

Application of Doctrine of Equivalents in Patent Infringement Disputes

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Due to the emergence of fast moving technology, there are more disputes than ever, requiring the courts to carefully interpret the patent claims. In a vacuum, claim terms are of little use. They must be interpreted and given meaning so that they can be used in a given context. Various patent doctrines have been recognized as tools for creating specific patent scopes, as a result, implementing specific patent theories.

This paper evaluates and deals with scope and extent of patent claims, whenever claim infringement takes place with respect to the doctrine of equivalents (DOE). The possible mechanisms and tests as developed by the Judiciary are also discussed. The paper also examines certain limitations/bars on the applicability of the doctrine of equivalents. An attempt has been made to understand the applicability of doctrine of equivalents as highlighted by courts of various jurisdictions especially US, European and Japanese courts. The Indian context, which is largely based on UK laws, is also reviewed with reference to the latest cases in this regard. Finally, after identifying various mechanisms developed by various courts, it is concluded that as there is no settled position of law till date, it is the ripe time for the Indian courts to formulate basic parameters and principles pertaining to doctrine of equivalents in patent claim infringement disputes.

Keywords: Doctrine of equivalents, claim infringement, function-way-result test, substantiality of difference test, all-limitations rule, prosecution history, file wrapper estoppel

The specification and claims of a patent, particularly, if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy.¹ Ranbaxy wins cefuroxime patent case against GlaxoSmithKline!², InterDigital wins Nokia patent dispute!³, DRL challenges Novartis patent in the US Court!⁴ Captions such as these are nowadays the regular feature of the headlines of national and international newspapers and scientific journals. These mainly pertain to the disputes⁵ due to patent infringement, which necessarily involve interpretation of exclusivity and domain of the 'patent claim' in dispute.⁶

The inventor's patent application, and the subsequent patent, contains 'one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.' The claims describe what is, and therefore, what is not, protected by the patent. Once a patent has been issued, the inventor or 'patentee' can enforce the patent claims against an alleged infringer.⁷ In doing so, the patentee often asserts that the alleged infringer's invention has literally infringed the claims of the patentee's patent. The other recourse left to the

patentee is the purposive and meaningful interpretation of the claim/s⁸ (in pith and substance) at issue, thereby applying the equity concept underlined in the doctrine of equivalents.

Concept of Claims and Patent Infringement

Patent claims are the statutorily granted rights guaranteed by the State for a well-defined period of time to the patentee regarding the subject matter of the patent. These are the exclusive rights to prevent third parties, who do not have the patentee's consent, from the act of making, using, offering for sale, selling or importing that subject matter of patent.

The language of both written description and patent claims are necessary and most important factors in determining the extent and scope of rights. The claim legally defines the patent's scope of protection.⁹ The claim's meaning delineates the subject matter that only the patentee may practice.¹⁰ Thus, a patent claim performs following objectives:

- (i) Public notice: A patent claim informs the public of the subject matter over which the patent provides exclusivity. Law requires every patent to have claims, and the claim's preset location at the end of the specification is statutorily defined.¹¹

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- (ii) Defining patent scope: Patent claims actually establish the scope of exclusivity afforded to an issued patent.¹² The claim tells the public the patent's particular scope of exclusivity by defining the patent grant's metes and bounds. This is the most fundamental trait of the modern patent claim.¹³ Through the claim's words, the patent claim establishes the primary area of exclusivity the patentee will enjoy because of the patent grant.

In the case of a patent infringement inquiry, two stages of analysis are normally performed by courts to investigate the infringement. The first stage is literal infringement and the second is infringement under the doctrine of equivalents (Fig. 1). Literal infringement examines whether the alleged device falls exactly within the boundaries of the claims of the patent by comparing the textual meanings of the claims with the features of the challenger's device.

However, if during the judicial determination no literal infringement is found, the second step of analysis adopted by the courts is to apply the doctrine of equivalents. At this stage, claims are interpreted beyond their strict literal meaning and the scope of the claims may be extended to the features that are equivalent to those literally claimed. This suggests that the exclusive rights provided by a patent are based on, but not exclusively limited to, the language

of its claims.¹⁴ Notwithstanding the long-recognized value of clear and certain claims, courts have refused to confine the infringement inquiry to the precise choice of words.

Nature and Scope of Doctrine of Equivalents

Doctrine of equivalents is an equitable doctrine that may apply in situation where, despite the absence of literal infringement, there still may be infringement if the product or service in question has a structure or performs a function that is an equivalent of an element recited in the claim. 'Equivalence' means that a claim element and its counterpart in a product does substantially the same thing in substantially the same way to achieve substantially the same result.¹⁵

The doctrine of equivalents arose from judicial efforts to stop competitors from making insignificant modifications and substitutions to the claimed invention, although adding nothing, in order to avoid literal infringement. While applying the doctrine of equivalents for patent infringement proceedings, courts have struggled to balance the competing public policies of protecting the patentee from fraud and the need for reasonable certainty for the public regarding the scope of the patentee's exclusive rights.

The theory on which the doctrine of equivalents 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 the name, form, or shape.' Difference between invention and accused device must be insubstantial – if the differences are substantial, no equivalence is found even if function-way-result test is met. Factors relating to substantiality are:

- (i) Whether persons with skills in the art actually know of the equivalence of the claimed and accused inventions.
- (ii) Whether a person with skill could have known of the equivalence.
- (iii) Whether he had intended to copy, or, rather intended to design around, or inadvertently arrived at the same result.

Under the doctrine of equivalents, a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is 'equivalence' between the elements of the accused product or process and the claimed elements of the patented invention.

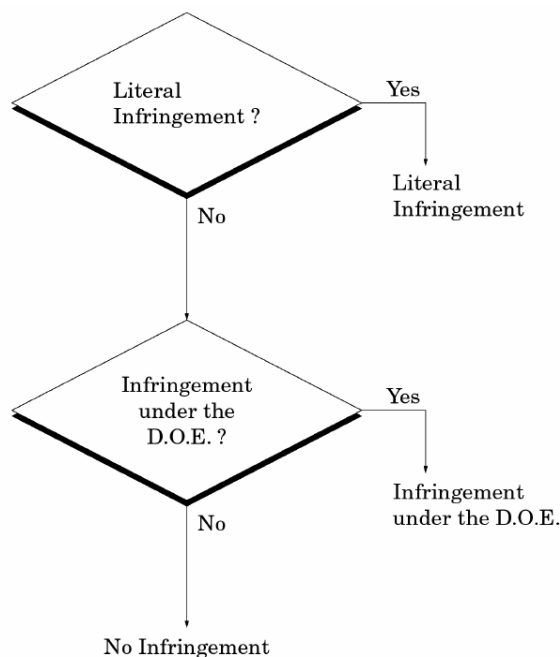


Fig. 1 — Flow diagram of patent infringement enquiry

Application of Doctrine of Equivalents

Doctrine of equivalents is a judiciary created concept (mostly, by the US courts), wherein the Judiciary has given certain tests in order to apply the doctrine. There are essentially two tests:

- (i) Function-way-result test; and
- (ii) Substantiality of difference test.

In the United States, the doctrine of equivalents has been established by the case law related to patent infringement, *Graver Tank & Mfg Co v Linder Air Products*,¹⁶ wherein the Supreme Court adopted the so-called 'function-way-result test' in finding the infringement via the doctrine of equivalents. The function-way-result test considered whether the element in the accused device does substantially the same function in substantially the same way to achieve substantially the same result as the element in the patented claim.

Nearly 50 years after *Graver Tank* case, the US Supreme Court reaffirmed the doctrine of equivalents in *Warner-Jenkinson Co v Hilton Davis Chem Co*.¹⁷ In that case, the Court refused a number of arguments for the removal or restriction of the doctrine of equivalents. The Supreme Court held that even though an alleged infringer may not fall within the literal wording of the claims, courts may find infringement when there are 'insubstantial differences' between the claim language and the defendant's product or process, the *Warner-Jenkinson court*, however, commented on the limited application of the function-way-result test in *Graver Tank*. The Supreme Court stated that although the function-way result test remains as one method for determining equivalence, particularly, for mechanical devices, it is not the only test. Rather, the Court placed much weight on 'the substantiality of the differences' test (criterion) between the claimed and accused elements. The insubstantial difference test, according to the Court, is an objective test, with proof of substantiality of the differences resting on objective evidence rather than unexplained subjective conclusions. An important factor to consider is whether persons skilled in the art would have known of the interchangeability of an element or step in the accused product or process with the claimed element or step. Known interchangeability is potent evidence that those skilled in the relevant art would have considered the change insubstantial. By this means, the Supreme Court tried to strike a balance between the scope of the patent,

and the right of the patentee to protect its patent in terms of the doctrine of equivalents

Bars to the Doctrine of Equivalents

The concept of doctrine of equivalence is not altogether a flawless concept. Certain limitations for its application are:

- (i) All-limitations rule,
- (ii) Obviousness,
- (iii) Prosecution history or file wrapper estoppel,
- (iv) The rule of dedication, and
- (v) The 'means-plus-function' claims.

All-Limitations Rule

The all-limitations rule as propounded in the case of *Pennwalt Corp v Durand-Wayland, Inc*¹⁸ is the first, and perhaps greatest, legal bar (also called Pennwalt bar). Also referred to as 'legal equivalency,' this rule holds that no equivalent infringement exists as a matter of law, if the allegedly infringing article lacks any claim limitation. Essentially, once all the claim limitations of a claim have been construed, the Court investigates whether a counterpart for each and every limitation can be identified in the accused device or process and applies the Pennwalt bar when appropriate. Thus, the inquiry takes one step beyond claim construction to check the 'correspondence of these elements or limitations with the components or steps of the accused device or process'. Under this rule, a finding of infringement may arise only when the doctrine of equivalents is applied on an 'element by element' basis. This means that the doctrine should be applied to each individual element of a claim and to the specific component substituted in the defendant's product or process, not to the claimed invention as a whole and not to the overall defendant's product or process.

Obviousness

In *Loctite Corp v Ultraseal Ltd*,¹⁹ the Federal Circuit held that the doctrine of equivalents does not extend to an infringing device found in the prior art. Five years later, in *Wilson Sporting Goods Co v David Geoffrey & Associates*,²⁰ the Court explained that the doctrine of equivalents 'exists to prevent a fraud on a patent, not to give a patentee something which he could not lawfully have obtained from the USPTO had he tried.' As the Federal Circuit stated in *Streamfeeder v Sure-Feed Systems Inc*,²¹ 'this bar

applies not only to prior art devices, but also to those that 'would have been obvious to one of ordinary skill in the art' at the time of invention. Thus, an accused device or process cannot infringe under the doctrine of equivalents if it is merely an obvious variation of prior art inventions'.

Prosecution History or File Wrapper Estoppel

Prosecution history estoppel requires that the claims of a patent be interpreted in the light of the proceedings in the patent office during the application process. In 1997, the Supreme Court addressed this bar in *Warner-Jenkinson*. Prosecution history estoppel prevents subject matter surrendered when applying for a patent from being reclaimed later under the doctrine of equivalents. Significantly, the Court emphasized that the doctrine of equivalents must give 'proper deference to the role of claims in defining an invention and providing public notice....'. Public notice implicitly leads to and proxies for predictability 'well-established limitation on the doctrine of equivalents ... whereby a surrender of subject matter during patent prosecution may preclude recapturing any part of that subject matter, even if it is equivalent to the matter expressly claimed.'

The Rule of Dedication

In *Maxwell v J Baker Inc.*,²² the Federal Circuit held that where a patent application discloses unclaimed subject matter, the subject matter deemed to have been dedicated to the public. Therefore, the doctrine of equivalents does not apply to that subject matter which is disclosed in a patent, but has not been claimed.

The 'Means-Plus-Function' Claims

The doctrine of equivalents concerns the special form of claims allowed by 35 USC § 112, 6, known as 'means-plus-function' claims. In *Chiuminatta Concrete Concepts Inc v Cardinal Industries Inc.*,²³ the Federal Circuit expressed that such claims limit equivalence to 'later-developed technologies' (developed after the grant of patent). In *Al-Site Corp v VSI International Inc.*,²⁴ the Federal Circuit further stated that, 'in other words, an equivalent structure or act under § 112 for literal infringement must have been available at the time of patent issuance, while an equivalent under the doctrine of equivalents may arise after patent issuance and before the time of infringement'.

Comparative Study of Doctrine of Equivalents

While the doctrine of equivalence has been extensively applied to patent infringement cases in the United States, Europe, Japan and India have been less active in adopting the doctrine for interpreting claims.

Position in USA

The origin, development and evolution of doctrine of equivalents is essentially the brainchild of the Judicial activism of the US courts. An attempt has been made to trace and know the US patent jurisprudence on this issue.

Winans v Adam

One of the earliest and most famous cases on the doctrine of equivalents is *Winans v Adam*.²⁵ *Winans* involved a patent for an improved railcar for carrying coal or other similar materials. The essence of the improvement was that the load was equally distributed throughout the structure, thereby vastly increasing the weight of coal that a railcar was able to carry. In the specification, the patentee described his invention as having 'the form of a frustrum of a cone.' The accused infringing cars made by the defendant did not use the form of a frustrum of a cone, but rather utilized octagonal or pyramidal shapes. The Court held, 'It is generally true, when a patentee describes a machine, then claims it as described, that he is understood to intend to claim, and does by law actually cover, not only the precise forms he has described but all other forms which embody his invention; it being a familiar rule that, to copy the principle or mode of operation described is an infringement, although such copies should be totally unlike the original in form or proportions.'²⁶

The Supreme Court further explained in *Winans* that a patent would be valueless if the defendant can simply change the form of the invention claimed.²⁷ While the Supreme Court did not use the terminology 'doctrine of equivalents,' the concept was established. Thus, where the patentee describes the invention and claims it in the form that most perfectly embodies it, the patentee is deemed by law to claim every form in which the invention may be copied, unless there is a manifest intention to disclaim some of those forms.²⁸ The intent to disclaim particular subject matter is the key to solving the current difficulties with application of the doctrine of equivalents. The Supreme Court first used the term 'doctrine of equivalents' in

McCormick v Talcott.²⁹ In *McCormick*, the Court stated that equivalents apply to colorable imitations of the patented invention.²⁹

Graver Tank & Manufacturing Co v Linde Air Products Co

The most commonly cited case in support of the doctrine of equivalents is the Supreme Court's 1950 decision in *Graver Tank & Manufacturing Co v Linde Air Products Co*.³⁰ The case involved an electric welding process and the fluxes used in that process. The patent claimed essentially a combination of alkaline earth metal silicate and calcium fluoride. The alleged infringing composition was similar to the patented composition, except that it substituted silicates of calcium and manganese for silicates of calcium and magnesium. Manganese silicate is not an alkaline earth metal. Clearly, there could not be literal infringement because all of the elements of the claimed composition were not present in the accused composition. The question then became whether the substitution of manganese was substantial enough to preclude a finding of infringement under the doctrine of equivalents. The Supreme Court again acknowledged, a patent would be useless if a party is allowed to imitate a patented invention, though not copying every literal detail.³¹ The Court recognized that such a limitation would encourage the unscrupulous copyist to make unimportant and insubstantial changes and substitutions to the patented invention, without adding anything, and be outside the reach of the law. As the Supreme Court stated, 'Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form.'³¹ The Court also reiterated that equivalency must be determined in the context of the patent, the prior art, and the particular circumstances of the case.³²

Warner-Jenkinson Co v Hilton Davis Chem Co

The Supreme Court said nothing further for 47 years following the *Graver Tank* decision. Then, in *Warner-Jenkinson Co v Hilton Davis Chem Co*,³³ the Supreme Court considered the doctrine of equivalents in great detail. The relevant facts of *Warner-Jenkinson* are relatively simple. A patentee held a patent on a process for filtering dyes between pH 6.0 and 9.0. The upper limit of 9.0 was added during prosecution to avoid a prior art reference that operated at pH above 9.0, but there were no reasons given for the amended lower limit. The accused infringer

performed a filtering process at pH 5.0. On trial, patentee conceded there was no literal infringement, and relied instead solely on the doctrine of equivalents. The defendant argued that the doctrine of equivalents was no longer valid in view of the Patent Act of 1952, and even if the doctrine of equivalents were still valid, it would not apply because of prosecution history estoppel. The Supreme Court refused to adopt this view and instead took the opportunity to set forth a new analysis for infringement under the doctrine of equivalents: The Court held that the doctrine of equivalents was still in effect but that it needed to be refined in order to limit conflicts with the definitional and public notice function of claims. To this end, the Court held that, on analysing an accused infringing device or process against a claimed invention, each element must be compared, not simply the invention as a whole: 'Each element contained in a patent claimed is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.' Thus, the Supreme Court took an affirmative step towards narrowing the range of equivalents while increasing the predictability with which equivalents might be applied while consolidating the two lines of cases. Under the *Warner-Jenkinson* standard, each claim element must be present, either literally or by equivalents.

Festo Corp v Shoketsu Kinzoku Kabushiki Co

In *Festo Corp v Shoketsu Kinzoku Kabushiki Co*,³⁴ the issue was whether an alloy sleeve that prevented magnetic leakage was equivalent to a magnetizable sleeve that prevented magnetic leakage and whether single two-way seals are equivalent to two one-way seals. The description of the sleeve as being made of a magnetizable material was added during prosecution, but the reasons for the amendment were unclear. Accordingly, the Court upheld the infringement because there was equivalence under the function-way-result test. The case was remanded for reconsideration in view of *Warner Jenkinson*. The Federal Circuit's decision on remand, *Festo II* as compared to *Festo I*, the issue raised was, 'Whether for the purposes of determining whether an amendment to a claim creates prosecution history estoppel, is a 'substantial reason related to patentability' limited to those amendments made to overcome prior art under § 102 and § 103, or does 'patentability mean any reason affecting the issuance

of a patent? The Court held, 'A substantial reason related to patentability is not limited to overcoming prior art, but includes other reasons related to the statutory requirements for a patent. Therefore, an amendment that narrows the scope of a claim for any reason related to the statutory requirements for a patent will give rise to prosecution history estoppel with respect to the amended claim.' Another important issue was 'if a claim amendment creates prosecution history estoppel, under *Warner-Jenkinson* what range of equivalents, if any, is available under the doctrine of equivalents for the claim element so amended?' The Court answered, 'when a claim amendment creates prosecution history estoppel with regard to a claim element, there is no range of equivalents available for the amended claim element. Application of the doctrine of equivalents to the claim element is completely barred (a 'complete bar').'

Position in Europe: A Tale of Harmonization

Position in UK

The patent system of the United Kingdom developed as an exception to a ban on monopolies, and therefore its policy leaned more towards the interests of the public. In addition, the UK practice for patent claims was usually described as the 'fence-post' approach, with a strong preference for certainty. Consequently, UK courts placed much weight on 'certainty for third parties' while construing claim language and thereby refused to accept the uncertainty caused by the doctrine of equivalents.

The doctrine of 'pith and marrow' defined the scope of patent protection by the substance of the invention.³⁵ According to the doctrine, an infringement could be established if the defendant's device or process included all the essential elements of the patent. In contrast to the US practice, which typically permitted a range of equivalents to every element of the claim, only inessential elements were entitled to a range of equivalents in the United Kingdom, and the general rule was that every element was essential.

For example, in *Van der Lely v Bamford*,³⁶ a device where three wheels were moved to the front of a hay rake (which had a line of six wheels set one behind the other), and set parallel to the front three wheels, was not considered to infringe the patent of a device where three wheels were moved to the back and set parallel to the three wheels in the front, even though the result was exactly the same. The House of Lords emphasized that a literal reading of the patent

specification was sufficient to compare the patented product or process with the infringing one and that it only constituted an infringement if there was exact copying. Viscount Radcliffe stated,

'After all, it is he [the applicant] who has committed himself to the unequivocal description of what he claims to have invented and he must submit in the first place to be judged by his own action and words'.

Thus, prior to implementation of the European Patent Convention (EPC), the interpretation of a patent was limited principally to literal infringement of the claims.

However, in *Catnic Components Ltd v Hill & Smith Ltd*,³⁷ anticipating the impact of the EPC, the House of Lords considered 'purposive construction' rather than 'purely literal construction' (this technique is not exactly doctrine of equivalents but is a method by construction of claims adopted and propounded by English courts to deal with the matter where the literal interpretation is not the appropriate technique of claim construction and is of no significance) to be the correct approach to claim interpretation. The principal issue in this case was whether a person skilled in the art would understand that the patentee intended strict compliance with that term or phrase to be an essential requirement of the invention such that any variant would fall outside the scope of patent protection. The House of Lords required the Court to consider as; 'A variant does not infringe a claim unless:

- (i) it would have no material effect on the way the invention works,
- (ii) the lack of material effect would have been obvious to one skilled in the art at the date of publication, and
- (iii) it would be apparent to the skilled reader that the patentee could not have intended the particular claim language to exclude such a known, minor variant having no material effect'.

Later, the three-part equivalence test was reiterated in *Improver Corporation v Remington Consumer Products Ltd*.³⁸ In this case, the Court of Appeal emphasized that the *Catnic* principles are applicable when a defendant's device falls outside the literal scope of the claim. It also stated,

‘if the issue was whether a feature embodied in an alleged infringement which fell outside the primary, literal or a contextual meaning of a descriptive word or phrase in the claim (a variant) was nevertheless within the language as properly interpreted, the court should ask itself:

- (i) Does the variant have a material effect upon the way the invention works? If yes, the variant is outside the claim. If no-
- (ii) Would this (i.e. that the variant had no material effect) have been obvious at the date of publication of the patent to a reader skilled in the art? If no, the variant is outside the claim. If yes-
- (iii) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention? If yes, the variant is outside the claim’.

Recently, in the case of *Kirin-Amgen v Hoechst Marion Roussel*³⁹ where the dispute was pertaining to a method of making a hormone (erythropoietin), artificially by recombinant technology, which was used for treatment of anemia, particularly, when, associated with kidney failure. The House of Lords quoted from the *Catnic* case and held that, ‘A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge’. The Court further pointed out, ‘‘Purposive construction’ does not mean that one is extending or going beyond the definition of the technical matter for which the patentee seeks protection in the claims. The question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean. And for this purpose, the language he has chosen is usually of critical importance. The conventions of word meaning and syntax enable us to express our meanings with great accuracy and subtlety and the skilled man will ordinarily assume that the patentee has chosen his language accordingly. As number of judges have pointed out, the specification is a unilateral document in words of the patentee’s own choosing. Furthermore, the words usually have been chosen upon skilled advice. The specification is not a document *inter rusticos* for which broad allowances

must be made. On the other hand, it must be recognized that the patentee is trying to describe something which, at any rate in his opinion, is new; which has not existed before and of which there may be no generally accepted definition’.

Now, UK courts follow Article 69 and the Protocol of the EPC for claim interpretation (which is a uniform system in Europe for claim interpretation) and Section 125 of the UK Patent Act provides the basis of that. However, the decisions in *Catnic*, improver still prevail and are considered as an authority.

Position in Germany

In contrast to the UK system, the German patent system was based on the belief in rewarding inventors in proportion to their contribution to the art. This led to a more generous and broad scope of protection beyond the literal terms of a patent. German claim interpretation was usually regarded as ‘signpost’ approach which was slightly different from the doctrine of equivalents in the United States. Because the German patent policy mainly emphasized the invention’s contribution to the field of technology, German courts often extended protection to ‘non-evident equivalents’ or ‘general inventive idea’.

However, in *Formstein* case⁴⁰, Germany narrowed the scope of an invention by excluding the protection for much of the general inventive idea to accommodate European harmonization. In that case, the German Federal Supreme Court considered three fundamental questions in determining an infringement:

- (i) Does the allegedly infringing embodiment lead to the same technical effect?
- (ii) Could the defendant’s solution be derived by a skilled person in the art from the disclosure of the patent claims?
- (iii) Does the allegedly equivalent solution not belong to the prior art and would have it been patentable over the prior art?

It can be deduced that if an alleged device is to be easily derived from the prior art or if it is not patentable over the prior art; an infringement of the patent cannot be asserted. In fact, this claim interpretation is consistent with the basic underlying idea of German competition law that does not allow prior art to be taken away from the public domain. Now, German claim interpretation is also governed by

Article 69 and the Protocol of the EPC. The legal basis for claim interpretation is found in Section 14 of the German Patent Act:

‘The extent of protection conferred by a patent or a patent application shall be determined by the terms of the claims. Nevertheless, the description and drawings shall be used to interpret the claims’.

Harmonization: Recent EPC Happenings

In that regard, EPC provides a common basis of interpretation and a common scope of protection for European patents in all member states and seeks to strike a balance between two extreme ways of looking at claim interpretation in the United Kingdom and Germany. Article 69 of the EPC reads:

‘The extent of the protection conferred by a European patent or a European patent application shall be determined by the terms of the claims. Nevertheless, the description and drawings shall be used to interpret the claims’.

This Article was promulgated to specify an intermediate scope of a European patent determined by the terms of the claims as well as by the patent description and drawings. In addition, a Protocol on the Interpretation of Article 69 was adopted in order to clarify Article 69 of the EPC. The Protocol states that the extent of protection is not to be limited ‘by the strict, literal meaning of the wording used in the claims’. It also stipulates that Article 69 shall be interpreted ‘as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties’.

Although, Article 69 and the Protocol suggest that claims can be interpreted beyond their literal meaning, they do not provide any specific guidance on the breadth of interpretation. Furthermore, each National Court is still responsible for the decisions in invalidation and infringement cases relating to granted European patents.

In an attempt to clarify the extent of protection under Article 69 of the EPC, and to ensure a more uniform court practice in Europe, the Diplomatic Conference for the Revision of the European Patent Convention was held in Munich in November 2000. The EPC Contracting States considered two issues regarding claim interpretation: the significance

of equivalents and prior statements made by the applicant during prosecution before the EPO (so-called ‘prosecution history estoppel’ or ‘file wrapper estoppel’). They proposed to change the Protocol on the Interpretation of Article 69 by introducing a new Article 2 which reads as follows:

‘For the purpose of determining the extent of protection conferred by a European patent due account shall be taken of any element which is equivalent to an element specified in the claims’.

Although this Article 69 was generally agreed, many Member States requested further consideration on the definition of equivalence, the way of assessment and the time of judging the equivalency, and thus these concepts were not reflected in the new Article. Another provision on file wrapper estoppel was proposed in the Basic Proposal:

‘For the purpose of determining the extent of protection, due account shall be taken of any statement unambiguously limiting the extent of protection made by the applicant or the proprietor of the patent in the European patent application or patent, or during proceedings concerning the grant or the validity of the European patent, in particular where the limitation was made in response to a citation of prior art.’

But this was deleted from the final text of the EPC Revision Act because some delegations strongly opposed the introduction of the provision. The revised text of the Protocol will come into force two years after 15 Contracting States ratify the revised text or three months after all Contracting States have ratified the revised text. It is currently expected that the new Protocol will come into force in about three to five years time.

In this regard, it is put forward that EPC provides for lot of interpretative techniques for patent claims, therefore, there is more or less no scope left for applying judicial doctrines like doctrine of equivalents for broadening of patent rights by the courts.

Position in Japan

Japanese courts have shown a preference for the interests of the public over those of patentees. This has been in line with the policy of the Japanese

Government to promote technological development by allowing further improvements through clarifying the scope of a patent.

This made Japanese courts less willing to apply the concept of equivalents in patent infringement proceedings, avoiding any uncertainty introduced by the doctrine. For example, in the *Fastener case*,⁴¹ the Osaka High Court held that 'there are significant differences between the effects of the alleged product and the patented device, even though they possess the same function.' The Court also stated 'the replacement of the element in the claim with the defendant's device was not easily conceived by those skilled in the art at the time of filing the patent application.' Normally, doctrine of equivalents infringement was not successfully argued in most cases. Although, the doctrine of equivalents was applied in few cases, most of them were overturned in higher courts. On the other hand, very few cases are found in which an infringement under the doctrine of equivalents was affirmed. Cases in which the infringement under the doctrine of equivalents was found include the *Method of Cutting Synthetic Resin Aspidistra Substitute case*⁴² and the *Liquid-Filtering Apparatus case*.⁴³

Most recently, Japanese courts considered the doctrine of equivalents in the *Recirculating Ball Spline Bearings case*.⁴⁴ Although, the Tokyo High Court found an infringement by applying the doctrine of equivalents,⁴⁵ the Supreme Court remanded the original decision. The Supreme Court made it clear that claims should be interpreted in such a way that one skilled in the art would have read them as of the filing date. Subsequent to the practice in *Ball Spline case*, an infringement can be established only if a defendant's product or process falls within the definition of the claimed language in view of one skilled in the art. The Supreme Court provided five conditions under which the doctrine of equivalents can be applied. It stated that, even if there are elements of the claims that are different from those of the defendant's product, it is appropriate to consider the defendant's product as being equivalent to the patented claims if:

- (i) the elements in the claim are not essential portions of the patented invention;
- (ii) the object of the patent can be achieved and the same functions and results can be obtained even if the elements of the patent are replaced by those of the defendant's device;

- (iii) one skilled in the art to which the invention belongs could have readily conceived of the replacement at the time the defendant's product was manufactured;
- (iv) the defendant's subject-matter is not identical to the prior art or could not have been readily conceived by one skilled in the art at the time of filing of the patent application; and
- (v) the subject-matter was not intentionally excluded from the scope of the claims during the prosecution of the patent application.

While applying the doctrine of equivalents for patent infringement proceedings, Japanese courts rarely depended on prosecution history estoppel. Rather, they primarily adopted the non-essential element rule for the purpose of infringement analysis.

Position in India

It is submitted that we have a poorly analysed, sloganistic environment of patent case laws, which are rather poorly and thoughtlessly analysed.⁴⁶ There is no specific path, which the Courts had laid. The Indian Court's decisions are highly influenced by the English Patent Jurisprudence.⁴⁷

In the case of *Bishwanath Prasad Radhey Shyam v Hindustan Metal Industries*,⁴⁸ the Supreme Court observed, 'As pointed out in *Arnold v Brandbury*⁴⁹, the proper way to construe a specification is not to read the claim first and then see what the full description of the invention is but first to read the description of the invention, in order that the mind may be prepared for what it is, what is to be claimed, as the patentee cannot claim more than he desires to patent'. In *Parkinson v Simon*⁵⁰, Lord Esher M R enumerated that as far as possible that the claim must be so construed as to give an effective meaning of each of them, but the specification and the claim must be looked at and construed together.

Prior to Patents Act, 1970, the honorable Bombay High Court in the case of *Lallubhai Chakubhai v Chimantal & Chunilal & Co*⁵¹, held, 'Patentee must particularly describe and ascertain the nature of his invention in the specification, as the ambit of his invention is circumscribed by the claims. The construction of a specification is a matter of law and is for the Court. It must be construed as a whole. A specification must be construed impartially, and the Court is generally slow to construe it against the patentee. But the construction must be reasonable one'.⁵¹

More recently, in the case of *Raj Parkesh v Mangat Ram Chowdhary*,⁵² the Delhi High Court held, 'Whether a patent sets out an invention is to be determined by a true and fair construction of the specifications on the basis of which an inventor claims that he is the first inventor of an invention which is to be patented. In order to properly construe the specifications, one should give ordinary meaning to the words, but where necessary the words must be construed in the sense in which they are used in a particular trade, a sphere in which the invention is sought to have been made. The grant of patent, no doubt, creates a monopoly in favour of the patentee but then law throughout the free world recognizes that an inventor must first get the benefit of his invention, even if it means creating a monopoly'.⁵³

Further the Delhi High Court held, 'To find out whether the patent has been infringed the patented article or process has to be compared with the infringing articles or process and unessential features in the infringing article or process are of no account and if the infringing goods are made with the same object in view which is attained by the patented article, then the minor variation does not mean that there is no piracy and a person is guilty of infringement if he makes what is in substance the equivalent of the patented article and some trifling and unessential variations has to be ignored'.⁵⁴

Conclusion

The determination of literal or equivalent infringement is a question of fact and if literal infringement is absent, the patent owner can establish infringement under the doctrine of equivalents.

It can also be concluded that the doctrine of equivalents, is a singular exception to patent law. While initially designed to prevent fraud on a patent, the doctrine of equivalents has become an often-used second method of proving infringement. An owner of realty cannot assert trespass onto grounds outside the metes and bounds of property actually owned. Moreover, the uncertainty of patent equivalency can have side effects. Competitors are faced with uncertainties as to what is and is not covered by equivalents under a patent, even though there is no literal infringement. Further, equivalency hinders the ability for competitors to design around the patent claims. Thus, it can be said that the doctrine of equivalents is about expanding the scope of the property right of a patentee. It slightly expands the scope beyond the literal meaning of the claims.

With reference to India, it can be concluded that so far there have been very few cases dealing with patent claim infringement. Nevertheless, the pace at which technological development is taking place, the Indian judiciary is likely to face similar cases in near future. Moreover, taking into account the Patent Act, 1970, it is evident that no specific provision exists regarding the patent infringement and interpretation of patent claims; to fill this lacuna the courts can look into the principles and tests laid down by the US, UK and Japanese courts. They can also formulate their own theory based on sound techno-legal reasoning in striking a balance between conflicting interests of protection and innovation. However, the emphasis should be on setting a precise parameter regarding the extent and applicability of patent claims so that there is certainty in the judicial process.

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- 3 InterDigital wins big in Nokia royalty spat (A US Federal Court ruled in favour of wireless technology firm InterDigital Communications Corp in a \$252 million patent royalty dispute with mobile phone maker Nokia, 29 December 2005, http://www.theregister.co.uk/2005/12/29/interdigital_wins_nokia_patent_dispute/ (22 January 2007).
- 4 DRL challenges Novartis patent in US Court (Dr Reddy's Laboratories (DRL) has moved US Court challenging Novartis patent on Alzheimer's drug Rivastigmine tartrate (brand name is Exelon). First hearing on the challenge is in October 2008, 16 June 2006, http://www.financialexpress.com/fe_full_story.php?content_id=130754 (23 January 2007).
- 5 These pertain to the litigation journey starting at the inception of a 'dispute'. What is dispute? Is often answered as -when a right of one is infringed by the act/omission of the other i.e. infringer. Black Law Dictionary defines

- 'dispute' as, 'a conflict or controversy, especially one that has given rise to a particular lawsuit'.
- 6 It is brought to the notice that at the capital involved; cost involved in R & D; marketing and other costs etc., are at the stake of both the patent contending parties, therefore, the proper construction of patent claim in dispute is very important.
 - 7 To obtain a patent an inventor submits an application to the Patent and Trademark Office (PTO). Within the application, the inventor will include a description of the invention and a list of claims which distinctly describes the subject matter of the invention. During the patent application process the patent examiner will scrutinize the inventor's claims to determine if the application satisfies the requirements for a patent. The examiner may request that the applicant limit or narrow the claims before granting the patent. Once the PTO issues the patent, the patentee has a monopoly on the invention as described in the claims. In describing precisely what is covered by the patent, the claims allow others to know what will or will not result in infringement. The claims have been characterized as the 'metes and bounds' of the invention.
 - 8 Adelman Martin J and Francione Gary L, The doctrine of equivalents in patent law: Questions that Pennwalt did not answer, *University of Pennsylvania Law Review*, 137 (1989) 673.
 - 9 *Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co Ltd*, 535 US 722, 731-32 (2002) (The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.); *Winans v Denmead*, 56 US (15 How) 330, 347 (1854)).
 - 10 *McClain v Ortmyer*, 141 US 419, 424 (1891) (The rights of the plaintiff depend upon the claim in his patent, according to its proper construction....).
 - 11 *Markman v Westview Instruments Inc*, 517 US 370, 373 (1996) (It has long been understood that a patent must describe the exact scope of an invention and its manufacture to secure to the patentee all to which he is entitled, [and] to apprise the public of what is still open to them).
 - 12 *Graver Tank & Mfg Co v Linde Air Prods Co*, 339 US 605, 609 (1950).
 - 13 *Zenith Labs Inc v Bristol-Myers Squibb Co*, 19 F 3d 1418, 1424 (Fed Cir 1994).
 - 14 Mathur Tarun, Patent claim interpretation in technological disputes, IPR Workshop, IIT-Kanpur (31 March 1 April 2007).
 - 15 Nard Craig Allen, A theory of claim interpretation, *Harvard Journal of Law & Technology*, 14 (2000) 1-15. The doctrine of equivalents prevents subsequent inventors from stealing the patented invention by making insignificant changes that avoid infringing the literal language of the claims yet result in essentially the same invention.
 - 16 339 US 605 (1950).
 - 17 520 US 17, 41 USPQ 2d 1865 (1997).
 - 18 833 F 2d 931 (Fed Cir 1987).
 - 19 781 F 2d 861 (Fed Cir 1985).
 - 20 904 F 2d 677 (Fed Cir 1990).
 - 21 175 F 3d 974, 982 (Fed Cir 1999).
 - 22 86 F 3d. 1098 (Fed Cir 1996).
 - 23 145 F 3d 1303, (Fed Cir 1998).
 - 24 174 F 3d 1308 (Fed Cir 1999).
 - 25 56 US 330, 1853 US Lexis 288 (1853).
 - 26 56 US 342, 1853 US Lexis 288 (1853).
 - 27 56 US 342-43, 1853 US Lexis 288 (1853).
 - 28 56 US at 343, 1853 US Lexis 288 (1853).
 - 29 61 US 402, 405 (1857).
 - 30 339 US 605, 70 S Ct 854 (1950).
 - 31 339 US at 607, 70 S Ct at 856.
 - 32 339 US at 609, 70 S Ct at 856.
 - 33 520 US 17, 117 S Ct 1040 (1997).
 - 34 72 F 3d 857 (Fed Cir 1995) (Festo I), vacated by 520 US 1111 (1997); cert Granted 533 US 915 (2001), vacated by 533 US 722 (2002).
 - 35 *Marconi v British Radio Telegraph and Telephone Co* (1911) 28 R P C 181 at 217; Nicholas Fox [2004] E I P R 528-537.
 - 36 *Van der Lely NV v Bamford* [1963] R P C 61.
 - 37 *Catic Components Ltd v Hill & Smith Ltd* [1982] R P D & T M 183 at 243, HL.
 - 38 *Improver Corporation v Remington Consumer Products Ltd* [1990] F S R 181 at 189, Pat Ct 1989.
 - 39 [2005] R P C 9; [2005] 1 All E R 667 (HL).
 - 40 Federal Supreme Court (1987) 28 I I C 795--Molded Curbstone (Formstein).
 - 41 Osaka High Court decision, 26 June, Sho-47 (1972).
 - 42 Osaka High Court decision, 18 December, Sho-47 (1972).
 - 43 Tokyo High Court decision, 20 May, Sho-57 (1982).
 - 44 Supreme Court decision, No. Heisei-6 (O) 1083, 24 February 1998.
 - 45 Tokyo High Court decision, No. Heisei 3 (Ne) 1627, 3 February 1994.
 - 46 As can be seen in the case of *Lintech Electronics (P) Ltd and Anr v Marvel Engineering Co and Anr*, 1995 (35) DRJ 11, wherein Delhi High Court confused patents with copyright and instead of analysing the scientific principles of the Acoustic Steam Leak Detection System machine, and interpreting the claim it relied on copyright in the drawings and designs relating to the system and then decided the case. I believe there is lack on willingness on the part of Judges to understand the Scientific principles and then decide the case; Moreover, there are very less patent filed and granted in India so consequently, there is lack of patent litigation in India.
 - 47 In the case of Novartis AG, represented by it's Power of Attorney *Ms Ritushka Negi and Anr v Adarsh Pharma and Anr*, 2004(29)PTC108(Mad) Mr P Chidambaram learned senior counsel in this case submitted that applying the 'pith and marrow' principle, also called as 'Doctrine of Equivalents', the Court should find that 'beta crystals' are related to both the drugs and it is enough, without reference to the difference in percentage of the presence of such 'beta crystals', to hold that there is an infringement. The Madras High Court stated, 'Doctrine of Equivalents' also is another theory, which can be applied while comparing the drugs. To apply the above doctrine, the plaintiffs have to plead facts and they are absent. There is also no evidence on their side.
 - 48 AIR 1982 SC 1444.
 - 49 (1871) 6 Ch A 706.
 - 50 (1844) 11 RPC 463 (CA).
 - 51 AIR 1936 Bom 99.
 - 52 AIR 1978 Del 1 (6, 7).
 - 53 AIR 1978 Del 1 at 9.
 - 54 AIR 1978 Del 1 (11), this view of court seems to be based upon the doctrine of equivalents. In the words of Lord

Denning, M R in *Beecham Group Limited v Bristol Laboratories Ltd* and another, 1967 (16) R P C 406 (12): 'The evidence here shows that in making hetacillin in the United States the defendants use a principal part of the processes which are protected here by the English patents. The importation and sale here is prima facie an infringement. There is a further point. A person is guilty of infringement if he makes what is in substance the equivalent of the patented

article. He cannot get out of it by some trifling or unessential variation..... On the evidence as it stands, there is ground for saying that hetacillin is medically equivalent to ampicillin. As soon as it is put into the human body, it docs, after an interval, by delayed action, have the same effect as ampicillin. In these circumstances, I think there is a *prima facie* case for saying there was an infringement. The process is so similar and the product so equivalent.