

Patent Infringement under Japanese Patent law: Comparative Study with Chinese Patent Law

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Abstract Patent infringement is defined as implementing a whole patent product without authorization, which is called literal infringement. However, the alleged infringer sometimes does not directly produce the same product with the patented invention, but they simply replace some claimed elements with new materials, or they only produce a certain part of the patent product. Therefore, there is an issue on whether the above cases should also be deemed as patent infringement. This paper uses specific cases to analyze the formation and development process of the doctrine of equivalents and indirect infringement theory in Japan. Then, by discussing the interpretation of Article 101 of the current Japanese patent law, this paper makes it clear that whether it constitutes direct or indirect infringement in some particular cases. The objective of this paper is to clarify the specific requirements of patent infringement under Japanese patent law by case studying and comparing with the patent legal system of China.

Keywords Patent infringement, literal infringement, the doctrine of equivalents, indirect infringement, subjective indirect infringement, objective indirect infringement

I. Introduction

Under the irreversible trend of economic globalization, cross-border trade of products and services become more frequent, many companies set up factories abroad to manufacture and sell products. However, when building factories and selling products abroad, it is necessary to understand the legal environment of the country, especially in the case of high-tech fields, in order to avoid patent infringement disputes, it is necessary to grasp the provisions on patent infringement in the patent law of the country where the product be produced or sold.

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The Japanese Patent Law provides detailed provisions on patent infringement, including direct infringement and indirect infringement. However, in specific cases, it is not easy to determine whether it constitutes direct or indirect infringement. For example, with respect to direct infringement, in addition to the type of “Literal Infringement” provided in Article 68 of Japanese Patent Law, there has the other type of direct infringement called “Equivalent Infringement” which is determined by the Supreme Court in a trial in 1998 through adopting the doctrine of equivalents. Then, what are the specific requirements for the court to determine the establishment of this kind of infringement? This paper will give an answer by comparing relevant regulations in Chinese patent law, and point out the difference between the two countries in the application of the doctrine of equivalents.

In addition, by revising the Patent Law in 2002, there are also two types of indirect infringement provided in Article 101 of the current Japanese Patent Law, which is called the “Objective Indirect Infringement” and the “Subjective Indirect Infringement”. Due to the different interpretations of the article, Japanese scholars have different understandings on the specific requirements for the establishment of indirect infringement. This paper will analyze and summarize these requirements for determining indirect infringement through specific cases. At the same time, by comparing to the regulations of Chinese Patent Law on patent indirect infringement, the difference between the two countries will be indicated.

Through comparative analysis and the discussion of the requirements for the establishment of all types of patent infringement in Japan and China, the final purpose of this paper is to provide a reference for companies to judge the legal risk of patent infringement when produce or sell product in these two countries.

II. Direct Infringement and Indirect Infringement

1. The Scope of Patent Right

Before discussing patent infringement, let’s take a look at the scope of patent right first. The scope of patent right is a key point to judge whether a patent right is infringed or not. The documents of application, the scope of claims, description and drawings should be submitted when file a patent application.

The scope of a patent right is also called “the technical scope of patented invention”. According to Article 70 of Japanese patent law, it should be determined “based on the statement in the scope of claims attached to the application.” Nevertheless, “the description and the drawings attached to the

application should be used to interpret the meaning of each term of claims.” The claims shall “define the invention in terms of the technical features of the invention, and they shall be clear and concise and be supported by the description.” In the case that there are multiple claimed technical features in the invention, the claims should be written separately, such as claim 1, claim 2, claim 3 in Figure 1.

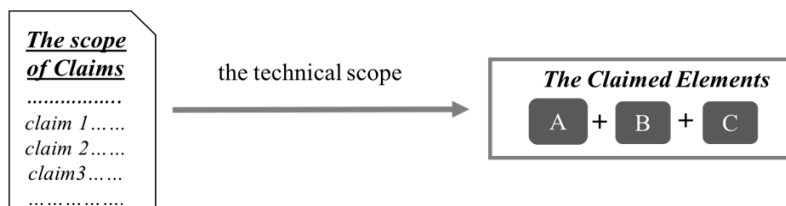


Figure 1 The scope of patent right

Based on “the scope of claims”, the scope of the patent right (or the technical scope of the patented invention) can be indicated by the technical features, which are also called “the claimed elements”, such as the claimed elements A, B and C in Figure 1.

2. Direct Patent Infringement

Article 68 of Japanese patent law provides that, “a patentee shall have the exclusive right to implement the patented invention as a business.” That is to say, if one “implemented the patented invention as a business” without license or authorization from patentee, the one would be charged with patent infringement. The problem here is how to interpret the term “implement the patented invention”.

2.1 Literal Infringement

According to the normal interpretation, “implement the patented invention” means implementing all the claimed elements of the patented invention. If a competitor implemented all the claimed elements of a patented invention without license or authorization from the patentee, it can be said that the behavior of the competitor above constitutes patent infringement. As the behavior falls within the literal scope of the claims of the patented invention (covers all the claimed elements), it is also called “literal infringement”. On the other words, “literal infringement” means that each and every claimed element of the patented invention has identical correspondence in the accused infringing product.

According to the interpretation of Article 68 mentioned above, we can make it clear that whether it constitutes patent infringement in the specific cases in Figure 2.

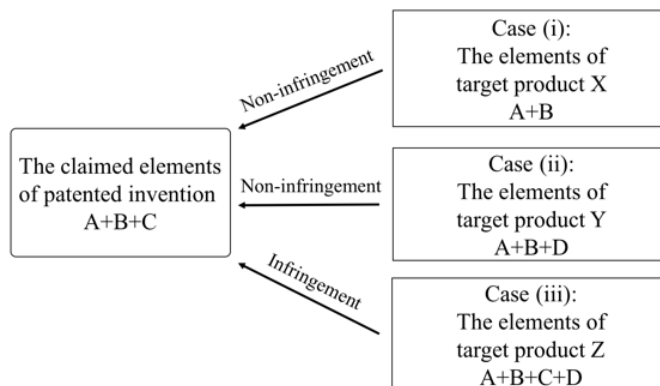


Figure 2 Cases of infringement and non-infringement

In case (i), the target product X only covers the claimed element A and the claimed element B, as the claimed element C is not implemented in the target product X, it does not fall within the literal scope of the claims of the patented invention. Therefore, target product X does not constitute literal infringement.

In case (ii), even if the target product Y covers three elements A, B and D, as element D is not the claimed element, and the claimed element C is not implemented in the target product Y, so, it does not cover all the claimed element too. On the other words, it does not fall within the literal scope of the claims of the patented invention too. Therefore, producing product Y does not constitute literal infringement too.

In case (iii), the target product Z covers all the claimed elements A, B and C, on the other words, it entirely falls within the literal scope of the claims of the patented invention. Therefore, the manufacturing of target product Z as a business constitutes literal infringement.

2.2 Doctrine of Equivalents

On the other hand, even if the elements of an accused infringing product do not fall within the literal scope of the elements of the patented invention, there are cases it can be evaluated that the difference between the two is very little and substantially there are the same. A typical example is when a part of the claimed elements of the patented invention is replaced by a new material that was not yet developed at the time of the patent application. In such cases, it is difficult to expand the interpretation of the literal scope of claims to cover the new materials that are developed after the patent application. However, it is

considered unfair to the patent owner if the competitors can escape from the charge of patent infringement only by simply replacing a claimed element of the patented invention with a new material that has appeared afterwards.

In fact, even if a part of claimed elements is different in appearance, like the claimed element B of the patented invention and the element b of the accused infringing product in Figure 3, and therefore it does not constitute literal infringement, but if they (claimed element B and element b) “perform substantially the same function, or in substantially the same way, and they obtain the same technical result”, it is also deemed as patent infringement by a legal doctrine, which is called “doctrine of equivalents”. The alleged infringement is called “equivalent infringement” under the doctrine of equivalents.

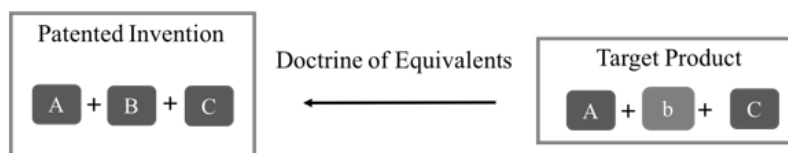


Figure 3 Doctrine of equivalents

The doctrine of equivalents is a legal rule that allows a court to hold a party liable for patent infringement even though the infringing product or process does not fall within the literal scope of a patent claim, but nevertheless is equivalent to the patented invention.

In common law country like the United States, the doctrine of equivalents has been adopted by the Supreme Court, and thus the doctrine has the same effect as the statute. However, Japan is a statutory law country, and the Japanese patent law does not mention equivalents with respect to claims. Therefore, there has been a big argument in Japan about whether the doctrine of equivalents should be adopted in the trial of patent infringement cases.

Japan has no Supreme Court precedent that adopted the doctrine of equivalents before, and as trials conducted in lower courts, even though the doctrine of equivalents itself was not denied, few court has adopted the doctrine of equivalent to determine that the defendant constituted equivalent infringement. For this reason, many Japanese law scholarships criticized that the scope of the patent right is too narrow as compared with the United States and other countries.

Under this situation, the Supreme Court of Japan reversed the judgement made by the Tokyo High Court and endorsed the application of the doctrine of equivalents for the first time in the “Ball Spline Case” (TSUBAKIMOTO SEIKO CO. LTD. v. THK K.K February 24, 1998) (Case 1).

The Supreme Court gave the reason why they cannot affirm the judgement of the Tokyo High Court as follows:

“In determining whether an accused infringing product falls within the technical scope of a patented invention, courts must ascertain the technical scope of the patented invention in light of the statement in the scope of claims attached to the application (Japanese Patent Law, Article 70, Item 1). If there is any claimed element that is different from the corresponding structure of the accused infringing product, the accused infringing product does not fall within the technical scope of the patented invention. However, even if some claimed elements are different from the corresponding structures of the accused infringing product, the accused infringing product may fall within the technical scope of the patented invention for having equivalents to the structures recited in the scope of claims.”

In the judgement, the Supreme Court also clearly listed five requirements as follows for determining whether it constitutes equivalent infringement:

“Firstly, the elements are not an essential portion of the patented invention (to be addressed as the requirement of “a non-essential element” hereinafter).

Secondly, the objective of the patented invention can be attained even if the elements are replaced with the structures in the accused product, and thus the accused product results in the identical functions and effects as the patented invention.

Thirdly, a person with ordinary skill in the field of the patented invention would have readily conceived the interchangeability between the claimed portion and the replaced structures in the accused product as the time of exploitation, such as the manufacturing of the accused product by the accused infringer.

Fourthly, the accused product is novel and would not have been able to be conceived by a person with ordinary skill in the field of the patented invention as of the application time.

Fifthly, the accused product was not intentionally removed from the technical scope of the claim by the applicant during the patent prosecution.”

Regarding the necessity of adopting the doctrine of equivalents and the reason for the above criteria, the Supreme Court made an explanation in the judgment as follows:

“(1) It is very difficult to describe claims to cover all possible infringing embodiments of the patented invention. If a competitor can escape from patent enforcement, including injunction, etc., by simply replacing some claimed elements with materials, technical means, etc. that are developed after the patent application, incentive for innovation is significantly reduced, which conflicts with the goal of the patent system to contribute to industrial developments through the protection and encouragement of inventions. further, such an interpretation of law

to allow competitors to escape from the charge of infringement would be unfair to the sense of justice in the society and conflict with the concept of fairness.

- (2) In considering these points, the substantial value of a patented invention extends to a structure which would have been readily conceived by a third party from the structure recited in the claim as being substantially identical to a patented invention. It is proper to assume that a third party must anticipate such an extension of patent protection.
- (3) On the other hand, the technical scope of patent cannot extend to an accused product which is part of the state of the prior art as of the application time of the patented invention, or would have been readily conceived by one skilled from the state of prior art, because no one could have obtained a patent on such accused product (Japanese Patent law, Article 29).
- (4) Additionally, under the rule of estoppel, a patentee is prevented, during the patent prosecution, from claiming a patent right on an accused product which was intentionally removed by an applicant from the claim scope where the applicant admitted that the accused product did not fall within the technical scope of the patented invention or the applicant's behavior indicated such removal of the accused product from the claim scope."

Although the Supreme Court of Japan has endorsed the application of the doctrine of equivalents to determine infringement, Japanese courts are very reluctant to apply the doctrine in specific cases. The first criteria of a non-essential element are most frequently cited to reject the application of the doctrine of equivalents.

Both equivalent infringement under the doctrine of equivalents and literal infringement under the Article 68 of Japanese Patent Law belong to direct infringement. Besides direct infringement, in some countries, like Japan and America, there are also some rules on indirect infringement.

3. Objective Indirect Infringement

In some cases, even if not all the claimed elements, but only a part of them are implemented, although it doesn't constitute direct infringement, however, as a contributory or assistant act to direct infringement, if certain requirements are met, it is also deemed as an infringement act, which is called indirect infringement.

In Japanese patent law made in 1954, Article 101, Item 1, provides that "The following acts shall be deemed to constitute infringement of a patent right or

an exclusive license: where a patent has been granted for an invention of a product, acts of producing, assigning any components or materials to be used exclusively for the producing of the said product as a business.”

In Article 101, Item1, with respect to the invention of a product, producing any components or materials to be used exclusively for the producing of the patented product will be forbidden because it inevitably leads to an infringement as a preparatory or assistant act. By imposing the requirement of “to be used exclusively”, whether it constitutes an indirect infringement or not should be determined objectively without searching the subjective intention of the alleged infringer. Therefore, it is also called “objective indirect infringement”.

For example, as shown in the case below (Figure 4). The Supplier who supplies Component C to the Manufacturer, who manufactures the whole patent product (Component A + Component B + Component C) without license.

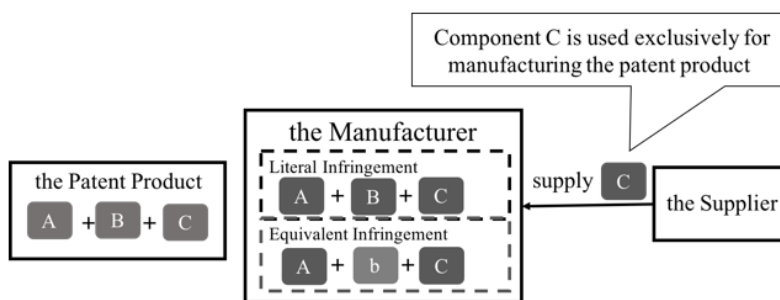


Figure 4 Objective indirect infringement

According to Article 101, Item1, of the Japanese Patent Law, the Supplier constitutes indirect infringement if the Component C is used exclusively for the manufacturing of the patent product, no matter whether he knows the other party (the Manufacturer) is an infringer or not. The key point of Article 101, Item 1, is the requirement of it means that there is no other use except for the producing of the patent product. If the “to be used exclusively” requirement is met, the accused infringer (the Supplier) cannot defend that he is ignorance or he has no subjective intention. On the contrary, if the requirement is not satisfied, even if the accused infringer (the Supplier) has subjective intention of infringement, indirect infringement cannot be determined according to the Article mentioned above.

However, for a specific component, in cases where it can’t be said that there is no other use other than to produce a patent product, there is an issue on whether it is suitable to judge the establishment of indirect infringement only

from the objective viewpoint regardless of the subjective intention of the alleged infringer.

Here is a case on “SLR Camera” patent infringement judged by the Tokyo District Court on Feb 25, 1981. (Case2)

The Patent X, who is the patent owner of the automatic preset aperture single lens reflex (SLR) camera, claimed the indirect infringement against the Producer Y, who produces and sells the changeable lens as a component attached to the patent camera.

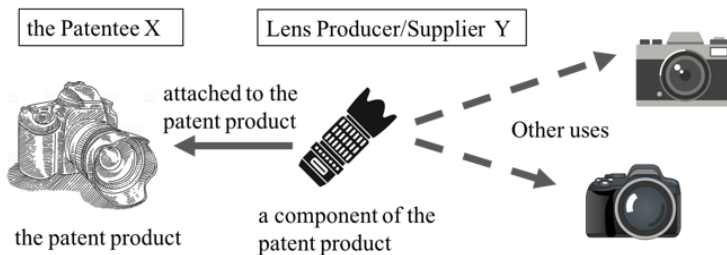


Figure 5 The limitation of objective indirect infringement

Before the revision of the Japanese Patent Law in 2002, the provision for indirect infringement was only the type of “objective indirect infringement” in Article 101 at the time. That is to say, the establishment of indirect infringement must meet the requirement of “to be used exclusively”. According to Article 101 at the time, the Tokyo District Court denied the claimed indirect infringement, for the reason that although the changeable lens made by Producer Y has the automatic preset aperture function as a component of the patent product, however, the accused component (changeable lens) can not only be used in the patent product, but it can also be used in other single lens reflex cameras.

After the Tokyo District Court made the above judgment based on Article 101 at the time, it caused a strong reaction in the academic world. Due to the limitation of the requirement of “to be used exclusively”, it is generally believed that the patent law was too strict for the establishment of indirect infringement and it was not conducive to the protection of patent right. Therefore, opinions on amending the patent law and expanding the effectiveness of patent right are becoming stronger.

4. Subjective Indirect Patent Infringement

In order to strengthen the protection of patent right and expand the scope of indirect infringement, Japanese patent law introduced the subjective indirect infringement as Item 2 of Article 101 in the year 2002. It provides that “The

following acts shall be deemed to constitute infringement of a patent right or an exclusive license: where a patent has been granted for an invention of a product, acts of producing, assigning, etc., importing or offering for assignment, etc. any product to be used for the producing of the said product and indispensable for the resolution of the technical problem by the said invention as a business, knowing that the said invention is a patented invention and the said product is used for the working of the invention.”

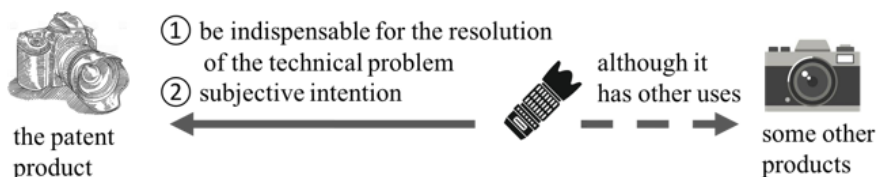


Figure 6 Subjective indirect infringement

According to Article 101, Item 2, of the Revised Patent Law, it provides two requirements for judging the establishment of indirect infringement. The first requirement is that the alleged infringing component is indispensable for the resolution of the patent technical problem. The second requirement is that the accused indirect infringer is subjectively intentional, that is, he knows that the supplied component will be used to manufacture the infringing product. In the case of satisfying these two requirements, unlike the above-mentioned “objective indirect infringement” of Item 1, even if the alleged infringing component has other uses in addition to the manufacture of the infringing product, the acts of manufacturing and providing the component as a business will also be deemed as indirect infringement. Since the establishment of this type of indirect infringement needs to satisfy the requirement of “subjective intention” of the accused indirect infringer, it is called “subjective indirect infringement”.

Item 2 of Article 101 expands the scope of indirect infringement and is conducive to strengthening the protection of patent right and promoting the perfection of the Japanese patent legal system. However, in judicial practice, there is still considerable controversy about the specific application of this item.

The problem is how to interpret the requirement of “be indispensable for the resolution of the technical problem” of the patented invention in judicial practice.

There are two theories in the academic world about this issue. One is put forward by Professor TAKABAYASHI from WASEDA University (to be addressed as “the Theory of TAKABAYASHI” hereinafter), who believes that the requirement should be understood as “the essential part of the patented invention, focusing on the patented invention”. For example, if it is the

invention of a ballpoint pen that can be erased with an eraser, it would be an invention comprising a shaft, a ball, a shaft core and ink. In this case, the “indispensable for the resolution of the technical problem” means the component of “the ink that can be erased by eraser”. Therefore, even if the ink has other uses, it constitutes indirect infringement when the ink was produced or assigned in business, knowing that the ink is used in the patented invention.

The other theory is presented by Professor TAMURA from HOKKAIDO University (to be addressed as “the Theory of TAMURA” hereinafter), who believes that the requirement should be understood as “the key component of the patent product, focusing on the patent product rather than patented invention.”

The difference between the two theories can be understood by the following case (Case 3, Figure 7 and Figure 8). Figure 7 is an illustration of a fueling device invention.

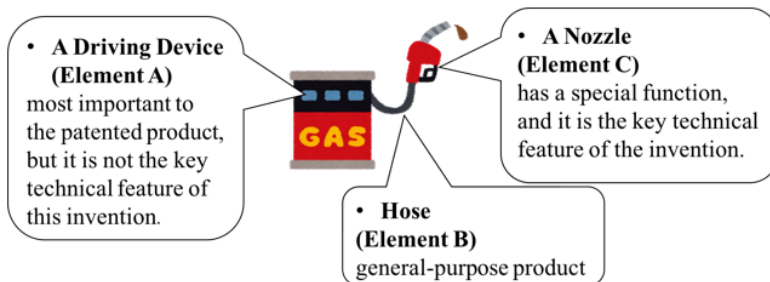


Figure 7 A fueling device invention

The patented invention is a fueling device comprising a driving device (Element A), hose (Element B) and a nozzle (Element C). The key technical feature of the patented invention resides in the nozzle (Element C), which has a special function. The hose (Element B) is a general-purpose product. The drive device (Element A) is the most expensive and important component of the patent product, but it is not the key technical feature of this patented invention and it can be used for any other fueling device.

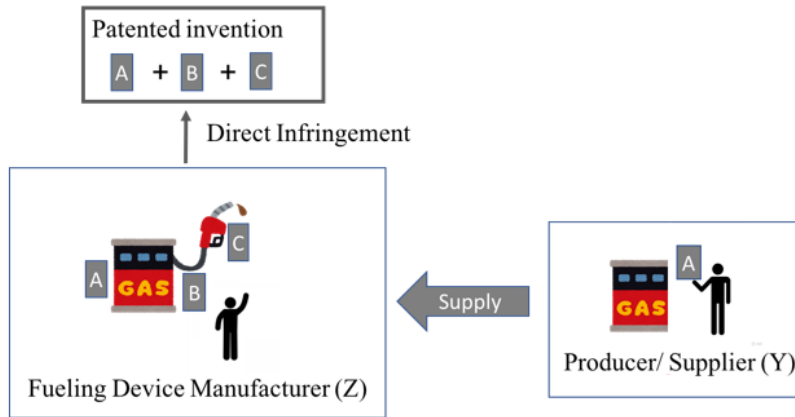


Figure 8 Case 3

Y is a producer of the driving device (Element A of the Patented Invention), and he supplies the driving device to the Fueling Device Manufacturer Z, knowing that Z uses the driving device for producing the patented invention without license from the patentee.

In this case, there is no doubt that the Fueling Device Manufacturer Z constitutes direct infringement of the patented invention. The problem is whether the component supplier Y constitutes an indirect infringement.

According to the theory of TAKABAYASHI, although Element A is the most expensive and important component of the patent product, but it is not the key technical feature of this patented invention (the key technical feature of this invention lies in the Element C), that is to say, it is not the essential part of the patented invention. Therefore, the requirement of “be indispensable for the resolution of the technical problem” is not satisfied, and it can be concluded that the Supplier Y does not constitute indirect infringement.

However, according to the theory of TAMURA, focusing on the patent product rather than patented invention, as the Element A is the key component of the patent product, therefore the requirement mentioned above is satisfied, and it can be concluded that the Supplier Y constitutes indirect infringement.

In response to how the subjective indirect infringement should be identified, the following is a real case on “Combined Drug of Pioglitazone” patent infringement tried by the Tokyo District Court on Feb 28, 2013. (Case 4)

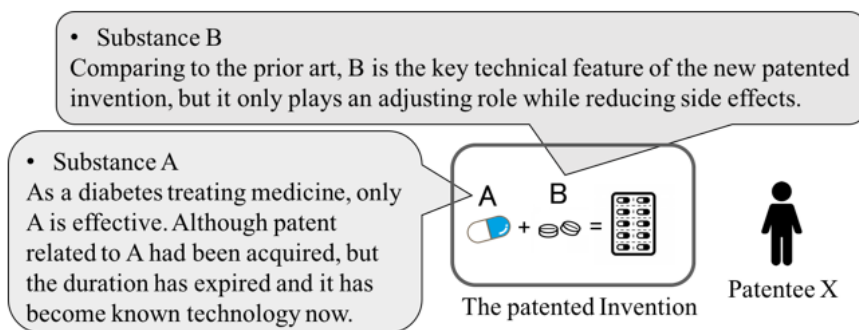


Figure 9 An invention of combined drug of pioglitazone

Patentee X is the owner of the patented invention named “a medicament for treating diabetes comprising a combination of Substance A and Substance B”. Substance A alone is effective as a drug for treating diabetes. Patentee X had a patent right on substance A, but it has become invalid due to the expiration of the term. By combining the “Substance A” and the “Substance B”, Patentee X filed the said invention as a new way. As the new patented medicament, Substance B only plays an adjusting role while reducing side effects.

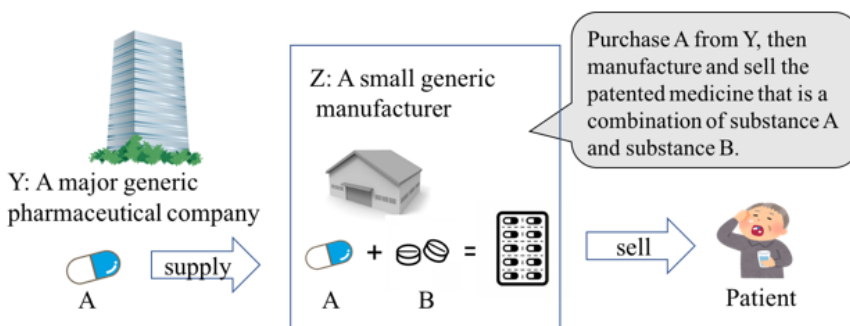


Figure 10 The major generic pharmaceutical company and the small generic manufacturer

There is a major generic pharmaceutical Company Y which started producing and selling Substance A as a drug for treating diabetes as the patent period for Substance A has expired. Substance A made by Company Y are purchased by a number of small generic manufacturers, for example, Manufacturer Z. Then, Manufacturer Z manufactures and sells the patented diabetes treating medicaments in combination with Substance B.

There is no doubt that, as Manufacturer Z implemented all the claimed elements (Substance A and Substance B) of the patented invention, therefore

Manufacturer Z is a direct infringement. But, as for patentee X, he prefers to forbid the major Company Y manufacturing and selling Substance A, instead of the small manufacturer like Manufacturer Z.

Patentee X argues that the acts of manufacturing and selling Substance A by Company Y constitutes subjective indirect infringement of the patented invention according to Article 101, Item 2, of the Japanese Patent Law with the reason that substance A is indispensable for the resolution of the technical problem of the patented invention, and Company Y knows that it is used for the working of the patented invention.

As a result, the Tokyo District Court denied the claim of the patentee X and ruled that the major generic pharmaceutical Company Y did not constitute indirect infringement. From the result of the judgement, it can be seen that the Tokyo District Court adopted the theory of TAKABAYASHI, that is to say, the requirement of “be indispensable for the resolution of the technical problem” in Article 101, Item 2, should be interpreted as “the essential part of the patented invention, focusing on the patented invention” rather than the patent product. However, as a lower court the decisions of Tokyo District Court have no general binding effect. The dispute over Article 101, Item 2, is subject to further judgement by the higher Court or even the Supreme Court in future.

III. Comparing with the Chinese Patent Law

1. The Doctrine of Equivalents in China

Similar to Japan, China is also a statutory law country. However, in China, in addition to the written laws enacted by the legislature, the “Judicial Interpretation” promulgated by the Supreme People’s Court has the same effect as the law, and it is the specific norms that guide the courts at all levels in the country to conduct judicial trials. On patent infringement, China introduced the Doctrine of Equivalents from the United States in the form of Judicial Interpretation in 2001.

Article 59 of the Chinese Patent Law (revised in 2008) provides the criteria for determining the scope of patent right as follows: “For the patent right of an invention or a utility model, the scope of protection shall be confined to what is claimed, and the written description and the pictures attached may be used to explain what is claimed.” Although the article does not directly mention the doctrine of equivalents, in the judicial interpretation on Article 59 of patent Law made by the Supreme People’s Court, the application of the doctrine of equivalents is clarified.

Article 17 of the Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies (No. 21 (2001) Judicial Interpretation, revised in 2015) provides that: “The first paragraph “the scope of the right for invention or utility model shall be determined by the terms of the claims. The description and the drawings attached to the application should be used to interpret the claims” of Article 59 of the Patent Law means that the scope of patent right should be determined by the necessary technical features expressly stated in the claims, including the extent as determined by the features equivalent to the necessary technical features. The equivalent features refer to the features which use substantially the same means, perform substantially the same function and produce substantially the same as the stated technical features and which can be contemplated by an ordinarily skilled artisan in the art without inventive labor.”

It can be clearly seen from Article 17 of the above Judicial Interpretation that there are only two requirements for the application of the doctrine of equivalents on determining whether it constitutes equivalent infringement.

Firstly, the accused product uses substantially the same means, performs substantially the same function and produces substantially the same technical result with the patent product. It is called “means-function-result” test.

Secondly, the change between the accused product and the patent product can be contemplated by an ordinarily skilled artisan in the art without inventive labor.

Comparing to the five requirements of the equivalent infringement in Japan, the establishment of equivalent infringement is easier to be determined in China. That is to say, a slight change would not be able to escape from patent infringement by the doctrine of equivalents, if this change uses substantially the same means, performs substantially the same function and produces substantially the same as the stated technical features, even if the change is on an essential portion of the patented invention.

2. Indirect Infringement in China

As discussed above, there are two types of indirect infringement called objective indirect infringement and subjective indirect infringement in the current Japanese Patent Law (Item 1 and Item 2 of Article 101). In China, however, there are still not any provisions on indirect infringement in the current Chinese patent law. Chinese courts have been trying to apply the civil law provisions on “joint infringement”, a concept that means “multiple actors are involved in carrying out the claimed infringement” to handle cases involving patent indirect infringement. However, there are lots of difficulties in

the application of this civil law conception on determining the case of patent infringement.

According to the principle of civil law, the establishment of “joint infringement” should meet the requirement of “conspiracy and collaboration among the multiple actors”, while in some patent infringement cases there are not any such conspiracy or collaboration, when the act of indirect infringement was carried out. For example, one may provide a third party with some indispensable components or materials that are intended to be used for manufacturing a patented product but without any conspiracy with that party on infringing the patent right. Or in cases that one provides the indispensable components or materials to a party who resides outside of China and the manufacture of the patented product does not occur in China, as there is no direct infringement act happened in China, it is difficult to investigate the indirect infringement liability of the component provider in accordance with the provisions of the joint infringement in civil law.

On the purpose of further enhancing patent protection, China is currently in the process of amending its patent law for the 4th time. According to Article 62 (Draft) of the Chinese Patent Law Amendment published by the Legal Affairs Office of the State Council of China, whoever actively induces infringement of a patent intentionally shall be liable as an infringer, and whoever sells a component of a patent product, knowing the component is exclusively used in infringement of the patented invention, shall be liable as a contributory infringer.

That is to say, Article 62 of the draft amendment provides for two types of indirect infringement, which is called “Induced Infringement” and “Contributory Infringement”. As both of them are acts of inciting or assisting direct patent infringement, the subjective intention of the actor is obviously necessary for the establishment of indirect infringement.

With these provisions of the draft amendment, one may be charged with indirect infringement if he causes it to happen by inducing or encouraging a third party to directly infringe patent right and even without any conspiracy with that party. And it is different to “joint infringement” in civil law, one may be charged with indirect infringement solely or independently if he provides the indispensable components or materials to a party, although the party does not reside in China or the manufacture of the patented product does not occur in China.

The 4th amendment of the Chinese Patent Law is only a draft at the moment. It is believed that it will be submitted to the National People's Congress for voting and finally come into effect in near future.

IV. Summary and Conclusion

Japan has always been a country that advocates strengthening patent protection. However, the Japanese Patent Law does not adopt the doctrine of equivalents and has no provisions about equivalent infringement. Although the Supreme Court of Japan has recognized the doctrine in a judgement in 1998, it provided five strict requirements on the application of the doctrine to determine whether the equivalent infringement is established. In judicial practice, many cases failed to satisfy the first requirement of “a non-essential element”, the application of the doctrine of equivalents were rejected and the establishment of equivalent infringement were denied. From the statistics of Japanese Patent Office, “the percentage of decisions in which the doctrine was applied in favor of patentees remains small or about 4-6% of all cases in which the doctrine is asserted”, it can be understood that equivalent infringement is determined only in very limited situations.

Based on the above conclusions, there is still a lot of arguments in academic circles of Japan in terms of the criteria for determining the establishment of the equivalent infringement. In addition, due to the complexity of patent infringement cases, it is difficult for the law to make a clear and specific judgement standard on whether or not to constitute equivalent infringement. This is why Japan has not made explicit provision on the doctrine of equivalents in the patent law.

On the contrary, China is a developing country that has gradually paid more attention to patent protection in recent years. However, China has officially introduced the doctrine of equivalents from the US patent law since 2001, and has confirmed the doctrine in the form of “Judicial Interpretation” which has the same effect as the statutory law. Comparing with the “five requirements” standard of Japan, China only provides the “means-function-result” test for the application of the doctrine to find equivalent infringement. Therefore, in judicial practice, Chinese courts are more inclined to determine the establishment of equivalent infringement based on the doctrine of equivalents.

In terms of personal opinions, especially in today’s information age, the issue of patent infringement has become increasingly serious. Neither the “five requirements” standard summarized by the Supreme Court of Japan nor the “means-function-result” test stipulated by the Chinese Judicial Interpretation is enough to protect the legal rights of patentee and prevent increasing equivalent infringement. The patentee provides the most effective technology to produce the product, and consumers buy only the function of the product, however, the equivalent infringer wants the patented technology to get illegal income from the consumers. As to the patentee, there are three steps from technical ideas to patented product, which can be said as “generating special idea-selecting

special way-fixing special result”. So, we can say that the patentee’s effort resides in all steps of “idea-way-result”, but both the “five requirements” standard of Japan and the “means-function-result” test of China only see the one side of the steps.

As a result, especially for the protection of the “idea”, we need to cover all steps for protecting patents more. As we live in a changing world, in the future, inventor cannot cover all future cases in the invention, but equivalent infringer can easily escape the patent more and more. Therefore, in both Japan and China, the application of the Doctrine of Equivalent needs to expand more in the future world.

With regard to indirect infringement, the Japanese Patent Law has detailed and specific provisions in Article 101. In particular, as the first item of this article provides that under the condition of satisfying the requirement of “to be used exclusively”, whether it constitutes an indirect infringement or not should be determined objectively without searching the subjective intention of the alleged infringer. That is to say, even if the accused indirect infringer has no subjective intention, he or she may still be liable for indirect infringement. As there are no similar provisions in the Chinese or US patent laws, it can be said to be a big feature of the Japanese Patent Law on strengthening patent protection. However, there is no provision in Japanese patent law that is similar to the “Inducement Infringement” in the Chinese (Draft Amendment) or US patent law. That is to say, if the accused indirect infringer does not conduct specific acts of indirect infringement, such as providing important claimed components of patent product to the direct infringer, but only instigates or induces a third-party to conduct an act of direct infringement, in this situation, under the framework of the Japanese Patent Law, the accused does not constitute indirect infringement, but under the framework of the Chinese patent law (Draft Amendment), the accused should be charged with indirect infringement.

When Japan revised the patent law in 2002, the second item of Article 101 of the current patent law was introduced. This item is the provision about “subjective indirect infringement”, which is of great significance to make up for the deficiency of the “objective indirect infringement” provided in the first item of Article 101 and to strengthen the protection of patent rights, but regarding to the interpretation and application of the requirement of “be indispensable for the resolution of the technical problem”, the patent law does not give a clear definition, so there is still a big controversy in the academic world. Although the Tokyo District Court supported the TAKABAYASHI theory in a judgment, as it is a lower court, the judgment has no binding effect. Therefore, the interpretation of the disputed requirement is expected to be further interpreted by the higher court or the Supreme Court in the future.

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