

Learning path for patent examiners

Performing the search: Intermediate level

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Introduction

This publication, "**Performing the search, Intermediate level**", is part of the "Learning path for patent examiners" series edited and published by the European Patent Academy. The series is intended for patent examiners at national patent offices who are taking part in training organised by the European Patent Office (EPO). It is also freely available to the public for independent learning.

Topics covered include novelty, inventive step, clarity, unity of invention, sufficiency of disclosure, amendments and search. Also addressed are patenting issues specific to certain technical fields:

- patentability exceptions and exclusions in biotechnology
- assessment of novelty, inventive step, clarity, sufficiency of disclosure and unity of invention for chemical inventions
- the patentability of computer-implemented inventions, business methods, game rules, mathematics and its applications, presentations of information, graphical user interfaces and programs for computers
- claim formulation for computer-implemented inventions

Each publication focuses on one topic at entry, intermediate or advanced level. The explanations and examples are based on the European Patent Convention, the Guidelines for Examination in the EPO and selected decisions of the EPO's boards of appeal. References are made to the Patent Cooperation Treaty and its Regulations whenever appropriate.

The series will be revised annually to ensure it remains up to date.

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All references to natural persons are to be understood as applying to all genders.

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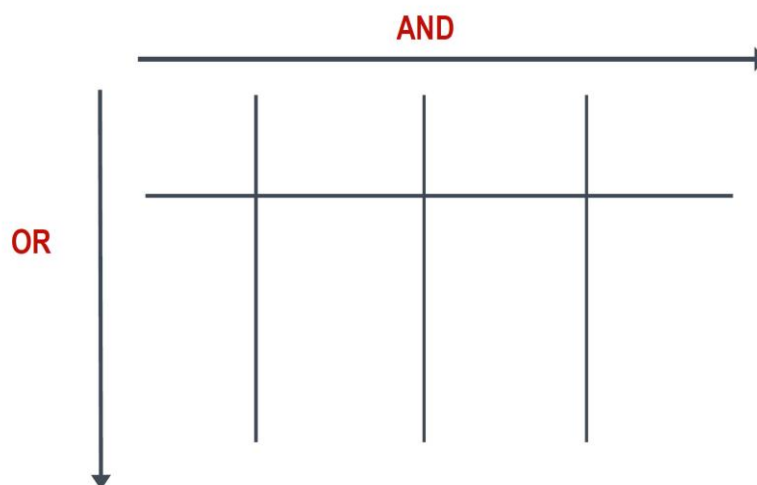
1. Learning objectives

Participants to this course will learn:

- How to build a search table starting from the claims
- How to combine search concepts using Boolean operators
- How to further refine the search
- The importance of starting from the preferred embodiments

2. Starting from the claims: search table and Boolean operators

	Search concept 1	Search concept 2	Search concept 3	Search concept 4
Classification /C /CCI /IC /FT				
Keywords				



As shown in the above search table, the basic idea of a search is to combine search concepts using an AND Boolean operator (shown going from left to right across the search table in the image).

Each search concept includes relevant classification symbols and/or keywords defining the concept of interest to be searched. These classification symbols and/or keywords are combined using an OR operator (shown going from top to bottom in the table).

The European search is a thorough, high-quality, all-encompassing search. However, bear in mind that 100% completeness cannot always be achieved due to the inevitable imperfections of any information retrieval system and its implementation.

The search is carried out such as to minimise the possibility of failing to discover anticipations for any claims or other highly relevant prior art. For less relevant prior art, a lower recall ratio can be accepted (see, however, the Guidelines (GL) B-III, 2.3). For limitations of the subject-matter searched by the EPO, see GL B-VIII.

Legal references:

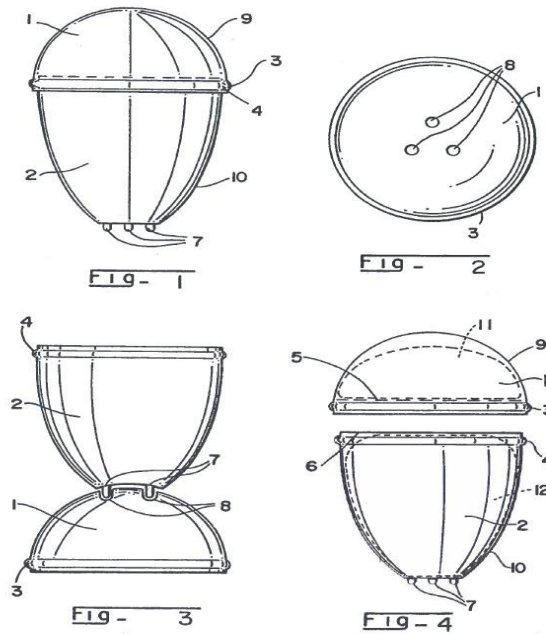
GL B-III, 2.1

3. Example of a complete search in Espacenet

Let us now look at the example of an application containing two claims relating to a container in claim 1, further defined as an egg cup in dependent claim 2:

Example: egg cup

1. A container comprising: a first concave element, a second concave element, said first concave element having an open end, said second concave element having an open end, a first means for connecting the open end of said first concave element to the open end of said second concave element to form the container, a second means for connecting by means of a press-fit the end opposite to the open end of said first concave element to the end opposite to the open end of said second concave element to form a holder, said second means comprising means for enabling said end opposite to the open end of one of said first or second concave elements to be supported on said end opposite to the open end of one of said first or second concave elements.
2. A container according to claim 1, wherein the holder is an egg cup.



Example: egg cup

	Container	Press fit/depress	Protrusion	Egg
Classification symbols				
Keywords/synonyms				

As shown in the table above, the search concepts are:

1. container (because claim 1 defines a container)
2. press fit/depress (because press-fitting is an important aspect of the first claim)
3. protrusion (because protrusions are shown in the diagrams and seem to be an important aspect of the first claim)
4. egg (because claim 2 defines an egg cup)

At this point, search examiners should think of classification symbols and keywords which define these four search concepts.

To carry out the search, they will combine the four search concepts using an "AND" operator, hopefully yielding a reasonable number of documents for them to look at.

After considering the four search concepts, the examiner decided on the keywords/synonyms shown in truncated form in the table below. The truncation symbol "+" represents unlimited truncation, so "fit+" will find "fits", "fitting", "fitted", etc. The symbol "?" stands for single or no character truncation, so "container?" will find "container" or "containers".

Example: egg cup – deriving keywords

	Container	Pressfit/ depress	Protrusion	Egg
Classification symbols				
Keywords/synonyms	container?, cup?, housing?, box?, compartment? receptacle?, cabin?, capsule?, package?, holder?, stand?	fit+, depress+, bore+, hole+, slot+, slit+, recess+, aperture+, notch+, trench+, opening+, cavit?, cut+	protrus+, pin?, project+, peg+, stem+, stud+, dowel+	egg?

Using the query below in Espacenet to search for "egg cup" results in more than 28 000 documents, which is clearly far too many results to look at.

Search results – egg cup

The screenshot shows the Espacenet search results page for the query "egg cup". The search bar at the top contains "egg cup" and the search button is visible. The results page shows 28,741 results found. The first four results are listed below:

- 1. Egg cup**
CN206857069U • 2018-01-09 • SHENZHEN ZHENYE INTELLIGENT EGG MACHINERY CO LTD
Earliest priority: 2017-03-29 • Earliest publication: 2018-01-09
...The utility model provides an egg cup, includes soft materials's cup, latch closure and fastener, cup body outer wall... that can be accurate, guarantees going on smoothly of epilogue engineering, distance between egg cup and the egg cup can be adjusted to the different work occasion of adaptation, egg cup can be fixed a position to three latch closure, and
- 2. Egg cup**
CN209142469U • 2019-07-23 • ZIBO TIANXING FOOD MACHINERY CO LTD
Earliest priority: 2018-12-01 • Earliest publication: 2019-07-23
...An egg cup belongs to the technical field of egg packaging equipment, the egg cup comprises an egg cup main... the front side and the rear side of an egg cup main body of the egg cup, the two mounting... being broken, the installation angle of the egg cup is convenient to adjust, use is convenient, the egg cup body is ...
- 3. Egg breaking and separating apparatus**
US3417798A • 1968-12-24 • CONTINENT EGG CORP
Earliest priority: 1966-09-02 • Earliest publication: 1968-12-24
No abstract available
- 4. Egg breaking and separating machine**
US3180381A • 1965-04-27 • CONTINENT EGG CORP
Earliest priority: 1961-02-10 • Earliest publication: 1965-04-27

On the right side of the screenshot, a preview of a patent drawing is shown. The drawing is titled "CN206857069U Egg cup" and shows two views of the egg cup mechanism, labeled "图 1" (Fig. 1) and "图 2" (Fig. 2). The drawings include numbered callouts (1, 2, 3, 31) pointing to various components of the device.

Given the enormous number of documents retrieved, the search examiner will need to further refine the search query using appropriate keywords and classification symbols. Suitable truncated keywords and classification symbols are shown in the following table:

Example: egg cup – retrieving classes

	Container	Press fit/ depress	Protrusion	Egg
Classification symbols	B65D			A47G 19/28
Keywords/synonyms	container?, cup?, housing?, box?, compartment? receptacle?, cabin?, capsule?, package?, holder?, stand?	fit+, depress+, bore+, hole+, slot+, slit+, recess+, aperture+, notch+, trench+, opening+, cavit?, cut+	protrus+ , pin?, project+ , peg+ , stem+ , stud+ , dowel+	egg?, eggcup?, eggstand?, eggholder?

Legal references:

GL B-IV, 2.1; GL B-IV, 2.2

4. Refining the search in Espacenet

In the case of the "egg cup" example, the following options should be considered to focus the results of the search towards more relevant prior art:

- a brief search combining the classes A47G19/28/C and B65D/C (Espacenet query: "cpc = B65D")
- a partitioned search combining A47G19/28/C with keywords of search concepts 1 to 3 in an abstract database (for example EPODOC or WPIAP)
- a full-text search combining the class A47G19/28/C with keywords of search concepts 1 to 3
- a keyword search combining keywords without any limitation by class
- a review of all the documents classified in the Cooperative Patent Classification (CPC) group A47G19/28/C, possibly by looking at all the documents in the group on screen

The search division continuously evaluates the results of its search and will reformulate the subject of the search if necessary. For example, the selection of the classification symbols to be searched or the order in which they are searched may need to be altered during the search once the results obtained have been analysed.

The search division will also use its judgement, in the light of the results obtained, to decide during the search whether it needs to approach the search documentation differently. For example, search examiners may consult documents cited in publications revealed by the search (e.g. documents cited in the description of a pertinent application or mentioned in a search report). The search division

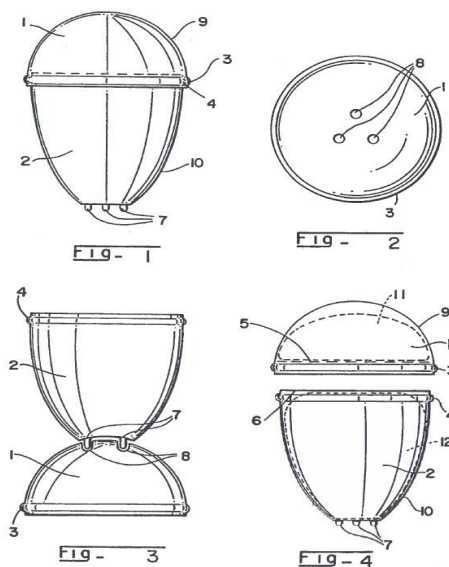
may also consult documentation beyond that available within the EPO (i.e. CPC-classified Patent Cooperation Treaty (PCT) minimum documentation and non-patent literature; see GL B-IX).

Legal references:

GL B-IV, 2.4

5. Starting from the preferred embodiments

A further approach to a complete search could be to start from the preferred embodiments. For example, in the "egg cup" example described above, the search examiner would focus on dependent claim 2, which defines the container of claim 1 as an "egg cup".



While searching the documentation for the independent claim(s), search examiners should also bear in mind the subject-matter of the dependent claims (for cases not complying with Rule 43(2) EPC, see GL B-VIII, 4).

It is important to remember that dependent claims are limited by all the technical features of the claim(s) on which they depend. Therefore, when the subject-matter of an independent claim is novel, that of its dependent claims will be too (see, however, GL F-VI, 2.4.3). When the patentability of the subject-matter of an independent claim is not anticipated by the documents found during the search, there is no need to make a further search or cite documents relating to the subject-matter of the dependent claims (see, however, GL B-II, 4.2(iii) and B-XI, 1.2).

Examples

Example 1

An application relates to cathode ray oscilloscope tubes. The independent claim is directed to a specific means along the edge of the front of the tube for illuminating the screen. A dependent claim is directed to a specific connection between the front and the main part of the tube. In the documentation consulted for the illumination means, the division also searches for the connecting means (whether or not in combination with the illumination means).

If, after this search, the patentability of the illuminating means is not questioned, the search division will not further extend its search for the connecting means.

Example 2

An application deals with a pharmaceutical composition for treating nail infections. The patentability of the subject-matter of the independent claim relating to specific combinations of the active ingredients is not questioned as a result of the search. There is no need to continue the search for dependent claims dealing with the use of a specific volatile organic solvent as a carrier in the composition.

When an application contains claims of different categories (i.e. both product and process claims), all these must be included in the search (for cases not complying with Rule 43(2) EPC, see GL B-VIII, 4). However, if a product claim is both new and non-obvious, the search division will not make any effort to search claims for a process which inevitably results in the manufacture of that product (see GL F-IV, 3.8 and G-VII, 13).

When the application contains claims of only one category, it may be desirable to include other categories in the search. In a claim directed to a chemical process, for example, the starting products form part of the state of the art and need not be searched. The intermediate products are only searched when they form the subject of one or more claims, and the final products must always be searched unless they are known.

Legal references:

GL B-III, 3.7; GL B-III, 3.10

6. Broadening the search using the other search fields (e.g. FI, IC, FT)

In the "egg cup" example, depending on the results obtained, other search fields can be used to broaden the search concepts. For example, if too few documents were retrieved, the following classification symbols could be added to the search query: international classification symbols (/IC), e.g. A47G19/28/IC, Japanese FI classification symbols (A47G19/28/FI), Japanese F-terms (available from a close Japanese document, /FT) or even Dutch IdT classification symbols (an expert would need to be consulted about this).

The search is carried out in collections of documents or databases which may contain material in technical fields pertinent to the invention. The search strategy determines the sections of the documentation to be consulted and covers all directly relevant technical fields. The search may have to be extended to include documentation covering technically related fields. The search division has to judge the need for this extended search in each individual case, in view of the outcome of the search in the documentation already consulted (see GL B-III, 2.3).

The question of which technical fields are to be regarded as technically related has to be considered in the light of the technical contribution of the invention. The decision to extend the search to fields not mentioned in the application must be left to the search division's judgement. The guiding principle when deciding on the extension of the search to related fields is whether it is likely that an objection of lack of inventive step could be raised on the basis of documents retrieved by searching those fields (see T.176/84, T.195/84; GL G-VII, 3).

Legal references:

GL B-III, 2.3

7. Beyond the course

You can deepen what you have learned during this course with the following further readings:

- Guidelines for Examination in the European Patent Office, Part B: Guidelines for Search
- WIPO (World Intellectual Property Organization), PCT International Search and Preliminary Examination Guidelines

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