

Research on Divided Infringement Judgment of Patented Process in China

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Abstract: For patented process, there may be a problem of divided infringement caused by multiple parties performing part of the method steps separately, especially in the field of electronic communication. Because there are some obstacles in the law and the traditional patent infringement theories, it is quite difficult to deal with the issues of divided infringement in China, whether direct infringement theory or indirect infringement theory is adopted. Some relative China judicial cases had attempted to breakthrough these obstacles, however, the authority rule is still not established. This paper firstly introduced three China cases - Watchdata v. Hengbao, Xidian Jietong v. Sony, and Dunjun v. Jixiang Tenda, then tried to learn from U.S. cases. After years of judicial experience, the U.S. courts paid more attention to the actual behavior of dominant party and have gradually established “control or direction” rule under the direct infringement theory when meeting divided infringement. Based on the analysis of relevant theories and cases, this paper suggests to make an judicial interpretation for “use the patented process” in rule 11 of patent law of China, and construct “control or direction” rule in China by diluting the subjective requirement of conscious connection by parties, investigating the major party of the key steps in executing the patented process to solve the problem of divided infringement.

Keywords: Patented Process, Divided Infringement, Direct Infringement, "Control or Direction" Rule

1. Introduction

In recent years, China has developed rapidly in the fields of electronic-communication, software, and information handing, resulting in many patented process. Innovators in the industry are extremely concerned about whether their patents can be effectively protected. Since the technologies in these fields often need to be presented in the form of multi-step method claims involving multiple parties, so resulting in whether divided infringement can be identified as patent infringement and how to regulate it effectively.

Divided infringement is currently only a theoretical expression. Although the concept was clearly put forward by Professor Lemley in 2005 [1], it has been encountered long before in the judicial practice of the United States, and there has been a long-standing disagreement on how to regulate it. The typical divided infringement appears as: different parties have performed part steps of patented process respectively, and the addition of each part constitutes the entire content of the claim of the patented process. The results are often as

follows: there is no party who has completely performed the whole steps, so it is difficult to meet the traditional patent infringement rule. However, the patented process has been “replaced” to some extent in the market value, which affects the patentee’s benefits. It is necessary to solve this problem.

2. Legal Obstacles Faced When Judging Divided Infringement in China

Firstly, there is conflict between the “divided infringement” with the “full coverage” principle under the traditional direct infringement theory in China because “Full coverage” principle means all technical features in the claims are involved [2] and one party must perform all the steps of the claim of the patented process [3].

Secondly, “divided infringement” also can’t meet “contributory or inducement infringement”. “Contributory or inducement infringement” could be considered as indirect patent infringement in China, which refers to the act of

assisting or inducing others to carry out direct infringement. So the key is “finding” the direct infringer. When the direct infringement is not constituted, this rule cannot be used. In some special circumstances, individual terminal users seem to be able to perform all patented process steps, however, terminal users often have not “production or business purposes” so that they do not constitute infringement based on rule 11 of Chinese Patent Law.

3. Breakthrough Attempts in the Divided Infringement of Patented Process in China

In recent years, several cases of divided infringement have been judged in China. Different theories have been explored, however, the authority rule is still not established.

3.1. *Watchdata v. Hengbao*

The patent infringement case of Beijing Watchdata System Co., Ltd. v. Hengbao Co., Ltd. in 2015 [4] was an early attempt dealing with the issue of divided infringement by Beijing Intellectual Property Court. The patent involved (CN100542088C) relates to a physical authentication method. Claim 1 of the patent is:

“1. A physical authentication method adapted for a system for a client-end in the network environment to perform an operation command by an electronic device, characterized in that the corresponding relationship between the operation command and the physical authentication method is set, and when a security computing operation is performed, the following steps are included:

S1. The client-end sends a first operation command for performing a security computing operation to the electronic device;

S2. The system queries the correspondence between the operation command and the physical authentication mode to obtain the first physical authentication mode corresponding to the first operation command;

S3. The user initiates the first physical authentication operation to the physical authentication executing agency corresponding to the first physical authentication method set on the electronic device., if the first physical authentication operation is passed, it indicates that the first operation command sent by the client-end is approved by the user, go to step S4, otherwise, end the process;

S4. The electronic device executes the first operation command.”

The patented process described above in the claim is a typical multi-party participated patented process. Obviously, the completion of the physical authentication method requires one user to participate in "initiating the first physical authentication operation" in step S3. According to the patent description, the "physical authentication operation" including fingerprint collectors, key devices, pulling switch devices, etc., are connected to the microprocessor, so the user can physically input various operations for security authentication.

Also, in step S1, the first operation command sent by the client-end is usually initiated by the user. Therefore, the defendant alleged that it only carried out the steps related to the operation command and physical authentication in S2, while step S1 and step S3 were made by the user instead of the defendant. For this reason, the defendant did not perform all the steps of the patented process and thus did not constitute infringement.

In the first instance, Beijing Intellectual Property Court held that the manufacturer of the electronic device had previously set the specific methods for executing the patented process such as the “corresponding relationship between the operation command and a physical authentication mode”. The method for the user to complete the digital signature (physical authentication) and the means of sending the authentication command were also pre-defined by the manufacturer of the electronic device. The user can only participate in the relevant steps under the preset operating and cannot change the content of the background program. Therefore, obviously, the manufacturer of the electronic device was the performer of the technical features of the patented process. So the manufacturer constructs patent infringement.

In this case, the court avoided discussing the basic theory and did not pay attention to which party performing which step in detail. By contrast, the court blamed the manufacturer of the electronic device as the actual performer just on direct viewing. It seemed that the court adopted the direct infringement theory.

3.2. *Xidian Jietong v. Sony*

In the patent infringement case of Xi'an XidianJietong Wireless Network Communication Co., Ltd. v. Sony Mobile Communications Products (China) Co., Ltd., the court discussed whether the theory of indirect patent infringement can be applied to solve the divided infringement problem. Beijing Intellectual Property Court of first instance held that the defendant's act constituted a direct infringement and contributory infringement [5], however, Beijing Higher People's Court of second instance judged that the defendant's act did not constitute contributory infringement, but constituted a direct infringement [6].

Claim 1 of the involved patent (CN1191696C) is:

“1. A method for the secure access of mobile terminal to the Wireless Local Area Network and for secure data communication via wireless link, wherein access certificate authentication comprising the steps:

Step 1: The mobile terminal (MT) sends the MT certificate to the wireless access point (AP) to request access authentication;

Step 2: The AP sends the MT certificate and the AP certificate to the authentication server (AS) to make a certificate authentication request;

Step 3: The AS authenticates the certificates of the AP and the MT;

Step 4: The AS sends the authentication result of the AP and the MT to the AP through the access authentication response, then step 5 is followed; if the MT authentication fails, the AP

refuses the access of the MT;

Step 5: The AP returns the authentication result of the AP certificate and the MT certificate to the MT through the access authentication response;

Step 6, the MT judges the received authentication result of the AP certificate; if the AP is authenticated, execute step 7; otherwise, the MT refuses to log in to the AP;

Step 7: The access authentication process between the MT and the AP is completed, and the two parties begin to communicate.”

The defendant, Sony, as a manufacturer of mobile communication equipment, had configured a wireless LAN authentication and privacy infrastructure (WAPI) block in the mobile phones. The WAPI is specially used for performing the patented process by the mobile terminal (MT) and there is no other non-infringing substantive use. When communicating, the user logged into AP through MT, and then MT, AP and AS performed certificate authentication according to the preset procedure. At last the key agreement achieved. MT was operated by ordinary individual users who hold mobile terminals, while AP and AS were configured in other parties, and related steps were operated by other parties.

In the first instance, Beijing Intellectual Property Court avoided the question of whether providing the WAPI block constitute direct patent infringement. Instead, the court pointed out that the defendant inevitably needs to go through the product testing stage during product manufacturing. It is reasonable to infer that the defendant has completely performed all the steps of the claim 1 in this testing stage, so the defendant constituted a direct infringement. Regarding whether the defendant constituted contributory infringement of indirect infringement, the court creatively pointed out that, in the situation of divided infringements, the patentee did not need to prove that there was one party who constitute direct infringement, but only need to prove that the final user operating the product in a preset manner will fully cover the technical features of the claim, the contributory infringement established. In the meanwhile, the court clearly pointed out that if the “indirect infringement is premised on the existence of direct infringement” is applied mechanically, and the user does not constitute infringement because of his “non production and operation purpose”, it will be difficult to safeguard the rights of patented process involving multi-party, which violates the original intention of the Patent Law.

In the second instance, Beijing Higher People's Court agreed with the judgment of the first instance on direct infringement, while had different views on whether the defendant constituted contributory infringement. Beijing Higher People's Court emphasized that the existence of indirect infringement should be premised on the existence of direct infringement, but it was necessary to provide some exceptions so that patented process involving multi-party in the communications and software fields could be fully protected when encountering divided infringements. The court concluded that four factors must be considered at the same time in order to make an exception: (1) the product should be for a special purpose; (2) what is the “substantial” function of

this special product; (3) this special product does not have a “substantial non-infringing use”; and (4) There is evidence to prove the existence of a direct performer and this performer is an individual with “non production and operation purpose” or in the circumstances of rule 3, 4, or 5 of Article 69 of the China patent Law.

Considering above factors, Beijing Higher People's Court still failed to find a complete “direct performer” in this case. It was believed that the defendant only provided a mobile terminal with WAPI block, and did not provide AP and AS devices. Because the MT, AP, and AS were ternary peer-to-peer structures, and neither party, including the user, could independently perform the steps of claim, so the defendant did not constitute contributory infringement.

The opinion in this case was inspiring; however, the detail reasons and legal principles for the formation of the exception were not enough, and there were also some controversies [7]. Only judging direct infringement in testing stage, the damage to the patentee was limited, because the test behavior is neither the fundamental and direct reason for the accused infringer to obtain improper interests, nor can it stop the patented process from being infringed on a larger scale by ordering the test behavior to stop, and most importantly, its application lacks universality.

3.3. *Dunjun v. Jixiang Tenda*

In December 2019, the Supreme People's Court made a new attempt to determine the divided infringement of the patented process in the case of *Dunjun v. JixiangTenda* [8]. The claim 1 of the patent involved (CN100412788C) is:

“1. A method for simply accessing a network operator's portal website, which is characterized by including the following processing steps:

A. The first uplink HTTP message before the portal service user device is not authenticated is directly submitted to the “virtual web server” by the access server's underlying hardware, inside the function of the “virtual web server” is performed by module of the “virtual web server” which connects with high software of the server;

B. The “virtual Web server” virtualizes the website to be accessed by the user to establish a TCP connection with the portal service user equipment, and the “virtual Web server” returns a message containing redirection information to the underlying hardware of the access server, and then the underlying hardware of the access server sends a message redirected to the real portal website Portal_Server to the portal service user device according to the normal forwarding process;

C. After receiving the redirection message, the browser of the portal service user device automatically initiates access to the real portal website Portal_Server.”

In this case, the Supreme People's Court pointed out that:

“The patent technology involved in the case belongs to the field of network communication, which has the characteristics of inter-connection, information sharing, multi-party cooperation, continuous innovation, etc., which determines that the vast majority of inventions in this field are patented

process, and can only be written as patented process that require the participation of multiple parties, or as better express the substantive technical content of the invention. However, in practical application, these patented process are often installed in a certain hardware device in the form of software, and the final user triggers the software to run automatically when using the terminal device. Therefore, the accused infringer can completely use the above method, without the permission of the patentee, install the patented process in the form of software in the accused infringing product, and even integrate other functional modules to become non-special equipment, and obtain improper benefits. On the surface, the final user is the performer of the patented process, but in essence, the patented process has been solidified in the manufacturing process of the accused infringing product. The patented process reproduced by the final user when using the terminal device is only a mechanical replay of the patented process previously solidified in the accused infringing product. Therefore, it should be recognized that the behavior of the accused infringer manufacturing and selling the accused infringing product directly leads to the patented process being performed by the final user."

Based on above opinion, the Supreme People's Court developed a new solution for judging divided infringement in the field of network communication to ensure that the legitimate rights of the patentee are substantially protected. If the accused infringer solidified the substantial content of the patented process in the product for the purpose of production and operation, playing an irreplaceable role in fully covering the technical features of the claim, that is, the final user can naturally reproduce the process of the patented process when using the accused infringing product, it should be recognized that the defendant infringed the patentee's rights by directly performing the patented process.

Although there are some developments in details and legal theory comparing with Watchdata case and XidianJietong case, there are still some questions left. The judgment limited divided infringement to the field of network communication, and only applies to the behavior of solidifying the patented process in the product. It is unclear on how to regulate the divided infringement of patented process in other fields and how to determine divided infringement in other behavior modes.

4. Reference from Relevant Cases in the U.S.

Different from the relevant provisions of the Chinese Patent Law, the direct infringement stipulated in the article §271(a) of U.S. Patent Law does not require the performer to have the purpose of "production or business". Therefore, although there are few cases against terminal users in the U.S. due to various reasons such as litigation strategies and commercial interests, terminal users may become direct patent infringers in the divided infringement cases, making indirect infringement judgement much easier than in China. However,

the claims of patented process have become more and more complicated in the communication field; it is often difficult to find a "single infringer" that fully performs all the steps of the patented process. So the U.S. courts developed a new rule - "control or direction" rule under direct infringement theory though many cases [9].

However, how to identify "control or direction" constructed a new question. A typical case is *Limelight v. Akamai* case. This case involved U.S. Patent No. 6,108,703 which claimed a method of delivering electronic data using a "content delivery network" (CDN). It includes a step of tagging the content of the web sites. The defendant *Limelight*, as a CDN, did not perform this step but left it to the web site provider to complete it. In the second instance of *Akamai* case [10], the United States Court of Appeals for the Federal Circuit (CAFC) adopted strict standards, and held that no enough proof to confirm that the defendant *Limelight* "control or direction" its customs so that *Limelight* did not constitute direct infringement. By contrast, the court held that *Limelight* constituted indirect infringement under the article §271(b) of U.S. Patent Law because *Limelight* encouraged its customs to tag their contents. This court opinion was named "inducement only" which materially overturn the principle - "there can be no indirect infringement without direct infringement". The U.S. Supreme Court rejected this opinion [11] and held that since direct infringement has not occurred, there can be no inducement of infringement under §271(b). The supreme court emphasized that "when Congress wishes to impose liability for inducing activity that does not itself constitute direct infringement, it knows precisely how to do so. The courts should not create liability for inducement of noninfringing conduct where Congress has elected not to extend that concept". This case was remanded for retrial.

In the retrial case [12], CAFC held that *Limelight* provided web site provider with detailed guidance and instructions on the use of its software, and provided them with engineer's door-to-door guidance and debugging services. Therefore, when the web site provider intended to obtain the positive effects brought by the software involved, it would follow the steps prescribed by *Limelight*, so the customs' behavior can be attributed to the defendant, which constituted direct infringement. In this case, CAFC concluded that directing or controlling others' performance includes circumstances in which an actor: (1) "conditions participation in an activity or receipt of a benefit" upon others' performance of one or more steps of a patented method; and (2) "establishes the manner or timing of that performance". In addition to this two-prong test, the Federal Circuit observed that "in the future, other factual scenarios may arise which warrant attributing others' performance of method steps to a single actor. Going forward, principles of attribution are to be considered in the context of the particular facts presented."

The *Eli Lilly v. TEVA* case in 2017 [13] is another example. The patented process involved U.S. Patent No. 7,772,209. This patent protected a method for using pemetrexed that required patients to take specified doses of folic acid and vitamin B12 to avoid side effects that could occur, and that

method was required to use the generic drugs the pharmaceutical companies proposed to manufacture. The court did not assume that patient action is attributable to a prescribing physician solely because they have a physician-patient relationship. The two-prong test developed by *retrial Akamai* case was still analyzed. Regarding the first prong, the court found, based on the product labeling, that "taking folic acid in the manner specified is a condition of the patient's participation in pemetrexed treatment." Regarding the second prong, the court found that physicians would "prescribe an exact dose of folic acid and direct that it be ingested daily." The court therefore held that, under *Akamai* *retrial* case, the performance of all steps of the asserted claims would be attributable to physicians. In this case, the court emphasized again that "conditioning" was not limited to legal obligations or technological prerequisites and §271(a) infringement was not limited solely to principal-agent relationships, contractual arrangements, and joint enterprise.

In the *Travel Sentry v. Tropp* case [14] in 2017 involved U.S. Patent No 7,021,537, CAFC further discussed the related issues. The court held that the benefits should not be limited in the form of money. The benefits can also be achieved by the improvement of baggage inspection efficiency, the security of employees, the increase of passenger satisfaction or the influence within the industry and the rise of reputation.

5. How to Develop "Control or Direction" Rule in China's Regulation

The relevant U.S. judicial cases above provide useful enlightenment for China. Firstly, the identification of divided infringement should follow technological development. Secondly, the choice of theory should minimize the impact on the existing legal system. "Full coverage" principle clarifies the technical features of the claim, so it has great significance in stabilizing the boundaries of patent rights, as well as increasing the predictability of public behavior. In the same way, the principle that "there can be no indirect infringement without direct infringement" is also the basic principle. A breakthrough on this principle may shake the foundation of the tort theory. The U.S. courts finally find another way to solve this difficult problem by taking the specific behavior of the defendant as the entry point. As in the "control or direction" rule, the key point of the judgment is whether the "conditioning" given by the dominant party can control or direct other party self-driven to carry out certain specific behaviors. In other words, the evaluation point is the behavior of the dominant party rather than the behavior of users or other parties.

From above analysis, we have found that the direct infringement theory is the best choice when encountering divided infringement. Identifying such multi-party infringement as direct infringement can avoid considering the problem of terminal user's liability. It is simpler and more effective than indirect infringement, and it is also in line with the purpose of technology development [15]. The direct

infringer should be focused on the "dominant party", rather than targeted to the "user". In fact, in the case of *Watchdata v. Hengbao and Dunjun v. JixiangTenda*, the China court's view is tended to this way. However, it should be noted that there are still some problems when the traditional Chinese direct infringement theory is applied to divided infringements because authoritative rule is still not be established. As a statutory law country, China law and judicial interpretations are the sources in judgement. Comparing the law, the judicial interpretations are more flexible; it could be changed or established following new development. If we want to construct a new rule, it is reasonable to pass a new article in the judicial interpretation.

As to the patented process, Article 11 of Chinese Patent Law clearly stipulates that "no entity or individual may, without the authorization of the patentee, exploit the patent, that is, make, use, offer to sell, sell or import the patented product, or use the patented process, and use, offer to sell, sell or import the product directly obtained by the patented process, for production or business purposes." The key is how to understand "use the patented process". It will be helpful for judging divided infringement if the term "using patented process" could be expanded in the judicial interpretation. The author tries to write a clause as following:

"When all steps of the patented process are performed by one party for production or business purposes, or all steps are performed and the performance can be blamed on one party for production or business purposes, the behavior of the party should be considered to constitute the 'use of the patented process' within the meaning of Article 11 of the Patent Law.

Where the actions of a party constitute 'control or direction' over the others, the steps performed by others may be attributed to that party. A 'control or direction' situation requires a combination of the following elements: (1) there is factual compulsion imposed by a party on others; (2) this party determines the time and manner of performance of the process."

Regarding to the above-mentioned "factual compulsion", the author did not use the description of "conditioning", but the meaning is close. This kind of compulsion does not need to achieve the same compelling force as legal obligations, mental compulsion (such as duress) and physical compulsion (such as illegal detention, binding, etc.) in the general sense. In essence, this compulsion is a manifestation of the different status between the dominant party and others. In the divided infringement, when the party designs an "optimal solution" for the user, such as solidifying the patented process into the product, providing a special product for performing patented process, or using software requirements and taking an "all or nothing" business strategy, users will naturally follow the preset behavior, then the factual compulsion would be established. The factual compulsion could be a certain contractual obligation or agreement, or just some kind of benefit or "threat". It can also be the avoidance of certain losses, for example, someone must perform the patented process, and otherwise the purchase cost will be lost.

6. Conclusion

Divided infringement of patented process has attracted more attention in recent years in China. In the field of traditional technology, this problem does not usually arise. It is believed that it could have been avoided through one-sided patent drafting strategy, however, it seems that in the specific technical fields such as information technology and business methods, the patent infringement cannot be completely avoided through drafting strategies. From the perspective of protecting the development of related industrial technologies, it is necessary for the law to respond to this issue.

To regulate divided infringements, the rules should avoid giving patentees too much or too little protection, which will damage the public interest or weaken the innovation enthusiasm of patentees. It is necessary to fully consider the balance of interests among the parties involved. When making new rules, the court should consider the impact of new rules on the original system, and try to make it tolerated by traditional infringement theories, as well as ensure the flexibility of theoretical content to reserve room for future development. It is reasonable to draw lessons from U.S. "control or direction" rule under the direct infringement theory. China's judicial practices also have shown similar opinions. It is necessary to establish relevant rules in China judicial interpretation.

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