

PATENT SEARCHING

Elec 4309 Senior Design

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Sept. 28, 2017



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Thorough Searching is Critical

- Search Benefits**
- Patentability**
- Prior Art**
- Preliminary U.S. Patent Search**
- U.S. Patent Classification System**
- Cooperative Patent Classification**
- 7 Step Search Strategy**
- Unique Offerings**



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Search Benefits for Inventors

- Better prepared to discuss ideas confidentially.
- Avoid infringement.
- Track research and development.
- Access to wealth of information.



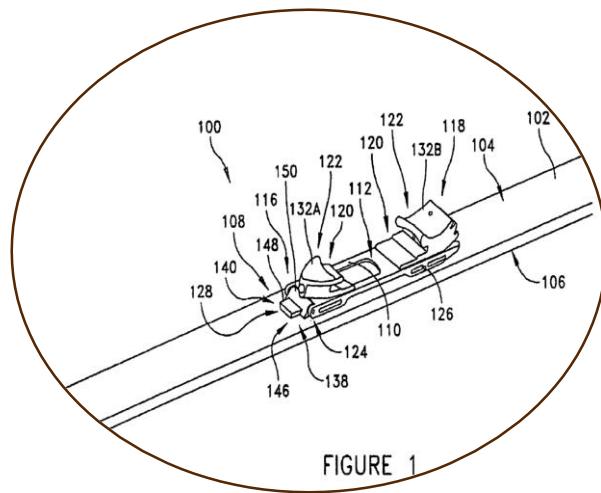
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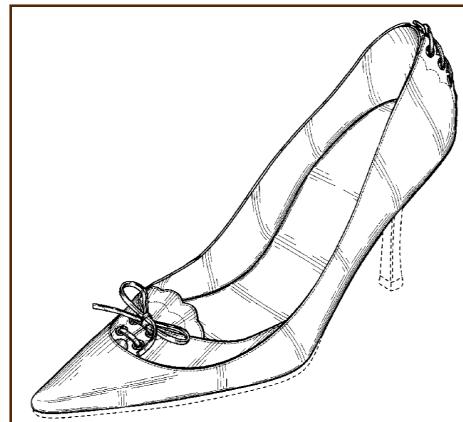
Types of Patents

- Utility - 20 years from filing date
- Design - 14 years from date granted
- Plant - 20 years from filing date

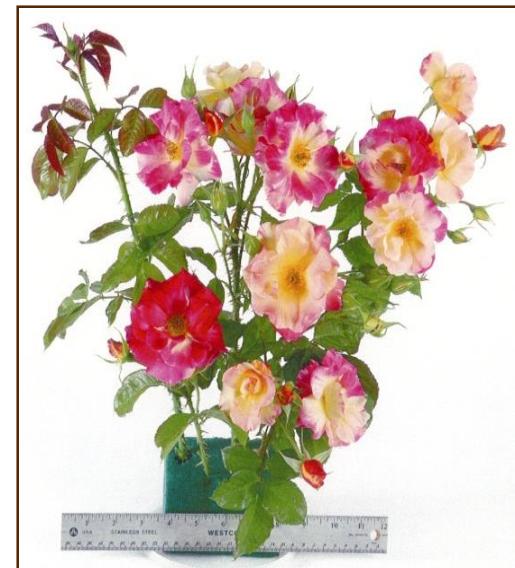
US 8,104,785



US D528,272



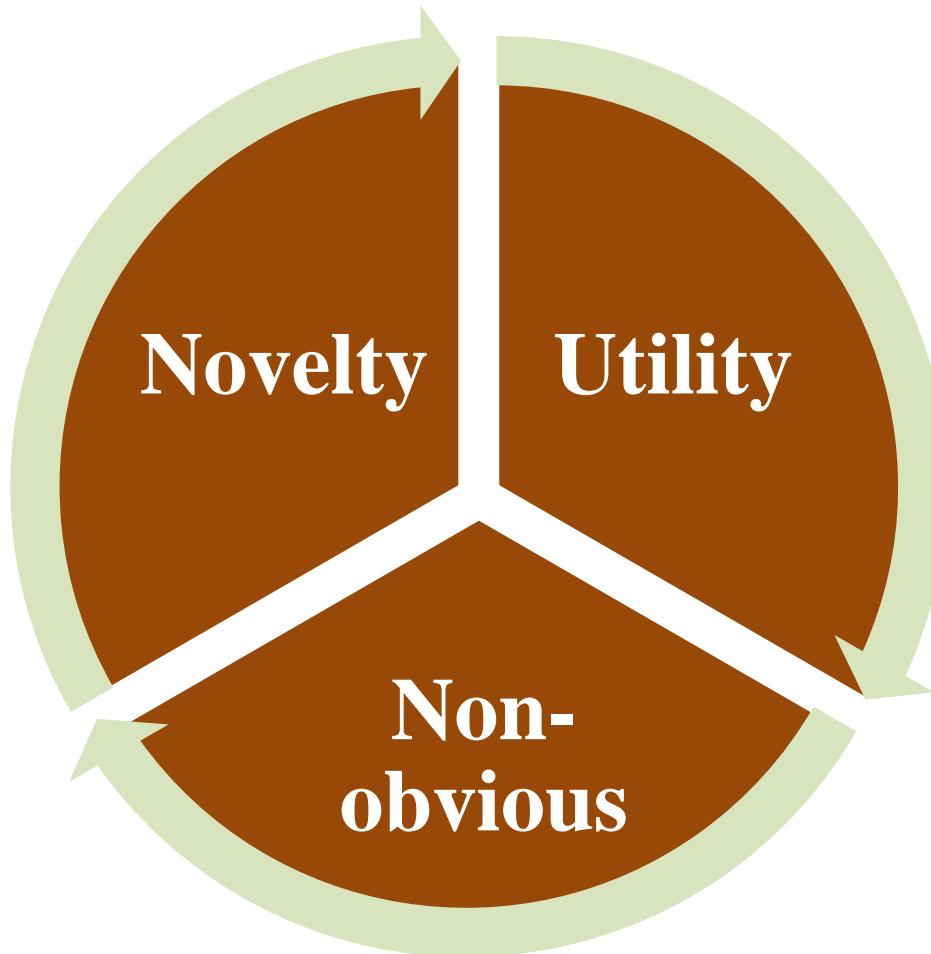
US PP20,303



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Criteria of Patentability



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What Is Prior Art?

Art = Technology

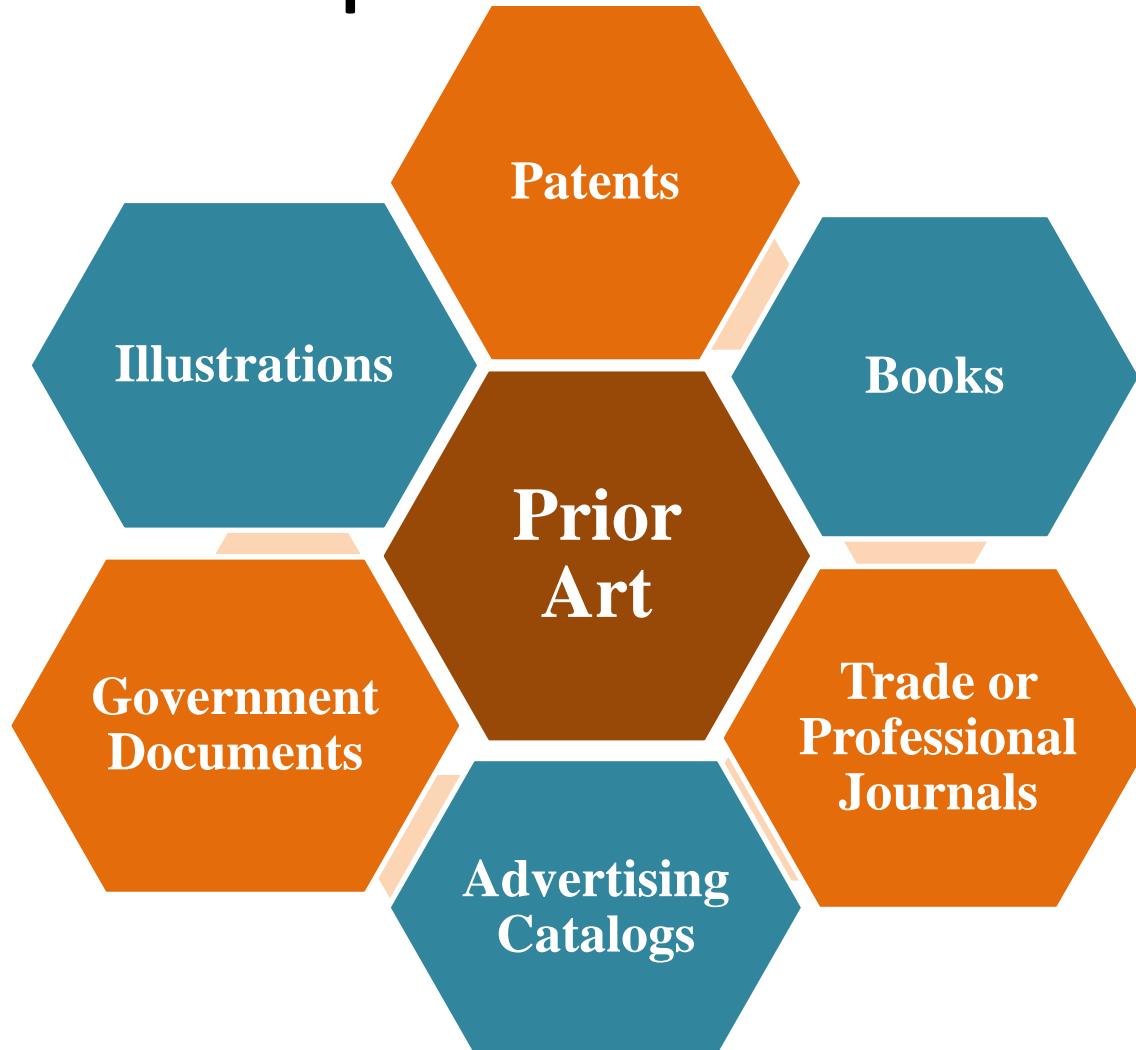
- 35 USC § 102 - Conditions for Patentability; Novelty and Loss of Right to Patent
- All information that has been disclosed to the public in any form about an invention before a given date.



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Examples of Prior Art



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AIA & Prior Art

America Invents Act (AIA)

Pre March 17, 2013
“First to Invent”

Pre *Invention* Date

Disclosure Within US
(Public use or placing
invention on sale)

Post March 17, 2013
“First to File”

Pre *Filing* Date

Disclosure Anywhere
in the World
(Public use or placing
invention on sale)



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Non-Obvious

Sufficiently different from what has been used or described prior.

Non-obvious to person having ordinary skill in area of technology.

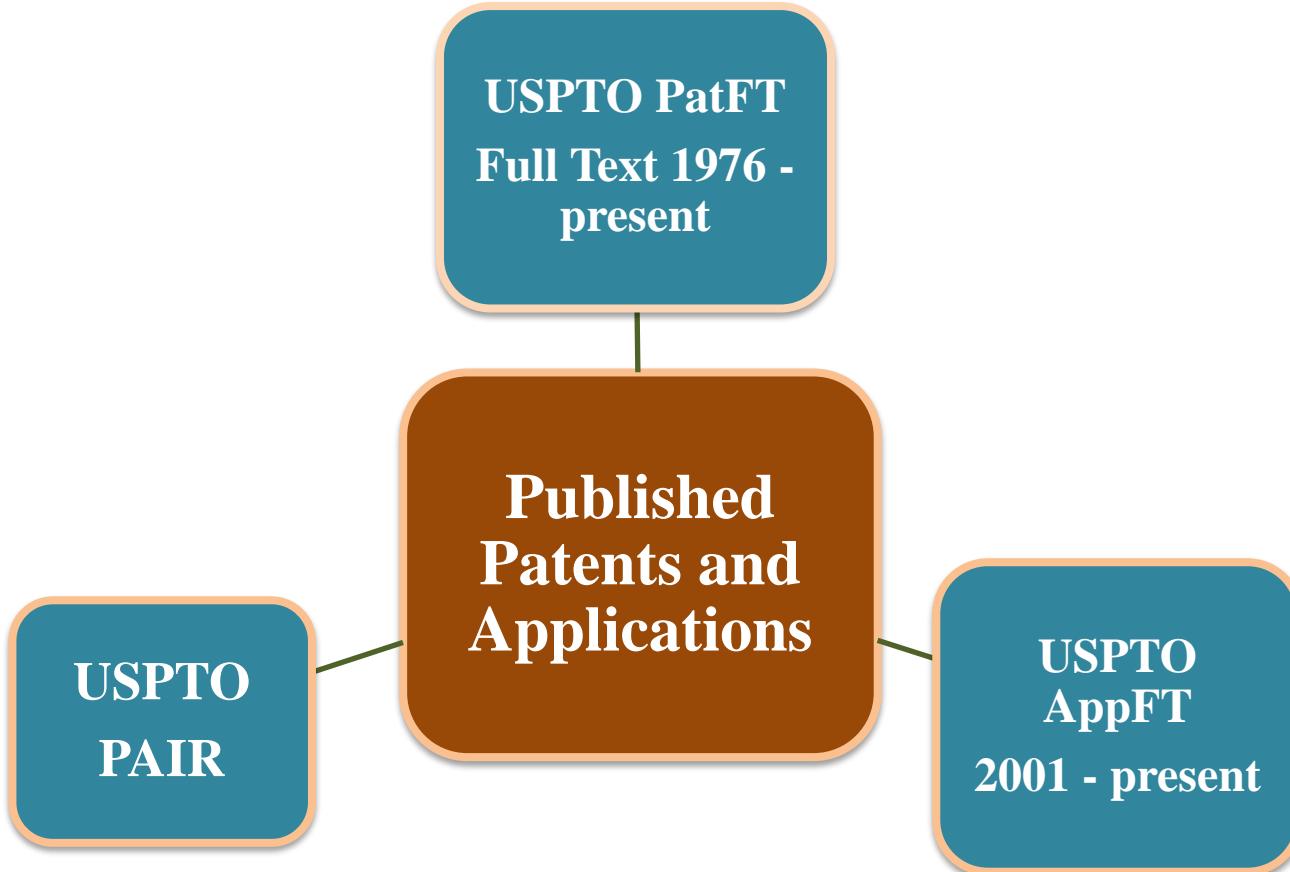
US D532,962



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Where to begin?



Pitfalls of Keyword Searching

- Titles and abstracts often vague
 - Slinky = “Toy and Process of Use”
 - iPod = “Media Device”
- Terminology changes
- British spellings and terminology (e.g. tyre, aluminium, petrol, defence)
- Keyword searchable from 1976 (USPTO website)

All patents prior art



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7 Step Search Strategy

Classification

- Step 1 - Brainstorm Keywords
- Step 2 - Determine the Initial Classification
- Step 3 - Verify Relevancy
- Step 4 - Read *Classification Definitions*

Access Full Text

- Step 5 – Search Issued Patents and Published Applications

Review & Reference

- Step 6 - Review Claims, Specifications and Drawings
- Step 7 - Check All References



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U.S. Patent Classification System

- Recommended method of searching:
 - USPC
 - 460+ classes and 150,000+ subclasses
 - Class 333/186



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Example of USPC

(12) United States Patent Park (10) Patent No.: US 8,362,853 B2 (45) Date of Patent: Jan. 29, 2013

(54) TUNABLE MEMS RESONATORS (55) Inventor: Sang-June Park, San Diego, CA (US)

(73) Assignee: QUALCOMM Incorporated, San Diego, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 509 days.

(21) Appl. No.: 12/488,404 (22) Filed: Jun. 19, 2009 (65) Prior Publication Data US 2010/0321132 A1 Dec. 23, 2010 (Continued)

(51) Int. Cl. H03H 9/24 (2006.01)
H03B 5/30 (2006.01)
H01P 7/00 (2006.01)

(52) U.S. Cl. 333/186; 333/188; 333/224; 333/232; 331/116 M; 331/107 DP; 331/154

FOREIGN PATENT DOCUMENTS EP 1429413 6-2004
EP 1429413 6-2004
(Continued)

Liu et al., "3-D 34.2 GHz Continuously Tunable Electronic-Mechanical Resonators with Quality Factor of 460-507," appears in 2009 IEEE MTT-S International Microwave Symposium Digest, pp. 116-117, 352, Jun 7-12, 2009.

(53) H03H 9/24 (2006.01)
H03B 5/30 (2006.01)
H01P 7/00 (2006.01)

(52) U.S. Cl. 333/186; 333/224; 333/232; 331/116 M; 331/107 DP; 331/154

(54) Field of Classification Search 333/186; 333/188; 333/224; 333/232; 331/107 DP; 331/116 M; 331/107 DP; 331/154 See application file for complete search history.

(56) References Cited U.S. PATENT DOCUMENTS 4,692,727 * 9/1987 Wakino et al. 333/210.1 5,406,344 A * 4/1995 Williams 333/203 5,839,000 A * 6/1998 Williams et al. 333/210 6,154,068 A * 11/2000 De Lillo et al. 333/210 6,630,700 A * 9/2003 Stanford et al. 331/278 7,099,595 B1 11/2007 Stanford et al. 29/600 7,299,534 B2 * 3/2009 Rauscher 333/237 7,511,470 B2 * 3/2009 He et al. 330/237 7,801,710 B2 * 3/2010 Vondale et al. 334/6 28 Claims, 10 Drawing Sheets

CLASS 333 WAVE TRANSMISSION LINES AND NETWORKS (186-190)

333/186

186 .Electromechanical filter

187 ..Using bulk mode piezoelectric vibrator

188 ...With means for varying response

189 ...Plural coupled vibrators

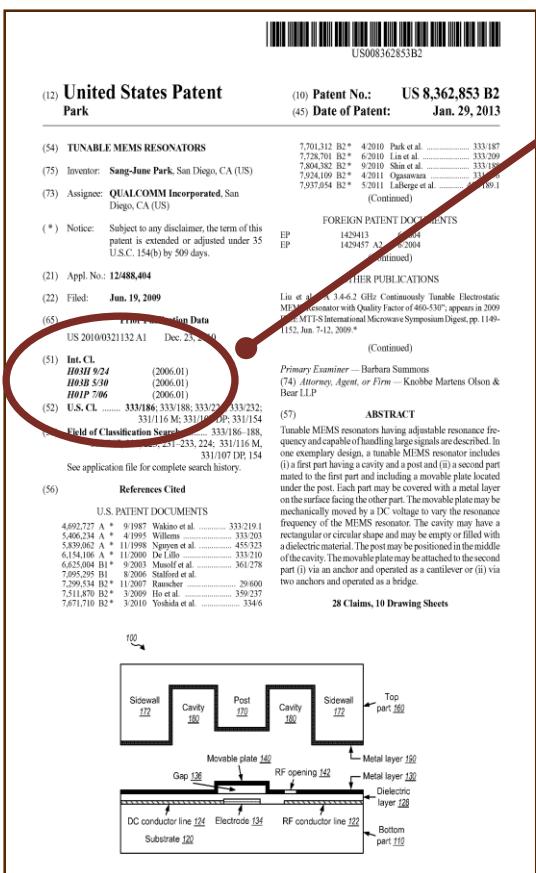
190Lattice structure



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Cooperative Patent Classification (CPC)



(51) **Int. Cl.**
H03H 9/24
H03B 5/30
H01P 7/06

(2006.01)
(2006.01)
(2006.01)

(52) **U.S. Cl.** 333/186; 333/188; 333/224; 333/232;
331/116 M; 331/107 DP; 331/154

(58) **Field of Classification Search** 333/186–188,
333/207, 209, 223, 231–233, 224; 331/116 M,
331/107 DP, 154

H03H 9/24
H03B 5/30
H01P 7/06



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Cooperative Patent Classification

- Bilateral classification system.
- Incorporates classification of EPO and USPTO.
- Consists of over 250,000 subdivisions.

Launched January 2013

EPO classifies in CPC only.

2-year transition period for USPTO – classifies in both USPC and CPC.



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Where to find information about CPC?

The screenshot shows a blue background with white text. On the left, there's a sidebar with links to Home, About CPC, Objectives, Timeline and milestones, Deliverables, Impact, Events, Publications, Press releases, Links, FAQ, and Sitemap. The main content area has several classification codes listed vertically: F16G5/10, F16G5/12, F16G5/14, and F16G5/16. To the right of each code is a bulleted list of sub-classifications or descriptions.

F16G5/10

- ■ ■ with reinforcement bonded by the plastic
- ■ ■ with textile reinforcement
- ■ ■ with metal reinforcement

F16G5/12

- made of plastics (F16G5/12) take precedence

F16G5/14

- ■ with reinforcement bonded by the plastic

F16G5/16

- consisting of several parts
- in the form of links

EPO and USPTO Work Toward Joint Classification System

The EPO and the USPTO have agreed together to work toward the formation of a partnership to explore the development of a joint classification system based on the European Classification system (ECLA). It is important to note that the classification practices of the two offices

News

21 March 2012: The Events section is now updated

23 March 2012: The CPC workshop for external users will take place at the EPO in Vienna, Austria

Search Enter search term

  United States Patent and Trademark Office

CPC Internet site: www.cpcinfo.org

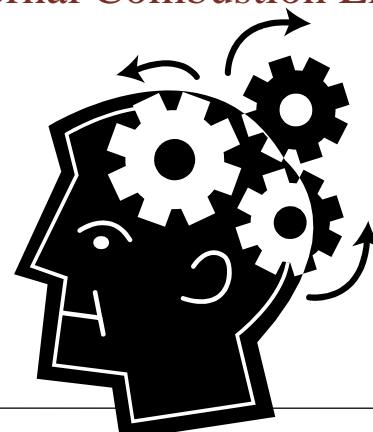


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Step 1: Brainstorm

- Purpose? Utilitarian or ornamental?
- Process or product?
- What is the invention made of?
- How is it used?
- Keywords and technical terms that describe?
- Vehicle → Automobile → Internal Combustion Engine → Fuel Injection



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Step 2: Determine Initial Classification

The screenshot shows the official website of the United States Patent and Trademark Office (USPTO) at www.uspto.gov. The page features a dark blue header with the "uspto.GOV" logo and navigation links for PATENTS, TRADEMARKS, IP LAW & POLICY, PRODUCTS & SERVICES, INVENTORS, NEWS & NOTICES, FAQS, and ABOUT US. A banner at the top announces an "Industry Day" coming for USPTO IT Initiatives. Below the banner, there's a large image of three business silhouettes standing in front of a world map. To the right of the image, a red callout box contains the text "Patent Search". An orange arrow points from this callout box to the "patents" link in the main menu, which is highlighted with an orange circle.



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Step 2: Determine Initial Classification

A screenshot of a computer screen showing the USPTO Patents index page at www.uspto.gov/patents/index.jsp. The page has a dark blue header with the "uspto.GOV" logo and the text "The United States Patent and Trademark Office, an agency of the Department of Commerce". Below the header is a navigation menu with links like "PATENTS | TRADEMARKS | IP LAW & POLICY | PRODUCTS & SERVICES | INVENTORS | NEWS & NOTICES | FAQS | ABOUT US". A sidebar on the left is titled "Patent Process" and lists various links such as "Home Page", "Search for Patents", "Patent Forms", "Statistics", "Electronic Business Center", "Patent Laws, Regulations, Policies & Procedures", "Resources and Guidance", "Office of Data Management", "Announcements", "Initiatives & Events", "International Protection", "Employee Locator", and "Contact Patents". The main content area is titled "Patents" and contains sections about "What is a patent?", "First-time filers, start here", and "Resources". The "Resources" section includes links to "Search Patents", "PAIR", "EFS-Web", "Inventor FAQs", "REVENUE ACCOUNTING AND MANAGEMENT", "ACCELERATED EXAMINATION", and "Contact Us". A callout box with a brown border and a blue background is overlaid on the left side of the sidebar, containing the text "Patent Classification" in blue. An orange arrow points from the bottom of this callout box towards the "Search for Patents" link in the sidebar.



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Step 2: Determine Initial Classification

The screenshot shows a Microsoft Internet Explorer browser window displaying the USPTO website at <http://www.uspto.gov/patents/resources/classification/index.jsp>. The page title is "Office of Patent Classification". The left sidebar has a red box around the "Search Classification System" link, with a red arrow pointing to the "Browse Index to USPC" link in the "Patent Classification" menu.

uspto.GOV
The United States Patent and Trademark Office
an agency of the Department of Commerce

PATENTS | TRADEMARKS | IP LAW & POLICY | PRODUCTS & SERVICES | INVENTORS | NEWS & NOTICES | FAQS | ABOUT US

Home Page » PATENTS » Patent Classification

Office of Patent Classification

The Office of Patent Classification maintains the patent classification systems.

Organization and Staff

- Classification Divisions and Contact Numbers

Cooperative Patent Classification (CPC)

The Cooperative Patent Classification (CPC) effort is a joint partnership between the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO) where the Offices have agreed to harmonize their existing classification systems (European Classification (ECLA) and United States Patent Classification (USPC) respectively) and migrate towards a common classification scheme.

I don't know anything about CPC. Where do I start?

- Use the USPTO and EPO bi-lateral [Cooperative Patent Classification \(CPC\)](#) informational site on WWW
- Start [browsing the CPC scheme](#) on [www.uspto.gov](#)

I know a USPC classification and I want to find a relevant CPC. What do I do?

- Use the [Classification Search Page](#) to look up a Statistical Mapping from USPC to CPC.

I know a CPC group symbol (e.g., B02C 19/0081) and I want to see the group title, browse the scheme or read its definition. How do I do this?

- Use the [Classification Search Page](#) to look up a CPC Scheme or Definition by CPC Symbol

I want to download CPC scheme and definition source files (e.g., XML, PDF); and CPC to IPC concordance files. How do I do this?

- Use the [CPC Deliverables page](#) on the Cooperative Patent Classification bi-lateral Web site to download this information.

United States Patent Classification (USPC) Resources

I don't know anything about USPC. Where do I start?

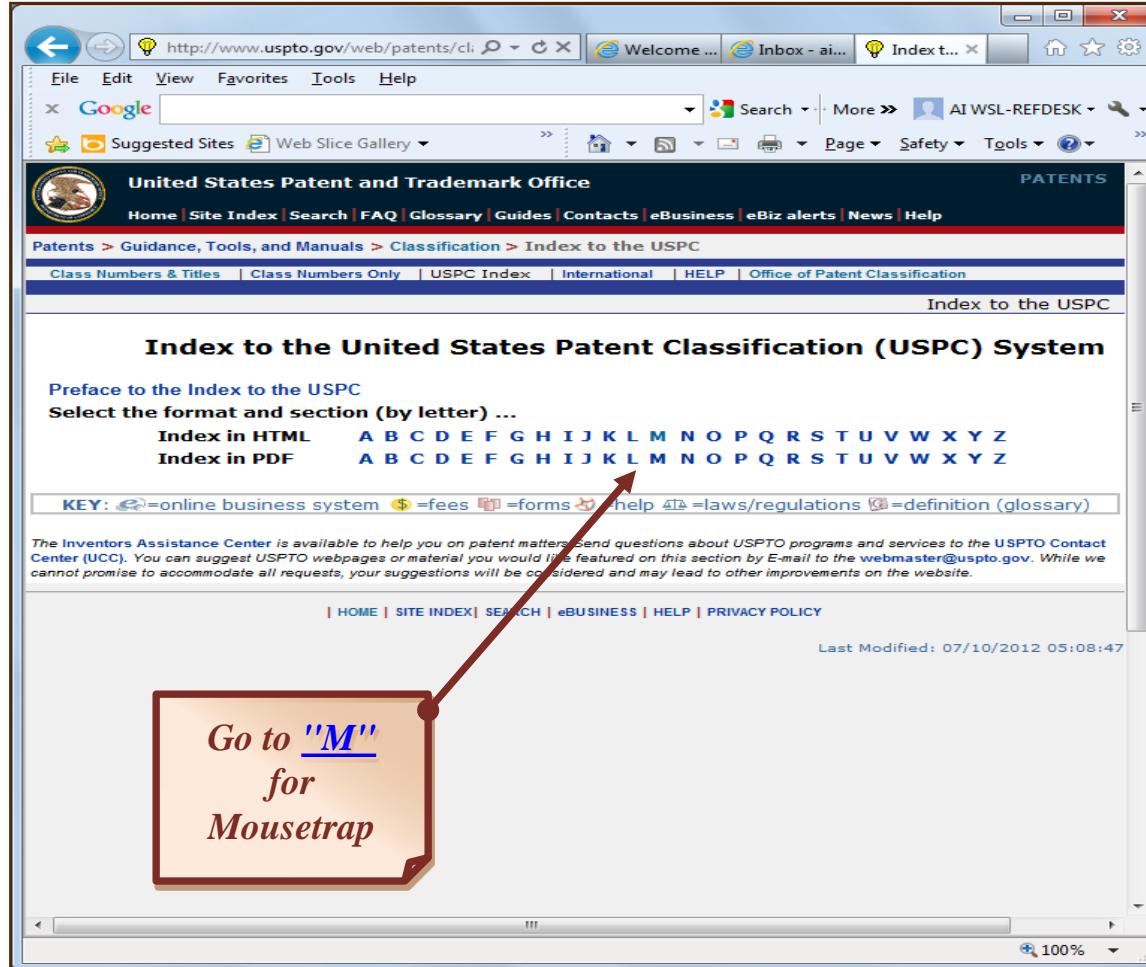
- Use the [Index to USPC](#) to browse an alphabetical listing of concepts and access relevant USPC classification schedules.



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Step 2: Determine Initial Classification



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Step 3: Verify Relevancy

Manual of Classification

M - Index to the U.S. Patent Classification System - Windows Internet Explorer
http://www.uspto.gov/web/patents/classification/uspcindex/indexm.htm

File Edit View Favorites Tools Help

Google McAfee

Favorites M - Index to the U.S. Pat... Sign-in

Find: mousetrap Previous Next Options No matches found

Vehicle for conveyer	198 / 300+
Wheel and axle	301
Cultivator, adjustable	172 / 395+
Land marker, slidable	172 / 126+
Land vehicle	301
Panel hangers travelers	16 / 97+
Flow, adjustable	172 / 395+
Railway	295
Railway motor axle mounting	105 / 136+
Railway rolling stock combined	105
Railway truck axle box mounting	105 / 218.1+
Skate wheel	280 / 11.27+
Vehicle combined	280 / 29+
Mountain Climbing	248 / 925+
Mounting	
Tires on wheels	157
Mouse	
Computer input & display control	345 / 156+
Devices	345 / 156+
Guard	
Piano pedal openings	84 / 233
Multicellular living organisms	800
Traps	43 / 58+
Mouth	
Bag holders	248 / 99+
Boiler	122 / 458
Doll part	446 / 395
Electric applicator	601 / 134
Electrical input device (see Joystick)	
Guard animal type	119 / 831+
Guard human type	128 / 859+
Harmonica	84 / 377+
Harp	84 / 375
Organ	84 / 93
Organs	84 / 377+
Pieces	
Acoustical muffler	181 / 242
Animal bits	54 / 8+
Applying or forming cigar or	131 / 88
Cigarette	131 / 88+
Automatic wind instrument	84 / 93
Brass musical instrument	84 / 398+
Cigar or cigarette	131 / 361
Clarinet	84 / 383 R
Ear piece combined speaking	181 / 20
Tube type	181 / 20
Flexible bag closure	383 / 80+

Link to Class Schedule

**Mouse trap:
Class 43 Fishing,
Trapping, and Vermin
Destroying/
Subclass 58+ Traps**



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Step 3: Verify Relevancy

Class Number – Links to Class and Subclass definitions file.

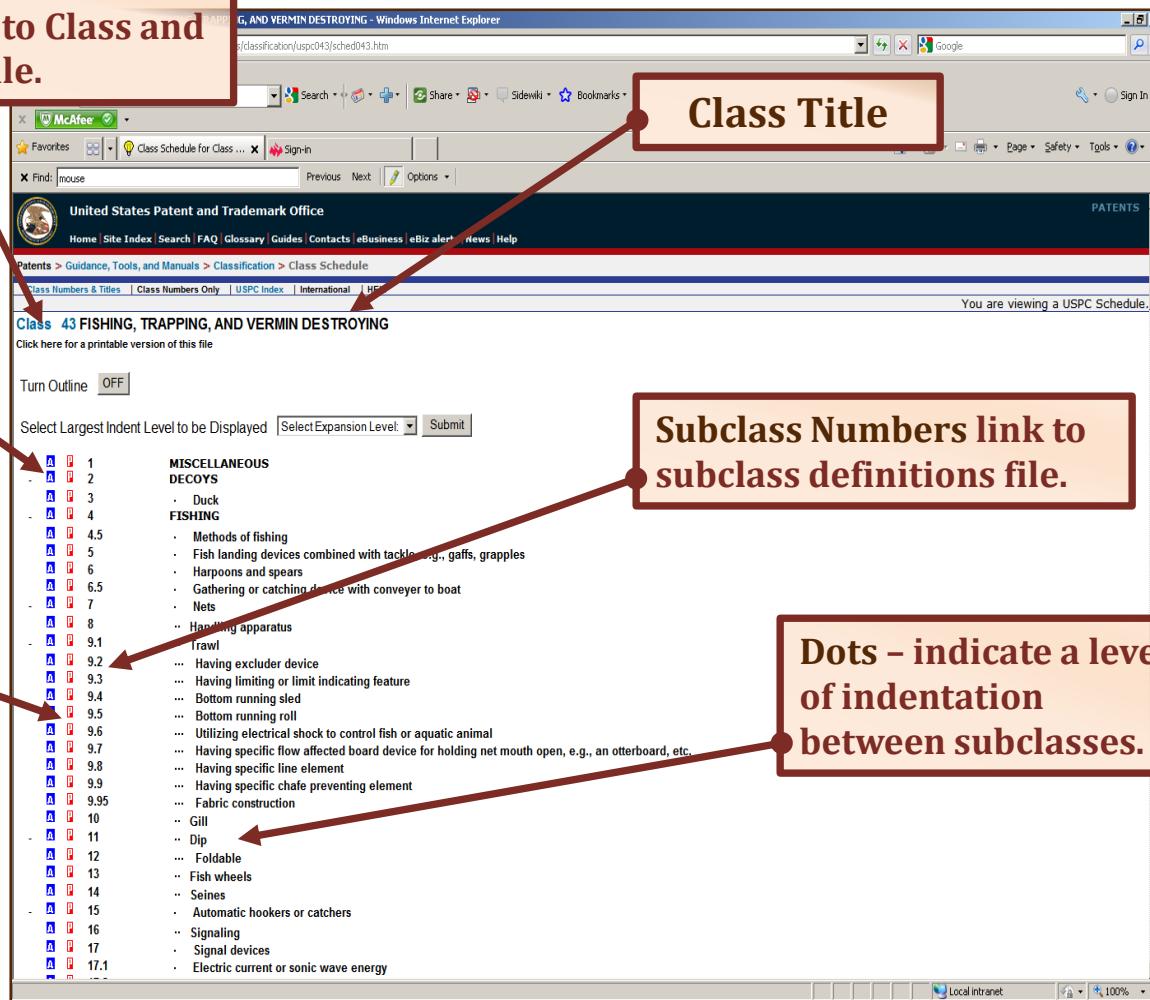
A icon links to search of Pre Grant Publication applications.

P icon links to search of Patents on the Web applications.

Class Title

Subclass Numbers link to subclass definitions file.

Dots – indicate a level of indentation between subclasses.



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Step 3: Verify Relevancy

The screenshot shows a Windows Internet Explorer window with the title "Class Schedule for Class 43 FISHING, TRAPPING, AND VERMIN DESTROYING - Windows Internet Explorer". The URL is <http://www.uspto.gov/web/patents/classification/uspc043/sched043.htm#C0435058000>. The page displays a hierarchical list of patent subclasses under Class 43. A red circle highlights the subclass number 58, which is part of the "TRAPS" section. A red arrow points from a callout box containing a note about subclass numbering to this highlighted number.

Note: Subclass numbers are not necessarily listed in sequential order. They are subclass identifiers and shift position when that subclass is moved within a schedule.

Click on subclass number to get the Classification Definition (Step 4).

- .. Sinkers with ground-engaging means, e.g., trolley or surf anchors
- .. Sinkers with guards or retrieving features
 - Lines and/or leaders
 - Bait distributors, e.g., chumming devices
 - Disgorgers and gags
 - Holder
- .. Catch and natural bait
- .. Minnow buckets
 - ... Aerating pump
 - .. Hook
 - .. Holder for snelled hook under tension
 - .. Trotline holder
- TRAPS**
 - .. Burglar
 - .. Imprisoning
 - .. Swinging or sliding closure
 - Falling engaging member
 - .. Jaw cage type
 - .. Self and ever set
 - .. Nonreturn entrance
 - ... Victim-opened
 - .. Victim-closed
 - .. Sinking compartment
 - .. Tilttable platform
 - .. Trigger-released
 - .. Rotatable platform
 - .. Trigger-released
 - .. Self-reset
 - .. Rotating door or platform
 - .. Smiting
 - .. Victim-reset
 - .. Impaling or smiting
 - .. Rectilinear striker movement
 - .. Impaling
 - ... Burrow type
 - .. Swinging striker
 - .. Auxiliary striker holder
 - .. Direct engaging latch
 - ... Automatic catch
 - .. Automatic set
 - .. Explosive
 - .. Choking or squeezing
 - .. Movable loops
- ..



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Step 4: Read Classification Definitions

**Subclass
58 Traps**

Class Definition for Class 43 - FISHING, TRAPPING, AND VERMIN DESTROYING - Windows Internet Explorer

File Edit View Favorites Tools Help

Google http://www.uspto.gov/web/patents/classification/uspc043/defs043.htm#C0435058000

McAfee

Favorites Class Definition for Class ... Google

Find: mouse Previous Next Options

254, Implements or Apparatus for Applying Pushing or Pulling Force, particularly subclasses 264+ for apparatus of a more general nature for applying tensile force to line or cable.

57.3 Trotline holder:
This subclass is indented under subclass 54.1. Apparatus wherein the specific receptacle or support is for holding a relatively long fishing line which has attached along its length a plurality of shorter fishing lines with hooks attached to them.

58 TRAPS:
This subclass is indented under the class definition. Devices which lure animals not domesticated or take advantage of some habit of the same and which by reason of some voluntary action on the part of the said animals catch or wound or paralyze or kill the same or in general render them helpless, that man may work his will upon them.
(1) Note. By "animals" is meant all sentient living organisms which have the power of voluntary motion whether mammals, reptiles, fish, birds, or insects. While many traps destroy, they are distinguishable from vermin destroyers by the fact that animals approach traps of their own free will, whether impelled by curiosity, hunger or habit. Destroyers seek out the animals to exterminate them and force them, in spite of themselves, to destruction. Devices in the nature of traps for domestic or farm animals--as cattle, poultry, or bees--are not included. Devices which hold animals for the express purpose of releasing the same are not considered to be traps within the meaning of the term as here used. Mere poison-holders, although the poison will attract animals, are considered more properly classifiable under "Vermin-destroying", which see.

SEE OR SEARCH CLASS:

116, Signals and Indicators, subclass 22 for devices for repelling animals, fish, and insects by means of sound waves.
119, Animal Husbandry, subclasses 339+ for poultry trap nests, and subclasses 801+ for catching and holding tools.
292, Closure Fasteners, appropriate subclasses for trap closure fasteners.
293, Vehicle Fenders, subclasses 15+ for body and animal catchers and retainers for vehicle-fenders.

59 Burglar:
This subclass is indented under subclass 58. Devices designed to catch thieves and burglars and prevent their escape and having no function additional to entrapping and sometimes raising an alarm.

SEE OR SEARCH THIS CLASS, SUBCLASS:

60+, and 64+, for animal-traps which might be used to catch thieves and burglars.

SEE OR SEARCH CLASS:

49, Movable or Removable Closures, appropriate subclasses for closures of the type provided for.
105, Railway Rolling Stock, subclass 394 for train-robbing-trapping devices.
109, Safes, Bank Protection, or a Related Device, subclasses 3+ where the trap is manually actuated to release position by an outside intelligence; subclass 47 for devices wherein the safe itself is removed from the immediate position upon attack by an outside source; and subclasses 29+, especially subclasses 31 and 32 for fluid ejecting devices to prevent train robberies.
116, Signals and Indicators, subclasses 75 through 99 for burglar-alarms if mechanically operated.
340, Communications: Electrical, subclasses 500+ for electric alarms which are automatically responsive to a condition. Note especially subclasses 541+ for intrusion detection, and subclass 574 for holdup detection.

60 Imprisoning:
This subclass is indented under subclass 58. Traps which capture or make prisoners of animals, especially fur-bearing animals, so that they are not harmed or injured in any way. These traps must be set after each capture and are cage-like in structure.



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Step 5: Review Published Applications and Patents in Selected Subclasses

Search Options:

- USPTO Website
- PubWest: Examiner Search Tool

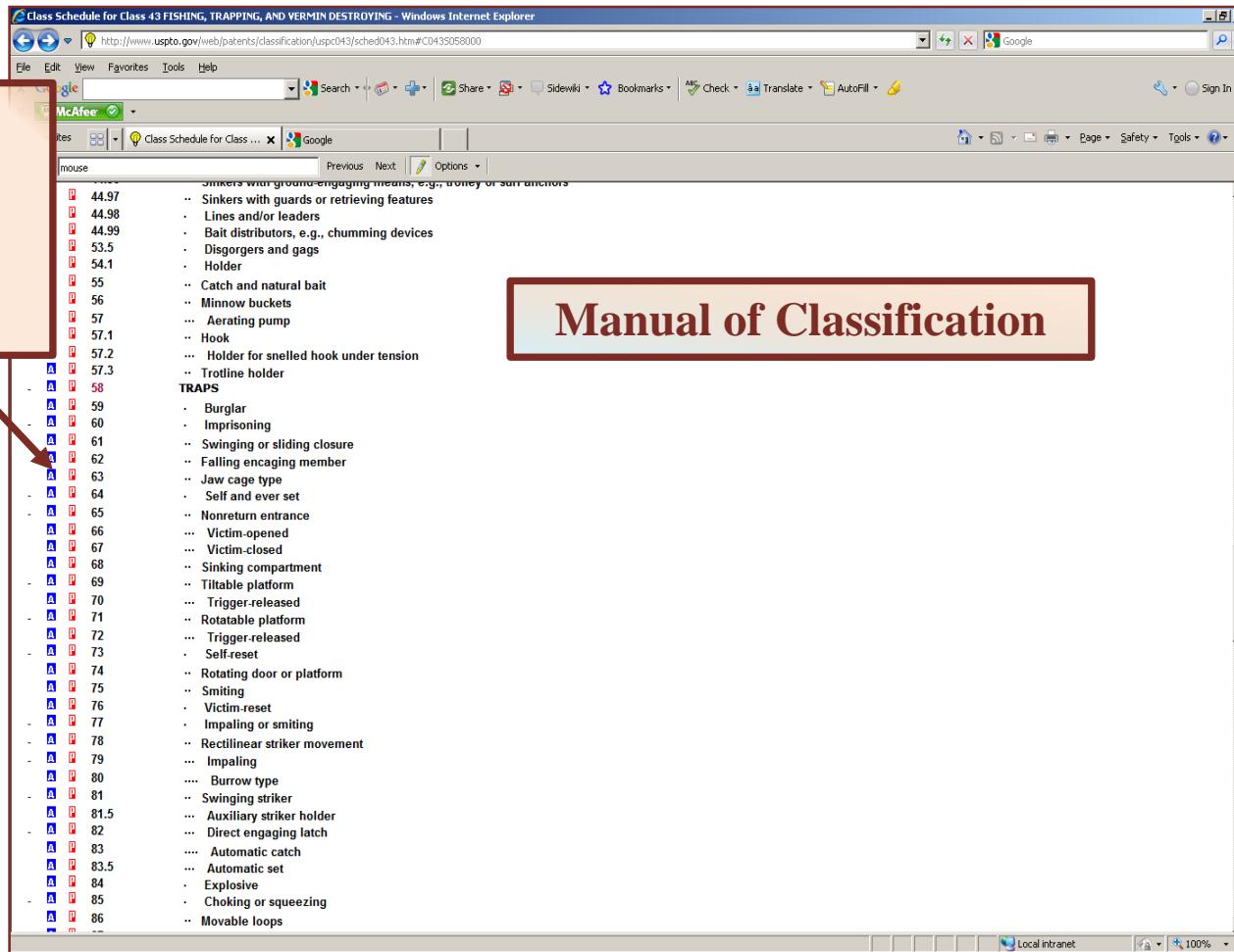


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Step 5: Review Published Applications and Patents in Selected Subclasses

 icon links to search of Pre Grant Publication Applications



Manual of Classification

Class Schedule for Class 43 FISHING, TRAPPING, AND VERMIN DESTROYING - Windows Internet Explorer
File Edit View Favorites Tools Help
http://www.uspto.gov/web/patents/classification/uspc043/sched043.htm#C043S058000
McAfee Google
Sites Class Schedule for Class ... Google
mouse Previous Next Options
Sinker with ground-engaging means, e.g., trolley or snare anchors
P 44.97 .. Sinkers with guards or retrieving features
P 44.98 .. Lines and/or leaders
P 44.99 .. Bait distributors, e.g., chumming devices
P 53.5 .. Disgorgers and gags
P 54.1 .. Holder
P 55 .. Catch and natural bait
P 56 .. Minnow buckets
P 57 .. Aerating pump
P 57.1 .. Hook
P 57.2 .. Holder for snelled hook under tension
P 57.3 .. Trotline holder
P 58 ..
TRAPS
A P 59 .. Burglar
A P 60 .. Imprisoning
A P 61 .. Swinging or sliding closure
A P 62 .. Falling engaging member
A P 63 .. Jaw cage type
A P 64 .. Self and ever set
A P 65 .. Nonreturn entrance
A P 66 .. Victim-opened
A P 67 .. Victim-closed
A P 68 .. Sinking compartment
A P 69 .. Tilttable platform
A P 70 .. Trigger-released
A P 71 .. Rotatable platform
A P 72 .. Trigger-released
A P 73 .. Self-reset
A P 74 .. Rotating door or platform
A P 75 .. Smiling
A P 76 .. Victim-reset
A P 77 .. Impaling or smiting
A P 78 .. Rectilinear striker movement
A P 79 .. Impaling
A P 80 .. Burrow type
A P 81 .. Swinging striker
A P 81.5 .. Auxiliary striker holder
A P 82 .. Direct engaging latch
A P 83 .. Automatic catch
A P 83.5 .. Automatic set
A P 84 .. Explosive
A P 85 .. Choking or squeezing
A P 86 .. Movable loops



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Step 5: Review Published Applications and Patents in Selected Subclasses

The screenshot shows a Windows Internet Explorer window displaying the 'US PATENT & TRADEMARK OFFICE PATENT APPLICATION FULL TEXT AND IMAGE DATABASE'. The search results for 'CCL/43/58' are shown, with 57 applications found. The first result is highlighted with a red arrow pointing to it from a callout box.

Click here to view Application Abstract.

PUB. APP. NO. Title
1 20110041383 RODENT MANAGEMENT SYSTEM
2 20100319238 RODENT MANAGEMENT SYSTEM
3 20100287815 METHOD FOR CONTROLLING HARMFUL RODENTS IN AGRICULTURAL ENTERPRISES
4 20100275502 RODENTICIDE
5 20100251598 Camper Resistant Weighted Rodent and Insect Bait Station
6 20100199543 Spring Activated Adhesive Rodent Trap
7 20100192450 Self Closing Glue Trap
8 20100170141 RODENT MANAGEMENT SYSTEM HAVING A HOUSING WITH AN ENTRY OPENING
9 20100170140 RODENT MANAGEMENT SYSTEM HAVING HOUSING
10 20100162614 RODENT MANAGEMENT SYSTEM HAVING BAIT SUPPORTS
11 20100155413 METHOD AND APPARATUS FOR PEST BAIT APPLICATION
12 20100134301 Networked pest control system
13 20100083561 Aquatic snail trap, bait, and method of use thereof
14 20090307961 ANIMAL TRAP HAVING TIMED RELEASE DOOR



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Step 5: Review Published Applications and Patents in Selected subclasses

United States Patent Application: 0110041383 - Windows Internet Explorer
http://appft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HTOFF&q=1&u=%2Fnetacgi%2FPTO%2Fsearch-adv.html&r=1&f=G&l=50&d=PG01&s1=%2243%22%2F58.CLS.&os=

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United States Patent Application: 0110041383

US PATENT & TRADEMARK OFFICE
PATENT APPLICATION FULL TEXT AND IMAGE DATABASE

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Hit List Next List Next Bottom
View Shopping Cart Add to Shopping Cart
Images (1 of 57)

United States Patent Application
Kind Code
Cink; James H. ; et al.

RODENT MANAGEMENT SYSTEM

Abstract

A rodent management station includes a housing having a base and a lid that together at least in part define an interior space of the housing. The lid is positionable relative to the base between a closed configuration of the station in which the interior space is substantially enclosed, and an opened configuration of the station in which the interior space is accessible for servicing. The housing has an entry opening through which rodents enter the interior space of the housing. The rodent management station also includes at least one of a trap and a bait positionable within the interior space of the housing. The base includes a floor panel and an inner surface on which rodents move within the interior space. An upstanding rear wall extends upward relative to the floor panel about substantially less than the circumference of the floor panel.

Inventors: Cink; James H.; (Ballwin, MO) ; Berger; Jonathan D.; (St. Louis, MO) ; Mann; Brian James; (Wildwood, MO) ; Marshall; Edward Francis; (Lansing, MI) ; Moran; Henry Wayne; (Ballwin, MO) ; Poling; James David; (Clarkson Valley, MO)

Correspondence: Patent Docket Department;Armstrong Teasdale LLP
Address: 7700 Forsyth Boulevard, Suite 1800
St. Louis
MO
63105
US

Assignee: BASF CORPORATION

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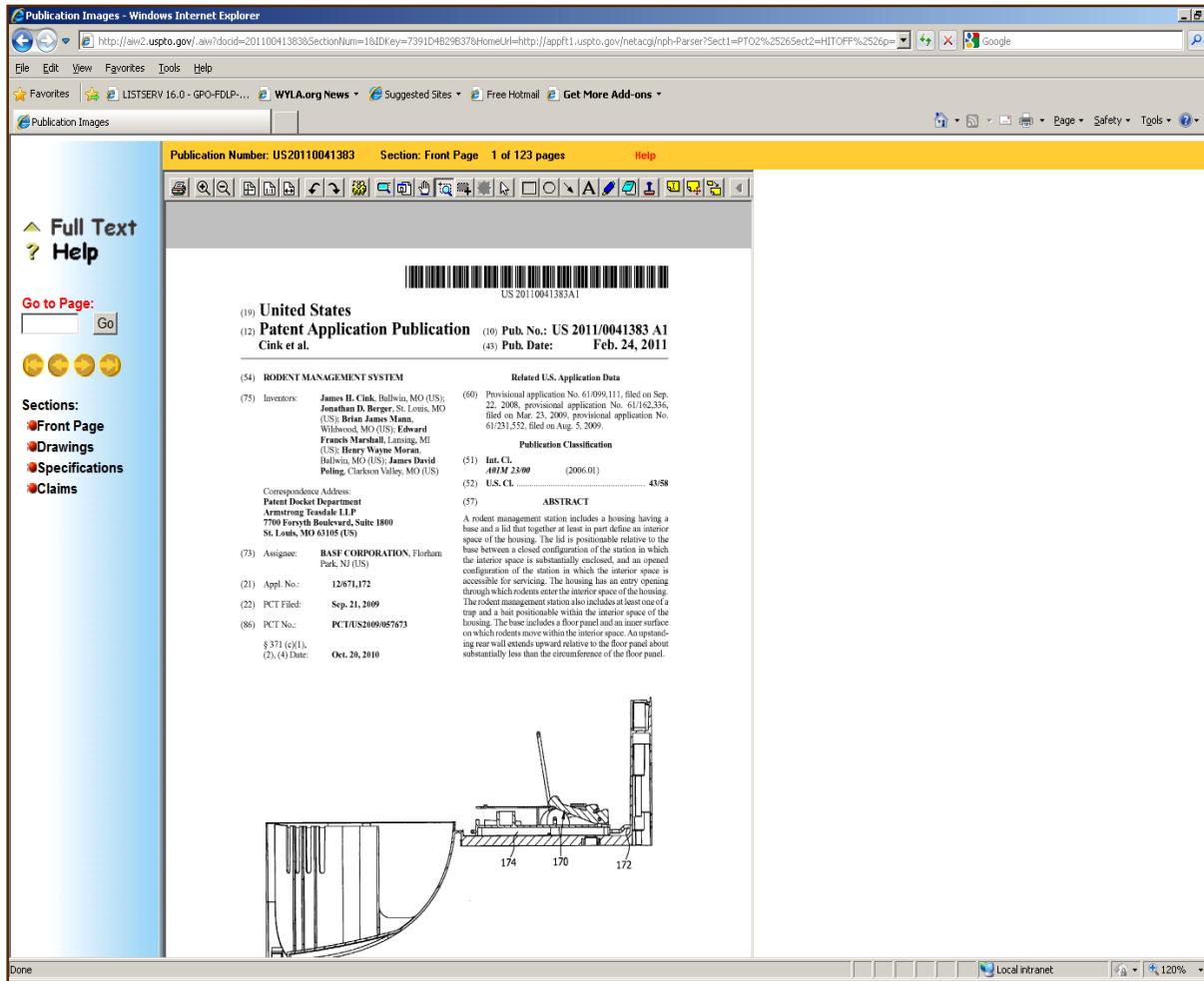
Click here to view Application Images.



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Step 5: Review Published Applications and Patents in Selected Subclasses

The screenshot shows a Windows Internet Explorer window with the title "Class Schedule for Class 43 FISHING, TRAPPING, AND VERMIN DESTROYING - Windows Internet Explorer". The URL is <http://www.uspto.gov/web/patents/classification/uspc043.sched043.htm#C0435058000>. The page displays a hierarchical list of patent subclasses under class 43. A red icon is located in the sidebar, and a red arrow points from it to a callout box containing the text: "P icon links to search of Granted Patent Applications".

Manual of Classification

P icon links to search of Granted Patent Applications

- Sinkers with ground-engaging means, e.g., hooks or sun anchors
 - Sinkers with guards or retrieving features
 - Lines and/or leaders
 - Bait distributors, e.g., chumming devices
 - Disgorgers and gags
 - Holder
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- 57.3
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- 78
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- 83.5
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TRAPS

- Burglar
- Imprisoning
- .. Swinging or sliding closure
- .. Falling engaging member
- .. Jaw cage type
- .. Self and/or set
- .. Nonreturn entrance
- .. Victim-opened
- .. Victim-closed
- .. Sinking compartment
- .. Tilttable platform
- .. Trigger-released
- .. Rotatable platform
- .. Trigger-released
- .. Self-reset
- .. Rotating door or platform
- .. Smiting
- .. Victim-reset
- .. Impaling or smiting
- .. Rectilinear striker movement
- .. Impaling
- .. Burrow type
- .. Swinging striker
- .. Auxiliary striker holder
- .. Direct engaging latch
- ... Automatic catch
- .. Automatic set
- .. Explosive
- .. Choking or squeezing
- .. Movable loops



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Step 5: Review Published Applications and Patents in Selected Subclasses

The screenshot shows a web browser displaying the USPTO Patent Full-Text and Image Database. The URL is <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&p=1&u=%2Fnetacgi%2Fsearch-bool.html&r=0&f=5&l=50&TERM1=43%2F58&FIELD1=ORCL&d=pall>. The page title is "USPTO PATENT FULL-TEXT AND IMAGE DATABASE". The search query "CCL/43/58" is entered in the search bar. The results section displays 185 patents found, with "Hits 1 through 50 out of 185" shown. A red callout box with the text "Click here to view Granted Patent Abstract" points to the first patent in the list, which is titled "Mouse and rodent trap" with patent number 7,908,790.

USPTO PATENT FULL-TEXT AND IMAGE DATABASE

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Searching US Patent Collection...

Results of Search in US Patent Collection db for:
CCL/43/58: 185 patents.
Hits 1 through 50 out of 185

Next 50 Hits

Jump To

Refine Search CCL/43/58

PAT. NO. Title

- 1 [7,908,790](#) Mouse and rodent trap
- 2 [7,874,097](#) Lobster trap with ring guard assembly
- 3 [7,854,088](#) Animal trap
- 4 [7,824,668](#) Compositions for attracting stink bugs
- 5 [7,793,460](#) Animal trap
- 6 [7,743,551](#) Pest control apparatus and systems
- 7 [7,726,063](#) Snake trap
- 8 [7,721,485](#) Leech trap
- 9 [7,676,985](#) System and device for pest monitoring and eradication
- 10 [7,607,254](#) Mouse trap having a triggering plate
- 11 [7,540,109](#) Humane trap for small animals
- 12 [7,530,195](#) Electrocution animal trap with a sender
- 13 [7,509,770](#) Method and apparatus for automatic pest trap report generation and additional trap parameter data

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Step 5: Review Published Applications and Patents in Selected Subclasses

The screenshot shows a Microsoft Internet Explorer window with the title "United States Patent: 7908790 - Windows Internet Explorer". The URL in the address bar is <http://paft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&p=1&u=%2Fnetacgi%2Fsearch-bool.html&r=1&f=G&l=50&d=pall&s1=43%2F58.CCL5.&OS=CCL43/S8&RS=CCL43/S8>. The page displays the "USPTO PATENT FULL-TEXT AND IMAGE DATABASE". A red callout bubble with a brown border and a black arrow points to the "Images" button in the top menu bar. The main content area shows a patent record for "Mouse and rodent trap" by Michael J. Mahony, filed on August 7, 2007, and published on March 22, 2011. The patent number is 7,908,790. The abstract describes a rodent trap with a base, a hoop pivoting relative to the base, a bias arrangement, a retaining bar pivoting relative to the base, and a release arrangement. The inventors listed are Michael J. Hallam and Michael J. Mahony. The patent also includes priority data.

United States Patent
Mahony

7,908,790
March 22, 2011

Mouse and rodent trap

Abstract

A rodent trap includes a base, a hoop pivoting relative to the base having a first and a second position, a bias arrangement, a retaining bar pivoting relative to the base and having a setting and a releasing position, a release arrangement comprising an over-center pivotally mounted keeper having first and second positions, the retaining bar including a locking lip to retain the hoop in a first set position when the retaining bar is in the setting position, the release arrangement for mounting a bait and release the retaining bar when subject to an upward force on the bait, the retaining bar automatically set to the setting position by drawing the hoop down onto the retaining bar against the bias and the retaining bar engaging a retaining lip of the release arrangement.

Inventors: Mahony, Michael J. (Hallam, AU)
Appl. No.: 12/376,480
Filed: August 7, 2007
PCT Filed: August 07, 2007
PCT No.: PCT/AU2007/001106
371(c)(1),(2),(4) Date: February 05, 2009
PCT Pub. No.: WO2008/017110
PCT Pub. Date: February 14, 2008

Foreign Application Priority Data

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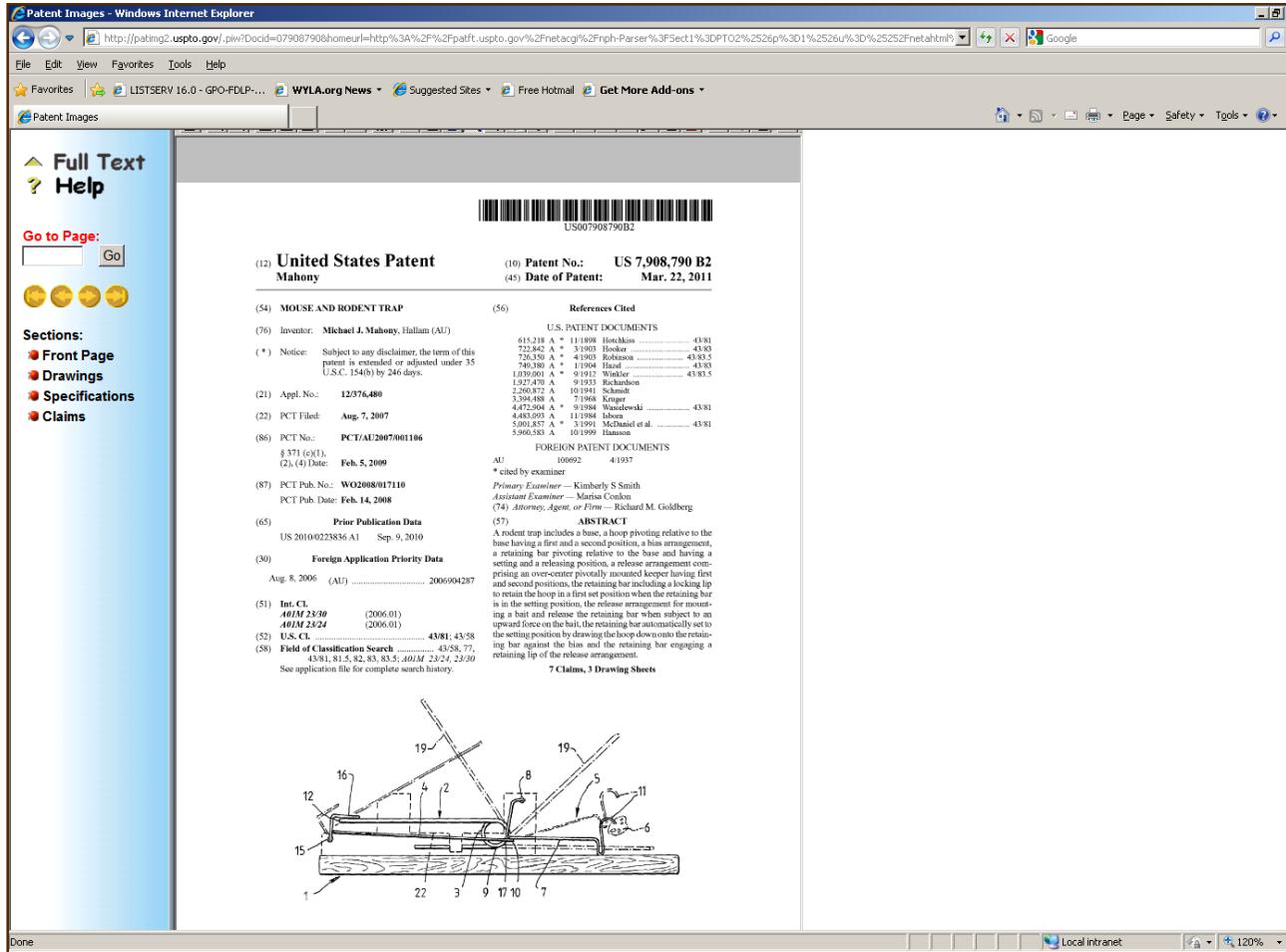
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Step 5: Review Published Applications and Patents in Selected Subclasses



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Step 6: Review all specifications, Claims and Drawings for Relevancy

(54) SYSTEM FOR REPELLING SMALL MAMMALS

- Specifications:
- Title
- Abstract
- Representative Drawing

(Continued)

Primary Examiner — Darren W Ark

(74) Attorney, Agent, or Firm — Collard & Roe, P.C.

(57)

ABSTRACT

A system for defense against small mammals, for example voles, for areas used for agricultural or horticultural purposes, consists of segments to be put together to form a gutter that is open towards the top, forming a type of fence. Each segment has a base plate and walls that rise laterally from this base plate. An inlet opening is provided, at least in the side wall that faces away from the area to be protected.

5 Claims, 3 Drawing Sheets

(12) United States Patent

Walther et al.



(10) Patent No.: US 8,082,691 B2
(45) Date of Patent: Dec. 27, 2011

(54) SYSTEM FOR REPELLING SMALL MAMMALS

(76) Inventors: Bernd Walther, Havixbeck, DE; Olaf Fuelling, Dinslaken, DE

(*.) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 208 days.

(21) Appl. No.: 12/313,930

(22) Filed: Nov. 26, 2008

(65) Prior Publication Data

US 2009/0133317 A1 May 28, 2009

(30) Foreign Application Priority Data

Nov. 28, 2007 (DE) 10 2007 057 244

(51) Int. Cl.

401M 23/08 (2006.01)

401M 23/02 (2006.01)

401M 23/00 (2006.01)

(52) U.S. Cl.

43/66; 43/58; 43/64; 43/65

43/61, 64, 67, 121, 107, 132, 1, 124; 47/33;

52/102, 256/24, 25, 32

See application file for complete search history.

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392,347 A *	5,1888	Krause	43/107

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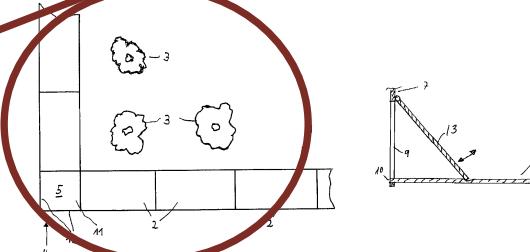
(Continued)

Primary Examiner — Darren W Ark
(74) Attorney, Agent, or Firm — Collard & Roe, P.C.

(57) ABSTRACT

A system for defense against small mammals, for example voles, for areas used for agricultural or horticultural purposes, consists of segments to be put together to form a gutter that is open towards the top, forming a type of fence. Each segment has a base plate and walls that rise laterally from this base plate. An inlet opening is provided, at least in the side wall that faces away from the area to be protected.

5 Claims, 3 Drawing Sheets



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Step 6: Review all specifications, Claims and Drawings for Relevancy

- Specifications:
- Background
- Summary
- Brief Description

BACKGROUND OF THE INVENTION

10

1. Field of the Invention

The invention relates to a system for repelling small mammals, for example voles, from areas used for agricultural or horticultural purposes.

2. The Prior Art

In order to protect such areas in agriculture or horticulture from voles or rats, for example, and to prevent these animals from penetrating into these areas, fences are put up, for example, which project into the ground to a depth of 30 cm, in order to make it difficult for the animals to get at them.

These fences, which are installed in a fixed manner and deeply into the ground, not only have the disadvantage of being labor-intensive construction, but also the further disadvantage that if the cultivated area changes, they are not moved.

Furthermore, in addition to the attempt to deny the animals access to the areas mentioned above, an attempt is frequently made to keep the population density of the small mammals as low as possible. For this purpose, it has already been proposed to set up trough-like structures next to the areas to be protected, which have an access opening in a side wall which might be provided with a flap that opens only in one access direction, but are configured to be open towards the top.

If an animal now enters this trough, it has no possibility of exiting this trough again, since the side walls are so high that it is impossible to cross them or climb up on them. The mammals sitting in such traps can then be caught by predators such as raptors, foxes, or cats.

SUMMARY OF THE INVENTION

It is an object of the invention to combine both the blocking effect of a fence and the capturing effect of a trap with one another, using a single system.

The invention accomplishes this task with a system that consists of segments to be put together to form a gutter that is open towards the top, forming a type of fence, each having a base plate and walls that rise laterally from this base plate. An inlet opening is provided, at least in the side wall that faces away from the area to be protected.

The segments, which are connected with one another, one behind the other, thus form a barrier and, for another thing, also a trap, by means of the gutter-like structure.

Such a system can be easily moved by disassembly and reassembly, and this requires significantly less labor than erecting a fence.

The entry openings in the segments can be closed off, as described above, with a flap that opens only in the entry direction, so that the animals can enter the gutter, but not out again.

For humane reasons, however, it is desired, in many countries, for the animals to have a possibility to exit the gutter again, since they would starve if they have not already been captured by predators.

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Step 6: Review all specifications, Claims and Drawings for Relevancy

Claims

What is claimed is:

1. A system for protecting areas used for agricultural or horticultural purposes against small mammals, comprising:
 - a plurality of segments adapted to be assembled together to form a gutter that is open towards a top of said gutter, and forming a fence, each of said plurality of segments having a base plate and walls that rise laterally from said base plate,
 - wherein an inlet opening is provided in at least one of said plurality of segments, in one of said walls that faces away from an area to be protected, and further comprising a flap that closes off the inlet opening, said flap opening in only one direction,
 - wherein the base plate and the walls of each one of said plurality of segments comprise plates that can be inserted into one another, and wherein accommodation openings are provided in the walls and receive insertion elements complementary to the accommodation openings, said insertion elements being provided on side edges of the base plate, to assemble the plates together.
 2. The system according to claim 1, wherein the accommodation openings are disposed in multiple rows, on top of one another.
 3. The system according to claim 1, wherein the plates of each of said plurality of segments is composed of plastic plates, and wherein the plurality of segments composed of plastic plates are inserted into one another.
 4. The system according to claim 1, further comprising an additional segment having a square base plate and side walls, and wherein said side walls of said additional segment abut each other at a right angle, for the formation of corner regions.
 5. The system according to claim 1, wherein the segments can be inserted into one another by way of tongue/groove connections.

US 8,082,691 B2

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FIG. 1 shows a system according to one embodiment of the invention, disposed to form a fence; in a broken-off representation:

FIG. 2 shows an individual segment of the system; FIG. 3a to 3d show alternatives for inserting the segments into one another;

FIG. 4 shows a flap connected to one of the segments; FIG. 5 shows the base plate of one of the segments; FIG. 6 shows a corner segment; and FIGS. 7a and 7b shows a connection of two segments to one another.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in detail to the drawings, FIG. 1 shows a system for repelling small mammals, for example voles, to prevent them from entering areas used for agriculture or horticulture, and provided, in general, with the reference symbol 1. This system 1 consists of individual segments 2, which are connected with one another to form a fence-like structure. This fence-like structure 1 is designed to protect a horticultural area that is indicated by individual tree 3.

In the corner region 4, where segments 2 meet at a right angle, a corner part 5 is provided. Corner part 5 consists of a square base plate 11 and side parts 12 that abut one another at a right angle.

Individual segments 2 and also corner part 5 are attached to one another by means of a tongue/groove connection, for example, such as shown in FIGS. 2 and 3. The tongue 14 of one sidewall 7 of the tongue/groove 15 of another sidewall 7 to tongue connection.

A segment 2 is shown in a perspective representation in FIG. 2. Segment 2 consists of a base plate 6 and two side walls 7 and 8, respectively, that rise from base plate 6 at a right angle.

An entry opening 9 is provided in side wall 7, which opening can be closed off by a flap 13, shown in FIG. 4. Flap 13 opens in only one direction so that the animal cannot exit out through the flap. The segment can also be structured without such a flap.

Base plate 6 is assembled to side plates 7 and 8 by way of insertion connections. In FIG. 2, the state that is also shown in FIG. 3a is shown. In this connection, tabs 16 (shown in FIG. 5) provided at the side edges of base plate 6 are inserted into a row of corresponding accommodation openings 10 in side plates 7.

As is evident from FIG. 2, multiple rows of accommodation openings 10 are provided, at a distance from one another. In this connection, it is important that the uppermost row is so far away from the top edge that these accommodation openings 10 do not serve as climbing aids for the animals trapped in the segment.

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When assembling the segments 2, which consist of plastic plates, the possibility exists, as shown in FIG. 2 and in FIG. 3a, to merely set the segment down on the ground underneath, so that it is still possible to move and displace it afterwards.

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In FIG. 3b, it is shown that side plates 7, 8 project downward beyond base plate 6, so that a segment can be pressed onto the ground at the slight extent.

Finally, in FIG. 3c, it is shown that one of the side plates, either 7 or 8, can project further downward beyond base plate 6, while the opposite one remains in the state according to FIG. 3a. In this manner, a fence-like having such a structure is given an angle, while only a few embeddings of the segment invention have been shown and described, it is obvious that

15 many changes and modifications may be made therewithout departing from the spirit and scope of the invention. What is claimed is:

1. A system for protecting areas used for agricultural or horticultural purposes against small mammals, comprising: a plurality of segments adapted to be assembled together to form a gutter that is open towards a top of said gutter, and forming a fence, each of said plurality of segments having a base plate and walls that rise laterally from said base plate;
2. The system according to claim 1, wherein the accommodation inlet opening is provided in at least one of said plurality of segments, in one of said walls that faces away from an area to be protected, and further comprising a flap that closes off the inlet opening, said flap opening in only one direction,

wherein the base plate and the walls of each one of said plurality of segments comprise plates that can be inserted into one another, and wherein accommodation openings are provided in the walls and receive insertion elements complementary to the accommodation openings, said insertion elements being provided on side edges of the base plate, to assemble the plates together.

3. The system according to claim 1, wherein the accommodation openings are disposed in multiple rows, on top of one another.

4. The system according to claim 1, wherein the plates of each of said plurality of segments is composed of plastic plates, and wherein the plurality of segments composed of plastic plates are inserted into one another.

5. The system according to claim 1, further comprising an additional segment having a square base plate and side walls, and wherein said side walls of said additional segment abut each other at a right angle, for the formation of corner regions.

6. The system according to claim 1, wherein the segments can be inserted into one another by way of tongue/groove connections.

* * * *



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Step 7: Check Patent References

Patent Number: US008148669 Section: Front Page 1 of 17 pages Help

Patent No.: US 8,148,669 B2 Date of Patent: Apr. 3, 2012

(1) United States Patent
Schwicker et al.

(2) APPARATUS AND METHOD FOR
TEMPERATURE CONTROL
IN ROLLER GRILLS

(7) Inventor: Roger A. Schwicker, Cheyenne, WY (US); Brendon G. Pardee, Cheyenne, WY (US); Kenneth L. Evans, Cheyenne, WY (US)

(7) Assignee: APW-West Corporation, Cheyenne, WY (US)

(*.) Notice: Subject matter disclosed in this application may be registered as a trademark under 15 U.S.C. 1057 by its owner within 180 days.

(21) Appl. No. 11/803,837
(22) Filed: Nov. 1, 2007
(51) Prior Publication Date
US 2008/0116268 A1 May 7, 2009

(52) Int. Cl.
B65B 1/12

(54) Title: APPARATUS AND METHOD FOR TEMPERATURE CONTROL IN ROLLER GRILLS

(56) Field of Classification Search
2104/04 2104/05 2104/06 2104/07
See application file for complete search history.

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(57) ABSTRACT
The present invention provides an apparatus and method for temperature control in roller grill assemblies. The apparatus and method provide a roller grill assembly which is located in a receptacle or structure provided in the floor. The roller grill assembly has an improved air flow system which includes an intermediate holding mode. Finally, certain features of the roller grill assembly are designed to facilitate the use of heating circuits of a food heater that may be already installed such that the current draw does not exceed the power rating of the receptacle.

4 Drawing Sheets

56)
U.S. I
2,185,079 A
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(10) Patent No.: US 8,148,669 B2
(45) Date of Patent: Apr. 3, 2012

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Step 7: Check Patent References

References provided by the applicant and patent examiner.

Forward citation search links patents that cite the displayed patent.

The screenshot shows a patent search results page for US Patent 7,596,902. The page includes fields for inventors (Han, Kehan and Han, Kedu), patent number (11/627,949), and filing date (January 27, 2007). It also displays the U.S. Class (73/418) and International Class (A01M 23/16). A section titled "References Cited [Referenced By]" lists numerous earlier patent documents with their publication dates, such as January 1868, February 1880, April 1890, April 1899, December 1907, August 1911, March 1912, December 1913, April 1916, January 1917, April 1918, August 1918, February 1919, February 1923, April 1924, July 1924, November 1926, November 1927, July 1929, and November 1929. To the right of these, a column lists names of patentees like Wigal, Wiggins, Hovell, Brandon, Beaudry, Halinka, Recko, Nebel, Stringfellow, Phillips, Borszcz, Renner, Margo, Miller, Berenyi, Garrison, Prokop, Boedecker, Abel, and Hendricks. A red callout box highlights the "Forward citation search links patents that cite the displayed patent." A red arrow points from the "U.S. Class:" field down to the list of cited patents. Another red arrow points from the "Forward citation search links patents that cite the displayed patent." callout box towards the right side of the page.

United States Patent: 7596902 - Windows Internet Explorer
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&p=1&u=%2Fnetacgi%2Fsearch-bool.html&r=1&f=G&d=500&d=pall&s1=43%2F61.CCLS.&OS=CCL/43/61&RS=CCL/43/61
7,596,902

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United States Patent: 75... Animal trap - Google Patent ... Previous Next Options

...el type of an animal trap is provided for trapping animals of different sizes. The mechanism for controlling rotation of the trap is designed for the purpose of controlling household rodents, such as mice, rats, or the like.

Inventors: Han, Kehan (Montreal, CA), Han, Kedu (Sugar Land, TX)
Patent No.: 11/627,949
January 27, 2007

U.S. Class:
Current International Class:
Field of Search:

43/61
A01M 23/16 (20060101)
43/60,61,62,63

References Cited [Referenced By]

U.S. Patent Documents

Date	Patentee
January 1868	Wigal
February 1880	Wiggins
April 1890	Hovell
April 1899	Brandon
December 1907	Beaudry
August 1911	Halinka
March 1912	Recko
December 1913	Nebel
April 1916	Stringfellow
January 1917	Phillips
April 1918	Borszcz
August 1918	Renner
February 1919	Margo
February 1923	Miller
April 1924	Berenyi
July 1924	Garrison
November 1926	Prokop
November 1927	Boedecker
July 1929	Abel
November 1929	Hendricks

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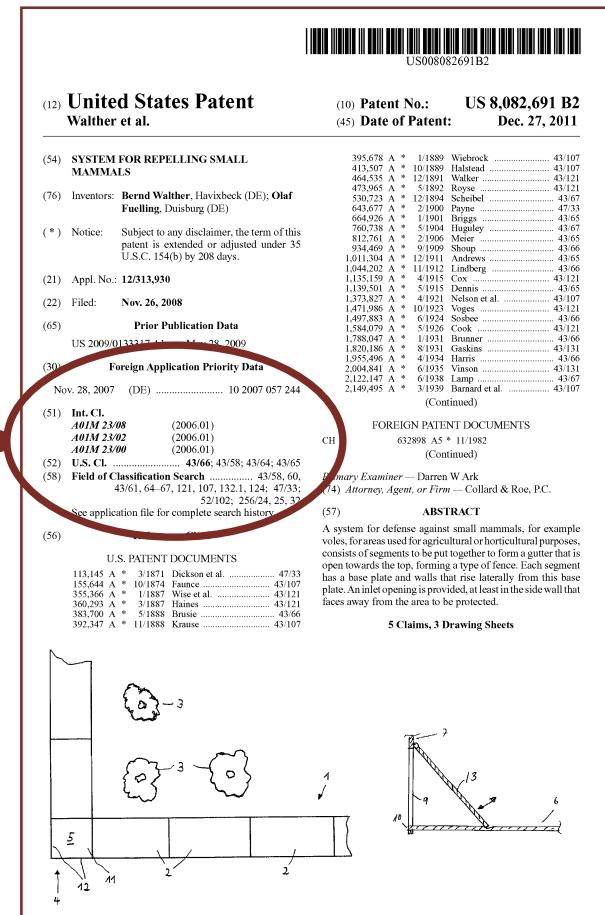
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Step 7: Check Patent References

Additional Classifications

- (51) Int. Cl.
A01M 23/08 (2006.01)
A01M 23/02 (2006.01)
A01M 23/00 (2006.01)
- (52) U.S. Cl. **43/66; 43/58; 43/64; 43/65**
- (58) Field of Classification Search **43/58, 60, 43/61, 64–67, 121, 107, 132.1, 124; 47/33; 52/102; 256/24, 25, 32**

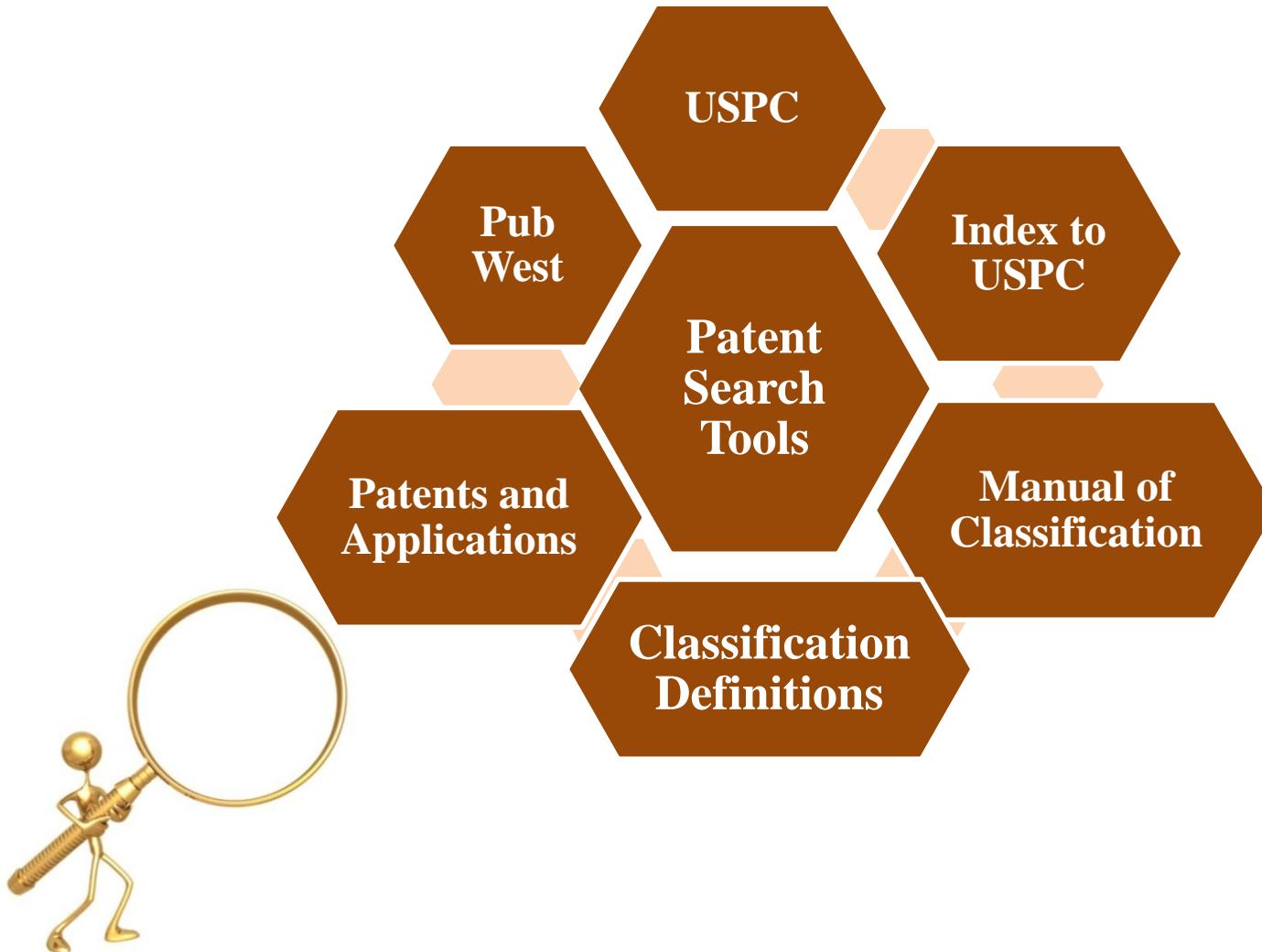
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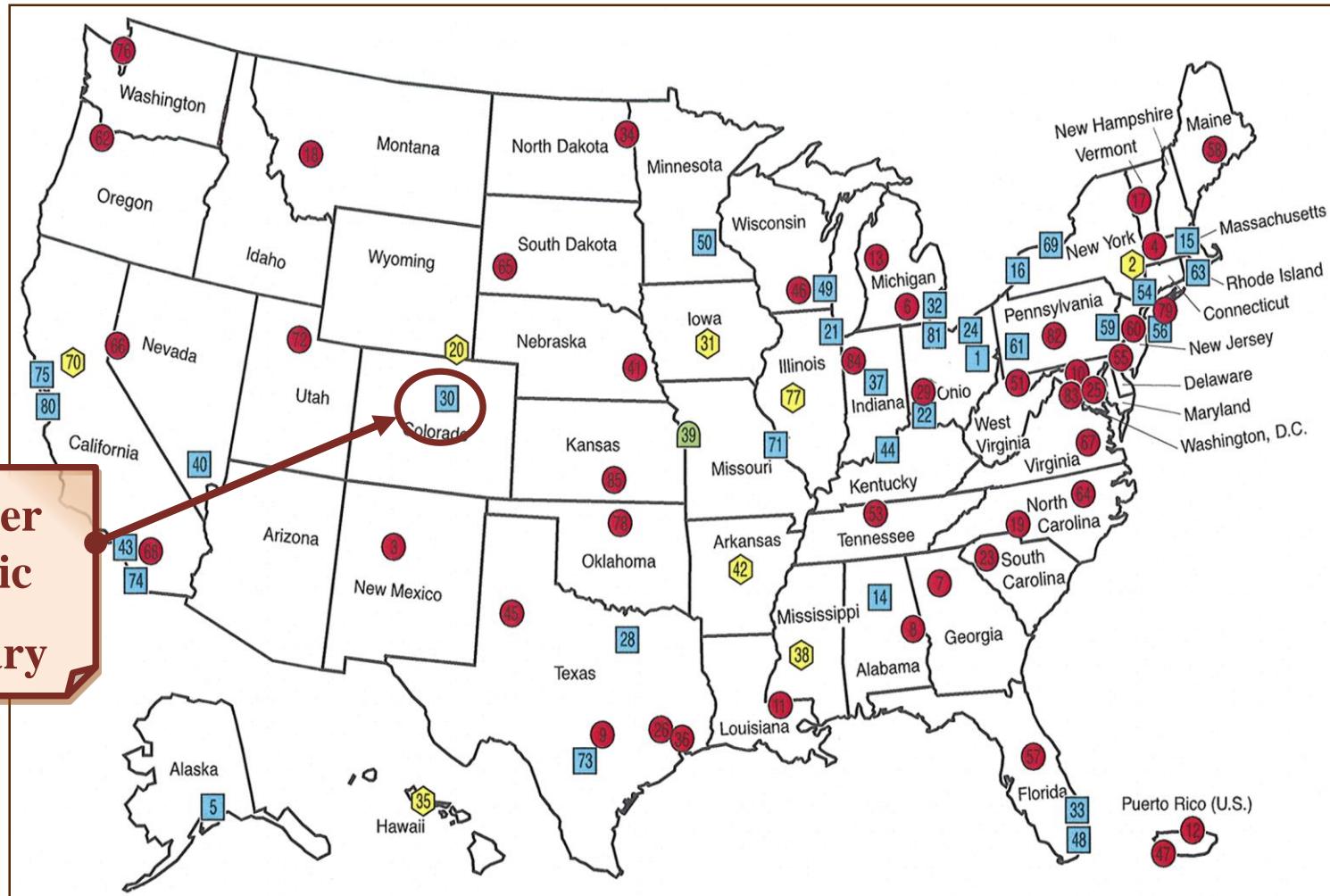
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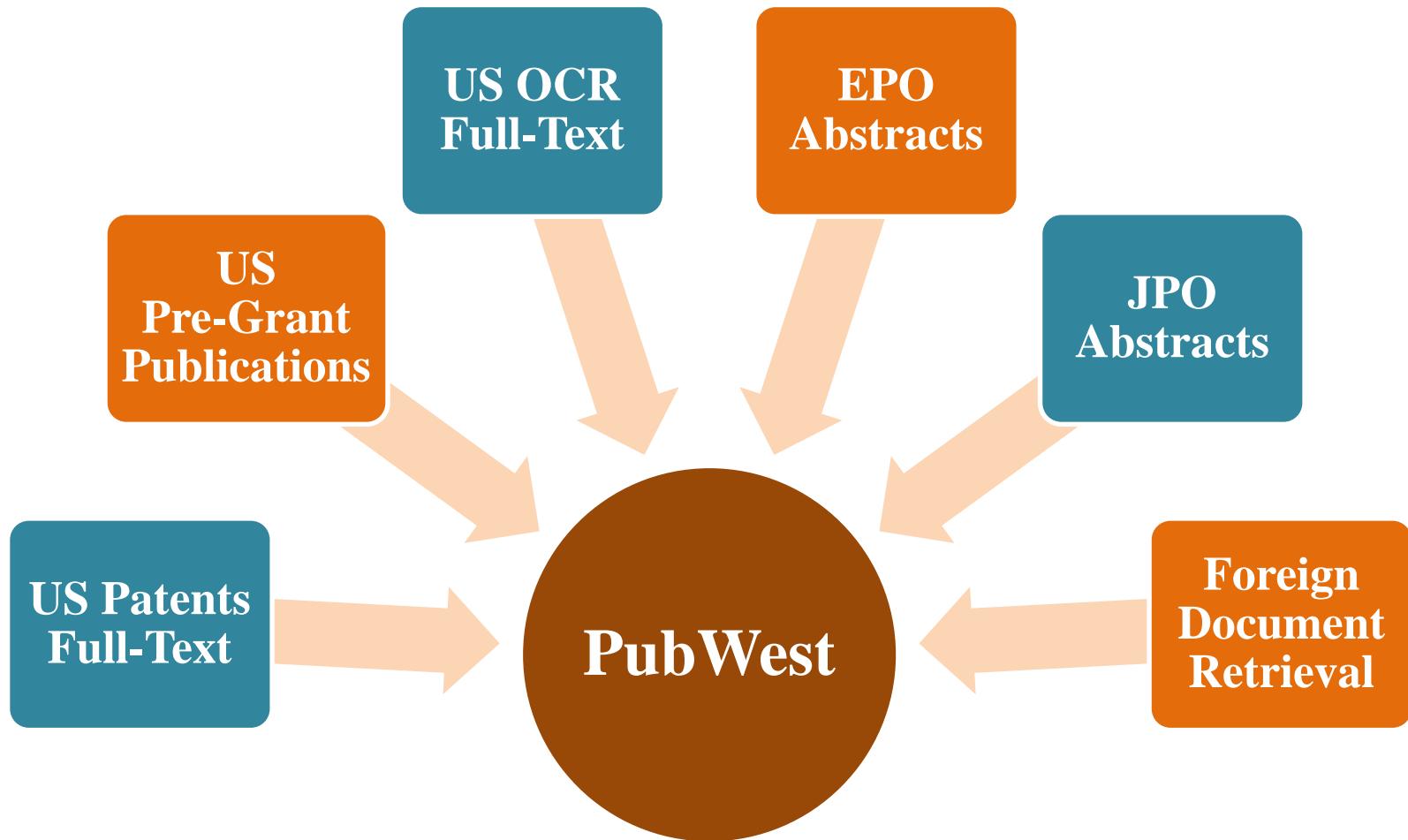
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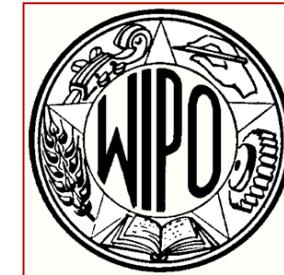
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