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Review Article

A detailed overview of the patent system

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ABSTRACT

The roots of today's solid patent system are from the ancient trade system, the introduction, and the evolvement of different intellectual properties. Various international legislations, collaborations, and treaties, as well as the introduction of various acts, rules, and amendments, are responsible for the management and growth of the recent patent system. Novelty, utility, and non-obviousness are the basic patentability criteria. The Indian patent act also defines things that are not inventions under section 3 of the Indian patent act as "statutory subject matter". The patent system working is described under patent prosecution (filing, publication, examination, opposition) sequentially. "Patent co-operation treaty" (PCT) introduced by the "World intellectual property organization" provides a most effective and economical way of patent application in multiple countries through a single filed application. A general overview of a patent application, drafting of claims, patent analysis, invalidation of patents, Infringement of patents, non-infringing activities, prosecution history estoppel, and remedies under the jurisdiction, are also described hereunder. At present, the number of patent applications filed in India is continuously increasing. Indian patent office is becoming one of the designated search authorities under the PCT. General awareness about patents and intellectual property in all sectors can be improved further.

Keywords: Patent, PCT, Pre grant opposition, Patent infringement, Doctrine of equivalence, Patent invalidation

INTRODUCTION

A patent is a right provided to an inventor not for the use or practice of the invention but for preventing others from practicing or using the invention. A patent is a document, issued, upon application, by a government office (or a regional office acting for several countries), which describes an invention and creates a legal situation in which the patented invention can normally only be exploited (manufactured, used, sold, imported) with the authorization of the owner of the patent.¹

HISTORY OF PATENT SYSTEM

1) 1856 - ACT VI of 1856 on the protection of inventions based on the British Patent Law of 1852. 2) 1872 - Patents

and Designs Protection Act. 3) 1883 - Protection of Inventions Act. 4) 1888 - Inventions and Designs Act. 5) 1911- The Indian Patents & Designs Act. 6) 1972 -The Patents Act (Act 39 Of 1970) came into force on 20th April 1972. 7) 1999 - Patents (Amendment) Act, (1999) came into force on 01-01-1995. 8) 2002 - Patents (Amendment) Act 2002 Came into force from 20th May 2003 9)2005 - Patents (Amendment) Act 2005 effective from 1st January 2005.

Indian membership of IP treaties and the date of ratification is appended as follows-1) Berne convention (April 1, 1928), 2) WIPO convention (January 5, 1975), 3) UCC (January 7, 1988), 4) WTO (TRIPS) (January 1, 1995), 5) Paris Convention (December 7, 1998), 6) PCT (December 7, 1998), 7) Budapest convention (December 17, 2001) and 8) Madrid Protocol (July 8, 2013).

The efforts of the global community under the aegis of GATT to facilitate more efficient global Trade by reducing Tariffs and non-tariff restrictions resulted in the culmination of the WTO TRIPS agreement. India is one of the founding members of WTO and played an important role in its evolution. India agreed to the TRIPS obligations in 1995. WTO TRIPS agreement compelled India to pass the patent Amendments Ordinance of product patent grant of 20 years that provided for grant of exclusive marketing rights and also enabled applicants for Pharma products to place their application in mail box to review the product claims should there be a regime change. This development took place on January 1, 1995. This was in force till the coming into force of the patent amendment act 2005.¹⁻³

Patentability criteria

As per Indian patent law, NUNS analysis is the criterion for patentability. NUNS means; 1. Novelty, 2. Utility, 3. Non-obviousness and 4. Statutory Subject Matter.^{2,4,5} The relevance of NUNS analysis to patent law jurisprudence is explained as follows:

Novelty

The general meaning is newness. As per 2(j) of the act, invention means a new product or process which involves an inventive step and has industrial applicability. An Invention is novel if it has not been in the public domain by way of written publication, oral disclosure, being sold, being offered for sale, or is otherwise known to the public (traditional knowledge) anywhere in the world. The written publication can be a research paper, article, patent, book, news in any language, etc. Oral disclosure in any conference, speech, to any person except the inventor. Disclosure of inventions other than to the national patent office as in the above-mentioned ways leads to loss of novelty which ultimately leads to non-grant of patent right.

Non-obviousness or inventive step

It is a contribution made by human intelligence to novel thoughts. The inventive step can be explained as the invention shall not be obvious to a person skilled in the particular field of technology to which the alleged invention is related. Indian patent act defines the inventive step as a feature of an invention that involves technical advance as compared to the existing knowledge or has economic significance or both and that makes the invention not obvious to a person skilled in the art. The invention is not only non-obvious but also shall involve technical advancement, economic significance, or both.

Utility or industrial application

Section 2(ac) of the Indian patent act explains the utility-“Capable of industrial application” concerning an invention, which means that the invention is capable of being made or used in industry. The product shall be reproducibly manufactured in bulk clear in each product

shall have all the essential features of the invention. An invention relating to process shall be made adaptable in an existing industry with/ without modifications to the existing infrastructure/ a new industry with adoptable infrastructure may be commissioned.

Statutory subject matter

It is covered under sections 3 and 4 of the Indian patent acts. It is stated the patent is ineligible. The alleged invention may pass the above-mentioned three criteria, still, it may or may not be a patent due to the statutory subject matter.^{2,4,5}

History of patent system

‘Patent prosecution’ describes the interaction between applicants and their representatives, and a patent office concerning a patent, or an application for a patent.^{2,5,6}

Steps of the patent prosecution process specifically in India include-1. Filing of the patent application, 2. Publication, 3. The opposition, 4. Request for examination, 5. The first examination report, 6. Examination response, 7. Grant of the patent and 8. Renewal of patent.

Filing or applying for a patent

It is either online or in the patent office in the respective jurisdiction. Any Indian resident can apply for a patent at the head of the office or its branches depending upon the jurisdiction he resides in or has a domicile or principal place of business. A foreign national who wants to file a patent in India must have an address for service in India/ principal place of business in India.

Mumbai office: Jurisdiction of the state of Maharashtra, Gujarat, MP, Goa, Chhattisgarh, and union territories of Diu and Daman, Dadra, and Nagar haveli.

Chennai office: Jurisdiction of the state of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and union territories of Pondicherry and Lakshadweep

New Delhi office: Jurisdiction of the states of Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, after Pradesh, Uttaranchal, Delhi, and union territories of Chhattisgarh

Kolkata office: Jurisdiction is the rest of India. Anyone can file as it is the head office.

Who can file a patent application? 1. A person alone or jointly with other people. 2. By any person claiming to be the true, first inventor of the invention. 3. By any person being the assignee of a person claiming to be true and the first inventor in respect of the right to make such application. 4. By the legal representative of any deceased person who was entitled to make such an application immediately before his death.

Foreign filing rule

A person residing in India must obtain permission from Indian patent office before making a direct foreign filing to find a provisional or complete specification in India, wait for 6 weeks, then make a foreign filing if no response is received from Indian patent office.

Type of patent application

The types are-1. Ordinary-provision of application for provisional and then complete patent application. 2. Convention-allow patent application in convention countries (TRIPS agreed) 3. International-PCT and 4. National.

Publication

All applications are published as filed after the expiry of 18 months from the date of filing. Indian patent office published publicly the title and abstract of the application can patent office journal request for early publication is also possible. USPTO, EPO and PCT publish the full text of the application as filed.

Examination

Once the request for examination is made, the controller forwards a copy of all documents to the examiner. The applicant has to request for examination within 48 months from the priority date. Applicants can choose to either file a request for a normal examination or file a request for an expedited examination by paying additional fees.

The examination involves: 1. Ascertaining, 2. Novelty, 3. Utility, 4. Inventive step, 5. The statutory subject matter, 6. Application formalities, 7. Issue of the first examination report. Examiner carries out searches to check patentability of invention and office action is generated. He forwards this report to the controller. Controller forwards first examination report (FER) to the applicant or his agent. The timeline to file a response to the first examination report FER is six months from the date of issuance of FER. The timeline to file a response to FER issued after 16 May 2016, remains twelve months from the date of issuance of FER (Rule 24B and rule 24C). Applicant heads to comply with requirements mentioned in FER within 12 months. The patent is granted when the controller is satisfied with the changes made. The date on which the patent is granted is entered in the register. The patent will be successfully granted and retained if it satisfies opposition criteria.

Opposition

It is optional and for a natural or legal person interested that is the person who is affected when the patent is granted or is going to be granted, for marketing, social, research, and educational interests. The opposition shall be filed to the controller of the Indian patent office. There are mainly

two types of opposition: pre-grant and post-grant. The 3rd amendment 2005, incorporated the provision for pre-grant and post-grant opposition. Before this amendment, India followed a post-grant opposition system. Pre-grant is the first opportunity that can be availed by the opponents to oppose the grant of patent and assist the patent office in learning about such facts of the invention which might have been hidden by the patent applicant. Because the Indian patent office lacks adequate infrastructure in terms of human resources, there is a huge number of patents waiting to get examined so, pre-grant opposition helps in ascertaining validity of information in a patent application. However, many times as soon as a patent is filed, many frivolous pre-grant oppositions are filed by the opponents and this causes an undue delay in grant of patents.

Pre-grant opposition

Any time after a patent application is filed but before it's granted, any person may oppose the grant of patent in the writing. Search written application shall include the grounds of opposition and evidence. The controller shall not consider pre-grant opposition if a request for examination has not been filed however request for examination can be filed by any person other than the applicant. Upon considering the pre-grant opposition, if the controller feels that the patent application has to be amended. He notifies the applicant. The patent applicant may contest the opposition within 3 months. The Controller shall consider the statements and pieces of evidence given to him by the patent applicant. and then decide whether to grant the patent or ask for amendment or refusal of grant of patent. The act does not provide an opportunity for the aggrieved party to appeal against the decision of the controller.

The grounds of pre-grant opposition are as follows; 1. The patent application has been filed by: 1. The patent application has been filed by a person who wrongfully obtained the invention from the person who has filed pre-grant opposition. 2. The invention claim in the patent has been published before the priority date in any document in India or elsewhere. 3. The invention claimed in the complete specification was publicly used or known before the priority date. 4. The invention claimed is obvious over the existing prior art and doesn't involve an inventive step. 5. The invention claimed in the patent isn't under section '3'. 6. The invention claimed in the patent is not under section '4'. 7. The complete specification doesn't clearly and sufficiently describe the invention or the method by which it is to be performed. 8. The inventor has failed to provide information regarding foreign filing. 9. The complete specification was not filed within one year from the date of filing the provisional application. 10. The complete specification does not mention or wrongfully mention the origin or geographical source of biological material and 11. The invention claimed is not novel concerning prior knowledge, traditionally known to the communities.

Post-grant opposition

Any person interested may oppose the grant of a patent within one year from the grant of the patent by giving notice to the controller and paying fees. He shall deliver a copy of the opposition along with statements and pieces of evidence. The controller forms an opposition board consisting of three members. One of which is the chairman. the opposition board considers all submissions made, conduct examinations, and submit its finding to the controller. The controller fixes a date for the hearing and sends a notice to both parties. After hearing the parties and considering the recommendations of the opposition board the controller notifies his decision to both the parties. The controller's decision can be appealed to the intellectual property appellate board IPAB, by the aggrieved party.^{2,5,6}

PATENT COOPERATION TREATY (PCT)

Patents are territorial which means no global patent exists; i.e., if you have procured a patent in country 'X', you can't stop infringement in country 'Y', therefore once the applicant is ready with the invention, he will have to apply to both the countries. Filing a patent application in a conventional country followed by the same within a period of 12 months in all other countries of his interest. This is the traditional patent system. This application will be searched by each national office and the applicant has to reply to the office action of multiple examiners. The inventor also has to meet the expenses of translation, attorney fees, and fees of various patent offices; also, the timeline will start immediately after the patent application is filed in all the countries. Thus, in the traditional patent system, there are multiple formality requirements, multiple searches, multiple examinations, multiple prosecutions of patent applications, and a huge amount of translational and national fees. The PCT provides a solution to this problem.

It is a treaty for rationalization and cooperation concerning the filing, searching, and examination of patent applications and dissemination of the technical information contained therein.

PCT is administered by world intellectual property organization (WIPO). It is an international treaty for international cooperation in the field of patents. PCT doesn't provide the grant of a patent. It only presents a mechanism by which an applicant is required to make only a single application which is then searched by at least one elected international search authority (ISA), and examined by at least one elected international preliminary examining authority (IPEA). The PCT application is also known as the International Patent Application, but it doesn't grant an international patent to the applicant. The task of and responsibility for granting patents remains exclusively in the hands of the patent offices of or acting for, the countries where protection is sought (the "designated offices"). Presently "156" countries are signatories to PCT. After filing the PCT application, the applicant has up

to 30 to 31 months to decide whether to enter the patent application in the national phase or not.

The PCT entered into force on 24 January 1978 and became operational on 1 June 1978, with an initial 18 contracting states. It came into force for India on 7 December 1998. The principal objectives of PCT are 1. To provide the most effective and economical way of filing patents in several countries wherein-A) a single patent application with a single patent office in a single language having effect in each country party to PCT. B) Application is searched by international search authority (ISA). C) There is a formal examination by international preliminary examining authority (IPEA) and D) There is a centralized international publication. 2. To facilitate and accelerate access by industries and other sectors to technical information relating to the invention and 3. To reduce the load of the patent offices through international search and examination. For filing a PCT in India. It is a must to follow timelines to avoid abandonment of application.

Once the priority patent application is filed, the PCT application must be filed within 12 months. ISA gives international search report and written opinion in the 16th month from the priority date. The international patent application is published after the 18th month of the priority date. The applicant may request supplementary international search (SIS) within one month after the publication and may file a demand for international preliminary examination up to the 22nd month from the priority date through chapter two. The international application must enter the national phase within 30 to 31 months from the priority date. If the mentioned optional search and examination are not demanded, then the application must enter the national phase in the countries mainly Brazil, Switzerland, Finland, Sweden, Tanzania, Uganda, Serbia, and Zambia within 20 months from the priority date through chapter one and rest of the countries within 30 months from the priority date.⁷⁻¹⁰

PATENT APPLICATION DRAFTING

A typical patent application has the following sections: 1) Title of invention 2) Cross-reference to related applications (if any); 3) Statement regarding sponsored research or development (if any); 4) Reference to a Sequence Listing or Biological Deposits (if any); 5) Background of the invention; 6) Summary of the invention; 7) Brief description of the drawing (if any); 8) Detailed description of the invention; 9) Claims; 10) Drawings, and 11) Abstract.

Key audiences of patent applications include patent examiners and judges. Of course, patent agent's client and inventor are also audiences; agent must make sure inventor understands his patent application. Other potential audiences include competitors, infringers, and investors.

Patent claims drafting is the first step in patent application writing for most patent agents. Claims are the legally-

operative part of a patent application as everything revolves around the claims. Initiate with “picture claim” which paints a picture of the invention that helps at the beginning of claims drafting. A patent is traditionally written as a single sentence in most jurisdictions consisting of three parts with correct punctuation. That is; 1) Preamble: It is an introductory phrase that identifies the category of the invention protected by that claim. 2) Transitional Phrase: “wherein”, “whereby”, “such that”, “so as to”, etc., Transitional phrases can be of two types. One is ‘open-ended’ which includes “comprising”, “including”, “containing”, “characterized by” etc., and the second is ‘closed phrases’ which includes “consisting of”, “consisting essentially of”, “composed of”, “formed of” etc., 3) Body: The body of the claim recites and inter-relates all the elements of the claim. The ‘elements’ of a claim are typically separated by semi-colons and the penultimate element ends with “; and”.

Claim punctuation includes a comma that typically separates the preamble from the transitional phrase and a colon typically separates the transition from the body. All patent applications must contain at least one “independent” claim directed to the essential features of the invention, i.e., those features necessary to satisfy the legal requirements of novelty and inventive step. Each independent claim may be followed by one or more dependent claims concerning more specific embodiments of the invention recited in the independent claim. Claims must be supported by the description and should be based on the description. This means that all the characteristics of the invention that form part of the claims must be fully explained in the description. In some jurisdictions, claims are encouraged and/or required to recite the reference numerals associated with particular elements in the patent application’s drawings. The elements in a patent claim must have the correct antecedent basis.

The major specific types of claims: 1) Apparatus/ Device claims, 2) Method claims/ Process claims, 3) Product-by-process claims, 4) Results to be achieved and parameter claims, 5) Composition claims, 6) Use claims, 7) Biotechnology claims and 8) Software claims.

A Claim set can have: 1) Independent claims- represents the broadest claims. An independent claim is a claim that stands alone and does not need a limitation from another claim to be complete. 2) Dependent/ subsidiary/ sub claim- Claims containing references to other claims are called “dependent claims.” Dependent claims are always narrower than the claim from which they depend. 3) Multiple dependent claims-provide another format for dependent claims. The preamble of multiple dependent claims refers to more than one claim in the alternative and 4) An omnibus claim is a claim that refers to the description and/or drawings as the subject matter of the claim (Omnibus is a Latin word meaning “For all, for everyone”). Omnibus claims limit the claim scope to only what the applicant disclosed.¹¹

PATENT ANALYSIS

Prior art search: The common online resources that may be employed for a prior art search includes; 1) Written or electronic databases from local patent offices, 2) PCT applications published by WIPO (PATENTSCOPE), 3) Electronic databases of United States patent and trademark office, 4) European patent office databases i.e., Espacenet, EPOLine and 5) Scientific databases from various field of technology.

Patent landscape analysis often referred to as “patent mapping” is a proven multistep process, employing computer software and human intelligence, to parse through, organize and extract value from this vast amount of information. Fundamental idea of patent landscape analysis sometimes referred to as patent mapping, is to review and organize the patent activity in a technology area. A freedom to operate (“FTO”) analysis invariably begins by searching patent literature for issued or pending patents and obtaining a legal opinion as to whether a product, process, or service may be considered to infringe any patent(s) owned by others. Much private law/ IP firms offer such analyses as part of their legal services to clients.

Invalidation of patents

Patents are granted with a presumption of validity. Different examiners may come up with different pieces of the prior art. Therefore, no patent is safe from being challenged and declared invalid (or partially invalid), for example, due to lack of novelty. This is one of the more difficult topics we have to deal with in the present context. Furthermore, the availability of technical judges and competent representatives (such as patent attorneys) plays a decisive role in concerns about quality of the procedure.

The competitor is, of course, interested in destroying the earlier patent as soon as possible. In the case of Indian patents, the first opportunity would arise in the examination proceedings (pre-grant opposition), in which novelty impairing facts could be submitted to the patent examiner of the competitor’s application, which however for strategic reasons is often avoided. The second opportunity is the post-grant opposition and appeal procedure before the IPAB, to obtain a revocation of the patent. Thereafter, the patent must at present be invalidated at the appropriate high court of India.

Invalidity counter-claims are an important means of challenging a patent in the course of infringement proceedings. The main idea is to deal with infringement and validity in the same action. This measure is not provided for in all jurisdictions at present.

Grounds for invalidity have to be assessed by the agent of the patent system, the virtual person skilled in the art who is the yardstick for disclosure and patentability. Depending on the situation and budget, one can invalidate a patent in different ways: 1) Substantive criteria: The subject matter

of the patent should be allowable by law and not one of those which are excluded from patentability in the choice of jurisdiction. 2) Novelty: If a similar invention or prior art references, such as a document or a whole product whether patented or unpatented, is found, then the patent or patent application in question may be invalidated. 3) Obviousness: One can test this by assessing the claims and evaluating if the inventive part of the claims is obvious to a person skilled in the art. 4) Failure to fulfil: Patented inventions must be of some use. Utility or usefulness is a mandatory requirement to patent an invention. Factual evidence is required to prove the utility of an invention. 5) Double Patenting: Double patenting is granting two patents for the same subject matter to a single applicant. In Canada, a patent is granted for a single invention. Double patenting is of two types. One, where at least one claim is identical in both the patents. And, 2nd is where claims in subsequent patent are obvious in light of 1st patent. If double patenting is found, one should evaluate the claims in each patent. If it is found identical/ obvious concerning the first application, then one can potentially invalidate the patent and 6) Sufficiency of disclosure: If an application or a patent lacks sufficient disclosure of its claimed invention, then one can potentially invalidate the patent.¹²

Patent infringement

The patent act of India does not specifically mention the actions which are considered as infringing patent rights. However, the Act confers upon the patentee, the right to exclude a third party from making, importing, using, offering for sale/ selling the patented invention. Therefore, if violates any of these rights, it shall be considered an infringement. The patent infringement jurisprudence in India is not much developed so the patent act refers to the US jurisprudence regarding infringement. According to the US patent act, there are 2 kinds of infringement: 1) Literal infringement and 2) Infringement under Doctrine of Equivalence (DoE). When the question of infringement arises, there are two subject matters i.e., 1) the patented invention, and 2) the accused invention. The owner of the patented invention accuses that his patented product has been infringed by the accused invention in determining the infringement. The court studies the meaning of claims and then the claim is read over the accused invention.

In literal infringement, the court compares every element of the claim with the accused product. If each element described in the claim is present in the accused product, then the court holds that as a literal infringement. After reading and comparing each of the claims with the accused invention if the claims are not the same then there is no literal infringement. And the court moves on to see whether there is an infringement by the DoE. Under this doctrine, although the claims don't read on the accused product, the difference between the patented invention and the accused one may be insubstantial or interchangeable if the accused elements perform substantially the same function in substantially the same way to obtain substantially the same result as the patented invention.

This "Function-way-result" is the basic test for DoE. The literal infringement and infringement under DoE are types of 'direct infringement'. While the "induced" and "contributory" are 'indirect' types of infringement. The act of actively inducing another to infringe a patent. Or, instructing, directing, or advising a third party to carry out a direct infringement, is called "induced infringement". Sale, offer for sale, or importation of a component of a patented article or a material part of the invention already patented, is known as "contributory infringement".

As between patentee who had clear opportunity to negotiate broader claims but didn't do so, and the public at large, it is patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure. Subject matter that is fully disclosed and enabled in specification, but not claimed, will be deemed by court to be dedicated to public and to be placed in the public domain.

Prosecution history Estoppel (PHE) favors the accused infringer. According to PHE, during the examination of the patent by the PTO in the course of the issuance process, the patentee had to change claims to avoid existing prior art and avoid the rejection of his application as not novel, the patentee is held to those limitations for the rest of the life of the patent. The patentee can't go back to the original broader claims. PHE can be applied when there is no literal infringement; the patent owner asserts infringement by equivalents; the accused infringer asserts the defense on the basis that the relevant subject matter has been disclaimed during the prosecution; when a patent applicant amends or cancels claims rejected by the patent office as not patentable based upon prior art; or other purposes including arguments made by the applicant.¹²

The case of Hilton Davis chemicals vs Warner Jenkinson addressed the issue of PHE. This case explained how the DoE is to be applied. The Hilton Davis case involves a patent on a 'dye'. The patent was based on producing the dye with certain chemical composition at a pH of 6 to 9. Warner Jenkinson also wanted to patent a dye; however, they claimed a pH of 5. So, the only difference between the two patents was pH. Since the pH levels were different (5 vs 6 to 9); the court concluded that there was no literal infringement. The next question to be answered was whether the pH of 5 was equivalent to a pH of 6 to 9. The court concluded that there was a marginal difference between pH 5 and 6. Therefore, the Warner Jenkinson patent infringes the Hilton Davis patent; however, a very interesting question came up in this case, why Hilton Davis amended their pH to 6 to 9 during the prosecution of their patent? The reason was that 'there was already another patent booth who had the patent for same dye at pH of 10' therefore, to escape the infringement of the Booth patent, Hilton Davis amended their application. Thereafter the court ruled that when an inventor during prosecution narrows down his invention to escape the prior art then he can't claim that someone else infringes his patent under

DoE. This is an exception to the DoE, and it is called the PHE.

Non-infringing activity

It include-1) Government use: An invention can be used any time after the application is filed or after the patent is granted by the central government for their purpose. 2) Research Exemption: Any person may use the patented invention merely for the experiment including for instructions to students. 3) Supply of patented drug to health institution: The patented invention covering a medicine or drug may be imported by the government for use or distribution in any dispensary hospital or other medical institution. 4) Use of patented invention on

foreign vessels 5) Bollar exemption: Patented invention may be used, made, sold, or imported for the reason solely related to the development and submission of information to the Indian regulatory authority. 6) Importation of patented products (parallel import or exhaustion): If a patented product is imported to a country from some other country where it has been sold, by a third person. This is not considered an infringement provided the country to which it is imported supports international exhaustion.

Jurisdiction

A patent holder can file a suit for infringement in a district or high court. Patent infringement is the always a civil offense.

Table 1: Difference between patentability criteria and prosecution of different jurisdiction.⁴

Jurisdiction	USA	Europe	Japan	China	India
Law	US patent law by America invents act AIA 2011	European patent convention EPC 2013	Act no. 121 of 1959 of 2015	The patent law of PRC 1984 as amended in 1992, 2002, and 2008	Patents act 1970 was amended in 1999, 2002, and, 2005
Patentable subject matter	Invention or discovery of a new and useful process for machine/ manufacture/ composition of matter/ improvement there off	A new invention involved an inventive step, and is industrially applicable, belonging to any field of technology	The invention is the form of highly advanced creation of technical ideas utilizing the laws of nature	The invention is the form of a new technical solution or improvement to a product/ process	New product/ process involving inventive steps and capable of industrial application
Patentability criteria	Utility, novelty, non-obviousness, enablement	Novelty, inventive step, industrial application	Same as the previous one	Novel, creative, and practical use	Novelty, utility/ industrial application, non-obviousness/ inventive step, statutory subject matter (should not attract sec. 3, 4 of IPA)
Regulation by case law/ examination guidelines	A new form is not a result of routine experimentation, not obvious to try and it shall not be inherently disclosed in the prior art, unexpected results can be used to rebut obviousness	The polymorph shall merely not provide only the obvious advantages of crystalline material over the amorphous form	The need to fully disclose the conditions used to synthesize the crystal	An unexpected effect of claimed polymorph shall be demonstrated, obvious advantages of polymorph such as better stability are insufficient to establish non-obviousness	Term efficacy in section 3(d) means therapeutic efficacy
Patent prosecution step (opposition)	A system of Re-examination is of two types: 1. Ex parte re-examination, 2. Inter partes re-examination	A system of post-grant opposition	Opposition to grant of a patent, and Opposition of a patent to revoke	Only have a single invalidity proceeding system before re-examination panel of patent office	Pre-grant opposition and post-grant opposition

Table 2: Pre-grant opposition and post-grant opposition.^{2,6}

Pre-grant opposition	Post-grant opposition
Can be filed by any person.	Can be filed by an “interested party”.
Representation of opposition under section 25(1) of the act to the controller.	Notice of opposition under section 25(2) of the act to the controller.
Is to be filed after publication and before grant.	Can be filed within one year after the grant of the patent.
Decision of the controller cannot be appealed to IPAB	Decision of the controller can be appealed to IPAB.
No fees for filing pre-grant opposition.	The opponent has to pay fees from 2400-13200 INR
Applicant and opponent are not a party to proceedings. (ex parte)	Both are parties to the proceeding.
No cost is awarded to the opponent	The cost may be awarded to the opponent.

Remedies

If the court decides in favor of the patentee, the court may grant relief in form of an injunction which means to stop the infringer from pursuing the infringing activity and grant the appropriate relief either as damages or account of profit. The injunction can be temporary or permanent. A temporary injunction means if the patentee can show prima face evidence that the case is in his favor and he would be suffering from a huge loss if he has to wait till final judgment then the court may grant a temporary injunction and stop the infringer from doing the infringing activity. If the court rules in favor of patentee, temporary injunction gets converted into a permanent injunction or if it rules in favor of the infringer then the patentee has to pay damages to infringer. Sometimes the court may order seizure of infringing product from the infringer without giving notice to him. After the decision of the court, the court may grant the relief either as damages/ accounts of profit as preferred by patentee. Damages mean loss suffered by patentee because of presence of infringing product in the market, and it is complex to calculate. While account of profit is profit made by infringer by doing infringing activity.^{1,5,6}

CONCLUSION

At present, the number of patent applications filed in India is continuously increasing. Indian patent office is becoming one of the designated search authorities under the PCT. India is an active participant in the WTO and figures often as a petitioner or respondent in many of the WTO dispute resolution cases. General awareness in all sectors about patents and intellectual property can progress further in India.

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Conflict of interest: None declared

Ethical approval: Not required

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