





Handbook for Patent Filing in India

Created for Indian iGEM Teams



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1. Introduction

1.1 Intellectual Property

According to the World Intellectual Property Rights Organization, "Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, and images used in commerce." [3]

It includes the following:

- Copyright
- Industrial Design
- Trademark
- Patent

Patents, Designs, and Trademarks together are referred to as Industrial Property^[1]. These forms of Industrial Property, along with Copyright are known as Intellectual Property.^[1]

According to Trade Related Aspects of Intellectual Property Rights (TRIPS), there are

- Copyright and related rights
- Trademarks
- Geographical Indications
- Industrial Designs
- Patents
- Layout-Designs (topographies) of Integrated Circuits
- Protection of Undisclosed Information (Trade Secret)

The Intellectual Property (IP) when protected in law, becomes Intellectual property Rights (IPR), which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish.

The protection of IP is governed by the national laws. This document pertains to the IPR laws in India.

1.1.1 Copyright

Copyright is a form of IP protection granted under the Copyrights Act 1957 to the creators of original works of authorship such as literary works, dramatic, musical and artistic works, cinematographic films and sound recordings. It protects the expression of ideas rather than the ideas themselves. [4] According to the Berne Convention, copyright protection is obtained automatically without the need for registration or other formalities. Most countries, nonetheless, have a system in place to allow for the voluntary registration of their work to facilitate enforcement of copyright laws.

1.1.2 Industrial Designs

According to The Designs Act, 2000, "An Industrial design recognizes the creation of new and original features of shape, configuration, surface pattern, ornamentations and composition of lines or colours applied to articles which in the finished state appeal to and are judged solely by the eye." [5]

1.1.3 Trademarks

A trademark includes name, device, label, signature, word, shape of goods, packaging or combination of colors or any combination thereof, used by one undertaking on goods or services or other articles of trade to distinguish it from similar products.^[6]

1.1.4 Patents

A patent is an exclusive right granted for an invention by the statutes and is governed by the national laws. The patent rights are granted for products or processes which are novel, involve an inventive step and are capable of industrial application. The patent rights gives its owner the legal right to exclude others from making, using, or selling an invention without the patent holder's consent for a limited period of time in exchange for public disclosure of the invention, subject to certain exclusions under The Patent Act 1970.

2. Patents

The fundamental goal of the patent system is to encourage the dissemination of technical knowledge. The patent system achieves this goal through a quid pro quo system, i.e. in exchange for the right to exclude others, the inventor must fully disclose the technical details of the invention. This disclosure has a relatively uniform structure, in the form of a techno-legal document (provisional or complete specification). This enables an experienced reader to abstract information from these documents with relative ease, hence serving as a reservoir of knowledge.

2.1General Structure of a Patent Document

An application for a patent must be accompanied by either the provisional specification or the complete specification. A provisional specification (if filed when the invention is not fully developed) is filed to secure the "First to File" date. The provisional specification comprises Field, Background, Object and Summary of the invention.

Provisional specification must be followed by filing of complete specification within twelve months from the date of filing of the provisional specification. Section 10 of the Patents Act 1970 prescribes the specific structure of provisional / complete specification. Complete Specification is a techno-legal document which fully and particularly describes the invention and discloses the best method of replicating the invention.

As a general rule, patent documents contain an abstract, field of the invention, background of the invention, object and summary of the invention, brief description of drawings, detailed description of the invention, and claims.^[1]

2.1.1 Abstract

The abstract of a patent gives the essence of the invention. It should give the reader an idea of the invention so that they can decide whether they need to read the entire patent document

2.1.2 Field

The field of the invention refers broadly to the area of technology of the patent.

2.1.3 Background

This part should generally indicate the existing status of technology in the field of invention with reference to developments in the field including patents and pending patent applications in the specific art and other non-patent disclosures.

2.1.4 Object and Summary

The purpose of this part is to clearly bring out the objectives to be achieved by the invention. It should clearly mention the technical problems associated with the existing technology and the solution for that, bringing out the differences between the claimed invention and the prior art. The solution sought by the invention should be clearly brought out as object(s) of inventions. The summary should clearly and succinctly indicate the technical field to which the invention belongs, technical advancement brought about by the invention and primary use of the invention excluding any speculative use. [9]

2.1.5 Brief description of Drawings

The drawings pictorially describe the invention. They can be supplied with the provisional or the complete specification. Each drawing must be accompanied by a description. The drawings are provided at the end of the specification

2.1.6 Detailed Description

It gives the invention's background and highlights differences between existing technology and what the invention contributes as a step forward in the field [1]

2.1.7 Claims

They define the monopoly sought or granted^[1]. They are of two types: Independent and Dependent. (Please refer to the Glossary of Intellectual Property Terms for definitions)

One of the important aspects of a patent application is that it should have "unity of invention" i.e. a single patent application should claim only one invention. Therefore, the claims must relate to a single invention, or to a group

of inventions linked so as to form a single inventive concept and must be fairly supported in the description of the invention.

2.2A gist of the Patent Policy in India

India follows a "First to file" patent policy, which implies that the right to a patent for an invention is determined by the first person to file for a patent to protect it^[2].

Although patent laws protect the patentee's privileges, the rights conferred by a patent are subject to certain conditions so that the Central Government can smoothly conduct its welfare schemes in public interest. The conditions are^[1]:

- Any patented product (machine, apparatus, article, etc.) or process may be imported or made or used by the Government.
- Any person may use any patented product or process for experiment or research, including instructing pupils.
- The Government may import any proprietary medicine or drug for its own use, distribute the medicine or drug to Government maintained (or maintained by someone on its behalf) hospitals or medical institutions, or any other hospitals and medical institutions based on the public service that they render.

The use of patented inventions will not constitute an infringement of the patentee's rights in the circumstances mentioned above.

2.3 Types of Patent Applications

Under the Patents Act, 1970, the following types of patent applications can be filed^[1]:

- Ordinary patent application
- Application for patent for addition on improvement or modification of an invention for which a patent is filed or granted
- Convention patent application filed under section 135 of the Act
- National phase patent application filed under PCT (Patent Cooperation Treaty)

2.3.1 What can be Patented

A patent is granted for an invention. According to section 2(1)(j) of the Patents Act, 1970, 'invention' means a new product or process involving an

inventive step and capable of industrial application.^[7] The three basic criteria of patentability are:

- 1. Novelty
- 2. Inventive step
- 3. Industrial application

2.3.2 What cannot be Patented

The Patents Act, 1970 (hereafter referred to as the Act) under Section 3 enlists the following entities that are not considered inventions and hence are not patentable under this Act^[1]:

- 1. any invention which claims anything contrary to well-established laws
- 2. any invention which, if used, would be against the law or morality
- 3. discovery of a scientific principle or an abstract theory
- 4. discovery of a new property or alternative use of a known substance
- 5. a substance obtained by mixture resulting in the aggregation of properties
- 6. rearrangement of known devices working independently of each other
- 7. a method for increasing the efficiency or the restoration of a machine
- 8. a method of agriculture or horticulture
- 9. any process for the treatment of humans, animals or plants

Kindly refer to the Act for further details.

Inventions relating to Atomic Energy falling within section 20(1) of the Atomic Energy Act, 1962, are also not patentable^{[1],[7]}.

2.4 Patent Opposition

Under section 25 of the Act, a third party (individual or group) or the Government may challenge the patent application, either pre- or post-grant.

2.4.1 Pre-grant Opposition

Pre-grant opposition ensures that the patent application is valid before they are granted to the applicant. Pre-grant opposition can be made on the following grounds^[9]:

- 1. Wrongfully obtaining the invention
- 2. anticipation by prior publication
- 3. anticipation by prior date, Prior claiming in India
- 4. Prior public knowledge or public use in India

- 5. Obviousness and lack of inventive step
- 6. non patentable subject matter
- 7. insufficiency of description of the invention
- 8. non-disclosure of information as per the requirement or providing materially false information by an applicant
- Patent application not filed within 12 months of filing the first application in a convention country
- 10.nondisclosure/ wrong mention of source of biological material
- 11. Invention anticipated with regard to traditional knowledge of any community, anywhere in the world.

2.4.2 Post-grant Opposition

A post-grant opposition may be filed at any time after the grant of a patent but before a period of one year from the date of expiry of the patent. The grounds for a post-grant opposition are similar to that of a pre-grant opposition^[9].

2.5 Patent Revocation

A patent can be revoked at any point of time after the grant of patent under Section 64 if^{[1], [7]}:

- 1. a claim for the invention as stated in the complete specification has been made in an earlier patent
- 2. the patent was granted to a person not entitled under the Act
- 3. the patent was obtained wrongfully
- 4. the subject of a claim in the complete specification is not an invention under the Act
- 5. the claims made for the invention in the complete specification are not new and they were publicly known or used in India before filing the patent
- 6. the claims made in the complete specification are apparent or do not involve any inventive step
- 7. the description of the invention is inaccurate or incomplete and does not disclose the best method of performing it
- 8. the subject of any claim in the complete specification is not patentable under the Act
- 9. the complete specification does not disclose or wrongly mentions the source of the material

10.the claims made were anticipated based on publicly available information\

Besides, a patent may also be revoked in public interest.

The Patents Act, 1970, elucidates the conditions for revocation. Kindly refer to the same for further details.

2.6 Patent Infringement

Patent infringement refers to the violation of the exclusive rights/privileges of the patent holder. In essence, it constitutes making, selling, offering for sale, using without appropriate authorization, or authorizing the product for use or the process from which it was obtained^[8].

If any person starts using the invention after the term of the patent has expired, he/she is not liable for infringement^[1]. Research Institutes or Organizations are allowed to use patents strictly for research purposes without any liability for infringement^[1].

3. Patent Search

3.1 Importance of Patent Search

- To avoid reinventing the wheel
- To avoid infringement of others' patents
- To learn about recent developments in various fields
- To enrich one's innovation and distinguish his/her work from existing literature

3.2 Types of Patent Search

Patent searching can be classified into two different types:

- 1. Prior-Art search
- 2. Freedom-to-Operate search

3.2.1 Prior-Art Search

While conducting a prior art search, one is looking for any piece of available information that can affect patentability. It can be considered as patentability or invalidity search. Prior art search is usually conducted before the commencement of invention or before filing a patent application. The prior art search is conducted on worldwide databases and includes search for existing patent and non-patent public disclosures.

3.2.2 Freedom-to-Operate Search

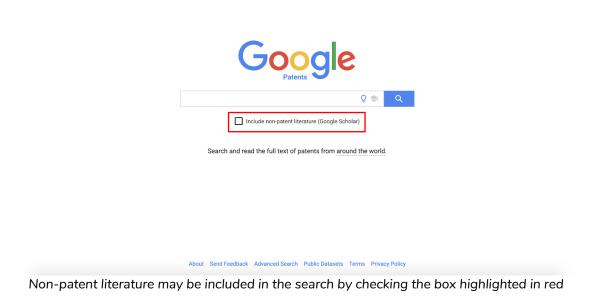
While conducting a Freedom-to-Operate search, one is looking for any existing valid patents that his/her invention may infringe upon. It can be considered as an infringement search^[2]. FTO refers to whether it's commercially 'safe' to make or sell a product in the country in which one wishes to do so, without infringing existing third-party rights. Hence, the FTO search is usually conducted at the time of commercialization of a product.

3.3 Software for Patent Search

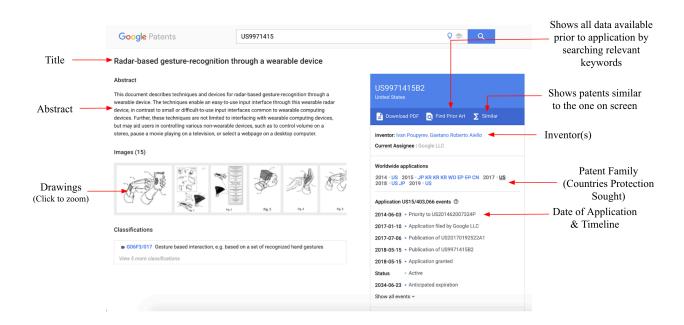
Although many software are available for patent search, this guide will exclusively focus on Google Patents and provide a brief tutorial on this software.

3.3.1 Google Patents: A Tutorial

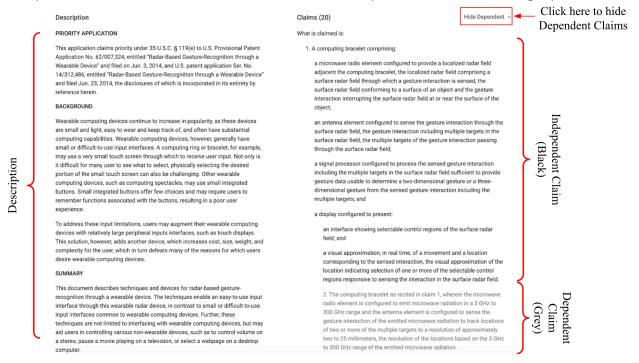
Go to patents.google.com



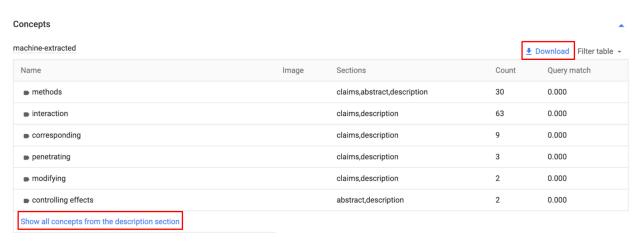
If the patent number is known, enter the same in the search bar. (For e.g. US9971415). Here is a breakdown of all the components on screen



Scroll Down to see the description and claims of this patent. Observe that all independent claims are in black text while all the dependent claims are in gray text.



Scroll Down to the end of the page. You can view and download all the concepts listed in the description section of this patent here.



Data provided by IFI CLAIMS Patent Services

This is a basic overview of navigating through a patent on Google Patents.

There are various search methods on google patents to conduct a literature survey.

3.3.2 Types of Search Methods

Listed below are a few methods of searching for patents while conducting a literature search.

a. A Quick and Dirty Search

Open Google Patents and simply type the technology you are looking for as a phrase in the box. You may try a few examples to see how it works. Although it may not show you precisely what you are looking for, it does show fairly relevant data.

Text searching may be a little tricky due to a lot of patent jargon.

Spring = "Means of Energy Storage"

Ball Bearings = "plurality of balls"

Drone = "Unmanned aerial vehicle" or "Remote-controlled aircraft"

b. <u>Using Basic Operators</u>

Retrieves documents where either x or y exists
Retrieves documents where both x and y exist
Retrieves documents where x and y are adjacent & in order
Searches these two words, or their plurals and close synonyms

-x -y Retrieves documents not containing either word

3.3.3 Other Operators

a. Wildcard, Truncations

Although Google Patents automatically generates plurals, you can specify wildcard patterns of words to search. Wildcards only work on single, English words. The 'OR' operator separates the top 25 most common matches. The wildcards are:

? (adds zero or one character)
* or \$ (adds zero or more characters)
\$x (adds zero to x characters)

(adds exactly one character)

You can include more than one wildcard symbol per word.

Example: *saccharide? = polysaccharide OR monosaccharide OR...

*cool** = cooling OR coolant OR cooler OR...

b. Proximity Operators

NEAR, NEARx, NEAR/x, /xw Matches maximum of x words away in any order

WITH Matches maximum of 20 words away in any order

SAME Matches maximum of 200 words away in any order

ADJ, ADJx, ADJ/x, +xw Matches maximum of x words away in same order

Example: (safety ADJ/5 belt) NEAR/10 (baby OR child) SAME vehicle

c. Boolean Operators

Google supports full Boolean logic. The default operator is AND with left associativity. This means:

safety OR seat belt is searched as (safety OR seat) AND belt

d. Searching in Title, Abstract, and Claims

TI=(x y) Searches for x y in the title

AB=(x y) Searches for x y in the abstract

CL=(x y) Searches for x y in the claims

3.3.4 Advanced Search

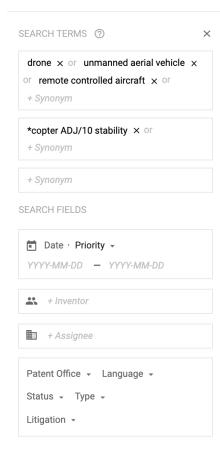
After searching for keywords, you can use the search menu to the left of the screen to customize and make your search more specific using the operators mentioned above.

The search bar allows you to use the OR operator by pressing the TAB key on your keyboard and the AND operator by pressing the ENTER key on your keyboard. It also allows you to filter your search results by priority dates, filing dates, publication dates, inventor names, assignee names, patent office, language, type (design/patent), and litigation. You can also use other operators by typing them out in the search bar.

Example:

((drone) OR (unmanned aerial vehicle) OR (remote-controlled aircraft)) AND (*copter ADJ/10 stability)

The above search is equivalent to the following entry in the Advanced Search Menu:



4. Patent Filing

4.1 Eligibility

Depending upon the patent type, the following people may apply for a patent:

- 1. The inventor, his/her legal representative, his/her assignee either alone or jointly with another person
- 2. For a patent of addition: the applicant of the original patent to which its an addition if the application is pending, or by the registered proprietor of the original patent if it has been granted
- 3. For a convention application: any person who has made the application for the patent in a convention country or by his/her assignee or legal representative

4.2 General Procedure

The procedure for obtaining a patent in India involves the following steps:

- 1. Filing a patent application accompanied by either a provisional or complete specification
- 2. Filing the complete specification within 12 months of the filing date of provisional specification, if a provisional specification accompanied the application
- 3. Publication of patent application in Patent Journal
- 4. Filing of Request for Examination within 48 months of the priority date. Patent applications are not examined unless Request for examination is filed.
- 5. Examination of the application by the patent office and issuance of first examination report (FER)
- 6. Filing reply to FER within 6 months from the date of issuance of FER, extendible by 3 months
- 7. Hearing, if any
- 8. Contesting Pre-grant opposition, if any, to the grant of the patent
- 9. Disposal of patent application by either grant or refusal of patent

4.3 Documents Required

The documents required for filing a patent application are as follows:

- 1. Form 1 (application form) filled in triplicate
- 2. Form 2 (provisional or complete specification in prescribed format) and drawings, if any, in triplicate. In case of a convention application, a complete specification is

mandatory

- 3. Form 3 (undertaking under section 8 of the Act) in triplicate
- 4. Form 5 (declaration of inventorship) in triplicate when necessary
- 5. In case of convention application: certified copies of corresponding documents filed by the applicant in the Patent Office of a convention country
- 6. In case of an application made by virtue of assignment: proof of the right to make the application
- 7. In case of an application made through agent or attorney: duly signed power of attorney
- 8. In case of convention and national phase application, if patent specification or priority document is not in English language, then duly verified English translation thereof

5. Acknowledgements

We would like to thank Dr. Bharti Jain, an advocate and patent agent with over 13 years of experience for her valuable feedback in shaping this patent guide.

6. Disclaimer

This document is **not** a legal guide. This document solely aims to familiarize the reader with the concept of Intellectual Property Rights and is correct to the extent of the author's knowledge. The author disclaims any liability in connection with the use of this information. If you have more specific legal questions, seek consultation with an intellectual property attorney or refer to the Patents Act, 1970, for further details.

7. References

- 1. Law of Patents: Procedure & Practice; Rajiv Jain and Rakhee Biswas
- 2. Glossary of Patent Law Terms
- 3. What is Intellectual Property?
- 4. What is Copyright?
- 5. What is Industrial Design?
- 6. Controller General of Patents, Designs and Trademarks
- 7. Patents Act, 1970
- 8. Patent Infringement
- 9. IP India
- 10. Patent Opposition System In India: An Overview

Glossary of Patent Terms

Term	Definition/Explanation ^{[1],[2]}
С	
Claims	A phrase defining the extent of protection conferred by the patent
Complete Specification	Filed after the provisional specification. The nature of the invention is highlighted in greater detail and does not differ substantially from the provisional specification
Convention Application	An application 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
Convention Country	A country that gives Indian citizens or patent applicants similar privileges as are granted to its own citizens in respect of grant of patents and the protection of patent rights
D	
Dependent Claims	A claim that is dependent on the scope of another claim
F	
Filing date	The date of filing of a patent application in one or more patent offices
First to File	The right to a patent for an invention is determined by the first person to file for a patent
First to Invent	The right to a patent for an invention is determined by the first person to make that invention
Freedom-to-operate	Looking for any existing valid patents that one's invention may infringe upon
1	
Independent Claims	A claim that does not comprise the features of another claim
Innocent Infringer	An infringer who, on account of lack of knowledge of the existence of a patent, infringes the rights of the patentee

International A patent application filed under the Patent Cooperation Treaty,

Application a.k.a PCT application

Inventor The creator of the invention subject to patent

L

License Assigning ownership of the patent to a third party so that

he/she can make, use and sell your invention for a decided

amount of royalty

Ν

Non-obviousness A characteristic that an invention should not be evident to a

"person having ordinary skill in the art"

Novelty A characteristic that an invention is new to the field it relates

to

P

Patent Family Collection of documents protecting same or similar content

Patent Specification Defines the scope of protection conferred by a patent

Priority Date The date on which the invention was first disclosed

Provisional Document in the prescribed format that contains essential

Specification features of the invention

T