

HISTORY AND EVOLUTION OF PATENT LAW – INTERNATIONAL & NATIONAL PERSPECTIVES

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The Law of Patents has witnessed a revolutionary change across the world in the past few centuries. The patents which were simple documents earlier, have now become sophisticated, complex and detailed. This paper focuses on the origin of concept of patents, justification of patent rights, international Conventions, Treaties and legislative framework, and outlines the recent developments in the field of patents.

1. Meaning of a Patent

A patent is in the form of industrial property, or as we commonly know an intellectual property. A patent is a monopoly right granted to a person who has invented a new and useful article or an improvement of an existing article or a new process of making an article. It consists of an exclusive right to manufacture the new article invented or manufacture an article according to the inventive process for a limited period. Unlike copyright, which arises automatically on creation of a work, patents are only granted after applicant satisfies the requirements of registration. The registration process imposes a number of limits and safeguards on the types of inventions that are patented, the scope of monopoly granted, and the nature of information that is disclosed in the patent. During the term of the patent the owner of the patent i.e. the patentee can prevent any other person from using the patented invention. . The rights granted to a patent owner cover most commercial uses of the patented invention. The owner of a patent has the power to sell the whole or the part of its property and can also grant licenses to others to use and exploit it. A patent granted in one country cannot be enforced in another country unless the invention is patented in that country also.

2. The Origin of Patents

The concept of conferring a market monopoly as incentive to innovate germinates from antiquity. In England and in other parts of Europe, it emerged as a form of state patronage¹. James I was partial to rewarding his political creditors with trading monopolies granted by letters patent. In this regard, there were many precedents from the period of reign of Elizabeth I. However, in 1624, the Parliament in UK sought to declare these exercises of royal prerogative void. Section 6 of the Statutes of Monopolies exceptionally allowed patent monopolies for fourteen years upon “any manner of new manufacture” within the realm to the “true and first inventor”. The concept of patent specification emerged only in 18th century. The then patentees began to file the statements of their inventions with the Court of Chancery. The role of patent system in first stages of industrial development can be seen from the examples of famous Boulton and Watt who secured large amounts from their steam engine patents.

The new patent system introduced by the Patent Law Amendment Act, 1852 was designed to attract capital for small ventures and novel ideas to benefit the industry. An applicant could secure a grant merely by registering his specification on payment of a reasonable fee and also take advantage of the new arrangement for first filing a

¹ A Venetian Law of 1474 established a positive system of granting ten year privileges to inventors of new arts and medicines: Mandich/Prager (1948) 30 JPOS. 166, Penrose, 'The Economics of the International Patent System' (1951) pp. 2 et seq; Philips 1983 EIPR 41.

provisional and then within a year a complete specification. In 1883, the modern patent office replaced the Commissioner of 1852 and began to examine applications for formal defects and sufficiency of description. When the Fry committee demonstrated that 40 per cent or more of the patents granted were for invention already described in earlier specifications, a change was imperative. The office began to search British specification of the previous 50 years in 1905. However, the examination contrary to United States was confined to the issue of novelty.

Gradually, more requirements for registration or grant of patents emerged such as the introduction in 1949 of the obviousness as the ground of pre-grant opposition. In today's world, many international Treaties and Conventions exist which lay down specific requirements, more or less on similar lines for the consideration and grant of patent rights. Many countries have been attracted to introduce the patent system in the hope that it benefit from foreign technology. This objective has induced them to open their systems to foreign applications. Even in the past, United States for instance allowed the applicants in 1836 to apply for patents well before it offered copyright to foreign authors. Likewise, the patenting countries of 19th century under the Paris Industrial Property Convention of 1883 guaranteed the nationals of each Member State the same treatment as was given to their own nationals. The British introduced the system of allowing grant of compulsory licenses, French originally made revocation of patent the penalty for importing patented articles from abroad. Another dramatic step was the formation of UNCTAD's Code of Conduct for the transfer of technology, which was aimed at formation of a new international economic order. Another step was the revision conference of the Paris Convention which also arose out of UNCTAD criticism of current operation of patent systems internationally.

3. **Object and Theory of Patent System**

Ever since the inception of the patent rights, a number of different justifications have been given in support of the patent system. The proponents of patent system have emphasized the natural rights of inventors to the products of their mental labour². While some have argued that inventors contributions should be recognized by the grant of a reward³. The most common theory put forth has been relating to the public benefits that flow from the grant of patent monopoly. These theories have been dominating discussion on the function of the patent system since 19th century. In particular it is believed that the Patents act as incentives to individuals and organizations to disclose information that would in turn constitute a substantive data base of technical information which may have otherwise remained a secret⁴. This important function of patent system was reaffirmed by 1977 UK Patents Act and the European Patent Convention (EPC) which emphasized the need for the invention to be disclosed so that it can be utilised in public interest. Kitch emphasized the way in which the grant of patents could be analogized to the grant of mineral rights, giving the grantee an incentive to invest in the exploitation of the 'prospect'⁵. Further, the role that patent system plays

² F. Machlup and E. Penrose, 'The Patent Controversy' (1950) 10 Journal of Economic History 1, 11-17

³ Ibid, 17-21

⁴ D. Davies, 'The Early history of the patent specification' (1934) 50 LQR 86.

⁵ E. Kitch 'An economic review of the patent system' (1977) 20 Journal of Law & Economics 265

in encouraging creation of inventions and implementation of the new industrial practices is realized since time immemorial⁶.

To sum it all, “the theory upon which the patent system is based is that the opportunity of acquiring exclusive rights in an invention stimulates technical progress in four ways; first is that it encourages research and invention; second, that it induces the inventor to disclose his discoveries instead of keeping them a trade secret; third, that it offers a reward for the expenses of developing inventions to the stage at which they are commercially practicable and fourth, that it provides an inducement to invest capital in new lines of production which might not appear profitable if many competing producers embarked on them simultaneously”⁷.

4. **International Conventions and Treaties**

In the past, no system existed that could be termed as an International Patent system. Over the years, nations realized that internationalizing the patenting would increase efficiency and reduce costs. This realization led to world-wide initiatives and formation of Treaties and Conventions relating to patents. International Treaties have always played an important role in shaping the patent law at both levels, be it national or international.

The European Patent Convention

The European Patent Convention (EPC) was signed in Munich in 1973 and came into operation on 1st June 1978. EPC was based upon the Patent Law of various Member States in force at that time. EPC is an inter-governmental Treaty i.e. distinct from the European community. The membership extends beyond members of the EC and currently there are twenty Member States of the EPC including Austria, Belgium, Denmark, England, France, etc. EPC is concerned with granting of European patents and its office is situated in Munich which acts as a Centralised System for grant of European patents. Therefore, in case an applicant wishes to protect its invention in a number of European countries, then the EPC office provides them with the benefit of a single application and search procedure and a single grant of bundle of national patents in each of the countries designated by the applicant in its application.

Community Patent Convention

With a view to establish a European Patent System in 1960s and 1970s it was decided that a dual system of protection is required to be introduced. The first success came with the formation of EPC that aimed to establish a centralized granting authority. Thereafter a single community patent was conceptualized that was to be obtained by one central procedure and be binding in all the member states. This came to be known as Community Patent Convention which was signed in Luxembourg in 1975. However, unlike the EPC the CPC never come into force.

Patent Cooperation Treaty

⁶ C. Macleod, 'Inventing the industrial revolution' (1988), H. Dutton, 'The Patent System and invented activity during industrial revolution' 1752 to 1852 (1986).

⁷ Ayyangar's report (1959) para 17 quoted from Swan Committee's Report

The Patent Cooperation Treaty (PCT) was signed in 1970 and came into operation from 1978. The significant feature of the Treaty is that it establishes a system of international application and preliminary examination procedure. Presently, PCT has 108 contracting States. Although the PCT provides for an international application and search methodology, the authority to grant the patent remains with the National Patent Office⁸. Under the PCT, an applicant applies to an international office and an international search and international preliminary examination is undertaken. Thereafter, the application is sent to the designated national offices to decide whether to grant national patents. The PCT has many advantages, inter alia, primarily that it costs towards fees and that the lengthy period between the initial application to international office and the time when that application is forwarded to the relevant national offices extends enough time to the applicant to decide issues relating to translation costs.

TRIPs

Trade Related Intellectual Property rights (TRIPs) Agreement has radically influenced the existing patent law regimes in most developing countries. Most important reform brought about by TRIPs relates to the limits imposed on compulsory licenses. There are quite extensive provisions designed to inhibit the granting of compulsory licenses and equivalent depreciations of the exclusive right, including exceptions for the benefit of the Governments and those they authorise.

Rio Convention on Biological Diversity

The Rio Convention on Biological Diversity was signed in June 1992. The Convention extends to all the developing countries a platform to express their concerns over the exploitation of indigenous resources by entities and major corporations from the developed world. There are numerous instances of such situations such as the Neem Tree traditionally used in India to make medicines and insecticides has been the subject of 37 patents in Europe and the USA⁹. The European Patent office in one such case finally opted to revoke a patent granted earlier to fungicide derived from Indian medicinal tree Neem in May 2000. There have been applications relating to the use of turmeric for treating wounds¹⁰ and certain inventions based on genetic material obtained from Hagahai People, a small ethnic group in Papua New Guinea, have secured patents. This convention offers a strong basis to control the use made of traditional knowledge and provides an impetus for conserving biological diversity and propagating its sustainable use.

5. Legislative Framework

Registration and Examination Systems

In many countries patents were granted by the concerned authorities merely by process of registration without any requirement of examination. Subsequently, the examining system was introduced in which the detailed and complex specifications were examined by the patent office to ensure that the invention claimed was of a patentable

⁸ K. Pfanner, 'The Patent Cooperation Treaty: An Introduction' (1979) EIPR 98, J Anglehart, 'Extending the International Phase of PCT applications' (1995) 77 JPTOS 101

⁹ S. Kadidal, 'Subject matter imperialism? Bio diversity, foreign prior art and the Neem Patent controversy' (1996) 37 IDEA 371

¹⁰ (26 Oct.1996) New Scientist, 14.

nature according to the patent law of the country, that it satisfied the requirement of novelty having regard to the state of prior art or technology of the specific field and that it was not obvious to the a man skilled in the art i.e. it involved an inventive step. In Holland, Germany, United States and Japan ,while scrutinising the applications, extensive search for both ingredients of obviousness and novelty is made.However,in England and Commonwealth countries it is less rigorous.

1977 UK Patents Act

This Act regulates the creation and use of patents in UK. As the substantial portion of 1977 Act was based on the EPC, the passage of 1977 Patent Act necessitated changes to British Patent Law. The 1977 Act states that its provisions should be interpreted so as to give effect to EPC and the decisions made thereunder¹¹. The consensus in European convention negotiations was that patents deserve to last for 20 years from the date of filing. The recent increase in British period from 16 to 20 years acts as a stimuli encouraging the inventors to invest their time and efforts to create an invention.

Evolution of Patent Law in India

In India, a patent for invention has always found its roots in statutes of Indian legislature. The first Act relating to patent rights was passed in 1856 (Act VI of 1856) which granted certain exclusive privileges to inventors of new manufacture for a period of 14 years. This Act was re-enacted with modifications under Act No. XVI of 1859. The provisions of this Act were modeled basis of the English Patent Act, 1852 wherein patent monopolies were termed as “exclusive privileges”. In 1872, the Patterns and Design Protection Act was passed followed by Invention & Designs Act 1888. Subsequently, Indian Patents & Designs Act was passed replacing all previous Acts. During the period from 1911 to 1970 ,various amendments were made to this Act. Later on ,based on the interim report submitted by a committee headed by Dr. Bakshi Tekchand, amendments were made to this Act by the Act 32 of 1950. Subsequently ,in 1959 Ayyangar’s report was submitted containing recommendations for effecting radical changes to the Patent law prevailing in India. Eventually,The Patents Act, 1970 was passed and it came into force on 20th April 1972.

Among the salient features of the Patent Act, 1970 and Patent Rules 1970 framed thereunder are: a more elaborate definition of invention, declaration of certain inventions as non-patentable, abolition of product patents for drugs and medicines, stringent requirements regarding description of the invention, extension of grounds for opposing the grant of a patent, etc. On March 26, 1999, Patents (Amendment) Act 1999 came into force from 1st January 1995. According to this amendment, it is now possible to make an application for patent claiming for a substance itself intended for use or capable of being used as medicine or drug excepting the intermediate for a preparation of drug. Exclusive marketing rights would be valid for a period of five years or till the date of grant of patent or date of rejection of the application for the grant of patent whichever is earlier.

Recently, the Patents (Amendment) Act 2002 came into force from 20th May 2003,interalia, making the term of every patent which is in force including a patent restorable under Section 16 as on 20th May 2003 to 20 years from the date of filing. As per this amendment , “Process” defined under S. 3(1) in case of plants, are now

¹¹ PAs. 130 (7), PAs. 91 (1)

patentable while a process which is diagnostic and therapeutic has now been considered as non patentable. By virtue of this amendment, a new definition of “invention” has now come into force, that is, a new product or process involving inventive step and capable of industrial application. After this amendment, a method or process of testing during the process of manufacture is now patentable, etc.

6. Basic Principles Underlying the Patent Law in India

It is a quintessential principle of Patent Law that a patent is granted only for inventions which are new and useful and which have industrial application. This principle is evident from the definition of invention. Secondly, it is not considered in public interest to grant patent rights in respect of discoveries of a scientific principle or an invention injurious to public health, or a method of agricultural or horticulture or a process for the treatment of human beings, animals or plants. The consideration for granting patent is the disclosure of the invention in the detailed specification which is open to public inspection so that on expiry of the term of the patent any member of the public can use the invention. The State can impose any conditions/restrictions while granting a patent monopoly. To prevent the abuse of monopoly rights created by grant of Patent, the Patent Act provides for compulsory licensing of the patented invention on certain grounds.

7. Recent Developments in the Field of Patents

Initiatives of European Community

European Community has made an active contribution in reforming the duration of patents (via the supplementary certificate scheme) and patent law relating to biotechnological inventions. Firstly, EC has played a key role in changing the duration of patent protection. EC introduced the so-called supplementary protection certification which extends patent protection where it has not been possible for patent proprietor to take full advantage of their patent right over the period of the grant¹². The effect of basic patent can be extended for up to five years by this supplementary right. Second contribution of EC in the patent law is witnessed in the sphere of biotechnological inventions. Biotechnology directive was formally adopted by the Council and the European Parliament on 6th July 1998¹³. This Directive deals with the patentability and scope of protection conferred on biotechnological inventions. It introduces special defenses and also establishes a scheme for compulsory licenses and cross licenses to deal with the overlap between patent and plant variety production.

Patent System and Bio Technology

The unprecedented advent of different systems of technology warrants reforms in the patent system across the globe and invokes nations to ponder over specific policy

¹² Council Regulation (EEC) No. 1768/2 of 18th June 1982 concerning creation of a supplementary protection certificate for medicinal products (OJ 1992 L1 82/1.) Regulation (EC No. 1610/96 of the European Parliament and of the Council of 23rd July 1996 concerning creation of supplementary protection certificate for plant protection products (OJ 1996 L 198/30-35).

¹³ EC directive on the legal protection of Biotechnological invention 98/44/EC of 6th July 1998, 98/44/EC of 6th July 1998.

objectives. The advent of computers, and biotechnology, in particular, demands that the applicants meet more stringent requirements to secure registration of patents for example, diligent and detailed explanation in the specifications for grant of patent as well as stricter disclosure requirements.

Advancement in the field of genetic engineering over last few decades have facilitated scientists to isolate and replicate of host of naturally occurring substances. The extent to which a biological research is patentable depends whether the resulting products and process are treated as discoveries or inventions. It is an established principle in patent law that discoveries are excluded from the remit of patentable subject matter. However, if it can be shown that the application that incorporates a discovery generates a technical change it may be patentable¹⁴. If a process is developed that enables a substance from the nature to be isolated and obtained from its surroundings the process may be patentable. This position is affirmed by Article 3 (2) of the Biotechnology Directive which provides that biological material i.e. isolated from its natural environment or produced by means of technical process may be patentable even if previously occurred in nature. In the *Relaxin decision*, the claims related to DNA sequences of a naturally occurring substance that relaxes the Uterus during childbirth which is obtained from the human ovary. The Opposition Division of the EPO held that the invention was not a discovery and as

such was not excluded from patentability¹⁵. Following EPO Guidelines the Opposition Division took the view that as the substance Relaxin had previously not been recognised, that a process had been developed to obtain Relaxin and the DNA which encoded it, that the products were characterised by their chemical structure and that the products had little use, the claims were patentable under the Article 52(2).

Animal Varieties

The Biotechnology Directive and the subsequent changes to the EPC and the 1997 UK Patent Act appear to confirm the current jurisprudence in relation to animal varieties. Article 4 states that animal varieties are not patentable. Article 4 (2) of the Directive explains that inventions that concern animals shall be patentable if the technical feasibility of the invention is not confined to a particular animal variety. Article 4 (2) has been introduced in the UK¹⁶ and in the implementing regulations to the EPC¹⁷.

Plant Varieties

Article 4(1) of the Biotechnology Directive confirms that plant varieties are not patentable. It also provides (as do the resulting changes to the 1997 UK Patent Act and the changes to the implementing regulations to EPC) that concept of plant varieties is to correspond to the definition used in Article 5 of the Community Plant Variety Regulation. The earliest decision to consider the scope of the plant variety exclusion was *ciba-geigy's application*¹⁸. The next decision to consider the plant variety exclusion was *plant genetic systems*¹⁹. The Board of Appeal in *plant genetic system* have adopted a more expansive

¹⁴ PA Section 1 (2)(a), EPC Article 52 (2)(a). On attempts to protect discovery. See F. Neumeyer, 'Legal Protection of Scientific Discoveries' 1975 Industrial Property 348, K. Beier, 'Scientific Research, Patent Protection and Innovation' (1975) 6 IIC 367.

¹⁵ (1996) 27 IIC 704, 705-6

¹⁶ PA Schedule A2 para 4.

¹⁷ Rule 23 C (b), Implementing Regulations to the EPC (Introduced by 1999 OJEP 437).

¹⁸ *ciba-geigy's T 49/83* (1979-85) CEPOR 758

¹⁹ *Plant genetic systems* (1993) 24 IIC 618 (Opposition Division)

reading of the exclusion. On the facts, it held that what was being claimed was based on genetically engineered cells (and that the application required the production of plant varieties to exemplify them). This meant that they were claiming rights over the plant varieties formed by those plants and seeds. As such they were not patentable.

Patents and Computer Related Inventions

Of late many patents have been granted for computer related inventions although computer programmes are expressly excluded from patentability by Section 1(2)(c) of U.K Patent Act 1977/ Article 52 (2) (c) of the EPC. It is now well established that an invention which includes a computer programme is patentable so long as the invention as a whole is technical. The acceptance of the 'whole contents approach' came to be established by the Board of Appeal decision in *Vicom* which held that an invention which would be patentable in conformity with conventional patentability criteria should not be excluded from protection only because for its implementation modern technical means in the form of a computer programme are used²⁰. However, it is important to mention herein that in *Gale's* application, Court of Appeal decided that a ROM carrying a particular programme was not distinguishable from the programme itself and as such was unpatentable²¹. This was reinforced in *Fujitsu's* application²² where the Court of Appeal held that a computer related invention that enabled chemists to produce digital models of hybrid chemicals was not patentable since it failed to produce a technical effect.

8. Current International and National updates in Patent Law

Few of the very recent developments/events relating to patents in the National/international scenario are as follows:

- As yet another remarkable initiative at WIPO, a new international patent treaty is under negotiation at the World Intellectual Property Organization in Geneva. This substantive patent law treaty would remove most of the remaining national flexibility in patent systems and pave the way for a future world patent granted directly by WIPO.
- Recently there has been a massive campaign against patenting of Indian wheat by Monsanto. Monsanto claims to have invented wheat plant derived from a traditional Indian variety. Monsanto repeats the bio piracy pattern, which was earlier attempted by the Ricetec through its claim to have invented Indian basmati rice.
- On May 2002 ,the Republic of Slovenia deposited its instruments of ratification to the Patent Law Treaty,
- On January 01, 2003, Hungary acceded to the European Patent Convention and amended its Act accordingly.

²⁰ *Vicom/Computer related Invention T 208/84 (1987) EPOR 74, 1987 OJEPO 14*

²¹ *Gale's application (1991) RPC 305 (CA)*

²² *Fujitsu's application (1997) RPC 608*

- Egypt's People Assembly ratified in January 2003 ,the WIPO Patent Cooperation Treaty.
- In February 2003 ,China implemented changes to the Patent Cooperation Treaty Regulations.
- WIPO attended a meeting of working group on international patent classification revision working group in Geneva from June 04 to 13th 2003 and agreed to incorporate additional classification schemes for traditional knowledge based inventions and business methods patents into an international system designed to facilitate search and retrieval and patent information in all fields of technology.
- OECD Science Technology & Industry Directorate has been looking at the relationship between the intellectual property rights and biotechnology for over 20 years. Its project on genetic inventions, IPRs and licensing practices was launched in March 2001. The purpose of the project is to gather information on the exploitation of patent of genetic inventions so as to determine whether the patent system is adequately meeting the needs of the society.
- OECD held a conference on IPR, innovation and economy performance in Paris from 28th to 29th August 2003. In May 2003, the first international survey on the patenting and licensing activities of public research organization in OECD countries was published in 'Turning science into business; patenting and licensing in public research organizations'.
- A WIPO conference on importance of statistics on patenting trends analysis and projections was recently held in Geneva on September 17, 2003.
- Few of the forthcoming conferences relating to the area of patent law are International Patent Information Conference and Exposition to be held in Portugal from 7th to 10th March 2004 and Institute of Trademark and Patent Attorneys AGM and Centenary of the Patent Office at Canberra, AU (IPTA) from 24th to 27th March 2004.

9. Conclusion

There has been a dramatic change in the Patent Law System across the world since its origin and embodiment in law centuries ago. Not only the form of patent has become more refined but also that the entire process of registration of patents has witnessed a commendable change. As a result of the recent move towards globalisation, the procedure for obtaining patents has also shifted towards centralised systems which aim at saving time and related costs. At the same time, with the emerging areas of new technology and inventions, the requirements for registration of patents have become more onerous and stringent. Needless to say, globalization has tremendously accelerated the evolution and growth of patent law (both nationally and internationally) and has led to international initiatives towards forming an international patent convention which supports centralized application for all nations in the world. This shall certainly save

time and costs and lead to a utopian regime for registration and grant of patent rights, its protection and lawful exploitation.

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