

Business Innovation in Optics and Photonics

Course Section 6

IP- Management

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IP Management

What is the meaning of IP?

IP: Intellectual Property

IPR: Intellectual Property Rights

Intellectual Property

All specific knowledge or know-how of a person or within an organisation, irrespective whether protected (by Intellectual Property Rights) or unprotected (Know-How)

Know-How

What is Know-How?

Technical Know-How

- Manufacturing Competencies (e.g. how to manufacture lenses or prisms)
- Development Competencies (e.g. how to design lens systems)
- Measurement Competencies (e.g. how to measure the surface topography with the required accuracy)
- ...

Commercial Know-How

- Who is the proper supplier for which component?
- Who are customers or likely to become customers?
- ...

Kinds of Intellectual Property Rights

Patent

Technical idea (invention) for an agent, a machine or a method
Term: Maximum 20 years
Examination of novelty and inventive step

Utility Model

Technical idea (invention) for an agent or a machine (no methods!)
Term: Maximum 10 years
Only formal examination

Design Patent

Industrial design of aesthetics (form)
Term: Maximum 25 years (EU Design)
In most countries only formal examination

Trademark

Words, images, colours and combinations thereof
Term: Unlimited extendable, use necessary (e.g. Carl Zeiss, Cinemizer, OPMI)

Copyright

Aesthetic creations (literature, music, computer programs, technical drawings)
Term: 70 years after death of creator
Is created automatically with creation

Others

Semiconductor Topographies
Plant Varieties

Common Properties of IPR

Written Request (Exceptions: Copyright, Short Term EU Design)

Only “negative” Right:

The right does not necessarily give the right to use but only the right to forbid a third party to use the invention (**Infringement**)

Principle of Territory:

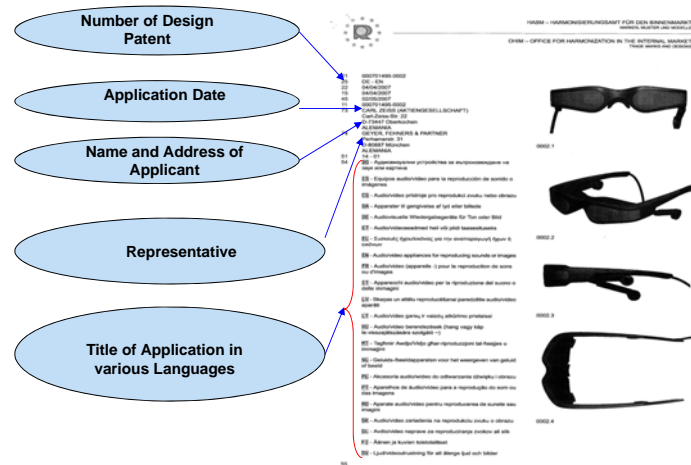
Protection only exists in that country in which the IPR was filed and granted (exception Copyright)
Decision by authorities in one country do not have any direct effect in other countries

Common Properties of IPR

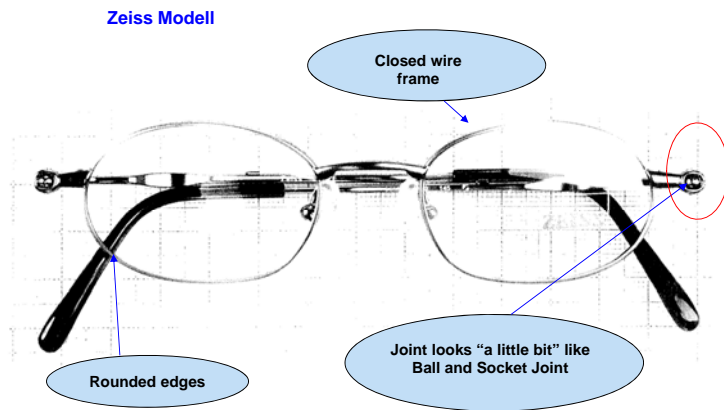
Transferability:

The owner of the right can sell, loan (license), transfer, pledge the property or pass it on an other person like any material property (exception Copyright which cannot be sold)

Design Patents – An Intellectual Property Right with often disregarded Power

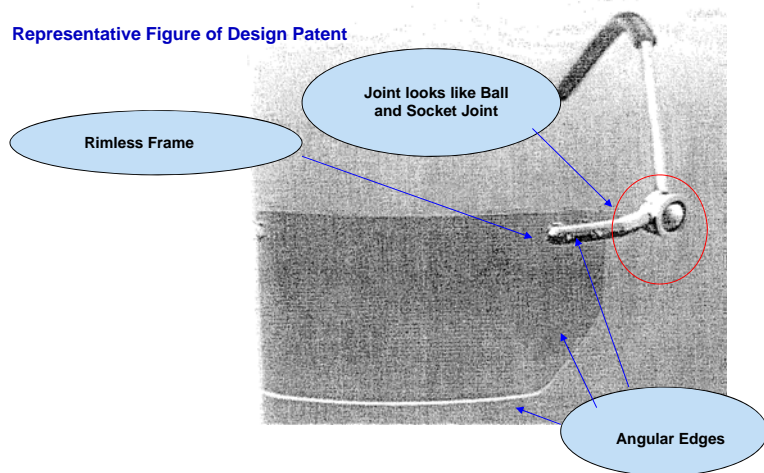


Design Patents – An Intellectual Property Right with often disregarded Power



Design Patents – An Intellectual Property Right with often disregarded Power

Representative Figure of Design Patent

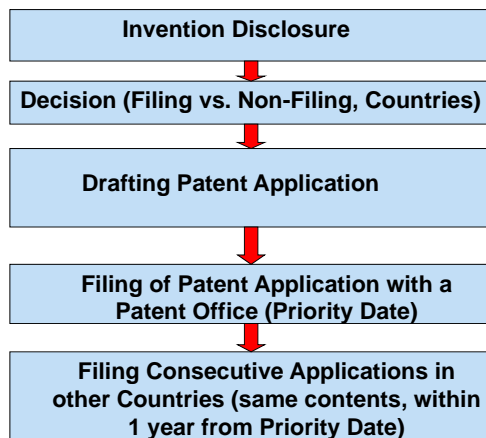


Design Patents – An Intellectual Property Right with often disregarded Power

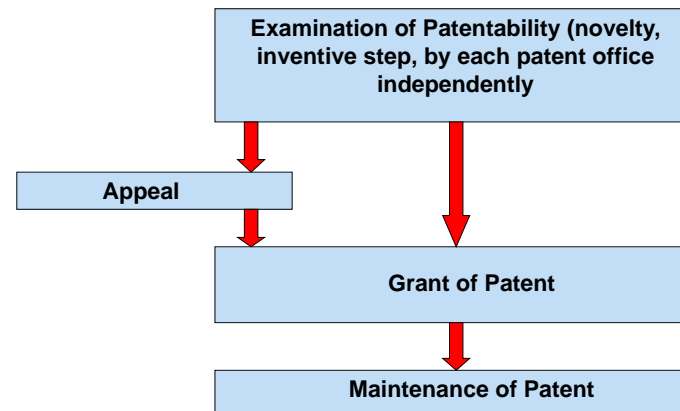
Important Properties of Design Patents:

- Nearly no text
 - no translation costs, no translation errors
- No defined scope
 - Scope to be defined "in light" of accused infringing product
- Quick registration
 - Enforceable right a few months after filing
- Low official fees

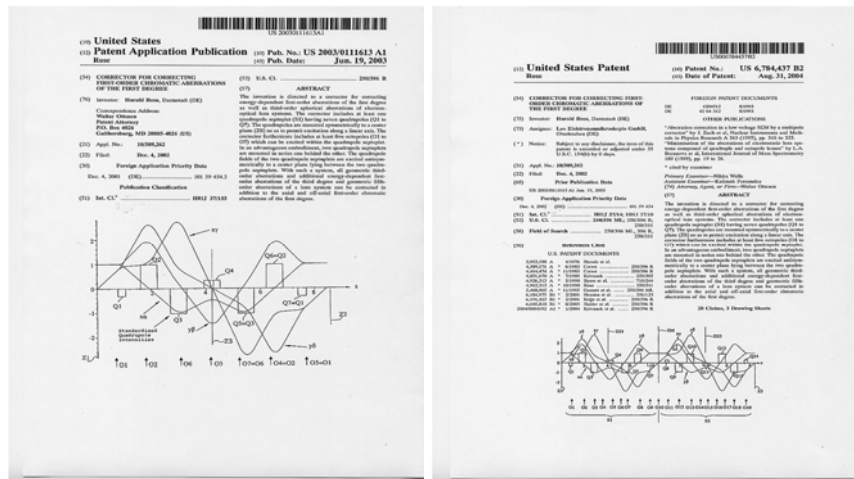
Patents – The Patent Process



Patents – The Patent Process (continued)



Two Kinds of Patent Publications



Two Kinds of Patent Publications (continued)

Patent Publication (Laying Open)

- 18 Months after first Filing Date (Priority Date)
- Identical with the application as filed
- No Indication by the patent office whether and to which extent it intends to grant a patent
- Claims are a „wish-list“ of the applicant
- Description serves as reservoir for amendments and form prior art for later patent applications

Patent Specification

- After successful examination
- Claims define what the patent office has assessed as patentable
- Claims define scope of the patent (what is protected – or which features a product/process must have to infringe the patent)
- Invention as defined by the wording of the claims can be enforced at court

Patent Claim

Example: US 2008/0239523 – HMD with Diopter Compensation

An HMD device comprising:

1. first and second imaging optical systems for the left and right eyes of a user wearing said device;
2. a support frame defining first and second windows corresponding to respective ones of said first and second imaging optical systems for the left and right eyes of said user, respectively;
3. each one of said imaging optical assemblies being adapted to so image an image formed in an object plane to permit said user to observe said image in an image plane with the eye corresponding thereto;
4. each of said imaging optical systems including an optical element defining an optical axis and a deflecting element disposed downstream of said optical element;
5. each one of said imaging optical systems further including an image transducer mounted upstream of said optical element

Patent Claim

Example: US 2008/0239523 – HMD with Diopter Compensation

6. and a receptacle frame for holding said image transducer and said optical element;
7. said receptacle frame being linearly movably guided;
8. each one of said imaging optical systems further including a drive unit for driving said receptacle frame so as to cause said optical element to be displaced along said optical axis;
9. the drive units of said first and second imaging optical systems including respective adjusting wheels disposed next to corresponding ones of said first and second windows as viewed from said user;
10. and, each of said drive units further including a cam mechanism for coupling the adjusting wheel to the receptacle frame so as to translate an input rotational movement of the adjusting wheel into an output linear movement of the receptacle frame.

The claim only is infringed if all features 1 – 10 are realized!

Costs of Patents

Drafting a Patent Application: 3 – 8k€ in exceptional cases up to 15k€(e.g. drafting by US Attorney)

EP Application: 3.5 k€, During Prosecution 3 – 5 k€

US Application: 5 – 8 k€, During Prosecution 4 – 6 k€

JP Application: 5 – 8 k€, During Prosecution 4 – 6 k€

KR, CN: Costs comparable to EP; IN: Costs about 50% of EP

Costs of Patents (continued)

Grant of EP Patent: Translations into official languages of each country in which patent protection is sought; validation costs for local patent attorney

Annuities: As a rule progressively increasing from about 100 €/year to about 1500 €/year and country; Exception: US: Extensions after 3.5, 7.5 and 11.5 years from grant of patent

Overall costs for a patent family with EP, US, JP, KR and CN with validation in 4 EP countries:

60 – 100 k€

Patent Litigation and Costs

Defences in Patent Litigation:

- Non-Infringement
- Invalidity of the Patent (through the full patent term)

In Germany dependent on the “value of the conflict” but mostly in the range 50 – 100 k€/per instance:

Infringement and validity are decided in separate procedures

In US costs depend on the effort to be spent by the attorneys, mostly in the range 2 – 5 Mio \$ (Discovery, Jury Trial)

Infringement, Validity and Enforceability are decided in a common procedure

Goals of IP Management

What can go wrong with respect to Intellectual Properties?

1. A needed technology is not available (either in or even outside the company)
2. A competitor holds a basic patents for the needed technology
3. A competitor holds a huge number of patents for the intended product
4. Oneself has a lot of patents but the wrong ones (which are of no interest for the competitor)
5. Costs for developing or maintaining the patent portfolio are beyond ones capabilities

The Goal of IP Management is to avoid such outcomes as best as possible and foreseeable and to realise the opposite situation

IP Managing: Why Filing of Patents?

Generation of prior art and avoiding later patents of competitors
Defensive Strategy – Freedom to Operate

Generation of mass for Cross-Licensing

- for the case of attacks by competitors to become “untouchable”
- Ensuring access to protected technology

Defensive Strategy – Freedom to Operate

Maintenance of exclusivity and technological distance to competitors
(Unique Selling Points)

Offensive Strategy

Realisation of licensing income

Licensing Strategy

IP Managing: Filing of Patents in which countries?

Strategically useful country spectrum depends on the individual competitive and market situation:

- Site of possible or actual competitors (prohibition to manufacture)
- Required markets size (prohibition to offer for sale, sale, distribute)
- Large markets (prohibition to offer for sale, sale, distribute)
- Enforceability of patents (possibility to prove infringement vs. litigation costs)
- Margin situations of the products (which costs can be born?)

IP Management: Challenges

There always are people who think a long term ahead

- Basic patents often have been lapsed
- Only patents for particular embodiments or solutions any more achievable
- **You also must think a long term ahead (mostly > 10 years)**

Continuous improvement of IP portfolio necessary

- File patents for the most valuable ideas
- Make country decision dependent on the value of the individual idea
- Give-up patents or patent applications with low value

Continuous Evaluation of Patents and Inventions

IP Management: Challenges and Tasks

Define your overall long term goals

Search and evaluate the IP landscape

- Evaluate your own position with respect to the long term goals
- Evaluate the position of your (likely) competitors

Define appropriate measures to reach and save guard your long term goals

- Define fields and valuable solutions for problem
- Generate ideas to resolve the problems and file as patents

Observe activities of competitors and market requirements and adjust your own measures

IP Management: Patent Data Bases

DEPATISNET:

<http://depatisnet.dpma.de/DepatisNet/depatisnet?window=1&space=menu&content=index&action=index>

ESPACENET: <http://ep.espacenet.com/>

USPTO: <http://patft.uspto.gov/>

IP Management: Examples of Successful IP Strategy Slab-Laser Patent

At the beginning of the 1990th Carl Zeiss bought US Patent 4,719,639, a basic patent for so called CO2-Slab-Laser

Carl Zeiss founded a US company site, developed the laser to market requirements and built up manufacturing capabilities in the US

A short time before market introduction of the new laser a competitor entered the market with a CO2-Slab-Laser infringing US 4,719,639

Carl Zeiss filed a patent infringement suit with a US district court

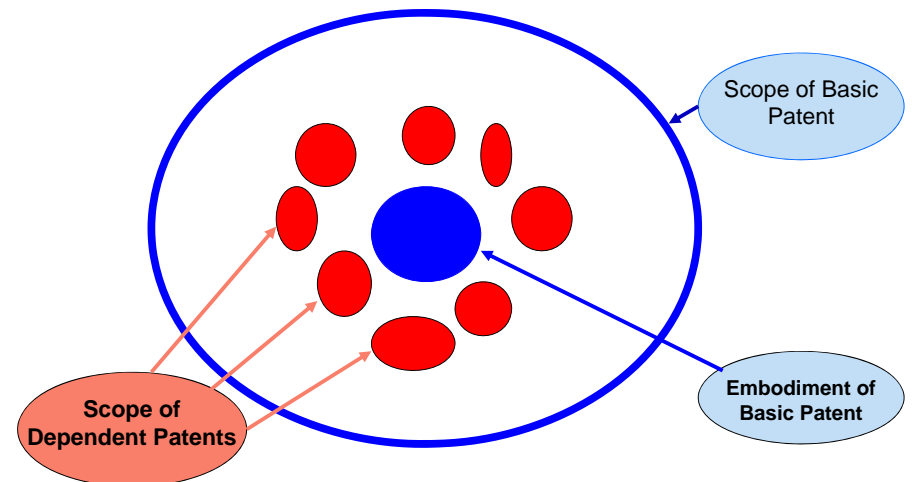
IP Management: Examples of Successful IP Strategy Slab-Laser Patent

During the infringement suit Carl Zeiss had to note that the competitor had filed a large number of patents dependent on the basic patent US 4,719,639.

Conclusion: There is no chance to realize a product fulfilling market requirement and concurrently avoiding infringement of all competitors patents.

Outcome: Settlement with Cross-Licensing

IP Management: Examples of Successful IP Strategy Slab-Laser Patent



IP Management: Examples of Successful IP Strategy

Nikon

At the beginning of the 1990th Nikon filed some patents for quadrupole illumination in lithography

1993 -1995 Carl Zeiss developed the "Areal" illumination system for our lithography optics also being capable of providing quadrupole illumination. At the end of development: analysis of patent situation with the result that the Nikon patent are uncritical

Nikon maintained patent application in the USA pending

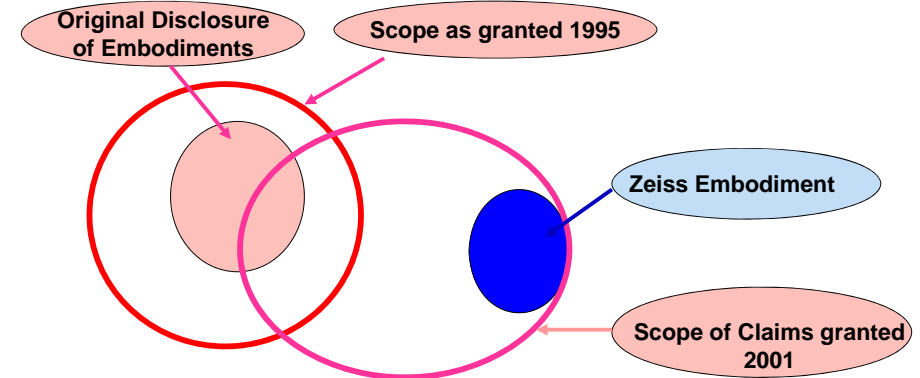
About 2000 Nikon filed Continuation Applications with claims directed to particular features realized in the "Areal" illumination system.

Middle 2001: Grant of US Patents for the Continuation Applications the scope of which was well beyond the scope of the claims granted early 1990th

IP Management: Examples of Successful IP Strategy

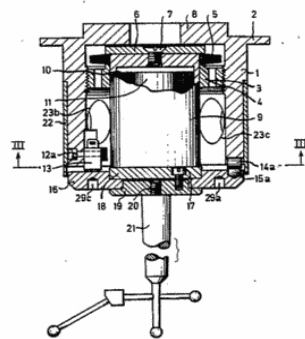
Nikon

In December 2001: Nikon filed infringement suit in California against ASML (13 patents)

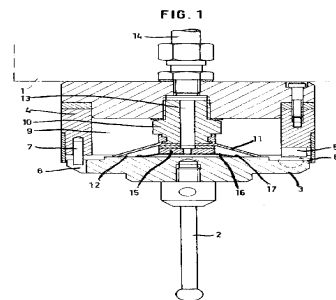


IP Management: Examples of Successful IP Strategy

Zeiss



DE Patent 3320127
Magnetic Stylus Changer
1983



Vacuum Suction Stylus Changer
EP471168
1990

IP Management: Examples of Successful IP Strategy

Zeiss

1983 Carl Zeiss filed a patent for a magnetic probe changer for Coordinate Measuring Machines DE 3320127.

Since about 1987 Carl Zeiss manufactured and sold magnetic probe changers according to DE 3320127.

In 1990 Carl Zeiss filed a patent for a probe changer based on vacuum suction (EP471168) though Carl Zeiss never intended to use this patent (is real alternative to DE 3320127).

In 2000 Carl Zeiss sued a competitor based on DE 3320127; Competitor stopped selling magnetic probe changers.

One Year later the same competitor came up with a probe changer working with suction. Carl Zeiss wrote a letter to the competitor and this probe changer was withdrawn from the market.

When DE 3320127 terminated in 2003 also EP471168 was abandoned.

Thank You for Your Attention