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# Preface

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Global Legal Issues 2013 is comprised of topics pertaining to international transactions, company/finance, taxes, information/communication, intellectual property, dispute resolution and others and consist of ten articles that address the recent global issues within these topics through an introduction and analysis. KLRI's desire is that through these ten articles there will be a provision of implications that can be formulated. KLRI asks for your support and interest.

Thank you

Won Lee  
President,  
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# The Doctrine of Equivalents and Interchangeability in the United States, Taiwan and China

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## Abstract

The United States, Taiwan and China have similar systems for determining patent infringement under the doctrine of equivalents. The courts in these countries apply the test of interchangeability in finding infringement under the doctrine of equivalents. However, the courts in the United States, Taiwan and China evaluate interchangeability in different ways. In the United States, the interchangeability is one important factor for determining equivalent infringement in addition to the function, way and result factors in the triple identity test. Nevertheless, the court does not necessarily have to consider interchangeability and can't rely only on the interchangeability factor to find equivalent infringement. In Taiwan, the triple identity test is a comprehensive test for determining equivalent infringement. Although interchangeability is not provided in the Guideline for Patent Infringement Analysis, some decisions by Taiwan's Supreme Court treat the interchangeability as an independent and comprehensive test for finding equivalent infringement. In China, neither the SPC Provisions nor the SPC Interpretation provides interchangeability, but the Supreme People's Court considered interchangeability in some of its decisions. The Court assessed the interchangeability by determining whether one skilled in the art could contemplate without creative work, followed the standard in the SPC Provisions and the SPC Interpretation, and treated the "creative work" as a necessary factor in addition to the function, way and result factors in the triple identity test for determining the equivalent infringement.

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## I. Introduction

The doctrine of equivalents has played an important role in defining the scope of patent protection and has been continuously applied in the United States, Taiwan and China. The doctrine allows the patentee to exclude others from practicing a patent invention beyond the scope of the literal meaning of the patent claim. Nonetheless, the application of the doctrine is often controversial and uncertain. The courts in the United States, Taiwan and China have similar systems for determining patent infringement: they all apply the all-elements rule, the doctrine of equivalents and triple-identity test to evaluate the infringement under the doctrine of equivalents. Also, they all consider interchangeability under the doctrine of equivalents. However, the courts in the United States, China and Taiwan apply the interchangeability test in a different way. This Article reviews the doctrine of equivalents, evaluates the role of interchangeability under this doctrine, and analyzes the difference of interchangeability test in these countries. This Article also analyze the Supreme Court's decisions to check whether the law in the book is the same as the law in the reality on the issue of interchangeability in Taiwan and China.

## II. The Practice of the Doctrine of Equivalents in the United States

### 1. The Graver Tank Triple Identity Test and the Interchangeability Factor

The United States patent law codifies only literal or textual infringement in Section 271 of the Patent Act. The doctrine of equivalents derived from case law, not statute. In a 1950 case, *Graver Tank & Mfg. Co. v. Linde Air Prods.*,<sup>1</sup> the U.S. Supreme Court set the contours of the modern doctrine of equivalents.<sup>2</sup> The Court indicated that the doctrine

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1. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.* 339 U.S. 605, 70 S.Ct. 854, 94 L.Ed. 1097, 85 U.S.P.Q. 328 (1950).

2. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 21; 117 S. Ct. 1040; 137 L. Ed. 2d 146 (1997).

essentially prevents the practice of fraud on a patent.<sup>3</sup> It recognized that to permit imitation of a patented invention that does not copy every detail is to make patent-grant protection hollow and useless.<sup>4</sup> This kind of patent protection would encourage an unscrupulous copyist to make unimportant and insubstantial changes and substitutions that suffice to take the accused subject outside the reach of law.<sup>5</sup> Such practice would deprive the inventor of the benefit of his invention and foster invention concealment rather than disclosure, which is one of the primary purposes of the patent system.<sup>6</sup> To prevent an infringer from misappropriating the benefit of the invention, the patentee may invoke the doctrine of equivalents to proceed against the producer of a device that performs substantially the same function in substantially the same way to obtain the same result.<sup>7</sup> The theory on which it is founded is that “if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.”<sup>8</sup> This test is known as the triple-identity test.<sup>9</sup>

The U.S. Supreme Court further indicated that equivalency must be determined against a patent’s context, prior art, and the particular circumstances of the case. Equivalence is not a prisoner of a formula and is not an absolute to be considered in a vacuum.<sup>10</sup> To determine equivalency, an important factor is to assess whether a person of ordinary skill in the art would have known of the interchangeability of a component not contained in the patent with one that was.<sup>11</sup>

The key issue in this case is whether substituting manganese for magnesium is a substantial change to make the doctrine of equivalents inapplicable.<sup>12</sup> The Court found that the accused product and the claimed composition were substantially identical in operation and in result, and the accused product was in all respects equivalent to the claimed inven-

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3. *Graver Tank*, 339 U.S. at 608.

4. *Id.* at 607.

5. *Id.*

6. *Id.*

7. *Id.* at 608.

8. *Id.*

9. DONALD S. CHISUM, CHISUM ON PATENTS, § 18.04 [1][a][iii] (2011).

10. *Graver Tank*, 339 U.S. at 609.

11. *Id.*

12. *Id.* at 610.

tion. The composition, manganese silicate, in the accused product can be substituted for calcium and magnesium silicates as the major constituent of the welding composition in the patent.<sup>13</sup> Prior art disclosures clearly show that manganese silicate is a useful ingredient in welding compositions. Specialists familiar with welding compositions understand that manganese is equivalent to and can be substituted for magnesium in the composition of the claimed flux.<sup>14</sup> Therefore, the Court determined that applying the doctrine of equivalents is appropriate.<sup>15</sup>

In this case, the U.S. Supreme Court also stated that the doctrine does not operate only in favor of the patentee. When a device is significantly changed from a patented article so that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal meaning of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee's infringement action.<sup>16</sup>

## 2. An Additional Factor to Determine Equivalency

In *Graver Tank*, the U.S. Supreme Court ruled that known interchangeability is an important factor in determining equivalence. After that, decisions by the Federal Circuit often cite "interchangeability" as a factor that may influence a decision on equivalency.<sup>17</sup> However, the correlation between the triple identity test and interchangeability was ambiguous. The Federal Circuit panel decisions after 1987 developed two distinct schools of thought about the doctrine of equivalents because of the conflict between the clear notice policy and the fair protection policy. Both policies found support in the language of the *Graver*

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13. *Id.* at 611-12.

14. *Id.* at 612.

15. *Id.*

16. *Id.* at 608-09.

17. *See e.g.*, Pennwalt Corp. v. Durand-Wayland, Inc. 833 F.2d 931 (Fed. Cir. 1987), Perkin-Elmer Corp. v. Westinghouse Electric Corp., 822 F.2d 1528 (Fed. Cir. 1987), Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 45 USPQ2d 1429 (Fed. Cir. 1998), Unidynamics Corp. v. Automatic Products International, Ltd., 157 F.3d 1311, 48 USPQ2d 1099, 1106 (Fed. Cir. 1998), Fiskars, Inc. v. Hunt Mfg. Co., 221 F.3d 1318, 55 USPQ2d 1569 (Fed. Cir. 2000), Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 61 U.S.P.Q.2d 1152 (2001), Toro Co. v. Deere & Co., 355 F.3d 1313 (Fed. Cir. 2004), and Hearing Components, Inc. v. Shure Inc., 600 F.3d 1357, 94 USPQ2d 1385 (Fed. Cir. 2010).

*Tank* opinion.<sup>18</sup> The first school asserted that the test for equivalency was whether the accused product or process performed the same function, way and result as the claimed invention (the “triple identity test”). The second school maintained that the triple identity result was not the exclusive test but rather was supplemented by other “equitable” factors.<sup>19</sup>

In 1995, the Federal Court made a clearer decision on interchangeability in *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc.*,<sup>20</sup> an *en banc* decision. In this case, the inventors added the phrase “at a pH from approximately 6.0 to 9.0” for the operation condition of the claimed process during patent prosecution. The accused process operated at a pH of 5.0. The patentee, Hilton Davis, sued Warner-Jenkinson for patent infringement and relied solely on the doctrine of equivalents. One of the issues in the case is whether a finding of infringement under the doctrine of equivalents requires anything in addition to the proof that there are the same or substantially the same function, way, and result, the so-called triple identity.<sup>21</sup>

The Federal Circuit indicated that the U.S. Supreme Court defined the doctrine of equivalents in terms of the substantiality of the differences between the claimed invention and the accused subject.<sup>22</sup> In many cases, the courts relied on the triple identity test to measure the substantiality of the differences.<sup>23</sup> The triple identity test often suffices to evaluate equivalency because if the accused subject and the claimed invention are substantially the same in function, way, and result, the differences between them will be insubstantial.<sup>24</sup> But evaluation of the function, way, and result does not necessarily end the inquiry.<sup>25</sup>

As technology becomes more complex, the triple identity test may not always suffice to show the substantiality of the differences.<sup>26</sup> The U.S. Supreme Court introduced factors other than function, way, and result in *Graver Tank* because equivalence is not the pris-

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18. CHISUM, *supra* note 9, at § 18.04 [1][a][iii].

19. *Id.*

20. *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc.*, 62 F.3d 1512, 35 USPQ2d 1641 (Fed. Cir. 1995) (*en banc*), *rev'd & remanded* for further proceedings consistent with this opinion, 520 U.S. 17, 41 USPQ2d 1865 (1997), *remanded*, 114 F.3d 1161, 43 USPQ2d 1152 (Fed. Cir. 1997)

21. *Id.* at 1516.

22. *Id.* at 1517.

23. *Id.*

24. *Id.* at 1518.

25. *Id.*

26. *Id.*

oner of a formula.<sup>27</sup> Therefore, the Federal Circuit cited *Graver Tank* and restated that an important factor to be considered apart from function, way, and result “is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.” Because “equivalence, in the patent law, is not the prisoner of a formula,” the available relevant evidence may vary by case. Therefore, the court stressed “the known interchangeability of the accused and claimed elements is potent evidence that one of ordinary skill in the relevant art would have considered the change insubstantial.”<sup>28</sup>

As interchangeability is not the only additional factor for determining equivalency, other factors, such as evidence of copying or designing around, may also inform the test for infringement under the doctrine of equivalents. The presence of such factors will depend on the way the parties frame their arguments.<sup>29</sup> The court will decide whether the proffered evidence is relevant.<sup>30</sup> In this case, the trial court tailored its function-way-result instruction to the parties’ reliance on evidence of these factors in triple identity test, and substantial evidence supported the jury finding that Warner-Jenkinson’s pH variation from the claimed approximate range was insubstantial.<sup>31</sup>

### 3. The All-elements Rule and Interchangeability in Warner-Jenkinson

In *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*,<sup>32</sup> the U.S. Supreme Court noted that if the doctrine is broadly applied, it might conflict with the definitional and public-notice functions of the statutory claim requirement.<sup>33</sup> To reconcile the doctrine with these functions, the U.S. Supreme Court conceded that the court has no right to enlarge a patent beyond the scope of its claims as allowed by the United States Patent and Trade-

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27. *Id.* at 1518-19.

28. *Id.* at 1519.

29. *Id.* at 1522.

30. *Id.*

31. *Id.* at 1523-24.

32. *Warner-Jenkinson*, 520 U.S. 17.

33. *Id.* at 29.



mark Office (hereinafter “USPTO”).<sup>34</sup> The scope is not enlarged if courts do not go beyond the substitution of equivalents.<sup>35</sup> Thus the Court confirmed that each element contained in a patent claim is deemed material for the purpose of defining the scope of a patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, and not to the invention as a whole.<sup>36</sup> In other words, the comparison of equivalents should follow the all-elements rule. Furthermore, the court should ensure that, under the doctrine of equivalents, any individual element in the claim is not allowed to extend too broad to be effectively eliminated from that claim.<sup>37</sup>

The U.S. Supreme Court stressed that claims serve both a definitional and a notice function and that the burden is on the patent applicant to establish the reason for an amendment during patent prosecution. If no explanation can be established, the court presumes that the USPTO had a substantial reason related to patentability for including the limiting element in the amendment. In those circumstances, prosecution history estoppel bars the application of the doctrine of equivalents to that element.<sup>38</sup>

In this decision, the U.S. Supreme Court also indicated the insufficiency of the triple identity test and the insubstantial differences test. Although the triple identity test may be suitable for analyzing mechanical devices, it often provides a poor framework for analyzing other products or processes.<sup>39</sup> Moreover, the insubstantial differences test offers little additional guidance for what might render any given difference “insubstantial.”<sup>40</sup> The appropriate test for determining the equivalency turns on the specific facts of the case.<sup>41</sup> However, no matter which test is applied, the key inquiry is whether the accused product or process contain elements identical or equivalent to each claimed element of the patented invention.<sup>42</sup> The Court indicated that an analysis of the role played by each element in the context of the specific patent claim could answer the question whether the substitute

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34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.* at 33.

39. *Id.* at 39-40.

40. *Id.* at 40.

41. *Id.*

42. *Id.*

element is substantially different from the claimed element.<sup>43</sup> With these limiting principles in the background, the U.S. Supreme Court had no intention to interfere with the Federal Circuit's particular word choice for analyzing equivalency.<sup>44</sup>

As to the interchangeability issue, the U.S. Supreme Court held that the proper time for evaluating equivalency and knowledge of interchangeability between elements is at the time of infringement.<sup>45</sup> The Court also noted that the "known interchangeability of substitutes for an element of a patent is one of the express objective factors noted by *Graver Tank* as bearing upon whether the accused device is substantially the same as the patented invention."<sup>46</sup> This indicates that knowledge combined with the state of the art is a factor that bears upon substantial similarity, but is not the ultimate test of substantial similarity or equivalency. The Court stated that "a skilled practitioner's knowledge of the interchangeability between claimed and accused elements is not relevant for its own sake, but rather for what it tells the fact-finder about the similarities or differences between those elements."<sup>47</sup>

#### 4. Conclusions

In the United States, the doctrine of equivalents was established by a series of court decisions. The U.S. Supreme Court defined the doctrine of equivalents in terms of the substantiality of the differences between the claimed and accused subjects. The triple identity test was used to measure the substantiality of the differences. As technology becomes more complex, the triple identity test may not always suffice to show the substantiality of the differences. Therefore, interchangeability was introduced to be one of the additional factors for determining equivalency other than the function, way, and result. Whether interchangeability should be considered or not depends on the particular facts of the cases, and the presence of these additional factors turns on the way the parties frame their arguments. For example, the interchangeability factor is not necessary if the triple identity test

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43. *Id.*

44. *Id.*

45. *Id.* at 37.

46. *Id.* at 36.

47. *Id.* at 37.

is sufficient to determine the substantial similarity between the accused subject and the claimed invention. Also, interchangeability is not an independent and comprehensive test for determining equivalency. The decision of infringement under the doctrine of equivalents can't simply rely on the interchangeability factor. One still has to satisfy the triple identity test in order to establish an equivalent infringement.

### III. The Practice of the Doctrine of Equivalents in Taiwan

#### 1. The Guideline for Patent Infringement Verification

The doctrine of equivalents was not codified in Taiwan's patent law. It was introduced by the Central Bureau of Standards (the predecessor of Taiwan Intellectual Property Office) and adopted by the courts. In the past, Central Bureau of Standards was often requested by the courts to issue opinions for patent infringement cases, and many of these opinions consistently applied the doctrine of equivalents.

In 1996, the Central Bureau of Standards issued the Criteria for Patent Infringement Verification (hereinafter "CPIV"), and the Judicial Yuan (Taiwan's judicial branch) designated several organizations to implement the CPIV and to verify patent infringement in response to requests by the courts. Parallel to the triple identity test, interchangeability is one independent test to determine infringement by equivalence under the CPIV, and the concept of interchangeability includes the possibility of interchangeability and the ease of interchangeability.<sup>48</sup> According to the CPIV, the possibility of interchangeability should include the function and result factors;<sup>49</sup> the ease of interchangeability is decided by whether substitution is easy for a person of ordinary skill in the art.<sup>50</sup>

In 2004, after the revision of the patent law, Taiwan Intellectual Property Office replaced the CPIV with the Guidelines for Patent Infringement Verification (hereinafter

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48. Taiwan Intellectual Property Office, the Criteria for Patent Infringement Verification, § 8.2, at: [http://www.tipo.gov.tw/ch/AllInOne\\_Show.aspx?guid=fceae3e-c989-445c-8f37-ab942c83233d&lang=zh-tw&path=828](http://www.tipo.gov.tw/ch/AllInOne_Show.aspx?guid=fceae3e-c989-445c-8f37-ab942c83233d&lang=zh-tw&path=828) (last visited: December 16<sup>th</sup>, 2012).

49. *Id.*

50. *Id.*

“GPIV”), which was partly based on the CPIV.<sup>51</sup> The GPIV was sent to the Judicial Yuan for the reference of the courts and was since then regarded as the guiding principle for patent infringement verification in Taiwan.<sup>52</sup> Taiwan Intellectual Property Office also made an announcement to abolish the CPIV in 2004.<sup>53</sup>

Based on the GPIV, if the accused subject does not literally infringe the claim, then the factfinder should consider the doctrine of equivalents.<sup>54</sup> In applying the doctrine of equivalents, if the difference between the accused subject and the patent claim is not substantial, then the two are equivalent.<sup>55</sup>

The time for evaluating equivalency is at the time of infringement<sup>56</sup>, and the doctrine of equivalents should be applied under the all-elements rule.<sup>57</sup> If there is any claimed technical feature or its equivalent that could not be found in the accused subject, there is no infringement by equivalence.<sup>58</sup> To determine equivalency, the triple identity test should be applied. Once the accused subject performs substantially the same function in substantially the same way and achieves substantially the same result as the claimed invention, the accused subject is equivalent to the claimed invention.<sup>59</sup> If any one of the function, the way, or the result of the corresponding technical feature of the accused subject is not substantially the same as the patent claimed technical feature, the accused subject does not in-

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51. Ren-Ping Chang, *The Study on the Revision of the Guideline of Patent Infringement Verification and the Practical Issues from the Perspective of International Principles and Practices for Patent Infringement*, INTELLECTUAL PROPERTY, No. 90, 64-65 (2006).

52. See DIN-FU CHEN, THE EMPIRICAL STUDY ON THE DOCTRINE OF EQUIVALENTS IN TAIWAN PATENT LITIGATION(2010); Yu-Lan Kuo and Hsiaoling Fan, *Development of intellectual property protection*, at [http://www.buildingipvalue.com/05\\_AP/339\\_342.htm](http://www.buildingipvalue.com/05_AP/339_342.htm) (Last Visit: Jan. 25<sup>th</sup>, 2013) ; *Taiwan Patent enforcement proceedings*, Website: [http://www.legal500.com/assets/images/stories/firmdevs/formosa\\_patent\\_enforcement\\_proceedings.pdf](http://www.legal500.com/assets/images/stories/firmdevs/formosa_patent_enforcement_proceedings.pdf) (Last Visit: Jan. 25<sup>th</sup>, 2013).

53. Taiwan Intellectual Property Office, the Criteria for Patent Infringement Verification, at [http://www.tipo.gov.tw/ch/AllInOne\\_Show.aspx?path=820&guid=8e90de93-deb1-4050-96c3-8-d116f5c6115&lang=zh-tw](http://www.tipo.gov.tw/ch/AllInOne_Show.aspx?path=820&guid=8e90de93-deb1-4050-96c3-8-d116f5c6115&lang=zh-tw) (last visited: October 25<sup>th</sup>, 2012).

54. Taiwan Intellectual Property Office, the Guideline for Patent Infringement Verification, vol 2, § 2.1, at [http://www.tipo.gov.tw/ch/MultiMedia\\_FileDownload.ashx?guid=40cfded3-3f8b-4029-a937-7-abf762b18ab](http://www.tipo.gov.tw/ch/MultiMedia_FileDownload.ashx?guid=40cfded3-3f8b-4029-a937-7-abf762b18ab) (last visited: October 25<sup>th</sup>, 2012).

55. *Id.* at § 3.2 [5][ii].

56. *Id.* at § 3.2 [5][iv].

57. *Id.*

58. *Id.*

59. *Id.* at § 3.2 [5][iii].

fringe the claim under the doctrine.<sup>60</sup> Nonetheless, the GPIV no longer expressly provides the factor of interchangeability under the doctrine of equivalents.

## 2. The Supreme Court's Decisions

Taiwan's Supreme Court<sup>61</sup> used to treat the CPIV and the GPIV as a guideline for the designated organizations to provide patent infringement report to the court, not as a law or a regulation with the binding force of law. For example, in the No. 2008-Tai-Shang-1938 decision, the Court indicated that neither the CPIV nor the GPIV was a law or a regulation that binds the courts. Even if the decision of a court is inconsistent with the principles in the CPIV or the GPIV, the decision does not violate the law. However, the Supreme Court continuously quoted and recognized the principles provided in the CPIV and GPIV.<sup>62</sup> Therefore, the CPIV and the GPIV have some substantial effect on the courts' decisions.

In some early Supreme Court decisions, the Court did recognize the doctrine of equivalents. For example, in the No. 2003-Tai-Shang-559 decision (2003),<sup>63</sup> the Court approved the designated organization's verification that the accused product and the claimed invention were not equivalent by the triple identity test and that the patentee's infringement claim was not established. The Court did not restate the theory or foundation of the doctrine of equivalents but simply recognized the designated organization's application of the doctrine and the triple identity test. In the following decisions related to the doctrine of equivalents, the Supreme Court also did not explicitly address the theory or foundation of the doctrine of equivalents, but simply approved the practice under the GPIV. For example, in the No. 2010-Tai-Shang-406 decision (2010), the Court recognized the GPIV provision that if the component, composition, step and their combination in the accused subject

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60. *Id.* at § 3.2 [5][iv].

61. The Supreme Court is the highest tribunal and the court of last resort for civil and criminal cases in Taiwan. However, the Grand Justices of the Judicial Yuan are vested with authority to interpret the Constitution and to unify the interpretation of laws and orders. *See* §79 of the Constitution of The Republic of China (Taiwan).

62. For examples, No. 2000-Tai-Shang-1372 decision, No. 2008-Tai-Shang-981 decision, No. 2009-Tai-Shang-997 and No. 2010-Tai-Shang-406 decision all recognize the principles provided in the CPIV or GPIV.

63. Based on the research in the database of Judicial Yuan, the decision is the earliest one regarding the doctrine of equivalents. *See* Judicial Yuan, court decision database, <http://jirs.judicial.gov.tw/FJUD/> (last visited Jan 25<sup>th</sup>, 2013).

and the technical feature in the claimed invention utilize substantially the same way, perform substantially the same function and achieve substantially the same result, then there is no substantial difference between the accused subject and the claimed invention and the doctrine of equivalents should apply. In other words, the Supreme Court implicitly consented to the condition for applying the doctrine of equivalents as stated in the GPIV.

So far, only two Supreme Court decisions involve the issue of interchangeability. Both decisions were made after the issuance of the Guideline for Patent Infringement Verification.

### **1) No. 2006-Tai-Shang-1857 Decision (2006)**

In this case, the Taiwan High Court ruled that the accused product did not infringe the patent under the doctrine of equivalents because some claimed limitations were missing in the accused product and some corresponding elements in the accused product did not perform the functions in substantially the same ways as the claimed elements. Furthermore, the patent infringement report submitted by the patentee was not admissible because the report was not provided by an organization designated. However, the patentee contended that the official patent infringement report issued by the Judicial Yuan, the designated organization did not address the issues of the possibility of interchangeability and the ease of interchangeability. The patentee further contended that the High Court simply concluded that substantial difference existed between the accused product and the claimed invention without considering the interchangeability issue raised by the patentee. The Supreme Court agreed with the patentee and reversed the decision by the High Court.

In the rationale of the decision, the Supreme Court averred that interchangeability alone can be determinative of infringement by equivalence, and is itself an independent and comprehensive test. Therefore, the Court remanded the case to the inferior court to consider the interchangeability issue.

### **2) No. 2010-Tai-Shang-767 Decision (2010)**

The key issue in the case was whether or not the accused process infringed the patent. The patent claim required the some vent holes on two wave plates for air outlet, but the accused process used passage slots between two wave plates instead. The Supreme Court ruled that the accused process did not literally infringe the claim because the claimed ele-

ments --vent holes-- were missing in the accused process. As to the issue of infringement by equivalence, the Court did not apply the triple identity test, but indicated that the doctrine of equivalents did not apply because there was no interchangeability between the accused process and the claimed invention.

In the decision, the Supreme Court determined the issue of infringement by equivalence simply by looking at the interchangeability between the accused subject and the claimed invention, and did not consider the triple identity test. In other words, the Supreme Court in this case treated interchangeability as an independent and comprehensive test for infringement by equivalence. Hence the Court did not mention or evaluate any factor in the triple identity test for determining infringement by equivalence.

### **3) Summary**

The Supreme Court talked little about the interchangeability issue. The Court did not clearly mention the effect of interchangeability or explain the reason for applying the interchangeability test. Nevertheless, the Court did recognize the role of interchangeability and even treated interchangeability as an independent and comprehensive test for determining equivalence, not just an additional factor outside the triple identity test.

### **3. Conclusion**

Although the Taiwan Intellectual Property Office provided the GPIV to the courts for reference, the GPIV does not have the binding force of law. Based on the study on the Supreme Court decisions above, the Court did not always follow the approach of the GPIV. In particular, interchangeability is not a factor or a test for determining equivalency under the GPIV, but the Supreme Court applies the interchangeability test in some decisions. The consideration of interchangeability shall include the possibility of interchangeability and the ease of interchangeability. Interchangeability has been treated as an independent and comprehensive test for determining infringement by equivalence, and the principle is the same as the principle under the CPIV which was abolished in 2004. In other words, the law in the book is different from the law in the reality on the interchange issue in Taiwan. One cannot simply look at the patent law and the GPIV and try to grasp Taiwan's practice of the infringement by equivalence.

## IV. The Practice of the Doctrine of Equivalents in China

### 1. The SPC Provisions and the SPC Interpretation

The doctrine of equivalents has not been codified in the Chinese patent law. In 2007, the State Intellectual Property Office proposed a draft of amendment to the patent law, which included the doctrine of equivalents, and one of the goals for the amendment is to increase patent protection.<sup>64</sup> The proposal for the doctrine was not adopted in the current patent law.<sup>65</sup>

Nevertheless, in June 2001, the Supreme People's Court<sup>66</sup> issued the Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies (hereinafter "SPC Provisions"), which included the doctrine of equivalents. That was the first time that the Supreme People's Court recognized the doctrine of equivalents through the form of judicial interpretation,<sup>67</sup> and the SPC Provisions became the basis for the judicial system to implement the doctrine. Before the issuance of the SPC Provisions, the courts already applied the doctrine of equivalents, but they did not have a common standard to evaluate equivalency.<sup>68</sup> However, the decisions by the U.S. Supreme Court, such as *Graver Tank* and *Warner-Jenkinson*, did have some influence on the judicial decisions in China.<sup>69</sup>

Article 17 of the SPC Provisions states the scope of the patent protection as:

#### **"The scope of protection of the patent right for invention or utility model**

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64. See Wei-Ning Yang and Andrew Y. Yen, *The Dragon Gets New IP Claws: The Latest Amendments To The Chinese Patent Law*, 21 No. 5 INTELL. PROP. & TECH. L.J. 18 (2009)

65. See Wu Yuhe and Wang Gang, *Equivalent Doctrine in China*, CHINA PATENTS & TRADE-MARKS, No.1, 33-41, 41 (2007).

66. The Supreme People's Court is the highest tribunal and the court of last resort for all kinds of cases. The Court also takes charge of establishing judicial interpretations. See the website of the Supreme People's Court, <http://www.court.gov.cn/jgsz/rmfyjj/> (last visited May, 13<sup>th</sup>, 2013). However, It is the powers of the Standing Committee of the National People's Congress to interpret the Constitution and to interpret laws. See §67 of the Constitution of the People's Republic of China.

67. See WUN-JYUN RUN, THE PROTECTION OF PATENT RIGHT, 341(2007).

68. See TIAN LIANG, THE SAME PRINCIPLES OF PATENT INFRINGEMENT, 14(2010).

69. See JYUN-MEI LIU, DISCUSSION ON THE APPLICATION OF DOCTRINE OF EQUIVALENTS IN ACTION FOR INFRINGEMENT OF PATENT 12-13(2011).



**shall be determined by the terms of the claims. The descriptions and the appended drawings may be used to interpret the claims,” as referred to in the first paragraph of Article 56 of Patent Law. This article means that the scope of protection of the patent right shall be determined by the scope of essential technical features clearly indicated in the claims, and shall also include the scope of the features that are equivalent to those essential technical features.**

**The equivalent feature means the feature which utilizes substantially the same way, performs substantially the same function and achieve substantially the same result as the technical feature in the claim, and which can be contemplated by a person of ordinary skill in the art without creative work.**

In this Article, the Supreme People’s Court adopted the triple identity test with an additional factor, the creative work standard, to determine infringement under the doctrine of equivalents.<sup>70</sup> In addition, the comparison between the accused subject and the claimed invention under the doctrine of equivalents was neither on an element-by-element basis (the all-elements rule), nor based on the claimed invention as a whole.<sup>71</sup> Article 17 of the SPC Provisions indicates that the scope of patent protection is determined by the essential technical features in the claims, and includes the scope determined by the features that are equal to those essential technical features. In other words, the claim includes essential technical features and nonessential technical features. Only the essential technical features are considered to define the scope of the patent protection, but the nonessential technical features are not.<sup>72</sup> The principle is called the “principle of superfluity establishment”.<sup>73</sup>

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70. In general, the inferior courts did not find non-infringement under the doctrine of equivalents simply based on the “creative work” standard alone. *See* WUN-JYUN RUN, THE PROTECTION OF PATENT RIGHT, 345-51(2007)

71. *See* WUN-JYUN RUN, THE PROTECTION OF PATENT RIGHT, 344(2007)

72. The rule in the SPC Provision is consistent with No 1997-Fa-Jih-58 memo from Supreme People’s Court. In the memo, the Court indicated that a spring in the patent in suit is non-essential technical feature and the patent could achieve the patent object and result without the spring. Therefore, the court should exclude the claimed spring for determining the patent infringement. *See* WUN-JYUN RUN, THE PROTECTION OF PATENT RIGHT, at 364-64. However, the Supreme People’s Court thought the threshold for applying this rule is high. *See* No. 2005 Min-San-Ti-1 decision.

73. *See* LI-FENG HSU, THE EXPANSION AND LIMITATION OF PATENT RIGHT, 356-57(2007); *See also* State Intel-

In 2008, China amended the patent law. In December 2009, the Supreme People's Court issued the Interpretation of the Supreme People's Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (hereinafter "SPC Interpretation"),<sup>74</sup> which came into effect on January 1st, 2010. In light of Article 20 of the SPC Interpretation, if there is discrepancy between relevant Interpretations promulgated by the Supreme People's Court and this Interpretation, this Interpretation shall prevail. Article 7 of the SPC Interpretation states the implementation of the doctrine of equivalents as:

**"The courts, in determining whether the technology alleged to be infringing falls within the scope of patent protection, shall examine all the technical features recited in the claim.**

**Where a technology alleged to be infringing comprises technical features identical or equivalent to all the technical features recited in the claim, the courts shall rule that such technology falls within the scope of patent protection; where by comparison with all the technical features recited in the claim, the technology alleged to be infringing lacks more than one technical features, or more than one technical features of the claim are neither identical nor equivalent, the courts shall determine that the technology alleged to be infringing does not fall within the scope of patent protection."**

This Article makes clear that all the technical features in the claim should be examined to determine the scope of patent protection. If the accused subject lacks more than one technical features, or more than one technical features of the claim are neither identical nor equivalent, the accused subject does not infringe the patent. In other words, there isn't any distinction between the essential technical features and the nonessential technical features in the claim any more. All the technical features in the claim should be compared

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lectual Property Office, *The Principle of Superfluity Establishment Is Inapplicable to Patent Infringement*, at [http://www.sipo.gov.cn/albd/2012/201206/t20120629\\_717201.html](http://www.sipo.gov.cn/albd/2012/201206/t20120629_717201.html) (last visited 2013/2/8).

74. See No. 2009-Min-Jian-567 decision (decided on Dec. 6th, 2011).

with the technical features in the accused subject,<sup>75</sup> and the principle is the same as the all-elements rule. However, the interchangeability is not considered in the SPC Interpretation.

## 2. The Supreme People's Court Decisions

The Supreme People's Court prescribed both the SPC Provisions and the SPC Interpretation, and the Court itself was supposed to follow these rules. In reality, the Supreme People's Court did continuously implement the SPC Interpretation.<sup>76</sup>

There are four decisions from the Supreme People's Court involves the issue of interchangeability. These decisions were made in the timeframe from 2002 to 2011, after the issuance of the SPC Provisions. Only one of these decisions was made after the issuance of the SPC Interpretation.

### 1) No. 2001- Min-San-Ti-1 Decision

The decision was made on December 15th, 2002. In the case, the Higher People's Court ruled that there is no interchangeability because the limiting means in the accused product could not fix the plate as the guiding means in the claimed invention. The accused product and the claimed invention achieved different results. The accused product therefore did not infringe the patent under the doctrine of equivalents. However, the Supreme People's Court indicated that based on Article 17 of the SPC Provisions, the scope of patent protection covers the equivalency of the technical features. If the technical features in the accused product and in the claimed invention perform substantially the same function in substantially the same way and achieve substantially the same result, and the difference between them can be contemplated by a person of ordinary skill in the art without creative work, they are equivalent. The Court divided claim 1 into five essential technical features, and found the accused product has only one technical feature that is different from the claimed invention. The claimed invention used a guiding means to fix a plate, but in the accused product, the plate was not fixed by a limiting means, which was supposed to be

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75. See JYUN WANG, ON THE DOCTRINE OF EQUIVALENT IN PATENT INFRINGEMENT JUDGMENT, 24(2011).

76. For examples, in No. 2009-Min-Jian-567 decision (decided on Dec. 6th, 2011), No. 2010-Min-Ti-189 decision, No. 2010-Min-Shen-1340 decision and No. 2011-Min-Shen-1309 decision, the Supreme People's Court applied the rules in the SPC Interpretation.

the corresponding element to the guiding means in the claimed invention. The accused product used a dragging board to fix the plate.

The Court held that interchangeability is a matter of technical fact, because interchangeability requires that the accused product and the claimed invention have substantially the same way, function and result, and the interchangeability could be contemplated by a person of ordinary skill in the art without any creative work. However, a finding of equivalent interchangeability does not necessarily result in a finding of infringement by equivalence because the court has to consider some other factors. Whether the equivalent interchangeability establishes patent infringement or not is a matter of law. Because the combination of the limiting means and the dragging board in the accused product could perform the same function and achieve substantially the same result as the guiding board in the claimed invention, and the interchangeability is commonly known, thus the accused product is equivalent to the claimed invention.

The decision was made before the effective date of the SPC Interpretation. The Supreme People's Court considered only the essential technical features in the patent claim. The Supreme People's Court examined the interchangeability under the standards of Article 17 of the SPC Provisions -- that is, the Court assessed the interchangeability by looking at the triple identity test and by determining whether a person of ordinary skill in the art could contemplate the accused product without creative work.

## **2) No. 2008- Min-Jian-191 Decision**

The decision was made on August 7th, 2009. In the case, the claimed invention used the compound made of clay and fly ash to manufacture bricks and the accused process used the compound of shale and fly ash. According to a book entitled "The Art Design of Sintered Brick" published in 1986, the fly ash brick can be made of the fly ash and some binder material, such as clay or shale. The chemical compositions of shale and clay are similar and the requirements for these two materials are the same. The Supreme People's Court held that using shale and using clay as a binder were substantially the same way in the field of brick manufacture. Both materials performed substantially the same function and achieved substantially the same result. Therefore, using shale and using clay as a binder to manufacture brick were interchangeable and equivalent.

In the decision, the Supreme People's Court did not specifically mention the "creative

work” standard in the SPC Provisions, but simply determined the equivalency based on the description in the prior reference. Nevertheless, the Court applied the triple identity test based on the content of the book. The Supreme People’s Court seems to imply that the disclosure in the book was so clear that a person of ordinary skill in the art could accomplish the accused process without creative work. In other words, the content of the book supports the finding of interchangeability between the accused product and the claimed invention so that a person of ordinary skill in the art could contemplate without creative work.

### **3) No. 2008- Min-Shen-981 Decision**

The decision was made on December 25th, 2009. In the case, the claimed trenching machine was driven by a chain and the accused product was driven by a track. The claim required a blade carrier of a quadri-section type, but the blade carrier in the accused product was a hexa-section type. The Supreme People’s Court held that no substantial progress was made to the use of track in the accused product, when it was compared with the chain in the claimed invention. A person of ordinary skill in the art could contemplate the accused product without creative work. Nonetheless, the blade carriers in the claimed invention and the accused product were easily interchangeable. These carriers performed substantially the same function in substantial the same way and achieved substantially the same result, and the difference between these two carriers could be contemplated by a person of ordinary skill in the art without creative work. Therefore, the claimed invention and the accused product were equivalent.

In the decision, the Supreme People’s Court also applied the standard in Article 17 of the SPC Provisions. In other words, the Court assessed the interchangeability by applying the triple identity test and by determining whether a person of ordinary skill in the art could contemplate without creative work. The Supreme People’s Court also implied that if substantial progress was made to the accused product, the accused product wouldn’t be equivalent to the claimed invention because a person of ordinary skill in the art could not contemplate without creative work.

### **4) No. 2009- Min-Jian-567 Decision**

The decision was made on December 6th, 2011. Different from the three decisions dis-

cussed above, this is the only one decision decided after the issuance of the SPC Interpretation. In the case, the claimed invention was a cardboard manufacturing machine, which included a gluing device and a makeup device. The accused machine did not include these two devices, but got these works done by hands. One of the key issues in the case was whether or not the accused subject infringed the claimed invention under the doctrine of equivalents. The inferior court held that there was no equivalency between the accused subject and the claimed invention because manual labor was a very different technical concept from the claimed mechanical devices. The Supreme People's Court overruled the decision.

The Supreme People's Court indicated that to determine whether the accused subject falls within the scope of patent protection, the court should examine all of the technical features in the claim and compare these features with the features in the accused subject one by one. If the accused subject has all of the technical features or their equivalents, the accused subject falls within the scope of patent protection. If any one of these technical features or its equivalent is missing from the accused subject, the accused subject does not fall into the scope of patent protection. With regard to the equivalent technical feature, according to paragraph 2, Article 17 of the SPC Provisions, the equivalent feature means the feature which utilizes substantially the same way, performs substantially the same function and achieve substantially the same result as the technical feature in the claim, and which can be contemplated by a person of ordinary skill in the art without creative work. In other words, if the manual labor in the accused subject and mechanical devices in the claimed invention performed in substantially the same way, had substantially the same function and result, and the interchangeability could be contemplated by one of ordinary skill in the art without creative work, the accused machine should be equivalent to the claimed invention. The court could not determine that the accused subject was not equivalent to the claimed invention simply because manual labor was used to substitute for the mechanical device. If the manual labor and the mechanical device performed in the substantially the same way and had substantially the same function and result, and the interchangeability could be contemplated by a person of ordinary skill

in the art without creative work, the manual labor and the mechanical device were equivalent.

In the case, regarding the technical feature of gluing device in the claim, both of the claimed invention and the accused subject were for gluing on the work piece, and they had the same function. As to the way factor, the claimed invention glued the work piece by a wheel before the piece was cut and operated in an automatic product line, but the accused subject glued the work piece by hands with a brush after the piece was cut and operated outside the product line. They used different tools and operated in different sequences and positions. They thus performed in fundamentally different ways. As to the result factor, the claimed invention had high productivity, which the accused subject didn't have. Therefore, the technical feature in the accused subject is not equivalent to the technical feature in the claimed invention.

Compared with the technical feature of the makeup device in the claim invention, the accused subject moved the work piece and placed the piece on the operation platform by hands. Although the claimed invention and the accused subject had the same function, the claimed invention moved the work piece along an automatic product line, processed the work piece by a regular operation of the machine, and thus performed in a fundamentally different way. Yet the claimed invention had high productivity, which was a different result from the accused subject. Therefore, the corresponding technical feature in the accused subject was not equivalent to the technical feature of the makeup device in the claimed invention. In the decision, the Supreme People's Court did not address the essential or non-essential technical features, but instructed the lower court to examine all of the technical features in the claim and to compare all of these features with the technical features in the accused subject one by one. This rule was different from the rule in Article 17 of the SPC Provisions, but was consistent with the rule in Article 7 of the SPC Interpretation. In other words, in the decision, the Supreme People's Court applied the all-elements rule, which was not addressed in the three decisions discussed above.

However, in determining infringement by equivalence, the Court still applied the principles in paragraph 2, Article 17 of the SPC Provisions, which spells out the triple identity test and the creative work standard-- if the corresponding technical features in the accused subject and the claimed invention performed in the substantially the same way and had

substantially the same function and result, and had the interchangeability that a person of ordinary skill in the art could contemplate without creative work, these technical feature were equivalent. In other words, the Supreme People's Court assessed the interchangeability by determining whether a person of ordinary skill in the art could contemplate without creative work. Although here the Supreme People's Court adopted the interchangeability factor, but it did not emphasize or elaborate it. The Supreme People's Court simply followed the rules in the SPC Provisions.

### **3. Conclusion**

Based on the study of the Supreme People's Court decisions above, although the SPC Provisions and the SPC Interpretation do not contain the factor of interchangeability, the Supreme People's Court did consider interchangeability in some cases. Nevertheless, the Court in these cases did not highlight the consideration of interchangeability; it simply followed the standard in the SPC Provisions and the SPC Interpretation, and assessed interchangeability by determining whether a person of ordinary skill in the art could contemplate without creative work. Where the Court used the "creative work" standard to assess the interchangeability, the interchangeability became a necessary factor in addition to the triple identity test for determining infringement under the doctrine of equivalents. In other words, the Supreme People's Court's decisions on interchangeability have been consistent with the rules in the SPC Provisions and the SPC Interpretation.

## **V. Conclusion**

The courts in the United States, Taiwan and China apply the all-elements rule and the doctrine of equivalents to determine patent infringement. These courts apply the triple identity test and consider interchangeability to evaluate equivalency. However, the interrelationship between the triple identity test and interchangeability is different in these countries.

In the United States, interchangeability was one of the additional factors to be considered in determining equivalency in addition to the function, way and result factors in the triple identity test. Whether the court should consider interchangeability depends on



the specific facts and the evidence of the case. To find infringement under the doctrine of equivalents, the court can't rely only on the interchangeability factor. The triple identity test has to be satisfied also.

In Taiwan, the official guidelines, the Guideline for Patent Infringement Verification, treat the triple identity test as a comprehensive test for determining infringement by equivalence, yet the GPIV does not contain the consideration of interchangeability. However, the law in the book is different from the law in the reality on the interchange issue in Taiwan. The Supreme Court still applies the interchangeability test in some decisions, and uses interchangeability itself as an independent and complete test to determine infringement by equivalence. The GPIV does not show the reality of Taiwan's practice of infringement by equivalence.

In China, the law in the book is substantially the same as the law in the reality on the interchangeability issue. Although neither the SPC Provisions nor the SPC Interpretation contain the consideration of interchangeability, the Supreme People's Court did mention interchangeability in some cases. However, the Court had not emphasized or elaborated the interchangeability test but simply followed the standard in the SPC Provisions and the SPC Interpretation. It assessed the issue of interchangeability by determining whether a person of ordinary skill in the art could contemplate without creative work and by using the "creative work" standard and the triple identity test together.

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