

Ontario Library Association
2007 Super Conference

Discovering the World of Patents



Michael White
Librarian for Research Services
Engineering and Science Library
Queen's University

Michael White

Michael White is the librarian for research services in the Engineering and Science Library at Queen's University. He is also the subject specialist for chemistry, chemical engineering, patents and electrical and computer engineering. Prior to joining Queen's in January 2005, Mike was a librarian for seven years at the U.S. Patent and Trademark Office in Washington, D.C. He has conducted numerous patent research seminars for librarians, inventors, attorneys and the general public.

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Abstract

In 2006, inventors filed more than 1.5 million new patent applications worldwide. The U.S. Patent and Trademark Office alone received a record-breaking 445,000 new applications. Patents are an increasingly important source of information on emerging technologies and new applications of old technologies. Patents are international and interdisciplinary, representing innovations in every field of technology during the last two hundred years. Whether you work with independent inventors or research scientists, entrepreneurs or R&D executives, patent attorneys or paralegals, patents are an indispensable source of scientific, technical, business and legal information. Patents can also be a useful resource for genealogists, journalists, teachers, students and historians. This session will cover the basics of patent terminology, documents and databases, explore online search tools and strategies, and explain the role of patent information in scientific research and business decision making using examples from public patent databases.

All graphics are from the author's collection or Microsoft Clip Art Online, unless otherwise noted.

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Topics

- Why patents?
- Patent data and documents
- Number searching
- Inventor and company searching
- Patentability searching
- Patent status
- Statistics

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Business & Entrepreneurship

Image:

Globe and Mail

**Biovail Hammered by
patent ruling.**

In August 2006 Biovail's stock lost 33% of its value after a negative patent ruling.

Photos: Globe and Mail and CLA

#1803- 5

Image:

**Photo of Sam Holman,
owner of the Original
Maple Bat Co.**

Sam Holman, owner of the Original Maple Bat Company, researched 225 baseball bat patents before patenting his own improved design.

Science & Technology

Image:

**Globe and Mail
headline:**

**Edmonton researchers
patent new technology
used to regrow teeth.**

Photo: Globe and Mail

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- New technological innovations.
- New uses for old technologies.
- Research not published in scientific journals.
- Bridge between basic and applied science.
- Research originating in developing countries.

2004

- 1.5 million new applications worldwide. (WIPO)
- 700K STM articles. (NSF/ISI)
- 5.5 million patents in force.
- International filings:
 - China ↑ 46.8%
 - Japan ↑ 22.4%
 - Korea, Rep. ↑ 24.4%
- Patent applications per million pop.:
 - Canada 125
 - Korea, Rep. 2,189
 - USA 645
- Patent maintenance (50% reach x years):
 - Japan 17 years
 - Europe 11 years
 - USA 11 years

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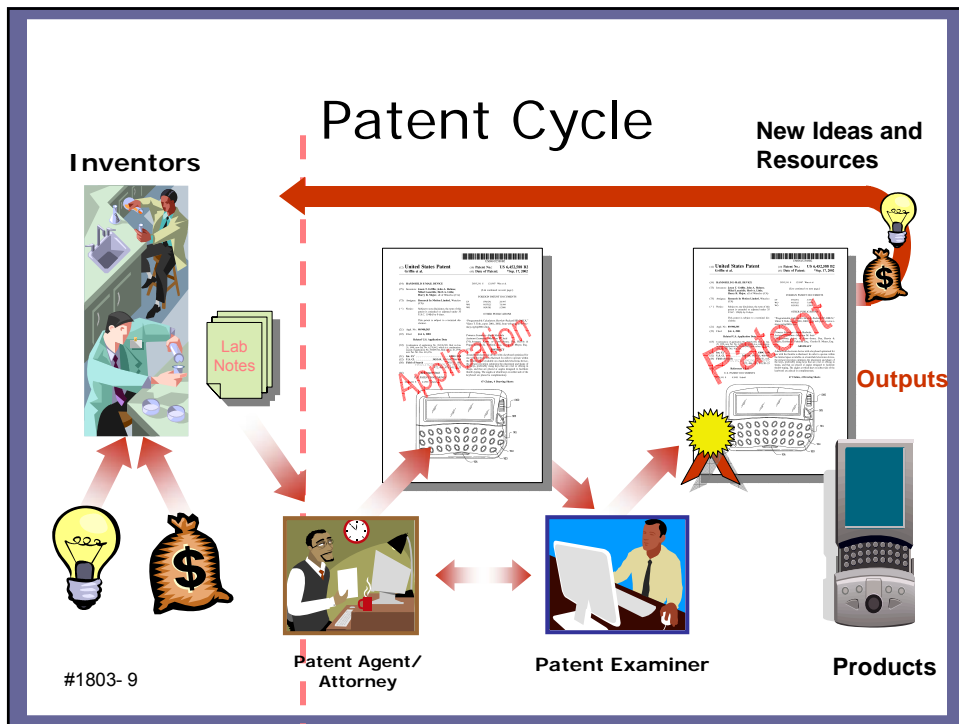
Other Uses

- Economic development.
- Genealogical research.
- History of technology.
- History of art and design.



19th century ceiling plate designs.

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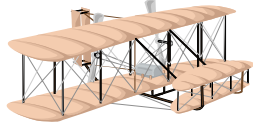


Patentability Criteria

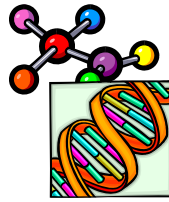
1. Allowable subject matter
 - Invention meets statutory requirements.
2. Useful
 - Invention performs a useful function.
3. Novel
 - Invention has never before been published or patented.
 - Invention is not obvious to someone of average expertise in the art.
4. Fully Disclosed
 - Patent describes how to make and use the invention. No "black boxes" or secret ingredients.

#1803- 10

What Can Be Patented?



New machine, device or appliance



New chemical or biological substance, material or alloy



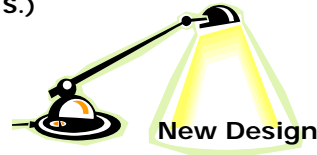
Genetically modified plants and animals (U.S.)
(Canada allows patenting microbes)



New process or method



Business Method (U.S.)



New Design

#1803- 11

Not Patentable

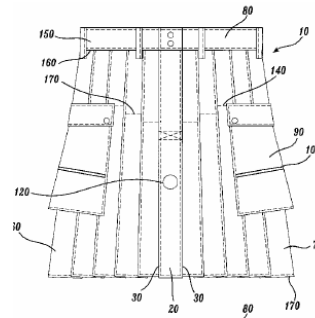
- Inventions disclosed to the public.
- Laws of nature, equations, abstract ideas.
- Printed matter.
- Inventions harmful to the public morality or good.
- Atomic weapons (U.S.)
- Human-animal hybrids. (U.S.)
- Medical procedures. (Canada)
- Non-useful inventions (perpetual motion machines)

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Improvements



Photo: Utilikits www.utilikits.com



Symmetrical Pleated Skirt
U.S. 6,282,723
Sept. 4, 2001
Steve Villegas, Seattle, WA

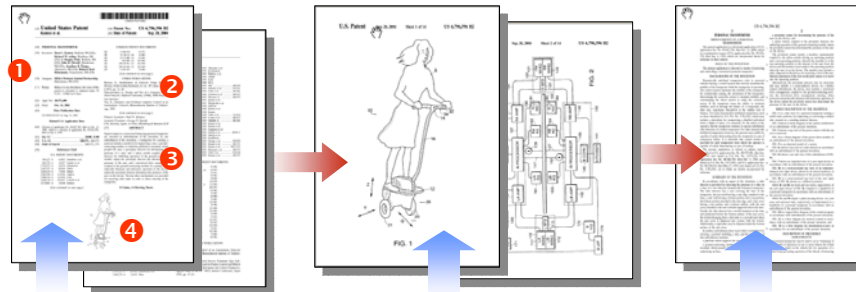
#1803- 13

Patent Rights

- Prevent others from making, using, selling or importing patented invention.
- Based on jurisdiction.
- Not renewable; inventions become public domain after 20 years.
- Require payment of maintenance fees (in most countries).
- May be sold, licensed, bequeathed, etc.

#1803- 14

Parts of a Patent



Front Page

1. Bibliographic Data
2. References
3. Abstract
4. Rep. drawing

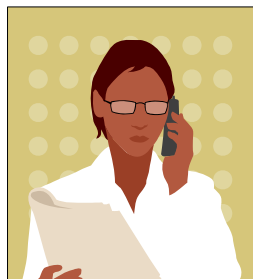
#1803- 15

Drawings

Specification

- Background of invention, discussion of the prior art
- Description, mode of use
- Claims (at least 1)

Scenario 1: Locating a Patent



I need a copy of a U.S. patent. The number? I think it's 6,483,388.

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Patent Data

Searchers beware!

- Patent offices publish patent data “warts and all.”
- Not all patent databases are created equal.
- Commercial database vendors “clean up” and enhance patent data.



Eastman Xodak
Eastman Kodal
Eastman Kokak
Eastman Kdak

The USPTO patent database has 15 different misspellings for Eastman Kodak.

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Patent Office Databases

- ✓ Free
- ✓ Comprehensive
- ✓ Authoritative
- ✓ Stable
- ✓ Current (updated weekly)
- ✓ Classification search tools



- Limited search, display and download options
- Multi-page printing difficult
- TIFF image format (USPTO)
- Dirty data

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Patent Numbers – U.S.

US06483388B2	
(12) United States Patent Khan	(10) Patent No.: US 6,483,388 B2 (45) Date of Patent: Nov. 19, 2002
(75) Inventor: Nasserullah Khan, Waterloo (CA) (75) Assignee: Research In Motion Limited, Waterloo (CA) (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	
(21) Appl. No.: 09/867,829	(2) Application #: 09/867,829
(22) Filed: May 30, 2001	
(65) Prior Publication Data US 2002/0008588 A1 Jan. 24, 2002	(3) PGPub #: US 2002/0008588A1
(60) Related U.S. Application Data Provisional application No. 60/212,999, filed on Jun. 21, 2000.	(1) Priority #: 60/212,999
(51) Int. Cl. H03L 7/00	
(52) U.S. Cl. 331/18; 331/25; 327/105; 327/106	
(58) Field of Search 327/105, 106; 708/271; 331/18, 25, 2; 455/118, 260, 265, 264	

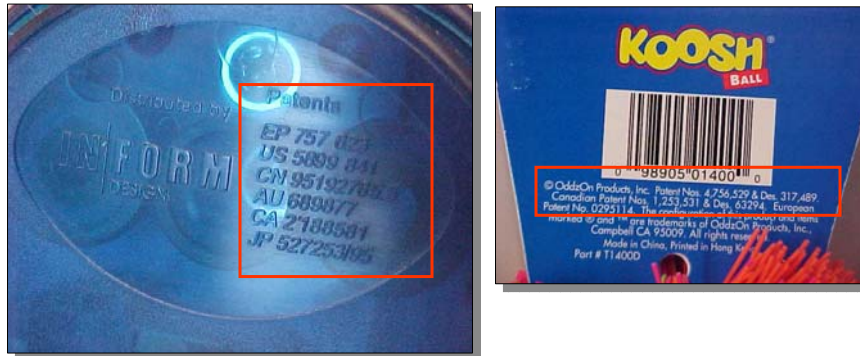
#1803- 19

Patent Numbers - Canada

(19) Canadian Intellectual Property Office / Office de la Propriété Intellectuelle du Canada An Agency of Industry Canada / Un organisme d'Industrie Canada		(11) CA 2 420 311 (13) A1 (40) 05.05.2003 (45) 05.05.2003	(2) Laid-open #: CA 2,420,311 A1
(12) 2 420 311	(1) Application #: 2,420,311	Since 1989 Canadian patent documents have been identified by a single number assigned at filing.	
(22) 17.03.2003	(30) 10/098,445 US 18.03.2002	(72) TATARLIOV, KEN (CA).	
(71) TATARLIOV, KEN, Box 155, MINTO, S1 (CA).	(74) ADE & COMPANY		
Office de la Propriété Intellectuelle du Canada / Canadian Intellectual Property Office Un organisme d'Industrie Canada / An agency of Industry Canada		CA 2420311 C:2004/09/22 (11)(21) 2 420 311 (12) BREVET CANADIEN CANADIAN PATENT (13) C	(3) Patent #: CA 2,420,311 C
(22) Date de dépôt/Filing Date: 2003/03/17	(41) Mise à la disp. pub./Open to Public Insp.: 2003/05/05	(51) Cl.Int./Int.Cl. A01B 39/18, A01B 35/08	
(45) Date de délivrance/Issue Date: 2004/09/22	(30) Priority/Priority: 2002/03/18 (10/098,445) US	(72) Inventeur/Inventor: TATARLIOV, KEN, CA	
		(73) Propriétaire/Owner: TATARLIOV, KEN, CA	(3) Priority #: 10/098,445
		(74) Agent: ADE & COMPANY	

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Scenario 2: Product Searching



Look for patent numbers on product packaging, labels or the product itself. If number is not present, look for the manufacturer's name.

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Identifying the Manufacturer

Image:

Toronto Star

Photo of man using a
Wovel, or wheeled
shovel.

Photo: Toronto Star

Search the product name.

- Trademark database:
 - CIPO CA TMs
 - USPTO US TMs
 - WIPO International TMs
- Newspaper database
- Web search engine

← "Wovel"

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USPTO Trademark Database

United States Patent and Trademark Office

Home | Site Index | Search | FAQ | Glossary | Guides | Contacts | eBusiness | eBiz alerts | News | Help

Trademarks > Trademark Electronic Search System(Tess)

TESS was last updated on Thu Feb 1 04:18:23 EST 2007

TESS HOME | NEW USER | FREE FORM | Browse Dict | SEARCH QG | BOTTOM

WARNING: AFTER SEARCHING THE USPTO DATABASE, EVEN REGISTERED AT THE USPTO. AFTER YOU FILE AN APPLICATION REGISTER YOUR MARK.

View Search History: [v]

Records Returned: 100

Search Term: wovel

Submit Query | Clear Query

WOVEL

Word Mark: WOVEL
 Goods and Services: IC 008 US 023 028 044 G & S: Snow shovels. FIRST U
 Standard Characters Claimed
 Mark Drawing Code: (4) STANDARD CHARACTER MARK
 Design Search Code
 Serial Number: 76674530
 Current Filing Basis: July 20, 2005
 Original Filing Basis: 1A
 Published for Opposition: April 11, 2006
 Registration Number: 3111921
 Registration Date: July 4, 2006
 Owner: (REGISTRANT) STRUCTURED SOLUTIONS II LLC, LLC, CONNECTICUT 06940
 (LAST LISTED OWNER) SNOW SOLUTIONS LLC, LLC, HANNAH CONNECTICUT 06840

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EPO esp@cenet

<p>1 Wheeled shovel Inventor: NOONAN MARK (US); HUMPHRIES ROBERT (US) Applicant: SNOW SOLUTIONS LLC (US) ECI: IPC: Publication info: USD5258935 - 2006-07-10</p>	<p>Family list 10 family members for: US2005160633 Derived from 8 applications</p> <p>1 WHEELED SHOVEL Inventor: NOONAN MARK (US) ECI: E01H5/02; E01H1/12 Publication info: CA2501109 A1 - 2005-09-25</p> <p>2 Wheeled shovel Inventor: MARK NOONAN (US) ECI: E01H5/02; E01H1/12 Publication info: CN1699696 A - 2005-11-23</p> <p>3 Apparatus and method for removal and disposal of materials Inventor: NOONAN MARK (US) ECI: E01H5/02; E01H1/12 Publication info: EP1580322 A2 - 2005-09-28 EP1580322 A3 - 2006-03-15</p> <p>4 SHOVEL WITH WHEEL Inventor: NOONAN MARK ECI: E01H5/02; E01H1/12 Publication info: JP2005273450 A - 2005-10-06</p> <p>5 Wheeled shovel Inventor: NOONAN MARK (US) ECI: Publication info: USD5237105 S1 - 2006-06-27</p>
<p>2 Wheeled shovel Inventor: NOONAN MARK (US) Applicant: SNOW SOLUTIONS LLC (US) ECI: IPC: Publication info: USD5237105 - 2006-06-27</p>	
<p>3 Apparatus and method for removal and disposal of materials Inventor: NOONAN MARK (US) Applicant: NOONAN MARK (US) ECI: E01H5/02; E01H1/12 IPC: E01H1/12; E01H5/02; E01H1/08 (+2) Publication info: EP1580322 - 2005-09-28</p>	
<p>4 Wheeled shovel Inventor: NOONAN MARK (US) Applicant: ECI: B62B/145; E01H5/02 IPC: B62B/14; E01H5/02; B62B/09 (+2) Publication info: US2005160633 - 2005-07-20</p>	

Fig. 2

#1803- 24

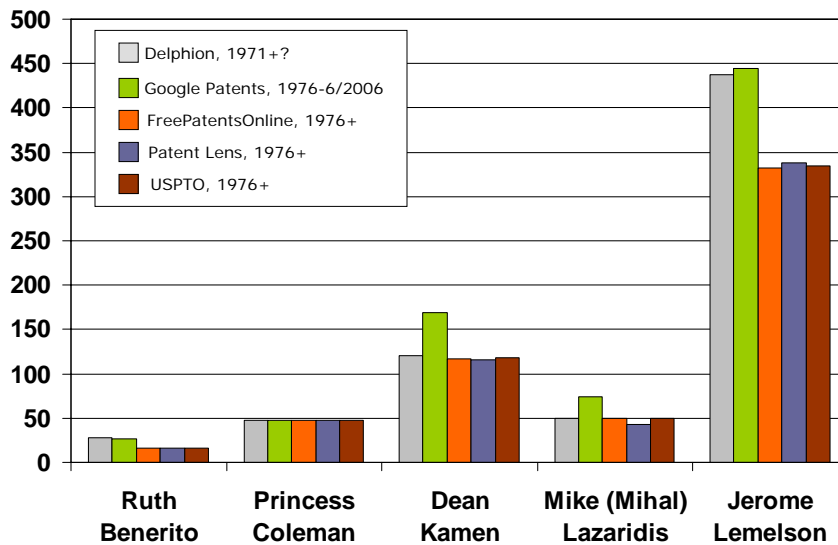
Inventor Searching

- Middle initials:
 - Dean Kamen, Dean L. Kamen
- Name variations:
 - Susan Smith, Susan Smith Jones
- Nicknames:
 - Burt Ratan = Elburt Ratan
- Foreign names:
 - Mike Lazaridis = Mihal Lazaridis



Mike Lazaridis uses his given name "Mihal" on patent applications.

#1803- 25

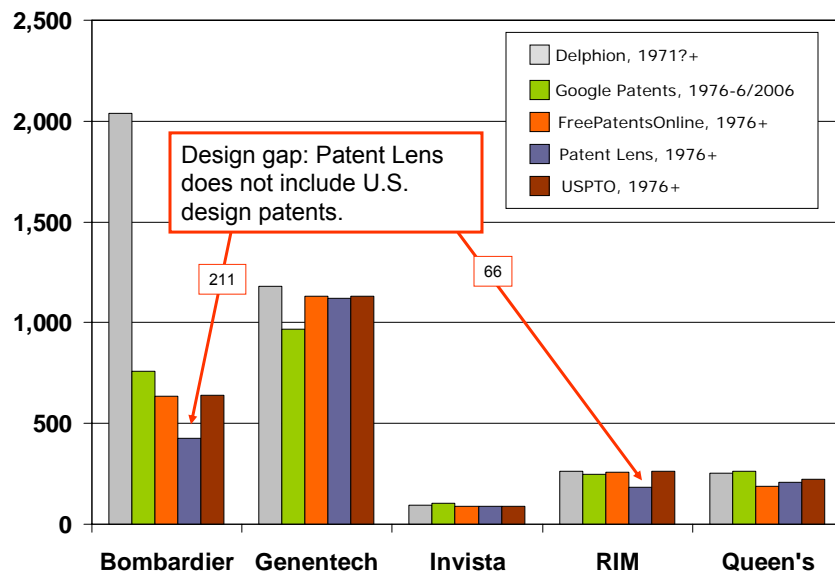


#1803- 26

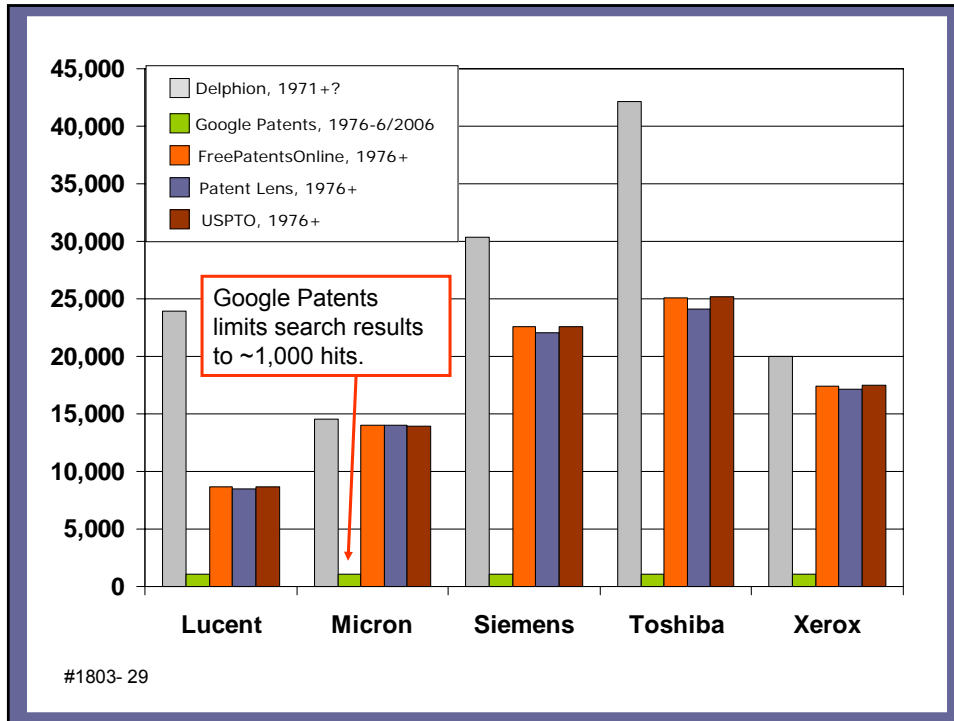
Company Searching

- Subsidiaries and affiliates:
 - Dupont Canada
 - Wisconsin Alumni Research Foundation (Univ. of Wisconsin)
- Nicknames:
 - RIM = Research in Motion
- Name changes and Spin-offs:
 - 3M = Minnesota Mining and Manufacturing
 - Bell Labs = Lucent
 - ALCAN = Novelis
- Mergers and Acquisitions
 - Lucent = Alcatel-Lucent

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Patentability Search

- Also known as:** Novelty search
Prior art search
- Purpose:** Determine the likelihood that a new concept, process, device, etc. is patentable in light of the prior art.
- When:** Before filing a patent application.
- Scope:** Patents and patent applications, foreign and national; other types of publications (non-patent literature) published anywhere in the world.



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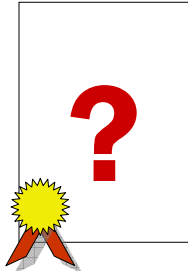
Infringement Search

Also known as: Freedom-to-operate search
Clearance search
Right-to-use search

Purpose: Discover patents and patent applications that may pose a potential infringement risk.

When: Before a product is released or a process is used.

Scope: Patents issued within the last 20 years. May be limited to a specific jurisdiction.



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Validity Search



Knave! Your unlawful claims shall not protect your ill-gotten gains. En garde!

Purpose: Invalidate one or more claims of an issued patent.

When: When a patent or patent application is discovered that could pose an infringement risk or when a competitor has accused you of infringing their patent.

Hack! Your patents are not worth the parchment upon which they are written. Prepare to meet thy doom!



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Other Types of Searches

State of the Art

- Purpose: Monitor technological developments in a given industry or field.
- Scope: Usually limited to a specific technology.
- Frequency: Ongoing.

Market Research (Competitive intelligence)

- Purpose: Uncover patents and applications owned by competitors.
- Scope: May be limited to a geographic area, technology or set of companies.
- Frequency: Ongoing.



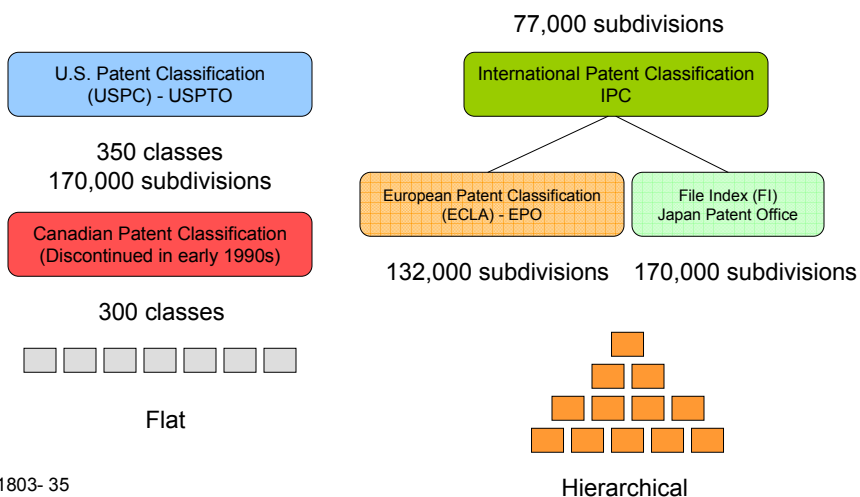
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Basic Patentability Search

1. Describe the invention; note keywords.
2. Search keywords in classification index.
3. Scan classification schedule.
4. Search selected classification(s).
(Search both ECLA and IPC)
5. Study retrieved patents.
6. Check references of closely related patents.

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Patent Classification Systems

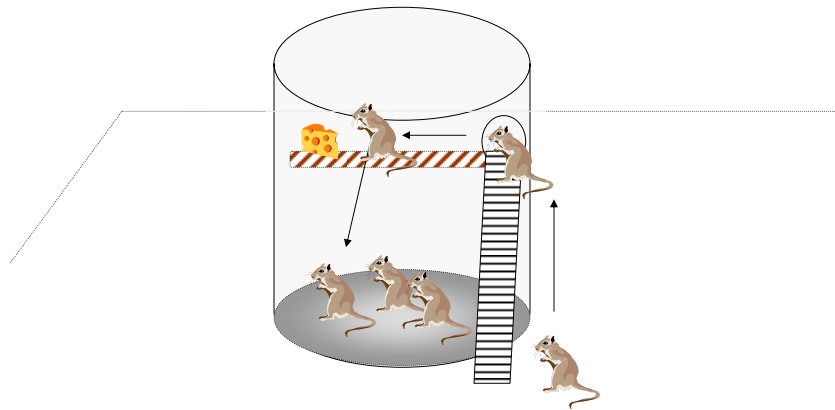


Keyword Searching Pitfalls

- Languages:
 - multi-language databases (esp@cenet)
 - American vs. British/Canadian spellings
- Limited search capabilities.
- Limited to title and abstract.
- Titles and abstracts not available.
- Synonyms, abbreviations, chemical nomenclature, etc.

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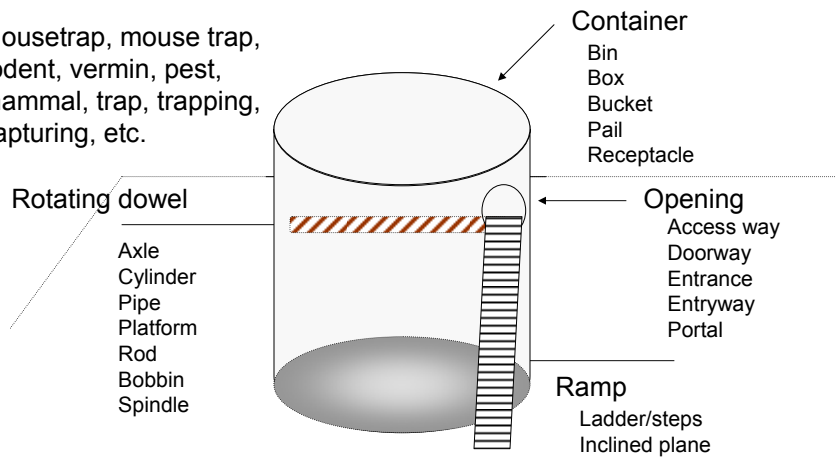
A Better Mousetrap



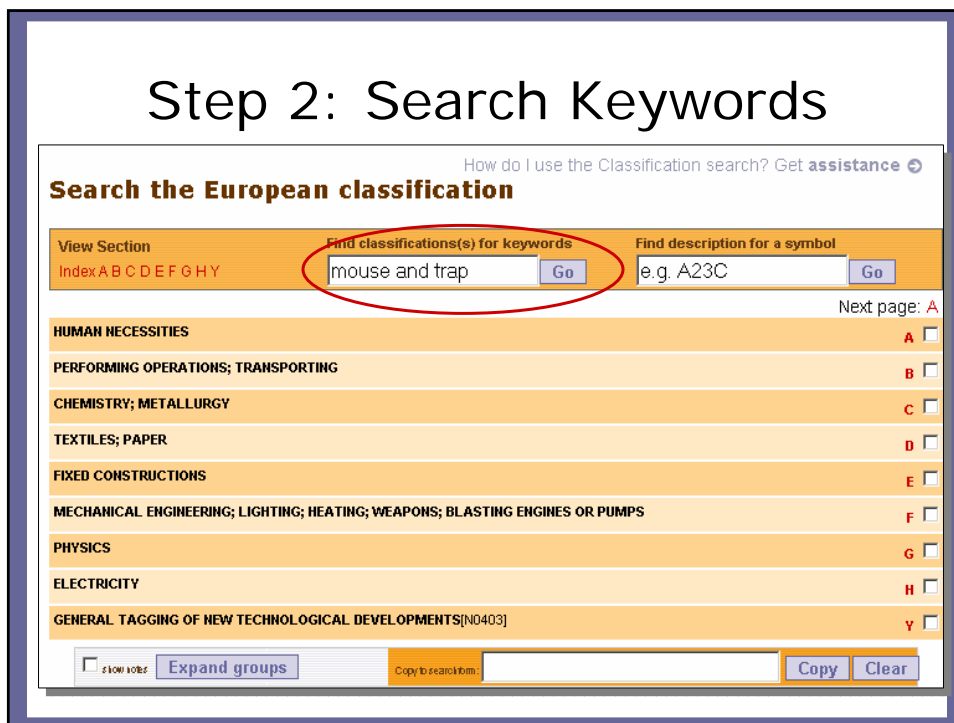
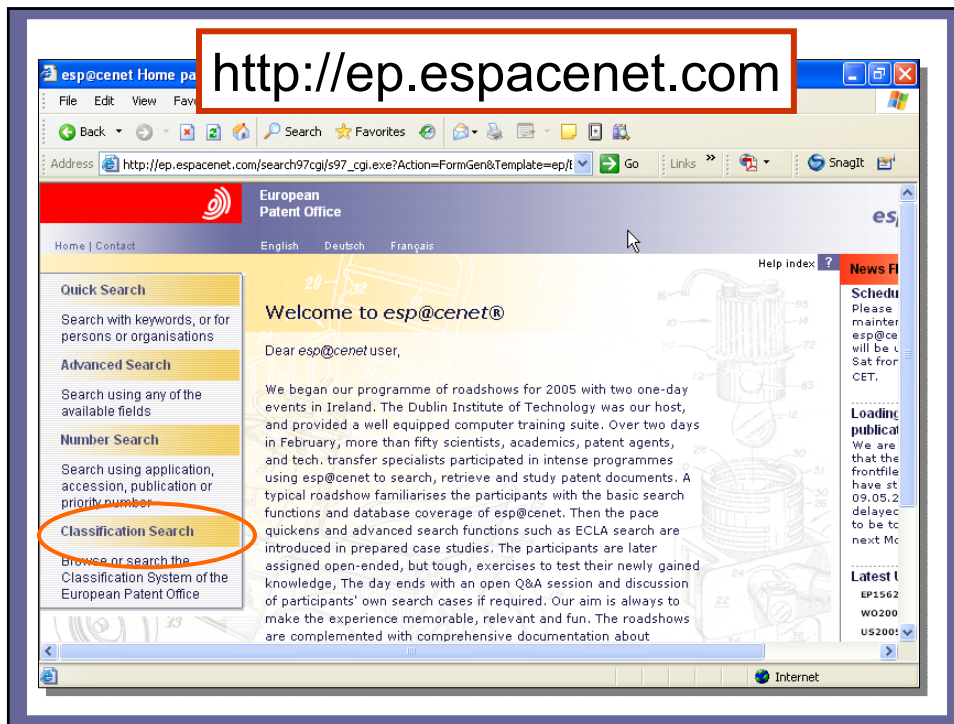
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Step 1: Describe Invention

Mousetrap, mouse trap, rodent, vermin, pest, mammal, trap, trapping, capturing, etc.



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Step 2: Initial Classification

View Section Find classifications(s) for keywords Find description for a symbol

Index **A B C D E F G H Y**

■ ■ ■ ■ ■	Traps for animals	A01M23	<input type="checkbox"/>
■	Hunting appliances	A01M31	<input type="checkbox"/>
■	Devices for dispensing poison for animals (A01M27/00 takes precedence; for insects A01M...	A01M25	<input type="checkbox"/>
■	Stationary means for catching or killing insects [N: (for repelling A01M29/00)][C0501]	A01M1	<input type="checkbox"/>
■	Apparatus for the destruction of noxious animals, other than insects, by hot water, steam, hot air, or electricity [N: (electric traps A01M...	A01M19	<input type="checkbox"/>
■	Methods or arrangements for processing data by operating upon the order or content of the data handled (logic circuits H03K19/00)	G06F7	<input type="checkbox"/>
■	Logic circuits, i.e. having at least two inputs acting on one output; Inverting circuits [N: (inverting circuits used as delay elements H03K5...	H03K19	<input type="checkbox"/>
■	Purses; Money-bags; Wallets [N: (collapsible or extensible A45C7/00; convertible into other articles	A45C1	<input type="checkbox"/>
■	Other toys	A63H33	<input type="checkbox"/>

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Step 3: Scan Schedule

HUMAN NECESSITIES **A**

AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING **A01**

CATCHING OR TRAPPING OF ANIMALS (apiculture **A01K47/00** to **A01K59/00**; fishing **A01K69/00** to **A01K97/00**; pesticides **A01N**); APPARATUS FOR THE DESTRUCTION OF NOXIOUS ANIMALS OR NOXIOUS PLANTS (equipment fitted in or to aircraft for dropping or releasing powdered, liquid or gaseous matter, e.g. pesticides, herbicides, **B64D1/16**) **A01M**

Traps for animals **A01M23**

A01M23/00

show notes Copy to searchform:

- [N: with sticky surfaces (for insects **A01M1/14**)] **A01M23/00A**
- Collecting-traps **A01M23/02**
 - with tipping platforms **A01M23/04**
 - with locking mechanism for the tipping platform **A01M23/06**
 - with approaches permitting entry only **A01M23/08**
 - with rotating cylinders or turnstiles **A01M23/10**
 - with devices for throwing the animal to a collecting chamber **A01M23/12**
 - Other traps automatically reset **A01M23/14**
- Box traps **A01M23/16**

#18

Step 4: Search Classifications

2. Search terms

Enter keywords in English

Keyword(s) in title:	plastic and bicycle
Keyword(s) in title or abstract:	hair
Publication number:	WO03075629
Application number:	DE19971031696
Priority number:	WO1995US15925
Publication date:	yyyymmdd
Applicant(s):	Institut Pasteur
Inventor(s):	Smith
European Classification (ECLA):	A01M23/10 F03G7/10 29
International Patent Classification (IPC):	H03M1/12 117

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SEARCH CLEAR

RESULT LIST Refine search

29 results found in the Worldwide database for:
A01M23/10 as the European Classification
 (Results are sorted by date of upload in database)
 The result is not what you expected? [Get assistance](#)

1	Vermin trap	in my patents list <input type="checkbox"/>
	Inventor: KENNEDY CYRIL JAMES (GB) Applicant: KENNEDY CYRIL JAMES (GB)	
	EC: A01M23/10 IPC: A01M23/10; A01M23/00	
	Publication info: GB2423002 - 2006-08-16	
2	MOUSE TERMINATOR	in my patents list <input type="checkbox"/>
	Inventor: SETO DAVID C T (CA); SETO JOYCE W C (CA) Applicant: SETO DAVID C T (CA); SETO JOYCE W C (CA)	
	EC: A01M23/10 IPC: A01M23/10; A01M23/00; (IPC1-7): A01M23/02 (+1)	
	Publication info: CA2370335 - 2003-07-28	
3	Animal trapping apparatus and method	in my patents list <input type="checkbox"/>
	Inventor: CAIRNS JAMES L (US) Applicant:	
	EC: A01M23/04; A01M23/10 IPC: A01M23/04; A01M23/10; A01M23/00 (+1)	
	Publication info: US2002129039 - 2002-10-03	
4	TRAP FOR SMALL ANIMALS	in my patents list <input type="checkbox"/>
	Inventor: MALEVEZ JEAN-MARC (CH) Applicant: MALEVEZ JEAN-MARC (CH)	
	EC: A01M23/10; A01M23/22 IPC: A01M23/10; A01M23/22; A01M23/00 (+2)	
	Publication info: EP1196028 - 2002-04-17	
5	Reusable, odorless rodent trap	in my patents list <input type="checkbox"/>
	Inventor: EDWARDS RICHARD H (US) Applicant:	
	EC: A01M23/10 IPC: A01M23/10; A01M23/00; (IPC1-7):	

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TRAP FOR SMALL ANIMALS

Bibliographic data	Description	Claims	Mosaics	Original document	INPADOC legal status
Publication number: EP1196028 Publication date: 2002-04-17 Inventor: MALEVEZ JEAN-MARC (CH) Applicant: MALEVEZ JEAN-MARC (CH) Classification: - international: A01M23/10; A01M23/22; A01M23/00 ; (IPC1-7): A01M23/22; A01M23/10 - European: A01M23/10; A01M23/22 Application number: EP20000943516 20000726 Priority number(s): WO2000CH00407 20000726; CH19990001377 19990727; CH19990001682 19990914					Also published as: WO0106850 (A1) EP1196028 (A0) EP1196028 (B1)

[View INPADOC patent family](#)
[View list of citing documents](#)
[View document in the European Register](#)

Abstract not available for EP1196028
 Abstract of corresponding document: **WO0106850**
 The invention concerns a trap whereof the body (1) is preferably cylindrical and hollow and has, at one end, at least a lateral opening, preferably two opposite lateral openings (2, 3). Above said openings (2, 3) is set, in standby position, a stop element (6) having preferably a lower part likewise cylindrical and hollow, and longitudinally mobile. A closure mechanism (7, 8) locks said stop element (6) in said standby position, the latter resting, prestressed by a spring, against the cover (11) of the body (1). When the closure mechanism (7, 8) has been released via a triggering mechanism (9, 10, 12), for example when an animal enters through one of the openings (2, 3), the stop element (6) is suddenly brought downwards prestressed by the spring and the animal is struck on the neck.

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6: Check References

LIST OF CITING DOCUMENTS
 5 documents citing US5528852 [Back to US5528852](#)

- Rodent catching apparatus** [in my patents list](#)
 Publication info: **US6739086** - 2004-05-25
- Reusable, odorless rodent trap** [in my patents list](#)
 Publication info: US...
- Rodent trap** [in my patents list](#)
 Publication info: **US: MODULAR ANIMAL TRAP**
- Mouse catching appar**
 Publication info: US...
- Rodent trap** [in my patents list](#)
 Publication info: US...

Bibliographic data	Description	Claims	Mosaics	Original document	INPADOC legal status
Publication number: WO8301724 Publication date: 1983-05-26 Inventor: JORDAN CARMELT (US) Applicant: JORDAN CARMELT Classification: - international: A01M23/18; A01M23/00 ; (IPC1-7): A01M23/10; A01M23/18 - European: A01M23/18 Application number: WO1982US01578 19821108 Priority number(s): US19810323958 19811123					Also published as: EP0094415 (A1) US4418493 (A1) EP0094415 (A0)

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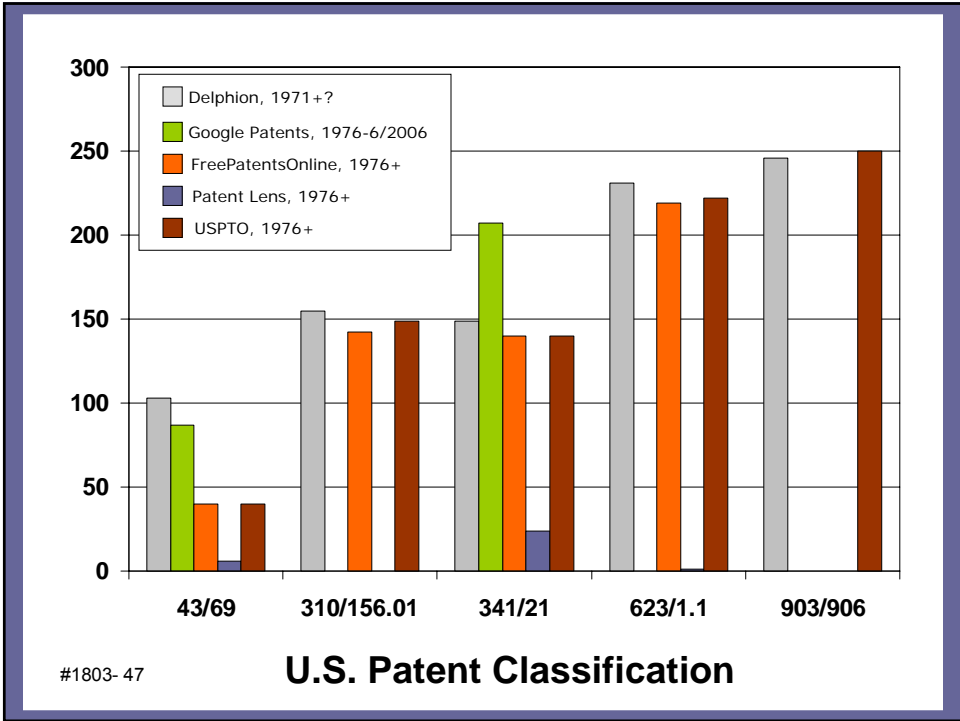
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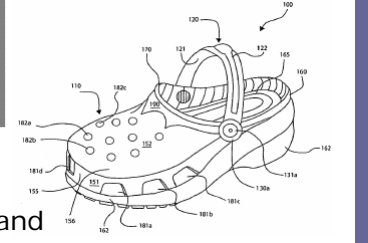
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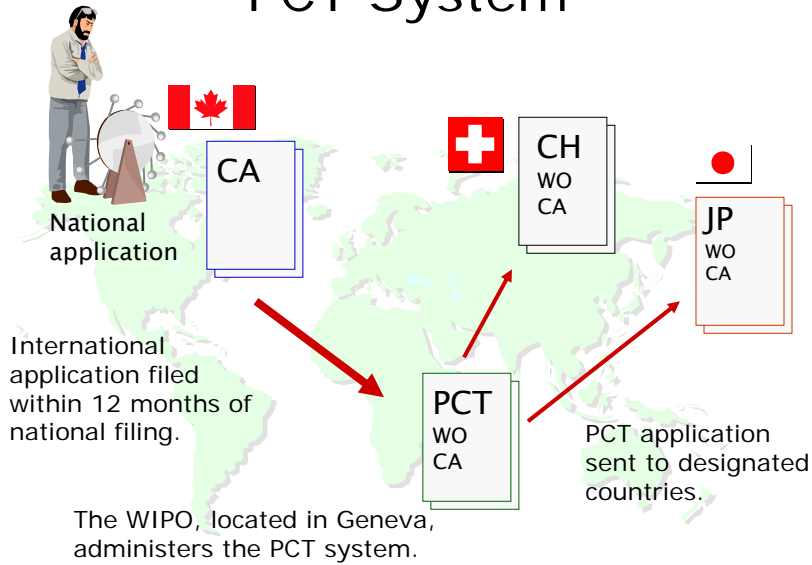


The Crocs shoe company has filed for patent protection in Australia, Canada, Brazil, China, Europe, S. Korea, Japan and the U.S.

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PCT System



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Scenario 4: Market Research



Q: What countries and companies worldwide are active in wind turbine technology?

A: Consult WIPO PatentScope database of international applications.

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Title	Pub. Date	Int. Class	Applicant
1. [WO 2007/010551] VERTICAL AXIS WINDMILL WITH GUIDING DEVICES	25.01.2007	F03D 3/04	KARVA, Vinod, Kumar, Chamanlal
2. [WO 2007/010329] WIND TURBINE BLADE	25.01.2007	F01D 5/14	VESTAS WIND SYSTEMS A/S

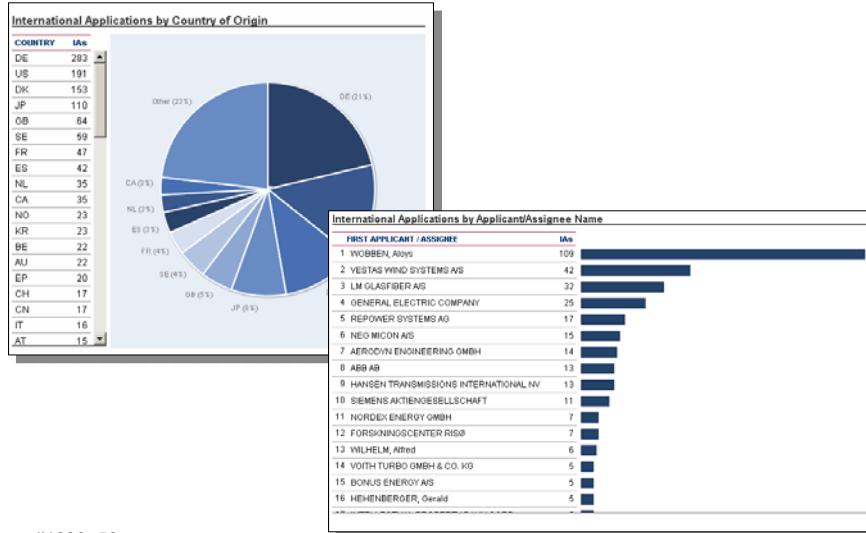
The instant invention deals with solution to technical flaws of existing Vertical Axis Windmill in which the wind strikes simultaneously on inward & outward facing sides of rotor blades which reduce efficiency. Hence this invention i.e. The Vertical Axis Windmill with Wind Guiding Device wherein the Vertical Plates (fig. 6) are fixed from bottom of Base structure (fig. 4) to top of rotor in annularly array. In between two Vertical Plates Inclined Plates (fig. 5) are fixed from bottom of Base structure to top of Base structure (fig. 4). These Plates are tilted towards the concave side of rotor blades (fig. 8). Vertical ...

Graphical view of search results (most recent 20K records).

RSS feed of search results.

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PatentScope Graphics



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Patent Status

- Assignment changes
- Expired, Corrected, Withdrawn, Extended, etc.
- EPO
 - esp@cenet - INPADOC Legal Status
- USPTO
 - PAIR System, 2003-
 - Assignment Database, 1980-

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Canada		USA	
1. Proctor & Gamble	205	1. IBM	2,941
2. Lucent	138	2. Canon	1,828
3. Honda	122	3. HP	1,797
4. Baker Hughes	95	4. Matsushita	1,688
5. 3M	85	5. Samsung	1,641
6. Illinois Tool Works	83	6. Micron	1,561
7. L'Oreal	80	7. Intel	1,549
8. Deere & Co.	78	8. Hitachi	1,271
9. Schlumberger Canada	74	9. Toshiba	1,258
10. Dupont	73	10. Fujitsu	1,154

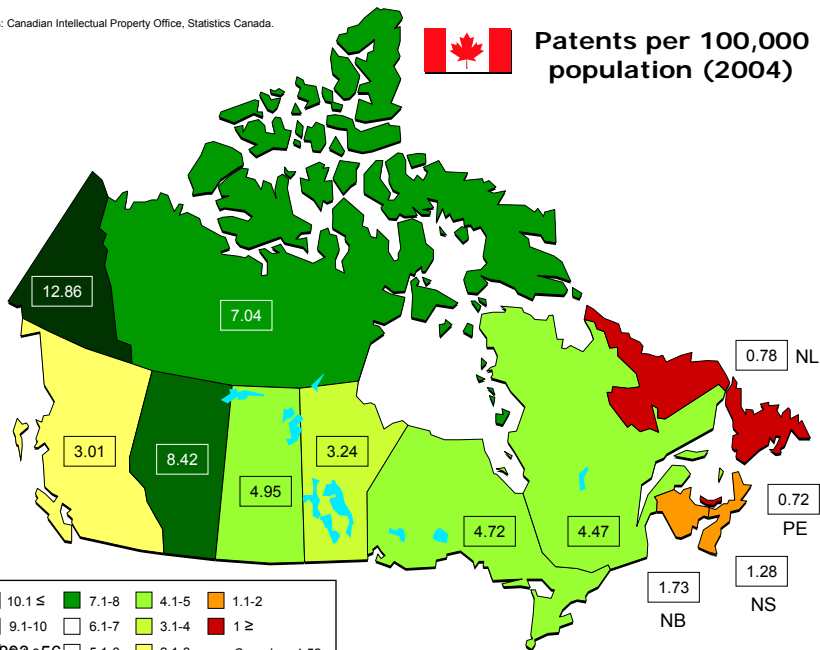
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Sources: Canadian Intellectual Property Office, U.S. Patent and Trademark Office.

Sources: Canadian Intellectual Property Office, Statistics Canada.



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