

ARTICLE:

THE DOCTRINE OF EQUIVALENTS IN JAPAN

Toshiko Takenaka*

I. INTRODUCTION

In *Warner-Jenkinson*,¹ the United States Supreme Court emphasized the significance of balancing three competing interests for determining the extent of patent protection under the doctrine of equivalents. These interests include: (1) interests of patent owners for securing a fair reward for their invention; (2) interests of the public for receiving clear notice of the scope of the exclusive right; and (3) interests of the patent office for making sure to issue patents only for patentable inventions. US courts have been struggling to reach a fair balance among these interests since the patent community developed a claim drafting practice to define an invention followed with a phrase such as “substantially as herein described” under the 1836 Patent Act.² Thus, it has been more than one and half centuries since the creation of the concept of equivalents, but courts are still unable to clarify the content and limits of the concept to reflect a fair balance among these interests.

In contrast, Japanese courts have consistently placed more weight on interests of the public and the patent office than the patentee’s interests. Japan was long in a position of trying to catch up with the level of technology in the United States and Europe. It successfully promoted industrial developments by importing pioneering technologies and developing improvements and manufacturing techniques. To allow room for improvements, the scope of a patent should be clear from the patent document, and should be free from any uncertainty introduced by the doctrine of equivalents. Thus, Japanese courts refused to introduce an unclear concept of equivalents in their patent system.

Reflecting the Japanese courts’ negative attitude, Japanese patentees refrained from claiming infringement under the doctrine of equivalents

* Associate Professor of Law, Director, Center for Advanced Study and Research on Intellectual Property, University of Washington School of Law.

¹ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 137 L. Ed. 2d 146, 117 S. Ct. 1040, 41 U.S.P.Q.2d 1865 (1997)

² Jessup, *The Doctrine of Equivalents*, 54 Journal of Patent Office Society 248 (1972).

because Japanese courts viewed the claim as an admission of no infringement. Once courts found no literal infringement, they emphasized the uncertainty introduced by the doctrine and simply rejected the patentee's infringement claim. However, in exceptional cases, Japanese patentees successfully persuaded Japanese courts to extend the protection beyond the literal meaning of claim language. These exceptional cases involved circumstances where a denial of infringement would have led to an unfair result. To reach a fair result, Japanese courts still refused to use the concept of equivalents. Instead, they stretched the literal meaning of claim language under the substantial identity rule.

After the Japanese Supreme Court expressly endorsed the doctrine of equivalents in the *Ball Spline* case,³ Japanese courts have started to undertake the difficult task of defining the content and limits of the concept of equivalents. A strong initiative taken by the Ministry of International Trade and Industry (MITI) and the Patent Office led to the Japanese courts' reevaluation of its case law on determining infringement and the balance among the competing interests under the pro-patent policy. Accordingly, the test and limit to the concept of equivalents defined by Japanese courts should reflect such change in patent policy.

Given that it has been only a few years since the endorsement of the doctrine of equivalents, Japan is still in the process of developing case law clarifying the concept of equivalents. However, a significant impact of the *Ball Spline* decision is very clear in presenting a case of infringement in Japanese courts. Accordingly, I will first focus on the impacts resulting from the *Ball Spline* decision. I will then explain the conditions for finding infringement under the doctrine of equivalents and compare them with the conditions developed by U.S. courts.

II. IMPACTS OF THE *BALL SPLINE* DECISION

The first impact of the *Ball Spline* decision is the expansion in scope of literal infringement. As properly pointed out by the Court of Claims in *Autogiro Co. of America v. United States*,⁴ it is almost impossible to define an invention in terms of language without introducing some uncertainty in the coverage of such language. Some degree of uncertainty is necessarily introduced as long as courts try to define the protection scope based on the claim language. Thus, to minimize the uncertainty resulting from the claim

³ *Tsubakimoto Seiko v. THK K.K.*, 1630 *Hanrei Jiho* 32 (Sup. Ct. 1998). An English translation of the decision by the author is published in *the Supreme Court Affirmed the Presence of the Doctrine of Equivalents Under Japanese Patent System*, 5-1 CASRIP Newsletter 12 (Winter 1998) available on line at <http://www.law.washington.edu/casrip/newsletter/newsv5i1jp1.html>.

⁴ 384 F.2d 391, 155 USPQ 697 (Ct. of Cl. 1967).

interpretation, Japanese courts developed the doctrine to limit the patent scope to what is recognized by the inventor. Since the specification and records of the prosecution indicate the scope recognized by the inventor, Japanese courts place heavy weight on patent documents in interpreting claim language, resulting in narrow literal scope covering only embodiments in the specification. Moreover, when judges define the scope recognized by the inventor, they use their own knowledge, instead of the general knowledge of one skilled in the art, because of their lack of expertise in technologies. Until the recent restructuring of court system, only Tokyo District and High courts had access to technical experts dispatched by the Japan Patent Office.

However, the Supreme Court in the *Ball Spline* case instructed lower courts to interpret the claim language as one skilled would have read it as of the filing date. Responding to that instruction, Japanese courts, in clarifying the meaning of claim language, started to make reference to the state of the art, taking into account the general knowledge of one skilled in the field of invention. Judges were instructed to view the description in the specification as merely example implementations of the patented invention described in the claims. Such use of the extrinsic evidence and the focus on the claim language in interpreting claim language led to an expansion of the literal infringement scope.

Under the new claim interpretation practice, courts can find infringement with respect to an accused device even if the device was different from the disclosed preferred embodiments but falls within the definition of the claim language in the view of one skilled in the art. This expansive claim interpretation contrasts starkly with the recent developments in U.S. courts after *Markman*.⁵ This is because U.S. courts now heavily rely on the specification and prosecution records, and limit the use of extrinsic evidence to exceptional cases where intrinsic evidence cannot clarify the meaning of a disputed term.⁶

Another impact of the *Ball Spline* decision is a significant increase in the number of cases in which Japanese patent owners have raised issues of infringement under the doctrine of equivalents. The Supreme Court's endorsement of the doctrine of equivalents removed the risk that courts may view a claim of infringement under the doctrine of equivalents as an admission of no literal infringement. Moreover, the courts can no longer dismiss a claim of infringement under the doctrine of equivalents without reviewing the conditions set forth by the Supreme Court. Japanese patent owners have argued infringement under the doctrine of equivalents in a majority of the cases brought in Japanese courts after the *Ball Spline* decision. Although the

⁵ *Markman v. Westview Instruments, Inc.* 517 U.S. 370, 38 USPQ2d 1461 (1996).

⁶ *Vitronics Corp. v. Conceptoronic, Inc.* 90 F.3d 1576, 39 USPQ2d 1573 (Fed. Cir. 1996).

success rate for a finding of infringement under the doctrine of equivalents is still very low, it is now worthwhile to argue infringement under the doctrine of equivalents in Japanese courts.

III. SIMILARITIES IN JAPANESE AND U.S. CONDITIONS FOR EQUIVALENTS

In the *Ball Spline* decision, the Japanese Supreme Court set forth five conditions for applying the doctrine of equivalents. These conditions closely parallel the conditions and limitations of the doctrine of equivalents developed by the German Supreme Court.⁷ However, they are also similar to the tests and limitations for the doctrine of equivalents developed by the United States Court of Appeals for the Federal Circuit.

The *Ball Spline* Court's first condition is the *non-essential element* test. It requires that the elements to be replaced with their equivalents should not exist in an essential portion of the patented invention. In other words, only non-essential elements can be replaced with equivalents under the doctrine of equivalents. This condition is similar to the *all elements test* emphasized by the U.S. Supreme Court in *Warner-Jenkinson*, because it requires finding equivalents on an element-by-element basis. Both U.S. and Japanese conditions prevent the doctrine of equivalents from eliminating any element entirety.

However, the Japanese non-essential elements test is somewhat stricter than the U.S. all elements rule. The Japanese non-essential elements test completely prevents essential elements from being replaced with their equivalents. In contrast, U.S. courts usually do not distinguish between essential and non-essential elements; all elements can be replaced with equivalents unless the patentee emphasized the significance of the role of an element in the patented invention, and thus it cannot be replaceable by an equivalent that does not play the same role.⁸

A challenge that Japanese courts have faced in applying the non-essential elements test is how to distinguish between essential and non-essential elements. In *Shinwa Seisakusho*,⁹ the Tokyo district court defined

⁷ Compare with a list of tests for equivalents developed by German Supreme Court in Pagenberg, *Patent Litigation in Germany: A Practitioner's Perspective*, Globalization of Intellectual Property in 21 Century, 4 CASRIP Symposium Publication Series 119 (1999).

⁸ *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 141 F.3d 1084, 46 U.S.P.Q.2d 1257 (Fed. Cir. 1998)

⁹ *Shinwa Seisakusho v. Furuta Denki*, Judgment of Tokyo District Court, March 23, 2000, available on line at <<http://courtdomino.courts.go.jp/chiteki.nsf/c617a-99bb925a29449256795007fb7d1/4b959f287a6eba2f492568ac001a67e0?OpenDocument>>

essential elements as being the technical features which give a basis for solving the problem unique to the patented invention. In other words, essential elements include features such that their substitution would result in a technical idea different from the idea underlying the patented invention. Other lower courts adopted that definition and analyze the description in the specification, the prior art, and amendments and arguments during prosecution to identify the features that distinguish the prior art and contribute to the solution for the problem of the invention.

The second condition is called the *capability of replacement* test. It requires that the replacement between claimed elements and their equivalents should have no effect in attaining the objective of the patented invention. In other words, the accused product must result in identical functions and effects as the patented invention. In focusing on the identity of the function and result between the patented invention and accused embodiment, this test closely parallels US courts' *function way result* test.¹⁰

The third condition is called *obviousness* or readiness of replacement test. It requires that the interchangeability of the claimed elements and their equivalents would have been readily conceived by a person skilled in the art of the patented invention at the time of manufacture or other exploitation by the accused infringer. This test also closely parallels the *known interchangeability* test emphasized by the U.S. Supreme Court in *Warner-Jenkinson*, because both tests focus on the perspective of one skilled in the art regarding whether the replacement between the claimed elements and their equivalents is foreseeable.¹¹

The fourth is a condition to limit the doctrine of equivalents. This test is a translation of a German patent case law doctrine, known to Japanese and German scholars as "the defense of the free state of art." In essence, the doctrine prevents patentees from extending the exclusivity of patent rights under the doctrine of equivalents to subject matter that is part of the prior art and was thus in public domain as of the filing date. The German Supreme Court expanded the test in the *Formstein* case¹² to prevent the extension of an exclusive right with respect to subject matter that is obvious from the prior art. The Japanese Supreme Court adopted this expanded doctrine to prevent the expansion of patent rights under the doctrine of equivalents.

According to this doctrine, to limit the doctrine by the prior art a patentee can claim infringement under the doctrine of equivalents only if the accused product is novel and would not have been conceivable from the

¹⁰ *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 4 U.S.P.Q.2d 1737 (Fed. Cir. 1987)

¹¹ *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 114 F.3d 1161, 43 U.S.P.Q.2d 1152 (Fed. Cir. 1997)

¹² *Moulded Curbstone (Formstein)*, Judgment of Federal Supreme Court of Germany, April 29, 1986, 18 IIC 795 (1987).

prior art by a skilled person at the time of application for the patented invention. U.S. courts have also developed a doctrine to limit the doctrine of equivalents in the context of the prior art. This U.S. doctrine parallels Japanese and German doctrines in preventing a finding of infringement under the doctrine of equivalents if a hypothetical claim literally covering an accused device could not have been patentable over the prior art for anticipation and lack of nonobviousness.¹³

The fifth condition prevents patentees from claiming infringement under the doctrine of equivalents with respect to subject matter that is intentionally removed from the technical scope of the claim by the applicant during the patent prosecution. This is another doctrine to limit the doctrine of equivalents, and appears to parallel the U.S. doctrine of *prosecution history estoppel*. However, the inclusion of the term “intentionally” suggests a narrow application of this condition. This limitation may apply only to subject matter that was in fact recognized and surrendered during the patent prosecution through an amendment, as suggested in a Federal Circuit case, *Litton*.¹⁴

In summary, on their face, the five conditions parallel the Federal Circuit’s tests for showing an insubstantial difference between the claim and accused embodiment and doctrines to limit the doctrine of equivalents. Moreover, the Japanese Supreme Court shares the same view as the U.S. Supreme Court that these conditions are to be examined as of the time of infringement.

IV. DIFFERENCES IN U.S. AND JAPANESE CONDITIONS FOR EQUIVALENTS

Overall, Japanese conditions for the doctrine of equivalents are in line with their U.S. counterparts. However, there are some major differences. The first major difference is the allocation of the burden of proof. Under U.S. case law, patentees need to show both an insubstantial difference and the absence of the doctrines to limit the doctrine of equivalents. In contrast, Japanese lower court decisions issued after the *Ball Spline* case suggests that Japanese patent owners need to show only the first three conditions, and then the burden of proof shifts to accused infringers. Accordingly, accused infringers must show the fourth and fifth conditions, the doctrines to limit the doctrine of equivalents, to avoid a finding of infringement.

¹³ *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 14 U.S.P.Q.2d 1942 (1990)

¹⁴ *Litton Sys. v. Honeywell, Inc.*, 140 F.3d 1449, 46 U.S.P.Q.2d 1321 (Fed. Cir. 1998)

Another difference is the significance of the fifth test, prosecution history estoppel. In the United States, prosecution history estoppel is by far the most important doctrine for limiting the doctrine of equivalents. However, the doctrine of prosecution history estoppel introduces difficult questions in defining both the conditions or activities which give rise to estoppel and the scope of surrender during the prosecution, as addressed by the Federal Circuit in *Festo*.¹⁵ So far, Japanese courts seldom rely on prosecution history estoppel to reject a claim of infringement under the doctrine of equivalents. Instead, to prevent patentees from extending their exclusive rights to subject matter which was surrendered for a patentability-related reason, they primarily rely on the first condition of the non-essential elements test.¹⁶ In short, an element that is included to distinguish from a prior art reference is essential to the patentability and thus not replaceable with an equivalent.¹⁷ Thus, the Japanese non-essential elements test functions like the Federal Circuit doctrine of prosecution history estoppel, but does not need to deal with the difficult questions of conditions and scope for estoppel.

Unfortunately, the Japanese courts' non-essential elements test also includes an inherent shortcoming: a conclusion reached under the test may change when the disputed claim is compared with a different prior art reference. For example, when the claim includes elements A, B, C, & D, and Reference 1 includes A & B and Reference 2 includes A & C, the essential elements in the context of Reference 1 are C & D and the essential elements in the context of Reference 2 are B & D. When Reference 1 is as close to the claim as Reference 2, it would be very difficult to decide which of the references to use for determining the essential features.

Moreover, the non-essential elements analysis, according to the Tokyo district court definition, is very likely to conflict with the well-accepted notion of a greater scope of equivalents for pioneer inventions and important improvements than for minor improvements. An invention based on a combination of old elements is patentable where there is no suggestion in the prior art of the particular combination. None of the elements in a combination invention qualifies as an essential element because all elements existed in the prior art; it's only the combination that contributes to an unexpected result. In contrast, if the patented invention is a pioneering invention and thus very different from any of the prior art references, it should have more

¹⁵ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 56 U.S.P.Q.2d 1865 (Fed. Cir. 2000)

¹⁶ For a general discussion, see Takenaka, *The Essential Element Test Provides A Big Hurdle to Japanese Doctrine of Equivalents*, 7-2 CASRIP Newsletter 13 (Spring 2000)

¹⁷ *Maruyama v. Purako*, Judgment of the Osaka District Court, May 27, 1999. The decision is available on line at <http://courtdomino.courts.go.jp/chiteki.nsf/caa027de696a3bd349256795007fb8257da56>

essential elements than a minor improvement or combination invention. In other words, a minor improvement has more elements which can be replaced with equivalents than a pioneer invention has. This means that a minor improvement has a more generous scope of equivalents and thus greater protection scope than a pioneering invention.

In addition, Japanese courts appear to use the doctrine of prosecution history estoppel in a different way from the U.S. practice. In a Tokyo District Court Decision, *Keiko Goto v. Kobayashi Seiyaku*,¹⁸ the Court rejected the patentee's argument of infringement under the doctrine of equivalents, expressly citing the doctrine of prosecution history estoppel. However, the use of the doctrine more closely parallels the Federal Circuit's dedication to the public doctrine,¹⁹ because the accused product was expressly disclosed in the specification but was excluded from the claim scope as a mistake made by the patentee.

V. CONCLUSION

The conditions for the Japanese doctrine of equivalents closely parallel the U.S. counterparts developed by the Federal Circuit. Their major difference is the use of the non-essential elements test, which functions somewhat similarly to the Federal Circuit's doctrine of prosecution history estoppel. To limit the doctrine of equivalents, Japanese courts most frequently rely on the "essential part" test to reject a patentee's request to apply the doctrine of equivalents, and seldom rely on prosecution history estoppel. Thus, they do not need to deal with the difficult questions that the Federal Circuit has encountered in *Festo*. However, it is very likely that they will encounter other difficulties, because the "essential part" test has its own inherent problems.

¹⁸ Judgment of Tokyo District Court, June 29, 1999, 1010 *Hanrei Taimuzu* 280. The case is reported in English in 7-2 CASRIP Newsletter 10 (Spring 2000).

¹⁹ *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098, 39 USPQ 1001 (Fed. Cir. 1996). A case clarifying the scope of the dedication to the public doctrine will be reviewed en banc in *Johnson v. Johnston Assocs. V. R. E. Serv. Co.*, 238 F.3d 1347 (Fed. Cir. 2001).