



POLITECNICO
MILANO 1863

An introduction to industrial property

Energise project webinar (24th September 2015)



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Forms of industrial property

Patent

- a legal document that specifies a **technical** invention. Patents are territorial and relate to a specific country.

Utility model

- a document that aims to protect a technical solution that relate to the **shape** or **structure** of a product and confers a particular utility on a product, which already exists.

Industrial design

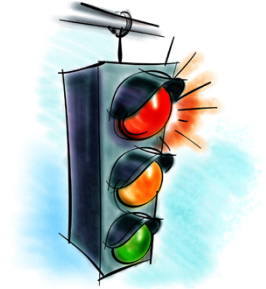
- it covers the **aesthetic features** of an object that has a practical utility (e.g. a new shape of a coffee machine).

Trademark

- word, phrase, symbol, and/or design that identifies and distinguishes the source of the goods of one party from those of others.



Patent (1)



A set of exclusive rights (***a right to exclude others***) granted by a country:

- To a patent owner (an inventor or his/her assignee);
- For a limited period of time;
- To prevent anyone from practicing exactly the invention claimed in the patent.

A patent gives you ***the right to exclude others*** from making, using, selling, offering for sale or importing the patented invention and creates barriers for competitors to enter the market.

The patentee must disclose an invention in a way that enable others to reproduce it.

The patent right is granted to the applicant who first files an application.



Patent (2)



A patent is a legal title and is:

- **Time-limited** (it expires after 20 years);
- **Space-limited** (it can be enforced within a country or those countries in which it was filed).

The technical features expressed in the **claims** define the invention for which has been granted an exclusive right to an applicant with respect to use, production and sale.

Is it easy to get a patent? No, it takes time and money to argue against patent examiners' rejections, especially to obtain broad and commercially useful claims.



Patent (3)

A first step is to understand what is an invention and what can become patentable subject matter. Not all legal systems have a positive definition of an invention.

The European Patent Convention doesn't define the concept of invention, but it rules out what is not patentable subject matter:

- Discoveries, scientific theories and mathematical methods;
- Aesthetic creations;
- Schemes, rules and methods for performing mental acts, playing games or doing business and programs for computers;
- Presentations of information.



Patent (4)

A patent shall be granted for any inventions, in all field of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

An invention is **new** if it differs from prior art

An invention is **non-obvious** when it is significantly different from prior art.

An invention shall be considered as susceptible of **industrial application** if it can be made or used in any kind of industry, including agriculture.



Patent (5)

A patent document is made of several pages:

- The **first page** contains a lot of bibliographic data;
 - The **title** is intended to be a brief description of the invention;
 - The **abstract** is an outline of the technical disclosure of the patent and should enable the reader to quickly understand the main aspects of an invention.
- The **description** comprises:
 - A statement of the field of technology to which the invention relates;
 - A discussion of the state of the art (*prior art*);
 - A summary of the invention;
 - A brief description of the drawings;
 - The detailed description (with one or more embodiments);
 - The claims (what subject matter is protected): a claim is a **single sentence** defining the technical elements of the invention



Patent (6)

Front page of
PCT patent
application n.
WO
2013/124764

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)
(19) World Intellectual Property Organization
International Bureau

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WIPO | PCT

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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[Continued on next page]

(54) Title: PEDAL ASSISTED BICYCLE AND METHOD OF CONTROLLING THE PEDAL ASSISTED BICYCLE

FIG. 1

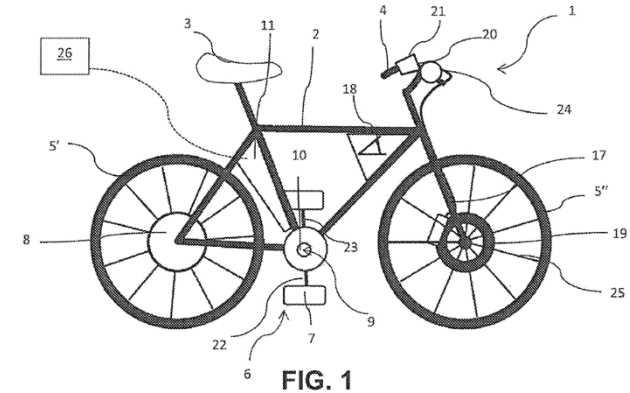
(57) Abstract: The present invention refers to a pedal assisted bicycle (1) which comprises a first (5') and a second (5'') wheels; a pedaling assembly (6) mechanically decoupled from said first (5') and second (5'') wheels by which a user can supply a pedaling power (Wped); an electric motor (8) mechanically coupled to at least one of said first (5') and second (5'') wheels capable of taking a motor power (Wmot); a generator device (9) adapted to generate a generator electric power (Wgen) from said pedaling power (Wped), arranged in an energy exchange relationship with the pedaling assembly (6) and the electric motor (8); an energy storage device (10) arranged in an energy exchange relationship with the electric motor (8) and with the generator device (9); a control system (11) comprising a module for controlling the power (Wgen) required to the generator device to be supplied to the electric motor (8) and/or to the storage device (10); a heartbeat sensor (26) adapted to generate a signal representing heartbeat. The module for controlling the electric power required to the generator device (Wgen) is operatively connected to the heartbeat sensor (26) and is configured in order to determine the electric power required to the generator device (Wgen) as function of the signal representing the heartbeat. The present invention refers also to a method for controlling the pedal assisted bicycle.

WO 2013/124764 A1

A source of bibliographic data



Patent (7) - claims



1. Pedal assisted bicycle (1) comprising:
 - a first (5') and second wheels (5''),
 - a pedaling assembly (6) mechanically decoupled from said first (5') and second wheels (5''), by which a user can supply a pedaling power (W_{ped}),
 - an electric motor (8) mechanically coupled to at least one of said first (5') and second wheels (5'') capable of taking a motor power (W_{mot}),
 - a generator device (9) adapted to generate a generator device electric power (W_{gen}) from said pedaling power (W_{ped}), arranged in an energy exchange relationship with the pedaling assembly (6) and the electric motor (8);
 - an energy storage device (10) arranged in an energy exchange relationship with said electric motor (8) and generator device (9),
 - a control system (11) comprising a module for controlling the power (W_{gen}) required to the generator device to be supplied to the electric motor (8) and/or to the storage device (10),

characterized in that it comprises a **heartbeat sensor** (26) adapted to generate a signal representing the heartbeat **and in that** **said module for controlling the electric power** required to the generator device (W_{gen}) **is operatively connected to the heartbeat sensor** (26) and **is configured in order to determine the electric power required to the generator device** (W_{gen}) as a function of said signal representing the heartbeat.




Patent (8)

Example of search report

List of relevant documents

Prior art labelled as X or Y renders the patentability of a claim at least dubious

EP 2 672 244 A1



Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 13 16 8800

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	PAWLOWSKA MONIKA ET AL: "Collinear interferometer with variable delay for carrier-envelope offset frequency measurement", REVIEW OF SCIENTIFIC INSTRUMENTS, AIP, MELVILLE, NY, US, vol. 80, no. 8, 18 August 2009 (2009-08-18), pages 83101-83101, XP012128427, ISSN: 0034-6748, DOI: 10.1063/1.3197404 * page 3 *	1-4,6-12	INV. G01J3/28 G01J3/433 G02B27/28 G01J3/453 G01J11/00
Y	----- * page 3 *	1,13	
X	US 6 195 167 B1 (REID DERRYCK TELFORD [GB] ET AL) 27 February 2001 (2001-02-27)	1-6,13,15	
Y	* column 5, line 19 - line 62; figure 5 *	1,13	
X	US 2008/175597 A1 (ARAHIRA SHIN [JP]) 24 July 2008 (2008-07-24)	1-6,13	
	* paragraph [0097] - paragraph [0104] * * paragraph [0255] * * paragraph [0289]; figure 20C *		
A	POCHI YEH: "Autocorrelation of ultrashort optical pulses using polarization interferometry", OPTICS LETTERS, vol. 8, no. 6, 1 June 1983 (1983-06-01), page 330, XP055073975, ISSN: 0146-9592, DOI: 10.1364/OL.8.000330 * the whole document *	1-15	G01J G02B
A,D	US 2009/161092 A1 (ZANNI MARTIN THOMAS [US] ET AL) 25 June 2009 (2009-06-25)	1-15	
	* the whole document *		
	----- -/--		
2 The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		2 August 2013	Besser, Veronika
CATEGORY OF CITED DOCUMENTS			
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document	

EPO FORM 1501 08/12 (PO4/07)



Patent (9)

Categories of citations

- X - particularly relevant if taken alone
Objection: Lack of novelty or lack of inventive step with one document
- Y - particularly relevant if combined with another Y-document
Objection: Lack of inventive step by combination of two (or more) documents, always in pairs
- A - Technological background, no objection of lack of novelty or inv. step
- O - Non-written (e.g. oral) disclosure
- P - intermediate document, published after priority date but before filing date of the application; used in combination with X, Y, A (e.g. XP)
- T - Theory or principle underlying the invention
- E - Earlier patent document, but published on, or after the filing date
- D - cited in the application
- L - cited for other reasons

Source: S. Wolf (2011)



Patent strategies (1)

The first formal step is the submission of a patent application.

Types of filings:

- **National**
- **Regional** (EPO, ARIPO, EAPO, OAPI)
- **International** (PCT)

After the national filing there is one year to decide whether or not to extend the patent.

Some countries are not member states of PCT (e.g. Argentina, Taiwan).

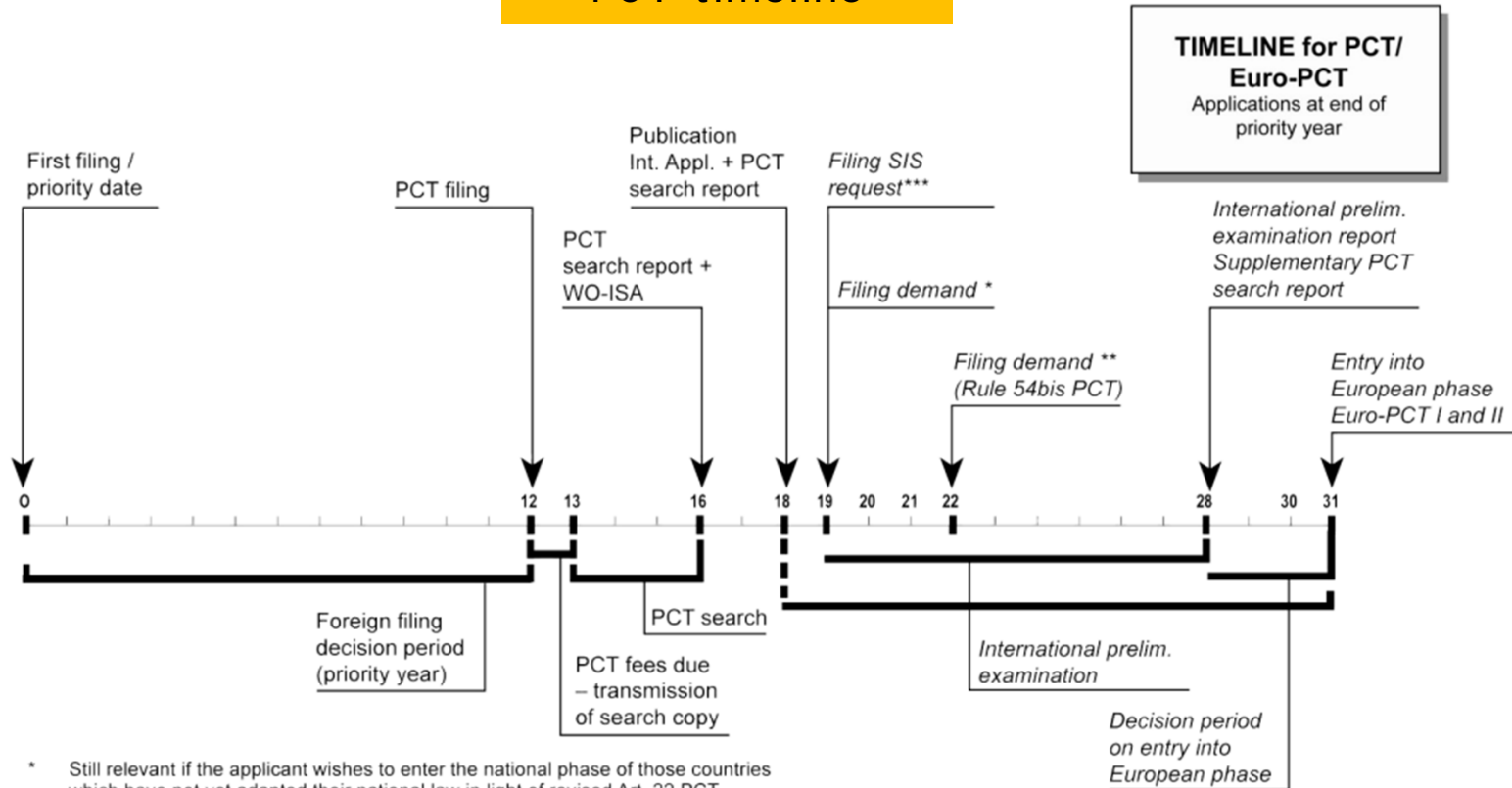
Depending on the country, patent applications may be subject to mandatory examination.

18 month after the initial submission, the application will be published.



Patent strategies (2)

PCT timeline



- * Still relevant if the applicant wishes to enter the national phase of those countries which have not yet adapted their national law in light of revised Art. 22 PCT.
- ** If the applicant wishes to enter the national phase of countries that apply the 30/31 month time limit under Article 22 PCT, the demand must be filed prior to the expiration of whichever of the following periods expires later:
 - three months from the date of transmittal to the applicant of the ISR and WO-ISA by the ISA, or
 - 22 months from the (earliest) priority date.
- *** A request for supplementary international search must be filed within 19 months from the priority date.

Source: epo.org



Patent strategies (3)

A «patent world» doesn't exist but by filing a PCT patent application, an applicant can seek protection for an invention in 148 countries.

PCT is basically *an option for future patenting*, that provides the applicant with a further delay before deciding to apply or not.

The PCT process provides the advantage of a longer investigation of the technological potential of the invention, and in case of a negative assessment, the application can be withdrawn before entering into expensive national or regional phases.



Utility models - an example



Mod.1 - fig.1



Mod.1 - fig.2

Utility model patent n. IT000277307
Registered community design n. 002027425 entitled
«Convertible garments»

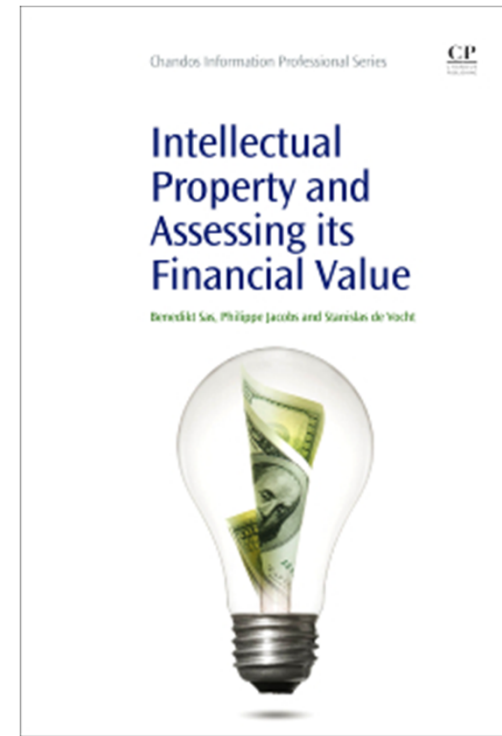
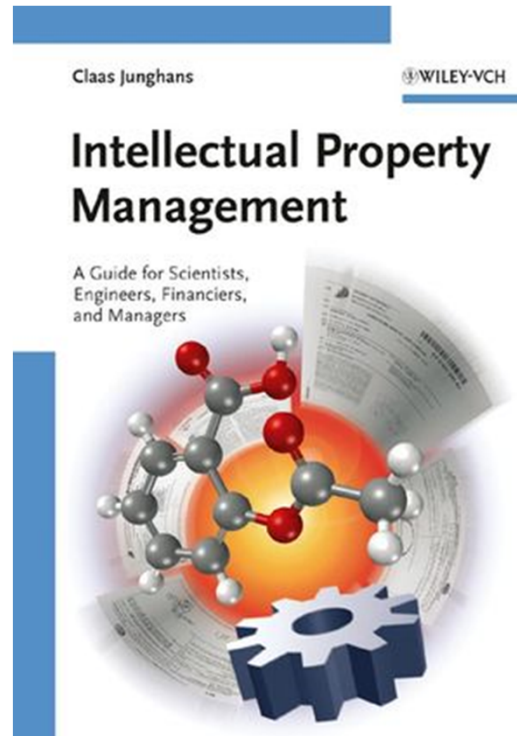
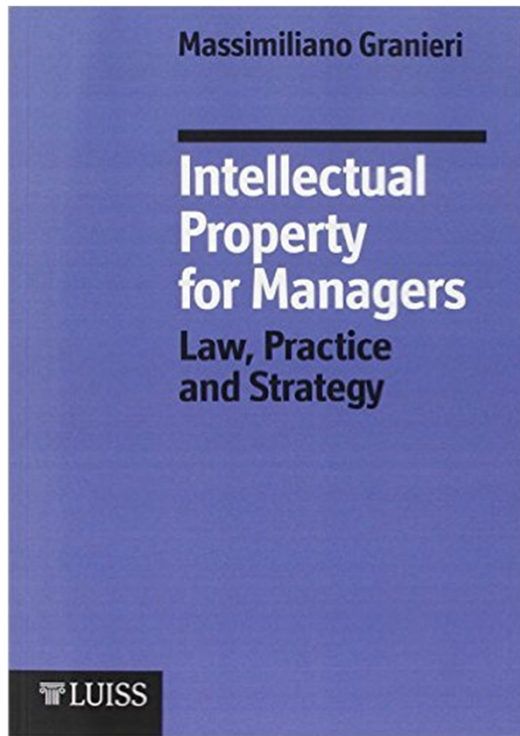


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1. D. Golzio – «**WWWVHOW (Why, When, Who, Where, What, How) Read a Patent!**» - Epo.org
2. S. Wolf – «**Interpreting and Utilizing Search and Examination Report**» – WIPO Sub-Regional Workshop, Kuala Lumpur, Malaysia (2001)
3. M. Granieri – “**Intellectual Property for Managers**” – Luiss University Press (2014)
4. C. Junghans et al. – “**Intellectual Property Management**” – Wiley (2006)
5. B. Sas et al. – “**Intellectual Property and Assessing Its Financial Value**” – Chandos Pub (2014)



Textbooks





And now the next presentation!

