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The Path to a Patent, Part I: IP basics



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PATENT AND TRADEMARK OFFICE ®

Notice

This content is for informational purposes only and is not legal advice. Please consult with appropriate sources for legal authority and guidance on these matters.

The USPTO in FY23

13,452 employees

- **8,568** patent examiners
- **756** trademark examining attorneys
- **225** Patent Trial and Appeal Board team
- **28** Trademark Trial and Appeal Board team

Patents

- **650,519** applications filed
- **346,152** patents issued

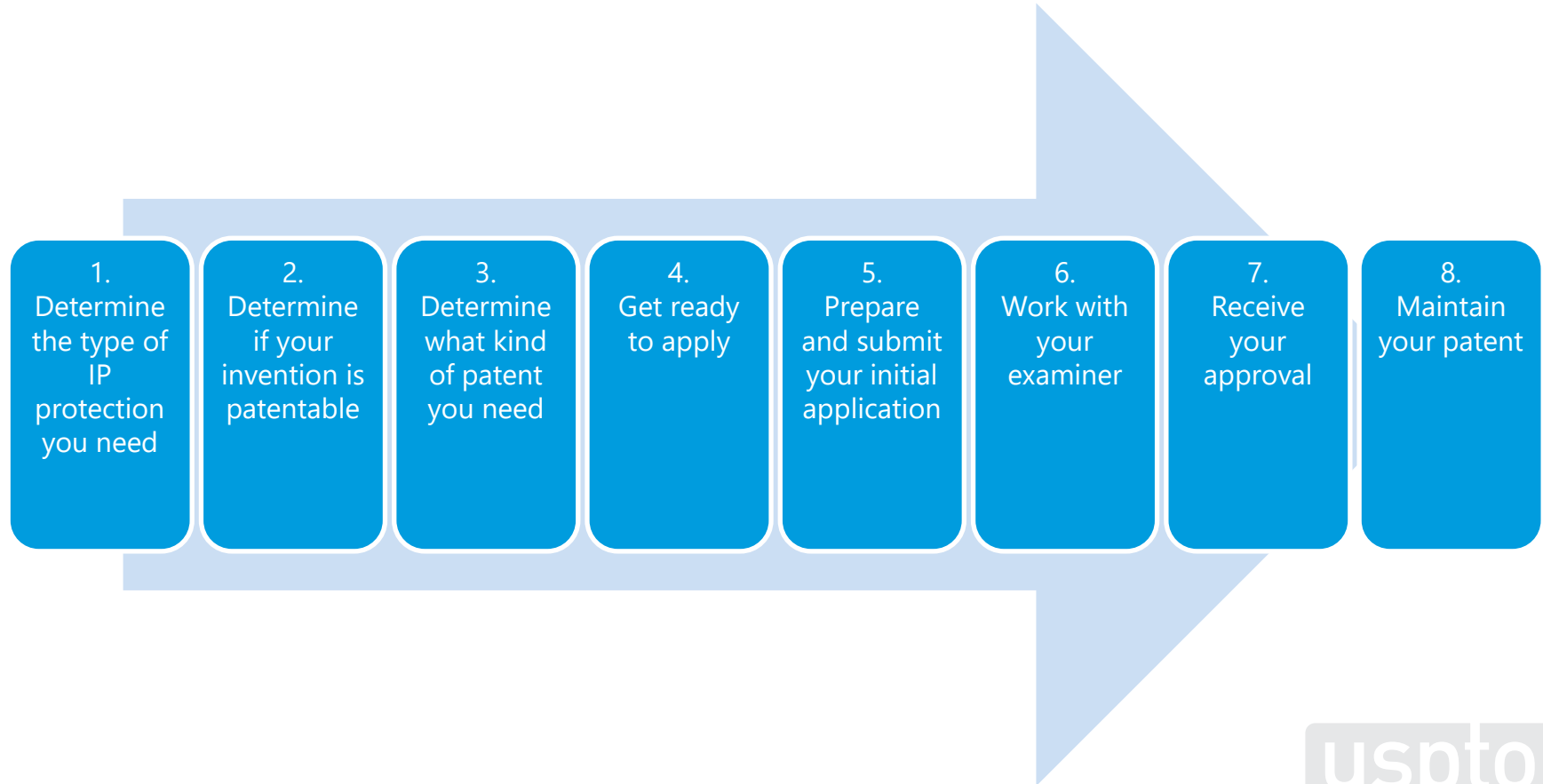
Trademarks

- **737,018** trademark applications filed
- **414,043** Registrations

USPTO headquarters
in Alexandria, VA



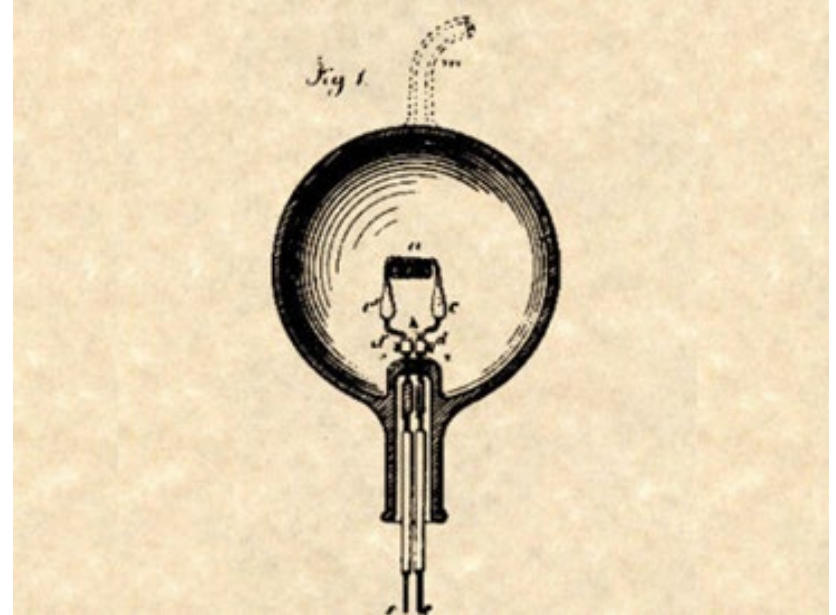
Patent process overview



What is intellectual property?

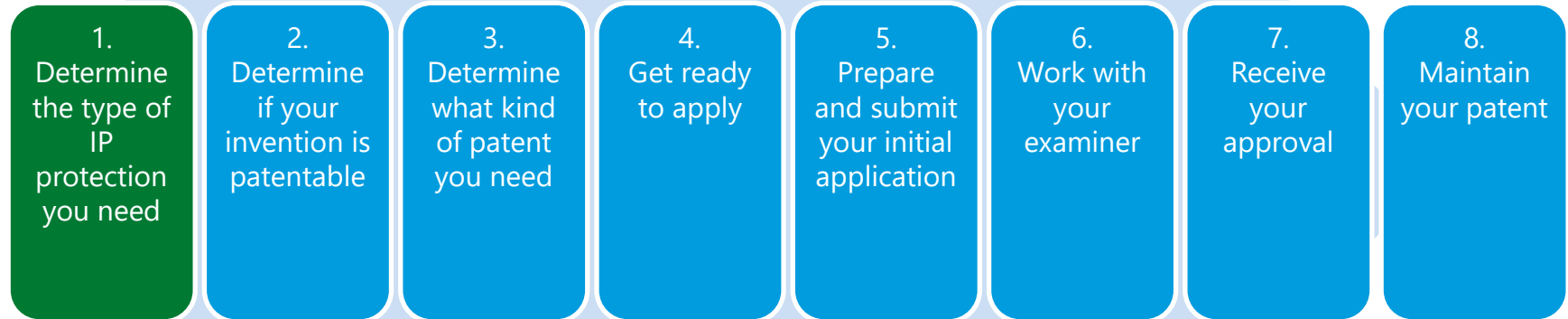


Real property



Intellectual property

Step 1: Determine the type of IP protection you need



Types of intellectual property



Patent

New, inventive ideas



Trademark

Identifies the origin of goods or services



Copyright

Creative expression stored in a tangible form



Trade secret

Any information that is valuable & kept confidential



Trade secrets

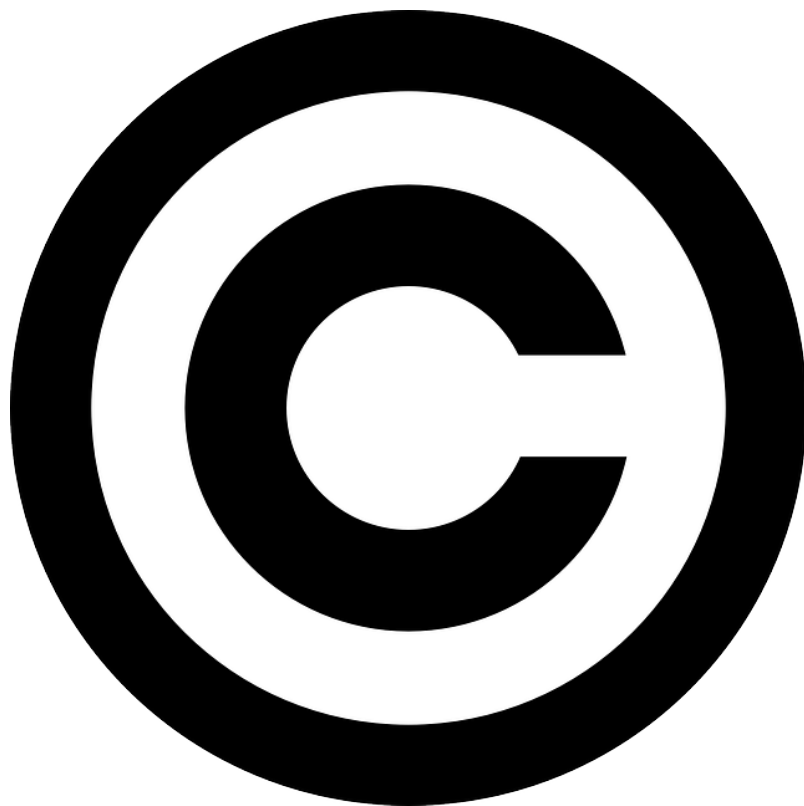


Google

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Ways to lose a trade secret

- Failure to take adequate steps to prevent disclosure
- Owner or owner-authorized disclosure
- Reverse engineering
- Independent development



Things protected by copyrights



Songs



Books



Movies



Sculptures



Copyright

- Library of Congress
- Protects “original works of authorship” including literary, dramatic, musical, artistic, and certain other intellectual works
- Term: Author’s life + 70 years
- www.copyright.gov

TM ®

Common law trademark

- Trademark that is **used** in commerce in connection with specified goods and services, but **not registered**
- Rights are limited to geographic area (based on use in that area)
- Optional symbols: TM SM
- U.S. is a first-to-use country
 - most countries are first-to-file



Federal registration advantages

- Public notice of claim of ownership
- Legal presumption of ownership and exclusive right to use mark in U.S. on/in connection with the goods/services listed in registration
- Ability to bring an action in federal court
- Use of U.S. registration as a basis to obtain registration in foreign countries
- Right to use the federal registration symbol ®
- Listing in the United States Patent and Trademark Office's online databases
- Registration may be recorded with U.S. Customs to prevent importation of infringing foreign goods
 - Recordation fee for trademarks is US \$190 per International Class of goods



Examples of trademarks

Trademarks can be **WORDS**

STARBUCKS

NIKE

TARGET

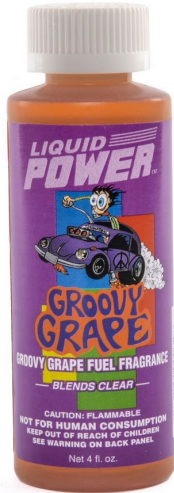
Trademarks can be **DESIGNS**



Nontraditional marks – colors



Nontraditional marks – scents



verizon[✓]



uspto[®]

Nontraditional marks – sounds



Trade dress



uspto®

Trademark fees

- Application fee: \$250 per class (electronic filing using TEAS Plus) or \$350 per class (using TEAS Standard)
- Post-registration fees
 - Declaration of use \$225 per class (after five years)
 - Declaration of use and Application for Renewal \$525 per class (after nine years)



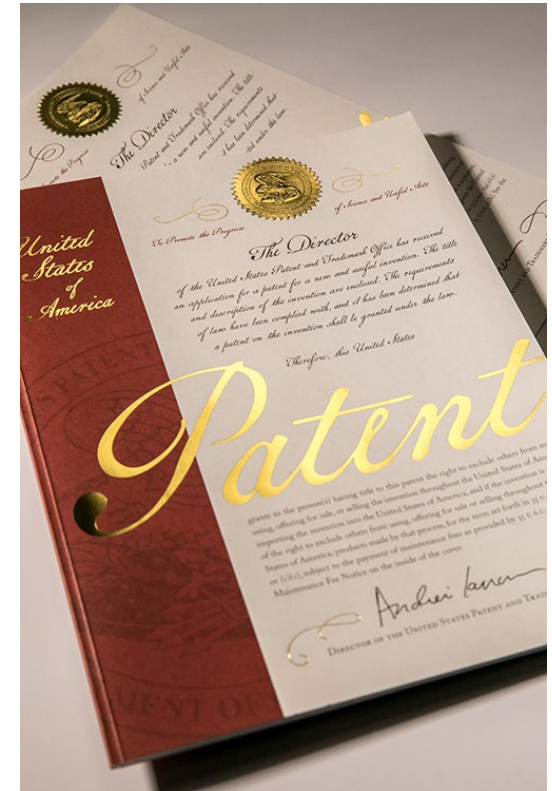


Patents

Patents

A U.S. patent is

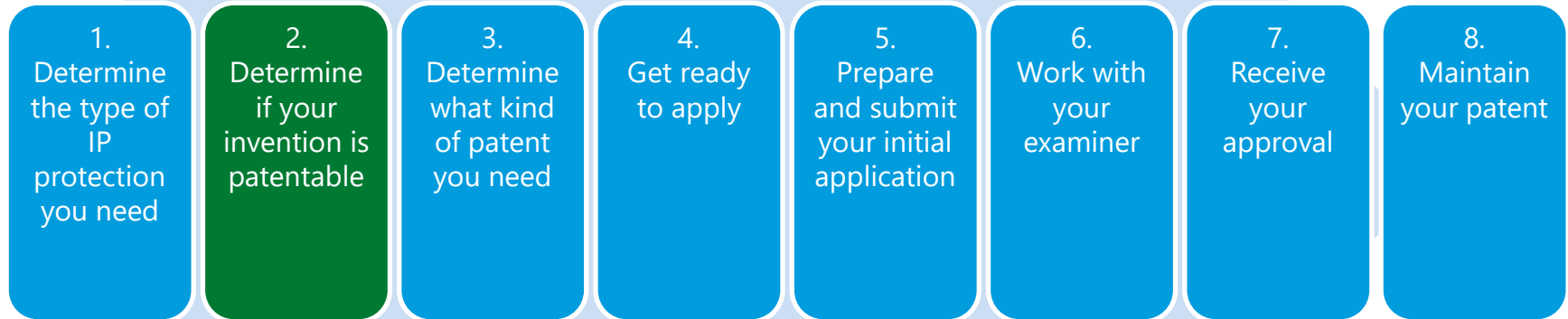
- A property right granted by the United States government to an inventor
- To exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States
- For a limited time
- In exchange for public disclosure of the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



Why get a patent?

- Gain entry to a market
- Exclude others from a market
- Use it as a marketing tool to promote unique aspects of a product
- Sell or license, like other property

Step 2: Determine if your invention is patentable



Is your idea eligible for protection?



Patent eligibility requirements

What can be patented:

- Process
- Machine
- Article of manufacture
- Composition of matter
- Improvement of any of the above
- Ornamental design of an article of manufacture
- Asexually reproduced plant varieties

What cannot be patented:

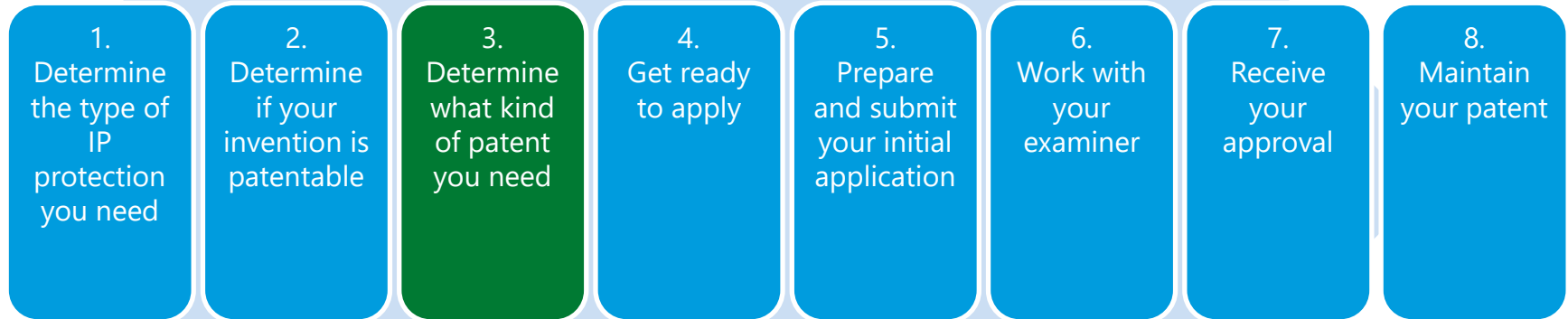
- Law of nature
- Physical phenomena
- Abstract ideas
- Literary, dramatic, musical, and artistic works
- Inventions which are:
 - Not useful or
 - Offensive to public morality



How do I know if my invention is patentable?

- Search
 - U.S. patents
 - Foreign patents
 - Printed publications
 - The internet
- Part III of this series is focused on searching

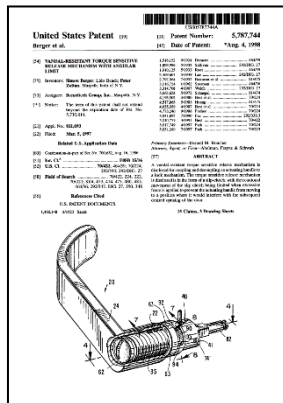
Step 3: What kind of patent do you need?



Types of patents

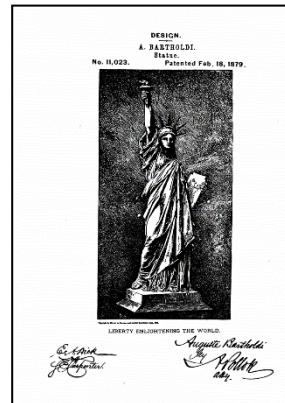
Utility

New and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof



Design

New, original and ornamental design; protects the way an object appears



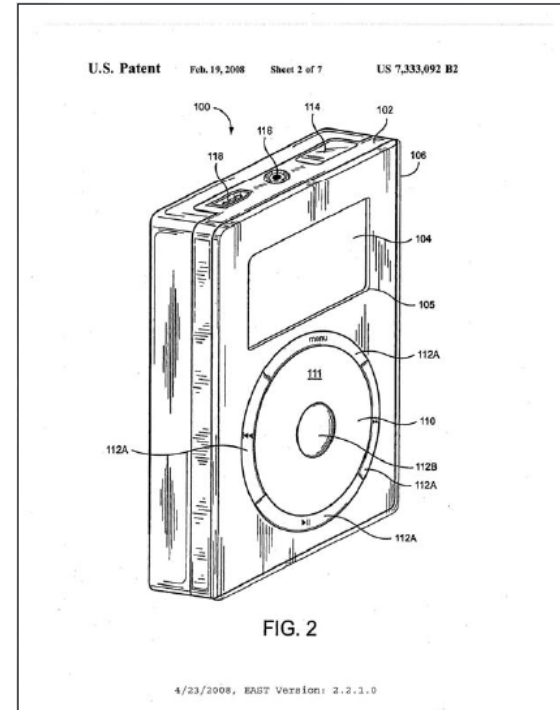
Plant

New and distinct, invented or discovered asexually reproduced plant

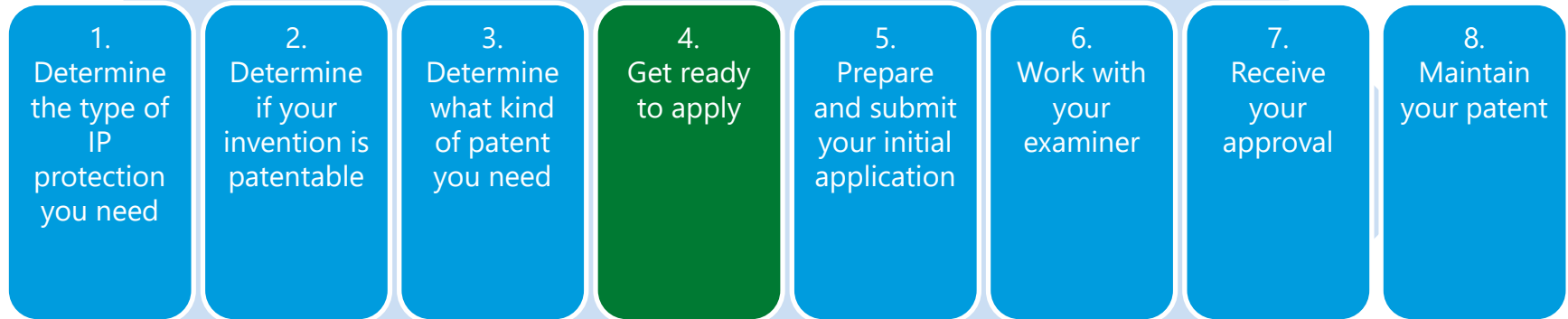


Utility patents

- Protect the function of an invention—the way it works
- Valid for 20 years from the date the application is filed



Step 4: Get ready to apply



Provisional vs. nonprovisional

Provisional application

- Establishes a filing date
- No claims required
- Inexpensive
- Not published or examined
- One year to pursue nonprovisional

Nonprovisional application

- Statutory requirements for what has to be filed
- More expensive
- Published and examined
- Can result in a patent

Utility patent fees

	Large entity	Small entity	Micro entity
Provisional filing fee	\$300	\$120	\$60
Basic filing fee	\$320	\$128	\$64
Search fee	\$700	\$280	\$140
Examination fee	\$800	\$320	\$160
Initial cost	\$1,820	\$728	\$364
Issue fee	\$1,200	\$480	\$240

Entity status discounts

- Small entity status gets a 60% discount
 - An individual or
 - A small business (less than 500 employees) or
 - A non-profit organization
- Micro-entity status gets a 80% discount
 - Qualify as a small entity
 - Filed no more than four previous applications
 - Income not greater than three times the median income
 - “Maximum Qualifying Gross Income” is currently \$212,352
 - Not assigned to any entity than the micro-entity
 - Inventions assigned to employer don’t count against you

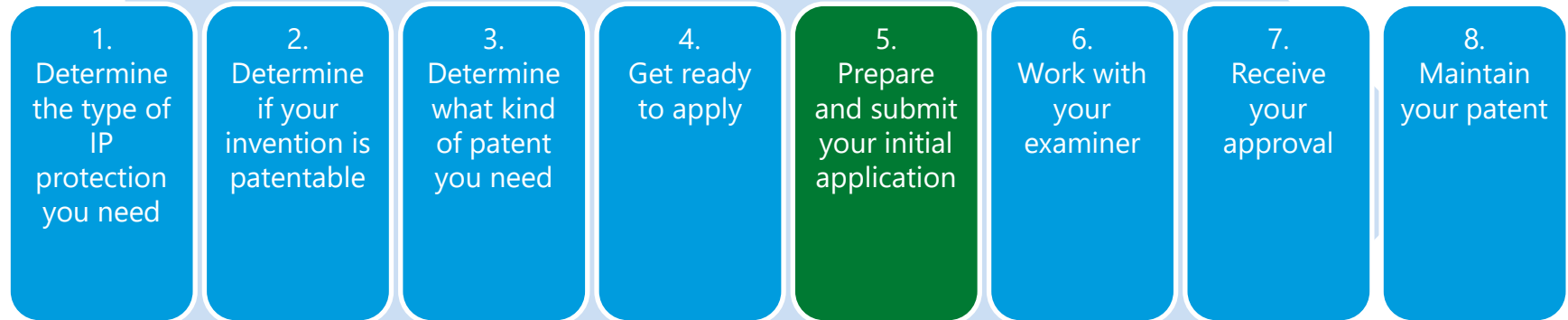


Need to fast track your patent?

- Track One provides a final disposition within about 12 months
- Utility and plant applications
- Limited to 15,000 requests
- \$4,200/\$1,680/\$840



Step 5: Prepare and submit your initial application

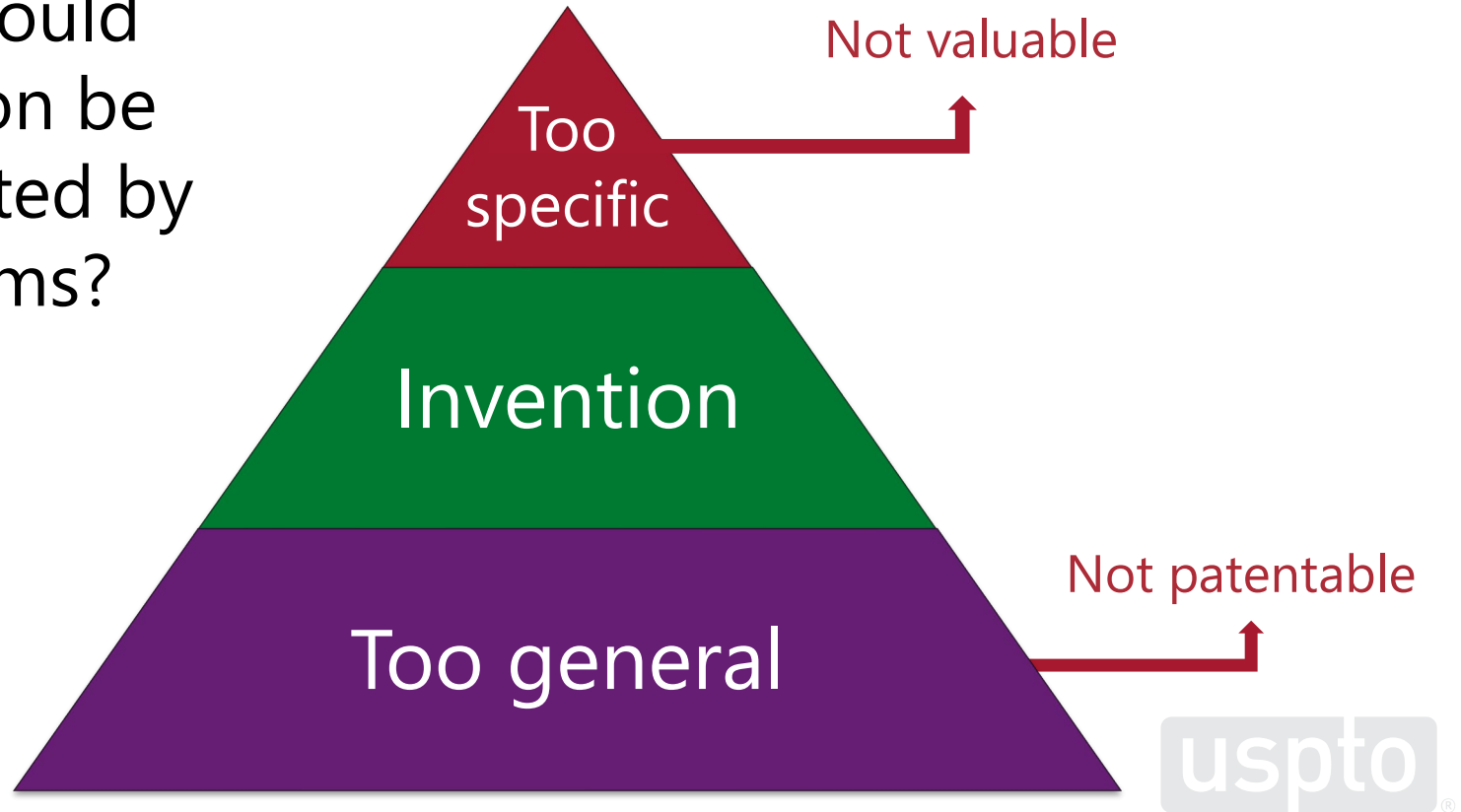


Parts of a patent application

- Abstract: Short summary of the invention
- Written description: How does it work?
How is it made or used?
- Drawings: What does it look like?
- Claims: One or more claims

Claims

How should invention be delineated by the claims?



Examples of dependent claims

A **dependent** claim incorporates by reference all the limitations of the claim to which it refers:

2. A headgear apparatus as in claim **1**, wherein **said** eye shield member is adjustable with respect to **said** headband member.
3. A headgear apparatus as in claim 1, wherein **said** visor member and **said** eye shield member are secured to **said** frontal portion of **said** headband member by **a** set of rivets.
4. A headgear apparatus as in claim **2**, wherein **said** headband member is formed from neoprene fabric.

Filing your application

- Submit online using Patent Center
 - Upload all necessary documents
 - Payment of required fees
- Receive an application number and filing date

Patent Electronic Business Center (EBC)

- The EBC can assist with:
 - Submitting your patent application via EFS-Web
 - Viewing application information in Private PAIR
 - Searching for patents in AppFT and PatFT
 - Patent Electronic System Verification Form, customer number issues, and assistance
 - USPTO.gov account authentication for Private PAIR and EFS-WEB including Web Browser Problems
 - Technical problems or errors with your patent application
 - PDX/DAS registration inquiries and issues
 - Technical problems with biotech tools

Contact Info

Hours: Monday – Friday,
6 a.m. to midnight ET,
except federal holidays

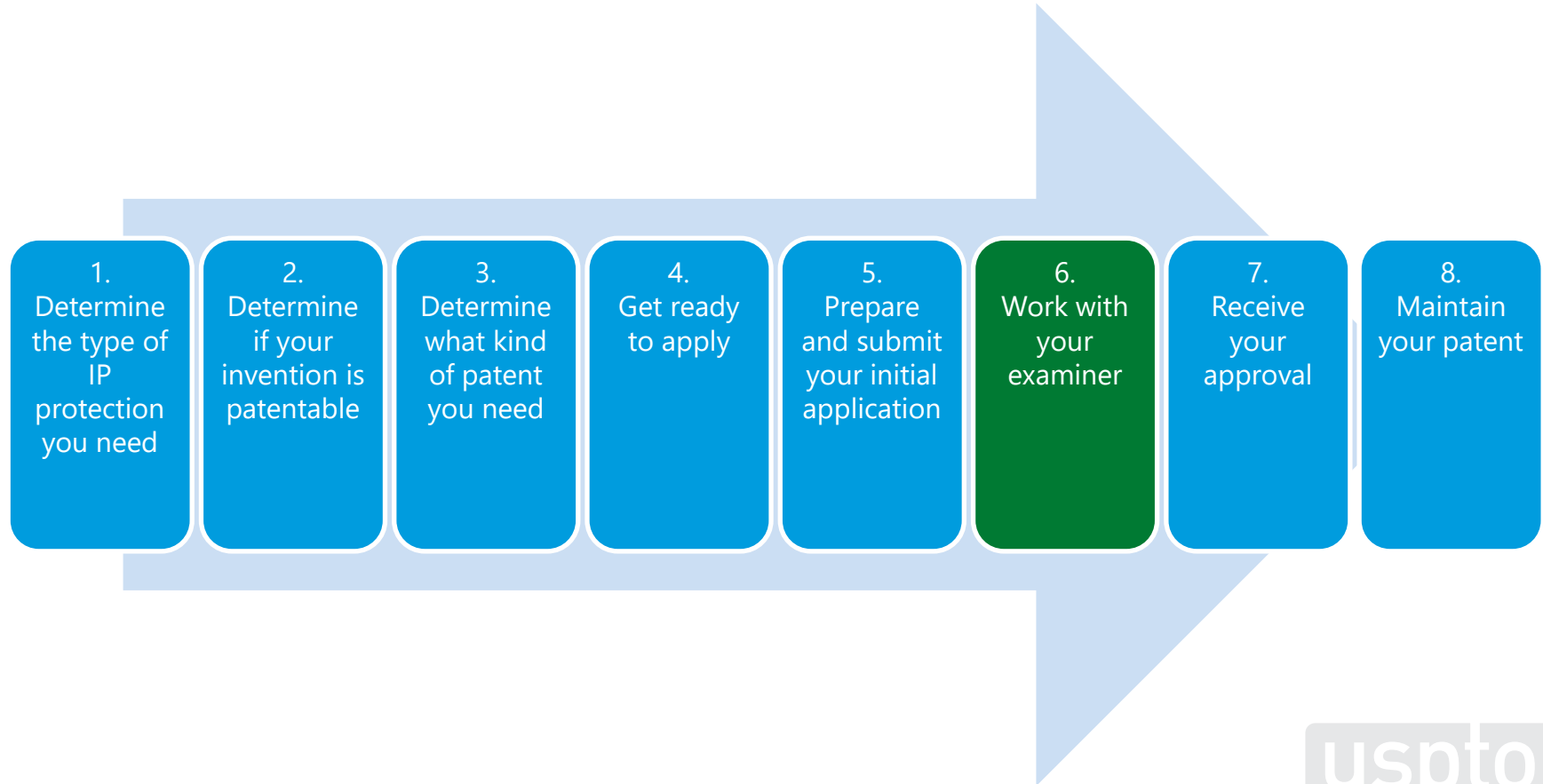
Telephone Numbers:

- Toll-Free: 866-217-9197
- Local: 571-272-4100

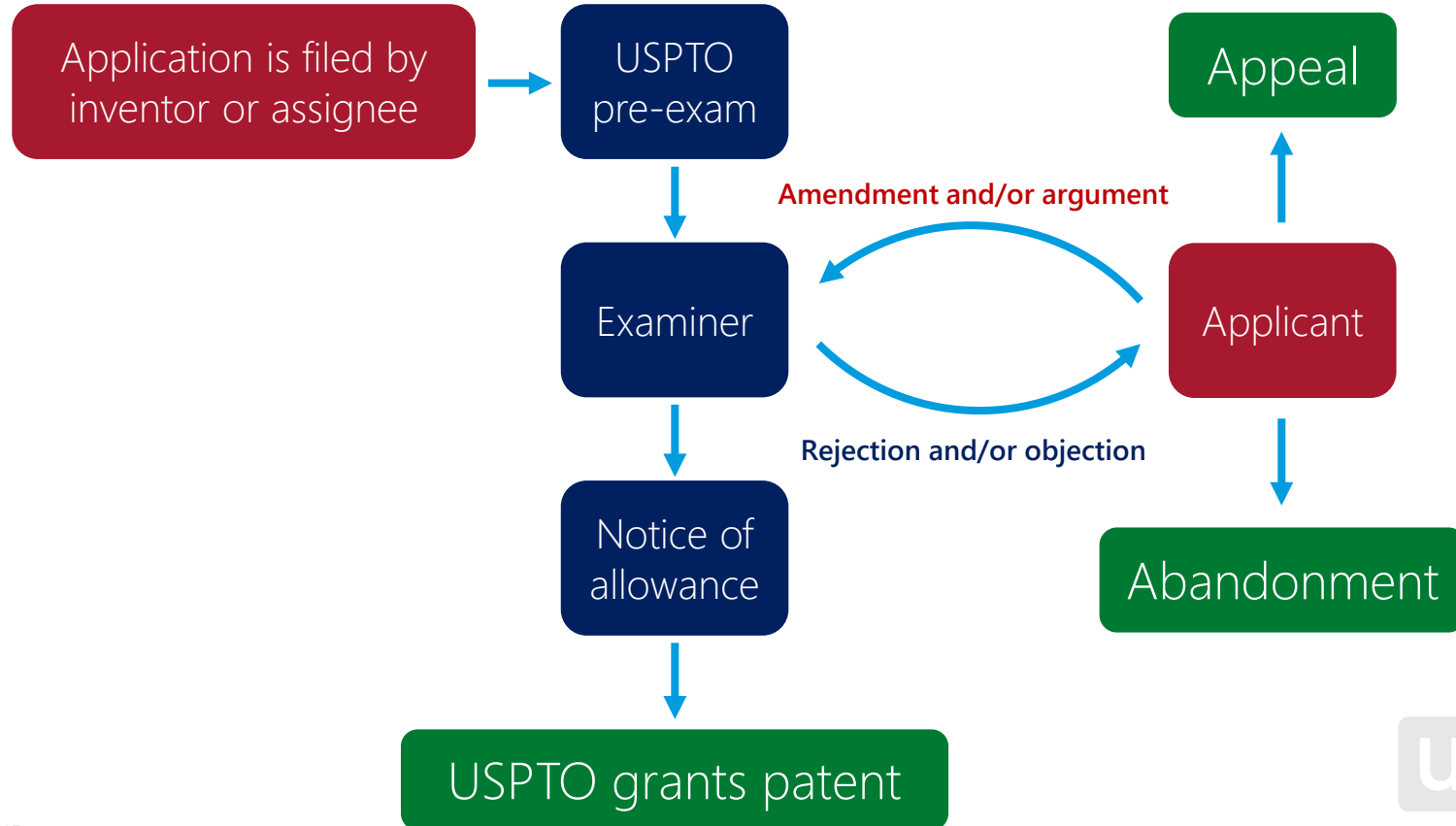
Email: ebc@uspto.gov



Step 6: Work with your examiner



Patent examination



What does a patent examiner do?

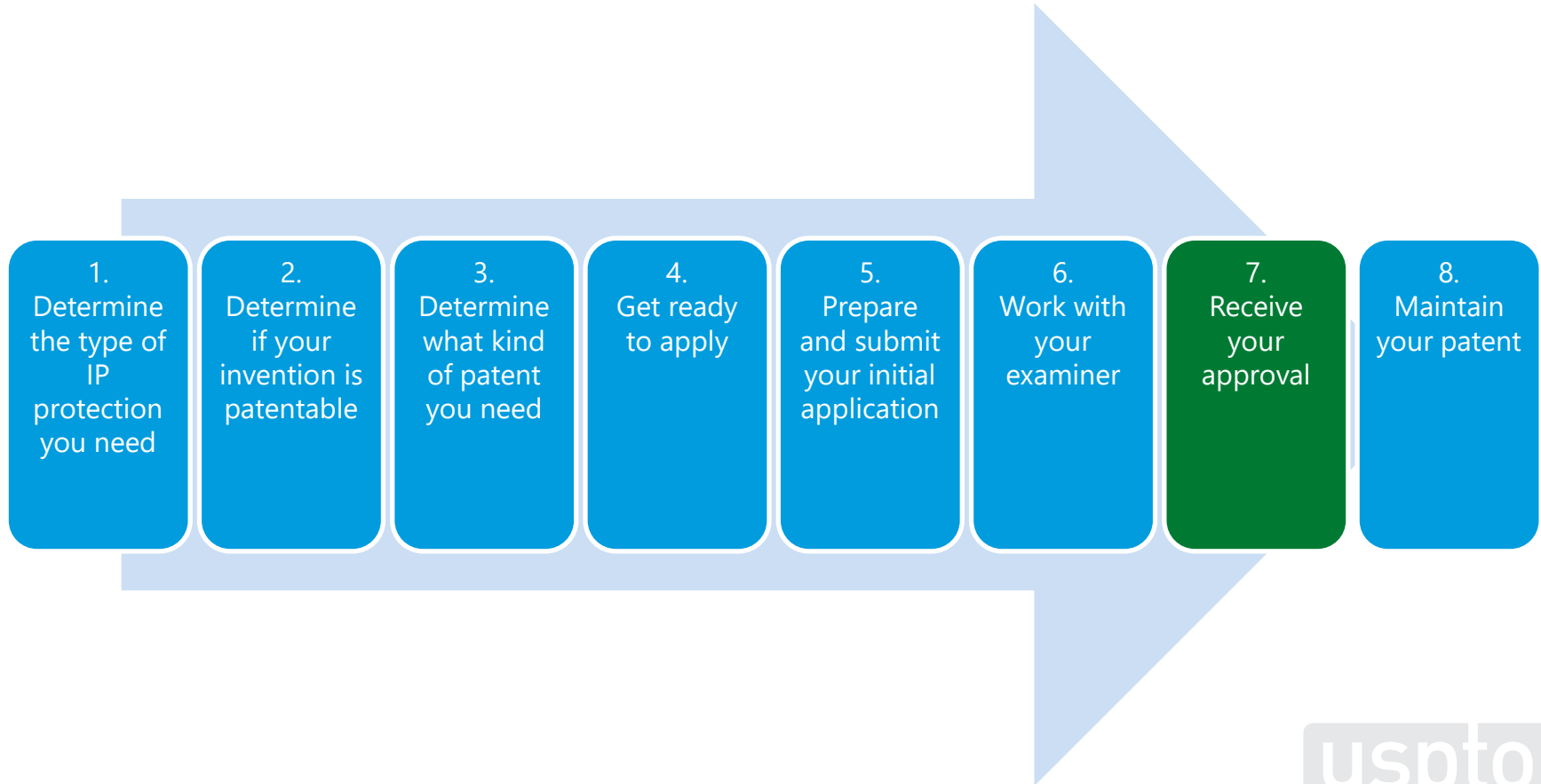
- Reads and understands the application
- Searches for prior art
- Evaluates the claims with respect to statutory requirements and formal requirements
- Writes office actions to applicant describing all findings related to patentability
- Holds interviews with applicant to explain findings and explore opportunities to advance prosecution



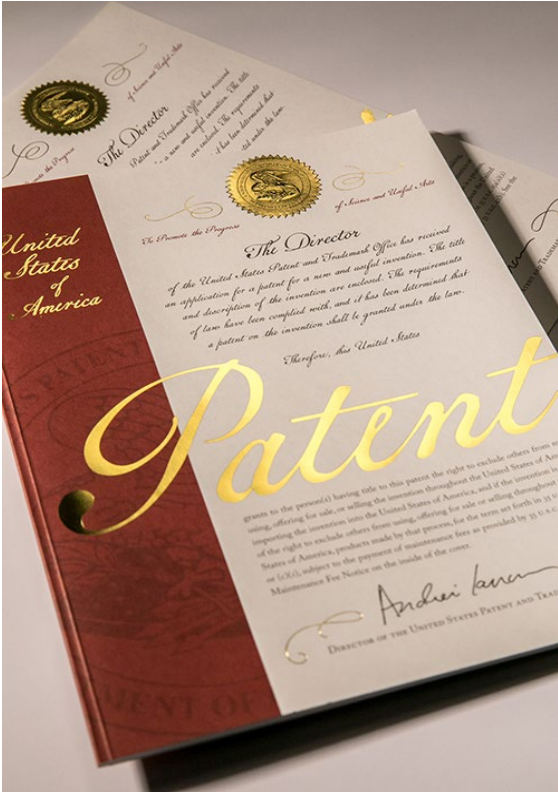
Statutory hurdles

- Is it patent eligible?
- Is it new?
- Is it nonobvious?
- Are the claims written clearly?
- Could a skilled technician reproduce the claimed invention based on what is in the specification?

Step 7: Receive your approval



Issued patent



(12) **United States Patent**
Marron

(10) **Patent No.: US 10,000,000 B2**
(45) **Date of Patent: Jun. 19, 2018**

(54) **COHERENT LADAR USING INTRA-PIXEL QUADRATURE DETECTION**

(71) Applicant: **Raytheon Company**, Waltham, MA (US)

(72) Inventor: **Joseph Marron**, Manhattan Beach, CA (US)

(73) Assignee: **Raytheon Company**, Waltham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 430 days.

(21) Appl. No.: **14/643,719**

(22) Filed: **Mar. 10, 2015**

(65) **Prior Publication Data**
US 2016/0266243 A1 Sep. 15, 2016

(51) **Int. Cl.**
G01S 7/48 (2006.01)
G01S 7/486 (2006.01)
G01S 7/491 (2006.01)
G01S 13/89 (2006.01)

(52) **U.S. Cl.**
CPC **G01S 7/4863** (2013.01); **G01S 7/4865** (2013.01); **G01S 7/4914** (2013.01); **G01S 7/4917** (2013.01); **G01S 13/89** (2013.01)

(58) **Field of Classification Search**
CPC G02B 27/58; G02B 26/10; G01J 1/20
See application file for complete search history.

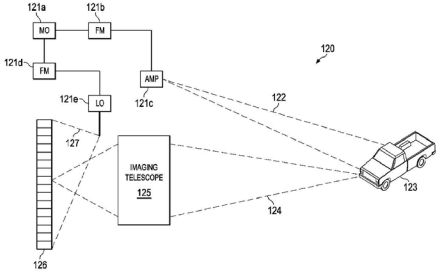
(56) **References Cited**
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2003/0076485 A1 4/2003 Ruff et al.
2006/0227317 A1 * 10/2006 Henderson G01B 11/026 356/28

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WO WO 2005/080928 A1 9/2005

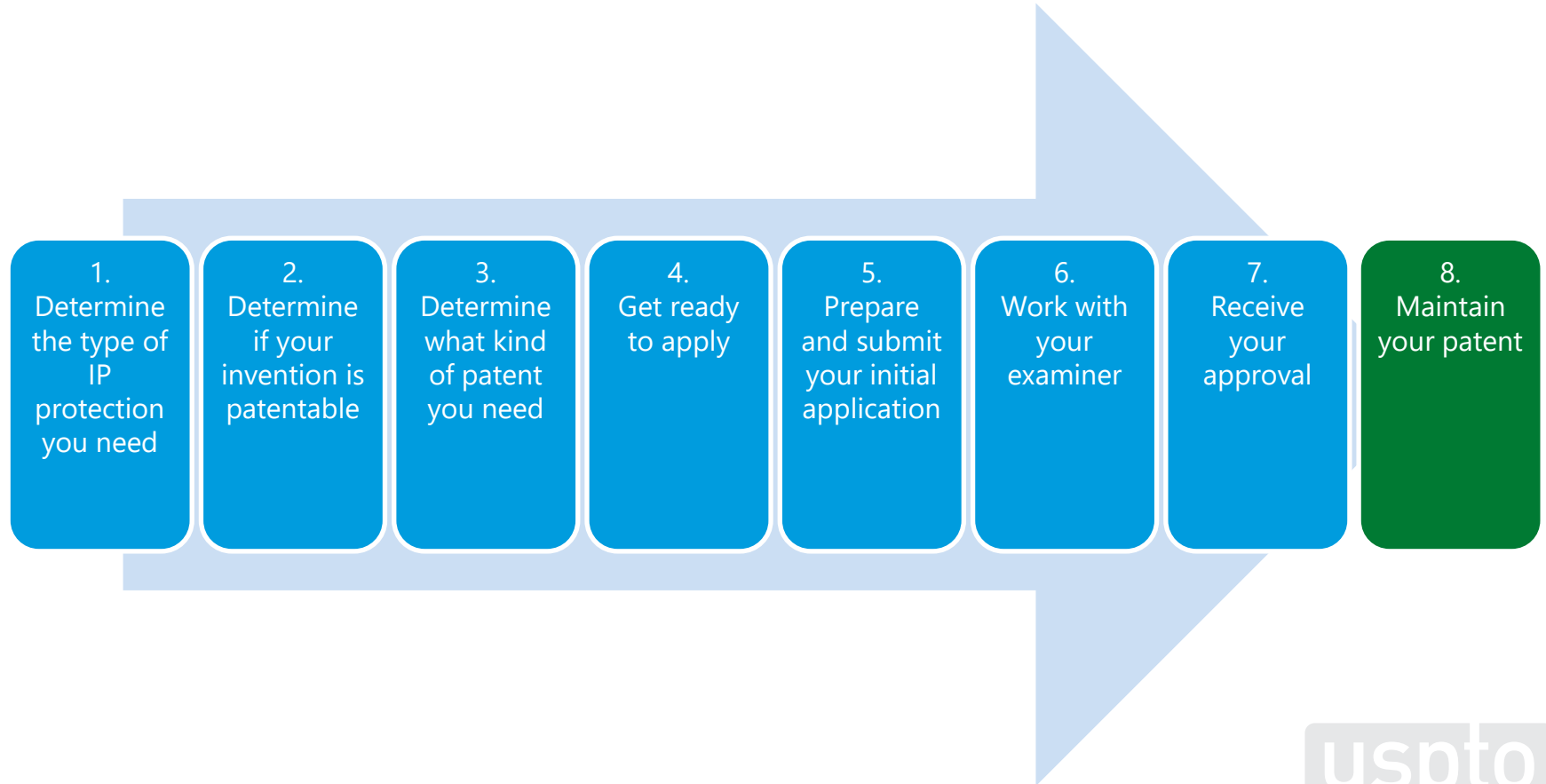
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Li; "Time-of-Flight Camera—An Introduction"; Texas Instruments White Paper; SLOA190B, Jan. 2014; revised May 2014; 10 pp.
(Continued)
Primary Examiner—Luke D Ratcliffe
(74) **Attorney, Agent, or Firm**—Munck Wilson Mandala, LLP

(57) **ABSTRACT**
A frequency modulated (coherent) laser detection and ranging system includes a read-out integrated circuit formed with a two-dimensional array of detector elements each including a photosensitive region receiving both return light reflected from a target and light from a local oscillator, and local processing circuitry sampling the output of the photosensitive region four times during each sample period clock cycle to obtain quadrature components. A data bus coupled to one or more outputs of each of the detector elements receives the quadrature components from each of the detector elements for each sample period and serializes the received quadrature components. A processor coupled to the data bus receives the serialized quadrature components and determines an amplitude and a phase for at least one interfering frequency corresponding to interference between the return light and the local oscillator light using the quadrature components.

20 Claims, 6 Drawing Sheets



Step 8: Maintain your patent



Enforcement

- Onus is on the owner to enforce their patent rights
 - Monitor marketplace for infringing products
 - Respond to infringement when detected
- **Government enforcement resources**
 - [STOPfakes.gov](https://stopfakes.gov)
 - Customs and Border Protection

Resources


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[Find It Fast](#)



Patent basics

- > Patent process step-by-step
- > Search patents
- > Frequently asked questions (FAQs)
- > Procedures (MPEP) and guidance



Apply for a patent

- > Register and easier filing resources
- > Check application status
- > Filing fees and payment
- > Forms



Application assistance

- > Contacts for application questions
- > Advanced application resolution
- > Petitions
- > Appeals and proceedings (PTAB)



Maintain your patent

- > Maintenance fees and payment
- > Calculate expiration date
- > Reinstate an expired patent
- > Ownership change and search



Helpful resources

- > CARES Act deadline waivers
- > International patent filing
- > Examiner interview requests
- > In-person help near you
- > Free assistance programs



Independent inventors

- > File a patent application on your own
- > Legal assistance and resources
- > Free resources in your state
- > Inventors Assistance Center

www.uspto.gov/patent



Startup resources



The USPTO's hub for startup resources provides links you can use to find help as you address the intellectual property (IP) challenges specific to startups, including assessing your IP portfolio, securing funding, and guarding against costly infringement litigation.

You will find practical information and useful tools, available from a wide variety of government agencies, which can assist you at every stage of growing your business, from your initial idea to entering the global marketplace.



Assess and protect your IP

Guard your valuable work

You need to know the value of your IP, and how to protect it, if you want to succeed and attract investors. You may even have IP assets you haven't considered.

- > Take your IP awareness assessment and get customized training materials
- > Protect your IP in the U.S.
- > Protect your IP abroad
- > Fight costly counterfeits



Develop your business plan

Do your homework

As the saying goes, "If you fail to plan, you are planning to fail." Make sure to explore the wide variety of resources that can help you do your research and set your goals. The [Small Business Administration \(SBA\)](#), the [Minority Business Development Administration \(MBDA\)](#), and [Small Business Development Centers \(SBDCs\)](#) are there to help you.

- > Review the SBA's 10 steps to start your business
- > Get strategic consultation via the MBDA



Find funding

Secure the investment

There are many sources of startup funding, including grants, loans, and different kinds of investors. [Read the Small Business Administration \(SBA\) introduction to types of funding](#), then follow the links below for more details.

- > Search thousands of federal funding opportunities on [Grants.gov](#)
- > Find R&D seed funds from the SBA's [SBIR/STTR](#)
- > See if you qualify for a SBA loan



Engage experts

Get advice and assistance

Find mentors, partnerships, and technological assistance in your industry. Learn to navigate the domestic and international IP markets.

- > Find USPTO resources for all types of innovators
- > Get NIST's help as you develop new technologies
- > Learn about international filing tools
- > Work with USPTO IP attachés to understand the global market
- > Explore IP in five languages

www.uspto.gov/startups

Access our free services

The United States Patent and Trademark Office (USPTO) offers a wide range of intellectual property (IP) resources, including application assistance, education and training, and other services that support the full spectrum of customers—from independent patent and trademark filers, to attorneys and business advisors in both the private and public sectors.

Using the icons below, select a category to filter the list by your area of interest.



All Resources



Patents



Trademarks



Attorneys and
Business Advisors

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STOPfakes.gov

- The International Trade Administration (ITA), U.S. Department of Commerce, manages STOPfakes.gov to assist U.S. businesses in protecting and enforcing their intellectual property rights against counterfeits and pirated goods in the global marketplace
- Provides information, guidance, and trainings for businesses and consumers by both industry and country of interest

U.S. Customs and Border Protection

- Customs and Border Protection (CBP) can detain and seize imported goods which violate intellectual property rights in the United States
- CBP officers can access the recordation database at each of the 328 ports of entry

U.S. Customs and Border Protection

- Intellectual Property Rights (IPR) e-recordation
 - Copyrights and trademarks
 - \$190 per International Class of Goods, per trademark registration or per copyright

Inventors Assistance Center (IAC)

Inventors Assistance Center (IAC) provides patent information and services to the public. The IAC is staffed by former supervisory patent examiners and experienced former primary examiners who answer general questions concerning patent examining policy and procedure

Contact Info

Hours: Monday – Friday, 8:30 a.m. to 8 p.m. ET, except federal holidays

Telephone Numbers

- 800-PTO-9199
(800-786-9199)
- 571-272-1000

**TTY customers can dial
800-877-8339 for customer
assistance**



Inventors Assistance Center (IAC)

- What IAC can do for you:
 - Answer general questions regarding patent examining policy
 - Answer questions concerning necessary formats and items needed for your patent application
 - Assist you with forms needed and with filling out the forms
 - Direct your calls to appropriate USPTO personnel or www.USPTO.gov web pages, as necessary
 - Provide you with general information concerning patent examining rules, procedures, and fees
 - Send you patenting information and forms via USPS mail or facsimile
- What IAC cannot do for you:
 - Give an opinion as to whether an invention is patentable
 - Provide legal advice or legal interpretations
 - Provide patent searches or other intellectual property research
 - Provide specific line-by-line completion of forms (but can provide directions)

Resources

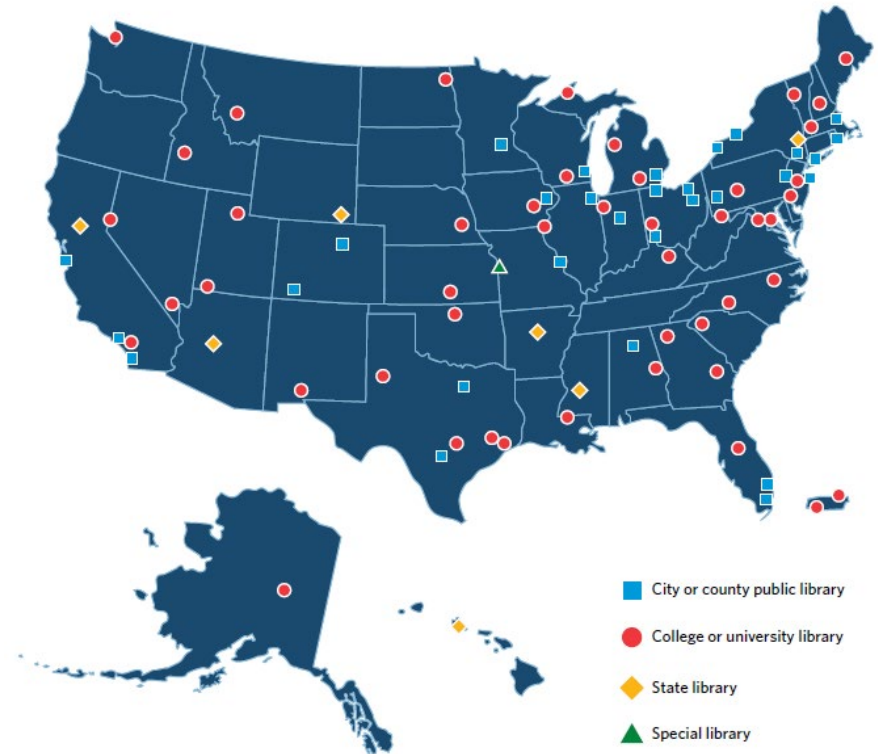
Helpline: 1-800-PTO-9199

Utility patent application guide	www.uspto.gov/patents/resources/types/utility.jsp
Patent process	www.uspto.gov/patents/process
Patent search guide	www.uspto.gov/patents/process/search
IP awareness assessment tool	www.uspto.gov/inventors/assessment
Inventor and entrepreneur resources	www.uspto.gov/inventors
Pro se assistance	www.uspto.gov/ProSePatents
Micro entity limit	www.uspto.gov/PatentMicroentity
Patent pro bono help and video	www.uspto.gov/inventors/proseprobono
First inventor to file	www.uspto.gov/aia_implementation/patents.jsp#heading-10
Law school clinic program	www.uspto.gov/LawSchoolClinic

Patent and Trademark Resource Centers (PTRC)

Nationwide network of public, state, and academic libraries that are designated by the USPTO to disseminate patent and trademark information and to support intellectual property needs of the public.

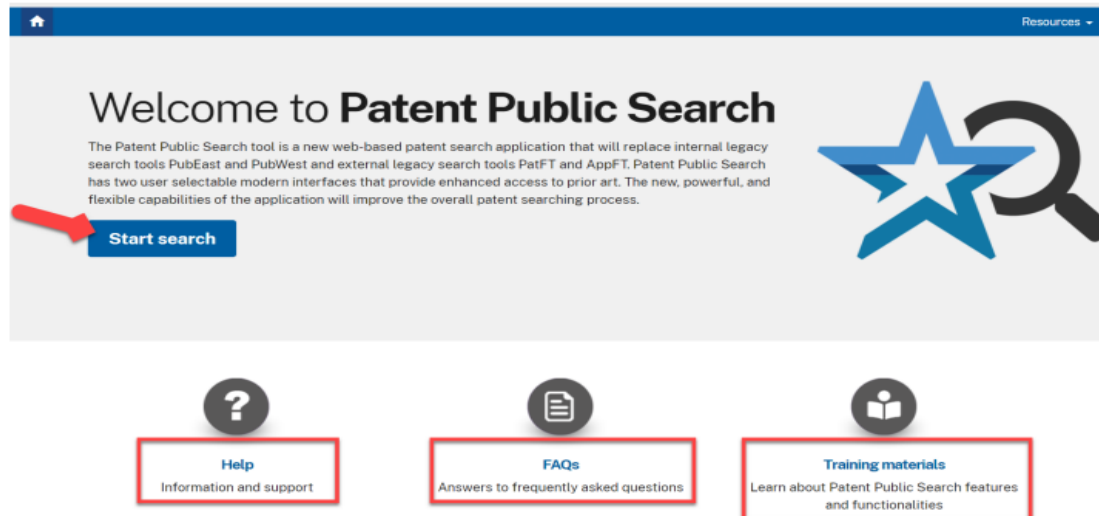
www.uspto.gov/ptrc



New patent search tool

- Patent Public Search is a new patent search tool available for free from the U.S. Patent and Trademark Office's website ([Patent Public Search](#))

Welcome page



Helpful hint: Have an interview

- Interview
 - Pro se inventor(s)/applicant(s)
 - In person on office premises, via WebEx, over the phone, or Video Tele-Conference (VTC)
 - Attorney/agent representing inventor(s)
 - In person on office premises, via WebEx, over the phone, or VTC
 - Inventor(s)/applicant(s) cannot have an interview without their attorney or agent present



Glossary of patent terms

- **Utility**—a credible use for a particular purpose of the claimed invention
- **Metes and bounds**—the claim scope which determines the legal limits of patent property rights
- **Person having ordinary skill in the art (PHOSITA)**—a hypothetical person who is presumed to have the capability of understanding the scientific and engineering principles applicable to the pertinent art
- **Patentable**—subject matter that is able to be patented
- **Allowable**—subject matter that meets all statutory requirements

Upcoming programs

- **The Path to a Patent, Part II: Drafting provisional patent applications**
 - Thursday, January 18, 2:00p.m. to 3:30p.m. ET
- **The Path to a Patent, Part III: Patent searching**
 - Thursday, January 25, 2:00p.m. to 3:30p.m. ET
- **The Path to a Patent, Part IV: Learn how to draft a patent application**
 - Thursday, February 1, 2:00p.m. to 3:30p.m. ET
- **The Path to a Patent, Part V: Understanding the role of claims in a patent application**
 - Thursday, February 15, 2:00p.m. to 3:30p.m. ET
- **The Path to a Patent, Part VI: Learn how to protect your IP abroad**
 - Thursday, February 22, 2:00p.m. to 3:30p.m. ET



Thank you!



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