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*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, Ratcheting Down the Doctrine of Equivalents

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Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,
Ratcheting Down the Doctrine of Equivalents

Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application. The inventor who chooses to patent an invention and disclose it to the public, rather than exploit it in secret, bears the risk that others will devote their efforts toward exploiting the limits of the patent’s language: “An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled.”

The Supreme Court’s decision in Festo was yet another in a line of cases that limit the application of the doctrine of equivalents. The opinion added a further limitation on the doctrine of equivalents effectively now requiring that the equivalent not be foreseeable. This new element will add more expense to litigation by requiring expert testimony not only about the state of the art and the scope of the claims involved in the case, but also as to what would have been foreseeable at the time of the application for the patent. Such standards, rather than fostering invention, make it increasingly difficult for parties to enforce their patents.

I. INTRODUCTION

Society has long recognized the importance of fostering creativity in order to advance and benefit society. To this end, the government grants limited monopolies in the form of intellectual property rights. In the government’s grant of these monopolies, a tension is created between encouraging subsequent parties to take what is known and improve upon it (thereby further benefiting society) and encouraging parties to invest the initial efforts to benefit society. A particularly difficult issue arises when government encourages others who come later to make further advances, especially in the patent system. At one extreme, a subsequent party could exploit the initial creative effort by making minor or insubstantial changes to some form of intellectual property and thus avoid infringement. Such a policy would have a chilling effect on parties

contemplating making the original investment in development. Consequently, out of a feeling of fundamental fairness, courts have developed a nebulous range of equivalents for just such situations.2 With respect to patents, this practice has long been recognized and is known as the “doctrine of equivalents.”3

This range of equivalents covers that which is similar enough to the intellectual property in question that it would infringe upon the property holder’s rights. At the same time, however, the equivalent is not exactly what the intellectual property holder owns. The range becomes hazy because it is difficult to draw a bright line between that which is not exactly the same as the intellectual property at issue, but may be similar enough to infringe, and that which is dissimilar enough not to infringe.4 To allow cheap knock-offs would discourage originality.

However, this range of equivalents may also have a chilling effect. Consider the case of a subsequent inventor who has conceived of an improved product or method that is somewhat similar to a previous invention. Such a situation is commonplace in today’s crowded marketplace. Before undertaking this new development, the second-comer would likely look at the patents held by his competitors. The range of equivalents makes it unclear what he can make without infringing the other party’s intellectual property rights. In the patent field, the range of equivalents is limited by changes or amendments that the inventor makes to his patent application and is commonly known as prosecution history estoppel.5

Consequently, there is a conflict between the public notice function of claims and the prosecution history and fairness. This conflict arises due to the nature of language. Regardless of how carefully a patent drafter chooses his words, his words are still inexact. To strictly hold a patentee to the language of the claims necessarily prevents the patentee from obtaining the full benefit of his discovery. Alternatively, to allow a patentee to recapture any or all of the claim scope that he gave up in order to secure the patent would unfairly prevent subsequent inventors from being able to develop an idea due to the uncertainty that he would not be sued for patent infringement.

It is unclear when the doctrine of equivalents emerged, but it seems to be as old as the patent system itself.6 As the manner in which

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4. Id.
6. See generally Winans v. Adam, 56 U.S. 300, 341-43 (1853) (citing several cases wherein the courts applied the doctrine of equivalents as then understood).
patentees stake out the metes and bounds of their patents has evolved, the
document of equivalents has evolved as well. Despite the evolution of the
document of equivalents, the doctrine remains a murky area of patent law.
The Supreme Court’s decision in Festo, though adding few clear
standards, took a step toward holding patentees to a narrower
interpretation of their claims.

This comment discusses the general historical progression of
intellectual property in order to compare and contrast the rights at stake
and the similarities in each of the different areas. Next, this comment
includes a brief example of the purpose of the doctrine of equivalents. Then it outlines the evolution of the U.S. patent system as reflected by
the evolution of the patent statute. This comment also discusses the
historical progression of the doctrine of equivalents and its role in the
constantly evolving field of patent law. Finally, it analyzes the impact
that the Supreme Court’s recent decision in Festo will likely have on
patent practice.

II. INTELLECTUAL PROPERTY IN THE UNITED STATES

In the most general sense, the three types of intellectual property
protected in the United States are patents, copyrights, and trademarks. An understanding of each of these types of intellectual property, and how
they work, is useful in understanding the purpose of the patent regime
and how those purposes are carried out.

Each type of intellectual property has a different standard in terms of
how protection is obtained, the rights of the property holder, the duration
of the protection, and how a third party infringes on an intellectual
property holder’s rights. In addition to different standards, each type of
intellectual property protection has a vague zone of equivalents.

A. Copyrights

Copyright protection is the easiest of the three types of intellectual
property protection to obtain. The statute for copyright protection merely
requires that works be “original works of authorship fixed in any tangible
medium of expression, now known or later developed, from which they
can be perceived, reproduced, or otherwise communicated, either directly
or with the aid of a machine or device.”7 The Supreme Court, in Feist
Publications v. Rural Telephone Service Co., interpreted this standard to
merely require that the work contain “a modicum of creativity.”8 In

8. 499 U.S. 340 (1991) (holding that although an arrangement of facts may be the proper
subject of copyright protection, placing names in a phone book in alphabetical order is not).
reaching its decision the Supreme Court clarified that facts are not copyrightable, but compilations of facts may be if they demonstrate the “modicum of creativity” discussed above.\(^9\) In light of this low threshold, Congress has placed limits on the proper subject matter for copyrights. This statutory exclusion states, “In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.”\(^10\) Thus, copyright protection does not give an author the right to protect an idea. However, an author of a copyrighted work can preclude others from reproducing the work, making derivative works, distributing copies of the work by sale, and performing or displaying the copyrighted work publicly.\(^11\)

For works created after 1978,\(^12\) this protection lasts for the life of the author plus 70 years for an individual, or for the lesser of 95 years from publication or 120 years from creation in the case of other entities.\(^13\) During this time, a copyright holder can preclude others from doing the activities listed above. Obviously, if a third party were to use a direct copy in any of the activities listed above, he would directly infringe upon the copyright holder’s rights. However, copyright protection extends to more than just direct infringement. To understand how far this protection extends, it is necessary to understand what constitutes direct infringement.

According Arnstein v. Porter,\(^14\) infringement requires both copying and improper appropriation. Copying is proved either by direct evidence of copying (which is generally not available) or by a combination of proof of access and substantial similarity.\(^15\) Improper appropriation is proved by showing that “[the] defendant from the plaintiff’s works took so much of what is pleasing to the ears of lay listeners . . . that the defendant wrongfully appropriated something which belongs to the plaintiff.”\(^16\)

Accordingly, there is a tenuous zone of equivalents in which a copyright holder has rights. The court’s opinion in Arnstein shows that this zone of equivalents is based on fairness; it aims to keep others from

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9. *Id.* at 362.
14. 154 F.2d 464 (2d Cir. 1946).
15. *Id.* at 469.
16. *Id.* at 473.
stealing the heart of what is copyrighted, even though the copying may not be direct. An example might be changing the characters’ names in a book but otherwise leaving the rest of the book unchanged. The range becomes nebulous as more elements are changed in a story. This nebulous range raises a difficult question: at what point, we must ask, does the copyright attempt to protect the idea, rather than the expression?

**B. Trademarks**

Similar fairness concerns are found in trademark law. A trademark is “any word, name, symbol, or device, or any combination thereof (1) used by a person, or (2) which a person has a bona fide intention to use in commerce and applies to register on the principal register established by” the Trademark Act. In the United States, there are two federal registers for trademarks, the principal register and the supplemental register. Registration on the principal register, the more valuable of the two, entitles the trademark owner to several valuable rights. These rights include constructive notice to the public of the owner’s claim of ownership of the mark, a legal presumption of the registrant’s ownership of the mark and the registrant’s exclusive right to use the mark nationwide on or in connection with the goods and/or services listed in the registration; a date of constructive use of the mark as of the filing date of the application; the ability to bring an action concerning the mark in federal court; and the fact that the registrant’s exclusive right to use a mark in commerce on or in connection with the goods or services covered by the registration can become “incontestable,” subject to certain statutory defenses.

In order to be eligible for registration, a trademark must identify the source of the goods, rather than a type or characteristic of the goods. The three types of trademarks are those that are descriptive, those that are suggestive, and those that are arbitrary. To literally infringe on a trademark owner’s rights, a third party must not only use the owner’s exact mark, but must also use the mark on related goods.

Since it is unlikely that such a situation would occur, the courts have laid down a test to determine whether a trademark would infringe despite not being exactly the same as the asserted mark: This standard asks whether the marks are so similar that there is a likelihood of confusion

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19. ROBERT P. MERGES, ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 580 (2d ed. 2000). Classification of trademarks within these three categories is a complicated area, which is the subject of much discussion. Id. at 580–592.
20. See AMF Inc. v. Sleekcraft Boats, 599 F.2d 341 (9th Cir. 1979).
among relevant consumers.\textsuperscript{21} The test is multi-factored, and as with most multi-factored tests, the likelihood-of-confusion test is a case-specific inquiry. This approach introduces a nebulous zone of equivalents wherein a third party may infringe upon a trademark owner’s rights without using the same mark on related goods. Thus, one must ask: When is a mark dissimilar enough to be distinctive, and what goods are sufficiently related?

C. Patents

A similar nebulous zone of equivalents exists in patent law. Patents protect new and useful inventions.\textsuperscript{22} In order to be eligible for patent protection, an invention must be both novel\textsuperscript{23} and non-obvious.\textsuperscript{24} The requirements for novelty are discussed in 35 U.S.C. § 102. This section requires that nothing exactly the same as that claimed in the application be published before the invention date,\textsuperscript{25} that the invention not be known or used by others, or that it be on sale for more than one year before the application date.\textsuperscript{26} Section 102 also requires that the inventor has not abandoned, suppressed, or concealed the invention and that the inventor be the first inventor.\textsuperscript{27} In order for a third party to infringe upon a patent holder’s rights, an accused infringing device or process must contain each and every element of the protected device, either literally or by equivalents.\textsuperscript{28}

To summarize, copyrights protect original works of authorship, trademarks identify sources of goods, and patents protect new and useful inventions or discoveries. With respect to equivalents, copyright infringement is found when the copied work is so substantially similar that it takes the heart of the idea, trademark infringement is found when the marks are so similar that there is a likelihood of confusion, and patent infringement is found when the differences between the claimed element and the accused infringer is insubstantial. Each of these standards reflects the lack of bright-line standards necessary to accomplish fundamental fairness. This lack of definite standards for infringement makes it difficult for others to know what they can and cannot do. Thus, there is

\begin{itemize}
  \item \textsuperscript{21} Id.
  \item \textsuperscript{22} See 35 U.S.C.S. § 101 (2002).
  \item \textsuperscript{23} 35 U.S.C.S § 102 (2002).
  \item \textsuperscript{24} 35 U.S.C.S. § 103(a) (2002).
  \item \textsuperscript{25} 35 U.S.C.S. § 102(a).
  \item \textsuperscript{26} 35 U.S.C.S. § 102(b).
  \item \textsuperscript{27} 35 U.S.C.S. § 102(c)-(g).
  \item \textsuperscript{28} Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001).
\end{itemize}
tension between the goals of fostering creativity for first-comers and of continuing to foster improvement for those who come later.

III. INTRODUCTION TO THE DOCTRINE OF EQUIVALENTS IN THE PATENT SYSTEM

The uneasy balance sought by the doctrine of equivalents has its roots in the inception of the doctrine. The doctrine of equivalents is a judicially created remedy. The doctrine of equivalents creates a “zone” of equivalents beyond what is described in the literal language of a patent. To understand the usefulness and importance of equivalents, a simple example may prove useful.

Suppose a person is in the business of making shovels. Further suppose that the shovel maker has spent considerable time and money in developing a novel shovel and has in fact obtained a patent on the shovel. The shovel works exceptionally well, especially the handle that excels at resisting torque in any direction. The shovel maker spends substantial time and money “prosecuting” his patent before the United States Patent and Trademark Office (USPTO). Further suppose that his original claim reads:

- a shovel, comprising:
  - a handle,
  - first and second ends; and a
  - a blade disposed on the second end of the handle.

Further suppose that the examiner at the USPTO finds a reference that is several years old that shows all the elements disclosed above, and properly rejects the claim above, citing the earlier reference to the applicant. In response to the examiner’s rejection, the applicant then changes the claim to overcome the prior art reference, pointing out the differences between his shovel and the old shovel. A patent issues wherein the single claim reads:

29. Prosecution of patents generally includes preparing an application, submitting it to the United States Patent and Trademark Office (USPTO) and corresponding with an examiner at the USPTO in an ex parte proceeding until the patent either issues or is abandoned. The examiners serve as gatekeepers in that they make efforts to assure that patents that issue are not found already in the public domain or the subject of previous patents. Part of this process typically involves the examiner citing prior art, which she feels precludes, or at least limits, what the applicant is entitled to in the scope of any issuing patents. The applicant then responds by either trying to show why the examiner’s assertions are wrong and/or why the subject matter of the application is distinct from the reference cited by the examiner. Any changes made to the application are referred to as amendments. The most important amendments made to an application are made to the claims. The importance of the claims will be discussed further below.

30. Such action would bring about what is known as “prosecution history estoppel.” Prosecution history estoppel may arise when a patentee amends claims or makes arguments during prosecution. See Pharmacia & Upjohn v. Mylan Pharm., Inc., 170 F.3d 1373 (Fed. Cir. 1999). In other words, arguments and changes to the application that are made to obtain allowance of the
a shovel, comprising:
   a handle,
   the handle having a circular cross-section and further comprising first and second ends; and a
   a blade disposed on the second end of the handle.

Although this example is simple, it is useful in its simplicity. Assuming that the patent is valid and enforceable and that there would be an incentive for a third party to make use of the patented shovel, it is likely that competitors would take advantage of the useful new shovel design. One of the competitors might look at the claim of the subsequently issuing patent and decide that the patentee has amended his claim to specifically include a round cross section. In order to infringe literally, an infringing shovel would have to include at least a handle with at least two ends having a circular cross section, and it would also have to include a blade on the second end. Suppose that a competing shovel maker decides to make a shovel, but instead of a circular cross section, the competing shovel maker uses a handle using an oval cross section. Those with experience in designing handles that are good at resisting torque generally understand that an oval cross section is substantially the same as a circular cross section for resisting torque loads applied to handles. The question thus becomes whether the competing oval handled shovel would infringe on the claims of the shovel patent.

The oval-handled shovel would clearly not literally infringe on the shovel patent because an oval is not a circle. Should the shovel maker be allowed to keep others from making, using, or selling the oval handled shovel on this basis? Conversely, shouldn’t the competitor be able to rely on the notice function fulfilled by the claims and the prosecution history to design around the claims?

Resolving this issue is complicated. On one hand, there might be a chilling effect on the advancement of technology if inventors had no assurance that third parties could make insubstantial changes to the patented subject matter and without infringing on the patent. Companies would have little or no incentive to invest money if once a patent was granted anyone could make minor changes and avoid infringing on the patent.

Claims give rise to prosecution history estoppel. This estoppel prevents a patentee from reclaiming subject matter surrendered during prosecution. Id. This subject matter is part of the record and is available to the public. See Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995). In sum, a patentee cannot say that he did not give up something he relinquished in order to obtain a patent. What the patentee actually relinquished during prosecution is the subject of much litigation, and the basis of the Festo cases that will be discussed below.
On the other hand, the doctrine of equivalents may have a different type of chilling effect. Suppose, for example, that you are in the business of designing shovels and want to create a shovel similar to the one described above except improve upon the design of its handle. Given the language of the patent, you may suppose that utilizing a square handle is sufficiently different so that you would not infringe the claim of the patent. The ambiguity of the doctrine makes it uncertain what is equivalent to a circular handle. This is especially true given the changes made to the claims during the prosecution of the patent. Clearly the patentee gave up something when he changed his claims, but how much? Consequently, technology may stagnate because innovators may be unwilling to attempt improvements. Supporting this argument is the fact that it is a patentee who drafts the claims. In the example above, the patentee could have chosen to claim an oval cross section, but instead claimed only the circular cross section. Although this example is simple, it illustrates the tension that equivalents create between seeking to prevent infringers from pirating an idea and fostering creativity by providing clarity in what is patented. A look into the history of the doctrine of equivalents is useful in understanding the complexity of the current state of affairs.

IV. THE PATENT SYSTEM

With the differences between the three types of intellectual property in mind, the doctrine of equivalents as used in the patent system will comprise the majority of the remainder of this comment. In particular, the comment addresses the effects of recent developments with respect to the doctrine of equivalents as it applies to prosecution history estoppel. In order to fully appreciate the impact of recent decisions on the doctrine of equivalents, it is useful to understand how the patent system has evolved and how the doctrine of equivalents has evolved with it.

A. Evolution of the Patent Statute

The sequence of Congressional legislation is useful in tracing the development of the patent law system in the United States. The statutes have evolved from requiring a general distinction over what was previously known\(^\text{31}\) to the current claiming regime that mandates that “the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”\(^\text{32}\)


The Constitution granted Congress the power "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The first Congressional expression of this power was found in the Patent Act of 1790. Section 2 of the Act required that the specification be

so particular, and said models so exact, as not only to distinguish the invention or discovery from other things before known and used, but also to enable a workman or other person skilled in the art or manufacture . . . to make, construct, or use the same, to the end that the public may have the full benefit thereof, after the expiration of the patent term.

Thus, the first patent act merely required that the specification distinguish the invention from the prior art, without a statutory requirement for claims. However, according to a foremost patent expert, Donald Chisum, while descriptions did not require the use of a claim, the courts interpreted this language as requiring the equivalent of claims. Congress modified the act three years later, but did not substantively change the requirement that the inventor merely distinguish the invention from the prior art and enable others to make and use the invention.

Congress made a clear step toward requiring claims in 1836. The Act of 1836, like previous acts, required that an inventor deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using, and compounding the same, in such full, clear and exact terms . . . as to enable any person skilled in the art or science to which it appertains . . . to make, construct, compound and use the same.

Unlike the previous acts, the Act of 1836 added an additional requirement that the inventor "particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery." Thus, Congress began to require not only that a patentee distinguish his invention over what had been previously known, but also apprise others of what the patentee claimed as his invention.

35. Id. at 110.
37. See Act. of Feb. 21, 1793, ch. 11, § 3, 1 Stat. 318. See also CHISUM supra note 36 § 8.02.
39. Id.
In 1870, Congress added a subtle yet significant requirement. The 1870 version of the Act requires a patentee to “particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery.” This subtle difference, rather than implicitly requiring an applicant to claim what he regards as invention, positively requires that the patentee claim the invention.

In 1952, Congress retained the positive claim requirement, but altered the language slightly to include the following: “[T]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” Thus, the current version of the Act clarifies that it is the claim that defines the patent.

As described above, the patent statute has required more and more that the patentee point out what he regards as his invention. This requires a patent drafter to write with more and more precision. Such precision would be onerous without some mitigation, like the doctrine of equivalents. Congress has the power to draw the line, but has left it up to the courts to decide the issue.

**B. Historical Progression of the Doctrine of Equivalents**

1. **Winans**

One of the earliest and most famous cases on the doctrine of equivalents is *Winans v. Adam*. In addition to being representative of the doctrine of equivalents as it existed early in United States history, *Winans* also provides useful insight into the infringement analysis courts undertook at that time. This insight into the court’s analysis is useful because in order to understand the doctrine of equivalents, it is also necessary to understand how a patent is literally infringed.

*Winans* involved a patent for an improved railcar for carrying coal or other similar materials. The essence of the improvement was that the load was equally distributed throughout the structure, thereby vastly increasing the weight of coal that a railcar was able to carry. In the specification, the patentee described his invention as having "the form of a frustrum of a cone." The accused infringing cars made by the
The defendant did not use the form of a frustrum of a cone, but rather utilized octagonal or pyramidal shapes.\(^{46}\)

The Winans Court did not address the question of literal infringement, but rather analyzed only whether the accused device was an equivalent.\(^{47}\) The court implied that if the accused device were exactly the same as the embodiment disclosed in the patent, it would clearly infringe. As will be discussed below, the requirements for a finding of literal infringement as interpreted by the courts have an important bearing on a determination on the application of the doctrine of equivalents.

The Court articulated two questions to be answered in determining infringement. First, a court must determine “what is the thing patented.”\(^{48}\) Second, it must conclude whether “[the] thing [has] been constructed, used, or sold by the defendant.”\(^{49}\) In defining the specifics of what had been patented, the Court was in effect determining the scope of the patent protection. The Winans Court determined that the essence of the invention was “that it carried more coal in proportion to its own weight than any car previously in use, and that the load instead of distorting it, preserved it in shape, acting as a frame.”\(^{50}\) Thus, the Court focused in part on the useful result of the coal car.

For example, the Court cited approvingly of a former case involving a patent directed to steamboats:

> There never were two things to the eye more different than the plaintiff’s invention, and what the defendant had done in contravention of his patent-right. The plaintiff’s invention was different in form; different in construction; it agreed with it in only one thing, and that was, by moving in the water.\(^{51}\)

In explaining how an alleged infringing mechanism that is dissimilar in nearly every way can nevertheless infringe, the court stated, “the moment a practical, scientific man is furnish[ed] with the idea . . . he can multiply without end the forms in which this principle can be made to operate.”\(^{52}\) Accordingly, the court focused on the useful results of the invention and on the principle the patentee used to bring about those results. As a result, patentees were allowed a monopoly on broad principles.

\(^{46}\) Id. at 332.

\(^{47}\) See id. at 332.

\(^{48}\) Id. at 338.

\(^{49}\) Id.

\(^{50}\) Id. at 332.

\(^{51}\) Id. at 335.

\(^{52}\) Id. at 336.
DOCTRINE OF EQUIVALENTS

In this context, only an invention that was exactly the same as the embodiment disclosed in the patent would literally infringe. On the other hand, the Winans Court made clear, “[S] till the question must always be, whether, whatever the shape he adopts, he is not availing himself of the principle first suggested by the patentee.” 53 This broad protection extended to the patent as a whole. Consequently, such protection would encourage others to find a different principle to achieve a different and perhaps better and more useful result. For better or for worse, the principles and useful result test contained in Winans remained the standard for years.

2. Graver Tank

The Supreme Court’s next significant pronouncement of the doctrine of equivalents came about with a decision in 1950. Graver Tank v. Linde Air Products Co. 54 involved an electric welding process and the fluxes used in that process. The patent claimed essentially a combination of alkaline earth metal silicate and calcium fluoride. 55 The alleged infringing composition was similar to the patented composition, except that it substituted silicates of calcium and manganese for silicates of calcium and magnesium. 56 Manganese silicate is not an alkaline earth metal. 57 Clearly, there could not be literal infringement because all of the elements of the claimed composition were not present in the accused composition. The question then became whether the substitution of manganese was substantial enough to preclude a finding of infringement under the doctrine of equivalents. 58

The Court relied upon expert testimony to determine whether those familiar with the field would have readily recognized that the substitution described above would make the composition effective for its intended purpose. 59 In its opinion, the Supreme Court clearly stated the purpose of the doctrine of equivalents:

[C]ourts have . . . recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes

53. Id. (emphasis added).
55. Id. at 610.
56. Id.
57. Id.
58. Id.
59. Id. at 610-612.
and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system. The purpose of the doctrine was well known. What the court added, by including an approving citation to a previous case, has become known as the function-way-result test: “if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.”

The function-way-result test could have added a significant amount of clarity to the Winans principle test, but it failed to do so. Instead, the test merely added two more elements, the function and the way, to Winans’ limited focus on the useful result. This may be because the court focused on the invention or device as a whole, rather than on the claim elements. As the precision with which applicants were required to claim their respective inventions increased, it became more feasible to define a predictable range of equivalents pertaining to those claims without departing from the purpose of the doctrine. Despite the addition of the function and way elements to the test described in Winans, defining the range of equivalents remained a difficult problem. This question is more complicated when prosecution history estoppel, a more modern doctrine, is also at issue. Which policy should control? If a patentee alters a claim during prosecution, is he still entitled to some range of protection of equivalents? If so, what is that range of equivalents?

C. Recent Cases on the Doctrine of Equivalents

The Federal Circuit found itself straddling two divergent lines of authority. One line of authority, commonly known as the Hughes I line applied a flexible bar with respect to prosecution history estoppel and the doctrine of equivalents. Hughes involved a patentee who had developed a novel system and method for controlling the attitude of satellites. During the process of obtaining the patent, the patentee made changes to

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60. Id. at 608 (citing Machine Co. v. Murphy, 97 U.S. 120, 125 (1877)).
62. Id.
his application to avoid the prior art. The accused infringer argued that the changes should preclude the patentee from any range of equivalents, based on prosecution history estoppel. The court refused to cut off equivalents completely, and instead chose to apply a flexible bar with respect to what the patentee surrendered during prosecution. The range of equivalents, under the flexible bar approach, depended on the purpose of the amendment. The court stated, “[a]mendments may be of different types and may serve different functions. Depending on the nature and purpose of an amendment, it may have a limiting effect within a spectrum ranging from great to small to zero.”

The court enumerated several reasons for such an approach. Among these reasons was the unpredictable nature of what equivalents may later be used to practice the invention. In applying a flexible bar, the court refused to close equivalents: “we . . . reject that view [that would preclude equivalents in cases where prosecution history may apply] as a wooden application of estoppel, negating entirely the doctrine of equivalents and limiting determination of infringement issues to consideration of literal infringement.” Accordingly, the Federal Circuit would often apply a flexible bar to equivalents when deciding cases involving prosecution history estoppel and would make a determination of equivalents based on the nature and purpose of the amendment at issue.

However, this approach was not the only one followed by panels of the Federal Circuit. The Kinzenbaw line of cases adopted an approach that was in opposition to that of Hughes I. Federal Circuit panels that chose to follow the Kinzenbaw court refused to look into the reasons for amendments and refused a patentee the opportunity to recapture any of the surrendered subject matter by equivalents. The Supreme Court’s first attempt to resolve the issue came a few years later in its decision in Warner-Jenkinson Co. v. Hilton Davis Chemical Co.
The relevant facts of *Warner-Jenkinson* are relatively simple. A patentee held a patent on a process for filtering dyes between a pH of 6.0 and a pH of 9.0. The upper limit of 9.0 was added during prosecution to avoid a prior art reference that operated at a pH above 9.0, but there were no reasons given for the amended lower limit. The accused infringer performed a filtering process at a pH of 5.0. At trial, the patentee conceded there was no literal infringement, and relied instead solely on the doctrine of equivalents. The defendant argued that the doctrine of equivalents was no longer valid in view of the Patent Act of 1952, and even if the doctrine of equivalents were still valid, it would not apply because of prosecution history estoppel. The Supreme Court refused to adopt this view and instead took the opportunity to set forth a new analysis for infringement under the doctrine of equivalents: The Court held that the doctrine of equivalents was still in effect but that it needed to be refined in order to limit conflicts with the definitional and public notice function of claims. To this end, the Court held that when analyzing an accused infringing device or process against a claimed invention, each element must be compared, not simply the invention as a whole: “Each element contained in a patent claimed is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.” Thus, the Supreme Court took an affirmative step toward narrowing the range of equivalents while increasing the predictability with which equivalents might be applied and while also consolidating the two lines of cases. Under the *Warner-Jenkinson* standard, each claim element must be present, either literally or by equivalents. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.* was among the cases remanded by the Supreme Court for reconsideration in light of *Warner-Jenkinson*.

V. FESTO

The Federal Circuit’s decision in *Festo I* was not extraordinary. A simplified version of the issue was whether an alloy sleeve that
prevented magnetic leakage was equivalent to a magnetizable sleeve that
prevented magnetic leakage and whether single two-way seals are
equivalent to two one-way seals. The description of the sleeve as being
made of a magnetizable material was added during prosecution, but the
reasons for the amendment were unclear. Accordingly, the court upheld
the jury’s finding of infringement because there was equivalence under
the function-way-result test. The case was remanded for reconsideration in view of *Warner-Jenkinson*.84

The Federal Circuit’s decision on remand, *Festo II*, as compared to
*Festo I*, was extraordinary. In a sweeping move, the Federal Circuit
attempted to eliminate all equivalents with respect to any element that
has been amended for a substantial reason relating to patentability. The
Federal Circuit’s opinion focused on its answers to five en banc
questions directed to what types of amendments create an estoppel and
the scope of that estoppel.87

The first question is,

For the purposes of determining whether an amendment to a claim
creates prosecution history estoppel, is a “substantial reason related to
patentability” (citations omitted) limited to those amendments made to
overcome prior art under § 102 and § 103, or does “patentability mean
any reason affecting the issuance of a patent”88

As discussed above, 35 U.S.C. § 102 and § 103 are the sections
dealing with novelty and non-obviousness. These two sections deal with
patentability as it relates to prior art or to what was previously known.
Consequently, amendments based on these considerations are typically
the subject matter of prosecution history estoppel, since the amendments
are typically made to distinguish the subject matter of the application
over the prior art. With respect to first question, the court held,

[A] substantial reason related to patentability” is not limited to
overcoming prior art, but includes other reasons related to the statutory
requirements for a patent. Therefore, an amendment that narrows the
scope of a claim for any reason related to the statutory requirements for

81. *Id.* at 861-862.
82. *Id.* at 864.
83. *See id.* at 868. *See also id.* at 862.
84. 520 U.S. 1111 (1997).
85. 234 F.3d 558 (Fed. Cir. 2000).
86. *See id.* at 562.
87. *Id.*
88. *Id.* at 563.
a patent will give rise to prosecution history estoppel with respect to the amended claim. 89

Accordingly, any amendment that fulfills a statutory requirement and narrows a claim will give rise to prosecution history estoppel. The court attempted to reconcile its position with the Supreme Court’s opinion in Warner-Jenkinson by implying that not all amendments are made to comply with statutory requirements and hence not motivated by patentability concerns. 90 While it may be true that not all amendments are related to statutory provision, the court took the estoppel further with their answer to the second question.

The second question was similar to the first, “should a ‘voluntary’ claim amendment—one not required by the examiner or made in response to a rejection by an examiner for a stated reason—create prosecution history estoppel?” 91 The court’s answer to this question made clear that it had no interest in differentiating between voluntary and involuntary amendments: “[v]oluntary claim amendments are treated the same as other amendments. Therefore, a voluntary amendment that narrows the scope of a claim for a reason related to the statutory requirements for a patent will give rise to prosecution history estoppel as to the amended claim element.” 92

Thus, the application of prosecution history estoppel to an amendment made to satisfy any statutory requirement effectively makes any amendment the subject of prosecution history estoppel. To extend prosecution history estoppel to any amendment can easily be justified by retreating to the public notice function of claims and prosecution history. 93 The public is entitled to rely upon the public record as notice of what they can and cannot do. If the circuit court’s decision had been upheld, patent drafters would have been on notice that any amendment made to satisfy statutory requirements would result in an estoppel and could have reacted accordingly. These answers were not ground shaking. The court’s answer to the next question, however, was.

In the fourth question the court asked, “[i]f a claim amendment creates prosecution history estoppel, under Warner-Jenkinson what range of equivalents, if any, is available under the doctrine of equivalents for the claim element so amended?” 94 The court answered, “[w]hen a claim amendment creates prosecution history estoppel with regard to a claim

89. Id. at 563.
90. Id. at 567-68.
91. Id. at 568.
92. Id.
93. Id.
94. Id. at 569.
element, there is no range of equivalents available for the amended claim element. Application of the doctrine of equivalents to the claim element is completely barred (a ‘complete bar’).”95

The practical effects of this pronouncement were considerable. The Federal Circuit itself had earlier recognized that very few claims are allowed without amendment.96 As a practical matter, this new “complete bar” pronouncement would have eviscerated the doctrine of equivalents. In most circumstances, the very point of novelty would be strictly held to the literal language of the claims. The Supreme Court in *Graver Tank* had recognized the difficulties in such an approach: “[u]tright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form.”97 Despite the history of the doctrine of equivalents, the Federal Circuit chose to ignore precedent and adopt a new standard because, as the Federal Circuit announced, the doctrine had become “unworkable.”98

The court then proceeded to list the benefits of the complete bar. The court emphasized that under the complete bar the patentee and public would have greater notice of what is actually covered by the patent.99 The court argued that such a public notice would encourage subsequent advancement: “[U]nder the complete bar approach, technological advances that would have lain in the unknown, undefined zone around the literal terms of a narrowed claim under the flexible bar approach will not go wasted and undeveloped due to fear of litigation.”100 Such development may actually be fostered by such a bar, but the court failed to consider the chilling effect that such a standard would have on those considering initial development. Is the undeveloped zone that is found in equivalents such that developments within such a zone would outweigh any possible chilling effects initial developments?

The court, however, did not address the issue. Instead, the court’s answer to the fourth question established a presumption that when no reason for an amendment is given, there would be no range of equivalents.101 Thus, the court cut off equivalents for all amendments, not simply those that were related to patentability. In light of the answers

95. Id.
99. Id. at 576-578.
100. Id. at 577.
101. Id. at 578.
to the first four questions, the court chose not to address the fifth question, which it considered to be moot.\textsuperscript{102}

After addressing these four questions, the court proceeded to analyze the facts before it. Given that the patentee had amended the claims during prosecution and that infringement had only been found under the doctrine of equivalents, the court reversed the jury’s finding of infringement.\textsuperscript{103}

The Supreme Court granted certiorari. The Court’s decision, \textit{Festo III},\textsuperscript{104} was much anticipated. Would the Supreme Court uphold the Federal Court’s decision? It seemed unlikely given the long history of the doctrine of equivalents. Would the Supreme Court over-turn all of the findings, or merely some of them? What would stand? What would become of equivalents?

The Supreme Court’s short opinion reintroduced a flexible bar while substantially stiffening that bar. In arriving at its holding, the Court adopted the Federal Circuit’s holding that if a patentee makes a narrowing amendment, either to satisfy the requirements of patent law or without reason; such an amendment creates an estoppel.\textsuperscript{105} But despite agreeing with the Federal Circuit with respect to the types of amendments that create estoppel, the Court disagreed with the Federal Circuit as to the effects of that estoppel. The Court stated

The amendment does not show that the inventor suddenly had more foresight in the drafting of claims than an inventor whose application was granted without amendments being submitted. It shows only that he was familiar with the broader text and with the difference between the two. As a result, there is no more reason for holding the patentee to the literal terms of an amended claim than there is for abolishing the doctrine of equivalents altogether and holding every patentee to the literal terms of the patent.\textsuperscript{106}

If a claim amendment creates estoppel, but that estoppel is not a complete bar, what then is the proper range of equivalents? With respect to this question, the Supreme Court held that “the patentee should bear the burden of showing that the amendment does not surrender the particular equivalent in question.”\textsuperscript{107} This established that when a patent

\textsuperscript{102} Id. The fifth question asked, “Would a judgment of infringement in this case violate \textit{Warner Jenkinson}’s requirement that the application of the doctrine of equivalents ‘is not allowed such broad play as to eliminate an element in its entirety?’” \textit{Id.} Clearly, where there were no equivalents there could be no expansion of those equivalents.

\textsuperscript{103} Id. at 591.

\textsuperscript{104} 122 S.Ct. 1831 (2002).

\textsuperscript{105} Id. at 1839-42.

\textsuperscript{106} Id. at 1841.

\textsuperscript{107} Id.
claim has been amended the patentee has surrendered all of the subject matter asserted between the original claim and the narrower amended claim. In making an amendment, a patentee knows that he will bear the burden of proving that he did not surrender equivalents of the narrower claim.

This rule naturally gave rise to the question of how a patentee proves that he did not surrender the equivalent. The court outlined several conditions under which a patentee could not be deemed to have surrendered the equivalents: One such condition occurs when the equivalent in question was unforeseeable at the time of the application. Another condition occurs when “the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question.” The third provision serves as a safety net: “There may be some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.”

In theory, the first condition would add predictability to the litigation. Those who were thinking of developing something that might fall in the range of equivalents would be able to look at the equivalents available at the time of the patent application. But this theory fails when looking at what it actually affords those who go to court. Litigants defending a patent infringement suit are likely to look at the language requiring that in order to be entitled to equivalents, a patentee must prove that the equivalent was not foreseeable at the time of the application. The question of what equivalents were available would then turn on whether the equivalent was foreseeable. The difficulty involved in the practice of looking to the past to determine what was foreseeable almost always ends in a battle of experts. Such a standard, though in theory more predictable, would add little surety to those wishing to avoid expensive litigation.

Similarly, the second condition under which the Court says equivalents might be available does nothing more than reintroduce the difficulties of looking at the reason for an amendment. If the second condition provides little in the way of predictability, the third condition provides even less. Instead it gives litigants a basis for arguing any variety of theories based on “other reasons.”

108. Id.
109. Id.
110. Id.
111. Id.
VI. CONCLUSION

Over the years, the doctrine of equivalents has become more and more restricted in its application. This restriction has been gradual, beginning with the addition of the function-way-result test. To that test was added the flexible bar and the all elements test. The Supreme Court’s decision in Festo added a further limitation on the doctrine of equivalents by effectively adding a limitation to prosecution history estoppel that the equivalent not be foreseeable. This new element, while arguably forcing or requiring the claims to provide more of a notice function may come at too great a price. By holding a patentee to the strict language of his patent, the Supreme Court effectively eliminated the doctrine of equivalents. This is true for several reasons.

For example, a patentee loses equivalents for any claim element that has been amended. The argument in support of this approach advocates that patent drafters need to be more careful when drafting claims. Such precision, if possible, would require an exponential increase in the cost of obtaining patent protection. Additionally, this new element will add more expense to litigation by requiring expert testimony not only as to the state of the art and the scope of the claims, but as to what would have been foreseeable at the time of application. Such standards, rather than fostering invention, simply make it increasingly difficult for parties to obtain and enforce their patents resulting in an overall chilling effect on the marketplace. This could not have been what the framers considered as fostering the useful arts.\footnote{U.S. Const. art. I, § 8, cl. 8.}

\textit{Kulaniakea Fisher}