

## The Review on the Patent

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Date Of Submission: 10-02-2021

Date Of Acceptance: 24-02-2021

### ABSTRACT

Firms in the pharmaceutical industry typically rely on a period of market exclusivity derived from patent protection and data exclusivity to recoup their investments in R&D. The invalidation of patent rights during drug development renders data exclusivity the sole source of protection and shifts the period of market exclusivity at the project-level. Invalidation therefore constitutes a natural experiment that allows us to causally identify how the duration of market exclusivity affects firms' incentives to innovate. Our analysis is based on a novel data set that links the development histories of drug candidates with underlying patent data. Our findings from instrumental variables regressions highlight that shorter durations of market exclusivity reduce the likelihood of successful drug commercialization. This main effect is largely driven by patent invalidations during early stages of the drug development process and by large originators. We discuss the policy implications of these results.

### INTRODUCTION DEFINITION:

1) The word patent originates from the Latin patere, which means "to lay open".

2) is a shortened version of the term letters patent, which was an open document or instrument issued by a monarch or government granting exclusive rights to a person, predating the modern system.

### HISTORY:

1) the first statutory patents system is generally regarded to be the Venetian Patent Statute of 1474.

#### U.S. Patent Granted

1) The first Patent Act of the U.S. Congress was passed on April 10, 1790, titled "An Act to promote the

progress of useful Arts".

2) The first patent under the Act was granted on July 31, 1790 to Samuel Hopkins for a method of producing potash (potassium carbonate). A revised patent law was passed in 1793, and in 1836 a major revision to the patent law was passed. The 1836 law instituted a significantly more rigorous application process, including the establishment of an examination system. Between 1790 and 1836 about ten thousand patents were granted. By the American Civil War about 80,000 patents had been granted.

3) Importation patents protected new devices coming from foreign countries. The patent law was revised in 1844 - patent cost was lowered and importation patents were abolished.

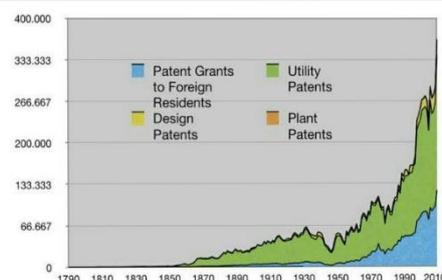


Fig : Effect of the revised patent law by U.S in 1844

### Indian Patent Act

1) Before the Indian Patent act, The first legislation in India relating to Patent was the Act VI of 1856.

2) The first patent act, On 3 March 1856, A civil engineer George Alfred DePenning of 7, grant's Lane, Calcutta petitioned the Government of India for grant of exclusive privileges for his invention " An efficient punkahpulling machine".

3) The Indian Patent Act presented in 1970, but forced in 1972.

### OBJECTIVES:

- 1) To protect the inventions of inventors.
- 2) To promote the invention of new inventors.
- 3) To accelerate the technologies and industrial development of countries.
- 4) To provide the exclusive rights to invention and afford protection against unauthorized use of the invention by third person.
- 5) To understand the meaning of specifications.

### CHALLENGES

In most jurisdictions, there are ways for third parties to challenge the validity of an allowed or issued patent at the national patent office; these are called opposition

proceedings. It is also possible to challenge the validity of a patent in court. In either case, the challenging party tries to prove that the patent should never have been granted. There are several grounds for challenges: the claimed subject matter is not patentable subject matter at all; the claimed subject matter was actually not new, or was obvious to the person skilled in the art, at the time the application was filed; or that some kind of fraud was committed during prosecution with regard to listing of inventors, representations about when discoveries were made, etc. Patents can be found to be invalid in whole or in part for any of these reasons.

### INFRINGEMENT

Patent infringement occurs when a third party, without authorization from the patentee, makes, uses, or sells a patented invention. Patents, however, are enforced on a nation by nation basis. The making of an item in China, for example, that would infringe a U.S. patent, would not constitute infringement under US patent law unless the item were imported into the U.S. Infringement includes literal

infringement of a patent, meaning they are doing a prohibited act that is protected against by the patent. There is also the Doctrine of Equivalents. This doctrine protects from someone who creates a product that is basically, by all rights, the same product that is protected by just a few modifications. In some countries, like the United States, there is liability for another two forms of infringement. One is contributory infringement, which is participating in another's infringement. This could be a company helping another company to create a patented product or selling the patented product which is created by another company. There is also inducement to infringement, which is when a party induces or assists another party in violating a patent. This could look like a company paying

another party to create a patented product in order to reduce their competitor's market share. This is important when it comes to gray market goods, which is when a patent owner sells a product in country A, wherein they have the product patented, then another party buys and sells it, without the owner's permission, in country B, wherein the owner also has a patent for the product. With either national or regional exhaustion being the law in country B, the owner may still be able to enforce their patent rights, however in country B has a policy of international exhaustion, then the patent owner will have no legal grounds for enforcing the patent in country B as it was already sold in a different country.

### ALTERNATIVES

A defensive publication is the act of publishing a detailed description of a new invention without patenting it, so as to establish prior art and public identification as the creator/originator of an invention, although a defensive publication can also be anonymous. A defensive publication prevents others from later being able to patent the invention. A trade secret is information that is intentionally kept confidential and that provides a competitive advantage to its possessor. Trade secrets are protected by non-disclosure agreement and labour

law, each of which prevents information leaks such as breaches of confidentiality and industrial espionage. Compared to patents, the advantages of trade secrets are that the value of a trade

secret continues until it is made public, whereas a patent is only in force for a specified time, after which others may freely copy the invention; does not require payment of fees to governmental agencies or filing paperwork; has an immediate effect; and does not require any disclosure of information to the public. The key disadvantage of a trade secret is its vulnerability to reverse engineering.

#### **BENEFITS**

##### **1. Perks of filing the application early.**

:

If you're sure about your invention, then you should file a patent application immediately. India follows a first to file system. So whoever files the application for an invention first, gets a priority date. You need not even file the complete application if your invention still needs a bit of work. Instead, you can file a provisional application, which is inexpensive and short to summarize. You have an assurance that nobody can claim the same invention within a pendency period of 12 months from the priority date. You must file a non-provisional application with complete claims and description within these 12 months. If another entity tries to file the same invention after your filing date, then the patent office rejects their request.

##### **2. The gift of exclusivity.**

After you receive your patent grant, it enables you to do anything with the invention. It allows you to stop others from copying, manufacturing, selling or importing the invention without your consent. If anyone tries to use it, then they'll be liable to legal action in the form of patent infringement. This is applicable throughout the entire lifespan of the patent. For India, the tenure of a patent is 20 years from the date of filing. Having complete protection on the back, you can do anything with the invention.

Amongst a lot of other benefits, you can improve it even further to optimize the solution that it is providing.

##### **3. Generating ROI after getting patent in India.**

Naturally, your invention will have a commercial application. Now it is up to you whether or not you want to commercialize it. You would want an ROI on your invention since you have put in time, effort and money into it. So you should study your market well, and plan out a good way to release and sell your invention. This way, you generate monetary benefits out of your invention and still retain its exclusive rights.

##### **4. Generating ROI through licensing or selling the invention**

After getting patent in India, there are chances that you might want to sell or license the patent. Sometimes, commercializing the invention on your own can be a burden. So you can license another organization to use it. This way, you generate an ROI by taking money for the license and also retain your rights. You can also sell it off to another entity or organization for a suitable monetary amount. But this will cause you to lose the rights for your own invention.

##### **5. Safeguarding good market status**

Disclosing the invention in public domain signifies that you are confident about your invention. This helps you to attain a good public impression and enhance your portfolio. You will attract leading business partners, investors, and shareholders towards you or your organization for doing business. With such a strong image in the market, you will have more negotiating power in your hand for your invention. In India, this also helps in building a good relationship with competitor firms. This will ultimately encourage small firms to participate in the industry as well.

#### **CRITICISMS**

Legal scholars, economists, activists, policymakers, industries, and trade organizations have held differing views on patents and engaged in contentious debates on the subject. Critical

perspectives emerged in the nineteenth century that were especially based on the principles of free trade. Contemporary criticisms have echoed those arguments, claiming that patents block innovation and waste resources (e.g. with patent-related overheads) that could otherwise be used productively to improve technology.[67][68][69] These and other research findings that patents decreased innovation because of the following mechanisms:

- 1) Low quality, already known or obvious patents hamper innovation and commercialization.
- 2) Blocking the use of fundamental knowledge with patents creates a "tragedy of the anticommons, where future innovations can not take place outside of a single firm in an entire field".
- 3) Patents weaken the public domain and innovation that comes from it.
- 4) Patent thickets, or "an overlapping set of patent rights", in particular slow innovation.
- 5) Broad patents prevent companies from commercializing products and hurt Innovation. In the worst case, such broad patents are held by nonpracticing entities (patent trolls), which do not contribute to innovation. Enforcement by patent trolls of poor quality patents has led to criticism of the patent office as well as the system itself. For example, in 2011, United States business entities incurred \$29 billion in direct costs because of patent trolls. Lawsuits brought by "patent assertion companies" made up 61% of all patent cases in 2012, according to the Santa Clara University School of Law.
- 6) Patents apply a "one size fits all" model to industries with differing need, that is especially unproductive for the software industry.
- 7) Rent-seeking by owners of pharmaceutical patents have also been a particular focus of criticism, as the high prices they enable puts life-saving drugs out of reach of many people. Boldrin and Levine conclude "Our preferred policy solution is to abolish patents entirely and to find other legislative instruments, less

open to lobbying and rent seeking, to foster innovation when there is clear evidence that laissez-faire undersupplies it. Abolishing patents may be politically challenging in some countries, however, as the primary economic theories supporting patent law hold that inventors and innovators need patents to recoup the costs associated with research, inventing, and commercializing; this reasoning is weakened if the new technologies decrease these costs. A 2016 paper argued for substantial weakening of patents because current technologies (e.g. 3D printing, cloud computing, synthetic biology, etc.) have reduced the cost of innovation. Debates over the usefulness of patents for their primary objective are part of a larger discourse on intellectual property protection, which also reflects differing perspectives on copyright.

#### ANTI-PATENT INITIATIVES

- 1) The Patent Busting Project is an Electronic Frontier Foundation (EFF) initiative challenging patents that the organization claims are illegitimate and suppress innovation or limit online expression. The initiative launched in 2004 and involves two phases: documenting the damage caused by these patents, and submitting challenges to the United States Patent and Trademark Office (USPTO).
- 2) Patent critic, Joseph Stiglitz has proposed Prizes as an alternative to patents in order to further advance solutions to global problems such as AIDS.
- 3) In 2012, Stack Exchange launched Ask Patents, a forum for crowdsourcing prior art to invalidate patents.
- 4) Several authors have argued for developing defensive prior art to prevent patenting based on obviousness using lists or algorithms. For example, a Professor of Law at the University of North Carolina School of Law, has demonstrated a method to protect DNA research.,[96] which could apply to other technology. Chin wrote an algorithm to generate 11 million "obvious" nucleotide

sequences to count as prior art and his algorithmic approach has already proven effective at anticipating prior art against oligonucleotide composition claims filed since his publication of the list and has been cited by the U.S. patent office a number of times. More recently, Joshua Pearce developed an open-source algorithm for identifying prior art for 3D printing materials to make such materials obvious by patent standards. As the 3-D printing community is already grappling with legal issues, this development was hotly debated in the technical press. Chin made the same algorithm-based obvious argument in DNA probes.

#### **PATENT THEORY**

Economics and patents – Patents are an incentive system designed to encourage innovation. By conferring rights on the owner to exclude competitors from the market (and thus providing a higher probability of financial rewards in the market place), patents offer the incentive for people to study and create new technology. Prizes as an alternative to patents – Some authors advocating patent reform have proposed the use of prizes as an alternative to patents. Critics of the current patent system, such as Joseph E. Stiglitz, are critical of patents because they fail to provide incentives for innovations which are not commercially marketability

#### **GOWERNING LAW**

1) The grant and enforcement of patents are governed by national laws, and also by international treaties, where those treaties have been given effect in national laws. Patents are granted by national or regional patent offices.

2) A given patent is therefore only useful for protecting an invention in the country in which that patent is granted. In other words, patent law is territorial in nature. When a patent application is published, the invention disclosed in the application becomes prior art and enters the public domain (if not protected by other patents) in countries where a patent applicant does not seek protection, the

application thus generally becoming prior art against anyone (including the applicant) who might seek patent protection for the invention in those countries.

3) Commonly, a nation or a group of nations forms a patent office with responsibility for operating that nation's patent system, within the relevant patent laws. The patent office generally has responsibility for the grant of patents, with infringement being the remit of national courts.

4) The authority for patent statutes in different countries varies. In the UK, substantive patent law is contained in the Patents Act 1977 as amended. In the United States, the Constitution empowers Congress to make laws to "promote the Progress of Science and useful Arts..." The laws Congress passed are codified in Title 35 of the United States Code and created the United States Patent and Trademark Office. There is a trend towards global harmonization of patent laws, with the World Trade Organization (WTO) being particularly active in this area.

5) The TRIPS Agreement has been largely successful in providing a forum for nations to agree on an aligned set of patent laws. Conformity with the TRIPS agreement is a requirement of admission to the WTO and so compliance is seen by many nations as important. This has also led to many developing nations, which may historically have developed different laws to aid their development, enforcing patents laws in line with global practice.

6) Internationally, there are international treaty procedures, such as the procedures under the European Patent Convention (EPC) [constituting the European Patent Organisation (EPOrg)], that centralize some portion of the filing and examination procedure. Similar arrangements exist among the member states of ARIPO and OAPI, the analogous treaties among African countries, and the nine CIS member states that have formed the Eurasian Patent Organization.

7) A key international convention relating to patents is the Paris Convention for the Protection of Industrial Property, initially signed in 1883. The Paris Convention sets out a range of basic rules relating to patents, and although the convention does not have direct legal effect in all national jurisdictions, the principles of the convention are incorporated into all notable current patent systems.

8) The Paris Convention set a minimum patent protection of 20 years, but the most significant aspect of the convention is the provision of the right to claim priority: filing an application in any one member state of the Paris Convention preserves the right for one year to file in any other member state, and receive the benefit of the original filing date.

9) Another key treaty is the Patent Cooperation Treaty (PCT), administered by the World Intellectual Property Organization (WIPO) and covering more than 150 countries. The Patent Cooperation Treaty provides a unified procedure for filing patent applications to protect inventions in each of its contracting states along with giving owners a 30 month priority for applications as opposed to the standard 12 the Paris Convention granted. A patent application filed under the PCT is called an international application, or PCT application.

The steps for PCT applications are as follows:

1. Filing the PCT patent application
  2. Examination during the international phase
  3. Examination during the national phase
- Alongside these international agreements for patents there was the Patent Law Treaty (PLT).

This treaty standardized the filing date requirements, standardized the application and forms, allows for electronic communication and filing, and avoids unintentional loss of rights, and simplifies patent office procedures. Sometimes, nations grant others, other than the patent owner, permissions to

create a patented product based on different situations that align with public policy or public interest. These may include compulsory licenses, scientific research, and in transit in country.

## OWNERSHIP

1) Most countries, both natural persons and corporate entities may apply for a patent. In the United States, however, only the inventor(s) may apply for a patent although it may be assigned to a corporate entity subsequently and inventors may be required to assign inventions to their employers under an employment contract.

2) Most European countries, ownership of an invention may pass from the inventor to their employer by rule of law if the invention was made in the course of the inventor's normal or specifically assigned employment duties, where an invention might reasonably be expected to result from carrying out those duties, or if the inventor had a special obligation to further the interests of the employer's company.

3) Applications by artificial intelligence systems, such as DABUS, have been rejected in the U.S., the U.K., and at the European Patent Office on the grounds they are not natural persons.

4) inventors, their successors or their assignees become the proprietors of the patent when and if it is granted. If a patent is granted to more than one

proprietor, the laws of the country in question and any agreement between the proprietors may affect the extent to which each proprietor can exploit the patent. For example, in some countries, each proprietor may freely license or assign their rights in the patent to another person while the law in other countries prohibits such actions without the permission of the other proprietor(s).

5) The ability to assign ownership rights increases the liquidity of a patent as property. Inventors can obtain patents and then sell them to third Parties. The third parties then own the patents and have the same rights to prevent others from exploiting the claimed inventions,

as if they had originally made the inventions themselves.

## OFFICES

Patent offices in India

Main Patent office in India: Kolkata

Branches of Patent offices in India:

1. Mumbai
2. Delhi
3. Chennai

- 1) The patent office comes under the ministry of commerce and industry.
- 2) Each branch office have their own territory and accept applications forms from area lying within its geographical limits.

## TYPES OF APPLICATIONS OF PATENTS

The Types of Application of Patent :

1. Ordinary Patent Application
2. Patent Of Addition Application
3. Convention Application
4. National Phase Application

1. Ordinary patent application:

An ordinary application is a type of patent application filed at the Patent Office in which there is no priority is claimed or an application that is made without any reference to any other application under process in the office is called an ordinary application.

2. Patent of Addition Application:

A patent of addition is an application made for a patent in respect of improvement or modification of the invention described or disclosed in the main application for which the patentee has already applied for or has obtained a patent.

3. Convention Application:

An application for patent filed in the Patent Office, claiming a priority date based on the same or substantially similar application filed in one or more of the convention countries, is called a

convention application.

4. National Phase Application:

after the end of the PCT procedure, usually at 30 months from the earliest filing date of your initial application, from which you claim priority, you start to pursue the grant of your patents directly before the national (or regional) patent Offices of the countries in which you want to obtain them.

## PROCESS OF APPLICATION

1. Filling of patent application:

Patent Documents can be filed either through online or at the patent office in respective jurisdiction: Kolkata, Delhi, Mumbai, and Chennai.

A) Physical Filing [at the counter of a jurisdictional patent office]

1. Covering indicating the list of documents;
2. Application for Grant of Patent in Form 1 in duplicate [section 7, 54 & 135 and Rule 20(1)];
3. Provisional/Complete specification in Form 2 in duplicate [Section 10; Rule 13]; comprising
  - Description
  - Claims
  - Drawing (if any)
  - Abstract
4. Statement and Undertaking in Form 3 in duplicate [Section 8; Rule 12];
5. Power of Attorney in Form 26 (in case a patent agent is assigned) (in original) (Rule 3.3 (a)(ii));
6. Declaration of Inventorship in Form 5 in duplicate (only where applicant and inventor[s] are different); (Rule 4.17);
7. Form 28 (in case the applicant is a small entity) (Rule 2 (fa) & 7);
8. Certified true copy of the Priority document (in case priority is claimed); and
9. Requisite Statutory fees (cheque / DD) Statutory Fees [Physical Filing]:

Particular	Natural Person (INR)	Small Entity (INR)	Large Entity (INR)
For filing patent application	1,760	4,400	8,800
For each sheet of specification in addition to 30	176	440	880
For each claim in addition to 10 claims	352	880	1,760

**B) Online Filing [By using E-Filing Portal of the Patent Office]**

**a) pre-requisite**

1. Login ID & Password;
2. Digital Signature [Class III issued from (n) Code Solutions or Safe Script or e-Mudhra]; and
3. Valid Debit/Credit/Net Banking facility for transaction.

**b) E-Filing Procedure**

1. Form 1 is generated through portal with field specific information to be fed by filer;
2. Provisional/Complete specification in Form 2 (in pdf format); comprising.

**Description**

**Claims**

**Abstract**

3. Drawings (in pdf format);
4. Figure of Abstract (in jpg format);
5. Statement and Undertaking in Form 3 (in pdf format);
6. Power of Attorney in Form 26 (in case a patent agent is assigned) (in pdf format), original needs to be submitted before Indian Patent Office);
7. Declaration of Inventorship in Form 5 (in pdf format);
8. Form 28 (in case the applicant is a small entity);
9. Letter/documentary proof to prove the small entity status (if any);
10. Certified true copy of the Priority document (in case priority is claimed) in original, to be submitted within 6 months of filing the Application;
11. Priority Details; and
12. Requisite Statutory fees (through

Particular	Natural Person (INR)	Small Entity (INR)	Large Entity (INR)
For filing patent application	1,600	4,000	8,000
For each sheet of specification in addition to 30	160	400	800
For each claim in addition to 10 claims	320	800	1,600

payment gateway).

**Statutory Fees:**

**2.Publication :**

[Rule 24] A patent application will be published automatically in the official journal after expiry of 18 months from date of filing or date of priority of the application containing title, abstract, application no. and name of applicant[s] and inventor[s].

Request for early publication: [Rule 22A] To expedite the process of grant of patent a request for publication under Section 11(A)(2) can be made in Form 9 any time after filing of the application. Upon such request the application will be published in one month from the date of such request.

**Statutory Fees:**

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Physical Filing	2,750	6,875	13,750
E-Filing	2,500	6,250	12,500

**3.Opposition(if any):**

**A) Pre grant Opposition**

[Section 25(1)] Upon publication but before the grant of patent, any person, based on different grounds may file a pre grant opposition, in writing, represent by way of opposition to the Controller against the grant of patent. However the opposition will be taken by the patent office only after the filing of Request for Examination.

**Time limit:**

May be filed within 3 months from the date of publication of the application [sec 25(1); rule 55(1)] OR Before the grant of patent, whichever is later.

**Fee: NO FEE**

Form and Content [Rule 55(1)]: Form 7A along with the representation comprise of following particulars:

1. Statement regarding opposition;
2. Evidence regarding opposition; (if

Office	Territorial Jurisdiction
Patent Office Branch, Mumbai	The States of Maharashtra, Gujarat, Madhya Pradesh and Goa, Daman & Diu & Dadar & Nagar Haveli
Patent Office Branch, Chennai	The States of Andhra Pradesh, Kerala Tamil Nadu, Mysore and Pondicherry, Laccadive, Minicoy and Amindivi Islands
Patent Office Branch, New Delhi	States of Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan and Uttar Pradesh, Chandigarh and Delhi
Patent Office (Head), Kolkata	West Bengal and other rest part of India.

any)  
 3. Request for hearing (Optional)

**Procedure:**

1. The Controller will consider such Representation only when a request for examination has been filed.
2. The Controller shall forward the Representation to the applicant.
3. On the basis of notice of filing the Representation, the applicant shall file his Statement and Evidence (if any) in support of his application within three months from the date of the notice.
4. Either party may request the Controller to give them a chance to be heard. After considering the representation of the opponent and the response of the applicant and their supporting evidences (if any) and after hearing both the parties (if hearing is requested), the Controller shall proceed further simultaneously either rejecting the representation and granting the patent or accepting the representation and refusing the grant of patent. Ordinarily within one month from the completion of the above proceedings. [Rule 55(6)]

**Appeal:**

An applicant can go for an appeal against the decision of the Controller. Such an appeal can be filed before the Intellectual Property Appellate Board (IPAB).

**B) Post grant Opposition**

[Section 25(2)] Upon grant of patent any interested person, based on different grounds may file a post

grant opposition in Form 7 to the Controller against the grant of patent.

**Time limit:**

[Section 25(2)] Within one year after the grant of a patent.

**Form and Content:**

1. Notice of opposition shall be in Form 7 (in duplicate) [Rule 55A];
2. Written Statement setting out nature of the interest (in duplicate) [Rule 57];
3. Evidence regarding opposition;
4. Statutory fees;
5. Request for hearing (Optional).

**Statutory Fees:**

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Physical Filing	2,640	6,600	13,200
E-Filing	2,400	6,000	12,000

**Procedure:**

1. On receipt of notice of opposition, the Controller shall, by order, constitute an Opposition Board consisting of three members and nominate one of the members as the Chairman of the Board;
2. A copy of Statement and Evidence together with Notice of Opposition shall be delivered to the applicant;
3. If the applicant desires to contest the opposition, he shall leave a Reply Statement setting out fully the grounds upon which the opposition is contested and evidence within a period of two months from the date of receipt of the copy of statement and opponent's evidence.
4. The opponent may within three months from the date of receipt of a copy of applicant's reply; leave Evidence in Reply strictly confined to matters in the applicant's reply and shall deliver to the applicant a copy of such evidence.
5. The Opposition Board shall conduct the examination of the notice of opposition along with documents filed above and submit a Report with reasons on each ground taken in the notice of opposition with its joint recommendation within three months from the date on which the document were forwarded to them.

**Hearing: [Rule 62]**

1. Controller may fix a date and time for the hearing of the opposition according to the rules.
2. Upon the receipt of the notice of hearing either party to the proceeding is desirous to be heard, he shall inform the Controller by a notice along with the prescribed fee;
3. [Rule 63] If the applicant notifies the Controller that he does not desire to proceed with the application after notice of opposition is given, the Controller, depending upon the merits of the case, may decide whether costs should be awarded to the opponent.

**Appeal:**

An applicant can go for an appeal against the decision of the Controller. Such an appeal can be filed before the Intellectual Property Appellate Board (IPAB).

4. Request for examination:

No Request, No Grant In Form 18 [sec 11B; rules 20(4)(ii) and 24B(1)(i)] (in duplicate when filed in physical copy) within period of 48 months from date of filing or priority, whichever is earlier.

Statutory Fees:

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Physical Filing	4,400	11,000	22,000
E-Filing	4,000	10,000	20,000

Express Request:

The Express Request can only be made for National Phase Applications under rule 20(4)(ii)

Statutory Fees:

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Physical Filing	6,160	15,400	30,800
E-Filing	5,600	14,000	28,000

5. First examination report:

[Section 12; 24B(3)] After proper examination of patent application on the criteria of novelty, inventiveness and industrial application, the Patent Examiner will issue a First Examination Report (FER) and will send along with the application and

specification to the applicant or authorized agent.

6. Amendment of objections by the applicant:

The issued FER give an opportunity to the applicant to file a response and overcome the objections raised by the Examiner.

Time limit: [Rule 24B(4)(iii)] Within 12 months from the date on which the First Examination Report has been issued to the applicant.

In case of the unjustified response, the Controller has power to refuse the grant of patent or amended claim[s] or make order for the Division of Application [Section 15, 16].

7. Grant of patent:

The Controller will grant the application upon satisfactory response by the applicant to overcome all of the objections raised in the FER. On the grant

of a patent, the application will be accorded a number, called serial number in the series of numbers accorded to patents under the Indian Patents Act, 1970 (39 of 1970).

8. Renewal fees:

1. To keep a patent in force, the renewal fees shall be payable at the expiration of the second year from the date of the patent or of any succeeding year and the same shall be remitted to the patent office before the expiration of the second or the succeeding year.

2. While paying the renewal fee, the number and date of the patent concerned and the year in respect of which the fee is paid shall be quoted.

3. The annual renewal fees payable in respect of two or more years may be paid in advance.

Statutory Fees (online mode\*):

\* 10% surcharge applicable in case of

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Before the expiration of 2 <sup>nd</sup> year from the date of patent in respect of 3 <sup>rd</sup> -5 <sup>th</sup> years [Each Year]	500	2,000	4,000
Before the expiration of 6 <sup>th</sup> year from the date of patent in respect of 7 <sup>th</sup> -10 <sup>th</sup> years [Each Year]	2,400	6,000	12,000
Before the expiration of 10 <sup>th</sup> year from the date of patent in respect of 11 <sup>th</sup> -15 <sup>th</sup> years [Each Year]	4,800	12,000	24,000
Before the expiration of 15 <sup>th</sup> year from the date of patent in respect of 16 <sup>th</sup> -20 <sup>th</sup> year	8,000	20,000	40,000

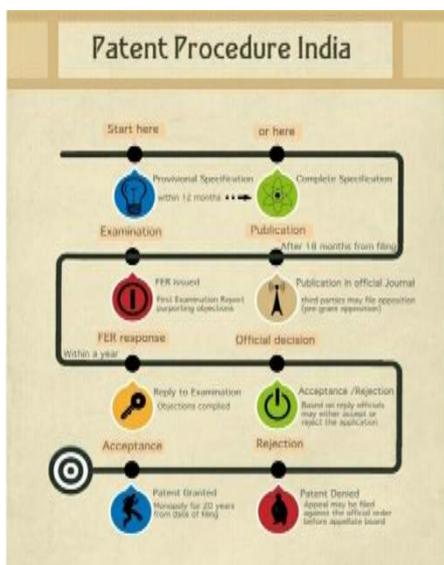
Physical Filing.

The period for payment of renewal fees may be extended to a period but not more than six months if the request for extension in Form 4 with fees.

Statutory:

Particular	Natural person (INR)	Small Entity (INR)	Large Entity (INR)
Physical Filing (per month)	528	1,320	2,640
E-Filing (per month)	480	1,200	2,400

Fig: Patent process in India



### COST

1) The costs of preparing and filing a patent application, prosecuting it until grant and maintaining the patent vary from one jurisdiction to another, and may also be dependent upon the type and complexity of the invention, and on the type of patent.

2) The European Patent Office estimated in 2005 that the average cost of obtaining a European patent (via a Euro-direct application, i.e. not based on a PCT application) and maintaining the patent for a 10-year term was around €32,000. Since the London Agreement entered into force on May 1, 2008, this estimation is however no longer up-to-date, since fewer translations are required.

3) In the United States, in 2000 the cost of obtaining a patent (patent prosecution) was estimated to be from \$10,000 to \$30,000 per patent. When patent litigation is involved (which in year 1999 happened in about 1,600 cases compared to 153,000 patents issued in the same year, costs increase significantly: although 95% of patent cases are settled out of court, that reach the courts have legal costs on the order of a million dollars per case, not including associated business costs.

### TYPES OF PATENTS

Following are the types of patents:

1. Biological patent: Biological patent covers inventions in the filed of biology.
  2. Business method patent: It is a patent in which disclose and claim new methods of doing business.
  3. Chemical patents: Chemical patents covers inventions in the chemicals and pharmaceutical industries.
  4. Essential patents: An essential patent or standard-essential patent is a patent that claims an invention that must be used to comply with a technical standard.
  5. Insurance patent: Patent insurance is a form of intellectual property insurance. Patent insurance is meant to protect you, as the patent holder, in case someone infringes upon your patent and causes you a business loss. Patent infringement insurance is more of a liability policy for manufacturers.
  6. Medical patent: It includes unique inventions in physical items or processes with medical process.
  7. Software patent: This patent protect the inventions of software's .
- Etc...

### PATENT COURTS

European Union

- Unified Patent Court, a planned court for patent litigation in the European Union

Germany

- Federal Patent Court of Germany (German: Bundespatentgericht or BPatG)

Japan  
 Intellectual Property High Court

Switzerland  
 Federal Patent Court of Switzerland

United Kingdom

- Patents County Court
- Patents Court

United States

- United States Court of Appeals for the Federal Circuit (exercising jurisdiction formerly vested in the United States

Court of Customs and Patent Appeals)

### **PATENT RELATED ORGANIZATIONS**

International, general organizations

- World Intellectual Property Organization (WIPO)
- African Regional Intellectual Property Organization (ARIPO)
- Organisation Africaine de la Propriété Intellectuelle (OAPI) or African Intellectual Property Organization. Regional , patent related organizations
- Eurasian Patent Organization (EAPO)
- European Patent Organisation (EPO or EPOrg)
- Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC)

Defunct organizations

- International Patent Institute (IIB)
- The United States Patent Association
- United International Bureaux for the Protection of Intellectual Property (BIRPI)

Intellectual property organization

### **PATENT RELATED BUSINESS CONCEPTS**

- Patent cliff – phenomena of patent expiration dates and an abrupt drop in sales that follows for a group of products capturing high percentage of a market. Usually, these phenomena are noticed when they affect blockbuster products. A blockbuster product in the pharmaceutical industry, for example, is defined as a product with sales exceeding US\$1 billion per year.
- Patent family – patents for a single invention in multiple countries.
- Triadic patent – series of corresponding patents filed at the European Patent Office (EPO), the United States Patent and Trademark Office (USPTO) and the Japan Patent Office (JPO), for the same invention, by the same applicant or

inventor. Triadic patents form a special type of patent family.

- Patent holding company – company that holds patents on behalf of one or more other companies but does not necessarily manufacture products or supply services based upon the patents held.

- Patent portfolio – collection of patents owned by a single entity, such as an individual or corporation. The patents may be related or unrelated. Patent applications may also be regarded as included in a patent portfolio.

### **EXAMPLES OF PATENTS**

Example.no.1

Patent no.: 214054

Patent for : Pharmaceutical composition comprising process of vaginal Suppository dosage form and process of preparation.

Patentee:

LINCOL PHARMACEUTICALS  
LIMITED

Date of Grant: 25 Jan 2008.

Example no.2

Patent no.: 209039

Patent for: A mouth melting pharmaceutical dosage film comprising medicaments And process of preparation.

Patentee: LINCOLN  
PHARMACEUTICAL LIMITED

Date of Grant: 17 Aug 2007.

Example no.3

Patent no.: 257991

Patent for: Pharmaceutical composition containing taurine and race-methionine For the treatment of alcoholism.

Patentee: ZOTA HEALTH CARE LTD

Date of Grant: 26 Nov 2013

Example no.4

Design No.: 270001

Patent for design of: Hospital bed  
Designer: MR. MOHASIN ALI KHAN.

Date of Grant: 2 March 2015

Example no. 5

Patent no: 184,454

Patent for: Druggists shelf bottles

Patentee: E. L. WIITTE.

Date of Grant: 14 Nov 1876

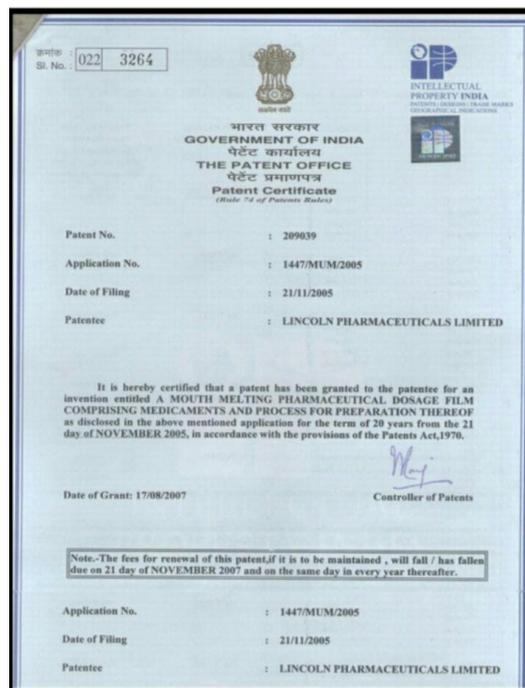
Example no.6

Patent no.: 357,809

Patent for: Design of Metallic  
Thermometer

Patentee: E. W. UPTON.

Date of Grant: 9 Aug 1887



SI. No.: 022 3264

भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
Patent Certificate  
(Rule 74 of Patents Rules)

INTELLECTUAL PROPERTY INDIA  
PATENT, TRADE MARKS & DESIGN

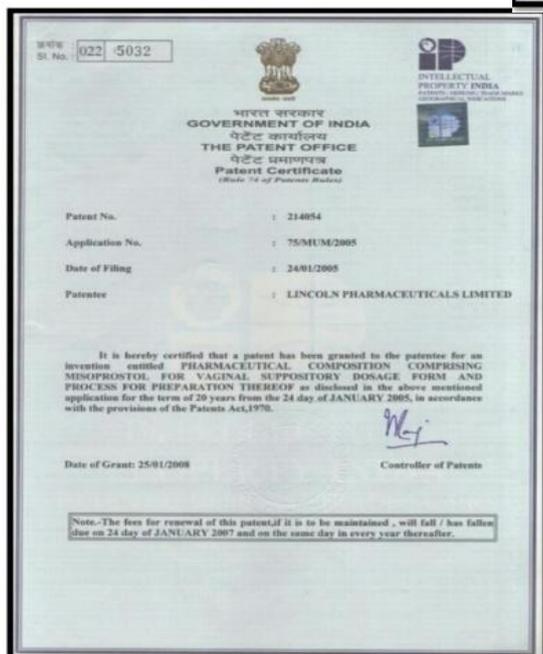
Patent No. : 209939  
Application No. : 1447/MUM/2005  
Date of Filing : 21/11/2005  
Patentee : LINCOLN PHARMACEUTICALS LIMITED

It is hereby certified that a patent has been granted to the patentee for an invention entitled A MOUTH MELTING PHARMACEUTICAL DOSAGE FORM COMPRISING MEDICAMENTS AND PROCESS FOR PREPARATION THEREOF as disclosed in the above mentioned application for the term of 20 years from the 21 day of NOVEMBER 2005, in accordance with the provisions of the Patents Act,1970.

Date of Grant: 17/08/2007  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 21 day of NOVEMBER 2007 and on the same day in every year thereafter.

Application No. : 1447/MUM/2005  
Date of Filing : 21/11/2005  
Patentee : LINCOLN PHARMACEUTICALS LIMITED



SI. No.: 022 5032

भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
Patent Certificate  
(Rule 74 of Patents Rules)

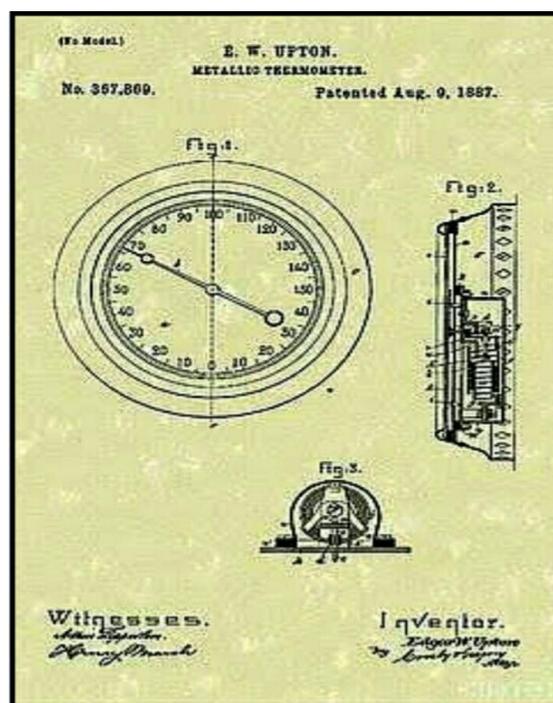
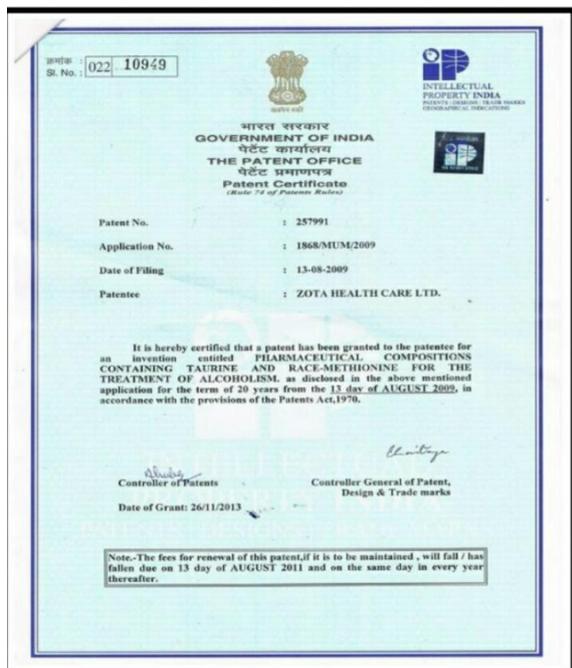
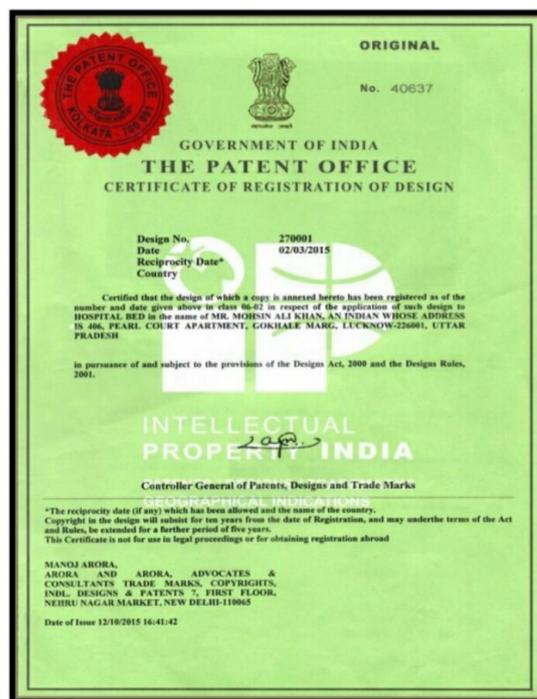
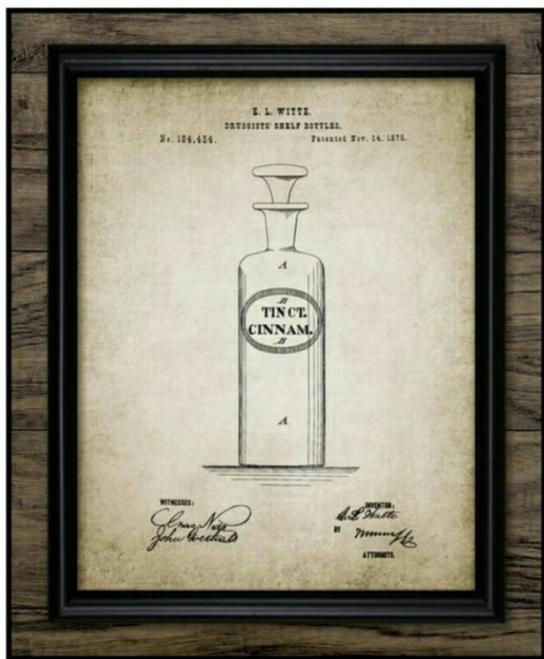
INTELLECTUAL PROPERTY INDIA  
PATENT, TRADE MARKS & DESIGN

Patent No. : 214054  
Application No. : 75/MUM/2005  
Date of Filing : 24/01/2005  
Patentee : LINCOLN PHARMACEUTICALS LIMITED

It is hereby certified that a patent has been granted to the patentee for an invention entitled PHARMACEUTICAL COMPOSITION COMPRISING MESOPROSTOL FOR VAGINAL SUPPOSITORY DOSAGE FORM AND PROCESS FOR PREPARATION THEREOF as disclosed in the above mentioned application for the term of 20 years from the 24 day of JANUARY 2005, in accordance with the provisions of the Patents Act,1970.

Date of Grant: 25/01/2008  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24 day of JANUARY 2007 and on the same day in every year thereafter.



## CONCLUSION

- It maintain continuous stream of new ideas and experimentation so it directly point out at growth of a country.
- The burden of duplication of the invention is avoided : it save further spending of time and money.
- Any interested person may buy the patent , wherein the patent becomes a nice tool for the transfer of technology.
- Patent provides protection to the patentee, wherein ,if the patent is infringed , the patentee may seek the legal remedies. Thus patent is a formof social security to an inventor.
- Once, the life of the patent is over, any person may freely without paying any royalty to the patentee, may enjoy the invention.

## REFRANCES

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9. Brodie, B. B.; Axelrod, J. (1948), "The estimation of acetanilide and its metabolic products, aniline, N-acetyl p-aminophenol and p-aminophenol (free and total conjugated) in biological fluids

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11.^ Lester, D.; Greenberg, L. A. (1947), "Metabolic fate of acetanilide and other aniline derivatives.II.Major metabolites of acetanilide in the blood,"*J.Pharmacol . Exp. There.*, 94 (1) :68,PMID 20241897.

12.^ Brodie, B. B.; Axelrod, J. (1948), "The fate of acetanilide in man" (PDF), *J. Pharmacol. Exp. Ther.*, 94 (1): 29–38, PMID 18885611

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