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I. Basics of Prior Art Search

II. Search Strategy

- III. Search Tool J-PlatPat
- IV. Search Tool PATENTSCOPE

---- (Slide 6) ----

Next, let me explain a search strategy.



A. Search Flow



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--- (Slide 7) ---

This diagram shows the search flow upon which search strategies are normally established.

The first step is to understand and recognize the invention.

The second step is to decide the scope of the search.

The third step is to decide which database you will use.

The fourth step is to decide the search formulae.

The next step is to retrieve documents using the search formulae, and screen the search results.

Following the screening, you may finish the search if you have found appropriate documents or have determined you already covered most of the related area and no more useful documents could be found.

Each step will be explained in the following slides.



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B. Decision of search scope - 1/7



- Step 3. Determine search scope
- Step 4. Change search scope

--- (Slide 8) ---

Next, let me explain the decision of the search scope.

The first step is to recognize the invention. This is represented as a black dot, and will be a standard point to decide the scope of the search.

The second step is to determine the outer border of the search scope. This is determined based upon examiners' knowledge and experience.

The third step is to determine the search scope.

The fourth step is to change the search scope. As you continue your search, the scope will be changed.

Let's have a closer look at steps 3 and 4 in the following slides.



B. Decision of search scope - 2/7

~ Step 3. Determination of search scope ~

Search scope having all the elements of the claimed invention



--- (Slide 9) ---

Let's take a closer look at step 3, the search scope decision.

The first search scope is determined so as to have all elements of the claimed invention.

In case the claimed invention is "a pen having a clip and a cap", the search scope should be "pen AND clip AND cap".



B. Decision of search scope - 3/7

~ Step 4. Change of search scope ~



---- (Slide 10) ---

Next, let's see step 4, changes to the scope of the search.

Roughly speaking, there are two types of search scope changes: expansion and shifts. An example of expansion is generalizing or deleting elements of the claimed invention. By contrast, an example of shifting is making a change to a neighboring technical field.



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B. Decision of search scope - 4/7

~ Step 4. 1. Expansion of search scope ~



--- (Slide 11) ---

I will explain how you can expand the scope of your search.

First, you can generalize the concept of the elements. (This is known as "generic conceptualization").

A pen is a type of writing instrument. Therefore, "a pen having a clip and a cap" can be generalized and defined as "a writing instrument having a clip and a cap".

Second, you can delete a part of the elements.

If you delete the element "clip" from "a pen having a clip and a cap", the search scope will be "a pen having a cap".

Or, if you delete the element "cap" from "a pen having a clip and a cap", the search scope will be "a pen having a clip".



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B. Decision of search scope - 5/7

~ Step 4. 2. Shift of search scope ~



--- (Slide 12) ---

Next, I will explain the shift of the search scope.

Even in cases where the combination of "clip" and "cap" has not been found in the technical field of "pen", you may find the same combination in neighboring technical fields. In such cases, the inventive step of the claim "A pen having a clip and a cap" could be denied based on the documents found in neighboring technical fields.

Consequently, in order to conduct searches with no overlooked prior art, there are cases where it may be necessary to shift the scope of your search to encompass the prior art in neighboring technical fields.

For example, you can shift the search scope from "a pen having a clip and a cap" to "an electronic stylus having a clip and a cap".



--- (Slide 13) ---

This diagram illustrates an example of how the scope of a search may be shifted.

In this case, the claimed invention is "a+b". Therefore, the scope including both "a" and "b" should be searched first, as the black arrow indicates. If the prior art document disclosing "a+b" has been found in this scope, the said document is a category "X" document. Therefore, the claim has no novelty or inventive step.

Next, if the search result didn't return the document disclosing "a+b" but returned the document disclosing "a", follow the yellow arrow. In this case, the scope of the search should be shifted to search for documents including "b".

Then, if a document including "b" has been found, each of the documents disclosing "a" or "b" is a category "Y" document.

On the other hand, if a document disclosing "b" has not been found, the purple arrow should be followed and the search scope should be expanded.

The red arrow on the right side shows that the document disclosing "b" was not found even when the search scope was expanded to maximum capacity. In this case, the claim "a+b" has both novelty and inventive step.



B. Decision of search scope - 7/7

~ Tips for more efficient search ~



--- (Slide 14) ---

I will next explain the method for an efficient search.

In some cases, a claim may be the generalization of embodiments disclosed in the description.

For example, let's say that "a ball-point pen having a clip and a cap" is disclosed in the description, while "a pen having a clip and a cap" is described in the claim.

One idea is to set Target 1, "a ball-point pen having a clip and a cap", as the first search scope, to meet later possible amendments to the claim. If the document that satisfies Target 1 has been found, the claim has neither novelty nor inventive step.

If the document that satisfies Target 1 has not been found, the search scope should be expanded to Target 2.

Target 2 is "A pen having a clip and a cap", which is the same as described in the claim. If the document that satisfies Target 2 has been found, the claim has neither novelty nor inventive step.

If the document that satisfies Target 2 has not been found, the claim has at least novelty. In this case, the scope of the search should be expanded to Target 3. That is, the scopes "A pen having a clip" and "a pen having a cap" should both be searched.

- C. Decision of database
- ~ How to select database ? ~
- Basic inventions and academic inventions of element(s)
 - Patent Gazette
 - Papers by using <u>Commercial DB</u> and <u>Internet</u>
- The fields where specific search tools have been established
 - CAS for compounds
 - ICIREPAT for metal alloys
- Improvement invention
 - Patent Gazette
- --- (Slide 15) ---

Next, I will explain how to select the database to be used.

There are different varieties of databases to be used for prior art searches, and different databases cover different types of prior art documents, and have different functions. Therefore, it's important to select a database that is appropriate for an application in prior art searches.

If you use an appropriate database, you will be able to more quickly find the prior art that is most appropriate.

Quite possibly, pioneer inventions and academic inventions are published in academic papers other than patent publications. Therefore, it is appropriate to search for such inventions in academic papers. You can search academic papers on commercial databases, and on the Internet.

The commercial database called "CAS" is available to use when you need to specify and search the chemical structure of a compound.

We have a database called "ICIREPAT", which is an internal database at the JPO and can be used at the JPO for prior art searches concerning the invention of alloy.

Improvements, such as making a known existing apparatus more user-friendly, are not usually published in academic papers. Therefore, when conducting prior art searches for the improvement of inventions, it is recommended that you put emphasis on patent publications rather than academic papers.



DB

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D. Decision of search formulae - 1/3

- Search formulae are created based on search scope and database
- Search scope determines the <u>contents</u> of search formulae.
 - When search scope is "pen AND clip AND cap", search formulae can be <u>"(pen*clip*cap)/tx</u>".
- Database determines the *description methods* of search formulae.
 - When classification(IPC) is assigned to documents in the database, search formulae whose search scope is "pen AND clip AND cap" can be "<u>B43K9/00 * clip/tx</u>" (B43K9/00 : Cap for pen)

*Search formulae are described so as to be available in JPO's search system

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---- (Slide 16) ----

Next, I will explain how to determine and create a search formula.

A search formula is determined based on the search scope and database.

The search scope determines the content of search formulae.

For example, if the search scope is "pen AND cap AND clip", the search formula is

"(pen*cap*clip)/tx" (* means logical product, /tx means text search).

The database determines the description method of the search formula.

IPC "B43K9/00" represents "a cap of a pen". Therefore, if IPC symbols are assigned to the documents on database, the search formula "B43K9/00*clip/tx" can be used.



D. Decision of search formulae - 2/3

~ Tips for keyword search ~



*Search formulae are described so as to be available in JPO's search system

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 \cdots (Slide 17) \cdots

Next, I'll explain the keyword search technique.

If the scope of the claim is "A pen having a clip and a cap", the search formula will be "(pen*cap*clip)/tx".

"Pin" is a synonym of "clip", so you can reduce the chance of overlooking prior art by creating the search formula (pen*[clip+pin]*cap)/tx.

Also, you can use the proximity search to search for "pen", "clip", and "cap" that occurs within ten words from each other. This allows you to eliminate irrelevant documents from search results, and increases the odds of yielding search results that include documents you wish to find.



D. Decision of search formulae - 3/3

~ Tips for classification search~



---- (Slide 18) ----

Next, I will explain classification searches.

If the claim is "a pen having a clip and a cap" and no IPC symbols are assigned to the documents on databases, the search formula will be "pen*clip*cap/tx".

IPC symbol "B43K9/00" represents "a cap of a pen". Therefore, if documents are classified according to the IPC, you can also use the search formula "B43K9/00*clip/tx".

Also, FI symbol "B43K9/00@F" represents "a cap of a pen having a clip". Therefore, if documents are classified according to FI, you can use the search formula "B43K9/00@F" as well.



E. Screening of search results - 1/3



--- (Slide 19) ---

Next, I will explain the screening.

After you have conducted the screening and found prior art documents, you are able to judge whether novelty or inventive step can be denied based on the documents, and whether the documents are conflicting applications.

If so, finish the search.

If not, you should judge whether you have already covered most of the relevant technical fields and whether it is likely that you will be able to find other useful documents.

If you have already covered most of the relevant technical fields to the invention and there is only a small possibility of being able to find other useful documents, finish the search.

If other useful documents are likely to be found, review the scope of search, database, search formula, and continue screening.



E. Screening of search results - 2/3

~ When do you finish prior art search ? ~



*The percentage of documents you have searched within the outer border of the search scope 20

--- (Slide 20) ---

Next, I will explain when to finish the search.

This diagram shows that the more time you spend on the search, the higher the cover ratio gets.

The horizontal axis represents the time you spend on the search.

The vertical axis represents the cover ratio, which refers here to the percentage of documents that the examiner reviewed among all of the documents that fall within the outer border of the search scope.

The more time you spend on the search, the closer the cover ratio approaches to 100%. However, the rate at which the ratio increases gradually goes down. This means that the more time you spend on the search, the lower the efficiency becomes. Ideally, the search cover ratio should be as close as possible to 100%, but to do so takes a tremendously long time.



- E. Screening of search results 3/3
- ~ When do you finish prior art search ? ~



- Finish prior art search when an examiner judges that no more useful documents can be found.
 - ✓ The judgment is made based on the examiners' knowledge and experience.
 - ✓ Young examiners are recommended to consult with experienced examiners.

*The percentage of documents you have searched within the outer border of the search scope 21

--- (Slide 21) ---

However, the time for an examiner to do the search is limited.

With that, when you decide that no more useful documents can be found you can end the search even if the cover ratio has not reached 100%.

The judgement as to whether or not you end the search is based on the examiner's knowledge and experience. If you are a less-experienced examiner, therefore, it might be beneficial to consult an experienced examiner.



F. Use of existing examination information - 1/3



--- (Slide 22) ---

Next, let's look at the use of existing information pertaining to the examination. If some kind of existing examination information is available, use it proactively.



F. Use of existing examination information - 2/3

- Examination results of other patent offices > ISR
 - Examination results of JPO, EPO, ...
- Examination results of related applications
 Divisional applications
- Miscellaneous
 Same inventors or applicants

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--- (Slide 23) ---

The following are examples of existing examination information that may be available for use:

Examination results by the ISR, JPO, EPO or other authorities

Examination results of related applications such as divisional applications

Examination results of applications by the same applicant or inventor



F. Use of existing examination information - 3/3



Use of <u>existing examination information</u> can reduce search time

*The percentage of documents you have searched within the outer border of the search scope 24

---- (Slide 24) ----

By utilizing existing examination information, you can avoid the need to start the search from scratch thereby cutting down your search time.