

# WWWWHOW Read a Patent!





#### Phd plus: il dottorato si fa strada

April, 12th 2012 Pisa - Italy

## Domenico Golzio

European Patent Office dgolzio@epo.org



- The Inventing Process
- What Is a Patent?
- Invention & Innovation
- WHY Read a Patent?
- WHEN to Read a Patent?
- WHO Should Read a Patent?
- WHERE to Read a Patent?
- WHAT to Read in a Patent?
- HOW to Read a Patent?



# **The Inventing Process**



## I have an idea !!!

## It's my idea !!!

# How can I protect it ?





#### **Trade Secrets**



- Products and services need to be known and advertised
- Difficult to enforce
- Intellectual Property Rights come to help you



### Intellectual Property Rights (IPR's)





#### **IPRs Portfolio**



"Technical" Idea: Patent, Petty Patent, Utility Model

"Appearance" of a Product: Registered Design, Industrial Design



Name or other sign of a product/enterprise: Trademark, Trade Name

Across the street from ordinary."

Literary, Musical, Artistic works: Copyright



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IPRs are regulated by different national or international laws and treaties, they have different terms of protection, are acquired and maintained through different procedures: they should be used in combination



#### **Registered Design**

- Addition to automatic design right.
- Monopoly right for the appearance of (part of) a product, the aesthetic value.
- e.g. Textile patterns, car design,...
- Criteria:
  - Novelty
  - Individual character
  - NOT a design concerned with how it works (except for Lego, Mecano,...)
  - NOT the interior of a product
- Territorial right.
- Max. 25 years.



#### Trademark

- A distinctive sign used by a business or organisation to exclusively identify the origin or products or services.
- Can be a name, logo, symbol, word, design, sound,... or a combination.
- ® Registered trademark.
- <sup>™</sup> Means the trademark is not registered but rights are claimed.
- It should have a distinctive character.
- Genericized trademarks must be prevented.
- It can be renewed indefinitely.
- Territorial right.



## Copyright

- Automatic when the work is 'fixed' (written, recorded,...)
- Copyright comprises:
  - Right of reproduction
  - Right to distribution
  - Right to create derivatives
  - Right to performance
  - Right to display/broadcast
  - Right to be recognised as the author
- Applies to: literary, artistic, dramatic, musical works, including layout, computer programs, broadcasts.
- In general it lasts up to 70 years after the death of the author.



# What is a Patent ?

## A contract between an inventor and a state

Inventor



## State

- 1. Protection for about 20 years
- 2. Exclusive rights to produce, use, sell and import the invention
- to recoup investment in R&D
- to strengthen market position and competitiveness

- 1. Publication of the invention
- to spread new technical knowledge
- to avoid R&D duplication
- to foster innovation

Patents are granted to inventions which are **Novel**, **Inventive** (non obvious), suitable for **Industrial Application** when considered against the **Prior Art** 



#### **Rights Conferred by a Patent**

#### • Exclusive Right

Nobody can produce, use, sell, or import your invention

#### • Territorial Right

A patent in one state does not affect patent in other states

#### Timed Right

Protection from a certain date to another date

#### One-Time Right

When a patented product is put on the market the patent right is exhausted

#### Transferable Right

You can assign or sell (licence) your patent to others

#### • Passive or Relative Right

A granted patent does not necessarily gives the right to exploit the invention (depends on the rights of others and on general law)



#### **The Procedure**





#### **Overview of the Search and Examination Procedure**





#### **Overview of the Search and Examination Procedure**





# Have you ever seen a patent?



# **Clip for Paper**

## **Front Page**

## **Bibliographical Data**

Abstract

**European Patent Office** 0 525 909 A1 (1) Publication number: Office européen des brevets EUROPEAN PATENT APPLICATION (12) (21) Application number: 92202354.4 (51) Int. Cl.<sup>5</sup>: **B42F** 1/02 (22) Date of filing: 29.07.92 (3) Priority: 31.07.91 NL 9101313 (7) Applicant: MULTIBRIDGE B.V. 35, Willem de Zwijgerlaan (43) Date of publication of application: NL-2252 VN Voorschoten(NL) 03.02.93 Bulletin 93/05 (72) Inventor: van Ardenne née van Rhijn, Designated Contracting States: Johanna Lamberta Maria AT BE CH DE DK ES FR GB GR IT LI LU MC 35, Willem de Zwiigerlaan NL PT SE NL-2252 VN Voorschoten(NL) (74) Representative: Keijser, Johannes Maurits L.F., Mr. et al EXTERPATENT B.V. P.O. Box 3241

#### ${}^{\scriptsize{\scriptsize{54}}}$ Clip for paper or other objects.

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EP 0 525

(7) Clip for holding and/or keeping together sheets of paper or other materials, comprising two holding elements lying essentially in parallel planes and springing relative to each other, and of which the two end edges run parallel at a distance from each other or at an angle relative to each other, and form pushon edges when in use. According to the invention, the two holding elements are in the form of holding legs (1, 2) of sheet-type material, and one (2) of said holding legs is bent in such a way that a part (4, 6) adjacent to the connecting line (3) with the other leg (1) lies at a distance from said other leg, and a second part (8), essentially ending at the push-on edge (13), lies with at least a part of its inside essentially flat and resiliently against the inside of a part (9) of the other holding leg (1). The clip can also be placed on other objects of different types.

Europäisches Patentamt

#### р 1 3 4 5 6 1 9 8

NL-2280 GE Rijswijk(NL)



# **Clip for Paper**

## Description

## **Problem**

## Solution

EP 0 525 909 A1

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The invention relates to a clip for holding and/or keeping together sheets of paper or other materials, or for placing on/against other objects of different types, comprising two holding legs of sheet-type material lying essentially in parallel planes and springing relative to each other, and of which the two end edges cross at an angle relative and form, when in use, with at least part of their lengths, push-on edges, defining a reverse Vshaped push-on space, at least one of said holding legs being bent in such a way that a part adjacent to the connecting line with the other leg lies at a distance from said other leg, and a second part. essentially ending at the push-on edge, lies with at least a part of its inside essentially flat against the inside of a part of the other holding leg.

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A clamp of this type is disclosed in US-A-1 637 564. It has the advantage in being fit for providing information on parts of the plate material, and is also fit to hide for example staples. However, the substantially V-shaped push-on space is fornmed for the greater part by two points in which the foremost holding leg ends. The rear holding leg is shorter and ends in a single point in the middle of the width. In order to create a push-on facility all these points are curved rearwardly. By this, they are inclined to introduce damages, by scratches or folds, onto the paper or the other material which they hold together, or on which they have been placed, both when placing them and with removing them. Furthermore the parts of the front and rear holding legs, initially lying one against the other, will not remain flat against each other when one or several sheets of paper are inbetween them; the contact is limited to a line contact. As a result the capacity is very much limited and also the risk increases that the rear holding leg is being gripped and thereby pulled off the pile of sheets.

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Also a clip for paper is known which comprises two holding elements lying essentially in parallel planes and springing relative to each other, and of which the two end edges run at an angle relative to each other, and form push-on edges when in use, which edges define a V-shaped push-on space. This is a paper clip of spring steel wire (as a variation of the most common type of paper clip with two semi-circular push-on ends lying some distance apart).

A major disadvantage lies in the thickness arising from the diameter of the steel wire from which they are made, and from the fact that the paper will bend through the gripping action. Also the deformation when pushin on is concentrated as torsion of the part of the wire which constitutes the connection between the two holding members; thereby these holding members will bnot lie anymore parallel to each other and flatly against the paper which is being clamped, but they will stand outwards, so that there will be no flat clamping effect. When a number of piles all containing such paper clips on the same corner, are stacked up, a thickening which is a multiple of the thickness of

the whole pile of paper is very soon produced at the corner.

Ordinary and special paper clips are known (WO 81/01535) which can be provided with clientspecific identification;they are expensive, however. Besides, they cannot be used together with permanent holders (e.g. staples), or at least they provide no possi-bilities for masking the common staple.

The object of the invention is to provide an artistically sound product which is functionally comparable to or better than the known holders, with which all disadvantages indicated above are eliminated, and with which a number of sheets of paper can be combined to one unit, without any of the materials being damaged and the artistic character

of the special information being destroyed. For this purpose, the clip according to the invention is characterised in that the bending in the at least one holding leg is realised such that the legs lie one against the other under a bias force, in that the two legs, at substantially equal distances from the connecting line, both terminate in a single point and are flat in the proximity of their extreme edges which constitute the push-on edges.

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- As regards holding, the clip according to the invention combines virtually all positive features of the staple and the paper clip while, in practical terms, all disadvantages of both holders are eliminated as well as those of the other clips discussed above. It provides semi-permanent holding through
- much greater gripping force than all known paper clips.

The broad, flat holding area between the two holding legs, which, as a result of the bias tension, will remain flat, means that the clips have a greater

- 40 gripping force than the known paper clip, with the result that when a page is turned they cannot slip as easily from the paper. The basic type clips 1 to about 15 sheets of paper (approximately 80 grammes), the total thickness of the paper held by the clip increasing only by the material thickness,
  - and thus being only negligible, in contrast to conventional paper clips and staples. Unlike all prior art paper clips, the clip also remains virtually always completely flat.

50 Paper clips making use of twisting techniques almost always have the disadvantage that the ends of the holding legs stand out and thus produce an additional thickening on top of the thickening resulting from the thickness of the material of the paper 55 clip; in the case of the clip according to the invention, the ends of the holding legs cannot stand out. This means already in the case of two pages that the clip is less thick in use than staples and paper

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# **Clip for Paper**

### Claims

paper or the other object, following which it is slid over it, are at an angle of 45° relative to the long edges 14, 15 respectively, so that they are at right angles to each other. Other angles are also conceivable. For purposes of this pushing on, it is desirable for the edges 12 and 13 to be rounded at least at the sides of the legs 1 and 2 facing each other. They must, of course, at least be made free from burrs, but these are aspects connected with the manufacturing method, and they are problems which will be solved by the person skilled in the art.

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The front and the rear holding leg are also shown to be the same shape. Here again, this is not essential. Instead of the trapezoidal shape shown, all kinds of shapes are conceivable, in which the long legs and the push-on edges run at other angles or are curved, or meander, provided that the push-on edges cross each other at one or two points, in order to make it easy to start the pushing on, while the front and the rear holding leg can also be different shapes from each other. The only important factor is that a sufficiently large contact face should remain for achieving the gripping effect according to the invention.

It is also advantageous to make an embodiment which in front view is the mirror image of that of Fig. 1. When the embodiment of Fig. 1 is pushed onto the top edge of a pile of sheets near the left corner, a fold line around edge 12 is automatically obtained on turning over. If the clip is pushed on along the left side, e.g. especially in order to cover a staple inserted parallel to that left edge, one has to fold round one point, which could cause tilting of the clip, with the risk of it cutting into the 35 paper, and the paper can be more easily pulled out of the clip. This is prevented by a mirror image embodiment, for we then again have a fold line running at 45° relative to the top edge and left edae.

It will be clear that the holding legs of the clip according to the invention have all kinds of surfaces on which information can be placed, either by printing, or by stamping or cutting out. This is indicated by way of example by information faces 16 and 17 at the front side of the front leg, but also by a face 18 which is situated on the visible side. but is in fact on the inside of the rear leg 2. The invention is not, however, restricted to the places to which this information is applied, and it is, of course, equally not restricted to the way in which said information is placed on the clip. A further variant of this is the provision of holes of a certain shape. If these holes are too large, the gripping force could be reduced at the position of the contact faces 8 and 9, but in particular at the position of the face 16 shown, thus in the top part 10 of the front holding leg, holes of different shapes can be

cut out, or can be made by, for example, laser cutting, without reduction of the gripping surface. It must be remembered here that too extensive removal of material could result in a reduction of the aripping force of the whole product.

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Printing with ink which can be written on, or printing with a bar code are particularly advantaaeous.

The clip can be designed in such a way that it is provided with a hanging device in the form of a 10 cord or wire loop threaded through the space present in the top part of the clip, or with a stamped-out hanging eyelet near the fold line 5 in holding leg 2. It is also advantageous if a number of clips are fixed permanently or by adhesive on an 15 elongated carrier. The clip can also be provided with a layer of adhesive on the rear side 2, either for permanent fixing or for temporary fixing.

1. Clip for holding and/or keeping together sheets of paper or other materials, or for placing on/against other objects of different types, comprising two holding legs of sheet-type material lying essentially in parallel planes and springing relative to each other, and of which the two end edges cross at an angle relative and form, when in use, with at least part of their lengths, push-on edges, defining a reverse V-shaped push-on space, at least one of said holding legs being bent in such a way that a part adjacent to the connecting line with the other leg lies at a distance from said other leg, and a second part, essentially ending at the push-on edge, lies with at least a part of its inside essentially flat against the inside of a part of the other holding leg. characterized in that the bending in the at least one holding leg (2) is realised such that the leas (1, 2) lie one against the other under a bias force, in that the two legs, at substantially equal distances from the connecting line (3), both terminate in a single point and are flat in the proximity of their extreme edges (12, 13) which constitute the push-on edges.

2. Clip according to claim 1, characterised in that the bend in the one leg (2) is in the form of a fold region (5) at a distance from the abovementioned connection (3).

3. Clip according to claim 2, characterised in that the fold region (5) is in form of a fold line.

4. Clip according to claim 3, characterised in that the abovementioned fold line (5) lies at a distance which is approx. a quarter of the

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20 Claims

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EP 0 525 909 A1

# **Clip for Paper**

Drawings



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<u> ±17</u>:2



t EUROPEAN SEARCH REPORT

Application Number

EP 92 20 2354

#### A Patent

# **Clip for Paper**

## Search Report

	DUCUMENTS CONSI			
ategory	Citation of document with in of relevant pa	ndication, where appropriate, ssages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
(	US-A-1 493 072 (FRI	CKER)	1-3	B42F1/02
(	* the whole documen	t *	8-10	
r	NL-A-8 601 431 (MOO * the whole documen	NS & VAN HOOF) t *	9,10	
,	US-A-4 563 796 (KET * column 3, line 3 *	 TLESTRINGS) - line 53; figures 1-	-4 8,10	
				TECHNICAL FIELDS SEARCHED (Int. Cl.5)
				B42F
	The present search report has b	een drawn up for all claims		
1	Place of search THE HAGUE	Date of completion of the search 03 NOVEMBER 1992	2	Examiner LONCKE J.W.
X : par Y : par doc A : tecl	CATEGORY OF CITED DOCUME icularly relevant if taken alone icularly relevant if combined with and ument of the same category nological background	NTS T : theory or p E : earlier pate after the fil other D : document L : document c	inciple underlying the nt document, but pub ing date ited in the application ited for other reasons	e invention lished on, or 1
O: nor P: inte	-written disclosure rmediate document	& : member of document	the same patent fami	ly, corresponding



### **Some Observations / Questions**

- •Do you grant patents to a paper clip?
- •This is a simple thing. Low tech.
- •How can you judge invention like this?
- •Is it worth patenting a paper clip?
- Are 'new' paper clips still being patented?



# **Invention & Innovation**

Meaning of "Invention":

• According to Patent Law of the People's Republic of China

"Invention" means any new technical solution relating to a product, a process, or improvement thereof.

According to Malaysian Patent Act

An "invention" means an idea of an inventor which permits in practise the solution to a specific problem in the field of technology.

An "invention" may be or may relate to a product or process.



#### What is an Invention ?

Meaning of "invention" : According to European Patent Convention: (Art.52 Patentable Inventions)

- (1) European Patents shall be granted for any inventions, in all fields of technology, which are susceptible of industrial application, which are new and which involve an inventive step.
- (2) The following in particular shall not be regarded as inventions ...

#### Invention is what is contained in a Patent Application.

Once examined and established the *industrial application*, *novelty* and *inventive step*, an invention is considered patentable!

Inventive step is assessed using the **Problem-Solution Approach**.





- Industrial Application
  - It should have the **possibility** of industrial application, not necessarily the **probability**,...

Whether the invention is actually produced/used is up to the market not to the patent office!



#### How much is this patent worth ?





#### **New paperclips !**

(19) United States

(12) Patent Application Publication(10) Pub. No.: US 2007/0137002 A1Thomson et al.(43) Pub. Date:Jun. 21, 2007

(54) DEVICES FOR HOLDING PAPER, CARDS, AND WALLETS Related U.S. Application Data

#### (57) **ABSTRACT**

Devices for holding paper, cards, and/or wallets. One device has a clip with two ends and a leverage bump; and an arm pivotally coupled to each end. One of the arms contacts the leverage bump when the clip is opened. Another device includes a clip having a receiving portion and a holding portion. The receiving portion includes an arch. The holding portion includes two ends. An arm is pivotally coupled to each end. Other devices are included.



(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)





(10) International Publication Number WO 2007/087547 A2

(54) Title: WIRE PAPER CLIP AND LOOSE-LEAF PAPER HANDLING DEVICES



(57) Abstract: A paper clip formed of a single length of wire includes a cross-armed spine that can expand to accommodate increased thicknesses of stacks of loose-leaf paper without loss of gripping strength. A pair of longer arms and a single U-shaped shorter arm are on opposide sides of the stack of paper. The preferred construction uses coated wire.



#### What is Innovation ?

- 1. The process of making improvements by introducing something new
- 2. The act of introducing something new: something newly introduced *(The American Heritage Dictionary)*
- 3. The introduction of something new (Merriam-Webster Online)
- 4. A new idea, method or device (Merriam-Webster Online)
- 5. The successful exploitation of new ideas *(Department of Trade and Industry, UK)*
- 6. Change that creates a new dimension of performance *Peter Drucker (Hesselbein, 2002)*
- 7. A creative idea that is realized [(Frans Johansson)] (Harvard Business School Press, 2004)
- 8. "The capability of continuously realizing a desired future state" *([John Kao, The Innovation Manifesto, 2005])*
- 9. "The staging of value and/or the conservation of value." (Daniel Montano 2006.)

#### ... the often unspoken goal of innovation is to solve a problem



## WHY Read a Patent?





#### **Patents Are a Source of Technical Information**

• 80% of the technical information contained in the patent documents is not published elsewhere



• Patents anticipate technical literature:

Invention	Patent	Elsewhere	Delay years	
Punched cards	1889	1914	25	
Television	1923	1928	5	
Jet engine	1936	1946	10	
Cast iron	1939	1947	8	



#### Patents Are a Source of Technical Information

#### To Publish or not to publish, that's the question.

Technical information is not always published in technical journals or symposium proceedings.

- Publishing may compromise patentability of an invention either formally ( as earlier disclosure) or substantially (may prove it is obvious). (cf. WO98/03643)
- Technical information may be unsuitable for publication:
  - subject, theoretical support, lack of experimental data,...
- Not interested in publishing, expensive,...





#### **Reinventing the Wheel**



#### **Solution => GB-A-2365393**



#### **Reinventing the Wheel**

UK Patent Application	(19) GB (11) 2 365 393 (13) A (43) Date of A Publication 20.02.2002
1) Application No 0019361.5 2) Date of Filing 07.08.2000	(51) INT CL <sup>7</sup> B64C 25/40 (52) UK CL (Edition T ) B7G G8H (56) Documents Cited GB 2242401 A
Applicants) Peter John Ginn 153 Waller Road, New Cross, LONDON, SE14 5LX, United Kingdom (72) Inventor(s) Peter John Ginn	(58) Field of Search UK CL. (Edition R.) B7G
<ul> <li>(74) Agent and/or Address for Service</li> <li>Peter John Ginn</li> <li>153 Waller Road, New Cross, LONDON, SE14 5LX,</li> <li>United Kingdom</li> </ul>	INT CL' B64C 25/40
<ul> <li>(54) Abstract Title Rotating aircraft wheels prior to landing</li> <li>(57) An aircraft tyre or wheel is provided with pockets cause the wheel to rotate. The pockets/ridges may be f attachment to the wheel. Means may be provided for a cooling purposes.</li> </ul>	or ridges 6, which catch the airflow past the wheel and formed in the tyre or an additional member for diverting air from a pocket into the wheel assembly for

X

X/D





#### **Reinventing the Wheel**

- •Several tens of patents since 1920
- •Private inventors, no big industries, no representative involved
- •Problem not fully analysed: tyres damaged anyway by the mechanical shock
- •Solution too expensive or too complex
- •Solution not effective: speed of the wheel not comparable to the speed of landing
- •No commercial/regulatory interest

# •You are re-inventing what is already existing, or coming up with useless inventions.



#### **Database of Ideas**

- Patent ideas are problems with solutions
- A patent database is a 'Database of Ideas'
- Therefore a patent database is
  - a 'Database of Problems" and
  - a "Database of Problems and Solutions'
- Inventions can be either processes or products that solve a problem. It is important to remember this when searching a patent database.



#### **Database of Technical Problems**

Patent literature is a database of "technical problems":

- Indicates the lack of advancement in a technology and addresses improvements. (vertical)
- Problems and solutions proposed may not be understood: source for scientific investigation and inspiration.
- Identifies unfamiliar technical areas and the related problems where you may apply your solution. (horizontal)



# Surprising, unexpected or, unexplained results in patents (vertical)

- **EP0078200**: Adding certain oxides a ceramic material shows enhanced (di)electric characteristics
- **GB2318174**: Scaling in electric water boiler reduced by injecting AC current through the water
- **EP0542353**: Addition of gelling pectin in deep-frozen, pre-proofed doughs improve storage stability and ovenspring properties
- US5623206: A unusual shape of the RF pulse provides better S/N in NMR imaging system
- **US4437350**: Vortex flow meter apparatus with improved S/N
- **US6164709**: Structure of a energy management device (i.e. a bumper) shows improved response
- **US4567645**: method of forming a buried subcollector in a semiconductor substrate by ion implantation gives an absolutely defect free epitaxial layer if part of the process is carried out in an oxygen ambient
- **US4670740**: Antitheft electronic tag uses non linear frequency divider



### **Bridging Technical Fields (horizontal)**

- EP0790640: Chemistry bridging Electricity. Electrodeless discharge lamp uses conductive polymer to shield the electromagnetic field. Alan Heeger studied the conductive polymers and for this won the 2000 Nobel Prize for Chemistry.
- EP0542353: Chemistry/Biotechnology bridging Food Science. Addition of gelling pectin in deep-frozen, pre-proofed doughs improve storage stability and ovenspring properties.
- US4670740: Electricity bridging Human Necessity. Antitheft electronic tag uses non linear frequency divider.







#### **Database of Technical Solutions**

Patent literature is a database of "technical solutions":

- It may *reveal solutions* to your problem
- You may <u>acquire the rights</u> for a patent which offers a solution to your problem at lower cost than your invention
- If licensing is not a viable solution, you may want to try to <u>find</u> <u>an alternative solution</u> which does not infringe the existing patent
- An existing patent anticipating your invention will prevent you from getting a patent on the same invention
- Your design or research could lead to a patent infringement (even if you can prove your good faith)







### **Innovation Strategy & Market Strategy**





#### **Patent Portfolio**

#### data extracted from esp@cenet on 17.04.2006

Car Maker	All	US	EP	JP	DE
Toyota Motor	>100.000	9.413	3.956	75.288	6.509
Honda Motor	86.142	11.632	3.513	49.509	6.173
Daimler	66.928	7.668	4.069	2.472	29.502
Hyundai Motor	32.186	1.044	129	1.090	887
Ford	24.798	8.233	2.185	1.524	1.462
Renault	18.713	1.426	2.199	185	3.048
BMW	15.403	718	2.591	411	10.845
Fiat	12.061	1.118	1.559	340	2.321
Porsche	10.231	1.407	1.254	897	4.793
Citroën	10.190	652	1.866	79	2.526
Opel	5.212	27	523	20	4011
Alfa Romeo	507	129	11	13	159



#### **Patent Applications**

Foldable phone (EC H04M1/02A2)

data extracted from esp@cenet on 12.04.2006









#### Patent Literature Is Not Secret !!!

#### MONDAY JUNE 11 2001

### Phone firms looked at radiation risks in 1993

#### BY NIC FLEMING AND IAN COBAIN

THE major mobile phone companies were investigating ways of shielding against radiation as long ago as 1993, according to evidence unearthed by the Wireless Consumer Alliance.

A patent filed by Nokia in 1995 for a layer of shielding material between the antenna and the user of the strength in the strength is the stre

THE

MONDAY JUNE 11 2001

#### Mobile firms patent cancer shields

BY NIC FLEMING AND IAN COBAIN

THE world's largest mobile telephone manufacturers have been patenting devices to reduce the risk of brain tumours among users while rejecting  $c^1 = -\sigma f$  any  $b^{-2} - \sigma r$  and s.



Le case produttrici minimizzano i rischi: nessuna prova che l'esposizione provochi il cancro

 Patto per il telefonino anti-radiazioni
 Nokia, Ericsson e Motorola studiano un cellulare schermato

di Paolo Passarini corrispondente da LONDRA

Documentipubblicati dal «Times» dimostrano che le più Importanti aziende costruttrici di telefonini stanno brevettando da anni congegni per ridurre il rischio di Intrarre il cancro al cervello da parte degli utenti. E Intinuando a sostenere che l'uso dei



#### WHY Read a Patent ?

- Source of Technical Information
- Prevent Reinventing the Wheel
- Database of Technical Problems
- Database of Technical Solutions
- Innovation Strategy / Market Strategy
- Not Secret



#### **The Chess-Board of Innovation**





# WHEN to Read a Patent ?

The four steps to invent a product/service





# WHO Should Read a Patent?





# WHERE to Read a Patent?

- Patent Offices
- Patent Libraries (PatLibs)
- Patent Information Points (PIPs)
- On-line Commercial Databases
- CD-ROMs (MIMOSA)
- Internet







# WHAT to Read in a Patent ?

#### **Function of a Patent Application / Granted patent:**

- Proposal for the "contract"/ finalised "contract".
- Disclosure of the invention.

in a manner sufficiently clear and complete in order to allow a **person knowing everything publicly disclosed** at the time of the invention (the skilled person) to **reproduce or carry out** the invention without any additional creative activity.





### **Front Page**

- Bibliographic Data
- Abstract
- Figure(s)
- INID codes

   (Internationally agreed
   Numbers for the Identification Data)
- (11) Patent publication serial number
- (19) Issuing Patent Office
- (21) Application number
- (22) Date of filing
- (30) Priority
- (43, 45) Date of publication
- (51) Int. Cl.
- (56) References cited
- (54) Title of Patent
- (57) Abstract
- Inventor, Applicant, Representative, Assignee (71-75) more details in WIPO Standard ST.9





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790 640 A2

EP 0



#### Description

#### Introduction

- Technical Field
- "State of the Art"
- Problem to be solved
- Proposed Solution
- Listing of drawings
- Detailed description
  - Preferred embodiments

#### Description

The present invention relates to an electrodeless discharge lamp.

Such a lamp is known from, e.g. EP-A-660375 (PQ 5 619). Such a lamp comprises a discharge vessel having a reentrant portion housing a solenoid which is energised by an RF current to generate an RF electromagnetic field in the vessel. The vessel has an internal transparent, electrically conductive coating (except on the reentrant) to confine the RF field within the vessel. Circuitry for energising the solenoid is housed in a metal housing which is coupled to RF ground for suppressing electromagnetic interference. The internal coating is also capacitively coupled to RF ground to further prevent lectormagnetic interference.

The transparent conductive coating is difficult to form inside the vessel and it is difficult to capacitively couple it to RF ground.

It is also known, from EP-A-0,512,622 to provide an interference-suppressing, transparent, electrically conductive layer on the outside of a discharge vessel. This external conductive layer is of tin-doped indium oxide, and induced currents are drained to the mains supply by means of a capacitor. 25

According to the present invention, there is provided an electrodeless discharge lamp comprising a sealed discharge vessel containing a fill capable of sustaining a discharge when suitably energised, means for producing an RF electromagnetic field in the vessel to energise the fill, and means for confining the field within the lamp, the confining means including a light transmissive inherently conductive polymer layer on the external surface of the discharge vessel.

For a better understanding of the present invention, reference will now be made by way of example to the accompanying drawing in which:-

Figure 1 is a schematic, cross-sectional view of an electrodeless fluorescent lamp according to the present invention.

The lamp of Figure 1 comprises a sealed discharge vessel 1 of glass having a re-entrant portion 2 through which an exhaust tube 3 extends from a distal end of the reentrant portion 2 contains a solencid 5. The solencid is energised by an RF oscillator 6 powered via a rectifier 7 from the mains. The oscillator 6 and rectifier are housed in the housing 4 which supports a lamp cap 8 such as an Edison-screw (not shown) or bayonet cap.

The vessel contains a fill as known in the art, the fill <sup>50</sup> comprising <u>inter alia</u>, mercury vapor provided by amalgam 9 held in the end 10 of the tube 3 by a glass ball 11 and dimples 12.

The inner surface of the discharge vessel has a coating C formed by at least:

a) a layer of material as known in the art which prevents blackening of the glass in long term usage of

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the lamp; and b) phosphor as known in the art

A discharge is induced in the fill by an RF electromagnetic field produced by the solenoid 5 resulting in the phosphor emitting visible light.

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In accordance with the present invention, means are provided to confine the RF field within the lamp, the means including an inherently conductive polymer layer

20 which is light transmissive, on the outside of the vessel. The polymer layer comprises a host material containing one or more of the following:

Polyaniline Polypyrrole Polythiophene

Polyphenanthro-isothionaphthene

All of these may be used in a substituted derivative form and not only parent compound.

The host material is preferably a clear silicone such as LIM60-30 available from General Electric Company. The layer 20 may be either a dip coat or a preformed moulding.

To provide electric shock protection a further light transmissive electrically insulative layer 21 is provided over the conductive layer 20.

Preferably the housing 4 is a single piece metal stamping the edge of which either directly contacts the discharge vessel and/or is fixed to it by conductive adhesive. In that case, as shown, the insulative layer 21 extends over and insulates the housing 4. The cap 8 is then of insulative material and/or the lamp contacts 23 are insulated from the housing 4. In this case the layer

35 20 is either dipcoated or preformed and the layer 21 is separately formed either as a dipcoating or a preform. Alternatively, the housing 4 is of insulative material and contains a metal can housing the oscillator and rectifier, the can being coupled to RF ground, and the conductive layer 20 for confining the RF field within the lamo

is also coupled to RF ground. In this case, the layers 20 and 21 may be co-formed or may be separately formed by dipcoating or preform-

The external electrically conductive polymer layer 20 provides the following advantages:

The shield is transparent causing minimal light loss. The shield is in close contact with the glass therefore providing improved shielding.

The shield is on the outside of the bulb which allows ease of manufacture and assembly. The use of a polymer layer enables the shield to be applied, using simple known techniques, in the final stages of manufacture. Previously, using an inorganic shielding layer, it was necessary to form the shielding layer during production of the glass envelope of the discharge vessel, using relatively complex process-

ino



### Claims

#### **Function:**

- Protection is conferred by the claims
- Define the matter for which protection is sought
  - clear, concise, supported by the description
  - -in term of technical features

Seek a Balance:

- Differentiate the invention from the prior art.
- Obtain the most extensive protection possible!

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    The shield is held in a flexible medium which is bet-
   ter resistant to shock and damage
   The use of a polymer shield makes it easy to apply
    an additional, insulating, layer of a compatible pol- 5
    vmeric material as the outermost laver, with reliable
    adhesion and integrity
   In another alternative, the housing 4 is of insulative
material and shielding is applied to components or 10
groups of components with the oscillator and rectifier
which radiate RF.
                                                       15
Claims
1. An electrodeless discharge lamp comprising a
    sealed discharge vessel containing a fill capable of
    sustaining a discharge when suitably energised,
    means for producing an RF electromagnetic field in 20
    the vessel to energise the fill, and means for con-
    fining the field within the lamp, the confining means
   including a light transmissive inherently conductive
    polymer layer on the exterior of the discharge ves-
                                                       25
    امہ
2. A lamp according to claim 1, wherein the layer com-
    prises any one or more compound selected from the
    aroup consisting of:
                                                       30
        Polyaniline
        Polypyrrole
        Polythiophene
        Polyphenanthro-isothionaphthene
                                                       35
    and substituted derivatives thereof.
3. A lamp according to claim 2, wherein the compound
    is held in an inert lattice material.
                                                        40
4 A lamp according to claim 3, wherein the inert ma
    terial is a silicone
5. A lamp according to claim 1, 2, 3 or 4 wherein the
    discharge vessel has a re-entrant portion housing 45
   a solenoid for generating the RF field.
6. A lamp according to claim 5, further comprising
    means for generating an RF current for energising
                                                       50
    the solenoid.
7. A lamp according to any preceding claim, further
    comprising a light transmissive electrically insula-
    tive layer over the conductive layer.
                                                       55
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 A lamp according to any preceding claim, wherein at least the conductive layer is either a dipcoat or a preformed moulding.

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    440 A2 4
    9. A lamp according to claim 7, wherein the conductive layer and the insulative layer are co-moulded.
```



### **Claims : Form and Contents**

- Technical features
- Two part form
- Independent/Dependent Claims
- Claim Categories
- Claim tree



#### **Claims: Technical Features**

Claims must be drafted in terms of the "technical features of the invention".

- Features expressed in terms of a structural limitation
- Functional limitations accepted if known how to perform that function.
- Claims should not contain any statements relating to commercial advantages or other non-technical matters.
- Statements of purpose should be avoided unless they assist in defining the invention.
- Claims to the use of the invention in the sense of the technical application of the invention are allowable.



#### **Claims: Two-part Form**

#### 1. Preamble

- technical features designating the subject-matter of the invention
- technical features known from the prior art

#### 2. Characterising portion

- technical features which define the invention
- IMPORTANT!!
- Protection defined by the combination of the features in 1) and 2)



#### **Claims: Independent / Dependent**

#### Independent claim:

- Essential features: i.e. those features solving the problem.
- Single sentence.

#### • Dependent claim:

- Refers to previous (independent) claim(s).
- Defines details.
- Details of the patent that can possibly be used during the lifetime of the patent.



#### **Claims: Categories**

- Claims defining a physical entity
  - Product
  - Device
  - Apparatus
  - System
  - ...
- Claims directed to an activity
  - Process
  - Method
  - Use
  - ...



#### **Claims: Claim Tree**





### Drawings

- No scale
- No dimensions/values
- No proportion



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#### **Search Report**

- Represents what is already known "in the technical field" of the patent application
- Documents cited with reference to the claims
- Indication on whether the invention "as claimed in the application as filed" is novel and inventive
- Category of documents X, Y, A, ..., indicates "relevance" to the claims
- Documents cited are a source of additional information
- Indicates the classes where the search was performed



### Language of Search Report

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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### Language of the Search Report

- **"O"** documents which refer to a non-written disclosure, "O, X", O, Y", ...
- "P" intermediate documents, "P, X", "P, Y", ...
- "T" documents relating to the theory or principle underlying the invention
- "E" potentially conflicting patent documents
- "D" documents cited in the application
- "L" documents cited for other reasons





**Annex to the Search Report** 

EP 1 894 826 A1

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.

Cited documents available in another language

#### ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

The members are as contained in the European Patent Office EDP file on

EP 07 01 6651

26-10-200

Patent document Publication Patent family Public cited in search report date. member(s) date EP 1508514 23-02-2005 AT. 315516 T 15-02-2006 Α. ¢A, 2478147 A1 22-02-2005 **FN** CN 1590203 A 09-03-2005 DE 10-08-2006 DE 602004000311 T2 **ES** ES 16-07-2006 2256811 T3 JP. 3953998 B2 08-08-2007 JP JP. 17-03-2005 2005067354 A TW. 252191 B 01-04-2006 CN US. 2005043915 A1 24-02-2005 DE 20117831 <u>03-01-ER</u>2 FR. 2816277 A1 10-05-2002 U1 IT. MI20010572 U1 30-04-2003 DF TW 553146 Y 11-09-2003 EP 0908381 FR. -FR9 2769574 A1 16 - 04 - 1999US. 6023646 A 08-02-2000 EN



#### **Example of an Invention**

**Problem:** longer antenna of a telephone allows for better RX/TX signals but make the telephone bulkier

**Solution:** the antenna is extensible and when the telephone is not in use the antenna can be retracted into the telephone casing reducing the size of the telephone









#### **Example: Set of Claims**

- 1. A mobile telephone handset comprising a casing **characterised in that** it comprises an extensible antenna.
- 2. A mobile telephone handset according to claim 1 wherein the antenna is made of a single element.
- 3. A mobile telephone handset according to claim 2 wherein the antenna is mounted on the right side of the casing.
- 4. A mobile telephone handset according to claim 2 wherein the antenna is mounted on the left side of the casing.
- 5. A mobile telephone handset according to claim 1 wherein the antenna has a circular cross section.



Example: US6211828



#### **Example: Set of Claims Expanded**

- 1. A mobile telephone handset comprising a casing characterised in that it comprises an extensible antenna.
- 2. A mobile telephone handset comprising a casing and an extensible antenna, wherein the antenna is made of a single element.
- 3. A mobile telephone handset comprising a casing and an extensible antenna, the antenna being made of a single element, wherein the antenna is mounted on the right side of the casing.
- 4. A mobile telephone handset comprising a casing and an extensible antenna, the antenna being made of a single element, wherein the antenna is mounted on the left side of the casing.
- 5. A mobile telephone handset comprising a casing and an extensible antenna, wherein the antenna has a circular cross section.



# HOW to Read a Patent?

- Patentese/Legalese
  - words or technical terms are a generalization of the original elements
  - "consisting of", "comprising", "plurality", "means of", "substantially", ..., have a special meaning in the patent language
- Don't be **creative** in reading: you may wrongly attribute merits to the invention.
- Put patent in the right **time-perspective** with respect to the state of the art at a certain date.
- No emotional approach/Humility





