



## Topic 3 - Chapter II.B

# Primary consideration before drafting a patent application

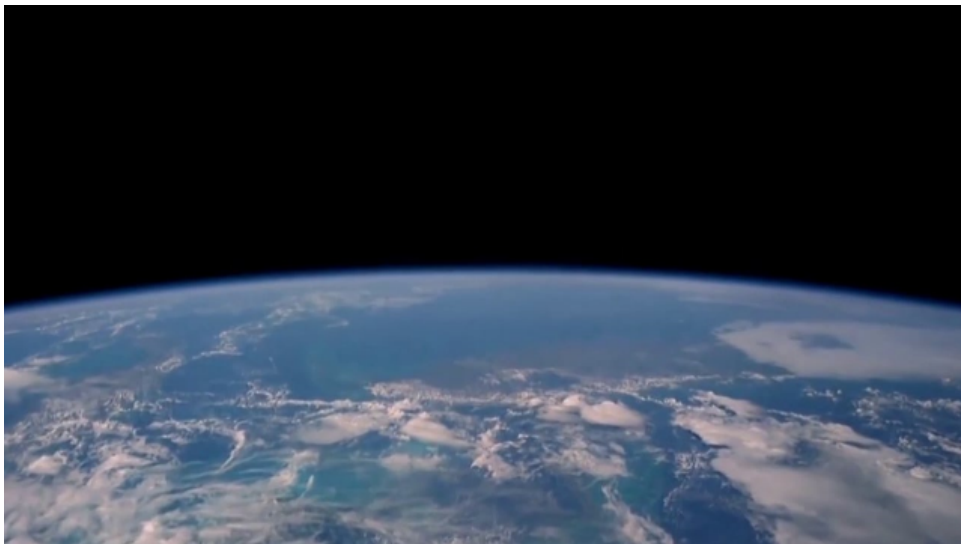
Emmanuel E. Jelsch  
European Patent Attorney

# Table of Contents

- Detailed Overview of Patents
- Patent Laws



# Patents Overview



# Patent:

- Patenting provides a strategy for protecting inventions without secrecy.
- A patent grants the right to exclude others from making, using, and selling the invention for a limited term of 20 years from application filing date in most of the jurisdictions.
- To get a patent, an inventor must disclose the invention fully so as to enable others to make and use it. The patent system promotes more disclosure than would occur if secrecy were the only means of excluding competitors.
- Patents thus facilitate transfer of technology to the private sector by providing exclusive rights to preserve the profit incentives of innovating firms.

# The "social contract" implicit in the patent system

Reveal  
invention



Get  
exclusivity



... so that others can learn from it  
and improve upon it!

# Benefits of Patent System

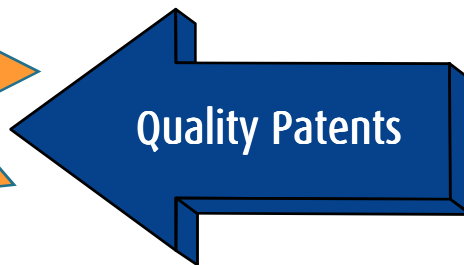
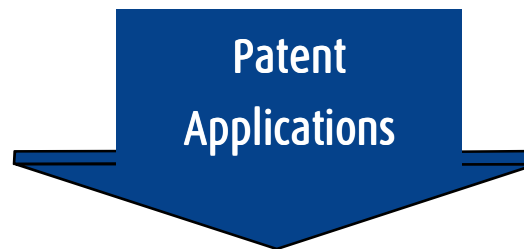
- Rewards time, money & effort associated with research
- Stimulates further research as competitors invent alternatives
- Encourages innovation and research by permitting companies to recover R&D costs during period of exclusive rights
- Limited term encourages quick commercialization
- Patents allow early exchange of information between research groups
  - Avoiding duplicate efforts
  - Increasing general pool of public information



# Patents and the Economy



Research & Development



# Rights conferred by the patent

- Prevent others from making, using, offering for sale, selling or importing infringing products in the country where the patent was granted
- Sell these rights or conclude licensing contracts
- For up to 20 years from the date of filing of the patent application

**The patent does not grant the right to use the invention!**



**A patent search  
is indispensable!!!**



# Rights conferred by the patent

The legal rights conferred by patents do NOT extend to:

- acts done privately and for non-commercial purposes
- acts done for experimental purposes relating to the subject matter of the patented invention.



If commercialising your invention means using the intellectual property of others, then you need to have their **permission!**

To make sure that your invention really is yours, you need to carry out a **patent search**. If you are not a patent expert, ask a patent professional, e.g. a patent attorney.

It is best to perform the patent search before starting development in order not to waste time and effort!

# What not to do when considering filing a patent application



- No publication prior to filing
  - e.g. no article, press release, conference presentation/poster/proceedings or blog entry
- No sale of products incorporating the invention prior to filing
- No lecture or presentation prior to filing
- except under a non-disclosure agreement (NDA)

**It does not matter if it was you who made the invention public!**

- Seek professional advice soon!
- File before others do!

# Patents – Elemental Basics (1)

A patent confers a time-limited, government-approved monopoly for the invention set forth in the patent's claims.

This monopoly gives the patent owner the right to:

- Control who makes, uses, sells, offers to sell, and/or imports the patented invention,
- Receive damages for infringements, &
- Seek an injunction against further infringement.



# Patents – Elemental Basics (2)

Patent rights are purely national.

- Holding a patent in Country A gives you no right to control what happens in Country B.
- Patent laws tend to differ from country to country.

Some countries have compulsory licensing requirements under certain circumstances.

Some countries have requirements that the patent owner himself “work” the invention.



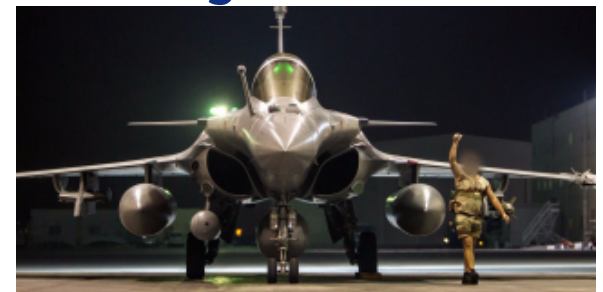
# Patents – the Elemental Basics (3)

Your own patents give you no rights to manufacture a product or provide a service:

- No effect on regulatory approval
- Your product may infringe someone else's patent

Your own patents provide no legal protection against infringement of another party's patents:

- Non-infringement, invalidity, misuse, & inequitable conduct are the only defenses to patent infringement



# Patents – the Elemental Basics (4)

## Patent Myths



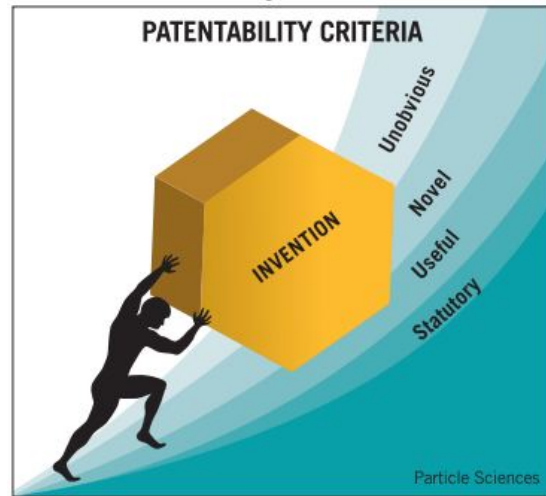
1. A Patent can Infringe another Patent

FALSE! Only products/processes can infringe patents

2. The Patent Office considers infringement issues in awarding patents

FALSE! The patent office only looks at prior art and provides no advice regarding possible infringement.

Figure 1



# Patent Laws: Patentability requirements

# Patent Definition (EP)

Patents shall be granted for any **inventions** which are susceptible of **industrial application** (utility), which are **new** and which involve an **inventive step** (non-obvious).

➤ Art. 52(1) EPC





# Discovery vs. Invention

## Discovery

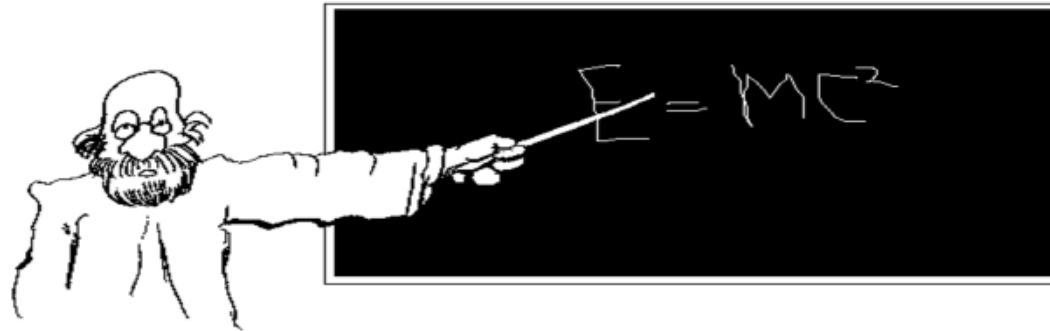
Discovery is gaining knowledge of or ascertaining the existence of something previously unknown or unrecognized.

## Invention

Invention is making or creating something which did not exist before it was made or invented.



# Patentability

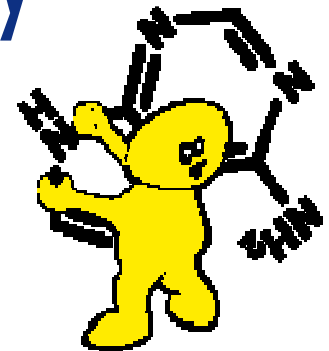


# Patentability requirements:

- A) Patentable inventions
- B) Novelty
- C) Inventive step (problem-solution approach)
- D) Industrial applicability and disclosure requirements

# Patentable Inventions:

- Necessity of a technical nature
- Exceptions to patentability





# Exceptions to patentability (EP)

- Discoveries, mathematical theories
- Aesthetic creations
- Playing games, software, methods of doing business
- Therapeutic and diagnostic methods
- Inventions contrary to morality
- Plant or animal varieties





US006276277B1

(12) **United States Patent**  
**Schmacker**

(10) **Patent No.:** **US 6,276,277 B1**  
(45) **Date of Patent:** **Aug. 21, 2001**

(54) **ROCKET-BOOSTED GUIDED HARD TARGET PENETRATOR**

(75) Inventor: **Bruce E. Schmacker**, Orlando, FL (US)

(73) Assignee: **Lockheed Martin Corporation**, Bethesda, MD (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/295,594**

(22) Filed: **Apr. 22, 1999**

(51) **Int. Cl.**<sup>7</sup> ..... **F42B 10/00**

(52) **U.S. Cl.** ..... **102/384; 102/386; 102/518; 102/519; 102/374**

(58) **Field of Search** ..... **102/518, 519, 102/384, 386, 374**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,302,570	*	2/1967	Marquardt	102/519	X
3,754,507	*	8/1973	Dillinger et al.	102/518	X
3,897,730		8/1975	Riparbelli	102/52	
3,935,817		2/1976	Riparbelli	102/52	
3,981,243	*	9/1976	Doris, Jr.	102/519	X
4,016,817	*	4/1977	Blanco	102/519	
4,131,246		12/1978	Rotmans	244/3.32	
4,290,364	*	9/1981	Weidenshagen et al.	102/384	
4,301,737	*	11/1981	Yahash et al.	102/518	
4,327,886		5/1982	Bell et al.	244/3.29	
4,463,921		8/1984	Metz	244/3.22	
4,488,487		12/1984	Croizer	102/382	
4,573,412		3/1986	Lovelace et al.	102/387	
4,697,525	*	10/1987	Bocker et al.	102/518	
4,876,963		10/1989	Deffayet	102/387	
4,892,268		1/1990	Peretti et al.	244/3.1	

4,898,342		2/1990	Kranz et al.	244/3.21	
5,000,093	*	3/1991	Bozner et al.	102/519	X
5,022,608		6/1991	Beam	244/3.18	
5,038,684	*	8/1991	Petrovitch et al.	102/518	X
5,076,511		12/1991	Stein et al.	244/3.22	
5,109,774		5/1992	Deffayet	102/382	
5,189,248		2/1993	Deffayet et al.	102/386	
5,216,611		6/1993	McElreath	364/454	
5,440,993		8/1995	Osofsky	102/374	
5,544,586		8/1996	Huerta	102/374	
5,596,166		1/1997	Gould	102/362	
5,649,488		7/1997	Morrison et al.	102/518	
5,698,814		12/1997	Parsons et al.	102/428	
6,119,600	*	9/2000	Burri	102/518	X

**OTHER PUBLICATIONS**

U.S. Statutory Invention Registration No. H1049, Khadduri et al.

U.S. Statutory Invention Registration No. H867, Hill. Military Standard "Hazard Assessment Tests for Non-Nuclear Munitions" Department of Defense.

\* cited by examiner

*Primary Examiner*—Peter A. Nelson

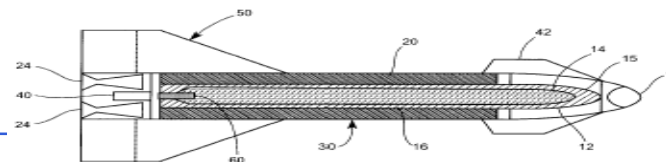
(74) *Attorney, Agent, or Firm*—Burns, Doane Swecker & Mathis, LLP

(57)

**ABSTRACT**

A target-penetrating aerial bomb includes a penetrator of hard steel or similar material that contains an explosive charge. A rocket motor is formed as an annular chamber and surrounds the penetrator. The bomb includes a guidance and control unit that guides the bomb on a glide path after release from the delivery aircraft, and steers the bomb onto a dive line. Once the bomb is aligned on the dive line, the guidance and control unit fires the rocket booster to accelerate the bomb to the target. A fuse ignites the explosive after target penetration.

**17 Claims, 5 Drawing Sheets**



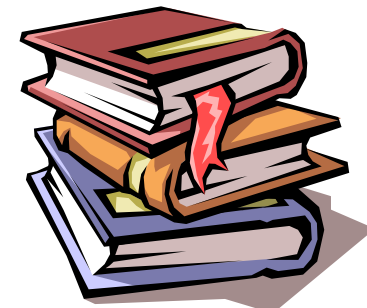
# Novelty (1)

## Definition

- Everything that does not form part of the State of the Art.

## State of the Art (Prior Art)

- Everything made available to the public by any means before the filing of the patent application.



# Novelty (2)

## Novelty:

- Standards of novelty vary from country to country
- Grace periods in some countries
- still able to fulfill novelty requirement within one year of an invention disclosure or offer of sale (US, China, Japan, Mexico etc.. )

**MAYBE WE ARE  
IN A GRACE  
PERIOD.**



# Novelty (3)

## “Absolute Novelty”

- Filing of application must precede any public invention disclosure
- Also known as: “strict novelty requirement”

### Example:

Inventor A plans to discuss his invention at a conference on May 31, 2005. He must file his patent application by May 31st to avoid losing patent rights !!!

# Novelty (4)

## Grace Period

### Example:

- Inventor A goes to conference and presents paper describing invention on May 31, 2015.
- Assume a grace period of 1 year.
- Inventor A has until May 31, 2016 to file his patent application.

# Novelty (Art. 54 EPC)

Each feature (element) of the claimed invention should be generally **disclosed in one single reference.**

(photographic novelty = identity)



# Novelty

## Novelty:

- Single prior art reference defeats novelty if it contains all limitations of the claimed invention
- Such a reference is designed to have “anticipated the invention”.

**ANTICIPATE**  
THE UNEXPECTED



REGISTRATION

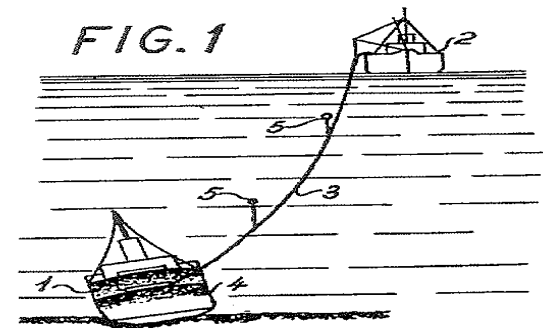
# Importance of the prior art The «Donald Duck Case»



Application NL6514306 filed by Karl Krøyer: a method of raising a sunken ship by filling it with buoyant bodies fed through a tube. NL application was not granted. (Granted GB1070600 and DE1247893)

On September 14, 1964, the boat Al Kuwait capsized at the docks in Kuwait's harbor with 5'000 sheep on board.

Krøyer lifted the ship with 27 million plastic balls saving the insurance company of \$2'000'000.





# Importance of the prior art

## Example 1:

- Prior art discloses:
  - “chair with seat and four legs;”
  - “may be made of wood or metal”
- The patent claims in Inventor A’s application recite a wooden chair with a seat and four legs



Does the prior art reference anticipate the claims of this patent application?

# Importance of the prior art

Yes, because all limitations are found in this prior art reference

## Example 2:

- Prior art discloses:
  - “chair with seat and at least four legs;”
  - “may be made of wood or metal”
- The claims of Inventor A’s patent application recite a wooden rocking chair with seat and four legs



**Does the prior art reference anticipate the claims of this patent application?**



# Importance of the prior art

No, because all limitations of invention are not met by this prior art reference

To anticipate, a prior art reference must contain all the limitations of the patent claim



# Importance of the prior art

## Example 3:

Inventor A invents a wooden chair of a seat and four legs with two rails (a rocking chair)

- Reference X discloses a seat & four legs and is made of wood
- Reference Y discloses a seat & four legs with two rails

Do the references together anticipate the claimed invention?

# Importance of the prior art

- No, because only a single reference can defeat novelty
- But, the references taken together may defeat the inventive step requirement (or show obviousness)



# Inventive Step (Art. 56 EPC)

## Definition

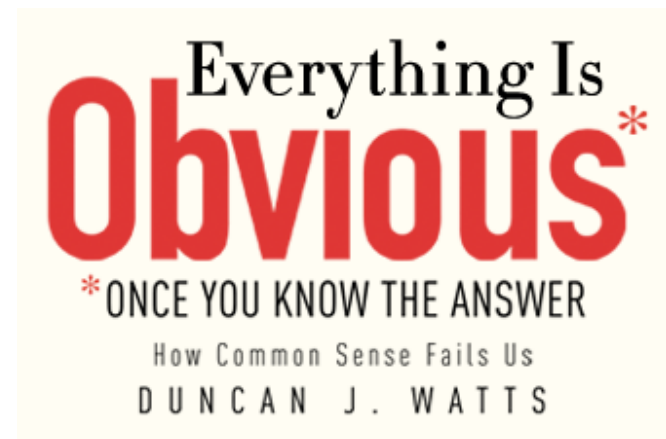
- If the invention is not obvious to a skilled in the art having regard to the state of the art.
- Referring to the « **Skilled in the Art** » = Technicien knowing the technical field but devoided of imagination or creativity.



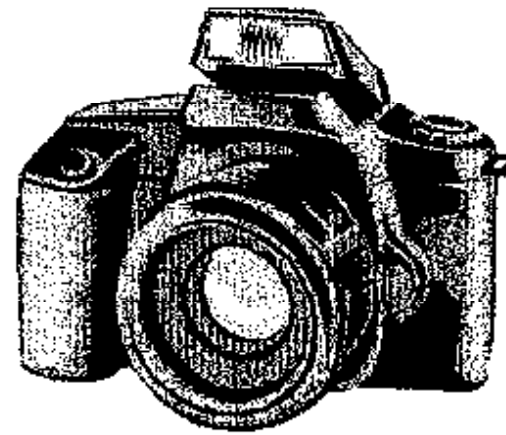
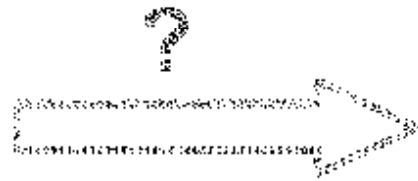
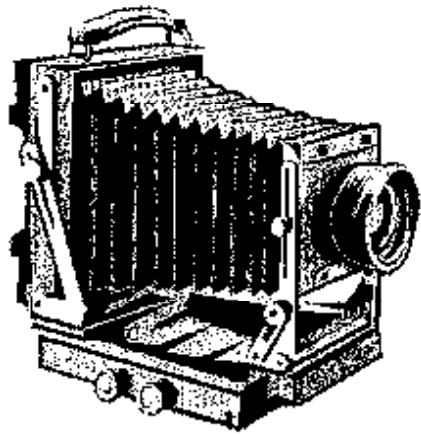
# Obvious?

Something which does not go beyond the normal progress of technology

but merely, to the ordinary skilled person, follows plainly or logically from the prior art.



# Obvious or not?

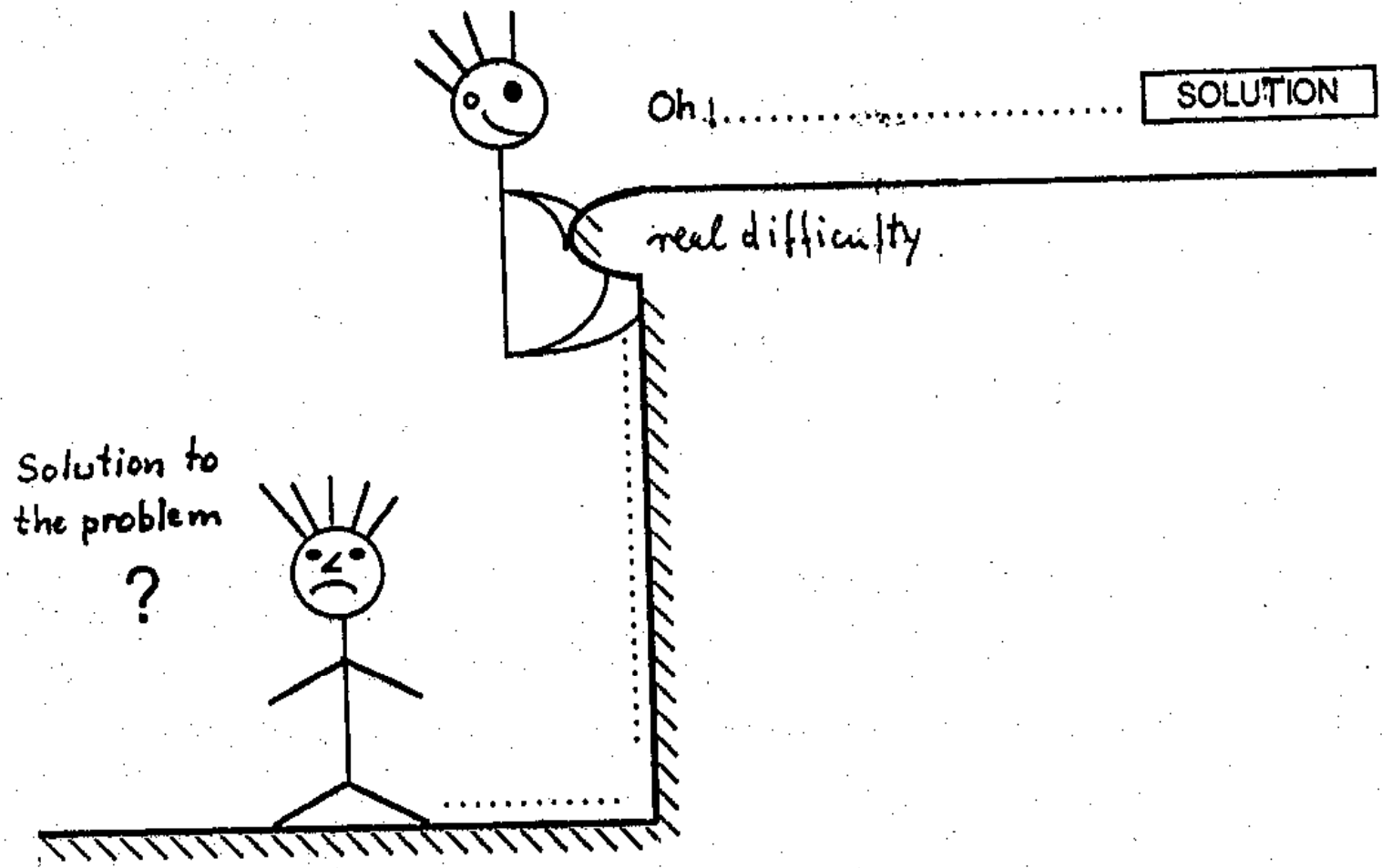


# Inventive Step

The European approach to assessing inventive step is to employ a “**problem-solution**” analysis

- In the problem-and-solution approach, there are three main stages:
  - i. determining the "closest prior art"
  - ii. establishing the "objective technical problem" to be solved, and
  - iii. considering whether or not the claimed invention, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person
- EPO Examiners rigidly follow this approach







# Example: Inventive Step

1. Determine the relevant features of the claims
2. Determine the relevant features of the prior art
3. Compare the features: analyze for any differences

No.	Features of Technology	Features of Prior Art	Analysis	Result
1	A+B	A+B	Not novel	Invalid
2	A+B+C	A+B	Novel	Valid
3	A+B+C	A+B+C' C-C'	Not Inventive	Invalid

# Example: Inventive Step (2)

Inventive Step/Non-Obviousness

Example:



Prior art discloses a chair with a cup holder to hold coffee cups.  
Inventor A invents chair with holder to hold water bottles.

Inventor A's patent claims will likely **lack an inventive step** in view of this prior art because an ordinary chair designer would likely be motivated to make a chair with a water bottle holder in light of this prior art.

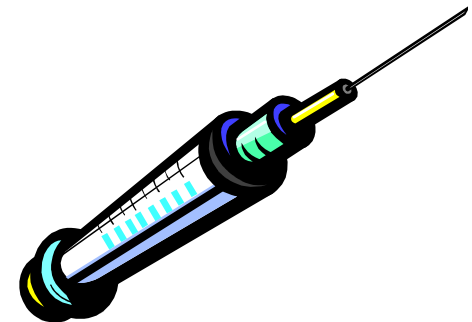
# Industrial Application (Art. 57 EPC) - Utility

## Industrial character

- If the invention can be made or used in any kind of industry.
- No requirement that the invention is better than existing products or processes

## Therapeutic and diagnostic methods

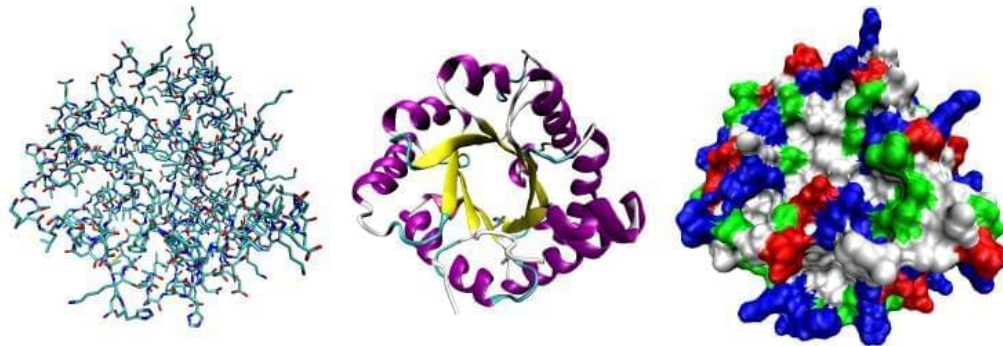
- Physicians should be free to take suitable actions to cure or diagnose illnesses.



# Industrial Application

The industrial application of a sequence or a partial sequence of a gene must be disclosed in the patent application (Rule 23e(3)).

Recital 24 EU Directive: if a protein is produced the function of the protein must be indicated (specific / credible)



# Disclosure requirements/sufficiency

In the United States, the disclosure requirements are expressed in terms of “enablement” and “written description”.

Enablement requires a determination of whether a person skilled in the art can make and use the claimed invention without undue experimentation.

The written description requirement is satisfied if a patent specification describes the claimed invention in sufficient detail that a person skilled in the art can reasonably conclude that the inventor “had possession” of the claimed invention.

