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PATENT INFORMATION AND DOCUMENTATION

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PATENT DOCUMENTS

Patent system is a bargain struck between the inventor and the state. It operates on a fair compensation basis that is, on one hand, the patentee is granted the monopoly for what he has invented over a limited period of time and on the other hand, he has to make a full disclosure of his invention as a legal requirement.

The information about his invention will then be published in a patent document and form part of the technical knowledge in the public domain. In this way, other people can learn from the invention and use it to build on something new to benefit mankind.

By the above arrangement, the inventor will receive patent protection, in the specific country where the patent is granted, for his inventive effort. He can benefit from said patent protection through the manufacture, use or commercial exploitation of his invention without fear of infringement from his competitors for a certain period of time, usually ranging from about 15 to 20 years, depending on the legislation of the patent system concerned.

Due to the publication of patent documents, the public will stand to gain from the technical knowledge of inventions because of the published information in these documents. Therefore, patent information is a very useful resource of technical knowledge for researchers, engineers and scientists who are involved in research and technology development work.

Conversely, without the patent system, inventors would most likely not disclose their inventions because there is no incentive for them to do so. As a consequence, they would keep the information of their inventions secret.

If this is to happen, many inventions would then remain as secret or kept under lock by the inventors. When the inventors die, the knowledge of such inventive works will be lost forever. The society as a whole will be deprived of these useful technical inventions.

From the above, it can be seen that the patent system has the following important roles in stimulating technological development;

- To draw out the inventions from the confines of inventors such that the knowledge of inventions will be disseminated and utilized by others for the sake of social and technological progress.
- To compensate the inventors for making disclosure of the inventions by granting exclusive rights to them such that they can exploit the inventions over a certain period of time, which includes the manufacturing, use and licensing of the inventive works.

According to statistics published, there are well over 40 million patent documents published to-date in the human history. These documents are being kept in public libraries, databases or other media all over the world and hence, constitute an enormous resource of technological information.

Due to legal requirement, each patent document contains the complete technical details of the invention concerned such that a person with ordinary skill in the art can understand the description of the invention and if necessary, can implement the invention. Hence, patent documentation is an enormous resource of technical information where one can find different ideas to solve different technical problems.

Patent documents are now published in fairly standard format. In these documents, patent information is presented in a very systematic manner in that there is a description on the technical problem concerned, an assessment of the prior art or background of the invention and then the full technical disclosure of the proposed solution in solving the problem.

Therefore, patent documents adopt a problem-solution approach in presenting the technical facts and details. This approach of presentation has helped to make patent information an easy reference material when one is looking for clues to resolve technical problems.

As a legal requirement, all patented inventions must satisfy the requirement of industrial application. Hence, patent documents only contain inventions that are industrially practical and constitute solutions to tackle any problem that may arise from the whole spectrum of technology i.e. food, energy, transport, environment, engineering, physics and so on.

Contents of Patent Documents

As mentioned earlier, patent documents are published in fairly standard format and structure by patent offices all over the world. In general, the format and information contents of patent documents are as follows:

- Bibliographic data - providing bibliographic information on the granted patent or patent application, which includes the document number, filing and publication dates, name of the patentee(s) and addresses, etc.
- A description, in most cases including drawings - disclosing clearly the technical details of the invention concerned, normally illustrated by working examples showing how to carry out the invention into practice.
- A claim or claims - defining the scope of protection for the invention under consideration; hence satisfying the legal aspect of the patent document.
- An abstract (may be accompanied by a drawing) - giving a concise summary of the technology of the invention.

An example of patent document is shown in Annex I i.e. US-A 5,372,018. In the first or 'front' page of the patent document, there are the bibliographic data about the patented invention i.e. the title of the invention, name of the inventor, name of the applicant, date of application, date of grant and so on. There is also an abstract that contains an illustrative drawing of the invention.

Take note that each element of the bibliographic data is associated with a 2-digit number or code, e.g. country of issue (19), patent number (11). These numbers are related to the “Handbook on Industrial Property Information” published by WIPO.

The above-mentioned handbook has many recommendations on the publication of patent documents, one of which concerns bibliographic data. Said recommendation is aimed at improving the access to information relating to the bibliographic content of patent documents such that information users would have no difficulty in retrieving the information they want.

The recommendation on bibliographic data covers a list of approximately 60 distinct titles widely used on the front page of patent documents. They are identified through code numbers, known as the “INID” code or “Internationally agreed Numbers for the Identification of Data”. The “INID” code numbers, given in a small circle or between brackets are placed before the relevant bibliographic data element.

After the front page, we can find the main body of the patent document, which is sometimes called the “patent specification”. Generally, patent specification includes the standard contents about the invention in the following sequence:

- An identification of the technology or technical field to which the invention concerns e.g. a device for preventing theft of a vehicle.
- An assessment on the prior art in the technical field or background of the invention.
- A technical discussion of the problem or problems which the invention intends to solve.
- A description of the invention in sufficient detail with reference to one or more working embodiments, as required by the law for a skilled person to be able to practice the invention.
- Drawing(s) relating to the working embodiments to assist the understanding of the invention mentioned in the description.

In the example given, the patent document further includes the claims of the invention, which are placed after the above-mentioned specification of the same document.

The claims of patent documents have an important legal function i.e. to define the scope of protection for the inventions concerned. They differentiate the prior art from the new technology as defined by the inventions and hence, constitute the legal aspect of patent documents.

In general, there are two types of claims that are as follows:

- Independent claims - which are directed to the essential features of the invention, e.g. Claim 1 of the patent document, US-A 5,372,018 as shown in Annex I.

- Dependent claims - which are concerned with particular embodiments of the invention and are appended to an independent claim, e.g. Claim 2, 3, 4, 5 of said patent document.

Classification of Patent Documents

In view of the huge number of patent documents, they have to be properly classified in order that they can be searched and retrieved easily whenever necessary. Therefore, it is important to classify patent documents through some kind of classification system by assigning to each patent document a classification symbol.

The International Patent Classification (IPC) is the recognized international classification system for the classification of patent documents. In parallel to this, some patent offices also have their own classification system. The IPC is the result of the Strasbourg Agreement concerning the International Patent Classification (1971), which came into force on October 7, 1975. As custodian of the classification system, The World Intellectual Property Organization (WIPO) is the custodian of the IPC and it makes regular revision of the IPC that is used by patent offices around the world to classify patent documents.

The main objective of the IPC is to provide the following:

- Uniform classification of inventions regardless of country and origin.
- Basis for information retrieval for users of patent information.
- Basis for gathering statistical data on certain technology parameters.

The IPC has a wide range of classes to accommodate all possible subject matter arising from the whole technology field. It has provisions to classify new technologies as it is updated every five years.

The IPC has 8 Sections, identified by the letters A to H, as follows:

A	Human Necessities
B	Performing Operations; Transporting
C	Chemistry and Metallurgy
D	Textiles and Paper
E	Fixed Constructions
F	Mechanical Engineering; Lighting; Heating; Weapons; Blasting
G	Physics
H	Electricity

The above Sections are divided into Class, Subclass, Group and Subgroup, in the descending order of hierarchy. Among the Subgroup, there is also a hierarchy structure that is determined by the number of dots. This means that the classification with less number of dots are more superior than that with more dots e.g. the two-dot Subgroups are hierarchically superior to three-dot Subgroups.

An illustration of a complete classification symbol of IPC is shown below.

A	01	B	1/00	Main group
Section			or	
	Class		1/24	Subgroup
		Subclass		
Group				

The following example demonstrates the hierarchical procedure of the IPC classification system:

Section :	A	HUMAN NECESSITIES
Class :	A47	FURNITURE;...SUCTION CLEANERS IN GENERAL
Subclass :	A 47 L	DOMESTIC WASHING OR CLEANING
Main group :	A 47 L	11/00 Machines for cleaning floors, carpet, furniture, walls, or wall coverings
One-dot subgroup :	11/02	. Floor surfacing or polishing machines (polishing machines in general B 24 B 29/00)
Two-dot subgroup :	11/03	.. characterized by having provisions for supplying cleaning or polishing agents
	11/04	.. hand-driven
Three-dot subgroup :	11/06	... with reciprocating or oscillating tools

For further information on the use of IPC, one can refer to Volume 10: Guide, of the Sixth Edition (1994) published by WIPO. The Guide has explained in simple terms and by means of examples how the classification should be used for the purpose of classifying and retrieving patent documents. Any communications relating to the classification system can be addressed to WIPO.

PATENT DOCUMENTATION

Patent documents have certain characteristics that make them convenient for reference as a source of technical information. As mentioned earlier, they represent a vast resource of technical information that is very useful for research and development projects. Some of the basic characteristics of patent documents are as follows:

- Patent documents have a fairly uniform format and hence are easy for reference.
- Patent documents are usually published ahead of other forms of publication for the same inventions.
- Technical information contained in patent documents is not secret and can be used freely for research and development purposes.
- Patent documents cover inventions of all technical fields in the whole spectrum of technology.
- Patent documents disclose what is new, worthwhile knowing and industrially applicable.
- Patent documents publish information on the patenting activities of competitors, even those from other countries.

Storage And Retrieval

Patent documents are stored in various information carriers. The more common carriers are as follows:

- Paper
- Microform; roll films or microfiches
- CD-ROM
- Databases

Paper and microforms are used to be popular carriers of patent documents. However, they are getting less popular now due to the advent of more powerful storage and retrieval systems. Such systems are based on modern information technology. One example is the CD-ROM technology, which has enormous storage capacity, easy retrieval and better durability. It is now a popular system to store and retrieve patent information. It operates with a computer terminal and is fairly cheap to use. Therefore, there are many CD-ROM patent information products in the market.

In recent years, more and more patent information is being stored in databases. Some of these databases are available through on-line searching. There are various commercial databases in the market to provide different patent information services to the end-users users.

On-line searching has many advantages, especially for the expert patent searchers. It is much quicker than the conventional manual searching method by substantially reducing the time taken to hunt through huge collection of paper patent documents. Patent information users can perform different types of searches on-line from their own terminals at home or in the office. Said searches include searching through the names of inventors, subject matters of inventions and so on. These searches would have been very cumbersome to do with paper documents in numerical file.

Commercial databases are providing more and more powerful searching facilities for information users to continually meet the needs of the industry. Nowadays, there are

databases that can offer facilities like 'cross-file' searching as well as provisions for combining different search requirements of the users.

Some CD-ROM patent products and on-line databases

Some common CD-ROM patent information products are listed below:

- CASSIS : Bibliographic information on US patents
- ESPACE – EP, WORLD : Full-text patent specifications of the EPO and PCT
- ACCESS : Bibliographic information on EPO and PCT patent applications
- BULLETIN : Bibliographic and status information on EPO patents
- IPC – CLASS : International Patent Classification search system

Some of the more popular patent databases that provide on-line patent information searching are listed below:

- INPADOC Database: Listing of patents issued in more than 50 countries and patent granting organizations, giving information on the legal and family status of patents.
- IBM Patent Database: Listing of all US patents, including bibliographic data and specification of granted patents
- DERWENT WORLD PATENTS INDEX: Containing information for more than 14 million patent documents on all patentable technology. Period of coverage is from 1963 to-date.
- CA: Containing scientific papers and patents from advanced countries in the field of chemistry and chemical engineering. Period of coverage is from early 1960 to-date.

[Annex follows]