

**WIPO - Technology and Innovation Support Center  
Seminar on the Effective Use of Technical and Scientific  
Information**

**State of the Art search**

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# What is an invention ?

- At least one significant part of its technology must be completely novel (i.e. new)
- Not all the technology of an invention needs to be novel
- An idea may be an invention if existing technologies are **combined** in a way that is novel, or **used** in a way that is novel.

How do you find out if your idea is novel?

## State of the art

# What is *State of the art*?

- **Everything** disclosed to the public, including patents and non-patent literature. Synonym of *Prior Art*.
- **Any** evidence that your invention is already known
- Does not need to exist physically or be commercially available
- An existing product is the most obvious form of prior art
- Decisive for the determination of the patentability of the invention in regard to novelty and inventive step.
- Sometimes referred as a “**collection**” search
- While looking for prior art, you should also look for **competing art**.

# What does the patent look like?

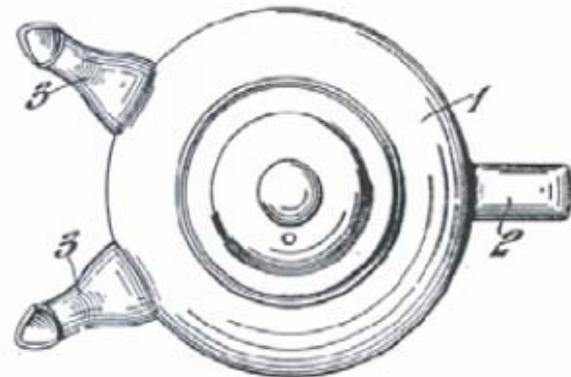
- Bibliographic information
  - Inventor, proprietor, date of filing, technology class, etc.
- Abstract
  - Around 150 words as a search aid for other patent applications
- Description
  - Summary of prior art (i.e. the technology known to exist)
  - The problem that the invention is supposed to solve
  - An explanation and at least one way of carrying out the invention
- Claims
  - Define the extent of patent protection
- Drawings
  - Illustrate the claims and description

# Structure of the description

- State of the art
  - *Teapot with one spout*
- Disadvantage of prior art
  - *Time-consuming*
- Problem to solve
  - *Reduce filling time*
- Solution
  - *Provide a second spout*
- Advantage of the invention
  - *The time needed to fill multiple cups is reduced*



*Fig.1.*



*Fig.2.*

# Searching - Step 1: Finding the right keywords

- Spend some time thinking of key words or search terms which best describe your idea
- Some basic knowledge is needed
- Kind of "jargon" is often used to broaden the scope of the patent
- Look out new terms for new technologies: for example, "telemedicine" for remote monitoring of patients in their own homes.
- Very often, the applicant simply doesn't want his patent to be found

# Searching - Step 2: Product searching

- You need to find out what is already on the market:
  - That is similar to your idea (state of the art).
  - That tackles the same problem (competing art)
- Obsolete technologies or products may be prior art, so check historical as well as current sources of information
- Products in development but not yet on the market may be prior art, so search news sites, industry journals, trade show and exhibition websites
- You should also of course search offline - in shops, books, periodicals, printed catalogues etc.
- Talk to people with relevant experience - for example, retailers and suppliers – as well as people retired from relevant careers

# Searching - Step 3: Patent searching

- Patent searching far more important than product searching. Although many products on the market do not have a patent, they are probably heavily outnumbered by the many ideas that are successfully patented but never reach the market.
- Patent searching involves two skills:
  - Finding every patent document that is relevant to your invention.
  - Interpreting the significance of your patent search findings.
- In some cases it may be advisable to ask a professional to search for you. An exception is if there is so much prior art that your search ends quickly!

# Getting an expert in the area

- Familiarize yourself with the subject matter
- Internet as resource, e.g. Wikipedia
- Read recent review articles of the subject matter
- For a precise and complete search one must have the appropriate scientific/technical background
  - Chemistry
  - Biotechnology
  - Engineering, etc.

# Elements in search strategies

- Key terms (synonyms, some are more likely to be in the text than others)
- Classifications
- Inventor and applicant names
- Dates
- Citations

# Some techniques....

# Smart searching (1)

Do not re-invent the wheel!

- Use terms and codes from documents already known: **Reverse Searching**
- Extensive citation searching
- Search for inventors (authors) and companies active in the field
- Display controlled terms, patent classifications and database specific codes of relevant documents



- Add relevant codes and terms to strategies

## Smart searching (2)

- Keeping control: do not mix up narrow and broad key terms/codes in “OR” term sets
- Use many different strategies with a low number of key terms/codes to explore the technology step by step
- For multi-featured technology start with strategies focusing on two features at a time and if necessary add additional key terms/codes in a second step if answer sets are too broad
- Start with searches in Titles and Abstracts and depending on precision expand to Claims and further to the Description

## Smart searching (3)

- Look in adjacent technical fields (patent classifications) for those features which objectively constitute the characterizing features
- Iterative process: keep the search process interactive by checking retrieved answer sets on the basis of low-cost formats and refine
- Develop list of synonyms (check on Internet before start and some are coming up during the search)

# Some quizzes on patent jargon ....

# Patent jargon (1)

- Writing instrument
- Spherical object with floppy filaments to promote sure capture
- Electrical power source for electronic circuits
- Fastening means

## Patent jargon (2)

- A composition **comprising** a solution of lactic acid in alcohol/water  
→ Wine!
- A composition **consisting of** a solution of lactic acid in alcohol/water  
→ Wine is excluded, since it comprises many more products than just lactic acid, alcohol and water.
- Pharmaceutically acceptable carrier
- Device for mixing the pharmaceutical ingredients