

**UNITED STATES
PATENT AND TRADEMARK OFFICE**



Tips and tricks for patent searching including a six-step process

Workshop objectives

- Participants will understand:
 - Benefits of searching
 - Keyword search vs. classification search
 - What is Cooperative Patent Classification (CPC)?
 - The six-step search process
 - Building a search strategy using keywords and classification scheme

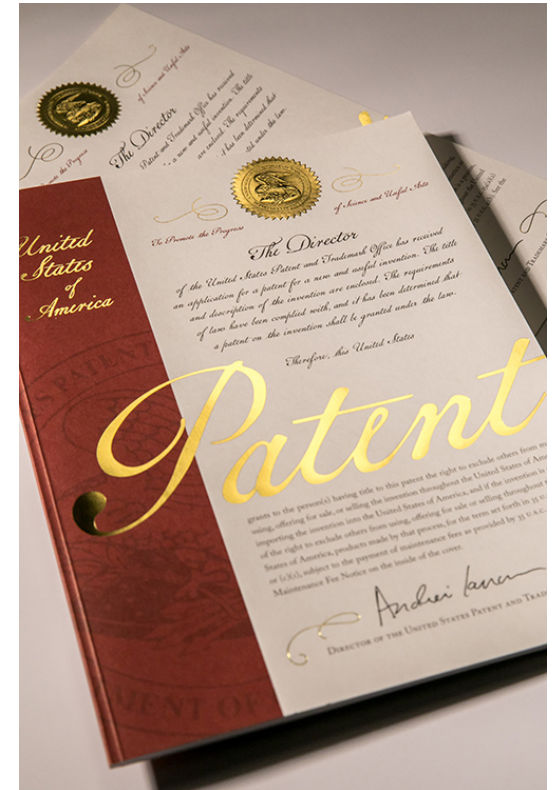
Disclaimer

- References to particular patents, designs, trademarks, service marks, products, services, companies, copyrights, and/or organizations appearing in this presentation are for illustrative and educational purposes only and do not constitute or imply endorsement by the U.S. government, the U.S. Department of Commerce, the U.S. Patent and Trademark Office, or any other federal agency.

Patents

A U.S. patent is

- A property right granted by the United States government to an inventor
- To exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States
- For a limited time
- In exchange for public disclosure of the invention



Why search?

- Patentability
 - Inventions that are new, useful, non-obvious, and accompanied by a written description disclosing how to make and use the invention may be patented.
- But how do you know if an invention is new and non-obvious?

Patent process overview



U.S. patent prior art search

- Ensure that your invention is indeed novel and non-obvious; conduct a prior art search before filing a U.S. patent application
 - Many searchers start with a preliminary prior art search of U.S. patents and published patent applications
 - Conduct a keyword search; however, note that there are pitfalls from relying only on a keyword search
 - To be as thorough as possible, a supplemental prior art search ideally includes a classification search of granted U.S. patents and published U.S. patent applications, conducted to determine patentability of an invention

Prior art

- **Any document that contains a discussion or description relevant to an invention for which a patent is currently being sought or enforced, may be a prior art reference.**
- It is an applicant's duty to submit to the office information which is "material to patentability of the invention claimed in a non-provisional application."
- A patent examiner may reject one or more claims in a patent application on the grounds that they are "anticipated by" or "obvious in view of" the prior art.

Prior art

- Prior art consists of information disclosed to the public including:
 - U.S. patents and published patent applications
 - Foreign patents and published patent applications
 - Journal and magazine articles
 - Books, manuals, and catalogs
 - Websites
 - Conference proceedings
 - Scientific papers



Challenges with relying on keyword searching

- Vague or inconsistent terminology
 - “Toy and Process of Use” (Patent 2,415,012)
- Obsolete names and terms
 - “LP” ... “hi-fi” ... “laser disc” ... “water closet”
- Different meanings in different fields
 - “mouse” the animal v. computer “mouse”
- Synonyms
 - Rodent Extermination Device (Patent 5,185,953)

Challenges with relying on keyword searching (continued)

- Some text may have British spellings
 - Colour v. color
 - Tyre v. tire
- Spelling errors and variations
 - Repellant v. repellent
 - Three wheeled v. tri-wheeled
- Acronyms and abbreviations
 - LED, light emitting diode
 - PDA, personal digital assistant

Biggest challenge of keyword searching

- Text patent databases limit keyword searching to no earlier than:
 - Google Patents: 1880's
 - USPTO public website: 1976
 - PubEAST and PubWEST: 1971
- Searching by classification allows access to all U.S. patents

What is classification?

- In general, a classification system is a system of hierarchical categories used to organize like “things” by their characteristics and relationships.
- Classification systems are very useful for sorting and searching large collections of information, including inventions.



Worldwide classification systems

Replaced by CPC
in 1/2015 for U.S.
utility patents

Replaced by
CPC in 2013

	USPC	IPC	ECLA	FI	CPC
<i>Documents classified into system by</i>	USPTO	IPC Union Members (61)	EPO, member states	Japan Patent Office	USPTO/EPO
<i>Relationship to IPC</i>	None	None	ECLA is an extension of IPC	FI is an extension of IPC	CPC is an extension of IPC
<i>Classification</i>	2 Standards for Classification	Invention Information	Invention Information	Invention Information	Invention Information
<i>Rules for classification</i>	U.S. Classification Guidelines	IPC Guide	IPC Guide + Art Specific Rules	IPC Guide + Deep Indexing with F-Terms	IPC Guide + Art Specific Rules
<i>Number of Subdivisions</i>	150,000	69,000	145,000	180,000	200,000

What is CPC?

- Joint partnership with the European Patent Office (EPO)
- Harmonization of the USPC and ECLA
- The CPC is divided into eight main areas, A-H:
 - A: Human Necessities
 - B: Performing Operations; Transporting
 - C: Chemistry and Metallurgy
 - D: Textiles and Paper
 - E: Fixed Construction
 - F: Mechanical Engineering; Lighting; Heating; Weapons; Blasting; Engines or Pumps
 - G: Physics
 - H: Electricity



Six-step U.S. patent search strategy

- The six-step U.S. patent search strategy is a strategy for searching U.S. patents and published patent applications to locate and evaluate relevant prior art; any previous publication that discloses an invention and would preclude issuance.
- A more comprehensive prior art search would also include foreign patent publications and non-patent literature.
- Careful recording of the search process (databases used, date and time of search, classes searched, and patents/published patent applications retrieved) is important.

Search example

We have invented an umbrella with a new rib design to eliminate the umbrella collapsing or inverting due to winds.



uspto

Step 1 – Brainstorm terms describing the invention

- What is the purpose of the invention? Is it a utilitarian device or an ornamental design?
- Is the invention a process – a way of making something or performing a function – or is it a product?
- What is the invention made of? What is the structure of the invention?
- How is the invention used?
- What are keywords and technical terms that describe the nature of the invention?

Note: Consult a technical dictionary or thesaurus to help find the appropriate terms.

Step 1 – Brainstorm terms describing the invention (continued)

Purpose: Umbrella has a new rib design to eliminate an umbrella collapsing or inverting due to high winds

Invention: An improvement in umbrellas to eliminate need for frequent replacement of umbrellas

Invention components: Framework with ribs, stretchers and a main frame, securing rings, mounting brackets, joint connectors, fabric connectors, fabric linkage bar

How used: As needed in protection from the elements

Other terms (in addition to above): parasol, sunshade, support assembly or apparatus, windproof, wind-resistant

Step 2 – Keyword search

- Use Boolean operators:
 - Use “OR” to group together synonyms
 - Use “AND” to find the intersection of two sets of information
- Include wildcard symbols (*) to obtain versions of words.
- Incorporate quotes to group search phrases where words are adjacent.
- Filter by selected fields, e.g., inventor name.

Keyword search strategy

((umbrella* OR parasol* OR sunshade*) AND (windproof or "wind resistant"))



Step 3 – Conduct in-depth review of patents you selected based on front-page information

- Review each U.S. patent you selected in-depth for similarity to your own invention.
- Look at other sections of the patent—additional drawings pages, the specification, and especially the claims.
- References cited by the applicant and/or patent examiner may lead you to additional relevant patents.
- Save the most relevant U.S. patents you find.
- Refine and repeat searches.

U.S. patent image after 2015

- Review the front page of each patent as well as other pages.
- Record the patent number of those patents similar to your invention that will merit later closer review.
- Note the classification value(s).

(12) **United States Patent**
Rudder et al.

(10) **Patent No.:** **US 9,585,447 B1**
(45) **Date of Patent:** **Mar. 7, 2017**

(54) **REVERSIBLE UMBRELLA**
2,725,066 A * 11/1955 Estes et al. 135/15.1
2,788,792 A * 4/1957 Koller
3,419,026 A * 12/1968 Evans, Jr. et al. 135/15.1
4,711,260 A * 12/1987 Wiens et al. 135/16
5,865,200 A 2/1999 Kuang et al.
5,909,746 A 6/1999 Doster et al.
7,484,518 B2 * 2/2009 Brader 135/31
2004/0211451 A1 10/2004 Goh
2007/0169801 A1 * 7/2007 Brader 135/31
2008/0006313 A1 1/2008 Wang
2008/0163907 A1 * 7/2008 Garner 135/15.1
2009/0151760 A1 6/2009 Brader
2012/0006367 A1 * 1/2012 Chang et al. 135/25.41
2014/0130836 A1 * 5/2014 Stochetti 135/20.3

(*) 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.: **14/333,955**
(22) Filed: **Jul. 17, 2014**

Related U.S. Application Data
(60) Provisional application No. 61/847,140, filed on Jul. 17, 2013.

(51) **Int. Cl.**
A45B 19/00 (2006.01)
A45B 25/02 (2006.01)
A45B 23/00 (2006.01)

(52) **U.S. Cl.**
CPC **A45B 19/00** (2013.01); **A45B 23/00** (2013.01); **A45B 25/02** (2013.01)

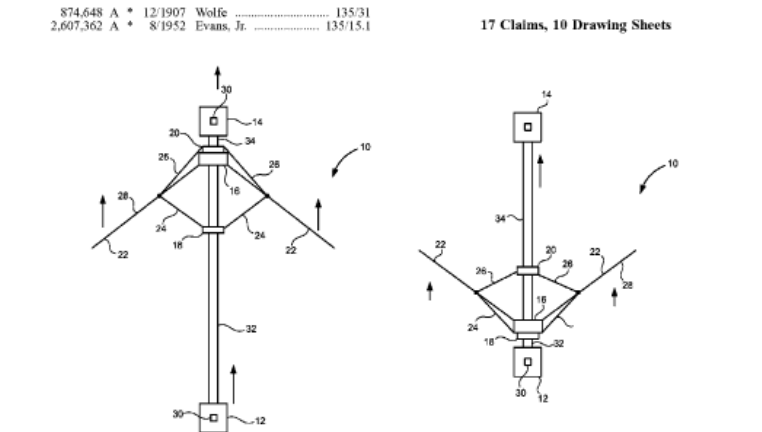
(57) **ABSTRACT**
A reversible umbrella has a pole, a first handle affixed to a first end of the pole, a second handle affixed to a second end of the pole, and a plurality of ribs extending outwardly of the pole. A canopy is affixed to the ribs. The canopy has a first side facing one direction and a second side facing an opposite direction. The ribs are movable from a first position, wherein the first side of the canopy is in a generally concave configuration with respect to the first handle, to a second position, wherein the first side of the canopy is in a generally convex position with respect to the first handle. The opposing sides of the canopy preferably have different appearances or textures, such that the user can select between two designs to be exposed on the exterior of the umbrella.

Primary Examiner — Robert Canfield
(74) **Attorney, Agent, or Firm** — Egbert Law Offices, PLLC

(58) **Field of Classification Search**
CPC ... A45B 23/00; A45B 19/00; A45B 2019/008; A45B 25/02
USPC 135/15.1, 20.3, 29-31, 98
See application file for complete search history.

(59) **References Cited**
U.S. PATENT DOCUMENTS
874,648 A * 12/1907 Wolfe 135/31
2,607,362 A * 8/1952 Evans, Jr. 135/15.1

17 Claims, 10 Drawing Sheets



U.S. patent image prior to 2015

- Review the front page of each patent as well as other pages.
- Record the patent number of those patents similar to your invention that will merit later closer review.
- Note: Only U.S. Classification, no CPC value(s).

(12) United States Patent David		(10) Patent No.: US 8,783,275 B2
		(45) Date of Patent: Jul. 22, 2014
(54) COMPACT FOLDING UMBRELLA WITH HYBRID RIBS TO RESIST DAMAGE DUE TO INVERSION		5,121,764 A 6/1992 Wu 5,502,624 A 3/1996 Tu 5,553,634 A 9/1996 Yang 5,931,175 A 8/1999 Lin et al. 6,062,242 A 5/2000 Lin 6,095,169 A 8/2000 Lin et al. 6,230,725 B1 5/2001 Ko 6,394,115 B1 5/2002 Tseng 6,497,242 B1 * 12/2002 Lin et al. 135/31 6,626,198 B2 9/2003 Tseng 6,668,845 B2 12/2003 Lin et al. 6,863,081 B2 * 3/2005 Hsieh 135/29 2002/0129843 A1 9/2002 Wang 2005/0211283 A1 9/2005 Lai 2007/0204894 A1 9/2007 Huang
(71) Applicant:	Kahng J. David , New York, NY (US)	
(72) Inventor:	Kahng J. David , New York, NY (US)	
(*) 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.:	13/749,973	
(22) Filed:	Jan. 25, 2013	
(65) Prior Publication Data US 2013/0228203 A1 Sep. 5, 2013		<i>Primary Examiner</i> — Noah Chandler Hawk (74) <i>Attorney, Agent, or Firm</i> — Millen, White, Zelano & Branigan, P.C.
Related U.S. Application Data		(57) ABSTRACT
(63)	Continuation of application No. 12/962,155, filed on Dec. 7, 2010, now Pat. No. 8,360,082.	A folding umbrella and particularly one having multiple folds, includes a support frame incorporating a hybrid rib typically located intermediate a main rib and a rear or outermost rib. The hybrid rib is formed of multiple sections composed of first and second materials which respectively provide the desired structural strength to reduce inversions of the umbrella to an acceptable minimum and provide the hybrid rib with the desired resiliency and flexibility to return the hybrid rib to its original, unstressed shape and thereby prevent permanent damage to the hybrid rib as well as adjoining frame elements of the umbrella. The thicknesses of the multiple sections and the relative sizes of the sections also significantly contribute to the capability of the hybrid rib to achieve the desired objectives of a compact, small, folding umbrella of reduced weight, and the ability to prevent permanent damage to the frame due to inversion.
(60)	Provisional application No. 61/282,782, filed on Mar. 31, 2010.	
(51) Int. Cl.	A45B 25/00 (2006.01)	
(52) U.S. Cl.	USPC 135/31	
(58) Field of Classification Search	USPC 135/31 See application file for complete search history.	
(56) References Cited U.S. PATENT DOCUMENTS RE21,492 E * 6/1940 Okun 135/25.31 2,221,289 A 11/1940 Okun 4,734,126 A 3/1988 Sweet, Jr.		11 Claims, 2 Drawing Sheets

Corresponding U.S. patent text version

- In text view, U.S. patents issued before 2015 will have contain both U.S. and CPC values.
- CPC values have been retrofitted to all U.S. patents.
- Since January 1, 2015, U.S. patent images contain and display CPC values.

US-PAT-NO: [8783275](#)
DOCUMENT-IDENTIFIER: US [8783275](#) B2
TITLE: Compact folding umbrella with hybrid ribs to resist damage due to inversion
DATE-ISSUED: July 22, 2014
PRIOR-PUBLICATION-INFORMATION:
DOCUMENT-IDENTIFIER DOCUMENT-DATE
US 20130228203 A1 September 5, 2013

PATENT-FAMILY-ID: [44708187](#)

INVENTOR-INFORMATION:
NAME CITY STATE ZIP CODE COUNTRY
David; Kahng J. New York NY N/A US

APPLICANT INFORMATION:
NAME CITY STATE COUNTRY AUTHORITY TYPE
David; Kahng J. New York NY US

APPL-NO: [13749973](#)
DATE FILED: January 25, 2013

CONTINUITY DATA:
continuation parent-doc US 12962155 20101207 US 8360082 child-doc US 13749973
us-provisional-application US 61282782 20100331

US-CL-ISSUED: 135/31

US-CL-CURRENT: [135/31](#)

CPC-CURRENT:
TYPE CPC DATE
CPC [A 45 B 25/22](#) 20130101
CPC [A 45 B 19/10](#) 20130101

Step 4 – Retrieve and review published patent applications using the CPC you identified

The image shows a screenshot of the USPTO website. The top navigation bar includes the USPTO logo, the text "UNITED STATES PATENT AND TRADEMARK OFFICE", and links for "About Us", "Careers", and "Contact Us". A search bar is located on the right. Below the navigation bar, there are tabs for "Patents", "Trademarks", and "Learning and Resources". A "Quick Links" dropdown menu is open, showing links for "PatFT", "AppFT", "EFS-Web", "Forms", "Private PAIR", and "Public PAIR". A red circle highlights the "AppFT" link, and a red arrow points to it with the text "Click on AppFT under 'Quick Links'".

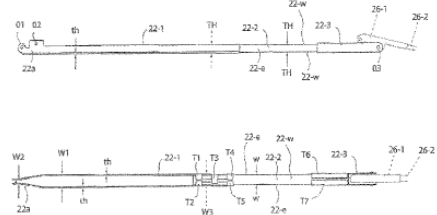
Below the navigation bar, there is a "WARNING:" section with the text "Non-USPTO solicitations may resemble communications." and a "Learn More" button. To the right of the warning, there is a search form with the following fields:

- Term 1:** A45B25/22
- in Field 1:** Current CPC Classification
- AND** (dropdown menu)
- Term 2:** (empty field)
- in Field 2:** All Fields
- Select years:** [Help] 2001-present
- Search** (button)
- Reset** (button)

Red arrows point from the "Search" button to the "Term 1" and "Field 1" fields.

Step 5- Cited references

- Conduct a search of cited U.S. patents and patent applications.

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11 Claims, 2 Drawing Sheets																																																														
																																																														

Step 6 – Broadening your search

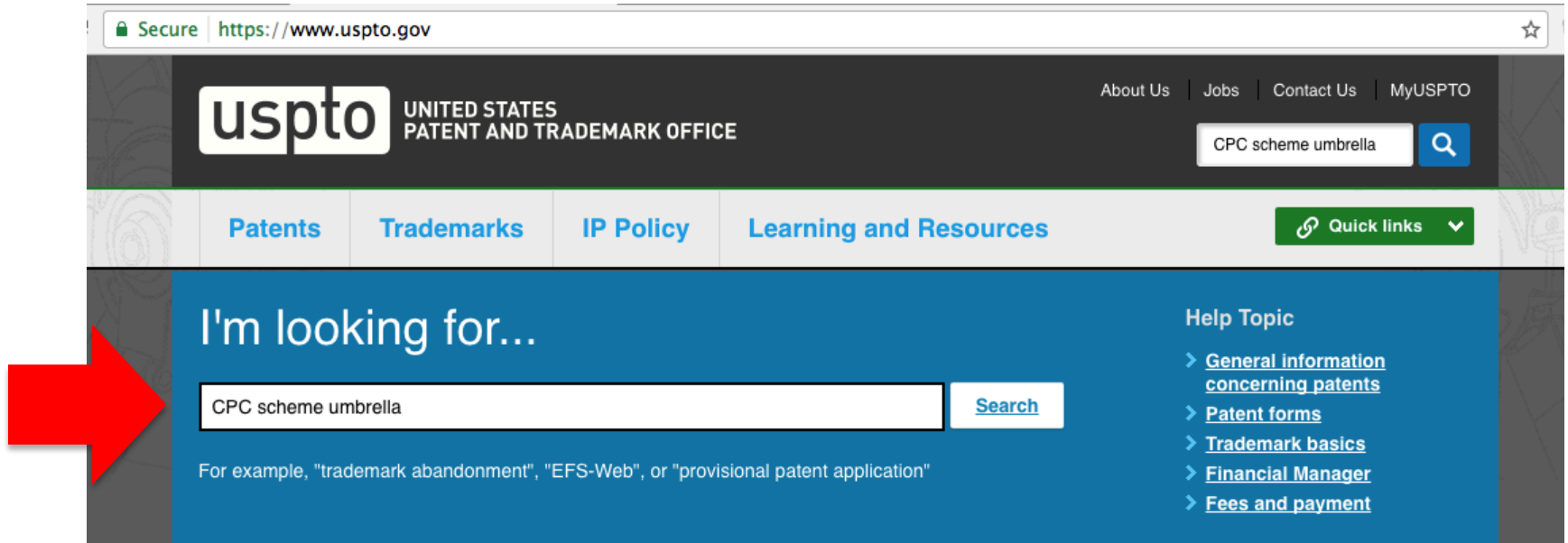
- Extend your search to foreign patents and published patent applications using CPC classification, and re-run your search using Espacenet at <http://worldwide.espacenet.com>.
- Search non-patent print and electronic publications, e.g., books, journals, websites, technical catalogs, and conference proceedings.
- Hire a registered patent attorney or patent agent to review your search and conduct a follow-up search of his/her own.

Access CPC schema

- Go to the USPTO home page at www.uspto.gov.
- Search for CPC classification schema using the search box on the home page or the search box in the top right-hand corner.
- Use specific language for your search terms:
 - CPC scheme umbrella
- From the search results page, click an entry for a Class-Subclass Scheme page.
- If you are not satisfied with your results, rerun your search using synonyms that you identified in Step 1.



I'm looking for...



The screenshot shows the USPTO website interface. At the top, the URL is <https://www.uspto.gov>. The header includes the USPTO logo and navigation links: About Us, Jobs, Contact Us, and MyUSPTO. A search bar in the header contains the text "CPC scheme umbrella". Below the header, there are tabs for Patents, Trademarks, IP Policy, and Learning and Resources, along with a Quick links dropdown. The main content area has a large blue section titled "I'm looking for..." with a search bar containing "CPC scheme umbrella" and a Search button. A red arrow points to the search bar. Below the search bar, there is a hint: "For example, 'trademark abandonment', 'EFS-Web', or 'provisional patent application'". To the right, there is a Help Topic section with links: General information concerning patents, Patent forms, Trademark basics, Financial Manager, and Fees and payment.

Secure <https://www.uspto.gov>

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CPC scheme umbrella

Patents Trademarks IP Policy Learning and Resources

Quick links

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CPC scheme umbrella

Search

For example, "trademark abandonment", "EFS-Web", or "provisional patent application"

Help Topic

- > [General information concerning patents](#)
- > [Patent forms](#)
- > [Trademark basics](#)
- > [Financial Manager](#)
- > [Fees and payment](#)



Results

The image shows a screenshot of the USPTO Cooperative Patent Classification (CPC) website. A red arrow points from the 'CPC scheme umbrella' link in the left sidebar to the main content area. Another red arrow points from the 'CPC Scheme - A45B WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS' link to the 'COOPERATIVE PATENT CLASSIFICATION' section. The main content area displays the classification hierarchy for A45B, including a list of subclasses and their descriptions. The left sidebar contains links to various CPC sections and a search bar.

USPTO UNITED STATES PATENT AND TRADEMARK OFFICE

Everything America Invents Act

CPC scheme umbrella

CPC Scheme - A45B WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS

www.uspto.gov/web/patents/classification/cpc/html/cpc-A45B.html

Cooperative Patent Classification. Toggle navigation weather protections of other than umbrella ...

[PDF] 7-Step U.S. Patent Search Strategy Guide ... www.uspto.gov/sites/default/files/documents/7-Step_U.S._Patent_Search_Strategy_Guide.pdf

CPC Scheme - A HUMAN NECESSITIES

www.uspto.gov/web/patents/classification/cpc/html/cpc-A45B.html

CPC. CPC Sections; A - HUMAN NECESSITIES; E following IPC groups are not used not used in ...

[PDF] WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS

www.uspto.gov/web/patents/classification/cpc/html/defA45B.html

A45B CPC COOPERATIVE PATENT CLASSIFICATION

FANS (cane or umbrella stands or holders A47G 25)

How to Conduct a Preliminary U.S. Patent Search

www.uspto.gov/video/cbt/ptrsearching/data/srchdata.xml

Use specific language for your search terms, such as "CPC scheme umbrella." Typing in only "umbrella" would be too broad and provide many unrelated ...

CPC Definition - A45B WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS

www.uspto.gov/web/patents/classification/cpc/html/defA45B.html

Scheme; Definition; CPC-to-IPC; CPC Definition - Subclass A45B. Printable version ... Combination table-

uspto

Cooperative Patent Classification

CSD Home CPC USPC Classification Revision Advanced Search Help

Search Symbol

e.g. A23F 5/04

Scheme

Outline ON

Color ON

Curly Brackets ON

References ON

Date Revised OFF

QUICK LINKS:

PDF

Scheme

CPC-to-IPC

Definition

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Indent Level: Collapse to Level Expand All

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Version: 2017.05

CPC

D A45B

COOPERATIVE PATENT CLASSIFICATION

WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS (cane or umbrella stands or holders A47G 25/12)

NOTE

In this subclass, the following term is used with the meaning indicated:

- "umbrellas" also covers sunshades similar in construction to umbrellas

Walking sticks; Sticks for umbrellas (walking aids, e.g. sticks, for blind persons A61H 3/06; walking sticks formed as supports or tripod stands F16M 13/08)

D A45B 1/00 Sticks with supporting, hanging or carrying means

D A45B 1/02 Walking sticks with rollers for carrying parcels or the like

D A45B 1/04 Walking sticks with means for hanging-up or with locks (carriers for walking sticks or umbrellas A45F 5/00)

D A45B 3/00 Sticks combined with other objects

D A45B 3/02 with illuminating devices

D A45B 3/04 electrical

D A45B 3/06 with coat-hangers

D A45B 3/08 with measuring or weighing appliances

D A45B 3/10 with purses

D A45B 3/12 with telescopes

D A45B 3/14 with weapons

D A45B 3/16 with smoking appliances

D A45B 5/00 Walking sticks or umbrellas convertible into seats; Hunting sticks

A45B 25/22

A45B 2023/0087	. {having a planar opening movement wherein the struts or screen sheet rotate and spread around an axis, e.g. around the stick}
A45B 2023/0093	. {Sunshades or weather protections of other than umbrella type}
D [-] A45B 25/00	Details of umbrellas (sticks for umbrellas A45B 1/00 - A45B 9/00; illuminating devices for umbrellas A45B 3/02; sockets or holders for poles or posts E04H 12/22))
A45B 2025/003	. {Accessories not covered by groups A45B 25/24 - A45B 25/30}
D A45B 25/006	. {Automatic closing devices (A45B 25/143 takes precedence)}
D [-] A45B 25/02	. Umbrella frames
D A45B 25/04	. . Devices for making or repairing
D [-] A45B 25/06	. Umbrella runners
D A45B 25/08	. . Devices for fastening or locking
D [-] A45B 25/10	. Umbrella crowns {(A45B 25/06 takes precedence)}
A45B 2025/1	
D A45B 25/12	
D [-] A45B 25/14	
D A45B 25/143	
A45B 2025/1	
D [-] A45B 25/16	
D A45B 25/165	. . {with fluid or electric actuators}
D [-] A45B 25/18	. Covers (detachable A45B 15/00); Means for fastening same
A45B 2025/183	. . {Covers with filtering or screening means for avoiding undesired radiation}
A45B 2025/186	. . {Umbrellas with two or more covers}
D [-] A45B 25/20	. Windows in covers
D [-] A45B 25/22	. Devices for increasing the resistance of umbrellas to wind
D [-] A45B 25/24	. Protective coverings for umbrellas when closed
D A45B 25/26	. . Ventilated coverings
D A45B 25/28	. Drip receptacles for umbrellas; Attaching devices therefor
D A45B 25/30	. Name-plates; Badges; Labelling or marking devices; Means for attaching same (attached to the umbrella stick A45B 9/06)
D [-] A45B 27/00	Ladies' or like fans
D A45B 27/02	. with mechanical hand-drive

Access classification definition

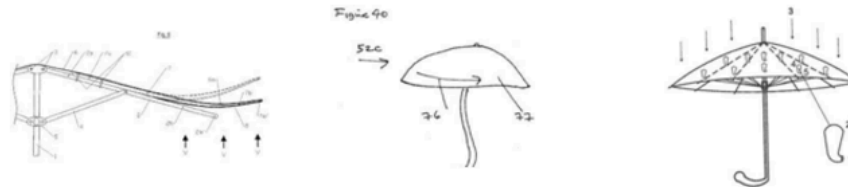
- If the selected classification has a "D" to the left of it, it is hyperlinked to a CPC definition.
- CPC definitions are helpful in establishing the scope of the relevant classification. A45B 25/22 definition relies on images (below), however, most CPC definitions use text.

A45B 25/22

Devices for increasing the resistance of umbrellas to wind

Definition statement

This place covers:



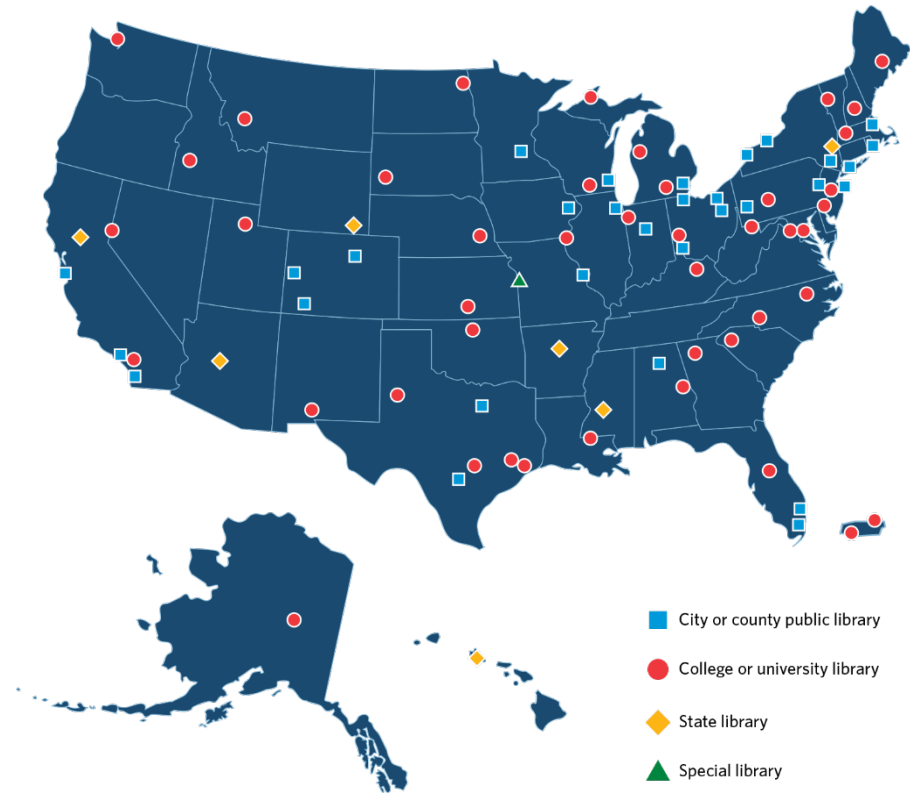
Search resources

- External resources:
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 - Espacenet: <https://worldwide.espacenet.com/>
 - Patentscope: <https://patentscope.wipo.int>
 - CPC general website: www.CPCinfo.org
- USPTO resources:
 - Search for patents: www.uspto.gov/patents/process/search
 - PubEAST and PubWEST (at USPTO and PTRC facilities)

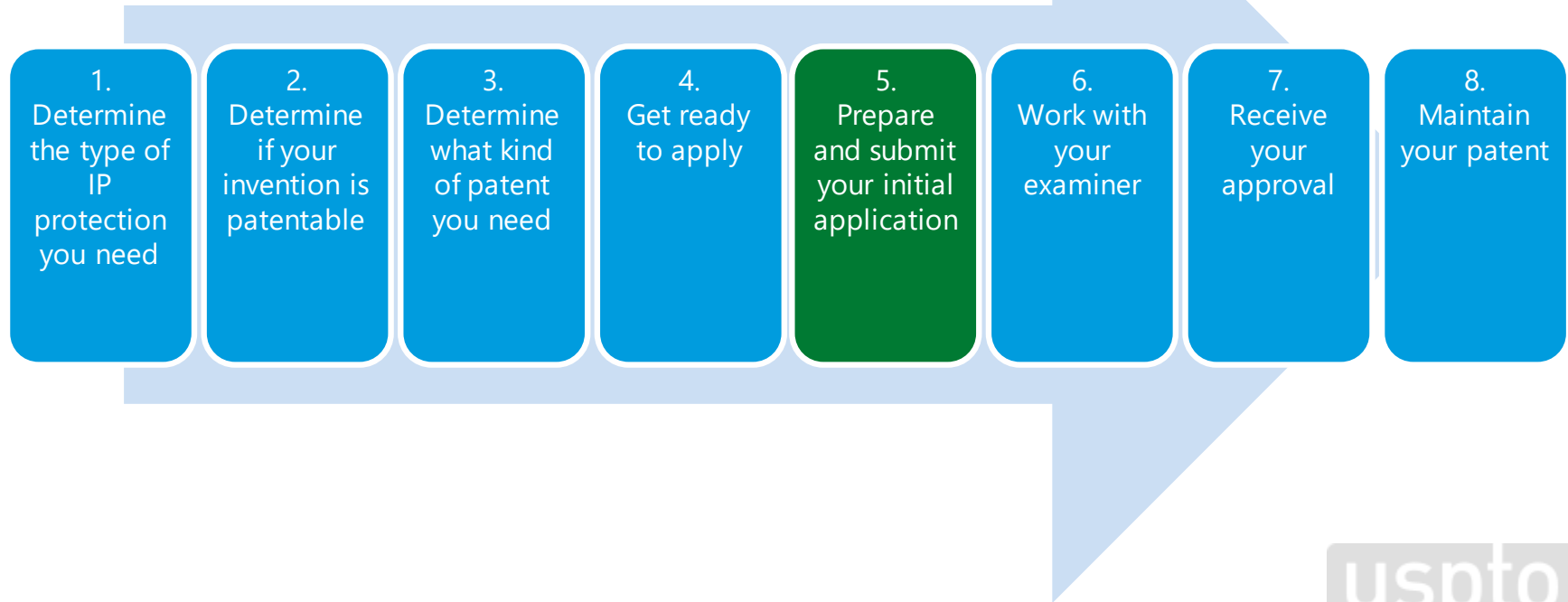
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