HØIBERG Patent School

Patentability -
Novelty and Inventive step

January 20th 2021

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Practical information

- **The webinar is recorded**
  - Available on our webpage within the next couple of days
  - All participants are kept anonymous in the recording

- **Please ask any questions in the “Q&A”- box**
  - Questions will be answered at the end of the webinar unless a specific question requires “immediate attention”

- **15-20 second time lag**
  - Questions are received in real-time but answers/comments will come with a delay

Speakers

Jens Viktor Nørgaard

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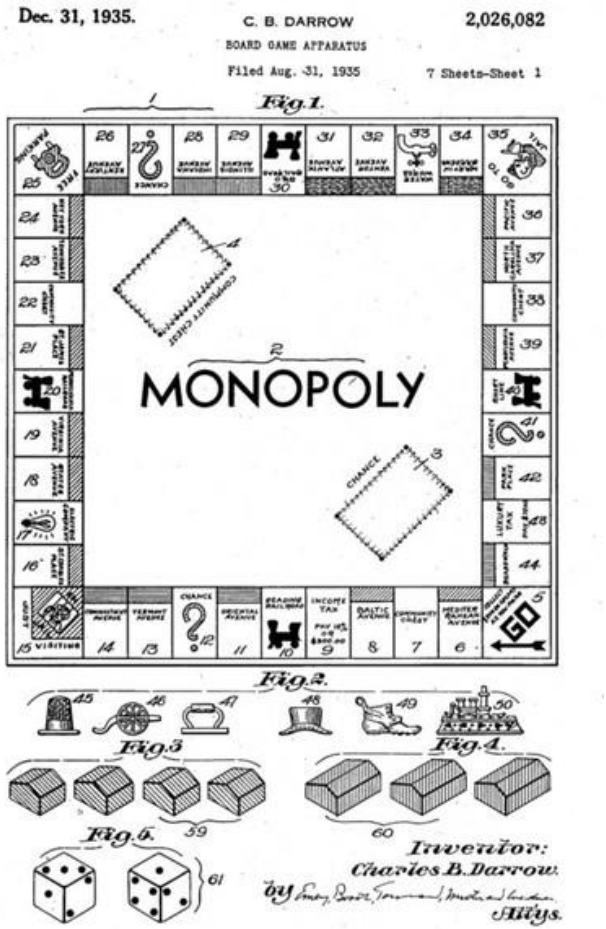
Agenda

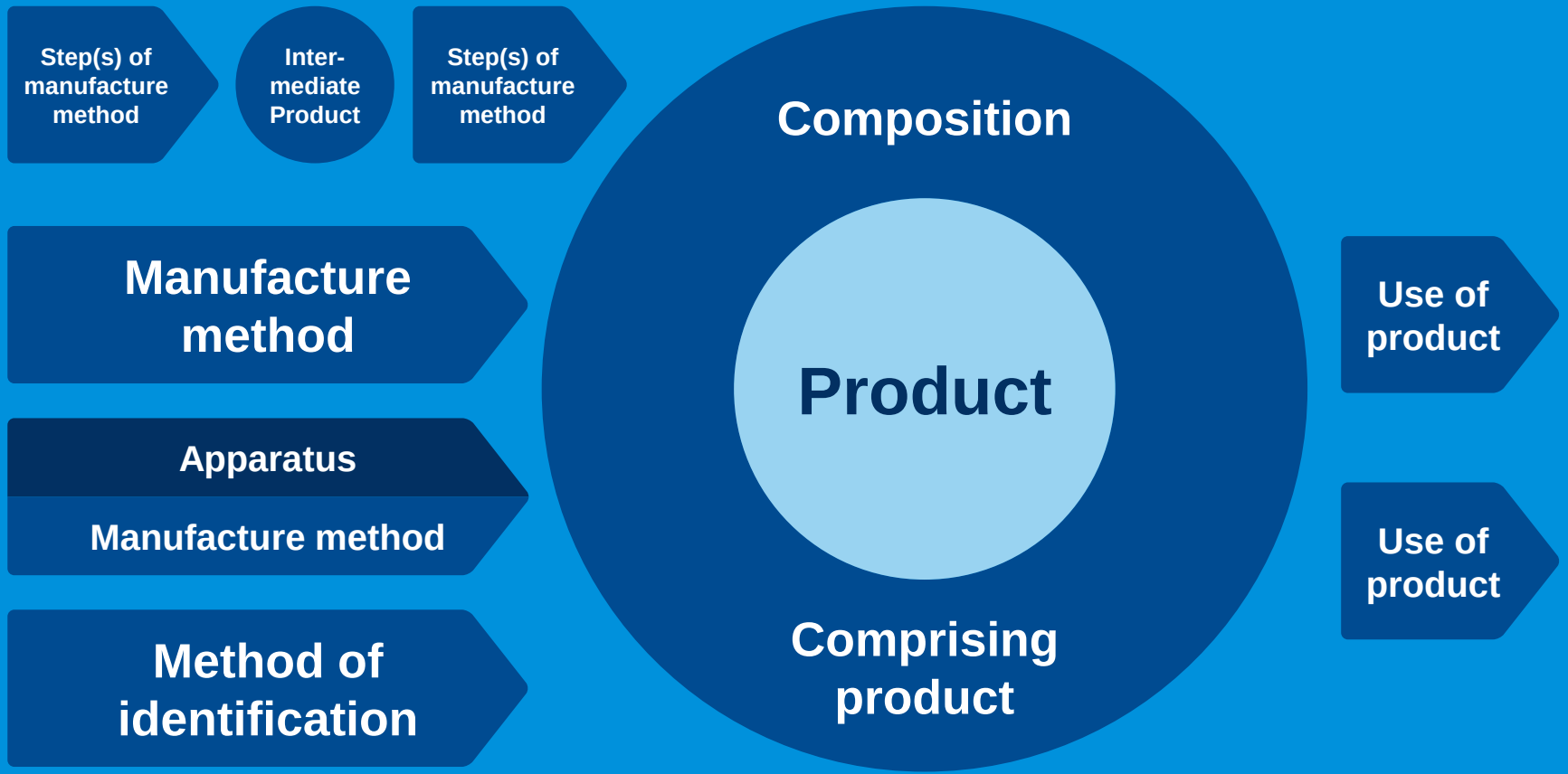
- Prior art
- Novelty
- Inventive step
- Exceptions to patentability
- Industrial applicability
- Q&A

What is a patent?

- Monopoly
- Right to forbid others to exploit the invention
- No (automatic) right to exploit the invention
- Provides a description of the invention
- Lasts for 20 years



Technologies to be patented



Some patent terms

State of the art

The highest level of general development. Everything disclosed to the public, including patents and non-patent literature

Prior art

Any evidence that your invention is already known.

It does not need to exist physically or be commercially available. It is enough that someone, somewhere, sometime previously has described or shown or made something that contains a use of technology that is very similar to your invention (EPO)

Subject matter

The matter under consideration

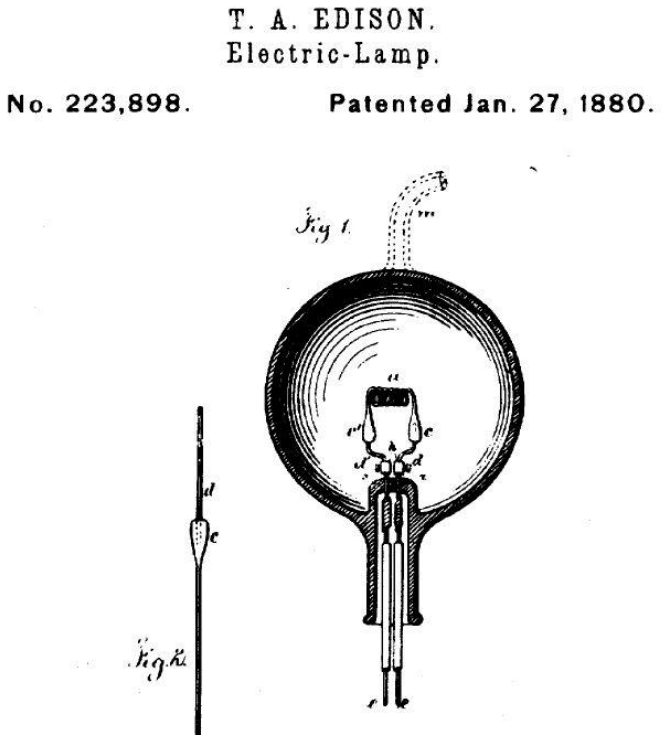
Claims

The patent claims that define the invention and, in turn, the scope of the patent protection

Requirements for patentability

Basic Patentability Requirements

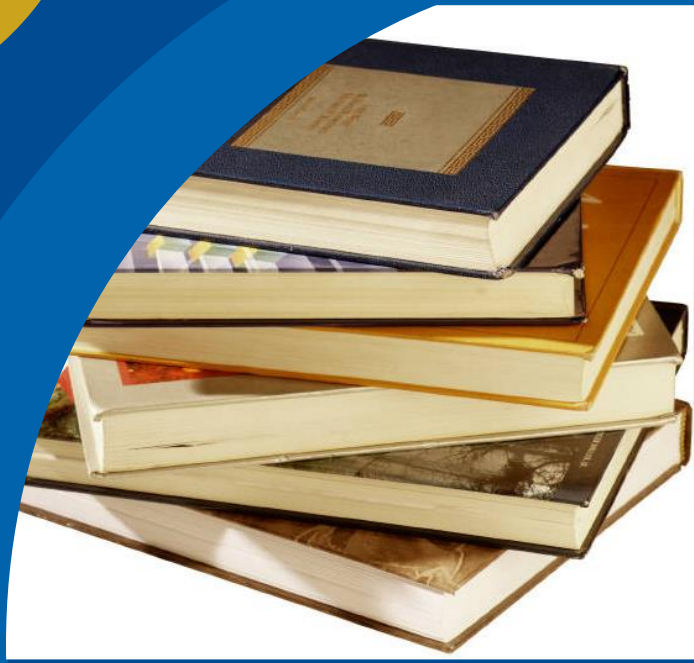
- Patentable subject matter
- Novel
- Inventive/non-obvious
- Industrially applicable (useful)


T. A. EDISON.
Electric-Lamp.

No. 223,898. Patented Jan. 27, 1880.

Novelty

Inventive step



Novelty

1. An invention shall be considered to be **new** if it does not form part of the state of the art.

2. The state of the art shall be held to comprise **everything** made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.

Art. 54(1-2) EPC

Prior Art

Poster

Scientific Articles

Patents

Internet disclosure

Public written material anywhere and in any language

Oral disclosure

Public prior use

Everything is prior art

1964

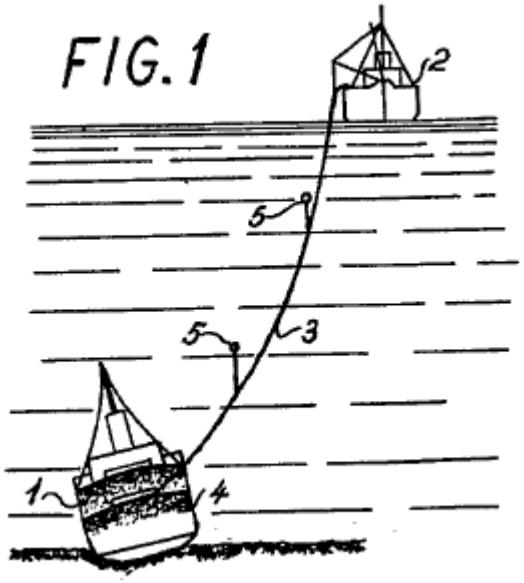
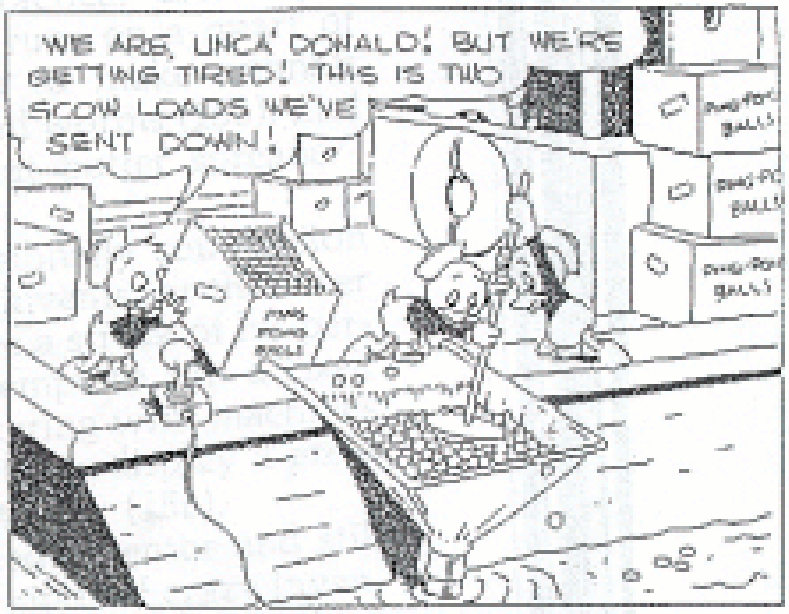
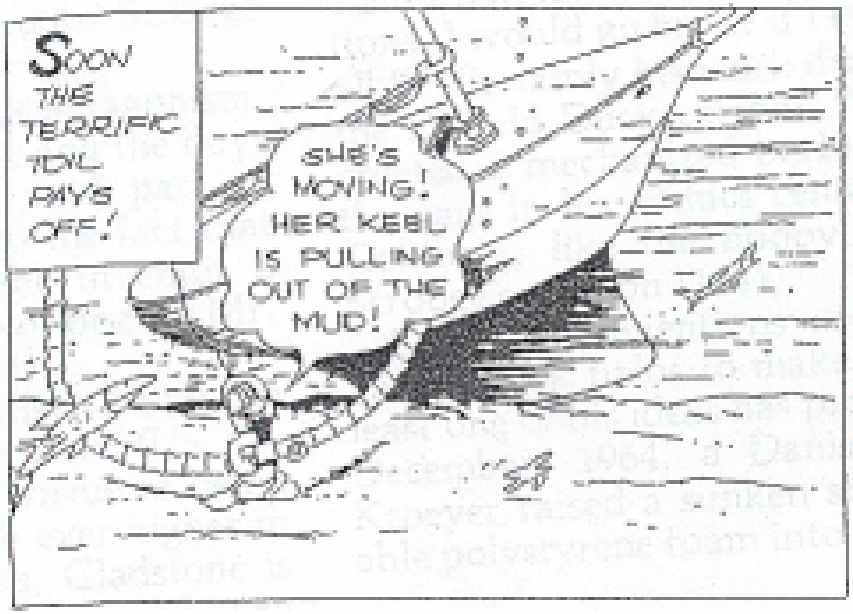


Figure 1 of Krøyer's patent

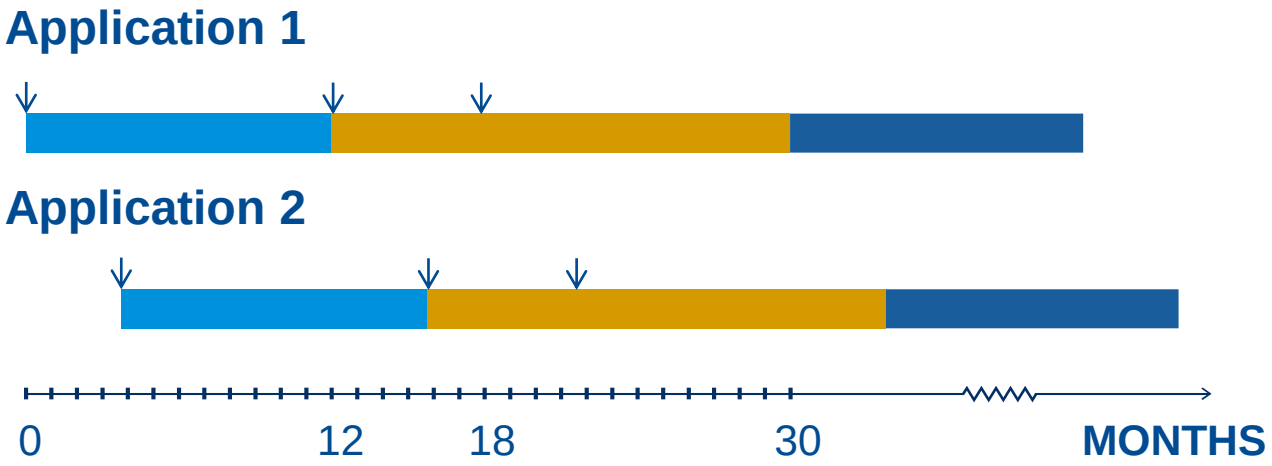
1949





Images from 'The Sunken Yacht', © 1949 Walt Disney Corporation

Prior patent application



- Application 1 is prior art to Application 2
- Only prior art for novelty in most countries (e.g. Europe)
- In some countries Application 1 is NOT prior art to Application 2 if filed by the same applicant (e.g. Japan)

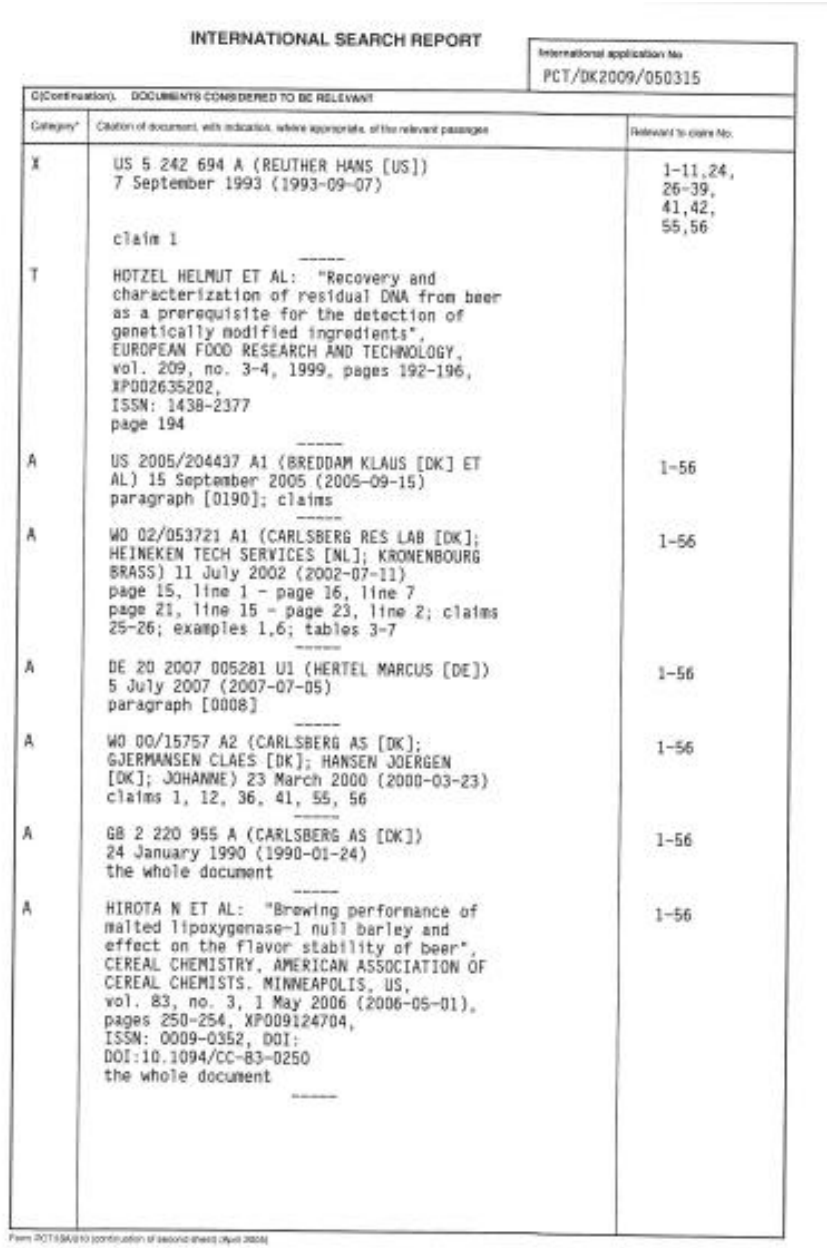
Search Report

- Objective of the Search report is to discover relevant prior art

X - Document of particular relevance

Y - Document of particular relevance when combined with other document(s)

A – General state of the art – not considered of relevance



INTERNATIONAL SEARCH REPORT

International application No
PCT/DK2009/050315

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 242 694 A (REUTHER HANS [US]) 7 September 1993 (1993-09-07) claim 1	1-11,24, 26-39, 41,42, 55,56
T	HOTZEL HELMUT ET AL: "Recovery and characterization of residual DNA from beer as a prerequisite for the detection of genetically modified ingredients", EUROPEAN FOOD RESEARCH AND TECHNOLOGY, vol. 209, no. 3-4, 1999, pages 192-196, XP002635202, ISSN: 1438-2377 page 194	
A	US 2005/204437 A1 (BREDDAM KLAUS [DK] ET AL) 15 September 2005 (2005-09-15) paragraph [0190]; claims	1-56
A	WO 02/053721 A1 (CARLSBERG RES LAB [DK]; HEINEKEN TECH SERVICES [NL]; KRONENBOURG BRASS) 11 July 2002 (2002-07-11) page 15, line 1 - page 16, line 7 page 21, line 15 - page 23, line 2; claims 25-26; examples 1,6; tables 3-7	1-56
A	DE 20 2007 005281 U1 (HERTEL MARCUS [DE]) 5 July 2007 (2007-07-05) paragraph [0008]	1-56
A	WO 00/15757 A2 (CARLSBERG AS [DK]; GJERMANSEN CLAES [DK]; HANSEN JOERGEN [DK]; JOHANNE) 23 March 2000 (2000-03-23) claims 1, 12, 36, 41, 55, 56	1-56
A	GB 2 220 955 A (CARLSBERG AS [DK]) 24 January 1990 (1990-01-24) the whole document	1-56
A	HIROTA N ET AL: "Brewing performance of malted lipoxygenase-1 null barley and effect on the flavor stability of beer", CEREAL CHEMISTRY, AMERICAN ASSOCIATION OF CEREAL CHEMISTS. MINNEAPOLIS, US, vol. 83, no. 3, 1 May 2006 (2006-05-01), pages 250-254, XP009124704, ISSN: 0009-0352, DOI: DOI:10.1094/CC-83-0250 the whole document	1-56

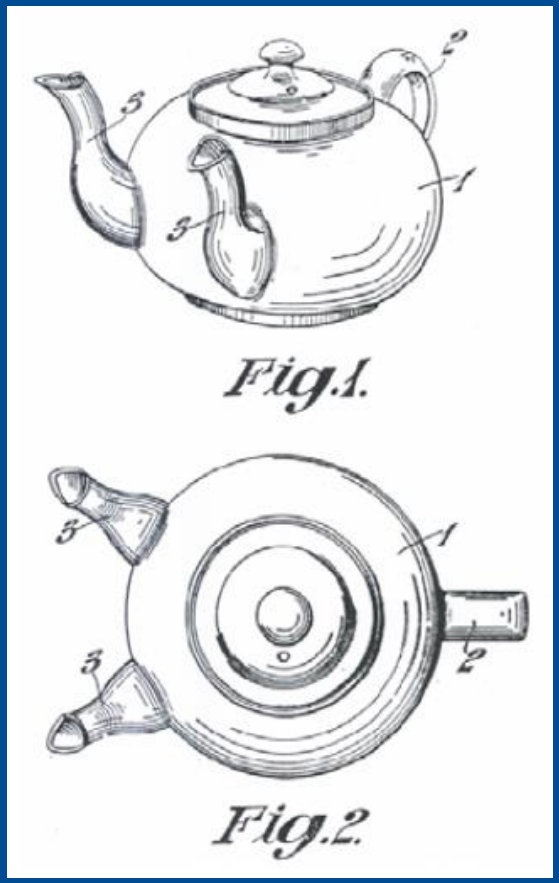
3

Novelty

- An invention must be novel compared to the prior art.
- Each prior art document is assessed individually
- All features of the claim must be described by the prior art document

Example

- Prior art
  - *teapot with one spout*
- Drawback of prior art
  - *time-consuming*
- Problem to be solved
  - *reduce filling time for multiple cups*
- Solution
  - *provide a second spout*
- Advantage of the invention
  - *filling time is reduced*



- Source: EPO/EUIPO Intellectual Property Teaching Kit

Assessing novelty

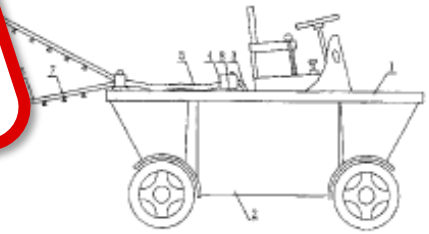
Claim: A pouring vessel comprising
(a) a compartment for liquids (1),
(b) a handle (2),
(c) a lid, and
(d) two spouts (5) extending from the compartment (1),
(e) whereby the tops of the two spouts are arranged
the same height.

Fig.1.

Stage 1: Prior art

The prior art search revealed the following docum

NOVEL



Document D2:
High efficiency distributor for fertilizer. Each rod has several nozzles for spraying liquid.

Document D3:
A filter handle with two spouts to be used with a coffee-maker.

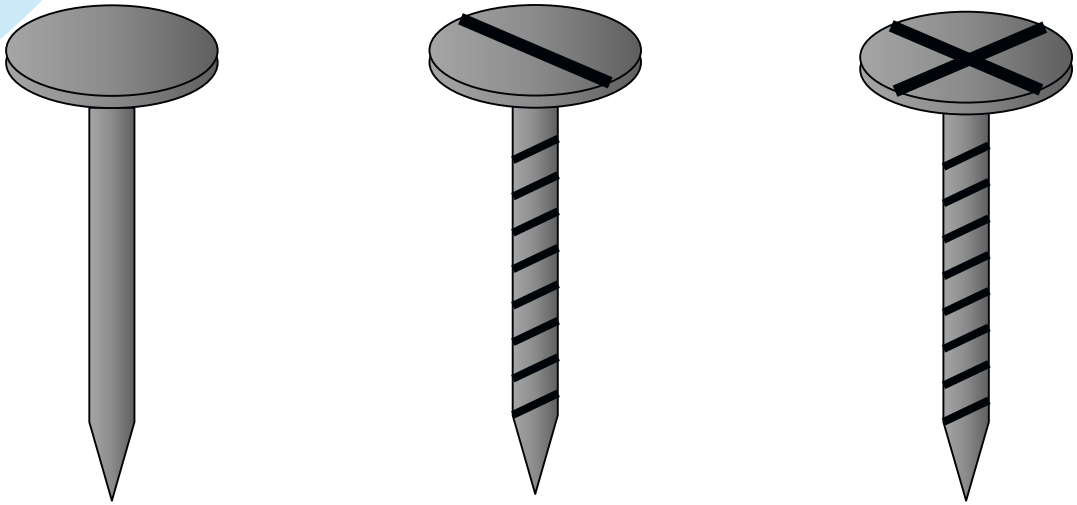
Document D4:
An oil and vinegar bottle which reveals a second bottle inside. The two spouts are cleverly arranged to ensure the second bottle never drips while the first one is in use.

Source: EPO Intellectual Property Teaching Kit

Novelty

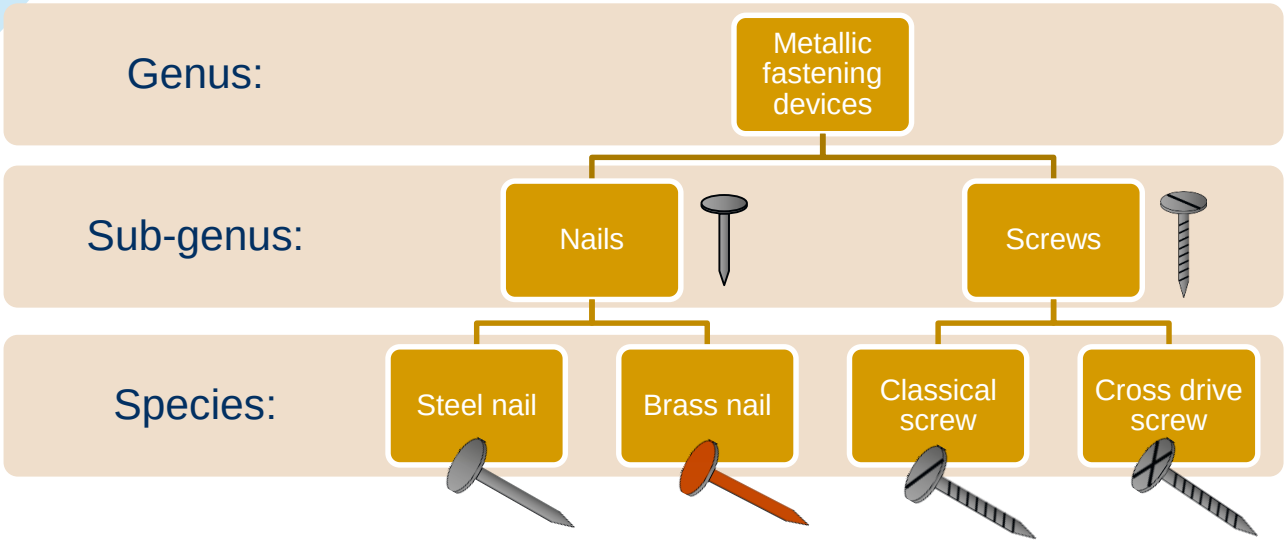
- Are there any technical features or effects that differ from what is known?

1. 2. 3.



Novelty

- Species is novel over genus
- Genus is not novel over species



Example:

- Classical screw (slot drive) is known
- Cross drive screw is novel (Philips screw, Torx screw etc)

Grace Period

Period in which an inventor's public disclosure of an invention does not destroy the novelty of the invention.

Europe	No Grace period Except in very specific circumstances
China	No Grace period Except in very specific circumstances
Russia	6 months
United States	12 months Applicant's own publication

Everything is prior art

- Apples' patent on photo gallery bounce-back effect (EP2059868)

https://www.youtube.com/watch?v=8JZBLjxPBUU

Novelty

Inventive step

Inventive step

Europe:

- An invention shall be considered as involving an inventive step if, having regard to the **state of the art**, it is **not obvious** to a person skilled in the art. **(Art. 56 EPC)**

US:

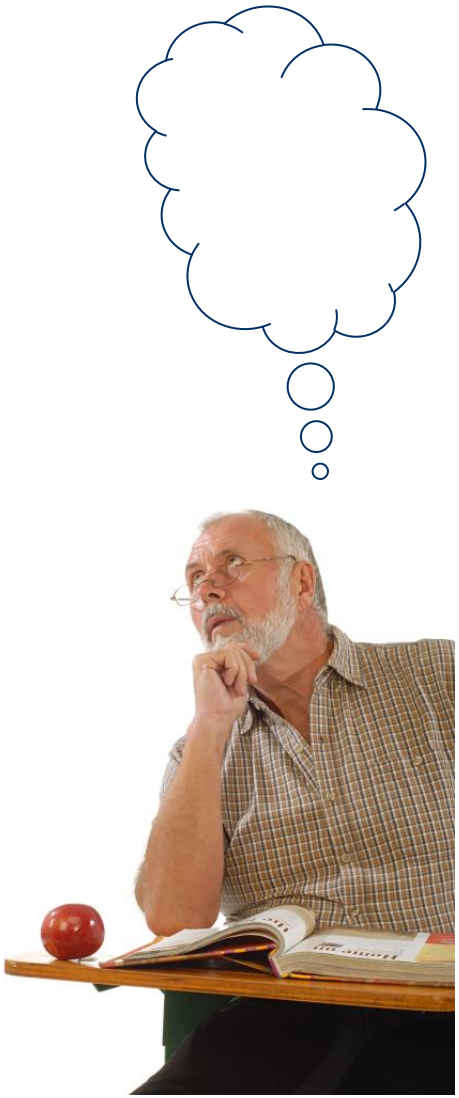
- A patent for a claimed invention may not be obtained … if the **differences** between the claimed invention and the prior art are such that the claimed invention as a whole **would have been obvious** before the effective filing date … **to a person having ordinary skill** in the art to which the claimed invention pertains. **(§ 103, U.S. Code 35)**

When is an invention "inventive"?

- When it is not obvious to the person skilled in the art in view of the prior art

- The person skilled in the art
  - is a skilled practitioner in the relevant technical field
  - has access to the entire state of the art
  - is aware of general technical knowledge
  - is capable of routine work

He knows EVERYTHING,
but has ZERO imagination!



Source: EPO Intellectual Property Teaching Kit

Inventive step – Problem/solution approach (European approach)

- Determine the "closest prior art",
- Distinguishing feature(s)
- Effect of distinguishing feature(s)
- Establish the "objective technical problem" to be solved, and
- Consider 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.

Assessing inventive step (I)

Stage 1

- Determine the closest prior art and common features:
  - (a) a compartment for liquids
  - (b) a handle
  - (c) a lid
  - (d) one spout

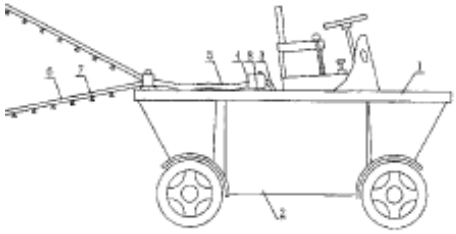
Fig.1.

Source: EPO Intellectual Property Teaching Kit

Prior Art

The prior art search revealed the following documents:

Document D1:
A teapot with one spout.



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A filter handle with two spouts to be used with a coffee-maker.

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An oil and vinegar bottle which reveals a second bottle inside. The two spouts are cleverly arranged to ensure the second bottle never drips while the first one is in use.

Assessing inventive step (I)

Stage 1

- Determine the closest prior art and common features:
  - (a) a compartment for liquids
  - (b) a handle
  - (c) a lid
  - (d) one spout

Stage 2: Problem

- Differences over D1:
  - two spouts instead of one
  - particular arrangement of the spouts

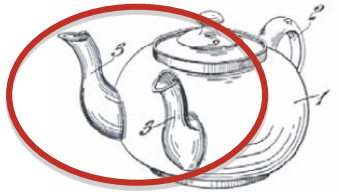


Fig.1.

- Drawback of prior art:
  - time-consuming

- Advantage/effect of the invention:
  - the time needed to fill multiple cups is reduced

- Objective problem to solve:
  - how to modify the teapot of D1 to reduce the time needed to fill multiple cups

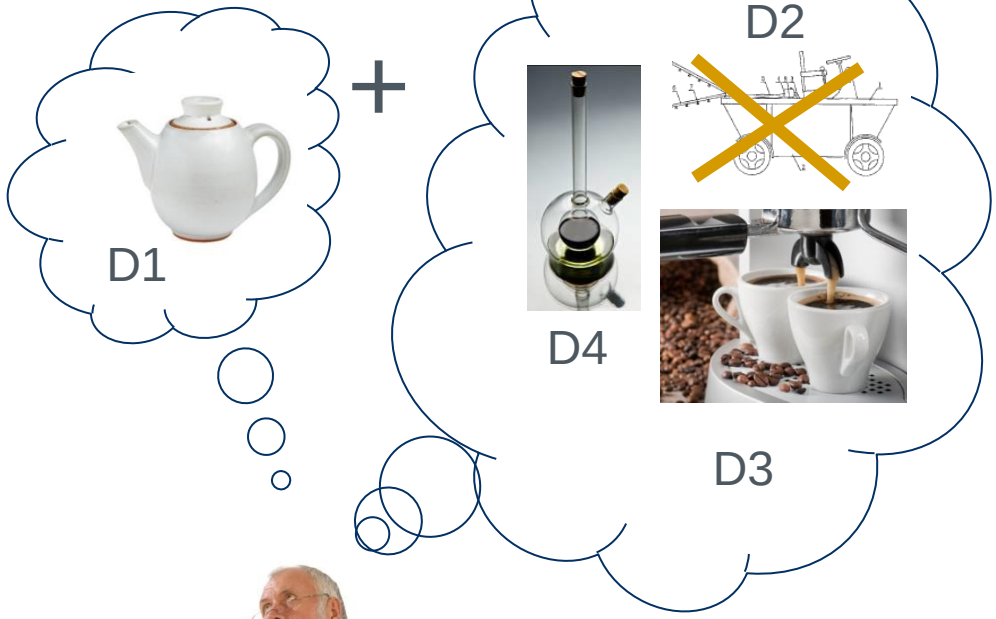
Source: EPO Intellectual Property Teaching Kit

Assessing inventive step (II)

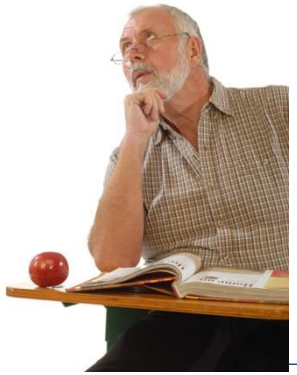
Stage 3: Solution

Is the claimed solution obvious in view of the prior art?

?



Objective problem for the skilled person: How to modify the teapot of D1 in order to reduce the time needed to fill multiple cups



Source: EPO Intellectual Property Teaching Kit

Assessing inventive step

Claim: A pouring vessel comprising
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Fig.1.

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revealed the
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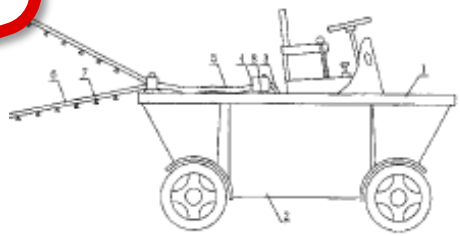
pout.

INVENTIVE



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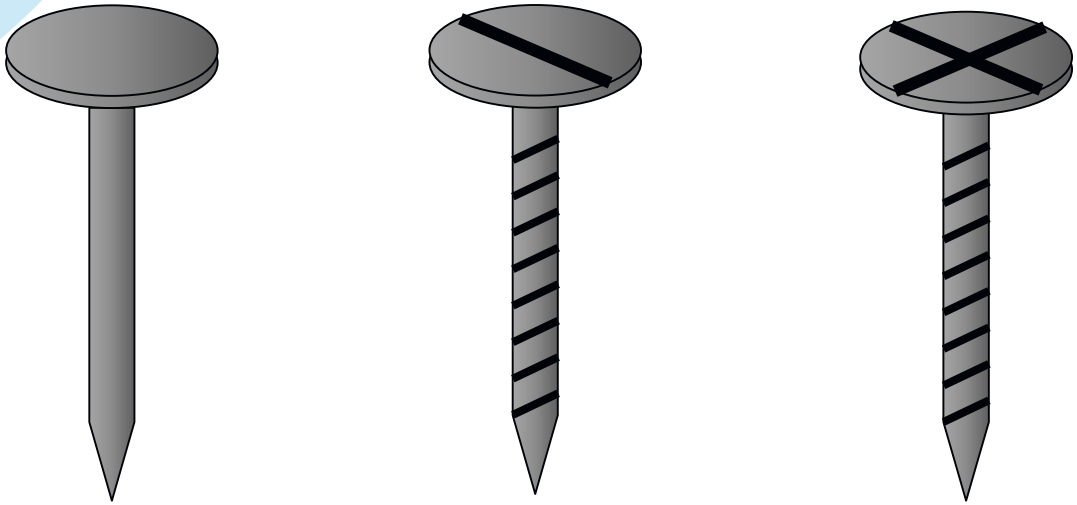
An oil and vinegar bottle which reveals a second bottle inside. The two spouts are cleverly arranged to ensure the second bottle never drips while the first one is in use.

Source: EPO Intellectual Property Teaching Kit

Inventive step – Is the technical effect or feature obvious in view of what is known?

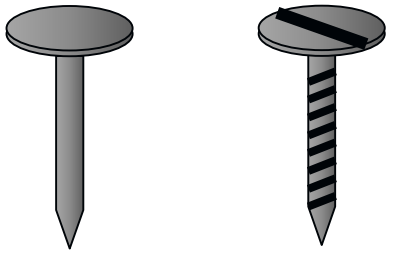


Inventive step – what are the differences

Structural differences:

Threaded shank

Slot in head



Functional differences:

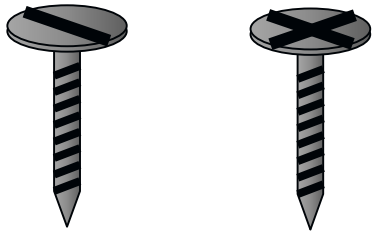
Can be re-used

Stronger fastening

Requires a screwdriver

Does not require a hammer

Inventive step – what are the differences



Structural differences:

Shape of slot

Functional differences:

Better engagement with screwdriver

More force can be applied

Less slipping?

Obviousness – United States

Four factual inquiries:

(1) determine the scope and content of the prior art;

(2) ascertain the differences between the prior art and the claims;

(3) resolve the level of ordinary skill in the art; and

(4) consider all objective evidence (secondary considerations)

“In view of all factual information, the (Patent) Office must then make a determination whether the claimed invention as a whole would have been obvious at the time to the skilled person”

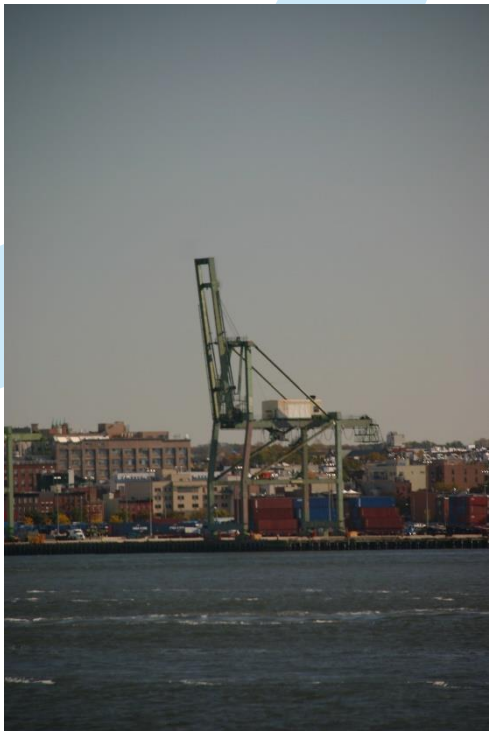
No hindsight

Obviousness – United States

- Secondary considerations
  - Art teaches away
  - Unexpected results
  - Invention solves a long-felt but unsolved need
  - Copying by others
  - Commercial success
  - Failure of others
  - Awards/praise in the field or disbelief from others that invention is operable

Exceptions to patentability

Why Exceptions?



- Why do we have patents?
- What are they good for?
- Can patents be bad for business?
- Can patents be bad for society?
- What should not be patentable?

Why Exceptions

- Ethics, morale
- Non-technical
- Alternative types of protection
- Courts' interpretation of the law
- Public/lobbyist pressure

Patentable subject matter (Europe)

Art. 52 (2) EPC

The following in particular **shall not be regarded as inventions** […]

(a) discoveries, scientific theories and mathematical methods;

(b) aesthetic creations;

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(d) presentations of information.

Example:

Computer program (source code) cannot be patented. Algorithm behind source code can

Patentable subject matter (Europe)

Art. 53 EPC

European patents **shall not be granted** in respect of:

(a) inventions the commercial exploitation of which would be contrary to "ordre public" or morality

(b) plant or animal varieties, methods for plant and animal “breeding”

Examples

1. Embryonic stem cells
2. “Non-technical” (=traditional) methods for breeding

US Exceptions (Supreme Court Decisions)

- **Products of nature**

Based on Myriad Genetics' discovery of the link between BRCA1 and 1 genes and risk of breast cancer.

Claims covering isolated DNA is not patentable because DNA is a "product of nature"

- **Diagnostic methods**

Based on patents covering optimization of dosing of a drug based on the blood level of a metabolite of the drug.

Degradation of the drug in the bloodstream was considered a "law of nature" and therefore not patentable.

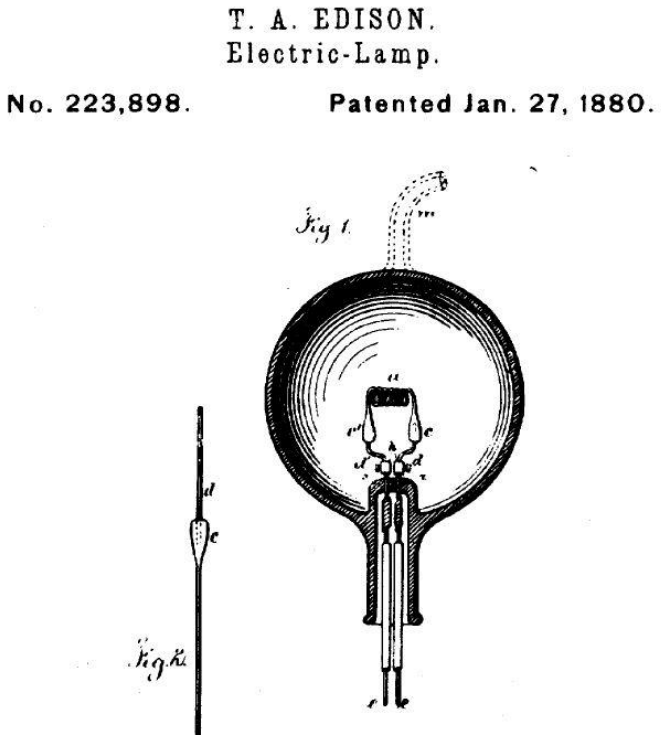
Industrial Applicability/Utility

- Invention can be made or used in any kind of industry
- "Industry" shall be understood in its broadest sense

- In United States – **utility**
- §101, US Patent law: Whoever invents or discovers any **new** and **useful** process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title (=this law).

Basic Patentability Requirements

- Patentable subject matter
- Novel
- Inventive/non-obvious
- Industrially applicable (useful)


T. A. EDISON.
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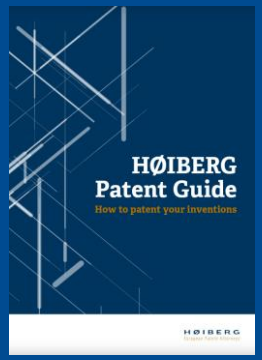
Q&A

Thank you!

A recording of this webinar will be available on **https://hoiberg.com**

The topic of the next HØIBERG Patent School webinar is:

”Freedom To Operate” on March 24th



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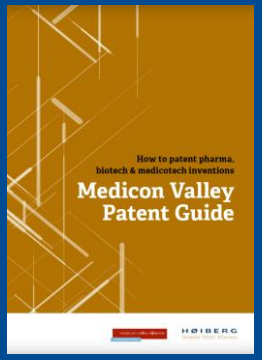
jvn@hoiberg.com; cdg@hoiberg.com or vby@hoiberg.com



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