


PATENTABILITY?

Andreas F. Tycho



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WHAT IS PATENTABLE:



US

- Anything under the sun made by man



Europe

- concepts which involve a technical aspect, with exceptions (theoretically)



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WHAT IS **NOT** PATENTABLE:

New and better understanding

New effects

Physical/mathematical models

EP: Software (as such...)



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A PATENTABLE IDEA/INVENTION MUST PASS THREE TESTS:

New (novel)  
– Novelty is "exact" and "anything" is valid....-almost

Involve an inventive step  
– The invention must be "substantial" and "non obvious"

Enablement  
– You must be able to make it.



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NOVELTY IS DESTROYED BY

- prior publication in a single document/event **anywhere**
  - Lectures
  - Comic books
  - TV/movies
  - Papers/patents
  - products
  - All languages



- Unpublished patent applications in the same country
- US has 1 year grace period!



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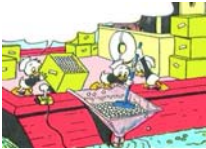
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NOVELTY




**Anders And 11/1957**



**Kuwait City, 1964**  
Ing. Karl Krøyer raised Al-Kuwait (2000 tons incl. Load of dead animals)

Rejected: Novelty ☹



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NOVELTY

AA19/1956 Originalt: Harmless Vanilla-Icecream-gun.

Today: Splattergun.



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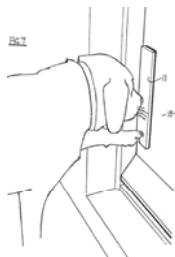
19/01/2012. Kilde: www.ctbarks.dk

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Seven horizontal lines for notes.

NOVELTY



(56) Documents cited  
GB 1549900  
GB 1030640  
GB 0763018  
GB 0529511  
GB 0407184  
The Schemo, No. 2016  
page 1



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Seven horizontal lines for notes.

NOVELTY

(56) Documents Cited  
GB 1438757 A GB 0783565 A GB 0615415 A  
EP 0158498 A2 US 4998982 A US 4573463 A  
US 2610624 A US 2428425 A  
Film or video titled "THUNDERBALL", United Artist,  
and featu ing the fictitious character James Bond  
particularly the scenes depicted in the video at  
approx. 65, 90 and 125 minutes after the start



GB 2 273 053

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INVENTIVE STEP

From a practical point of view



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INVENTIVE STEP

Fuzzy subject ↔ Law

- Difference between known and invention → “non-obvious”
  - To whom?
  - Based on what?
  - How “non-obvious”?

Each country have their own standards.

HOW DO I KNOW WHETHER I MAY HAVE AN INVENTION?



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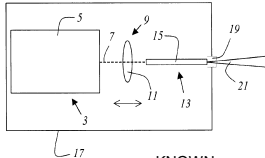
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INVENTIVE STEP = IS THE IDEA NON-OBVIOUS?




Example of very low inventive step  
US 6,611,643

An illuminating device comprising:

- a **laser** that emits a light beam,
- a **microstructured optical element** on which the light beam is directed and wherein the microstructured optical element spectrally broadens the light beam and
- a **casing**, defining an **exit opening** from which the spectrally broadened light beam emerges and wherein **the laser and the microstructured optical element are arranged within the casing.**

KNOWN → (points to laser and optical element)

NEW. OBVIOUS? → (points to casing and exit opening)



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SO DO I HAVE AN INVENTION?

“Laymans test”:

1. Is it technical?
2. Is it new?
3. Is it of commercially valuable to prevent others from performing the “new step”?

All yes? → Likely patentable!

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WHY...

are patents important.

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WHY?

Defence Bargaining Tradable “package”



Why not?



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START-UP

Often investor requirement:


Web 2.0  Life Science

Low Patent application required High

Why?

- Defence against larger companies.
- Tradable asset.

Why not?



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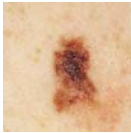

WHY: EXAMPLE – P.1

2<sup>nd</sup>-round financing for start-up

DURING DUE DILLIGENCE PROCESS

They had:

- Scanner to cure lethal skin cancer
- Excellent results
- Working prototypes.

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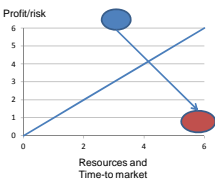

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WHY: EXAMPLE – P.2

We investigated portfolio for flaws. Found the usual problems:

- Own PhD thesis as dangerous prior art
- Patents did not cover 2.generation product

**Result:**  
**They almost lost financing**  
**=the cure for cancer!**

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FILING STRATEGY

•What to protect?



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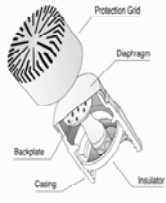
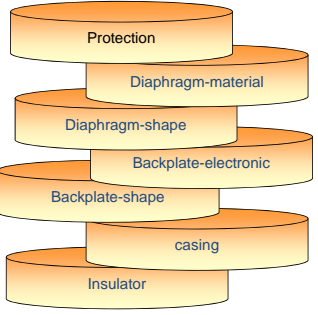

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HEGNER TOWER

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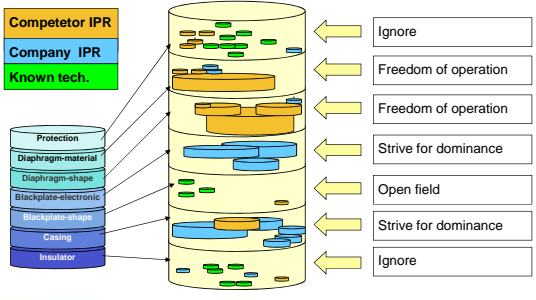

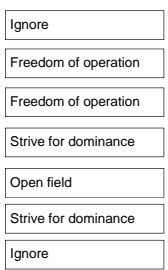

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HEGNER TOWER – FROM A COMPANY VIEW

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HEGNER TOWER – OPTIONS FOR DTU

Company 1 IPR  
Company 2 IPR  
Known tech.

Protection  
Diaphragm-material  
Diaphragm-shape  
Blackplate-electronic  
Blackplate-cathode  
Casing  
Insulator

Ignore  
Sell IPR to Company 1 or 2  
Sell IPR to Company 1 or 2  
Sell IPR to Company 1 or 2  
May obtain strong position  
Sell IPR to Company 1 or 2  
Ignore

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REMEMBER REMEMBER REMEMBER

A PATENT IS ONLY VALUABLE IF IT IS VALUABLE TO **STOP** SOMEBODY!!

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FILING STRATEGY

•When to file?

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**FILING: STARTING THE CLOCK**

0 12 18 months

dkr. 50k-100k dkr. 35k-100k

Priorities for new features

PUBLICATION Threat to own and other's inventions!

Patent Office Competitors Trial

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**COST EXAMPLE**

Et "verdenspatent"  
EP(alle), JP, CN, US

Accumulated costs, Million Dkr.

Year	Accumulated Costs (Million Dkr.)
2006	0.10
2007	0.20
2008	0.30
2009	0.40
2010	0.50
2011	0.60
2012	0.70
2013	0.80
2014	0.90
2015	1.00
2016	1.10
2017	1.20
2018	1.30
2019	1.40
2020	1.50
2021	1.60
2022	1.70
2023	1.80
2024	1.90
2025	2.00
2026	2.10
2027	2.20
2028	2.30
2029	2.40
2030	2.50

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**DILEMMA: FILING = STARTING THE CLOCK**

Sooner:  
Get priority before competition  
Secure rights before publication

Later:  
Invention complete within 12 months?  
Are we financed before high cost?

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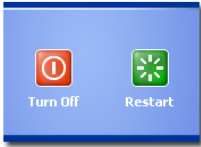
RESET THE CLOCK/RESET PRIORITY

Withdraw application (before 12 months)

Re-file application

**DANGER DANGER** (get help!)

- Risk of new prior art (yours + others).



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OTHER ISSUES RELATING TO FILING STRATEGY

Country of first filing?  
DK? US? European?

Which countries to cover?  
ONLY key countries for competitors!

How to cover important countries?  
PCT to keep options open?  
EP patents.

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FILING STRATEGY

•Fictional) How is a patent obtained in practice?

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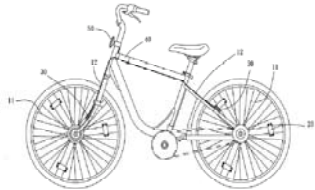
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BICYCLE LIGHT INVENTION (FICTIONAL)

1: January 2008. Yin Jhao invents this:



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DRAFTING PATENT APPLICATION

2: Draft patent application with attorney

Includes claims.

1. A power-generating illumination device for a bicycle comprising at least one permanent magnet disposed onto wheel spokes so as to form a rotor, an induction coil assembly mounted onto a fork for forming a stator, such that during the rotation of the rotor, said induction coil assembly may be cut by magnetic lines of force to generate electrical energy for being outputted to a light-emitting unit.

3: Faxed to United States Patent Office on Feb. 4, 2008.  
+ forms + money transfer

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EXAMINATION

4: 1 year later. An Examiner checks to see whether there is prior art.



She writes to us:  
*Patent is rejected.*  
*Claims lack novelty in view of [US patent 5,874,792](#).*  
*You have 4 months to respond.*

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WE RESPOND

5. We change the claims based on what is already in the application. **WE CANNOT ADD NEW MATERIAL!!**



Amended claim 1:

Claim 1 + *comprising less than 4 permanent magnets disposed onto wheel spokes.*



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FURTHER EXAMINATION

6. *Patent is rejected because you do not have support for "less than 4 magnets".*

*You have 4 months to respond.*

7. New business development. We partner with Reelight (fictional). They work with 1 magnet (see [this patent](#))



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GRANT

8. Instead we take a feature from the description (page 2, line 14-18).

Claim 1 is now limited to:

1. A power-generating illumination device for a bicycle comprising at least one permanent magnet disposed onto wheel spokes so as to form a rotor, an induction coil assembly mounted onto a fork for forming a stator, such that during the rotation of the rotor, said induction coil assembly may be cut by magnetic lines of force to generate electrical energy for being outputted to a light-emitting unit, characterized in **between said induction coil assembly and said light-emitting unit is provided with a control unit at least including a wave detector, a wave filter, and a current limiting resistor so that said wave detector, said wave filter, and said current limiting resistor are connected together to form a loop.**

9. Examiner writes: Patent is granted as [US 7,507,007](#)



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THINGS TO KEEP IN MIND/TAKE HOME MESSAGES

- You cannot add new material, so an application needs to have fall-back positions to handle:
  - Unknown publications
  - New business developments.
- Claims = coverage
- Coverage of application ≠ coverage of patent !!
- Consider balancing claims:
  - Wide claims = potentially many publications against you
  - Narrow claims = poor patent protection.

Also note:  
Examination is not perfect: a granted patent may be invalid!



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ENFORCING PATENT RIGHTS



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PATENT

A patent is a small law.

*"..a patent provides the right to exclude others from making, using, selling, offering for sale, or importing the patented invention."*



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COMMON MISCONCEPTION

*"We have a patent so we have the rights to market the invention"*  
**WRONG !!**

Feature	Competitor	Your company
1	X	X
2	X	X
3	X	X
4		X

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DEFENDING YOUR RIGHTS

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INFRINGEMENT: CONSEQUENCES (FROM THE COURT)?

- Activities are stopped
  - May/may not be costly
- Damages
  - US: Extremely high (punitive)  
Trial cost: ~3 million US\$ (win or loose)
  - Germany /Denmark: Lost profits or reasonable royalty (low)

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INFRINGEMENT: MAKING, USING, SELLING, OFFERING FOR SALE, OR IMPORTING OF WHAT?

Literal infringement

Hanging means, such as nails or screws



Equivalent infringement?



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WHY ARE PATENT-CASES SO EXPENSIVE?

Interpretation:

Technology meets Law



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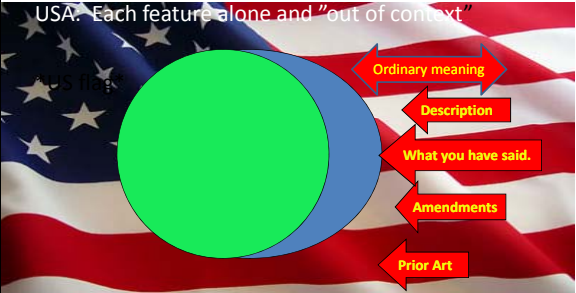
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INTERPRETATION/EQUIVALENCE DIFFERS AROUND THE WORLD

USA: Each feature alone and "out of context"



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INTERPRETATION/EQUIVALENCE DIFFERS AROUND THE WORLD

Germany: What skilled person understands in light of the entire patent rather than a literal meaning. (the inventive idea)

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INTERPRETATION/EQUIVALENCE DIFFERS AROUND THE WORLD

UK: In between US and Germany (~mainland Europe)

DK: Going forth and back (mostly like Germany)

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A DANISH EXAMPLE: THE FABER CASE (1)

The patent:

Claim 1 (freely translated)  
A device for adjusting of a blind **characterized in that** the adjustment mechanism is directly attached to a freely hanging adjustment bar

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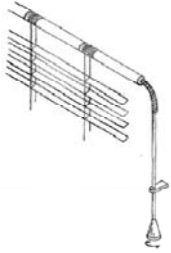
A DANISH EXAMPLE: THE FABER CASE (1).

Infringer:

Not hanging freely

Patentee added this feature in an argument before the Patent Office saying: "it is important"

*Infringement?*



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A DANISH EXAMPLE: THE FABER CASE (2).


Court rules: YES

The holder has no bearing on the function of the adjustment bar.



Damages (1962): Kr. 30.000

This ruling is consistent with extending the scope to encompass the "inventive idea".



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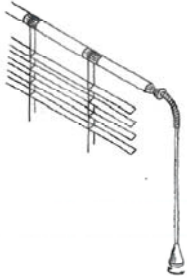
A DANISH EXAMPLE: THE FABER CASE (2).

Infringer:

A gear is added:  
Not directly connected

Patentee added this feature in an argument before the Patent Office saying: "it is important"

*Infringement?*



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A DANISH EXAMPLE: THE FABER CASE (2).

Court rules: NO



The adding of "directly" must have meant that the patentee specified the lack of a gear.

This ruling is less (?) consistent with extending the scope to encompass the "inventive idea".



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A US EXAMPLE: CHEF AMERICA, INC VS. LAMB-WESTON, INC

Chef America (United States Patent No. 4,761,290):

Dough products convertible by heating to light, flaky, crispy dough products are produced by applying shortening flakes to a dough, coating a light batter upon the dough product and heating the batter-coated dough to first set the batter and then subsequently melt the shortening flakes, thereby forming air cells within the batter and at the surface of the dough



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A US EXAMPLE: CHEF AMERICA, INC VS. LAMB-WESTON, INC

Discussed feature of the claim:

"heating the resulting batter-coated dough to a temperature in the range of about 400° F. to 850° F."

*Infringement?*



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A US EXAMPLE: CHEF AMERICA, INC VS. LAMB-WESTON, INC

Court ruled: NO



Court refused to rewrite the claims, instead construing the claim as written, and "not as the patentees wish they had written it..." Court affirmed the district court finding that "the claim means what it says."



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TAKE HOME: INFRINGEMENT/FREEDOM TO OPERATE

Complicated: Multiple factors in play.  
Each country is different.

Prediction? Only risk analysis possible

Litigation? Expensive & unpredictable venue



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