Intellectual property is the property that stems from the exercise of the mind and enjoys legal protection. It is intangible property created by intellectual effort. It is a product of human intellect and accredited in various forms, namely, copyrights, patents, trademarks, service marks, geographical indications and designs. In the liberalized economy, inventions and patenting of inventions have a great role to play.

The Law of Patents has witnessed a revolutionary change across the world in the past few centuries. The Patents which were simple documents earlier now become sophisticated and complex. This chapter focuses on the concept of patents and evolution of patent laws in different countries such as U.K, U.S.A., European Union Countries and in India.

2.1 Meaning and Definition of Patent

A patent is in the form of industrial property which is commonly known as 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 invented\textsuperscript{1} 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 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.

The word “patent” is used in two senses. One is the document that is called patent or letters patent and the other is the content or the protection that a patent offers. In the first sense of the term ‘patent’, namely, the document, when a person develops what he considers as an invention he makes an application to the State along with a document in which the person discloses all the essential information about the invention and that he is the owner of the patent.

In the second sense, word “patent”, when it relates to content or protection, it means that anyone who desires to exploit the invention disclosed therein must obtain the authorization of the person who is the owner of the patent. If anyone exploits the invention disclosed in the patent without such authorization, he commits an illegal act (infringement) and such a person is liable to legal action for paying damages to the proprietor of the patent.2

The word ‘patent’ implies openness and accessibility. The term patent originated from the Latin term *literae patentes* (letters patent) which means ‘open letters’. In Britain, it was so called as they were open and not sealed, bearing the great seal at the bottom and a proclamation from the sovereign to the subjects. The grant of a patent was a matter of the sovereign’s grace. Letters Patent were impressively worded documents which captured the spirit of Austin’s command theory. The letters patent would ‘strictly command all subjects’ that they shall not, during the continuance of the term of the patent, ‘make use of or put in practice the said invention.’ Any disobedience was visited by sanction in the form of ‘penalties as may be justly inflicted on such offenders’ for their contempt of the Royal Command, apart from damages claimed by the patentee.3

2.2 Nature of Patent

As patent consists of a bundle of rights, like the rights to sell, manufacture, import etc, it conveys different meanings based on the way a patent is perceived. In one sense, a patent is an exclusionary right granted and protected by law. As a corollary to the exclusive right, patent is also viewed as a monopoly, though it struggles to fit into the conventional definition of a monopoly. A grant of patent may also be regarded as a

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contract between the inventor and the state raising interesting questions as to what could be the consideration in lieu of the grant.4

2.2.1 Patent as an Exclusive Right

A patent offers a right capable of protection under the law. A patent does not give a positive right to its proprietor to use the invention, but only confers the right to exclude others from using the invention for a limited period of time. The right offered by a patent is a negative exclusionary right as it excludes others from using the subject matter of the patent. There could also be other restrictions imposed along with the grant of a patent. For instance, the grant of EMR for a drug is subject to the approval of the Controller General of Drugs to sell and distribute the drug.5 The nature of right conferred by a patent is more manifest in cases of infringement. For protecting a patented invention, law does not, by itself, restrain others from using the invention. It is left to the patentee to initiate an infringement action against the infringer in the courts to protect its rights.6

A patent confers an exclusive right to manufacture, use, offer to sale, sell or import an invention in India. The right of ownership of a patent is different from the right of ownership of things on which the patent manifests.7

Intellectual property is a category of intangible rights protecting commercially valuable products of the human intellect. It lacks physical form that defines its boundaries, yet these rights are regarded ad in rem proprietary rights. Patents confer jus in re propria, which grants full ownership over an intangible thing.8

A patent is granted for a limited period of time. The Patent Act originally contemplated a shorter term for medicine or drug substances, but now provides for a uniform period of 20 years for all patents. This change was brought about by the Patents (Amendment) Act 2005. Upon the expiry of the term of the patent, any person will be able to exploit the invention.9

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4 Id, at p.4.
6 Id, at p.15.
7 Supra note 3, p.3.
8 Id, at p.5.
2.2.2 Patent as a Monopoly Right

Though a patent is a sort of monopoly granted by the state, it does not strictly fall within the definition of monopoly. A monopoly refers to a privilege granted to a particular entity whereby the public at large is restrained from manufacturing or trading with the subject-matter of the privilege which they had before. Since the patent is granted for an invention, which by definition has to be new, non-obvious and not known to persons skilled in the art, the aspect of restraining the public of a matter previously known to them will not apply to patents.

Law casts a duty on the patentee to supply information relating to the patent. The grant of the monopoly is subject to fulfilling a two-fold duty. The first is to ensure that the monopoly granted by the patents extends no further than the invention which the applicant for the patent has made. The second is to ensure that the public shall, in return for the grant of the monopoly, be put in full possession of the way to carry out the invention in order that, after the patent has expired, they may enjoy to the full benefit of that invention. Normally, a patentee will not be entitled to a monopoly broader than what the patentee has invented.\(^\text{10}\)

2.2.3 Patent as a Contractual Right

As patent is granted by the state to an inventor, it is often debated that there ought to be some consideration for the grant of patent. The consideration for the grant could be the establishment of a new industry, the disclosure of technology pertaining to the invention, training of apprentices, working of the invention for the benefit of the public or the development of science and technology caused by the invention.

Some have compared the grant of patent in return for the disclosure of technical information to a Faustian pact. Patents have also been viewed as incomplete contracts. A patent has been defined as an agreement between the inventor and the state, where the consideration for the grant is the full public disclosure of the invention. It is an accepted fact that the obligation to fully describe an invention is with the ultimate object of allowing the public to enjoy the benefit of the invention after the patent has expired.

\(^\text{10}\) Supra note 3, p.7.
It could also be argued that the consideration for the grant of patent is the development of science and technology caused by the invention. It is granted as a means to encourage persons to devote their effort for the development of science and technology which would ultimately benefit the state that grants the patent.11

2.3 Need for Patent System

In the course of time both “individual” and “public” justifications have played prominent roles in the arguments in favour of patents for inventions and for other kinds of intellectual property rights. At various periods the idea of a patent as an instrument of justice to the inventor has proved attractive, and the power of this sort of argument is by no means exhausted. Yet rewarding inventive ingenuity may seem little more than an incidental consequence of modern patent systems. They do not protect each inventor who conceives an invention. Only the first comer is entitled in most systems, indeed, it is the first to apply for a patent, rather than the first to invent, who is given priority. The protection is then good not only against those who derive their information from that patentee but also against those who work it out independently. The period of protection, moreover, is very short compared to other forms of “intellectual property”. If a major object were to give the inventor his just reward, a system more closely akin to copyright with its “property” like duration and its protection of all original creations, but only against copying –would seem more appropriate.12

Today the debate over the patent systems tends to concentrate upon their role as a “public” instrument of economic policy. Patents are looked upon to two kind of aid towards the technical efficiency, and hence the growing wealth, of the community as a whole. They are intended to encourage the making of inventions and the subsequent innovative work that will put those inventions to practical use; and they are expected to procure information about the invention for the rest of the industry and the public generally, which otherwise might be withheld, at least for a period could be crucial.13

11 Id., at pp. 8-9.
2.3.1 Patent as an Incentive to Invent and Innovate

Patents have also been justified by the fact that they provide an incentive for the production of new inventions. As Lord Oliver said in *Asahi Kasei Kogyo KK’s Application*\(^4\), the ‘underlying purpose of the patent is the encouragement of improvements and innovation’. In return for making known his improvement to the public the inventor receives the benefit of a period of monopoly during which he becomes entitled to prevent others from performing his invention except by his licence.\(^5\) More specially, it is said that as patent provide the possibility for inventions to be exploited for a 20 year period, this means that inventors will be more willing to fund research and development. In this sense, patents acts as a vector that links scientific and technical research with commercial spheres. Arguments of this nature have proved to be particularly important in situations where an invention can be readily ascertained (or reverse-engineered) from the product, which is put on the market.

One persistent argument against patent in the 19\(^{th}\) century controversy was this: since inventions are there to be discovered, industries that have progressed to a certain point will inevitably make them, and so artificial aids are unnecessary. It was line of argument that carried some conviction when the bulk of inventions concerned relatively simple mechanical contrivances that were often worked out as a by-product of ordinary manufacturing. In the face of increasingly systematic organization of research and development, and the extensive process of education, which precedes it, this point of view is harder to maintain.\(^6\)

2.3.2 Patent as an Information System

In Britain the policy of making the patent system a source of technical information has been deliberately pursued since the early industrial revolution. For many years the results have justified treating this aspect of the system as more than a useful by-product. Patents do make available a large quantity of information about the latest technical advances, and they are regularly consulted by those concerned with development in many industries. Nevertheless, exaggerated expectations need to be

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\(^6\) Id, at p.132.
avoided. If the inventive concept is one that has to be embodied in a marketed product, the patent may give earlier access to the information and perhaps a more explicit statement of what the invention is. Only if the invention is one that need never be revealed to the rest of the industry in the course of exploiting it does the patent provide a clear long-term gain in terms of publicity? But this, of course, is the case where secrecy offers a real alternative, a route that despite the danger of leak, may seem simpler and cheaper to pursue.\textsuperscript{17}

The information aspect of patent is not a policy that is altogether easy to implement. There is an obvious temptation to any patentee to omit from his specification information that may seem incidental but is in fact useful or important to commercial success. When this effect can be achieved the patent system is reduced to an index of sources from which further information may be had on application and payment. This leaves the policy maker, whether legislator, patent office administrator or judge, with a choice: either to recognize that the system cannot hope to provide more information, or to insist that it should be declaring such patents invalid. Countries with examining offices have arrived at rather varied results in their approach to this dilemma. The typical American specification is noteworthy for its dogged attention to pedestrian detail; a German specification may be hazy about practical steps but is more likely to reveal basic concepts. One decision of the English court of Appeal leans in the former direction; it holds that a specification about basic ideas in a new technology should teach its principles to second rank technicians rather than to leading researchers in the field.\textsuperscript{18} This sort of insistence carries with it the danger that really significant developments may be the subject of invalid patents. Yet to give up a real effort to police the disclosure requirement may be to surrender the one public advantage of the patent system that remains relatively uncontroversial.\textsuperscript{19}

\textbf{2.3.3 Adapting the Patent System: New Technology}

The emergence of each major technology requires adjustments in the patent system, and is, therefore, likely to stir up arguments about underlying rationale and

\begin{footnotesize}
\textsuperscript{17} Supra note 12, p.113.  \\
\textsuperscript{18} Valensi v. British Radio (1973) R.P.C 337.  \\
\textsuperscript{19} Supra note 12, p.114.
\end{footnotesize}
specific policy objectives. The coming of computers first activated symptoms of denial, with a series of moves to place computer programs beyond the reach of the system; latterly, there has been growing industrial pressure to take the opposite position. Over a much longer period resistance to the idea of monopoly over something a fundamental as chemical substance has gradually given way. A set of rules on the disclosure requirement have enabled claims of commercially significant breadth to be made; but at the same time, where necessary, biological material has to be made available to others through culture collection.20

A half-century after Crick and Watson’s uncoiling of living structures, genetic knowledge and techniques of genetic manipulation have undergone a series of remarkable advances. Once revealed, each procedure has been rapidly taken over by laboratories everywhere, spurning quantities of competitive research. In particular medical applications of biotechnology have attracted a rash of new business, often spinning out of academic research. There have been rushes to patent, accompanied by demands for very wide claims modeled on those of the initial master patents by now familiar in organic chemistry. Courts in the United Kingdom have shown a tendency to react slowly and cautiously to this. Patent officers, by contrast, have been ready to embrace the new technologies. In Europe that attitude must be sharpened by the fact that there are competing routes to patent protection. However, over the last fifteen years, they have faced a growing barrage of objection, which has made the issue far more prominent and is leading to a somewhat more critical attitude towards what should fall within the patent system under what conditions.21

Each invention has a multiplier effect. A single invention, when patented is not the end of technological development. It is the basis for further research and increasing technical development.

2.3.4 Economic Justification

If there were no patent system, it would be possible for anyone to copy a new invention and profit from it without having to bear the costs of developing the invention. Since the cost of copying many inventions will be substantially less than the development

20 Id. at pp.114-115.
21 Ibid.
costs, this would allow the copier to sell the invention at lower price than the original inventor, which may make it impossible for the inventor to profit from the invention.

This could mean that business or individuals would have little incentive to invest in research and development or would invest only in those inventions, which could be kept secret. If businesses are not provided with adequate incentive to invest in research and development, economic growth may be inhibited.

Patent is a form of industrial property conferring monopoly right on a person, who invents a product or a process to exclusively produce it or to use the said process for a pre-determined period of time. It is a reward given by state to the inventor for input of his intellectual labour with something useful to the public. By granting patent, the promise of the state is that there will be an exclusive right to use the invention and recover the costs and make reasonable profits.

To get patent right, the inventor has to disclose his invention while applying for patent registration. The disclosure of the invention can be helpful to the public to work upon the invention once the patent term expires. This can also be of great help in enhancing the industrial and in turn, the economic growth of the society.²²

2.4 History and Evolution of Patent Law

The earliest form of patents might have existed in the 500 B.C. in Sybaris, Greece where monopolies were granted to new dishes for a period of one year. Some even contend that the patents originated in the Roman Empire where guilds existed. The guilds in the middle ages developed in the context of the market economies that existed in the cities. The guild system followed a system of apprenticeship, which facilitated the process of imparting the techniques of the craft. Thus it can be regarded as communal property, rather than a monopoly held by an individual. The craft developed within the guild and was shared by all the craftsmen of the guild. For example, the Venetian glassmakers had reputation for glass making during the Renaissance time. Glass making was strictly restricted to guild members and was closely controlled by them. There were regulations as to working days, apprenticeship, technical specification, quality of the glass, ingredients to be used. As the reputation of their craft increased the commercial

²² Basic Principles of Patent Law, Paper – 1 Basic Principles & Acquisition of Intellectual Property Rights, Bangalore: CIPRA National law School of Indian University, p.18.
value also increased, with it the craft were strictly forbidden from being exported to other parts of Europe. Thus, the earliest forms of monopoly emerged in the form of a communal property, restricted to a region and the guild.

Patents could have emerged out of the need to develop new industries within the realm. Protection of the trade, tax incentives may have served as inducements to lure the foreigners to introduce new industries. They were to be granted exclusive rights to practice their art for a certain period of time.

Although it is certain that the genesis of the patent system originated in Italy, Filippo Brunelleschi of Florence had invented a new kind of boat in which heavy loads could be effectively hauled over the river. In 1421, the Gentlemen of Works requested from the Lords of the Council of Florence an exclusive privilege for Fillippo to make and use his invention on the waters of Florence for three years. Quite a few patents had already been granted prior to 1474 when Venice came up with its first patent statute. The first Patent Law in the history was that of Venetian Statute 1494. Venetian Statute was the foundation for the patent systems that exists in the present world. The statute set forth the statutory requirements for the patentability of inventions, which are still relevant. The basic policies underlying modern patent law regimes including the quid pro quo were present in the Venetian statute.\(^{23}\)

The system envisages concepts of novelty, registration of the new device, term of exclusive right, infringement of patents as well as compulsory license. In the next two centuries the system of patent monopolies had spread across Europe. England being prominent among them developed the system. There are records to suggest that letters patent existed in England prior to 15\(^{th}\) century. Letters patent developed on its own without any influence from the system that existed in Venice. But the global adoption of the system gradually increased in the course of time. It spread to the U S, in 1790, France in 1871 and Sweden in 1819.

2.4.1. Evolution of Patents in European Union Countries

It took several centuries for patent law to develop from monopoly grants given by a ruler to the regular system of law, embodying rights and privileges open to anybody

which we know today. As early as 500 B.C., monopolies or licenses were granted by the state or ruler to individuals for exclusive manufacture, processing or import of particular products. This system of exclusive grants to individuals was in use in England at the beginning of the 17\textsuperscript{th} century.

There were no Greek or Roman laws which included any notion of intellectual property. The ancient theft of writing or ideas was not considered theft of intangible property. It was considered theft of honor, fame or reputation. The growth of commercial societies, which assigned value to marketable commodities, led to a process of reification by which objects were separated out of the whole as ‘things’. The process began earlier for land and chattels and developed later for intangible, inventive ideas.

By the middle ages, monopolies were extended by the ruling councils of Italian City-States to guilds of artisans engaged in a particular trade. In Florence and Venice, guild monopolies were well developed by the beginning of the 12\textsuperscript{th} century. In Florence, which was a center for the wool trade, carding, weaving or dyeing of wool could only be performed commercially by a member of one of the guilds. Guilds served as professional organizations, protecting the livelihood of the members, offering some aid to widows and their families, enforcing an apprenticeship system and preventing others from entering the trade. Guilds controlled legal workdays, judicial procedures and election of guild officials. Selling stolen or defective products or products not manufactured by guild members was forbidden. Export of the craft or training someone who was not a member of the guild especially a foreigner was forbidden. The guilds held a type of corporate or communal ownership of knowledge specific to the craft of industry.

Guild monopolies also developed in Europe and England. During the middle ages, guilds protected a wide range of commercial activities, including printing, working with silver or gold, trade in sugar, importation and dyeing of silks, mining and the manufacture of power.\textsuperscript{24}

\textbf{The Italian Renaissance}

By the 15\textsuperscript{th} century, the city-states of Northern Italy, particularly Florence and Venice, began to use monopoly grants to promote commerce. In 1401, Florence offered a

\textsuperscript{24} http://www.sarai.net/research/knowledge/history of patents in Europe and US. Accessed on 7-8-2010.
A ten-year exemption from taxes to anyone who would introduce the art of using steel brushes in wool carding machines. Guerinus de Mera, a Milanese (Milan) contracted with the wool guild of Florence to teach the art to guild members. In 1409, the governing board of Florence approved the contract, giving Guerinus permission to reside in Florence free from taxation for 20 years. Guerinus contract is the first known example of a grant of monopoly in return for ‘technical disclosure’ or ‘working’.

In 1421, the city of Florence granted a monopoly to Fillippo Brunelleschi for the development of a ‘machine or ship’ to bring merchandise from Pisa to Florence. Brunelleschi was the architect and was widely known as an inventor of ingenious mechanical devices. His machine, which became known as ‘the monster’ promised to benefit the merchants generally, since it would save the time and expense of off-loading merchandise and re-loading it for design and infringing the patent was to be burned. Brunelleschi’s grant of a monopoly required technical disclosure in return.25

Brunelleschi’s patent or Guerinus contract, were granted on an ad hoc basis to individual, but they contained important policy elements that later patent systems would recognize. Governing bodies realized that advantages could be gained for local trade and industry by developing and enforcing a reliable patent system. It remained for the Republic of Venice to develop the first system of laws and administration under which any citizen could apply for protection for his invention in return for certain concessions.26

By the 1300’s, Venice maintained a special fund from which payment could be made to inventors. Bartolome Verde received a payment in 1332 to build a windmill. The money had to be refunded if he did not complete the installation and make it work within six months. Monopolies were given for building flour mills, cookstoves for dye shops, pumps to raise water for irrigation, methods of printing and mills to grind corn. The grants conferred exclusive rights for a limited period of time, prescribed forfeiture if the inventor failed to complete the invention and included penalties for infringements.

In 1474, a Venetian statute established the first regular system for granting patents for ‘new and ingenious devices’. The right was a general one and not a matter of royal favor. To be patentable, the device had to be new to Venice, made in Venice, registered

25 Ibid.
26 Ibid.
with a General Welfare Board, and ‘reduced to perfection’. A ten year period of protection was granted. Usefulness was an implied precondition. Before a patent could be granted, the applicant had to demonstrate the device or process to the satisfaction of an examining board or committee, which sometimes heard from experts.

The recognition of a patent as a property right developed slowly. The holder of a Venetian patent could license others to use or practice his invention. Some patent grants included terminology and phrasing indicating that the patent conferred a right which was transferable inter vivos and mortis causa. That is, the right could be licenced or transferred to another and could be exercised by one’s heirs during the period of the grant.27

The period from 1400 to 1550 represents the peak of Venetian prosperity and economic power. The fall of Constantinople to the Turks in 1453 aided this concentration, because it initiated a significant influx of craftsmen and artisans from the east in to Venice and other Italian city-states. There would be an outflow of craftsmen and artisans from Venice and other Italian city-states to other parts of Europe, taking with them not only knowledge of a particular craft, but also an awareness of the Venetian patent custom. All of the basic patent rules developed in Venice were preserved in subsequent systems, including that in the United States.28

Germany

From at least 1484 onwards, patents were granted by the Holy Roman Emperor and by various local sovereigns. It is thought that the German custom was influenced by Venetian practices and developed independently of English law.

Applications were inspected for novelty and operability. The application required a clear statement of what was claimed and prior art had to be distinguished. Injunctions, fines and confiscation were ordered for infringers. The terms varied between five and twenty years. The grants were assignable and heritable.

While it flourished, the German patent custom was as prolific as that of Venice, but the system was destroyed by the ravages of the Thirty year’s war (1618-1648).

28 Ibid.
Almost all of the European powers were involved, but the war was fought primarily in German territory between Catholics and Protestants.

By the end of the war, Germany was fragmented into more than 300 political entities, ranging from states the size of Bavaria and Prussia to lose alliances of single free cities. These fell to quarrelling among themselves. It took more than 200 years for the German to recover from the exhaustion and impoverishment caused by the war. During that time, each city, state or confederation had their own system of protecting inventions. For example, in Prussia, the largest state, patents were granted in an arbitrary manner as royal privileges. After great expense, the applicant might be given a patent which would last for few months or up to five years.\footnote{Supra note 23.}

Germany was not politically united until 1871, under Otto Von Bismarch, the last European country to achieve national unity. During the first six years of the newly-formed German Empire, each state adopted its own patent policies. Although many German Economists thought a patent law would be detrimental to commerce and argued against it. Engineering societies and other inventors advocated for it and by 1877 the first German Patent Law was passed.

The German patent system was influenced by development in the United States and itself became a model for Argentina, Austria, Brazil, Denmark, Finland, Holland, Norway, Poland, Russia and Sweden. The 1877 statute provided for the grant of a federal patent and established a centralised administrative office. Unlike the United States, the Germans adopted a ‘first to file’ system which remained in place until 1936, when the National Socialists introduced a first to invent system. Applications were examined at the Patent Office by examiners who were experts in their field. Applications were examined for novelty, non-obviousness and for usefulness. German courts interpreted patent rights broadly.

In 1891 the Germans introduced a weaker system of utility patents, sometimes called a ‘petty patent’, which was granted for three years.

After 1891 a parallel and weaker version of patent protection could be obtained through a gebrauchsmuster or utility patent (sometimes called a petty patent), which was granted through a registration system. Patent protection was available for inventions that
could be represented by drawings or models with only a slight degree of novelty, and for a limited term of three years (renewable once for a total life of six years). About twice as many utility patents as examined patents were granted early in the 1930s. Patent protection based on co-existing systems of registration and examination appears to have served distinct but complementary purposes. Remedies for infringement of utility patents also included fines and imprisonment.\(^{30}\)

### France

The French had a system for granting non-exclusive trading and import rights by the early 16\(^{th}\) century. Patents were granted by the Parliament de Paris to acquire binding force. Patents required utility and novelty, following the Venetian practices. The patent was transferable. Terms were from five to thirty years.

France was a major beneficiary of the migration of artisans and craftsmen from Venice and other Italian city-states. In 1536, Etienne Tarquetti obtained a privilege for the production of silk from the municipal government of Lyons, which was subsequently approved by the king. The grant allowed Tarquetti to import foreign workers, who were given loans and exempted from taxes. In 1551 a monopoly was granted to an Italian from Bologna for glassware according to the manner of Venice. But the French had an inconsistent history for protection of foreigners which discouraged immigration.

Between 1562 and 1580 there were seven religious civil wars between French Catholics and Protestant Calvinists, called Huguenots. Both sides had private armies and conducted assassinations and massacres. Eventually, King Henry the IV of France issued the Edict of Nantes in 1598 granting substantial rights to French Calvinists, including the rights to work in any field and the right to bring their grievances directly to the king.\(^{31}\)

In 1648, in a revolt known as the Fronde, French magistrates and businessmen revolted against burdensome taxes which had been levied originally to pay for the French Part in the Thirty year’s war. There followed a period of internal division and civil turmoil.

In 1685, Louis XIV, King in his own right, renounced the Edict of Nantes and declared Protestantism illegal in France.


\(^{31}\) Supra note 23.
During this time, intellectual property rights developed slowly. In 1666, the French Minister established the free Academy, which later became the French Academic des Sciences. The Academy was modeled after academics founded in Italy during the previous century. French kings started to consult their scientific advisors on patent applications, creating a reutilized system of patent examination to determine whether or not the invention was new and useful. Applicants submitted drawings, models and specifications to the Academy in support of their applications. Special examiners were also appointed by the parliament to investigate the ‘value’ of inventions. While the Academy examined an invention for novelty and utility, the Parliament was most interested, in the potential commercial success of the invention and the prospective tax value of the enterprise. In 1699, the king gave the Academy written regulations, the first law incorporating an examination system for patents. After 1730, the Government began to appoint scientists to work within the Bureau du Commerce to examine inventions. By 1750, more than 500 patents had been granted under the examination system.

In 1762, a statute fixed the patent term at 15 years. The statute provided that a patent would lapse if the patentee had failed in attempts to put the invention to use or had not used it at all in the year following the grant.\(^{32}\)

By 1791, patentees could file through a simple registration system. The inventor decided whether to obtain a patent for five, ten or fifteen years, depending on the fees.

Until 1844, patents were avoided if the inventor attempted to patent the invention in another country. On the other hand, the person who introduced a foreign patent into France enjoyed the same ‘natural rights’ as a native inventor.

Patentees were expected to describe the invention in terms that would enable someone skilled in the art to practice the invention, but no provision was made for publication of these descriptions. Until 1902, printed information was limited to brief titles in patent indexes. Specifications were only available in manuscript form in the office in which they had originally been lodged and restrictions were placed on access. Viewers had to state their motives, foreigners had to be assisted by French attorneys, and nothing could be copied from the manuscript until the patent had expired.

\(^{32}\) *Ibid.*
To further encourage industrial development the French government established the *Societie d’ Encouragement pour l’Industrie Nationale*, which awarded medals each year to stimulate new discoveries in areas they thought worth pursuing. At times the Societie d’ purchased patent rights and placed the invention in the public domain.

Contracts for assignment of patent rights were slow to develop. Assignment and licenses were issued with a caveat, stating that the French government could not guarantee the validity of the patent or the contract. The annual fees for the entire term of the patent had to be paid in advance if the patent was assigned to another party.³³

**Netherlands**

Monopoly patents were established in the Netherlands by the middle of the 16th century. The Italian connection is evident. During the period from 1533 to 1580, some 117 Italians became citizens of Antwerp, then part of the Netherlands and established a number of new industries.

From 1589 onwards, we can see that 'patents for inventions' were being granted and recorded in the deed books of the States General of the United Provinces of the Netherlands. 'Patents for trademarks and manufacturers' trademarks' also existed, such as the right to sell brooches on a green piece of paper with the image of an angel.

In order to obtain a patent for an invention, it was important that this invention was a new one. The invention may have already been seen somewhere else in another country, but this was acceptable if a new industry could be established on the basis of this invention in the Netherlands, such as for the production of macaroni.

One requirement was that the invention could be applied in practice, and a period of approximately one year was allowed for this. The invention then became public once this year had passed; a concept that still applies to 'patents for inventions'. Counterfeiting (misuse of the right) was a punishable offence, and a patent could also be declared void…. There was certain arbitrariness as to the duration of a patent's validity: it could be two years, but it could also be fifteen years, and sometimes even fifty years. When the patents expired, they could often be extended.

One thing is certain: even then, patents served as an economic resource in many countries. The criteria and costs for extending patents varied somewhat; it depended upon the granting authorities, from sovereigns to public bodies.

In 1817, the first Patent Act came into force in the Netherlands. This Patent Act stipulated that patents could be valid for five, ten or fifteen years. The considerable fees involved could rise to 750 guilders. Complete descriptions of the invention had to be filed and these became public when the applicant came to 'collect' the patent. In other words, the applicant made his/her payment and received a certified copy of the patent. In 1869, the Act was abolished once again and the Netherlands acquired the image of a free-spirited nation.

The end of the 19th century was dominated by international collaboration. This was when the League of Nations was established. The euphoria surrounding industrialisation meant that people were prepared to cross over their own national boundaries. In 1883, representatives of over 140 countries met in Paris in order to try to compare the national acts concerning industrial property (patents, trademark and designs) and to achieve uniformity between them. In the famous Paris Convention of that year, it was agreed that priority should be recognised in all signatory countries. Three years later, international agreements were made with regard to the protection of Intellectual Property and works of literature and art. This took place at the Berne Convention in 1886.

The Netherlands belonged to one of the participating countries regarding the Union of Paris and the Berne Convention, but a new patent act did not enter into force until 1910, the Patent Act 1910. From 1912 onwards, the year from which the patents were being granted, the number of patent applications steadily increased. In the 1960s and 1970s, the number of patent applications was between 14 and 18,000. The signing of the European Patent Convention in 1973 by fifteen countries was a unique event. Two years later, an inventor or a manufacturer was able to make a single application for the first time and obtain a patent for 17 countries. The European Patent Office in Munich granted the patents and soon acquired branches in Rijswijk, Berlin and Vienna. The numbers of Dutch initial applications then decreased spectacularly.

In 1995, this decrease led to a new act, the Patent Act 1995. By means of this act, it was possible to apply for patents more cheaply and more rapidly, without the need for a
search into the state of the art, which took many years to complete, and without examining them. A novelty search was not carried out for six years patents, however the applicant was able to request a novelty search for twenty years patents.

The deadline for the grant procedure was reduced to eighteen months, and from then on, the patent was published after the same deadline. The six-year patent ceased to exist with effect from 5 June 2008. The Patent Act 1995 was being amended in a number of sections. The novelty search remained compulsory for twenty-year patents. The result of this search, the novelty search report, is published and provides the applicant and the outside world with insight into the strength of the patent.34

The early patent custom in the Netherlands in the 16th and 17th centuries was both advanced and prolific. During the 16th, 17th and 18th centuries, 574 patents for inventions were granted by the States General and 283 were granted by Holland.

By the early 17th century, Holland had become one of the most advanced industrial regions in Europe, with industries in sugar refining, brewing, tobacco cutting, silk growing, pottery, glass, ornaments, printing and paper making. An applicant was required to clearly delineate the subject-matter covered by the patent. The application was examined by the committee. The claim was used to provide evidence as the nature of the invention in case of later litigation, rather than for public education. The invention had to be worked within a specified time, i.e., one year or the patent lapsed.

During the mid 1800’s a strong anti-patent sentiment developed in Europe. In 1863 the congress of German Economists declared patents to be “injurious to the common welfare”. The movement had its greatest success in Holland, which abolished patents entirely in 1869. During this time there were deteriorating rates of innovation and invention. The patent system in Holland was reinstated in 1912.35

2.4.2 Evolution of Patents in United Kingdom

As with the origins and development of other intellectual property rights, England has a prime place in world history and has set the mould for patent rights internationally. It is no coincidence that England was the country where the first major steps towards an industrial society were taken. Whether this was a direct result of the patent system is

35 Supra note 26.
arguable, but it is without doubt that patents had an important role to play in the Industrial Revolution. The origins of patent law can be seen emerging in medieval times. The word ‘patent’ is an abbreviation of the term ‘letters patent’ derived from the Latin ‘litterae patentes’ and meaning ‘open letters’. It relates to a document issued by the Sovereign, usually addressed to all subjects of the realm, to which Great Seal of the Realm is attached at the foot so that the document can be read without the seal being broken. Letters Patent were used in middle ages, at least since the year 1201, for countless administrative purposes. Letters patent were granting rights, often to foreign weavers and other craftsmen, allowing them to practice their trade and overcoming guild regulations which suppressed competition. The first such letters patent were granted in 1311 to John Kempe, a Flemish weaver who wanted to practice his trade in England, one of the earliest recorded instances of a patent.

Blackstone, states that: The Kings grants are also matters of public record. These grants, whether of lands, honors, liberties, franchises are contained in charters or letter patent, that is, open letters, litterae patentes."

With the emergence of the guild system in England, group monopolies came into being. These guilds had obtained exclusive right to sell certain goods within a region. Outsiders could not trade in that region but the members could compete with each other. The state sanctioned monopolies as it lead to quality products and regulated prices. These guilds were under the control of the municipality. This was a kind of regional monopoly which did not apply to the whole of England. This was an impediment in terms of national growth especially with the expansion of manufacturing sector and increasing trade. Thus, the local phenomenon was nationalized and the group monopoly gave way to individual monopolies. To encourage manufacturing, the crown used to grant certain privileges to certain native inventions and new imports. In order to attract foreign artisans to practice their art and train the locals, the crown allowed him to practice his craft exclusive others for a limited period of time.

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38 Supra note 23.
The regulation of trade was deemed to fall within the provenance of the crown and letters patent proved to be a useful method of encouraging the establishment of new forms of industry and commerce, giving the crown powerful control over trade. In this early form, there was no need for anything inventive, it had more to do with the practice of a trade and the granting of favours by the Crown. However, some letters patent were granted for inventions; for example, a patent was granted to John of Utyman in 1449 for his new method of making stained glass.\textsuperscript{39}

Queen Elizabeth in the early years of her reign issued letters patent to encourage foreigners to introduce new manufacturing products and technology in England. Her policies seem to attract the foreigners. But in the later part of her rule she used the same system to grant patents even on well-established trade. The abuse of letters patent provoked the Parliament to legislate against such monopolies. She managed to pacify them by assuring them that such letters patent will not be issued any further. The letters patents issued during this period seemed more like monopoly grants rather than privilege grants.

Some historians suggest that she wanted to reward her faithful servants but hard on cash, she resorted to use the existing system to grant monopolies to those faithful to her.\textsuperscript{40}

Eventually, there was a strong need for an effective system that prevented unfair competition where, for example, one person had made some novel invention and wanted to stop others from simply copying it. A monopoly system developed in the reign of Elizabeth I and many letters patent were granted. There are many dangers associated with monopolies, such as overcharging, manipulation of markets or a refusal to make the product available.

The system, however, did not have the desired effect of encouraging new industries and eventually, the Crown promised to recall some of the patents granted. These privileges were offered by the Crown for public good, though the grant of these monopolies went against the common right.

\textsuperscript{39} Supra note 34, p.312.
\textsuperscript{40} Supra note 23.
The Tudor monarchs found that granting monopolies by letters patent was an effective way of raising revenue. Queen Elizabeth I granted monopolies in everyday necessities including coal, fruit, iron, leather, salt, soap and starch. However, during the last decade of her reign, so much unrest was caused by these monopolies that she issued, in 1601, a proclamation revoking the more obnoxious patents and giving her subjects the right to take cases concerning monopolies to the courts of common law.

This right was exercised almost at once by Edward Darcy, a groom of the Privy Chamber. He had obtained by letters patent a twelve year monopoly in making playing cards. In 1602, he brought an action against Thomas Allin, a haberdasher, in the Court of Queen’s Bench for infringing the patent. In This famous case of Monopolies, *Darcy v. Allin*, the courts questioning the grant of monopoly for importing, manufacturing and selling playing cards is invalid. The court concluded that the grant of such monopoly was illegal as it prevented others from carrying on the ordinary trade. This case was regarded as the first case wherein patents were viewed as a legal right of the inventor rather than the royal prerogative.

This famous decision, in the ‘Case of Monopolies’ did not, however, end the abuses of monopoly, and James I issued a proclamation known as “The Book of Bounty” in 1603, 1610 and 1621 against monopolies, which excluded new inventions from the general prohibitions. The rampant abuses of the monopolies lead to the passing of the Statute of Monopolies, 1623 which is a landmark in the history of British patent law because it was the first English statute to refer specifically to patents for inventions. The statute resulted largely from the influence of Sir Edward Coke, a champion of common law. The Statute of Monopolies was passed on 25 May 1624 in the 1623-4 Session of Parliament.

This Statute restricted monopolies already granted and prohibited the granting of new monopolies, except to the true and first inventors of a manner of new manufacturer, which were not used by others at the time of grant. This exception gave an inventor the exclusive right to make and use an invention for 14 years. Section I rendered all monopolies illegal, but later Sections excepted certain monopolies from the general

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41 *Edward Darcy Esquire v. Thomas Allin of London Haberdasher* (1599) 74 ER 1131.
42 *Supra* note 35, p.19.
prohibition. Section 6 of the Statute of Monopolies, which is still in force, allowed the grant of monopolies ‘for the term of 14 years or under, hereafter to be made of the sole working or making of any manner of new manufactures within this realm to the true and first inventor and inventors of such manufacturers, which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law nor mischievous to the state, by raising prices of commodities at home, or hurt of trade or generally inconvenient.’ As Coke explained, this was largely a declaration of the law as it then existed. The only real change was that the maximum term of a patent was fixed at 14 years, the time for training two generations of apprentices.

Despite the Statute of Monopolies, the Crown continued to grant objectionable monopolies, and it was not until Parliament gained control of the State finances following the revolution of 1689 that the practice ceased.43

The Industrial Revolution in Britain brought significant changes in the law relating to patents. The need to provide every inventor with an incentive to continue expanding his creative energies in producing inventions suddenly gained centre stage and every invention, however insignificant was given due recognition.

These changes of emphasis coincide with the first step towards mechanized factory production and with a decisive increase in the number of patents. In the 1750’s fewer than 10 patents a year were being granted, in the 1760’s that number more than doubled. By the 1810’s the average was 110 p.a. and in the 1840’s, 458 p.a. probably these concerned many more home-grown inventions than before the role of the patent system in this first stage of industrial development was somewhat tangential.

Among the famous, Boulton and Watt secured large sums from their steam-engine patents. Arkwright’s main patent on his spinning mule threatened the whole industry but proved to be too obscurely drawn to survive the attack on its validity. Crompton had to be given a parliamentary reward of 5000 pounds since he had virtually no commercial return from his spinning jenny. Patents provided equally sporadic encouragement for those with less celebrated improvements.44

43 Id, p.20.
The mediaeval procedures concerning letters patent had been evolved for patents of all kinds, and had serious drawbacks for the patenting of inventions. Perhaps the worst of these was the risk an inventor ran of having his invention rendered unpatentable by premature disclosure during the weeks, or even months, which it took him to obtain a patent. The Act of 1439 had forbidden the antedating of letters patent and so an invention was only safe after the Writ of Privy Seal; had been delivered to the Lord Chancellor.

Another serious drawback of the old patent system was that legal proceedings for enforcing a patent could seldom take place in a single court. This was because only the Court of Chancery could grant an injunction to stop infringement of patent rights or cancel a patent, whereas only one of the common law courts could determine the validity of a patent or award damages for infringement. Thus, particularly if more than one trial proved necessary, the proceedings could take years and be very expensive.

Although they were much criticized, the cumbersome old procedures remained throughout the Industrial Revolution. A famous critic was James Watt, improver of the steam engine, who in 1790 submitted a paper to the Lord Chancellor making detailed proposals for the reform of the patent system. Societies were formed with the aim of reform or in some cases the abolition of the patent system. There were abortive patent law reform bills in 1819 and 1820 and in 1829 a Parliamentary Committee collected and published evidence on the patent system. However, it did not issue a report making definite proposals for reform.

The first changes in patent law since the Statute of Monopolies were made by Lord Brougham’s Act of 1835. This allowed a patentee to amend his patent, an important advantage, but did nothing to simplify or cheapen the procedure for obtaining patent. Unrest continued to grow, and by 1851 there were no fewer than eleven committees or associations working for the reform of patent law. These included a Select Committee of the House of Lords.45

In the end, a private bill of Lord Brougham and a Government Bill were consolidated to produce a Bill which became the Patent Law Amendment Act of 1852. This Act established a single office, the Patent Office, in which all stages of obtaining a patent could be carried out under the control of Commissioners of Patents. The

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45 Supra note 35, p. 20.
Commissioners were the Lord Chancellor, the Master of the Rolls, the Attorney-and-Solicitor-Generals for England, the Lord Advocate, the Solicitor-General for Scotland, and the Attorney and Solicitor-Generals for Ireland. One patent now gave protection for Great Britain, Ireland, the Channel Islands and the Isle of Man.

The 1852 Act reduced the cost of obtaining a patent, especially where full United Kingdom protection was needed and laid down simplified procedure for obtaining patents for inventions. For the first time description of patent had to be filed on applying for a patent. This could be a complete specification giving merely outlines to be completed later, within fixed period after grant. An important step forward was that the patent was dated from its application date, so that a disclosure of the invention during the application procedure would no longer invalidate the patent. As more and more patents were granted, it became necessary to clarify what the patentee thought was crux of his invention, for which he claimed monopoly and the practice grew up of doing this by means of a separate part of the specification referred to as claims. At that time specifications were still heard before a jury, who had to decide on the basis of the specification what was the scope of monopoly and the claims served only to point the jury in the right direction. Claims grew in importance with the reorganizations of the courts in 1875, which transferred juries which required the specification to contain at least one claim.

Not all the provisions of the 1852 Act proved satisfactory. A Royal Commission of 1863 under Stanley enquired into the matter and issued a Report in 1865, and a Select Committee of the House of Commons of 1871 made further enquiries and reported in 1872. However, it was not until the Patents, Designs and Trade Marks Act of 1883 that patent law and procedure were again amended extensively. (It may be noted that Trademark Law was separated from Patent Law in 1905 and the Law of Registered Designs was separated in 1949).

The 1883 Act replaced the Commissioners of Patents by a Comptroller General of Patents, Designs and Trade Marks serving under the Board of Trade and marks the start of the British patent system as we know it today. The Act greatly reduced the cost of obtaining a patent and almost halved the total renewal fees. It excluded the Channel Islands from its provisions.

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46 Lord Russel in *EMI Ltd v. Lissen Ltd* (1938 56 RPC 23 57 (HL).
47 *Supra* note 12.
Islands from the area for which a patent gave protection. This area was again reduced when the Republic of Ireland established its own patent system in 1925.

Since 1883 most of the changes in British patent law have been made in the light of reports by committees as summarized below:

### Committees appointed to consider Patent Law

<table>
<thead>
<tr>
<th>Year of Appointment</th>
<th>Chairman</th>
<th>Year of Report</th>
<th>Following Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>Sir Farrer Herschell</td>
<td>1888</td>
<td>1888</td>
</tr>
<tr>
<td>1900</td>
<td>Sir Edward Fry Lord Parker</td>
<td>1901</td>
<td>1902</td>
</tr>
<tr>
<td>1929</td>
<td>Sir Charles Sargent</td>
<td>1931</td>
<td>1932</td>
</tr>
<tr>
<td>1944</td>
<td>Sir Kenneth Swan</td>
<td>1945/6/7</td>
<td>1949</td>
</tr>
<tr>
<td>1967</td>
<td>Sir Maurice Banks</td>
<td>1970</td>
<td>1977</td>
</tr>
</tbody>
</table>

The most noteworthy changes produced by the Acts listed in the table were as follows. The 1888 Act established a Register of Patent Agents. The 1902 Act provided for patent applications to be examined for the novelty of the inventions concerned, the necessary search being introduced in 1905. The 1919 Act extended the normal maximum term of patent from 14 to 16 years. The 1932 Act specified all the more important grounds on which a patent could be revoked whilst still allowing other grounds to be effective. It also established a Patents Appeal Tribunal, consisting of a specially chosen High Court judge, for hearing appeals against Patent Office decisions, and so took away from the Law Officer his last duties concerning patents. The 1949 Act removed anomalies concerning various patent dates and gave a complete list of grounds of revocation. The 1977 Act introduced the examination of patent applications for obviousness of the inventions concerned, extended the normal maximum term of patents from 16 to 20 years, and made the other amendments necessary for allowing the United Kingdom to participate both in a European patent system and in a system for simplifying the procedure for obtaining patents in more than one country established under the Patent Cooperation Treaty. It also established the Patent Court.\(^\text{48}\)

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\(^{48}\) *Supra* note 35, pp 21-22.
With the Patents Act 1977, the British patent system received the largest culture shock in its history. The Act provides machinery for collaborating in three Supra-national ventures, namely, the new European Patent Office (EPO) under the European Patent Convention, 1973, WIPO and Community Patent Convention, 1975 (CPC).49

2.4.3 Evolution of Patents in United States of America

During the Colonial period, the colonists were familiar with English monopoly laws and continued to follow English legal practice. There was no consensus in England that common law would apply in the American colonies. Acts of Parliament were held not to apply to the colonies unless specifically mentioned. British ‘patents’ were monopolies granted by the King and often gave the exclusive right to trade in a particular item to a preferred vendor. As British subjects, the colonists were required to deal only with that vendor (Boston Tea Party).

English monopoly grants were occasionally given to specific entrepreneurs in one of the colonies. More important were grants to colonial governors or those in their entourage. In 1687, the Duke of Albemarlie, governor of Jamaica, received a patent for the sole right of erecting saw mills powered by wind or water in the colonies, excluding those in New England. Salt, the importation of machinery, methods for curing tobacco or corn, and methods of weaving were other potentially lucrative monopolies.

Some colonial assemblies simply assumed the authority, and granted legal protections and exclusive licenses. Individual bills were passed on a case-by-case basis, but no colony established a public patent statute. The earliest grant of patent for an invention in the United States seems to have been by the Massachusetts Bay Colony in 1640s.50 In 1646, the Province of Massachusetts Bay granted inventor Joseph Jenks Sr., the exclusive right to set up water mills using an engine he had developed for making edged tools, such as scythes. His monopoly was run for 14 years.51 A Massachusetts statute of 1672 prohibited making copies of a printed work without the consent of the owner, clearly implying a property right. Connecticut allowed patent monopolies for such matters and times as were deemed ‘profitable for the country.’ William Penn’s Frame of

49 Supra note 41.
Government for his new colony directed the governor and provincial council to encourage and reward authors and inventors.

The monopolies which were granted seldom included a requirement for working of the invention and there was almost no requirement for teaching the art or trade to others. Several bills included specific statements of high fines to be levied for infringement. None of these grants were called ‘patents’ which would have implied usurping the royal prerogative. They were called ‘bills’ or ‘laws’. 52

Although pre-independence patent custom in the American Colonies owes much to the English Statute of Monopolies of 1628, which restricted the right of the Crown to grant monopolies so that hence forth they could be granted only for a limited period and only for a manner of new manufacture. 53 The Statute of Monopolies was never made directly applicable to the American Colonies.

There were two Continental Congresses. One met from September 5th to October 26th, 1774 at the start of the Revolutionary War. The second met from May 10, 1775 to March 2, 1789. There were no requests for monopoly grants during the war. There was no grant of power to establish a system of patent or copyright. Each State could encourage agriculture, arts, manufactures and commerce in any way they chose.

Between 1783 and 1786, twelve States enacted general Copyright statutes. Only the South Carolina statute extended protection to the inventors of useful machines. Several of the preamble states that no one is so clearly the master of his goods as a man is the master of the products of the labor of his mind, a clear recognition that an inventor was entitled to protection as a matter of right. This was a departure from English custom, where the grant of a patent (or copyright) was at the discretion of the sovereign. Instead of a formal system for granting patent protection, State legislatures continued the practice of passing individual bills.

This unwieldy State-by-State system required an inventor to apply to each State for a patent and led to inconsistent results. A grant from one State was unenforceable in another. States issued patents to different inventors for the same or similar inventions. An

52 Supra note 48.
53 This had the effect of limiting the power of crown to the grant of monopolies only for limited period and most important only for manner of new manufacture that was introduce in to the realm by the recipient of the monopoly. Such grant was, however, conditioned on their not being mischievous to the state or generally inconvenient.
inventor might be granted a patent in one State but denied it in another. The terms of the grants, the requirements for working, the lengths, and the requirements for a description of the invention or the process might vary. A person in New Jersey who held a patent for a steamboat could be prevented from operating in New York waters and the steamboat seized if the boat infringed on a New York patent, and vice versa. This was a system which was obviously unfavourable to inventors and interfered with the development of interstate commerce. To remedy the problem, the Framers gave the new federal congress the power to create a national patent system.54

During the period of confederation after independence had been achieved (1783) but before the adoption of Federal Constitution of the United States (1789), most of the states had their own patent laws. However, as noted by James Madison in the federalist “the states cannot separately make effectual provision” for protection of invention and so in drafting the Constitution of the U.S. responsibility for providing such protection was entrusted to the Congress of Unites States.55

The U.S. Constitution, which is the foundation of U.S. Patent Law, was drafted during the Industrial Revolution. The constitutional basis for federal patent and copyright system is to be found in the Constitution of the United States. Article1, section 8, clause 8 which states “Congress shall have power……to promote the progress of science and useful arts by securing for limited time to authors and inventors the exclusive right to their respective writings and discoveries”. The Industrial Revolution and the quest for the technology prompted a pro-patent environment throughout the 19th century.

This is the only one of the enumerated powers in which the framers give specific instructions on how to exercise the power. The new government was discussing State debts which arose from the Revolutionary war. Giving a monopoly grant was a way of rewarding inventors without giving the new Congress a general power to create monopolies and without incurring in the form of bounties or monetary rewards of inventions.

South Carolina was the only State which had drafted a patent statute while the Articles of confederacy were in effect. Intellectual property clause was proposed by James Madison, who was a member of the committee and Charles Cotesworth Pickney, the delegate from South Carolina. Pickney was a member of the South Carolina legislature when the statute was adopted, and he knew the value of patents would have for artisans and inventors in his State.

For some time after the Constitution was ratified and the government established, there was a legal theory that States might hold ‘concurrent’ power with the federal government. In Gibbons v. Ogden, a conflict between steamboat operators between New York and New Jersey, the Supreme Court established the supremacy of Congress to regulate commerce between States. The Federal power is supreme where there is a significant federal interest.

The first United States Patent Act was passed in the year 1790. It was a short Act of 7 sections only entitled “An Act to promote the progress of useful Arts”. Under its terms any two of the Secretary of State, the Secretary of War and the Attorney General were empowered to grant patents for terms of up to 14 years for inventions that were “sufficiently useful and important” provided that an inventor submitted a specification describing the invention to the Secretary of State at the time of the grant.

The first patent was granted on July 30th, 1790 to Samuel Hopkins of Philadelphia for a method of producing potash (potassium Carbonate), an essential ingredient used in making soap, glass and gunpowder. Fifty seven patents were issued under the Act of 1790.

In 1793 this Act was repealed and replaced by a slightly longer Act, the drafting of which is largely attributed to Thomas Jefferson, who was at the time Secretary of State and therefore intimately involved in the administration of the 1790 Act. The Act is notable for its definition of what constitutes patentable subject matter in the United States, which definition is almost unchanged until now and states: “Any new useful art, 

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56 22 U.S. 1 (1824).
57 A similar title was used for all acts relating to patent before the consolidation in 1870.
machine, manufacture or composition of matter and any new and useful improvement on any art, machine, manufacture or composition of matter.\textsuperscript{58}

A short description had to be filed with the application. However, before grant could occur it was necessary to submit a written description of the invention and of the manner of using or process of compounding the same in such full, clear, and exact terms, as to distinguish the same from all other things before known and to enable any person skilled in the art or science of which it is a part, or with which it is most nearly connected, to make a compound and use the same.\textsuperscript{59}

Another notable feature of the law was its early recognition that one patent might have a dominating effect over another and it specifically set out the principle that securing a patent on a particular improvement of a previously patented invention did not give the patentee of the improvement patent any right to use the invention that was the subject of the original patent or vice-versa. Rights to patents under the 1793 Act were confined to citizens of the United States.

The 1793 Act was amended in 1800 to allow foreigners who had been resident in the U.S. for two years to obtain patents, subject to them making an oath that the invention in question had not to their knowledge or belief been known or used previously in the U.S. or abroad. This Act also provided for the first time the possibility of an award to treble damages for patent infringement.

What was meant by the term ‘new’ in the early statutes varied somewhat but after 1800 the courts considered simply whether the invention was known before the date on which the applicant for a patent claimed to have made his or her invention. In 1829 the Supreme Court in the case of \textit{Pennock v. Dialogue},\textsuperscript{60} recognised the potential dangers of such an approach, which enabled the inventor to delay filing a patent application until competition was imminent and construed the statutes so as to create a statutory bar to deny patent protection to one who had previously publicly used his invention.

In 1832, a new Act expanded the category of potential patentees to cover all resident aliens who had declared an intention to become citizens of the United States,

\textsuperscript{58} The Patent Act 1793, section 1, the term ‘art’ was replaced by ‘process’ in 1952 but this term itself defined as a ‘process art or method’ 35 USC 101.
\textsuperscript{59} Section III of Patent Act of 1793.
\textsuperscript{60} 27 U.S.I (1880).
provided that any patent granted to the class of patentee become void if they did not work the invention publicly in the United States within one year of grant.

A major review of the law was undertaken in 1836. The Patent Act of 1836 was the result of more than 40 years of experience and sought to correct some of the defects in the old system. Patents were being issued for things which lacked novelty. Fraudulent patent claims were used for extortionate purposes. The length of the patent term was also criticized.

The new Act established the basic structure of the current patent system. A separate Patent Office was set up as part of the State Department and trained examiners were hired. Applications were to be examined for novelty before a patent could be granted. Employees of the patent office were not permitted to obtain patent rights. The application had to include a claim, stating with specifically the nature of the invention and distinguishing it from prior art. The claim must “fully explain the principle……..by which the invention may be distinguished from other inventions”.

The 1836 Act finally removed all limitations on the nationality or residence of those who could obtain United State’s patents. However, it did not end all discrimination on this score. U.S. citizens or residents intending to become citizens were charged $30 filing fee, British subjects were charged $500 and all other foreigners $300. Laws of 1832 and 1836 required foreigners to exploit their invention with 18 months, but the requirements were interpreted liberally.

The examination system introduced by Patent Act of 1836 made patent rights more secure by increasing the likelihood that a patent would survive a court challenge. Thereafter, there was an increase in patent applications and sales of patent rights. An elaborate system grew up surrounding patents, including specialized intermediaries who helped inventors to obtain patents, venture capitalists and specialized journals.

In 1850, in Hotchkiss v. Greenwood, the Supreme Court recognized that minor changes could not be patented, initiating the doctrine of non-obviousness. A change which would be obvious to someone skilled in the relevant art was not patentable.

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61 Section 9 of Patents Act 1836.
62 52 U.S. 248 (1850). The key reasoning in the decision was “unless more ingenuity and still….than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitutes essential elements of every invention”.
In 1861, a number of amendments were made. Among the more important were: the appointment of three examiners-in-chief to hear appeals from the primary examiners of any application that had been rejected twice; the changing of the term of a utility patent to 17 years from the date of grant; and the provision of terms of three and a half, seven or fourteen years for design patents at the choice of the applicant.

The 1836 Act had provided that the applicant had the right to amend his or her specification if the Patent Office raised objections to it. In 1864, the Supreme Court imposed limits on this right to amend thereby forming the basis for the present rule that no new matter can be added during prosecution of an application.

In 1866, the Supreme Court in the case of Suffolk Mfg. Co. v. Hayden, laid the foundation for the modern doctrine of double patenting by holding that where the same inventor held two patents for the same invention, the second one was void.

In 1870 the legislation relating to patents were consolidated into a single Act but without many significant amendments as to substance. Among the changes that were made the following are important. Removal of the requirement that if the patent had been granted abroad a U.S. application had to be filed within six months and replacement by a provision that the U.S. patent must expire at the same time as foreign patent, subject to a maximum term of seventeen years from the grant of U.S. patent, codification of a requirement that the specification described the best method or made known to the applicant for “applying the principle” of his inventions; set up a mechanism for resolving disputes as to who had first invented a particular invention. It was also made clear that any public sale or use of the invention before the start of the two –year grace period was destructive of novelty irrespective of whither that sale or use was by the applicant for the patent.

The 1870’s and 80’s were a period in which many international organizations were created. Among them was the Paris Convention for the Protection of Industrial Property which came into being in 1883. The United States became a member of the Paris Convention on May 30, 1887.

In 1897, some of the statutory bars to the grant of a patent were revised:

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63 70 U.S. 315.
65 Supra note 53.
1. If a foreign patent had already granted, a U.S. application had to be made within seven months of filing of the foreign and;

2. It was made clear that prior knowledge or use was only a bar if it occurred in the U.S. before the applicant had made his invention.

In 1925, responsibility for the patent office was transferred to the Department of Commerce and Labour.

In 1930 the Plant Patent Act provided for the possibility of patent protection for sexually reproduced plants. In 1940 the duration of the grace period relating the inventor, which were to be excused as novelty destroying acts, was reduced from two years to one year.\footnote{Ibid.} The two major changes were introduced in the year 1952 to include in the statute for the first time a requirement that to be patentable an invention not only to be novel but also it must satisfy other two conditions, namely, inventive step and industrial application, and to include the definition of infringement which had hitherto been left to the courts.\footnote{The definition specifically stated that the “Patentability shall not be negative by the manner in which the invention was made”, apparently to ensure that, issues of obviousness were assessed objectively and that invention did not have to be the result of a “flash of genius”.}

In 1939, the two year grace period that had existed since 1839 with respect to some statutory bars was reduced to one year on the ground that ‘two years appears unduly long and operates as a handicap to industry.’

In 1946, the law was amended to overrule the Supreme Court’s decision in\cite{Electric Storage Battery v. Shimadzu, 68} which had applied the U.S. laws ‘first to invent’ principle on a worldwide basis.

The basic structure of the present law was adopted in 1952. Two major changes made at that time were to include in the statute for the first time a requirement that to be patentable an invention had not only to be novel, thereby codifying a century of case law, and to include a definition of infringement, which had hitherto been left to the courts. A minor change in the definition of what constituted patentable subject matter by replacing the eighteenth century word ‘art’ by ‘process’, a relaxation of the formalities relating to applications by joint inventors and where an inventor cannot be found or refuses to apply for a patent even though bound by contract to do so.

\footnote{\textit{Electric Storage Battery v. Shimadzu}, 307 U.S. 5 (1939).}
Since 1952, the law has been amended several times and has continued to develop by way of case law. Changes were relatively infrequent prior to the establishment of the Court of Appeals for the Federal Circuit in 1982. The increased interest in the patent system that at least in part led to the creation of this court has also resulted in an increased rate of change in the law. In 1968 Patent Cooperation Treaty was signed. In 1975 the name “the patent office” changed to the “Patent and Trademark Office.” In 1987 Supreme Court upholds the patentability of a genetically modified bacterium quoting a congressional Report leading up to the 1952 Act that “anything made by man under the sun” should be patentable.  

More important than any of those was the Drug Price Competition and Patent Restoration Act of 1984, commonly known as the Hatch-Waxman Act, which provided for extensions of patent term for human drugs, food additives, and medical devices who’s commercialization had been delayed by regulatory procedures and at the same time made registration easier for competitors when patent protection expired and provided that testing for regulatory approval involving a patented drug did not amount to patent infringement.

In 1994, a new trend started, in past as a result of renewed attempts at globalization of the patent system. The law was amended to comply with a new international agreement that has been grafted on to the Uruguay round of amendments to the General agreement on Tariffs and Trade. This agreement is commonly known as TRIPs (Trade Related aspects of Intellectual Property rights) imposed certain minimum standards in patent protection on all member countries. This required changes in U.S. law relating in particular to the minimum duration of a patent and to prevent discrimination between protection of inventions made in the U.S. and those made elsewhere.

From 2005 to 2009, three consecutive U.S. congressional sessions have debated a patent reform act that would shift the U.S.to a ‘first-to-file’ rule, limit damagers for patent violations, and provide patent defendants more methods for defense. The most recent is the Patent Reform Act of 2009.

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71 Supra note 49.
2.4.4. Evolution of Patents in India

India since time immemorial has been the forerunner in the fields of science, technology, medicine, dance, arts, literature etc. The ancient books and manuscripts like Vedas and Upanishads not only provide spiritual solace but also serve as source for the evolution of all science and art. These various sciences have developed over a period of hundreds of years when the other civilizations in the world were in their rudimentary stages. Though India had been the hub of human wonders in ancient days, today our technology in most of the fields cannot be compared itself with the best in the world. The ancient knowledge at some point of time has not been fully passed to the future generations by our ancestors. Whatever scientific and technical knowledge were possessed was occupied and stolen by the western countries. Our ancestors while being generous in propagating such vital information for the benefit of the mankind did not have the forethought of protecting their inventions and innovations, which in the course of years proved fatal.\textsuperscript{72}

Knowledge is considered to be the product of individual creativity today but earlier knowledge was considered as the most precious gift, which knew no limitations of space or time, was freely given to the aspirants from the guru and this tradition was known as guruparampara. The guru got the knowledge from his guru and after adding his expertise and experience passed it to his students, this was true with all ancient traditional knowledge. “Let noble thoughts come to us from everywhere let all beings live happily, free from the fear of death and diseases” and many more such ideals were the guidelines for the scientists who worked for the betterment of every living creature. They were so selfless that thinking of petty personal benefits was unknown, unheard and unthinkable too.

Indian society has inherited a rule that each individual owed at least three debts or rinas. One was to his parents, second was to his guru and the third is towards motherland or society for all that has been bestowed upon him. When a person is repaying his debt by contributing something to the society what can he expect in return except the feeling of intense fulfillment.

\textsuperscript{72} Ibid.
So in ancient India the invention of anything and everything useful to the society was offered as a salutation to the god, guru, parents or the ruler and in turn blessed with further progress of the ruler would award him with material benefits or title and engrave the details of such invention either on stone or other inscriptions for the benefit of the whole society.73

But gradually the situation changed and the idea of protecting knowledge emerged in India as a result of influence of British on India. Therefore India’s patent system is drawn from British system. Unlike Great Britain where the concept of patent originated from the exercise of the royal prerogative to grant monopolies, in India a patent for invention has always been the sole creation of statutes of Indian legislature.

The first Act relating to patent rights was passed in 1856, which granted certain exclusive privileges to inventor of new manufacture for a period of 14 years. This Act was found defective and was therefore re-enacted with some modifications in 1859. The provisions of this Act were founded on the English Patent Act 1852. Under the Act of 1859 patent monopolies were called “exclusive privileges”. An inventor of a new manufacture could under the provisions of this Act, by filing a specification of his invention obtain the exclusive privileges of making, selling and using the inventions in India and authorizing others to do so for the term of 14 years.

In 1872 the Patents and Designs Protection Act was passed, followed by the Protection of Inventions Act of 1883. These Acts were consolidated by the Inventions and Designs Act 1888. Subsequently the Patents and Designs Act 1911 was passed repealing all the previous Acts. This Act established for the first time in India a system of patent administration under the management of the controller of patents.

After independence, the government of independent India decided to reform the patent law. In 1948, a Committee headed by Dr. Bhakshi Tekchand, a retired Judge of the High Court of Lahore was appointed by the Government of India to review the patent law in India, with a view to ensure that the patent system is more conductive to national interest. The Committee submitted its Report in April 1950.74 Tekchand Committee

74 Dr. Tekchand Committee’s recommendation was incorporated in the amendments that were introduces to the 1911 Act in the year 1950.
Report revealed that the Indian Patent system had failed in its purpose namely to stimulate invention among Indians and to encourage development and exploitation of new inventions for industrial property in the country, so as to secure benefits thereof to the largest section of the people. On the basis of this report a bill consisting of certain amendments to the Act of 1911 was introduced in the Parliament in 1953. This Bill was based on 1949 U.K. Patent Act. The Bill was not however proceeded with and therefore lapsed.\(^7\)

Subsequently in 1957, the Government of India requested Justice N. Rajagopal Ayyangar assisted by Dr. Venkateshwaran to advice the Government on the question of revision of the patent law. This Committee submitted its Report in 1959, keeping in mind the factors of economic development and public interest.\(^6\) The Report observed, firstly, that with all the handicaps, which the system involves in its application to under developed countries; there are no alternative methods for achieving better results…..I consider that the patent system is the most desirable method of encouraging inventors and rewarding them. Secondly, the Committee noted that foreign patentees were acquiring patents not in the interest of the economy of the country granting the patents or with a view to manufacture there but with the object of protecting an export markets from competition from rival manufacturers particularly those in other parts of the world. Thus India is deprived of getting in many cases, goods at cheaper prices from alternative source because of the patent protection granted in India. The Report concluded that foreigners held 80-90% of the patents in India and were exploiting the system to achieve monopolistic control of the market. The Committee suggested that a patent system that focused on access to resources at lower price would be beneficial to India.\(^7\) On the basis of this Report a Patent Bill was introduced in the Loka sabha in 1966, which however lapsed.

An Amendment Bill was introduced again in 1967\(^8\) which, culminated in the Patent Act 1970. The draft patent rules were also published in 1971. The Act and final

\(^6\) The report of this committee is considered to be the backbone of the Indian Patent Law that was enacted in the year 1970.
\(^7\) *Supra* note 69.
\(^8\) A Joint Parliamentary Committee was formed to study the Bill, the committee made various changes to the Bill and it was tabled again as the Patent (Amendment) Bill 1965.

The present law with regard to patents is stated in the Patents Acts 1970. The Act brought about the abolition of product patents for food, medicine or drug which was earlier granted under the 1911 Act. For the first time, the Patent act brought about the distinction between process and product patents for pharmaceutical substances.

The Act contains a long list of inventions which are not patentable. The Repealing and Amending Act, 1974 and the Delegated Legislation Provisions (Amendment) Act 1985 brought about certain changes to the existing law.

The Act has so far seen three major amendments, all of which were done as a part of the exercise to conform the Indian Patent laws to the obligations under the TRIPs Agreement of the WTO.

The first amongst the major amendments was introduced, rather hesitantly, by the Parliament in 1999. The prelude to the amendment was filled with interesting developments.

India was obliged to introduce product patents for pharmaceutical substances under the TRIPs Agreement. The TRIPs Agreement however, provided for a 10-year transition period for developing countries that were in the process of extending product patent protection to area of technology not capable of protection in its territory. 80

Certain stop-gap arrangements were introduced in the interregnum. The TRIPs Agreement required the countries under transition to provide for a means by which patent applications for pharmaceutical and agricultural chemical products can be filed. This was popularly called the ‘mail-box’ or the ‘black-box’ system. This system of entertaining applications was based on the patentability criteria as laid down in the TRIPs Agreement as applied on the date of filing in India, or where priority is available and is claimed, on the priority date of the application. The applications filed through the mail-box were to be

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79 Supra note 69.
80 Supra note 3, p. 13.
processed by the Indian Patent Office only after the expiry of the ten year transition period.

The TRIPs Agreement also provided for another interim arrangement consequent to the application of product patents for pharmaceuticals made through the ‘mail-box’ where an application for product patent has been made under art. 70 (8) (a) of the TRIPs Agreement, EMR, shall be granted for a period of five years subject to certain conditions. The protection available under EMR was very similar to the one extended by a product patent. India was expected to have the mail-box system and EMR in place from the date, on which the TRIPs Agreement came into force, i.e. 1st January, 1995. Thus the effect of the ten year transition period which exempted India from implementing product patents was nullified by the introduction of EMR as art. 70(9) which introduced EMR with immediate effect clearly stipulate that it shall prevail over art 65 which grants the ten-year transition period. As a result, India could not enjoy the benefits of the transition period.81

As if in protest of the injustice done, India delayed the implementation of the above two measures till March 1999. These measures were introduced only after United States lodged a complaint against India before the Dispute Settlement Body of the WTO. The Patents (Amendment) Act 1999 introduced provisions for ‘mail-box’ applications and EMR with retrospective effect from 1st, January, 1995.

The Patents (Amendment) Act, 2002, passed on 25th June 2002, was a further step in conforming Indian patent laws to the obligations under the TRIPs Agreement. The Patents (Amendment) Act 2002 and the Patents Rules 2003 came into force on 20th May 2003.

The changes introduced by the amendment Act include a uniform patent term of 20 years from the date of application; provision for publication of application after 18 months whether or not the application is accepted; provision for third parties to obtain marketing approval from regulatory authorities within three years before the expiration of the patent term; provision for increased penalty for unauthorized claim of patent right and for refusal or failure to supply information; provision for appeals against the order of Controller and Central Government and application for rectification of register of patents

81 Id, p. 15.
to the Intellectual Property Appellate Board; provision for filing international application under PCT simultaneously with an application filed before the Controller in India; and provision for protection of bio-diversities and of traditional knowledge.  

The Patents Bill 2003 was introduced to bring about the third conforming amendment to the Patents Act. The Bill however lapsed after its introduction in the Rajya Sabha on 22\textsuperscript{nd} December, 2003. As the deadline for complying with the TRIPs Agreement was nearing, the Government introduced the Patents Ordinance 2004 on 26\textsuperscript{th} December, 2004. The Ordinance was by and large, an improvement on the Patents Amendment Bill 2003. The Ordinance was succeeded by the Patents Amendment Bill 2005 which was introduced in the Lok Sabha and the Rajya Sabha on 22\textsuperscript{nd} March 2005 and 23\textsuperscript{rd} March 2005 respectively.

The Amendment Act of 2005 came into force with retrospective effect from 1\textsuperscript{st} January, 2005. The salient features of the Amendment include the omission of section 5 and the consequent introduction of product patents for pharmaceutical substances; the omission of Chapter IV A dealing with EMR; provision for acceptance of complete specification and advertisement of the same stand omitted; provision for publication of the application of patent introduced; opposition can be made at the time of publication on the same ground on which the grant of patent can be opposed; opposition can be made within 12 months after the grant of patent; prior written permission of the Controller required for a resident of India to apply for any patent in a foreign country; though registration of assignments is still required, the assignment of patent shall be valid even if it is not registered; provision for sealing of patent has been omitted; no suit for infringement can be instituted before the date of publication of application; and advertisement and notifications in the official Gazette replaced by publication in the official journal.  

Amendments were carried on by India to survive the onslaught of global competition earlier, in order to re-enforce her inventiveness as well as strengthen and efficiently use the patent system.

\footnote{\textit{Ibid.}}
\footnote{\textit{Id,} at p. 16.}
2.5 Conclusion

A patent is a limited monopoly given to individuals/corporations for limited number of years for technological inventions/innovations by preventing others from using the patent technology. It is granted at the request of the applicant by the patent office in respective countries. Hence the patent right is available within the territory of the granting countries. Patents are tools of public policy that are supposed to guarantee that society as a whole benefits from any innovation. Patents have been developed in order to achieve two aims: firstly, to promote the publication of ideas, inventions and creations in order to make them available to others. Secondly, to provide economic incentive for people to invent or to engage in creative efforts. The patent system was apparently devised to encourage inventions and enable the public to enjoy the benefits of the new inventions. Therefore patents should be worked to meet the full demands of the domestic market.

The Law of Patents has witnessed a revolutionary change across the world in the past few centuries. The Industrial Revolution in Britain brought significant changes in the law relating to patents. The need to provide every inventor with an incentive to continue expending his creative energies in producing inventions suddenly gained centre stage and every invention, however insignificant was given due recognition.

The U.S. Constitution, which is the foundation of U.S. Patent Law, was drafted during the Industrial Revolution. During the period of confederation after independence had been achieved (1783) but before the adoption of Federal Constitution of the United States (1789), most of the states had their own patent laws.

Much of the Indian patent law is derived from English. In U.K. the concept of patent originated from the exercise of royal prerogatives to the grant of monopoly. In India, patent for an invention has always been the sole creation of the statutes. The idea of conferring market monopoly as an incentive to innovate has old roots. In the course of time both individual and public justifications have played a prominent role in the arguments in favour of patent protection for inventions.

Patents do not protect each and every inventor who conceives an invention. Every legal system insists upon certain conditions for an invention to get patent right. Although
the requirements vary in different legal systems, certain basic common features do exist. They are novelty, utility or industrial applicability and inventive step.

Every patent system has excluded law of nature, physical phenomena and abstract ideas from patentability and kept certain other inventions outside patent system on the ground that they are against public order and morality.