PATENT AS A SOURCE OF INFORMATION

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Volume of patent literature being generated in the world: characteristics of patent information; patentability; patentese; tools for searching of patents; objectives and services of organisations like WIPO, ICTREPAT, INPADOC have been described.

Research scientists, engineers, technologists, librarians and information scientists have a tendency to overlook patents as source of information. Perhaps it is because an individual patent appears to be dealing on a very highly specialised area, and written in a repugnant legal language. One has also a feeling that patents are not easily accessible. All these fears are unreal to a certain extent.

Patents are agreements between a national government and inventors whereby an inventor discloses his invention to public in exchange of an exclusive right of exploitation for fixed period (fourteen years in India now).

VOLUME OF PATENTS

The prosperity of a nation is in a way measured or reflected in its patent literature. The examples of Japan and Federal Republic of Germany can be quoted in this connection. There are varying estimates about the volume of patent literature as information sources. The variation of estimates ranges from 5% to 33.3% of total volume of literature. WIPO (1) has recently estimated (1980) that the world volume of patent documents has reached a figure of approximately 27 million, and grows at the rate of one million (nearly 3.7%) per annum. These one million patents relate to some 350,000 different inventions. Approximately 80% of patent documents are published in the following 13 countries.

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India has been publishing since 1912 about 3,000 patents per annum. The present stock of Indian patents is around 150,000 i.e. total stock of Indian patents from 1912 equals approximately only about six months' output of Japan in patent documents.

CHARACTERISTICS OF PATENT INFORMATION

It has become an integral part of scientific and technological information. A survey of patents indicates that they give us not only records of past and present inventions but also point towards future trends of technological progress when projected. The special features of patents have been summarised by Sviridov as below (1).

1. They contain technological information which will not be found in any other source. Independent studies have established that only 5-10% of technological information contained in patents find their way into other sources of information.

2. They disclose information not only on general utility of the invention but also on practical application of the invention in, for example, industry.
We may elaborate the points given above.

1. Only Source of Information

The normal sources of scientific and technical literature, apart from patent literature, are books and periodicals, articles, reports in which many aspects of scientific data and their interpretation are discussed. Most of these refer to accepted data or at least those of general interest. Publishers accept papers of such general nature only because they are operated in commercial environment. An abstruse item of invention or novel idea may not be acceptable to them unless the same is presented in the way they want it. They would want to slash heavily parts of drawings, etc. because they occupy considerable space available to them. But an inventor has to give complete details and examples as far as he can, to establish his claim. There are quite a few voluminous examples which could not have found publishers. The British patent No. 749836 on a computing device has 267 printed pages plus 780 drawings. Another British patent, No. 1,108,800 on a similar subject, had to be bound in three volumes all costing only 25 pence (now 33 pence). Surely these contain enormous information which can't be found anywhere else.

2. Early Information

The fact that an inventor wants to exploit his idea before anyone else, makes the patent document earliest source of information. Sometimes, the invention as it stands is not economical to exploit at a particular stage of time and hence it does not get published in any other source. But once the snag is removed, it becomes economical. Even highly profitable patent specifications are known to have gone without the conventional literary exposition for a long period after the patent was taken.

For example:

Hollerith's patent on punched cards and machines for processing the same was taken in 1889, but no literature was noticed till 1914 (a period of 25 years). To-day punched cards are very important and voluminous literature has come out on the subject.

Secondly, Watson Watt's patent of 1936 on radar, which no doubt was subject to secrecy regulations during war, did not find its way out in conventional document world till much later after the war. But still, a copy of the patent could be bought in the patent office.

A third example could be quoted in Whitt-le's patent on jet engines dated 1930, which did not have its veil removed through literary expositions for a long period.

The other characteristics of patents are self-explanatory as given in the points above.

PATENTABILITY

There are certain terms used in connection with patents. It is necessary to be clear in our mind about the distinctions of these words for clear understanding. These are: knowledge, discovery, invention, and innovation. Whether or not they are patentable is given in the chart. It is generally understood that an invention has to be a novelty in order that it may be patent-
able. Some general tests that the legal authorities perform to determine whether an invention is patentable or not are listed below. Anyone of the positive or negative tests may determine the issue.

**NOT PATENTABLE**

- **KNOWLEDGE** (body of truth)
- **DISCOVERY** (Addition to general stock of human knowledge)

**PATENTABLE**

- **INVENTION** (an idea for achievement of some practical result in the realm of technology)
- **INNOVATION** (Introduction of something new or a new idea to an existing device or invention)

**Novelty Issue**

The point as to whether a patent claim is patentable or not is determined by the novelty of the invention which is highly debatable as mentioned above. Some tests which are usually considered for accepting a patent by the legal authorities can be listed below but they are in no way absolute.

**Positive Tests**

1. Produced new, improved, or unexpected results;
2. Satisfied a long felt need;
3. Solved an outstanding problem;
4. Was contra-indicated in earlier art;
5. Succeeded over unsuccessful efforts of others;
6. Went into extensive use and enjoyed prompt and general adoption;
7. Enjoyed public acquiescence;
8. Had commercial success;
9. Possessed economy, efficiency, or other advantage, including new, improved, unexpected, or contra-indicated results;
10. Turned a halt in the art into progress; and
11. Turned a failure into a success.

**Negative Tests**

1. A change of form, degree, size or location;
2. A substitution of materials or equivalents;
3. A change of proportions or ingredients of a composition;
4. A duplication of parts or elements;
5. An omission of parts of elements with a corresponding omission of functions;
6. An application of an old principle to a new analogous use;
7. The reversal of parts;
8. Simply making old devices adjustable, durable, portable or movable;
9. Conversion of a manual into a mechanical operation;
10. Superior or excellent workmanship; and
11. An aggregation.

Among many things, the invention must not have been disclosed in prior publications or prior patents or must not have been involved in public use or public sale or must not have been a part of prior language or must not have been abandoned.

PATENTSE

Thus the patent laws offer enough scope for legal arguments. We shall not go into any further discussion on these points here, except mentioning that the drafting of patent claim goes into so much repugnant legal language mainly to prove that an invention is patentable. Such a language has been branded as 'patentese'.

A patent issued to Galileo Galilei in Venice in 1594 is an example which reads as follows:

"That by authority of this Council be it granted to Galileo Galilei, that for the space of next twenty years no one but himself or those receiving the right from him may, in this city or in our country, make cause to be made, or, made elsewhere, use of construction for raising water and for irrigating land which, with the motion of a single horse will continuously discharge water through twenty spouts, which are found thereon, invented by him, under penalty of losing the constructions, which are to go to the petitioner, and a fine of 300 Ducats, one third to the magistrate that renders judgement and another third to the assets of our arsenal being however the petitioner obliged to have given to the light within the term of one year, said new form of construction, and that it has not been invented or disclosed by others, and provided that never before the privilege has been granted to others; otherwise let the present want be though never made." We all agree that patent language does not make it an attractive literary piece for reading. It does have an unnecessary unnatural legalistic language. (Note the length of single sentence).

CONTENTS OF PATENTS

A standard lay-out and contents for patents has resulted from the cooperation among patent offices within the patent union committee. International Cooperation in Information Retrieval among Patent Offices (ICIREPAT).

These relate to:

1. Bibliographic data on patent documents (St.9)

These appear at the head of first page of printed patent documents together with identifying codes. The codes are related to priority date, names, application number, and index information:

2. 8 - Up aperture card microforms (ST. 7/A)

Some countries like Federal Republic of Germany, publish their patents in microfilm form. These microfilms contain 8 frames of 16 mm films and are mounted on an aperture card with suitable columns for punching the bibliographic data mentioned earlier (Fig 4).

3. Country codes (ST.3)

Under ICIREPAT system, a two digited country code has been developed, e.g. Afghanistan (AF); Canada (CA); Federal Republic of Germany (DT); India (IN); Indonesia (ID); United Kingdom (GB).

SEARCHING PATENTS

Having accepted the usefulness of the patents how do we search them for information to satisfy our own purposes?


In India, the Patent Office has opened a number of Patent Centres where copies of patents are available for searching.

Similarly, INPADOC gives various similar and more sophisticated services about which we shall deal later.

The Patent Office, Calcutta and its branch offices at Bombay, Madras and New Delhi have the following for the public: (1) All Indian patents kept in classified order; (2) All abridgements of published Indian patents kept in classified order; (3) Name index for the years 1959-74 and the name index published in Gazette of India, Pt. III, Section 2; (4) Serial volumes of published Indian patents; (5) Gazette of India Pt. III, Section 2 containing weekly notifications; and (6) A complete register of patents granted.
A Patent Granted to Galileo Galilei

THE APPLICATION

Most Serene Prince, Your Illustrious Lordship,

Galileo Galilei, have invented a construction for raising water and irrigating land, of small expense and great convenience, which, with the motion of a single horse, will continuously discharge water through twenty spouts which are fixed therein.

I desire now to have it patented, but if you permit me to patent this invention, which has not been discovered by me with great labor and much expense, be made common to everybody, I humbly petition Your Serene Highness not to suffer me to lose the reputation or esteem which I have in your opinion. I am, therefore, the right from me or from them may make, cause to be made, use or sell it, under my said new construction, with or without the aid of those whom I shall appoint, as they shall obtain.

The invention is now under examination, and I am ready to submit it to your inspection.

Yours very obediently,

Galileo Galilei

THE EXAMINATION

December 28, 1593.

Let the Purveyors of the Community answer the aforesaid petition, and be well informed of the things therein contained, and after having seen, weighed and considered what is due, render their opinion under oath and signatures by their own hand, according to the laws.

Councillors
Z. Paolo Contini
Z. Ani Verri
Vince Capello
Z. de Fovili
Carlo Corner
Z. Barto Ventur

Giulio Gerardo
Secretary

Most Serene Prince,

By order of Your Serene Highness we, the Purveyors of the Community, have examined the petition laid at your feet by Galileo Galilei in which he says that it is granted to him that the right from me or from them may make, cause to be made, use or sell it, under my said new construction, with or without the aid of those whom I shall appoint, as they shall obtain. As we have not seen his construction, either in great or in little form, it is not possible to judge of it, and it cannot be examined as we have not been granted the privilege to others. We are, therefore, caused to have it examined and disclosed by others, and provided that the privilege have not been granted to others, otherwise let the present grant be as though never made.

(1) Venetian style.

THE ALLOWANCE

1594, 15 September in Pergoli

The Councillors, Zuanziaro absent.

That by authority of this Council be it granted to Galileo Galilei that for the space of the next twenty years no one but himself or those receiving the right from him may, in this city or in the country, make, cause to be made, or, made elsewhere, use the construction for raising water and for irrigating land which, with the motion of a single horse, will continuously discharge water through twenty spouts which are fixed therein, invented by him, under penalty of losing the construction, which are two to the potentiary, and a third to the potentiary, one third of which to go to the inventor, one third to the magistrate that renders judgment and one third to the city. By our authority, however, the petitioner obligated to have given to the right, within the term of one year, and new form of construction, and that it have not been invented or disclosed by others, and provided that the privilege have not been granted to others, otherwise let the present grant be as though never made.

THE LETTERS PATENT

Pasquale Caconia, by the grace of God, Doge of Venice etc. To all and several the governors of any of our towns, territories and places, and to our further representatives, justices, and ministers of any description, as well as to the magistrates of any city of Venice, and, in particular, to the Purveyors of the Community, present as well as future, whom these our letters may reach and whom these our instructions concern, or may concern, we make known that this day in our Council of Delegates there was taken a resolution written as follows, viz.:.

Thus by authority of this Council be it granted to Galileo Galilei that for the space of the next twenty years no one but himself or those receiving the right from him may, in this city or in our country, make, cause to be made, or, made elsewhere, use the construction for raising water and for irrigating land which, with the motion of a single horse, will continuously discharge water through twenty spouts, which are fixed therein, invented by him, under penalty of losing the construction, which are two to the potentiary, and a third to the potentiary, one third of which to go to the inventor, one third to the magistrate that renders judgment and one third to the city. By our authority, however, the petitioner obligated to have given to the right, within the term of one year, and new form of construction, and that it have not been invented or disclosed by others, and provided that the privilege have not been granted to others, otherwise let the present grant be as though never made.

Wherefore, under the authority of said Council we command you to observe this decree and cause it to be observed according to all.

Given at our Doge Palace, XV September, Indiction VIII, MDXCIII.

Camillo Zabalin, Secretary.

Fig. 3 Translation of Galileo's Patent
Misleading Patents

Effective information about the contents of a patent, is most of the time not available from the title which is many times too brief or vague, though some titles are quite specific and give the precise claim. The former variety is sometime given by a deliberate attempt of the claimant to confuse the issue. An example is the patent on 'improvements in or relating to internal combustion engines'. The patent deals with a specific design of pistons used in such engines. The name of the applicant is very often indicative of the subject of a patent. After all, it is unlikely that a pharmaceutical firm would claim a patent in micro-electronics though it cannot be ruled out. Similarly, a boiler maker would not seek a patent on herbicide but there is a snag in that. Several large firms do not apply for patents in their own name but in someone else's name. If the name of the claimant and title of patent do not give sufficient information, the only way is to go through the legal claim, however repugnant the language may be due to patentese. Sometimes, the salient features are obvious from the attached drawings. The enormous task of going through several hundreds of such patents each week, drives most people who search patent literature by themselves, to resort to the abstracts of the same. A good abstract is difficult to find because the original claim itself is couched in such vague terms e.g. "A steel alloy characterised in that it contains zirconium 1 - 10%. Now, 1 - 10% is a wide margin. A closer look at the claim, reveals that steel alloy's Zr content is 4.56%. For enlarging legal protection, the claim has been made in the wide margin of one to ten percent.

Patent Agent

There are many patent agents who search on behalf of others for a fee. But this practice is very limited in India.

Patent Abstracts

There are two kinds of patent abstracts available:

1. Abstracting Services dealing only with patent
2. Abstracting Services including patents as one of the many forms of scientific literature.

1. Abstracting Services exclusively for Patents

Here again, there are two types:
(a) Official Abstracts
(b) Commercial Abstracts:

(a) Official Abstracts

Patent offices in most countries provide official abstracting journals. The British Patent Office calls it Abridgements and publishes them in 25 series. These are the versions of the examiners. In USA it is called Official Gazette of the United States Patent and Trademark Office - Patents. In India, it is called 'Abridgements of Indian Patents'. These abridgements are provided with a name index and subject index from time to time.

In France 'Resumes' appear in the "Bulletin Officiel de la Propriete Industrielle" issued by the French Patent Office.
METHOD OF MAKING A HEAT PIPE

Inventor: Wayne F. Peck, St. Petersburg, Fla.
Assignee: Electronic Communications, Inc., St. Petersburg, Fla.

Filed: July 13, 1971
Appl. No.: 162,084

References Cited
UNITED STATES PATENTS
3,655,573 5/1972 Werner et al. .................. 29/157.3 R X
3,402,767 9/1968 Bohnsak et al. ................. 165/105

ABSTRACT
A heat-transfer device or heat pipe having an integral screen-wick structure which provides relatively great contact area between the internal working fluid and the heat input. The screen wick is fabricated by a plurality of photographic etching and plating steps.

12 Claims, 14 Drawing Figures
Patent Classification

While making a search for patents in any country, one has to become familiar with the classification of patents used in that country. Each country has developed its own system of classification and an International Patent Classification (IPC) has also been developed by ICIREPAT. The working party organised by the Council of Europe produced a framework in 1954 for IPC which consisted of eight major sections and about six hundred subclasses. In 1968, about 6000 sub-groups were published. Revision of the system is a continuing affair. Some 40 countries are now applying IPC numbers to their published patents.

IPC has been produced with the intention of classifying all inventions to be classified as a whole and not by separate classification of constituent parts, which is practicable in indexing systems by references only. The system is published in two parts. First part is in loose leaf form, being the classification key and the second part contains the catchword index.

Patent Concordance

Searching patents involves finding out the related patents in other countries. In recent years, Chemical Abstracts, Derwent Publications Ltd., and other patent abstracts are bringing out patent concordances in different countries. If one wants to search specific patents of particular countries, individual search through that country's patent indexes/abridgements has to be resorted to. A personal index establishing equivalents in different countries can be arranged in a chronological arrangement as below for personal use e.g.

Germany M 23456 9 July 1965
M/S Griesheim GMBH
Continuous Casting.
Brit Pat. 1,130,294
French Pat. 1,418,678

In a way, patent concordance helps one in understanding a claim more clearly since the patent claim is consulted in the favoured language.

Licensing Patents

Many patents are licensed by the inventor to a party or parties and this information may or may not be disclosed in the patent. Advertisements for such licenses appear in official journals of patents as well as other places. At the same time, appearance of an advertisement is merely a pretext for one to indicate that the inventor is still working on the subject. In India as well as UK, the National Research Development Corporation (NRDC), takes charge of the licensing and commercial exploitation of patents arising from national laboratories and public sector R & D centres. NRDC finances such projects in building of prototypes, pilot plants and developmental stages. Some recent projects of this kind are: V H F promotion link, electrolytic manganese dioxide, vinyl pyridine monomer, etc. Where licenses are granted, NPDC offers the right to use the know-how of the patent as developed by the laboratory, including training facilities, and help in importing equipment or raw materials.

Patent Associated Literature (PAL) Service

The service has been developed by INSPEC to help patent searching authority with provision of non-patent literature which is required to be consulted. In its introductory phase the service covers the fields of physics, electrical engineering, electronics, computers and control and is likely to be extended to mechanical engineering and chemical field. The service for the patent offices will be a full text copy service. Photocopy of the article will be supplied with an information sheet containing bibliographical data and int. Cl. code. Copies of non-English articles are accompanied by an English abstract prepared by INSPEC.

Japan Patent Information Centre (JAPATIC)

The Centre is a non-profit organization established in 1971. It provides SII service and retrospective search service with its most modern computerised information retrieval system.

International Sources

It has been widely realised that international cooperation in exchange of patent literature is essential. As a result of this, three inter-connected organisations have come into existence at international level. These are:

(1) World Intellectual Property Organisation (WIPO);

(2) International Cooperation in Information Retrieval among Patent Examining Offices (ICIREPAT); and

(3) International Patent Documentation Centre (INPADOC).
WIPO

This organisation, established in 1967 in Geneva (earlier known as the International Bureau for the Protection of Intellectual Property) has the following objectives:

1. To promote the protection of intellectual property throughout the world; and
2. To ensure administrative cooperation among various unions established by international agreements to protect rights relating to intellectual activities in the industrial, scientific, literary and artistic fields.

Its programme of activities can be broadly grouped as follows:

a. Development of an international patent classification (IPC);

b. Creation of an up-to-date world data bank of bibliographic details of patent documents; and

c. Provision of searches of patents particularly of developing countries. This cooperative activity which was linked to India by Insdoc, is now carried out by the Patents Wing of CSIR which is sister organisation. WIPO had 84 countries including India as its member, in 1979.

ICIREPAT

This organisation conceived originally as an informal group in 1961 was christened as such at Munich in 1962. It started functioning from WIPO, Geneva in 1968 as a formal wing of WIPO including the International Patent Institute of Hague. Its main purpose and programme are to standardise patents and to develop computerised searching systems for patent information. Nine such systems for subjects like lubricants, lasers, etc. have already been developed and more are in progress.

INPADOC

This organisation located in Vienna, and established in 1972, has become the hub of WIPO service for patent information. It is a combined organisation of WIPO and Austrian Government, creating an information file called INPADOC Data Base (IDB) covering 90% of world patents from 46 countries including India (Fig. 7). The IDB is growing at the rate of 800,000 patent records per year.

INPADOC has world's largest collection of copies of patent documents in 16 mm microfilm
PATENT AS A SOURCE OF INFORMATION


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45 TOTAL 3,637,529

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The International Patent Gazette on microfiche is a comprehensive service while the others cover specific areas.

2) The Patent Family Service (PFS) relates to patents for which applications are filed in various countries and based on the same priority application as recognised in the Paris convention. In this service documents are sorted according to priority and publication data. The sorted data provides a cumulation for five years. (Fig 8)

3) The Patent Classification Service identifies patents according to IPC. The sorted data gives a cumulation for 5 years in microfiche form at the rate of $6250 per quarter year. (Fig 9)

4) The Patent Application Service identifies patent documents of a selected number of countries as being connected by a common applicant. (Fig 10)

5) The Numerical Data Base Service identifies patents by their number. (Fig 11)

All these are available on COM (Computer on Microfiche) or hard copies for a small number of pages.

REFERENCES


### Fig. 10 Patent Applicant Service

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### Fig. 11 Numerical Data Base

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