

EXPERIMENTAL USE OR FAIR USE AS A DEFENSE TO PATENT INFRINGEMENT

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The statutory definition of direct infringement is deceptively simple. Section 271(a) provides that; "Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent, therefor infringes the patent." From time to time, interesting questions can arise concerning the nature of the acts of making, using or selling. [n.1] But for the most part, answers to these concerns are straightforward. For example, only one of the three activities is required for infringement, thus use alone is actionable without either manufacture or sale. [n.2] The "United States" includes its territories and possessions, such as Puerto Rico and the U.S. Virgin Islands. [n.3]

Some of the more established problematic aspects of infringement have been in first determining what the patented invention is, and to this the Court of Appeals for the Federal Circuit has responded and recognized that such a determination is first a legal question of claim interpretation. [n.4] This is followed by a consideration of whether or not the properly construed claims read on the accused process, a question reserved *244 for the factfinder. [n.5] Another accepted area of confusion has been with respect to literal infringement and infringement under the doctrine of equivalents. [n.6] Courts have appeared to find direct or literal infringement while in reality applying the doctrine of equivalents, while other courts have found infringement under the doctrine of equivalents in cases where there was literal infringement. [n.7]

Arising solely out of case law, however, an experimental use exception has been offered as a defense to patent infringement. At this point the experimental use exception can be summarized as offering a defendant an excuse to patent infringement when the use of the patented invention is for the sole purpose of gratifying curiosity or a philosophical taste, or for mere amusement. [n.8] Two leading commentaries on the origin and scope of this exception have reached opposite conclusions as to whether or not such an exception should exist at all. [n.9] In the first paper to discuss the experimental use exception it was suggested that the experimental use exception did not represent sound law. It was argued to be contrary to the clear and express language of the patent statutes and viewed as judicial dictum without any apparent necessity. It was termed confusing and contradictory to other established rules of patent law. It was suggested that the satisfaction of a philosophical taste or thirst might be just as much an act of patent infringement as the satisfaction of an actual physiological curiosity. Nevertheless, given

that some courts had been found to entertain the concept of experimental use, the suggestion was that it be strictly construed and held inapplicable where a business purpose or profit motive exists. [n.10] Alternatively, it has been suggested that the policy of the patent system itself encourages experimental *245 use of the patented technology of others for technological development. This position continues with the suggestion that the experimental use defense allows a researcher to infringe a patented invention in their laboratory thereby developing improvements which may then replace the patented invention in the market place. It was argued that the cases support the proposition that the experimental use exception applies to testing a patented invention for adaption to the experimenter's business provided that the experimental use does not result in a use for profit. The exchange for the patent grant, given to the inventor, contemplates that the inventor discloses the invention to the public and runs the risk that the invention may be made obsolete (through experimentation). [n.11]

In view of such opposing perspectives, one of the goals of this paper to ascertain whether or not the experimental use exception to patent infringement can ever be reconciled fully with the purposes of the patent system. The importance at this time to fully understand the proper role of the experimental use exception comes in light of the increasing number of non-profit institutions (universities and colleges) that are securing patent protection, and patent profit, for their sponsored and unsponsored research. [n.12] Consider, for example, any institution with an educational objective, utilizing patented technology for the purposes of instruction. [n.13] Should we tolerate such infringement provided the university*246 does not make a monetary profit or attempt to make a monetary profit during infringement? Alternatively, can the patentee argue that the institution is collecting tuition, that the students are utilizing patented technology that they (or the institution) would normally have to purchase, which collectively denies the patentee monetary gain. Ultimately, do the knowledge and intentions of the infringer along with the totality of circumstances ever warrant an excuse for patent infringement? The temptation, by most, is to answer in the negative.

However, a careful understanding of the prohibited activities (making using and selling) will shed some perception as to whether the right to exclude, at least in the context of use, was ever intended, or even needs to be, absolute. Given that the right granted under a patent has been characterized on various occasions as a property right, one must explore the judicial notions as to what extent principles of property law effect, limit, or even expand the patentee's right to enforce against making, using or selling. This may turn on whether the de minimis doctrine applies in patent infringement and when it should be invoked. Furthermore, a brief look at the codified concept of "fair use" in copyright along with a comparison of copyright and patent remedies is offered to show the similarities of fair use and experimental use along with their common intentions.

Whether Exceptions to Infringement Are Consistent With The Objectives Of The Patent System

Objectives Of The Patent System

Much has been written concerning the constitutional source and purpose of the patent right. Aside from the classical description of serving to promote the useful arts, commentators have argued that the patent grant encourages investment-based risk, encourages innovation and its fruits, new jobs and new industries, new consumer goods and trade benefits. [n.14] From a historical perspective, the purposes that lay behind our patent system have been identified to be primarily concerned with innovation and not bald invention alone. The object, then, was not merely to grant patents; rather it was to encourage the few inventive minds among us to take the risks inherent in introducing new products and arts or processes into the stream of commerce, for the ultimate benefit of many. The encouragement took the form of a contract: the sovereign offering the inventor limited protection against copying in *247 return for the publication of the details of the invention and rested upon the theory that rewards to the individual benefit the public at large. [n.15]

If exceptions to infringement are recognized, such impact on what can be called technological innovation must be measured against the identified and existing benefits of our patent system. From case law, the encouragement of investment-based risk has been distilled as the fundamental purpose of the patent grant and has been found to depend primarily on the right to exclude. *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 599 (Fed. Cir. 1985). The Federal Circuit has gone as far to say that without the right to exclude, which becomes available to the patentee through injunctive relief pursuant to 35 U.S.C. § 283, the express purpose of the Constitution and Congress, to promote the progress of the useful arts, would be seriously undermined. *Smith International, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1577-78 (Fed. Cir. 1983).

But it has also been suggested that the policy of providing for further advances in technology can be found in the patent statute itself. [n.16] Namely, 35 U.S.C. 100 and 101 provide that a patentable invention exists for any new and useful process, including a new use of a known process, machine, manufacture, or composition of matter, or any new and useful improvements thereof. (Emphasis added). Consequently, the statute as written suggests that in order to promote technological innovation, one must be allowed to advance over the disclosed prior art, utilizing the prior art as a starting point. Otherwise, duplication of effort would curtail advances in technology. [n.17] From this perspective, a right to exclude need not be absolute and to some degree, if absolute, would be in tension with the objectives of our patent system.

It appears then that the objectives of the patent system, if one can ever harmonize many of the above viewpoints, encompasses the encouragement and protection of investment based risk by allowing the inventor to make improvements over the known prior art. Or, as some have suggested, the fundamental argument for a patent system is that patent protection permits the innovator (or inventor) to retard competitive imitation, and hence to anticipate earning supranormal profits *248 if its contribution proves technically and commercially successful. [n.18] The next question, then, is how far the prohibited acts of making, using or selling must be restricted to meet these objectives. That is, to what

extent should the patentee be supplied with the necessary leverage to insure that investment based risk will be protected. [n.19]

Judicial Interpretation of Making, Using and Selling and the Relationship to Patent Objectives

There is little doubt that the encouragement of investment based risk depends on the right to exclude when the excludable activity involves the sale of the patented technology. A sale by its very nature attacks the potential of the patentee to enjoy the full value of their invention in the market place. Moreover, the sale of less than all of the elements of a patented combination may be considered the making, using and selling of a "completed" invention under some circumstances and, therefore, an infringement. [n.20]

Whether or not a mere finding of making or using should allow an inventor to fully invoke their right to exclude is not as clear. In *Paper Converting Machine v. Magna-Graphics*, 745 F.2d 11 (Fed. Cir. 1984) the court defined what is termed the triad of excludable activities (making, using or selling) as terms available for judicial interpretation. The issue facing the court was to what extent a competitor of a patentee could manufacture and test during the life of a patent a machine intended solely for post-patent use. The court was unwilling to ignore the fact that the plaintiff had lost, during the term of its patent, a contract for the patented machine which it would have received but for the competitor's acts. 745 F.2d at 16. In addition, the court found that the defendant had intended to finesse the plaintiff out of a sale of a machine where a valid patent existed. 745 F.2d at 19. The court went on to conclude that on these facts, there could be no reduction in the patent-term to allow for testing prior to the expiration of a valid patent. 745 F.2d at 19. So viewed, the excludable activity of use appears to center on the *249 question of use with an intent to reduce the economic potential of the patentee.

Further support for the proposition that the excludable activity of use contemplates use with economic effect can be found in *Kaz Manufacturing Co., Inc., v. Chesebrough-Pond's, Inc.*, 211 F. Supp. 815 (1962), *aff'd* 317 F.2d 679 (1963). In finding that there was no infringement for using the patentee's vaporizer in television commercials, the court held that

"[a]n unauthorized construction of a patented article is not infringement per se, but it is necessary to look beyond the fact of construction to the use which the constructed article is, or is intended to be put. . . In general, a patentee should be able to reserve and preserve his monopoly over the commercial use of his patented invention; in other words he may altogether exclude others from the commercial field. . . Otherwise expressed, patents confer upon patentees the exclusive right and liberty to make and use and vend to others to be used their own inventions. The "use" contemplated by this rule is the commercially valuable use which the patentee would or could avail himself of in exploiting his invention. 211 F. Supp. at 817-818. [n.21]

In the now famous case of *Roche Products, Inc. v. Bolar Pharmaceuticals Co.*, 572 F. Supp. 255 (E.D.N.Y. 1983), *rev'd* 733 F.2d 858 (Fed. Cir. 1984) the court was faced with

deciding whether or not Bolar had infringed a Roche Products patent by obtaining a small amount of the claimed compound six months before the patent expired so that it could begin testing for FDA approval (since FDA approval could take more than two years). At the district court level, District Judge Wexler denied a permanent injunction for the plaintiff for the defendant's acts which threatened infringement of a patent. 572 F. Supp. 256, 257. Ultimately characterizing the defendant's activity as commercial preparation of a nonproduction nature for post-expiration competition, Judge Wexler relied on at least two precedential theories to find a lack of infringement. First, infringing use could not be established unless a benefit was established at the expense of the patent. 572 F. Supp. at 258. A benefit, as defined by the district court, was an act of competition or profit during the term of the patent in either domestic or foreign markets. 572 F. Supp. at 258. A post-expiration advantage was not viewed to be a value (or benefit) secured by the patent. 572 F. Supp. at 258. Bolar's activity was therefore found not to be connected with any benefit during *250 the term of the patent since Bolar's FDA mandated testing was a sort of commercial experiment without profit, manufacture or sale during the patent term. Secondly, Judge Wexler held that the de minimis doctrine applied. 572 F. Supp. at 258. Citing *Maxon Premix Burner Co. v. Eclipse Fuel Engineering Co.*, 471 F.2d 308 (7th Cir. 1972) (experimental construction of a prototype even paired with a sale was de minimis and insufficient to support an action for threatened infringement) the court was similarly unable to find any substantial loss that would stem from Bolar's studies. As Judge Wexler characterized it, "The only harm Roche can point to is a violation of the principle of monopoly . . . [T]his court will not act to protect a right or benefit that is without legal basis." 572 F. Supp. at 258.

Although later reversed by the Federal Circuit, it appears that Judge Wexler correctly recognized that the objectives of patent protection did not encompass an absolute right to exclude for no other reason than to monopolize. Nowhere in any statute is a patent described as a monopoly. [n.22] The exclusive rights to patents no more confer a monopoly on their owners than do rights in tangible property. [n.23] The Supreme Court has on several occasions stated that, "a patent is not accurately speaking, a monopoly, because it does not deprive the public of anything to which it was formerly entitled." *United States v. Dublier Condenser Corp.*, 289 U.S. 178, 186 (1933). [n.24]

In fact, while reversing the District Court in *Roche Products*, the Federal Circuit recognized that the word use in section 271(a) had never been taken to its utmost possible scope. [n.25] 733 F.2d at 861. However, in contrast to the District Court, the Federal Circuit considered Bolar's activity not to be de minimis and not of trifling effect on the parties. Bolar's use was found to be in the guise of scientific inquiry and such inquiry had definite, cognizable, and not insubstantial commercial purposes. 733 F.2d at 863. There appeared, therefore, no explicit rejection of the District Court and Judge Wexler's finding that use could not be infringing unless a benefit was established at the expense of the patent. *251 The Federal Circuit just took a more narrow view as to Bolar's activities and found that they indeed had established a benefit at the expense of the patent.

Property Theories and Excludable Activities

The courts have also attempted to define the limits of making using and selling in the context that patents are a form of property. [n.26] The statute itself identifies that "patents shall have the attributes of personal property." [n.27] An early comparison of an invention to land was made in *Consolidated Fruit-Jar Co. v. Wright* [n.28] and it was stated that: "A patent for an invention is as much a property as a patent for land." Therefore, the patent right stems from the government in the same way as original rights in real property granted by land patents. [n.29] It is subject to ownership by one or more individuals or corporations. It can be transferred in whole or in part, e.g., by assignment or license. It may be bequeathed and, if not; will be governed by the law of intestate descent. Finally, it cannot be appropriated by the government unless just compensation is paid therefore. [n.30] Thus, many aspects of a property right are present in the patent right. Fundamentally, the right to exclude others is the very definition of property. [n.31] With such a classical perspective of patents as a property right, it is not too surprising that at various times courts have embarked on a rationale tied to the notion of the "bundle of rights" to determine whether or not infringement (or trespass) has transpired. The property notion of a patent right, from early case law, indicates that the right was generally considered absolute and the question of infringement ignores, in this case, intent. [n.32]

Looking at some early opinions one finds exactly what has been described above. An early, interesting area of litigation that appears to test the relationship of the patent as property notion, and the scope of excludable activities, has been in defining the chronological boundaries of the patent grant. In **252Columbia @ N.R.R. Co et. al v. Chandler*, 241 F. 261 (9th Cir. 1917), the court was faced with a situation involving trucks built before a patent was granted but then found (using principles of property law) that the patentee was authorized to recover from the user for the use of the trucks. [n.33] Faced with a problem of first impression, the court reviewed a fair amount of property concepts to determine whether or not the patentee had any rights to recovery for some manufacturing before the issuance of the patent. The court noted that in *Gayler v. Wilder*, 13 L. Ed. 504, Chief Justice Taney said:

"The inventor of a new and useful improvement certainly has no exclusive right to it, until he obtains a patent. This right is created by the patent, and no suit can be maintained by the inventor against any one for using it before the patent is issued."

This was followed by a cite to *Marsh v. Nichols, Shepard & Co.*, 128 U.S. 605 where the court found that:

"Until the patent is issued there is no property right in it; that is, no such right that the inventor can enforce. Until then there is no power over its use, which is one of the elements of a right of property in anything capable of ownership."

The Chandler court continued with its analysis, looking to *Lyon V. Donaldson*, 34 Fed. 789 where it had been held that "[a] defendant cannot be said to have been a trespasser upon plaintiff's property before his (plaintiff's) patent was obtained." Finally, the court cited *Brill v. St. Louis Car Co.*, 80 Fed. 909 where it was noted that:

"[t]here can be no invasion of the patentee's rights by any manufacture or use of the device, the subject matter of the expected patent, prior to the date of the patent."

Following this look back, the court concluded that the plaintiff was not entitled to any claim of damage for manufacturing of the product before the issuance of the patents. More significant to the issue presented here, however, was that the court found that the product "[w]as not free from the monopoly of the patent (once it had issued)." Chandler, at 263. Consequently, a patentee cannot recover damages for the sale or use of his invention prior to the issuance of the patent, but the fact that articles embodying the invention were manufactured before the patent was issued, unless by the patentee's consent, does not authorize their use thereafter. Owing to the strong notion of property in these collective opinions, it appears that trespass onto a patentee's (property) rights was viewed as per se actionable (once a patent had issued).

*253 However, some of the more recent views of the patent as a form of property have shown what appears to be a consideration of the parties knowledge and intentions in framing a remedy for infringement. Fifty years after Chandler, in *Coakwell v. United States*, 371 F.2d 508 (1967) the court determined the plaintiff's patent valid and issued on April 27, 1954, relating to antiblackout equipment. The issue on appeal was whether or not the plaintiff was entitled to recover compensation for defendant's unauthorized use during the period of the patent for antiblackout equipment procured prior to issue but on hand for defendant's use at the commencement of issue. After an analysis of statutory authority, Congressional intent and common law, and an apparent approval for the notion that patents are a form of property, the court found that:

"[w]hoever without authority makes, uses, or sells any patented invention during the term of the patent infringes the patent. . . plaintiff is entitled to recover compensation for defendant's use of (patented) equipment on hand at the commencement of the recovery period (after issue) available for use during the recovery period (life of patent). . . The fact that certain articles embodying an invention were manufactured before and obtained by the defendant before the patent was issued does not authorize their use thereafter." 371 F.2d at 510, 511.

But what was interesting, and to some degree inconsistent with the above was the courts consideration that the patentee had knowledge of the pending patent that was ultimately infringed. "It was not necessary to decide whether or not plaintiff could recover compensation with respect to the (patented technology) procured prior to the grant of his patent if the defendant had not had knowledge of the pending patent application. Coakwell, at 512. This is a remarkable statement. Given the attention and strength of authority that the Coakwell, court considered, it is not clear why any different holding would follow from a consideration of the defendants knowledge of a pending patent application versus the absolute rights flowing from a "patent as property" analysis. On one hand, the court could not reach a conclusion as to whether or not the property rights identified by a patent were relevant or irrelevant to, a defendant who has purchased (patent) property for value without any notice of outstanding rights of others, and acts in good faith. But Coakwell may very well stand for the first time a court recognized that a grant of a patent may be as much a privilege as a property right. Namely, the privilege to

the exclusive manufacture and sale of an invention or patented article. A grant made by the government to an inventor, exclusive, but not absolute and therefore dependent on other things or persons (e.g., the knowledge and intentions of the infringer).

*254 Equity and Making, Using and Selling

When we contemplate a balancing of a patentee's rights vs. the character of infringer we are seeing no more than judicial application of equity which by its nature may be collateral or independent of statutory patent law. A direct concept of equity in determining the rights of a patentee were considered in *Aluminum Extrusion Company v. Soule Steel Company*, 260 F. Supp. 221 (C.D. Cal. 1966). An action was brought for infringement of a certain type of window construction, and the plaintiffs sought damages and an injunction against future infringement. The court found that since the patented windows had been installed prior to the date of issue, no direct infringement could be established. *Id.*, at 223. In response to the plaintiff's request for an injunction against future infringement the court responded that such an injunction would be granted "in accordance with the principles of equity to prevent the violation of any right secured by the patent." *Id.*, at 225. Consequently, the court went on to find that where a structure infringes when originally constructed, any repair of that structure is an infringement. But when the windows in question were installed, there could be no infringement since the patent had not yet issued. Therefore, only "reconstruction" (of the windows to an infringing form) and not "repair" will constitute an infringement. *Id.*, at 226. The fact that minor repairs would from time-to-time be made on the otherwise infringing windows became insufficient for the court to find infringement. In other words, the infringement was viewed as "de minimis." *Id.*, at 226.

Whether or not the clever distinction on "reconstruction" and "repair" was the appropriate analysis is a lively question, but it did provide the Soule Steel court a route away from the issue of whether or not patent rights are modified by other principles of law (e.g., the bona fide purchaser). However, the court apparently applied a measured concept of equity in recognizing that the award of an injunction to the plaintiff was unwarranted since the threat of infringement probably would have had little (economic) impact on the patentee's ability to exploit their invention. If we ultimately view the prospective value of a patent in terms of how much power over price the patent confers, it is not hard to reconcile this decision in Soule Steel from the viewpoint that if the patentee's position has remained unchanged, no relief is to be awarded.

So long after the courts analogized patent as a form of property with the theory that the right to exclude is absolute and commences when the patent grant is issued, we find some judicial tolerance for consideration of the knowledge and intentions of the infringer along with whether or not identifiable economic harm, potential economic harm, or use that is commercial in context, is present. Consequently, even if we proceed *255 with the accepted notion that patents are property, that all title to the invention accrues to the inventor, the rules that govern the exploitation of this resource of property need to go no further than to allow the patentee the right to enjoy a substantial share of a patented

technology as the price of their labor or risk of investment. [n.34] To some degree, this is the same argument that the term of the patent right need go no further than that which is necessary to insure that the goals of the patent system are achieved.

The analysis of the objectives of the patent system and the theory that patents are to a large extent a form of a property right have provided a background for determining the appropriate limits on the excludable activities. From all of the above, it may come as a surprise that courts have looked at the following considerations in determining whether relief was appropriate in an action for infringement:

1. knowledge and intent of the infringer;
2. potential economic benefits lost;
3. whether infringement is de minimis;
4. the principle of monopoly is probably insufficient to restrict use;

The above then appears to be considered in regards to the objective of protecting and motivating investment based risk. Even with the notion that patents are a form of property, the excludable activities (bundle or rights) have not always been uniformly viewed as per se absolute, again, absent some facts that go to the knowledge and intentions of the infringer and the potential for economic harm to the patentee. In other words, the objectives of the patent system appear to be on the minds of the courts even in the face of the statutory command of 35 U.S.C. § 271(a). [n.35] Note that we arrived at this conclusion by considering the objectives of the patent system and the current understanding of the patent as property formulation. In the next section we see that the experimental use exception is to a large degree an extension of this notion that the objectives of the patent system to encourage investment based risk remain intact in the face of a use of a patented device for philosophical inquiry, or use to determine the verity and exactness of *256 some specification, provided these are not done with the achievement of profit.

The Experimental Use Exception

As noted the more recent and problematic aspect of exception to patent infringement has been the application of what is now known as the experimental use defense. In what appears to be the first review on this subject, the experimental use defense to patent infringement was recognized as an exception arising solely out of case law. [n.36] It turns out that Supreme Court Justice Story had been riding circuit and was faced with an appeal by the defendant to a trial judge's instructions to the jury in a patent case. [n.37] The jury instructions had been given the effect that absent a finding of intent to use the invention for profit, infringement could not be established. Noting that the "use for profit" limitation was actually in the defendant's favor, Justice Story affirmed and held:

[i]t could never have been the intention of the legislature to punish a man, who constructed such a machine for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects. [n.38]

Following the above, Justice Story next contemplated the experimental use exception in the case of *Sawin v. Guild*, 21 Fed. Cas. 554, No. 12,391 (C.C.D. Mass, 1813). Plaintiff had a patent on a certain machine for cutting nails. The plaintiff's machines were seized in satisfaction of a judgment debt of the plaintiff. Plaintiff sued the deputy for infringement. Justice Story ruled for the defendant and wrote, "The court has already . . . held that the making of a patented machine to be an offense. . . must be the making with an intent to use for profit, and not for the mere purpose of philosophical experiment or to ascertain the verity and exactness of the specification. *Whittemore v. Cutter*. In other words, that the making must be with an intent to infringe the patent right, and deprive the owner of the lawful rewards of his discovery. 21 Fed. Cas. at 555.

As noted by Ronald D. Hantman in a more recent review of the experimental use doctrine, [n.39] Justice Story's opinion in *Sawin* resulted in a two step test, namely that the infringing activity must fall within one *257 of two protected classes of activity (ascertaining veracity or exactness of specification, or philosophical experiment) and that the activity not be done with an intent to use for profit. Hantman recognized further that as between private parties, "use for profit" means to make or attempt to make a monetary profit while infringing the patented invention. That is, the experimental use defense was allowed if, and only if, the experimenter neither made money nor tried to make money while infringing. [n.40]

The results were observed to be different in cases where the United States Government was a party. The view here is that that Government does not make, use or sell patented inventions of others for profit and the Government uses patented inventions it made for some governmental purpose. Consequently, Hantman observed that "use for profit" must be read in the context qualified by Justice Story in *Sawin* to mean that the use must not deprive the patent owner of his lawful rewards. Deprivation of the patent owner's lawful reward were found when Government use was systematic, extending over long periods of time on the assumption that the Government deprived the patent owner of the profits that might have been made if the patent owner had provided that patented invention to the Government. [n.41]

Hantman makes a strong argument that the experimental use defense should be allowed if the infringer did not make a monetary profit or in the case of the government, if the use was not extensive. In response to the allegation that the experimental use defense would allow a researcher to infringe a patented invention in their laboratory, thereby developing improvements which may then replace the patented invention in the market place, the answer given is that's exactly what the patent system is supposed to do. This follows from the suggestion, described earlier, that the policy of improving of the prior art is manifested by the awarding of improvement patents and new use patents. If pure experimentation on existing patented technology was not tolerated, the suggestion is that improvement patents and new use patents would never be issued. Hantman was careful to point out that experimental use on patented inventions must be distinguished from using patented technology for experimental purposes. Since the latter will not result in improvements in the patented invention itself, even if done for philosophical experiment, it should not be excused.

The experimental use exception appears to be in step with the more recently accepted notions, described above, concerning the objectives of *258 the patent system. First, the encouragement of investment based risk contemplates that inventors will utilize available resources, that is, disclosed patented technology, in order to create past some form of prior art. This is exactly what the experimental use exception was and is designed to do. [n.42] Case law has shown a tolerance for consideration of the knowledge and intentions of the infringer, whether or not there is identifiable or potential economic harm, and whether there is use for profit, that is commercial in context. There is an equitable theory of de minimis infringement floating and employed when a threat of infringement is of too little importance to justify the intervention of a court. [n.43] All of these concepts can be collectively considered in Justice Story's two part test as to whether the infringing activity was done to ascertain the exactness of specification or philosophical experiment without an intent to use for profit. The experimental use exception to patent infringement, in short, does not exist in tension with the objectives of the patent system. The Federal Circuit suggested in Bolar that the experimental use exception should be narrowly construed. [n.44] It appears that lower courts, mindful of the objectives of the patent laws, have applied other legal theories to reach a result that is similar to the application of this exception.

Fair Use in Copyright

The idea of a "fair use" defense finds direct authority in copyright law. Copyright statutes up through 1909 spoke in terms of "exclusive" rights, but these were quite early subjected to a judge-made equitable rule of reason ultimately known as fair use. [n.45] The 1976 Act was the first statutory recognition of the fair use doctrine. [n.46] The 1976 Act merely attempted to restate the judicially evolved doctrine with "no disposition to freeze" and "not to change narrow or enlarge it in any way." [n.47] The *259 doctrine is a means of balancing the exclusive rights of the copyright holder with the public interest in the dissemination of information. [n.48]

Of course, the exclusive rights in copyrighted works are much different than the rights of a patent grant. Copyright protection centers fundamentally upon the original expression of some idea. By contrast to a patent, the expression need not be novel. A copyright claim is available to an author, provided it was created independently. Arguably the most valuable right of the copyright owner is the right of reproduction. That is, the copyright owner has the exclusive right to exclude all others from reproducing the work in the form of a copy.

But what is interesting is that once again the courts recognized that under certain conditions, the objectives of affording copyright protection, namely to grant valuable rights to authors thereby encouraging the production of literary and artistic works of lasting public benefit, [n.49] requires some tolerance for infringement.

According to the statute, fair use is established by a balancing process whereby the following variables are considered vs. the rights of the copyright owner:

1. the purpose and character of the use, including its commercial nature;
2. the nature of the copyrighted work;
3. the proportion that was taken;
4. the economic impact of the taking.

Furthermore, the intent and motives of the defendant are often relevant. 17 U.S.C. § 107.

In essence, the doctrine permits one to use another's work in circumstances where the amount of copying and the purpose of the copying are such as to cause little likelihood of injury to the owner of the copyright. [n.50] Case law built up on § 107 has shown that if an infringer's use of copyright work is private and non-commercial (e.g. educational), it is more likely to be considered a "fair use" and the burden is on the copyright holder to demonstrate some meaningful likelihood of harm. *Sony Corp. of America v. Universal City Studios*, 446 U.S. 417 (1984). *260 But see *Marcus v. Rowley*, 695 F.2d 1171 (9th Cir. 1983) (finding a fair use does not follow directly from the fact that alleged infringing work was for non-profit educational purpose or that the plaintiff suffered no pecuniary damage). To negate a defense of "fair use" the copyright holder need only show that the challenged use, if widespread, would adversely effect the potential market of the copyrighted work. In other words, a copyright holder is on stronger ground if a profit motive can be developed on behalf of the defendant. *Harper & Row Publishers, Inc. v. Nation Enterprises*, ___ U.S. ___ (1985). The statutory consideration of the "nature" of the copyrighted work has provided courts with an opportunity to consider the extent of originality or creative aspects of the disputed work and then determine if "fair use" should be tolerated. In *New York Times Co. v. Roxbury Data Interface*, 434 F. Supp. 217 (D.N.J. 1977) the copyright holder was denied relief against defendants who had copied a list of personal names appearing in the New York Times Index. The judge held that "Since the Times Index is a work more of diligence than of originality or inventiveness, defendants have greater license to use portions. . . under the fair use doctrine than. . . if a creative work had been involved. 434 F. Supp. at 221.

Policy Reasons for Fair Use-Promoting Useful Arts

What is interesting in addition to the brief summary above of the "fair use" defense is the holding in *Harper*, where the court considered some of the doctrinal underpinnings of both copyright and "fair use":

"[the copyright] grant is a means by which an important public purpose may be achieved. It is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired. *Harper & Row Publishers Inc.*, ___ U.S. at ___, citing *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984).

Next, the court considered the purpose and scope of the "fair use" defense and revealed that the concept of fair use had been consistent with the purpose and policy of the copyright laws:

"[T]he author's consent to a reasonable use of his copyrighted works ha[d] always been implied by the courts as a necessary incident of the constitutional policy of promoting the progress of science and the useful arts, since a prohibition of such use would inhibit subsequent writers from attempting to improve upon prior works and thus. . . frustrate the very ends sought to be obtained." Harper & Row Publishers, Inc., ___ U.S. at ___, citing H. Ball, *Law of Copyright and Literary Property* 260 (1944). (Emphasis added.)

From the perspective that a copyright and a patent are similar in regards to their purpose of permitting the recoupment of risk capital, [n.51] *261 it may appear surprising that authority exists suggesting that at certain times a de minimis infringement is in fact necessary to maintain part of our constitutional directive to protect intellectual property.

This issue came up directly when copying for the purposes of "research" was involved in what was to be the test case in the application of fair use to new technological developments. [n.52] *Williams & Wilkins Co. v. United States*, 487 F.2d 1345 (Ct. Cl. 1973), *aff'd* by an equally divided Court, 420 U.S. 376 (1975). The Court of Claims, in a 4-3 reversal of a trial judge's decision, held that Governmental libraries photocopying of journal articles from plaintiff's medical journals did not constitute infringement but was rather a "fair use" of such works. The court, in setting forth its major rationale, noted that: 1. plaintiff was not substantially harmed by the photocopying in question; 2. medicine and medical research would be injured by holding these particular practices as infringement; and 3. the problem of accommodating the competing interests involved called for legislative action, in the absence of which the courts should not place a risk of harm on science. 487 F.2d at ___. Chief Judge Cowen argued in dissent that there was a clear and legally cognizable harm to plaintiff resulting from defendant's operation of "a reprint service which supplants the need for journal subscriptions" and operates "on a scale so vast that it dwarfs the output of many small publishing companies" 487 F.2d 1363, 1364, 1377; and that the fair use doctrine in the field of science and scholarly works is designed to protect a new author's need to comment on and discuss earlier works in the same field, not to sanction "bare verbatim reproduction." In a separate dissent, Judge Nichols stated "the [[majority] decision will be read, that a copyright holder has no rights a library is bound to respect" and that the majority was making "the Dred Scott decision of copyright law." 487 F.2d 1386, 1387.

As commentators noted, the closeness of the vote and the far-reaching implications of this case of first impression created a sense of anticipation in the copyright and academic communities when the Supreme Court granted certiorari and then heard arguments in December 1974. [n.53] The Court split 4 to 4 with Justice Blaukman not participating in the decision. As is traditional in this situation, no opinions were filed and the votes of the individual justices were not disclosed.

Williams & Wilkins clearly demonstrates that there is no easy application of the doctrine of "fair use" when faced with the possibility that to hold for infringement could

run counter to the policy and objectives *262 of the government to promote technological innovation, the progress of science and the useful arts. As the Court of Claims opinion succinctly stated, "there is much to be said on all sides." 487 F.2d at ___.

It may also be argued that the codified concept of fair use was done in order to qualify the extensive remedies available to the copyright holder when in fact, copying has been established. An owner of copyrighted work is entitled to injunctive relief, [n.54] actual monetary damages or the option to seek statutory damages, if the infringer has been shown to have acted willfully. This would also include attorney's fees. [n.55] The court may order all unauthorized copies to be seized and destroyed pursuant to a final decree. [n.56] Finally, if the infringement was found willful for the purpose of commercial advantage or private financial gain, punishment by imprisonment of up to 1 year in addition to a fine can be invoked against the infringer. [n.57] In the face of all of these forms of relief, Congress may have felt compelled to particularize the scope of the fair use defense in codified form so that the courts (and the public) were confident that a "fair user" would not be severely punished.

By contrast, the remedies available in patent infringement do not contemplate the extent of statutory damages noted above for infringement of copyright. The patent statute indicates that damages should be "in no event less than a reasonable royalty for the use made of the invention by the infringer." 35 U.S.C. § 284. Damage awards can be increased up to three times the amount found as actual damages upon a finding of willful infringement. [n.58] In exceptional cases the court may award reasonable attorney fees to the prevailing party. 35 U.S.C. § 285. Although this may appear to be significant relief, commentators have noted that prior to the creation of the Federal Circuit, the patentee could hardly have expected to receive much after succeeding in establishing validity and infringement. [n.59] The damages assessed against the infringer were often insufficient to cover the patentee's attorney fees and other litigation expenses. Awards of treble damages and attorney fees, would seldom survive appellate review. Nowadays, the Federal Circuit is recognizing the validity of patents. This, on its own, could warrant further development of the exceptions to infringement described earlier, along with the experimental use exception.

*263 As relief flows to the patentee, and the more liberal attitude in the Patent and Trademark Office for qualifying subject matter pursuant to 35 U.S.C. § 101, courts may soon be faced with a request for relief in what appears to be a form of infringement that has practically no effect on the incentive purpose of the patent laws to promote investment based risk, and in fact, contributed to the progress of science and the useful arts or some form of technological innovation. Recall earlier the proposition of some university utilizing patented technology for the purposes of instruction or pure research. This does not necessarily suggest that the patent bar requires a codification of conditions where a fair use might be awarded. As noted earlier, courts have struggled with the problem already, and have embodied within their opinions consideration of the knowledge and intent of the infringer, potential economic benefits lost, whether infringement is de minimis and that the principle of monopoly as being insufficient to restrict use. The suggestion here, is that the application of the "fair use" doctrine in

copyright law wrestles with the same problem that soon may invade the patent bar. Namely, to what extent should relief be granted to the patentee when the infringing use has little or no effect on the patentee and at the same time technological innovation has been established with no benefit accruing to the infringer at the expense of the patentee. Consequently, the cases surrounding the application of the "fair use" defense in copyright might serve as additional authority for future cases concerning certain forms of patent infringement.

Conclusion

This paper suggests that a misunderstanding of the nature and appropriate limits on the patent monopoly-taking into account the extent to which the patent policy contributes to socially useful goals has led to confusion concerning the rights of the patentee against an infringement that contemplates the complete advancement of technology without any benefit accruing to the infringer at the expense of the patentee. If we look back to the caselaw concerning the purpose of the patent statutes, we are confronted with language that is remarkably similar to that describing copyright objectives. Again, the reason of the patent system is to encourage innovation and its fruits. Of course, patent protection is much stronger than copyright protection owing to the clear statutory mandate that the inventor has an unlimited and exclusive right to their invention. Nevertheless, caselaw has shown that the primary purpose of the patent system is fostering of innovation, new jobs and new industries, new consumer goods and trade benefits. Furthermore, *264 the negative rights do not need to be absolute to be consistent with patent law objectives. And if there are situations where it is desirable and consistent with the purpose of fostering creativity of expression, to tolerate copyright infringement, can a similar argument be made that certain situations warrant a tolerance for patent infringement in the interest of advancing technology? If the only sensible way to view a patent is in terms of the rights it secures its owner, then any enforcement of a patent should depend on whether or not the rights granted to the patentee has been adversely effected. [n.60] If the full prospective value of a patent has remained unchanged, it would be difficult to enjoin some experimental user simply with the argument that the right to exclude is absolute. Certainly, the right to exclude others is the very definition of property-but absolute protection against trespass attaches to discrete physical items, and a patent is after all, more a grant of right.

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[n.1] Robert L. Harmon, Patents and the Federal Circuit, William Brinks Olds Hofer Gilson & Lione Ltd., Chicago (1988).

[n.2] Roche Prods., Inc. v. Bolar Pharmaceutical Co., 733 F.2d 858 (Fed. Cir. 1984).

[n.3] 35 U.S.C. § 100(c).

[n.4] Federal Circuit Patent Law Decisions, A Case-By-Case Review of the Federal Circuit's Principal Patent Decisions to See Whether the Court Has Unified Patent Law Jurisprudence, Federal Practice and Procedure Committee, American Intellectual Property Law Association, K.E. Krosin, Editor, p. 98, 135 (1986).

[n.5] R. Harmon, note 1 supra at 111.

[n.6] Literal infringement turns on whether or not the accused matter is the invention defined by the claims. However, infringement is not limited to a finding that the same thing is done in the same way to accomplish the same result, but also where substantially the same thing is done in substantially the same way to accomplish substantially the same result. *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 339 U.S. 605 (1950). For a more recent application of the doctrine of equivalents see, *Perkin-Elmer Corp. v. Computervision*, 732 F.2d 888 (Fed. Cir. 1984).

[n.7] Note 4, supra, at 98, citing *Kolene Corp. v. Motor City Treating, Inc.*, 440 F.2d 77 (6th Cir. 1971) (finding of direct infringement); *Farmhand, Inc. v. Craven*, 455 F.2d 609 (8th Cir. 1972) (finding of infringement under the doctrine of equivalents).

[n.8] 69 C.J.S. Patents § 288 (1951).

[n.9] R.E. Bee, *Experimental Use as an Act of Infringement*, 39 J. Pat. Off. Soc'y 357 (1957). R. D. Hantman, *Experimental Use as an Exception to Patent Infringement*, 67 J. Pat. Off. Soc'y 617 (1985).

[n.10] See R.E. Bee, note 9 supra at 377.

[n.11] See R. D. Hantman, note 9 supra at 642-644.

[n.12] Massachusetts Institute of Technology recently reported a \$300 million dollar research budget for fiscal 1988 and in 1987 reported licensing revenues of \$3.1 million from about 100 inventions. At the same time Stanford has reported licensing revenues of \$6.1 million, the University of California at \$5.4 million and the University of Wisconsin at about \$5.0 million. The technology and licensing office at MIT has recently noted that they have changed the professors mentality in regards to research, with a more complete understanding that commercial results, in lieu of scientific research, provides a better chance at further research funding. Many companies have been founded by professors based on technology discovered in the school's laboratories. Forbes Magazine, May, 1988.

[n.13] This proposition is not so unrealistic, in view of the expanded practice of the Patent and Trademark Office approving patents for inventions in which an algorithm constitutes most of the claim and applications (of the algorithm) are only generally described. *Diamond vs. Diehr*, 450 U.S. 175 (1981). See also, *Computer and Method for Solving Discrete Bracewell Transformation*, U.S. 4, 646, 256 (1987), R. N. Bracewell of Stamford University; *Discrete Cosine Transform*, U.S. 4, 797, 847 (1989), P. Duhamel. Consequently, it is possible, that some basic texts in computer science would be under patent. From a practical standpoint, the issue of how to enforce these patents would stagger the imagination. See *The New York Times*, Business Technology, February 14, 1989.

[n.14] R. Harmon, n.1 supra, citing *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861 (Fed. Cir. 1985); *Patlex Corp. v. Mossinghoff*, 758 F.2d 594 (Fed. Cir. 1985).

[n.15] R.H. Rines, *Create or Perish--The Case for Inventions and Patents*, Acropolis Books (1969).

[n.16] Hantman, note 9 supra at 642.

[n.17] Hantman, note 9 supra, citing, *The Report of the President's Commission on the Patent System*, for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402 (1966).

[n.18] F.M. Scherer, *Industrial Market Structure and Economic Performance*, in M. Handler, H. Blake, R. Pitofsky and H. Goldschmid, *Patents and Antitrust*, Foundation Press (1983).

[n.19] That is, the patent owner is afforded the right to exclude and such "leverage" afforded by this right need only go so far as to allow the patentee to enjoy the full value of their invention in the market place. *Smith Intern, Inc. v. Higher Tool Co.*, 718 F.2d 1573, 1578 (Fed. Cir. 1983) (emphasis added).

[n.20] Note 4, *supra*, at 136. However, at least one member of the Court of Appeals for the Federal Circuit was identified as disagreeing with this view.

[n.21] The Court of Appeals for the Federal Circuit, of course, is not bound by this precedent which relates to substantive patent law. In *South Corp. v. United States*, 690 F.2d 1368 (Fed. Cir. 1982), the CAFC dealt with the matter of binding precedent. Sitting, *en banc*, the court held that it would adhere to the body of law that existed in its predecessor courts, the Court of Claims and Patent Appeals and the Court of Claims, as of September 30, 1982. Overruling such precedent, or resolving a conflict between the two predecessors, would require *en banc* consideration.

[n.22] *Harmon*, note 1 *supra* at 10.

[n.23] J. Paul McGrath, *Patent Licensing Today: A Fresh Look at Antitrust Principles and Misuse in a Changing Economic Environment*, in *Proceedings of the Twenty-third Annual Institute on Patent Law*, Matthew Bender Publishing, J.R. Moss, ed., (1985).

[n.24] But compare *Morton Salt Co. v. Suppiger*, 314 U.S. 488, 491 (1942) and *Crown Co. v. Nye Tool Works*, 261 U.S. 24, 37 (1923), where the Supreme Court has unequivocally stated that a patent confers a monopoly.

[n.25] Furthermore, the court invited, and congress responded, with a change in the patent laws to avoid problems as those identified in *Roche*. See the Drug Price Competition and Patent Term Restoration Act of 1984, O.L. 98-417. See also 35 U.S.C. § 271(e)(1).

[n.26] The right granted under a patent has been characterized on various occasions as a (1) monopoly right, (2) a contractual right, (3) a property right, (4) a natural right and (5) a trust right. R. C. Nordhaus and E.F. Jruow, *Patent-Antitrust Law*, Jurail Publishing, (1972).

[n.27] 35 U.S.C. § 261.

[n.28] Consolidated Fruit-Jar Co. v. Wright, 94 U.S. 92 (1877).

[n.29] Note 22 supra at 14.

[n.30] Hartford-Empire Co. v. United States, 323 U.S. 386, 415 (1945).

[n.31] Schenck, A.G. v. Nortron Corp., 218 U.S.P.Q. 193 (Fed. Cir. 1983).

[n.32] Kansas City Southern Ry. Co. v. Silica Products Co., 48 F.2d 503 (8th Cir. 1931), cert. denied, 284 U.S. 626 (1931).

[n.33] Although this case is relatively old, note that it was relied upon more recently in *Coakwell v. United States*, 372 F.2d 508 (1967), discussed later in this work.

[n.34] See *Patelx Corp. v. Mossinghoff*, 758 F.2d 594, 599 (Fed. Cir. 1985) citing J. Bentham, *Theory of Legislation* chs. 7-10 (6th ed. 1890), as discussed in Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 *Harv. L. Rev.* 1165, 1211- 12 (1967).

[n.35] "[w]hoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

[n.36] R.E. Bee, note 9 supra.

[n.37] *Whittemore v. Cutter*, 29 Fed Cas. 1120 No. 17, 600 (C.C.D. Mass. 1813).

[n.38] 29 Fed. Cas. at 1121.

[n.39] See Hantman, note 9 supra at 620.

[n.40] Note 9, supra, at 625, 644.

[n.41] Hantman, note 9, supra at 631, 632.

[n.42] See Hantman, note 9 supra at 643.

[n.43] See Aluminum Extrusion Company v. Soule Steel Company, 260 F. Supp. 221 (C.D. California), discussed supra, citing Condenser Corp. of America v. Micamold Radio Corp., 145 F.2d 878, 880 (2d Cir. 1944).

[n.44] 733 F.2d at 863.

[n.45] A. Latman, The Copyright Law, 5th Edition, Bureau of National Affairs, Washington D.C. at 203 (1979).

[n.46] 1976 Act § 107.

[n.47] 1976 House Report 66; reprinted in H.G. Henn, Copyright Law -- A Practitioner's Guide, Practising Law Institute, at 181 (1988).

[n.48] Note 45 supra, citing Iowa State Univ. Research Foundation v. American Broadcasting Cos., 621 F.2d 57, 60 (2d Cir. 1980) ("The doctrine of fair use, originally created and articulated in case law, permits courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster".)

[n.49] N. Boorstyn, Copyright Law, Lawyers Cooperative Publishing, at 3 (1981).

[n.50] Note 10 supra, at

[n.51] See Field, n. 6 supra at 89-90.

[n.52] Note 45 supra, at 207.

[n.53] Note 45 supra at 208.

[n.54] 17 U.S.C.A. § 502(a).

[n.55] 17 U.S.C.A. §§ 504, 505.

[n.56] 17 U.S.C.A. § 503.

[n.57] 17 U.S.C.A. § 506.

[n.58] J.J. Pavlak, Willful Patent Infringement, in Proceedings of the Twenty-third Annual Institute on Patent Law, J.R. Moss ed., Matthew Bender (1985).

[n.59] Note 1 supra at 231.

[n.60] See Harmon, note 1 supra at 3.