Online Patent Searching Techniques: An Overview

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Abstract

During the year 2000, European Patent Office (Espacenet), United States Patent & Trademarks Office (USPTO), and Japanese Patent Office (JPO) began offering online patent search capabilities on their websites free of charge. Some other websites of organisations like World Intellectual Property Organisation (WIPO [PCT]), SIPO (Chinese), KIPO (Korean), orgainisations from Australia, and New Zealand also provide free search facility. This has resulted in patent information being readily available to people than ever before due to the revolution in information technology (IT). Researchers, who never previously considered using patent data to supplement the basic literature, might be surprised at the wealth of under utilized information now available at no cost. Free patent databases on the Internet are useful, particularly as they allow users in numerous locations to quickly access information. To search these sites searchers should be aware of the search techniques of boolean operations, truncation, and wildcards. What skills are required for online searching? This paper tries to provide online search techniques to the people who want to do a patent search on the internet free of cost.

1. INTRODUCTION

The advent of internet has made changes in almost every body's life. It is useful for all types of people - professionals, scientists, researchers, scholars, industrialists, businessmen, teachers, and students.

The area of patent has undergone a number of changes because of the internet. Some aspects of patents have become simpler, such as finding patent information, and some have become more difficult, such as the whole issue of business patent.

The changes in the website to provides free searches made every user able to do free and payable search cheap on the web. However, the main concern raised was the quality. Many predicted that quality would suffer as the number of free search sites increase. Everyone is concerned about the fact that there are many new, cheap internet based search sites that are providing a bad service. These sites make one to think that one can get an adequate search cheaply and quickly, and that no legal opinion is needed in interpreting the results.

Most IT professionals know the advantage of using the internet for hosting databases. These include swift potential updating and amendment of files, and swift searches through huge amounts of data. Searching can be portable now due to internet rather than dedicated to particular machines or in patent offices or libraries.

After the existence of internet, online searching provides many advantages to the searcher over manual searching which is listed below:

- Speedy searching and high quality search
- Attractive functions, such as selective dissemination of information (SDI), PDF (Portable Document Format) and document delivery.

- Multiple searches
- User friendly interface, friendly helpdesk, an easy to use system
- Provide patent information directly to the end-user through web based technologies
- Inexpensive service and cost.

2. OBJECTIVES

The main objective of this paper is to provide awareness about the techniques of patent searching and the listing of freely available patent databases on the websites with their types of searches for the patent professionals and information professionals who are indulged in patent searching manually and wasting their time and also to those who are changing their searching platform from manual platform to internet or online.

3. SOME TERMINOLOGIES OF IPR

Intellectual Property Rights (IPRs) allows every citizen of the country to own their creativity and invention in the same way that they can own physical property. IPR generally grant monopoly over the creation using intellectual labour. IPR laws include prosecution or securing protection litigation and rendering of advice. The owner of IPR can control and be rewarded for his creation, and this encourage further innovation and creativity to the benefit of all.

1. Patents

Patents are grants of property rights by the government to an inventor, which prevents others from making, using, or selling an invention for the term of the patent.

2. Copyrights and related rights

Copyright is concerned with protecting work of the human intellect. These include: literary and artistic material, writing, sculptures, technology based work, music, films and recordings and broadcast, including software and multimedia. Related rights are rights that in certain respect resemble copyright. The purpose of related right is to protect the legal interests of certain persons and legal entities who contribute to making works available to the public. Traditionally, related rights have been granted to three categories of beneficiaries: performers, producers and broadcasters

3. Trademark

Today trademarks (often abbreviates as TM in English) are in commercial usage and most people could distinguish between the trademarks for the two soft drinks PEPSI COLA and COCA COLA. For brand identity of goods and services allowing distinctions to be made between different traders, trademarks are used.

4. Industrial designs

An industrial design is that aspect of a useful article which is either functional or aesthetically pleasing such as surface decoration, pattern or ornament. It may consist of three-dimensional features such as the shape or surface of the article, or two-dimensional features such as patterns, lines or colour.

5. Trade secretes

Trade secretes is information that the owner chose not to divulge at all. Formula; business methods and blueprints are some types of information which some businesses choose to keep as trade secretes. An example of trade secrete is the formula of COKE.

6. Lay out of designs of integrated circuits

Layout-design is synonymous With 'Topography' and means the three-dimensional disposition, however expressed, of the elements, at least one of which is an active element, and of some or all of the interconnections of an integrated circuit, or such as three-dimensional disposition prepared for an integrated circuit intended for manufacture."

Integrated circuit means a product, in its final form, or an intermediate form, in which the elements, at least one of which is an active element and some or all of the interconnections are integrally formed in and/or on a piece of material, and which is intended to perform an electronic function.

7. Protection of undisclosed information and trade secrets

Undisclosed information is such information which must be secret, i.e., not generally known or readily accessible to 'persons within the circles that normally deal with the kinds of information in question.' Also, the information must have commercial value because it is secret and the information must be the subject of reasonable steps by its owners to keep it secret.

8. Geographical indication

A geographical indication (GI) is basically a notice strategy that a given product originates in a given geographical area. GI's can be protected nationally either by decree or by a register.

4. PATENT SEARCH

We can search patents for the wealth of technical information they contain. They often contain valuable information, which is not available in either journal articles or conference papers. Researchers who overlook the patent literature run a serious risk that they will miss important documents and waste time and money by duplicating previously conducted search. To overcome this duplicating problem, researcher conduct the novelty search.

Online patent search is not an easy task. A searcher should be a subject expert and should have knowledge of advanced search techniques. An online searching charges depend on the time duration. For a subject expert the searching of patents relating to his/her subject becomes easy as well as cheap in monetary terms. Also it is necessary to compile a list of search methods and databases, which will help the searcher for online searching. An online searcher may always ask requester to give the answers of the following questions whenever the searcher gets a search request.

1. What information already exists on the search subject?

2. Why do you want this information?

3. How do you hope to use the information?

4. What are you trying to achieve? For example, to replicate an existing process;

to research new product; to monitor patents in specific industry, and so on.

Here are some instructions, which make search organised, quicker and easier:

- Prepare for online searches with the right hardware, software, and computer skills
- Access online patent searching resources
- Narrow online patent searches with keywords and boolean logic
- Perform database searches at Patent websites which are providing free search facility
- Search International Patent Offices
- Do advanced searches at patent websites like USPTO (American), EPO, JPO (Japanese), IP Australia (Australian), IPONZ (New Zealand), WIPO (PCT), Delphion, CIPO (Canadian), KIPA (Korean) and SIPO (Chinese), etc.

Always remember: "To do a good search you should get a good search," so, before going to patent search, every online searcher must prepare the strategy of patent searching. Step-by-step patent searching strategies is mentioned in the flow diagram given below:
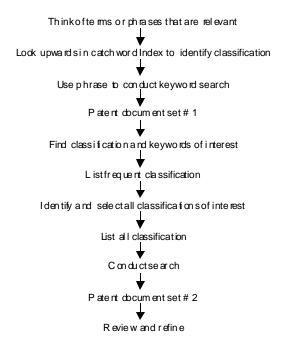

Figure 1: Flow diagram of search strategy for patent search

Background Search for Patent Search Strategy

A background survey/research of the innovation is conducted to ascertain its classification, expertise identification of the operating principle, any previous work done in this area, and its virginity. This study also helps in reducing some technical problem, if any, for commercial exploitation.

Simultaneously, through a search strategy, a patent search is conducted to further check for the novelty. There are three types of patent search methods:

- Landscape Search
  - General search on particular topic
  - Latest research progress in a particular area
- Patentability Search
  - Novelty, non-obviousness, inventive step
  - Cover patent and research articles
- Freedom to Practice
  - Only patents
  - Searching for infringement of any patent

Process for novelty search

- Collect the background information on the search request
- Ask requester about his research details
- Ask requester his/her definition of a relevant reference
- Get a list of all possible keywords
- End use of the search results

This helps to design a search strategy for more relevant and comprehensive search

Designing of search strategy

- Browse some handbooks/websites for more understanding and keywords
- Select the database and online host

Design Search Strategy

- Use Index command to find out the databases or by experience
- Use Boolean and Proximity operators
- Use Wild cards

Conduct the search

- Login

- Enter into database (BEGIN INSPEC), if you know the databases otherwise use INDEX command (INDEX PHYSICS) to find out the name of the database, and then enter into that database
- Search the search strategy (SEARCH Keywords)
- Display (DISPLAY L# ALL 1-20)

Go through abstracts of some references and refine search strategy, if needed.

To develop the search strategy we use the background information and try to get a list of all possible keywords by asking the requester for his/her definition of relevant references. We also browse through handbooks/websites to increase our understanding of the keywords. Thereafter, we select a particular online host/website and run a search with the help of index commands specific to the database. Generally, boolean operators, proximity operators and wild cards are used during the search process. To refine our search, if needed, we go through abstracts of some references and refine our search strategy.
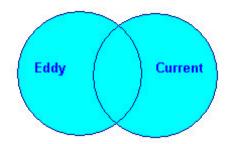
4.1 Techniques for online searching
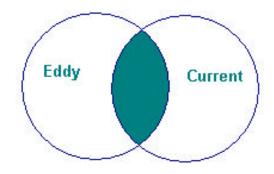
(a) Boolean Logic

Internet is a vast computer database. As such, its contents must be searched according to rules of computer database searching. Much database searching is based on the principles of boolean logic. Boolean logic refers to the logical relationship among search terms, and is named for British mathematician George Boole. Boolean logic allows the use of AND, OR and NOT (see figure 2 (a, b, c)) to search for items containing both terms, either term, or a term only if not accompanied by another term.

(b) Wildcards and Truncation

This involves substituting symbols for certain letters of a word so that the search websites will retrieve items with any letter in that spot in the word. The syntax may allow a symbol in the middle of a word (wildcard) or only at the end of the word (truncation). This makes it easier to search for related word

EDDY OR CURRENT

Figure 2(a):Boolean search for OR operator

EDDY AND CURRENT

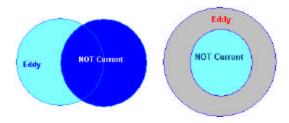**Figure 2(b): Boolean search for AND operator**

EDDY NOT CURRENT

Figure 2(c) : Boolean search for NOT operator

groups, like 'Woman' and 'Women' by using a wildcard such as 'Wom*n'. Truncation can be useful to search for a group of words like 'invest, investor, investors, investing, investment, investments' by submitting 'invest*' rather than typing in all those terms separated by OR's. The only problem is that 'invest*' will also retrieve 'investigate, investigated, investigator, investigation, investigating.'

(c) Phrase Searching

In Phrase searching many concepts are represented by phrase rather than a single word. In order to successfully search for a term like "Turbine Blade" it is important that the search website allow syntax for phrase searching. Otherwise, instead of getting documents about turbine blades one could be getting documents about the words "turbine" and "blade" both appear but have nothing to do with a turbine blade.

(d) Field Searching

All database records are divided into fields. Almost all patent CD-ROMs or online database products and the more sophisticated patent search sites allow users to search for items appearing in a particular field. This can help immensely when you are looking for a very specific item. Say that you are looking for a particular title 'Electronic Anti-theft device' of patent in USPTO. We can do search in USPTO (www.uspto.gov), searching for "Electronic" AND "Anti-theft" in title field.

Example:

Problem: Material used to quench circuit breaker arc

■ **Strategy**

Concept 1	Concept 2	Concept 3
(Circuit(1W) break?) (2A) (arc? OR spark)	quench?	Material? OR Plastic? OR thermoplastic?

■ Selection of website and online database vendor like USPTO, Espacenet, STN, DIALOG, etc.

STN: PROCESS

■ INDEX PHYSICS

INDEX 'CAPLUS, CONFSCI, ELCOM, ENERGY, FEDRIP, GEORIP, IFIPAT, INIS, INSPEC, INSPHYS, JICST-EPLUS, MATH, NTIS, PASCAL, RUSSCI, SCISEARCH, SIGLE, SOLIDSTATE, USPATFULL, USPAT2'

ENTRED AT 09:13:52 ON 22 DEC 2002

20 FILES in the list in STNINDEX

■ SEARCH (circuit(1W) break?) (2A) (arc? OR spark?)

148	FILE CAPLUS
6	FILE CONFSCI
36	FILE ELCOM

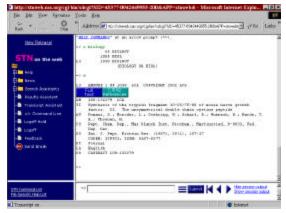**Figure 3. STN Home page for online patent searching**

```
114        FILE ENERGY
245        FILE IFIPAT
23         FILE INIS
2361       FILE INSPEC
9  FILES SEARCHED ……………
10         FILE INSPHYS
40         FILE JICST-EPLUS
1          FILE MATH
17         FILE NTIS
87         FILE PASCAL
1          FILE RUSSCI
62         FILE SCISEARCH
4          FILE SIGLE
6          FILE SOLIDSTATE
703        FILE USPATFULL
19  FILES SEARCHED……………
5          FILE USPAT2
```

18, FILES HAVE ONE OR MORE ANSWERS, 20 FILES SEARCHED IN STNINDEX

Maximum citation was found in INSPEC database, so searcher must begin with INSPEC database.

♦ **BEGIN INSPEC**

■ SEARCH (circuit (1W) break?) (2A) (arc? OR spark?) = L1

```
355975     CIRCUITS
296998     CIRCUITS
493744     CIRCUIT
    (CIRCUIT OR CIRCUITS)
136194     BREAK?
```

```
246556     ARC?
    5      SPARK
L1    2361 (CIRCUIT (1W) BREAK?)
(2A) (ARC? OR BREAK?)
```

■ SEARCH L1 and quench?

```
54534      QUENCH?
L2    239  L1 AND QUENCH?
```

■ SEARCH L2 and (Material? OR Plastic? OR thermoplastic?)

```
790171     MATERIAL?
106921     PLASTIC?
4410       THERMOPLASTIC?
L3     49  L2 AND (MATERIAL?
AND PLASTIC? AND THERMOPLASTIC?)
```

Similarly we can search other databases individually and simultaneously (Begin INSPEC and USPATFUL)

■ Display L3 all 1-20

♦ **Begin USPTO**

Circuit AND break$ AND (arc OR arcs) AND quench$ AND (Material$ OR plastic$ OR thermoplastic$)

In QUICK Search menu

Search in all fields

Searching 1976 to present...

Results of Search in 1976 to present db for:

(((((Circuit AND break$) AND (arc OR arcs)) AND quench$) AND ((Material$ OR plastic$) OR thermoplastic$)): 894 patents.

REFINEMENT OF SEARCH

Relevancy increased by searching in claims only

Searching 1976 to present...

Results of Search in 1976 to present db for:

ACLM/(((((Circuit AND break$) AND (arc OR arcs)) AND quench$) AND ((Material$ OR plastic$) OR thermoplastic$)): 45 patents.

REFINEMENT OF SEARCH

Relevancy increased by searching in IPC only

Searching 1976 to present...

Results of Search in 1976 to present db for:

(((((Circuit AND break$) AND (arc OR arcs)) AND quench$) AND ((Material$ OR plastic$) OR thermoplastic$)) AND ICL/h01r$): 36 patents.

4.2 Free Internet Patent Websites

There are many websites, which provide free patent information. In which some provide bibliographic information, abstract, images and full text of patents and some provides bibliographic information and abstract free of cost and full text on payment basis.

Full text: USPTO, Espacenet (EPO), WIPO (PCT), Japanese (PAJ), Canadian (CIPO) and Australia (IPAustralia)

Bibligraphic and Abstract: Chinese (SIPO), Korean (KIPA) and NewZealand (IPONZ), Delphion

Some leading free database websites (table 1) and their searching techniques:

1. United States Patent and Trademark Office (USPTO)

The main changes from the perspective of the websites providers are that the searchers will be free. Every user will be able to do his or her own search free on the web. USPTO is currently providing free search at its websites at http://www.uspto.gov. There are already other free sites that are on the internet and more are likely to follow suit. The US patents

Table 1: Comparison of some free patent websites

URL	Full Text	Abstract	Bibliogr-aphic	Images
USPTO	Y	Y	Y	Y
Delphion	N	Y	Y	N
EPO	Y	Y	Y	Y
JAPIO (PAJ)	N	Y	Y	N
PCT	Y	Y	Y	Y
CIPO	Y	Y	Y	Y
New Zealand	N	N	Y	N
Australia	Y	Y	Y	Y
Chinese (SIDO)	N	Y	Y	Y
Korean (KPA)	N	Y	Y	Y
HPO	Y	Y	Y	Y

database contain only US patents from January 1976. Images were added from March 1999. It is available only in English language. USPTO also provides the facility of Electronic Filing System (EFS) via internet.

USPTO site provides information on both the granted patents and patent application. Searching process is same for both. In figure 4 shows the home page of USPTO site for patent search.
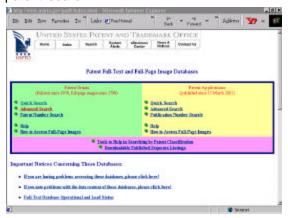

Figure 4: Home page of USPTO website

There are three types of search:
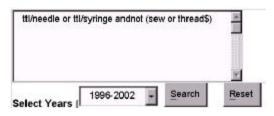
(a) Quick Search

For quick search user may enter a Keyword in the text box labeled Term 1 (see below) and Select the field to apply to Term 1 by using the Field 1 drop-down menu located to the right of the Term 1 box. Select a boolean operator (AND, OR, or ANDNOT) from the menu located between the two Term boxes. Enter a term in the text entry box labeled Term 2. Use $ (dollar sign) for Truncation (as shown below). Select which field to apply to Term 2 by using the Field 2 drop-down menu located to the right of the Term 2 box. Select a year or range of years to search from the Select years to search drop-down menu. Hit the Search button.

(b) Advanced Search

In advanced Search user must know about the Field Code. For advanced search, select a year or range of years to search from the Select years drop-down menu. Enter search statement into the Text box marked Query. Click on the Search button. For above both searches user can refine his search also by using the same search syntax. The refine search is automatically conducted in the same year range as your original search. Syntax is:

TTL/simulation AND ABST/"random Numbers" AND TTL/"Chaos theory"

(c) Patent/Publication Number Search

The patent number search page allows to search for patents by their number. For patent application Number year range is up to latest date. Enter the patent/publication number or numbers into the box. If you include more than one number, they should be separated by a space. It is not necessary to include commas or to capitalize the prefix. Click on the search button.

Publication Number Utility: 20010000044

Patent Number Utility: 5,146,634

Query

After search, result will appear with patent number and title. Click on the patent number or title to get the fulltext information regarding that particular patent.

State Intellectual Property Office (SIPO) (http://www.sipo.gov.cn/) of China have a same search strategy like USPTO website.

2. European Patent Office (EPO): ESPACENET

European patent websites (http://ep.espacenet.com) cover all European as well as WIPO (PCT), Japanese (PAJ) and Worldwide patents. So, user may search here according to the category-wise search page:

1. European Patent Office (EPO)—covers European countries patents

2. World Intellectual Property Organisation —PCT covers all PCT filing countries patents

3. Worldwide - 30 million documents—covers the patents world wide

4. Japan—PAJ covers Patents Abstract of Japan.

EPO cover bibliographic data from 1920 to present on a comprehensive collection of patents published in Europe and worldwide. Coverage varies by country. It covers 20 European countries. This site is available in three languages: English, French and German. Approximately 30 million patents are available on this site. EPO also provides EFS facility via internet. Figure 5 (a) and 5 (b) show the first page of Espacenet and the search page of Espacenet for different patent databases respectively.

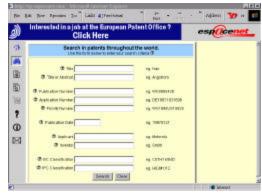**Figure 5 (a): Home page of Espacenet**

Figure 5 (b): Patent search page for databases

Here in all categories search process is same according to their field. In search section there are ten fields for patent searching (given in table 2). Searcher may search any fields and also combination of different fields.

Title | Sterile AND Mediacl | in the title field and

Inventor: | Guha | in the inventor field

Boolean Operators and Wildcards Used in Espacenet:

User can combine search terms using the Boolean operators AND, OR or NOT to refine your searches. Examples of combining search terms:

Any of the words Encryption, Random, or Chaos

Title | Encryption OR Random OR Chaos |

All of the words Spun, Yarn, Torsional and Rigidity

Title | Spun AND Yarn AND Torsional AND Rigidity |

The word Security but not the word Chip

Title | Security NOT Chip |

There are three types of basic search

1. Single word : | Turbine |

2. Multiple words with phrase:

| Turbine AND blade | and | "Turbine blade" |

3. Truncation and wildcards:

| Car? | , | Car* | and | Car# |

- There can be no alphanumeric characters following a wildcard (colo?r is not allowed, but colo?? is)
- Wildcards are only supported in the fields Title, Title and abstract, Inventor and Applicant
- There must be at least two alphanumeric characters preceding a ? or # symbol
- If two alphanumeric characters preced a ? or # symbol, then a maximum of 3 truncation symbols is allowed

- If three or more alphanumeric characters preced a ? or # symbol, then up to 7 truncation symbols are allowed.

There must be at least three alphanumeric characters preceding a * symbol

In all four categories what types of fielded search available is listed in table 2.

Table 2: Types of fielded search available on Espacenet

Fielded search	EPO	PCT	World wide	Japan
Title	Y	Y	Y	Y
Abstract	N	N	Y	Y
Publication Number	Y	Y	Y	Y
Application Number	Y	Y	Y	Y
Priority Number	Y	Y	Y	Y
Publication Date	Y	Y	Y	Y
Applicant	Y	Y	Y	Y
Inventor	Y	Y	Y	Y
IPC Classification	Y	Y	Y	Y
EC Classification	N	N	Y	N

After getting results, click on the patent number or title for bibliographical information and abstract. For full text (claims, abstract, drawing and specifications) click the buttons for claims bibliographic information, drawing, etc.

3. World Intellectual Property Organisation (WIPO): Patent Cooperation Treaty (PCT)

In PCT website (http://pctgazette.wipo.int or http://ipdl.wipo.int) user may register as a guest user, and after that he may search by applying login ID and password. Total number of PCT member status was 115 as on October 15, 2001). The database is available from 1981. This site is available in French, Spanish, English languages (See figure 6 for search page). It also provides EFS via internet.
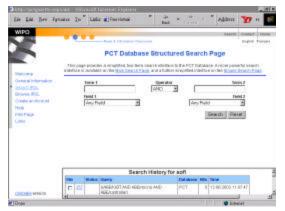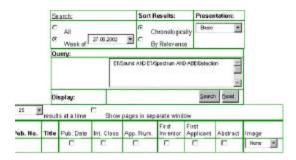
There are three types of search in PCT:

Figure 6: PCT (WIPO) patent database search page

(a) Advanced Search

In advanced search, first of all select the database from the Search list. After that there are two button, 'All' and 'Week of' button. 'All' button will search the entire database and 'Week of' button will allow to specify a week to search. Enter your query into the Text box labeled 'Query'. User must know about the field code which is mentioned in the website and is useful for the advanced search. Also one may select the results ranked by selecting either the 'Chronologically' or By Relevance'. Select display formats using the Presentation. Press the Search button.

(b) Simple Search

In simple search user may enter the term or terms (separated by spaces) into the box. Choose any one option from drop down menu which are 'All of these words', 'Any of these words' and 'This exact'.
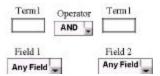
Then click on the Search button.

Search for: [   ]

Results must contain: | Any of these words |

User may also use the wildcards for truncation of the words e.g., Detect* (see Appendix - II)

(c) Structured Search Page

Structured Search provides a simplified, two-term search interface to the PCT Database. Enter a Keyword or Phrase in the box labeled Term 1. Select what field to apply Term 1 to from the menu labeled Field 1. Select Boolean operator from the menu labeled Operator between the two Term Boxes. Enter a second term in the box labeled Term 2. Select what field to apply Term 2 to from the menu labeled Field 2 press the Search button.

In PCT website there are some things to note that is:

■ The search is not case-sensitive. (searching for 'Turbine' or 'turbine' will produce the same results)

■ The Refine Query box uses the same search syntax as the PCT Gazette search page. The refined search is automatically conducted in the same database as the original search. ET/Erbium AND ET/Doping AND ABE/"Gain Flattening"

■ The Start At box allows one to enter a number to skip to in your search results list. For long search results lists, entering '250' in the Start At box is easier than hitting the 'Next 50 Hits' button 5 times.

4. Canadian Intellectual Property Office (CIPO)

CIPO (http://patents1.ic.gc.ca/) database allow user to access over 75 years of patent descriptions and images. One can search, retrieve and study more than 1,400,000 patent documents (Figure 7). CIPO hosts the Canadian patents database that has Canadian patents information dating back to 1920. Full patent images of all patents

Figure 7: Search page for Canadian patent database

starting from the Jan 1, 1920. Abstract and Claims are available in textual format from August 15, 1978. This site is available in French and English.

In Canadian sites patent search is divided into four categories

(a) Basic Search

In basic search, user may simply enter the search words or title and press the search button for process.

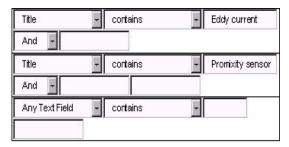Enter search words, e.g. Elevator, robot, twin-engine, smith john:

(b) Number Search

In patent number search User may simply enter the patent number and press the search button.

Enter patent document number:

Examples: 2172863, 2173965, etc.

(c) Boolean Search

In boolean search user may enter the search words or phrases according to their query in one or all text entry boxes. Select the patent fields to be searched with the selector to the right of each entry area. When using both areas, choose the boolean connector (OR or AND). User may also truncate their query by using the wildcards. Searcher may also narrow their search by specifying the time interval.

(d) Advanced Search

In advanced search field name is available before the text entry box. Just enter search words in the text box. User can search through PCT or Non PCT documents, by default; the search is conducted through all patent documents. User may select the language and also do date search.

After getting the results press on the patent title and see the full text of the patent.

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5. Japan Patent Office (JPO): Patent Abstract of Japan (PAJ)

Japan Patent office is providing the patent information of Japanese patent only by their PAJ database (http://www1.ipdl.jpo.go.jp/PA1/cgi-bin/PA1INIT?1015432823879).

User can retrieve more than 4 million patents from 1976 onward by keywords, publication numbers, etc. This site is also available in two languages English and Japanese. As shown in figure 8, basically there are two types of search technique (a) text search and (b) number search.

(a) Text Search

In text search user may search the applicant name, title of the invention and the abstract in first section, in second section he may search by date of publication of application and lastly by IPC number.
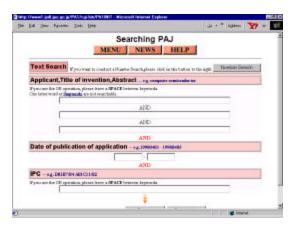

Figure 8: Text search page of IPDL Japanese patent database PAJ

■ **Text Search (Applicant, Title of invention, Abstract)**

In PAJ database, searcher may enter the search word to find documents relating to a particular applicant or technical subject, he may enter keywords that describe the applicant's name or the subject into the "Applicant, Title of invention, Abstract" boxes. The search will be performed within the range of the applicant's name, title of invention and abstract.

■ User can enter multiple keywords separated by a SPACE in one box like "Electric Vehicle". The OR operation will be performed.

■ The maximum number of characters that can be entered is 200.

■ One letter word or Stopwords are not searchable.

Enter the relevant keyword in the box.

> Kelvin

> Electric

If multiple keywords were entered in one box, then the OR operation is performed.

> Electric Vehicles

The AND operation is performed between the boxes.

All documents containing the keywords in the Applicant, Title of invention or Abstract field hit.

■ **Text search (Publication date)**

For publication date search there are four date range criteria:

♦ **Particular Date:** If you want to find documents published on July 1, 1993

Date | 19930701 | - | 19930701 |

♦ **Between the Date Range:** If you want to find documents published between July 1, 1993 and August 10, 1993

Date | 19930701 | - | 19930810 |

♦ **After Specific Date:** If you want to find documents published after July 1, 1993

Date | 19930701 | - | |

♦ **Before Specific Date:** If you want to find documents published before August 10, 1993

Date | | - | 19930810 |

■ **IPC**

User may enter the Japanese IPC number for this type of search.

(b) Number search (Application/ Publication/ Patent number)

■ Application/Publication Number

In PAJ databases, Before 1999, please use the 2 digits of the Japanese emperor's year, and after 2000, please use the 4 digits of the Gregorian year.

➢ If User wants to search for a document whose application number is 000005 in 1996, ⟨08-000005⟩

➢ If user wants to search for a document whose application number is 000005 in 2002, ⟨2002-000005⟩

➢ Zeros that are placed at the beginning of each serial number to adjust the digits can be omitted to put serial number into the box.

08-002001 -> 08-2001

■ Patent Number

If user wants to search for a document whose patent number is 1435677 ⟨1435677⟩

■ Number of appeal against examiner's decision of rejection

Before 1999, please use the 2 digits of the Japanese emperor's year, and after 2000, please use the 4 digits of the Gregorian year.

➢ If user wants to search for a document whose appeal number is 00002 in 1997, ⟨09-00002⟩

➢ If user wants to search for a document whose appeal number is 00002 in 2002, ⟨2000-00002⟩

Figure 9: Number search page of PAJ

➢ Zeros that are placed at the beginning of each serial number to adjust the digits can be omitted to put serial number into the box.

08-02001 -> 08-2001

5. TECHNOLOGY INFORMATION, FORCASTING AND ASSESSMENT COUNCIL

Technology Information, Forcasting and Assessment Council (TIFAC), an autonomous organization under Department of Science & Technology, Government of India, is working in the field of Technology information, Forecasting for the last one decade. It has a Patent Facilitating Cell (PFC), which is very active in patent related activities in India, also publishing a newsletter (Intellectual Property Rights Bulletin), advisory Services, Case studies.

Database on Indian patents are now available with Patent Facilitating Centre on the CDROM discs. The databases relate to patent applications filed and patent applications accepted and notified for opposition. The CDROMs can be run on the Windows 95 and advanced versions. The databases are quite user friendly and equipped with latest search tools and logical operations. Value addition has been done in the databases to make the information easily accessible. The required information for the databases has been compiled from the Gazette of India Part III Section 2. Ekaswa-A and Ekaswa-B. Now Indian patent database

Figure 10 (a): Ekaswa A for patent application search

Figure 10 (b): Ekaswa B for patent granted search

is available on internet at http://www.tifac.org.in/

CONCLUSION

Twenty years ago a preliminary search was often conducted by looking through abstracts in books and on microfilm. But in the last two decades patent abstract have been put into computer databases. More recently the full text and images of the recent patents have been put into computer databases as well. The paper has explained in detail the various techniques of the patent searching. The important patent sites such as USPTO, Espacenet, PCT database, PAJ database are described comprehensively along with their searching techniques. A query searching on the basis of patent number is possible which can help in locating the patent. The paper also lists out the patent sites where searches could be carried out without any cost involvement (Appendix -I).

REFERENCES

1. United State Patent and Trademark Office
   http://www.uspto.gov/

2. European Patent Office
   http://ep.espacenet.com/

3. Japan Patent Office
   http://www1.ipdl.jpo.go.jp/PA1/cgi-bin/PA1INIT

4. World Intellectual property Organization
   http://pctgazette.wipo.int/

5. Thomson & Thomson
   http://www.delphion.com/

6. Canadian Intellectual property Organization
   http://patents1.ic.gc.ca/srch_bool-e.html

7. Korean Intellectual Property Office
   http://211.173.78.101/

8. State of Intellectual Property Organization
   http://www.sipo.gov.cn/

9. Technology Information Forecasting Assessment Centre
   http://www.tifac.org.in/

10. Rossco's WWW Corner
    http://www.tip.net.au/~rossco/psearch.htm

11. NIC (National Informatics Centre)
    http://patinfo.nic.in/

12. Siddiquee, Q. An evaluation of internet as resource for information on patent and intellectual property rights (IPRs), INSDOC (CSIR), New Delhi, 2001. (Dissertation submitted to INSDOC, for the award of AIS)

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The following are list of patent sites, which are freely available:

Delphion(IBM Intellectual Property Network
http://www.patents.ibm.com/

Esp@cenet - EPO
http://www.european-patent-office.org/espacenet/info/access.htm

US Patent Database - USPTO
http://www.uspto.gov/patft/index.html

Australian Patent Database - IP Australia
http://www.ipaustralia.gov.au/patents/P_srch.htm

Canadian Patent Database - CIPO
http://patents1.ic.gc.ca/intro-e.html

New Zealand Patent Database
http://www.iponz.govt.nz/search/cad/DBSSITEN.main?p_access_no=&p_option=IPSEARCH

Search the Gazette of Patents and Trademarks - HPO
<http://www.hpo.hu/English/szkv/ekerform.cgi>

TIFAC<
http://www.tifac.org/>

Wildcards and Boolean Operators used by patent websites

Website	Operator	Wildcards
USPTO	AND, OR, AND NOT, XOR (either/or but not both)	$: Truncate Any Number of Characters " " : Around several word of phrase matching
EPO	AND, OR, NOT	* : Substitutes for a string of characters of any length ? : Substitutes for zero or one Characters # : Substitutes for Exactly one Characters
SIPO	OR, AND	* : Truncate Any Number of Characters
IBM/ Delphion	AND, OR, AND	* : Truncate Any Number of Characters " ": Exactly One Character
CIPO	AND, OR, NOT, NEAR, ACCRUE	*: Specifies zero or more alphanumeric characters ? : Specifies one Alphanumeric
WIPO (PCT)	AND, OR, ANDNOT, XOR, NEAR (within 20 characters) () - to indicateprecedence A @ - for exact phrase matching	* : Any Number of characters to the right
JPO	AND, OR, OR-is implied between terms if no operator is used	Automatic truncation - implied wildcard