.69]. 433 F.2d 808, 167 U.S.P.Q. 676 (C.C.P.A. 1970).

[n.70]. *Id.* at 812, 167 U.S.P.Q. at 679.

[n.71]. See *In re Boon*, 439 F.2d 724, 726-27, 169 U.S.P.Q. 231, 233-34 (C.C.P.A. 1971) (stating conveyor system for semi-liquid material analogous to conveyor system for bulky material); *In re Shearman*, 435 F.2d 589, 591-92, 168 U.S.P.Q. 284, 286 (C.C.P.A. 1971) (concluding thermocouple used in petroleum oil application analogous to thermocouple used in conjunction with molten metal furnace as both related to high temperature baths). But see *John Zink Co. v. National Airoil Burner Co., Inc.*, 613 F.2d 547, 552, 205 U.S.P.Q. 494, 498 (5th Cir.1980) (cited references are not analogous because of differing conditions in use). *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 620, 225 U.S.P.Q. 634, 637 (Fed.Cir.1985) (jury finding that sputter coating of glass sheets was not analogous to sputter coating of silicon wafers for electronic uses was not unreasonable), cert. denied, 474 U.S. 976 (1985).

[n.72]. 956 F.2d 1174 (Table) (Fed.Cir.1992) unpublished, text in Westlaw.

[n.73]. 670 F.2d 1015, 210 U.S.P.Q. 249 (C.C.P.A. 1981).

[n.74]. *Id.* at 1020 n.7, 210 U.S.P.Q. at 254 n.7.

[n.75]. *Id.* at 1016, 210 U.S.P.Q. at 251.

[n.76]. See *Cuno Eng. Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 88- 89 (1941) (car cigarette lighter thermostat is analogous to electric toaster thermostat).

[n.77]. 972 F.2d 1354 (Table) (Fed.Cir.1992) unpublished, text in Westlaw.

[n.78]. 10 Cl.Ct. 321 (1986).

[n.79]. Id. at 329.

[n.80]. See *In re Gorman*, 933 F.2d 982, 987, 18 U.S.P.Q.2d 1885, 1889 (Fed.Cir.1991) (ice cream on a stick and candy on a stick were analogous arts).

[n.81]. *In re Wood* 599 F.2d 1032, 1036, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979).

[n.82]. 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed.Cir.1992).

[n.83]. Id. at 1446, 24 U.S.P.Q.2d at 1445.

[n.84]. Id. at 1446, 24 U.S.P.Q.2d at 1445.

[n.85]. Id. at 1446-47, 24 U.S.P.Q.2d at 1445.

[n.86]. Id. at 1446-47, 24 U.S.P.Q.2d at 1445.

[n.87]. Id. at 1446, 24 U.S.P.Q.2d at 1445.

[n.88]. Id. at 1447, 24 U.S.P.Q.2d at 1446.

[n.89]. Id. at 1447, 24 U.S.P.Q.2d at 1445-46.

[n.90]. Id. at 1447, 24 U.S.P.Q.2d at 1445-46.

[n.91]. *Aron v. Manhattan R. Co.*, 132 U.S. 84 (1889); See also *Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 1568, 1575, 220 U.S.P.Q. 584, 586, 590 (Fed.Cir.1984) (binding of packaging used in meat packing industry is analogous to binding of office products); *In re Cline*, 345 F.2d 847, 849, 145 U.S.P.Q. 610, 612

(C.C.P.A. 1965) (fountain pen for instant drying inks is analogous to applicator for liquid cosmetics).

[n.92]. In re Wood, 599 F.2d 1032, 1036, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979).

[n.93]. See Geo. J. Meyer Mfg. Co. v. San Marino Electronic Corp., 422 F.2d 1285, 1288, 165 U.S.P.Q. 23, 26 (9th Cir.1970) (stating 'art' includes knowledge from all fields employing similar techniques); Aerotec Indus. of Cal. v. Pacific Scientific Co., 381 F.2d 795, 802, 155 U.S.P.Q. 52, 57 (9th Cir.1967) ("if the elements and purposes in one art are related and similar to those in another and . . . make appeal to mind of one having a mechanical skill and knowledge of the purposes of the other art, the arts are analogous"), cert. denied, 389 U.S. 1049 (1968).

[n.94]. See In re Glavas, 230 F.2d 447, 450, 109 U.S.P.Q. 50, 52 (C.C.P.A. 1956) (stating where a combination of references is cited, doctrine of analogous art applies).

[n.95]. Id. at 450, 109 U.S.P.Q. at 52; In re Boldt, 344 F.2d 990, 991, 145 U.S.P.Q. 414, 415 (C.C.P.A. 1965). See also In re Facer, 442 F.2d 976, 977, 169 U.S.P.Q. 794, 795 (C.C.P.A. 1971) (concluding metal sheathing and wood board siding are analogous when evaluating obviousness of surface ornamentation).

[n.96]. 23 U.S.P.Q.2d 1636 (1992).

[n.97]. Id. at 1636.

[n.98]. Id. at 1638.

[n.99]. See In re Nalbandian, 661 F.2d 1214, 1217, 1220 n.1-2, 211 U.S.P.Q. 782, 785, 787 n.1-2 (C.C.P.A. 1981) (ornamental design configuration of an illuminable tweezer was analogous to design configurations of a flashlight head and cosmetic applicator).

[n.100]. See In re Glavas, 230 F.2d at 447, 450. 109 U.S.P.Q. 50, 52 (C.C.P.A. 1965) (concluding utility of articles irrelevant to determining obviousness of designs).

[n.101]. Id. at 450, 109 U.S.P.Q. at 52.

