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# Protecting Your Innovation – The Basics of Patents

# Agenda

- How to Obtain a Patent
- How to Enforce Your Patent

# Patents: How to Obtain a Patent

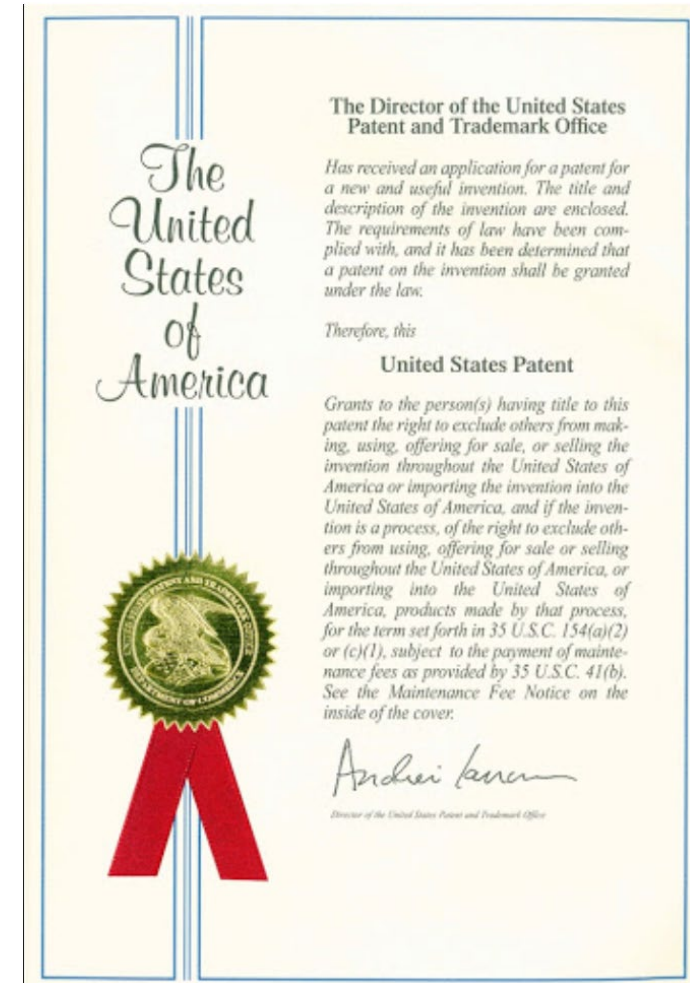
# The Constitutional Underpinnings of Patent Law

- The United States Constitution grants to the Congress the power to grant patents.
- Article I, Section 8, clause 8 reads:  
“The Congress shall have Power To . . . promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . .”



# What is a Patent?

- Property
- Right to exclude
- Public disclosure
- Limited term
- Territorial

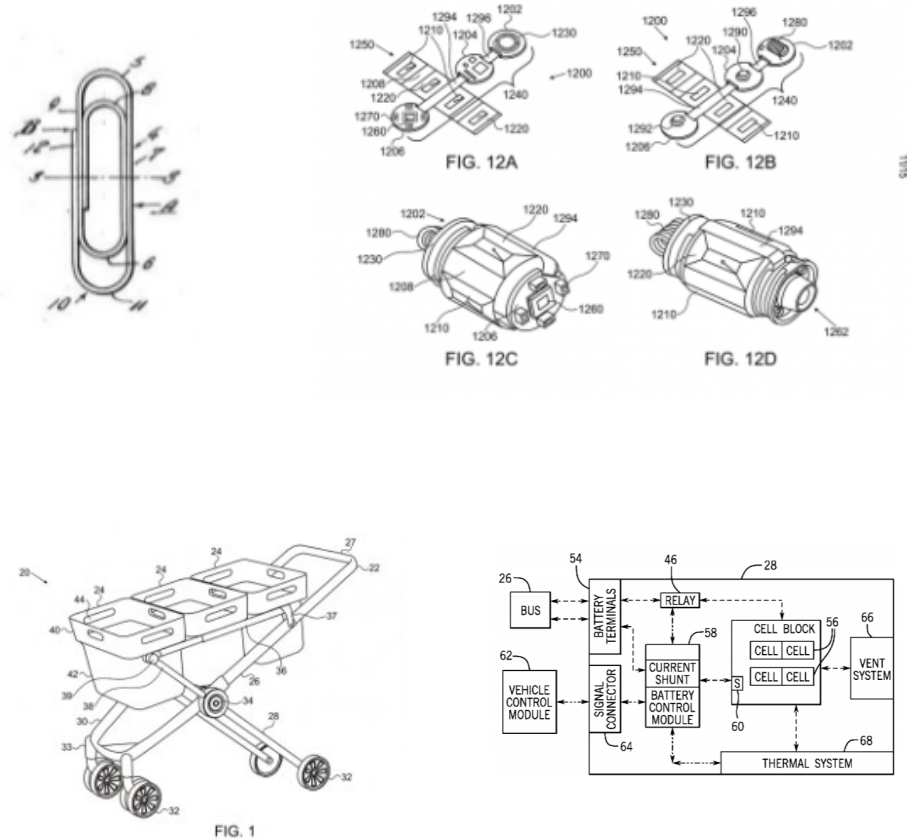


# Three Types of Patents

- Utility patents are the most common
  - Year 2020: about 90%
- Design patents are less common
  - Year 2020: about 9%
- Plant patents are the rarest
  - Year 2020: less than 1%

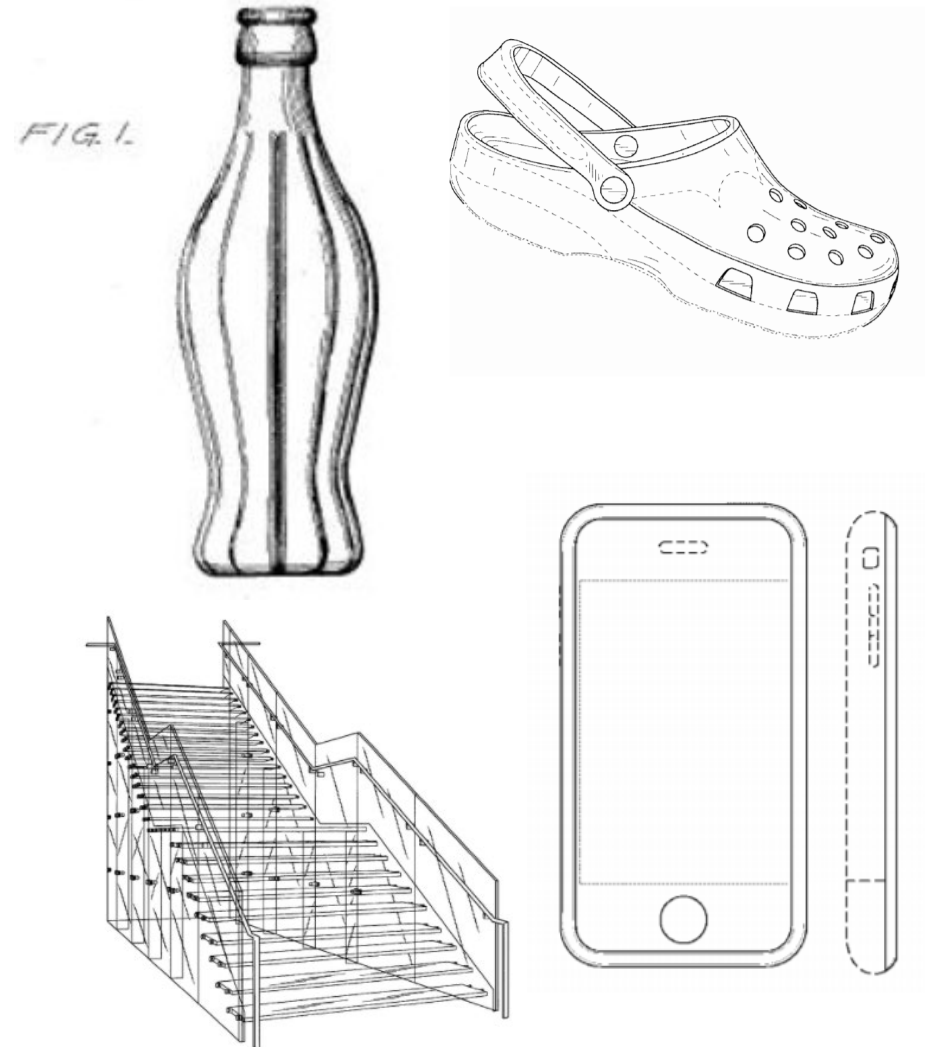
# Utility Patents

- New and useful:
  - Machine
  - Process
  - Article of manufacture
  - Composition of matter
  - Any new and useful improvement



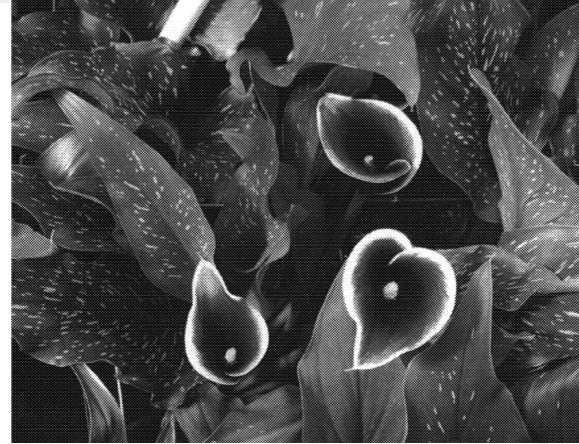
# Design Patents – Ornamental Features

- For ornamental features
- Examples:
  - Shoes
  - iphone, ipod
  - Christmas ornaments
  - Staircase
  - Beverage containers



# Plant Patents

- Granted to an inventor who has invented or discovered and asexually reproduced a distinct and new variety of plant.
- Examples:
  - Calla lily plant named “Dubai nights”
  - Strawberry plant named “NCS10-038”



PP32,716; PP32,705

# The Patentability Requirements

- Patentable Subject Matter – 35 U.S.C. § 101
  - Not patent eligible: (1) laws of nature; (2) natural phenomena; and (3) abstract ideas
- Novel - 35 U.S.C. § 102
- Not obvious - 35 U.S.C. § 103
- The form and content of the specification and the claims - 35 U.S.C. § 112

# Should You File a Patent Application?

- Conduct cost/benefit analysis
- Consider the shelf life of a product, e.g., changes in technology, style
- Consider how the patent will be used, e.g. licensing, to exclude competitors
- Consider whether the product can be used outside your market
- Determine patentability
- Assess workarounds for the invention

# When to File a Patent Application?

- Reasons to file early:
  - Before first public disclosure, public use, or offer for sale of technology
  - Before pitching to investors
  - The first to file rule provides an early priority date
- Reasons to wait:
  - Cost can be high
  - Product concept can change

# Types of Patent Applications

- Provisional applications
- Non-provisional applications
- PCT applications
- Continuing applications

# Provisional Application

- Establishes an early effective filing date
- Provides one-year buffer
- Limited formal requirement
- Low-cost
- Not examined and does not issue as a patent
- Allows the term “Patent Pending” to be applied

# Non-provisional Patent Application

- Examined and may be issued as a patent
- Formal legal document
- Contents:
  - Specification: detailed description of the patent
  - Drawing when necessary
  - Claims: discloses the scope of the invention
  - Inventor oath or declaration
  - Fees

# Filing Foreign Patent Applications

- Where is the product sold – potential market
- Where is the product made - manufacturing potential
- Where are your customers
- Where are your competitors - competition activity
- Where are your investors
- What are the costs
- How easy is it to obtain a patent
- How easy is it to enforce a patent

# Patent Cooperation Treaty (PCT)

- An international phase:
  - filing of the international application
  - international search and written opinion of the ISA
  - international publication and
  - international preliminary examination
- A national/regional phase before designated Offices:
  - 153 contracting states

# It's All About the Claims

- Protection is limited to what is claimed
- Specification may include numerous embodiments and elements
  - Only subject matter claimed is afforded protection

What is claimed is:

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	may be performed in any suitable order. As used in this document, "each" refers to each member of a set or each member of a subset of a set.	9. A laser detection and ranging (LADAR) system, comprising:
	To aid the Patent Office and any readers of any patent issued on this application in interpreting the claims appended hereto, applicants wish to note that they do not intend any of the appended claims or claim elements to invoke 35 U.S.C. § 112(f) unless the words "means for" or "step for" are explicitly used in the particular claim.	a two-dimensional array of detector elements, each detector element within the array including:
	What is claimed is:	a photosensitive region configured to receive return light reflected from a target and oscillating local light from a local light source, and
	1. A laser detection and ranging (LADAR) system, comprising:	local processing circuitry coupled to an output of the respective photosensitive region and configured to receive an analog signal on the output and to sample the analog signal a plurality of times during each sample period clock cycle to obtain components for a sample during each sample period clock cycle;
	a two-dimensional array of detector elements, each detector element within the array including:	a data bus coupled to one or more outputs of each of the detector elements and configured to receive the plurality of sample components for each sample period clock cycle;
	a photosensitive region configured to receive return light reflected from a target and oscillating local light from a local light source, and	a processor coupled to the data bus and configured to receive, from the data bus, the plurality of sample components from each of the detector elements for each sample period clock cycle and to determine an amplitude and a phase for an interfering frequency corresponding to interference between the return light and the oscillating local light using the plurality of sample components;
	local processing circuitry coupled to an output of the respective photosensitive region and configured to receive an analog signal on the output and to sample the analog signal a plurality of times during each sample period clock cycle to obtain a plurality of components for a sample during each sample period clock cycle;	a laser source configured to emit both light illuminating the target and the oscillating local light, wherein the laser source comprises:
	a data bus coupled to one or more outputs of each of the detector elements and configured to receive the plurality of sample components for each sample period clock cycle; and	a master oscillator;
	a processor coupled to the data bus and configured to receive, from the data bus, the plurality of sample components from each of the detector elements for each sample period clock cycle and to determine an amplitude and a phase for an interfering frequency corresponding to interference between the return light and the oscillating local light using the plurality of sample components.	a first frequency modulator coupled to the master oscillator and configured to modulate a frequency of a signal output by the master oscillator used to generate a signal corresponding to the emitted light illuminating the target, and
	2. The system according to claim 1, wherein the two-dimensional array of detector elements comprises a large format array.	a second frequency modulator coupled to the master oscillator and configured to modulate the frequency of the signal output by the master oscillator used to generate a signal corresponding to the emitted oscillating local light; and
	3. The system according to claim 1, wherein the plurality of sample components are quadrature components and wherein the quadrature components are employed to determine an amplitude and a phase for each of a plurality of interfering frequencies corresponding to interference between the return light and the oscillating local light.	an imaging telescope positioned between the target and the two-dimensional array of detector elements and configured to focus the return light reflected from the target onto the two-dimensional array of detector elements.
	4. The system according to claim 1, wherein each detector element within the array includes sample component signal line connections to the data bus.	10. The system according to claim 9, wherein the laser source further comprises:
	5. The system according to claim 1, wherein each detector element within the array is configured to receive a clock signal from the data bus.	an amplifier coupled between the first frequency modulator and a light source emitting the light illuminating the target; and
	6. The system according to claim 1, wherein the data bus is configured to serialize the plurality of sample components from each of the detector elements for each sample period clock cycle for transmission to the processor.	a local oscillator coupled between the second frequency modulator and the local light source emitting the oscillating local light, the local oscillator configured to respond to a signal output by the second frequency modulator.
	7. The system according to claim 1, wherein the two-dimensional array of detector elements and the data bus are contained within a read-out integrated circuit (ROIC).	11. A laser detection and ranging (LADAR) method, comprising:
	8. The system according to claim 1, further comprising:	receiving, at a two-dimensional array of detector elements, return light reflected from a target, each detector element within the array including:
	a laser source configured to emit both light illuminating the target and the oscillating local light; and	a photosensitive region configured to receive the return light reflected from the target and oscillating local light from a local light source, and
	an imaging telescope positioned between the target and the two-dimensional array of detector elements and configured to focus the return light reflected from the target onto the two-dimensional array of detector elements.	local processing circuitry coupled to an output of the respective photosensitive region and configured to receive an analog signal on the output and to sample the analog signal a plurality of times during each

# How are claims written?

- What is claimed is:
- 1. A laser detection and ranging (LADAR) system, comprising:
  - a two-dimensional array of detector elements, each detector element within the array including:
    - a photosensitive region configured to receive return light reflected from a target and oscillating local light from a local light source, and
    - local processing circuitry coupled to an output of the respective photosensitive region and configured to receive an analog signal on the output and to sample the analog signal a plurality of times during each sample period clock cycle to obtain a plurality of components for a sample during each sample period clock cycle;
  - a data bus coupled to one or more outputs of each of the detector elements and configured to receive the plurality of sample components from each of the detector elements for each sample period clock cycle; and
  - a processor coupled to the data bus and configured to receive, from the data bus, the plurality of sample components from each of the detector elements for each sample period clock cycle and to determine an amplitude and a phase for an interfering frequency corresponding to interference between the return light and the oscillating local light using the plurality of sample components.

# Continuing Applications

- Continuation:
  - Same specification and general invention, and same priority date, but new claim language
- Divisional:
  - Same specification and same priority date, but claims a different invention described in specification
- Continuation-in-part
  - New disclosure added; priority depends on when claimed subject matter was first disclosed
- Continuing patent applications are a valuable tool

# The Process of Patent Application

- Prepare patent applications (description, claims, abstract, drawings)
- File patent applications
- Work with the examiner
  - Examiner may issue office actions rejecting the application
  - You have the opportunities to respond and amend your applications
- If the application meets the requirement, you will receive a notice of allowance

# Example Patent Application Timelines

- File a non-provisional



- File a provisional, and then a non-provisional



- File a provisional, 12 months later, file a PCT, 18 months later, enter the national phase of US application



# Patents: How to Enforce Your Patent

# Enforcing your Patent Rights

- Patents allow you to:
  - Prevent others from doing what you have claimed as your invention
- Patents do not allow you to:
  - Practice your patent

# What is Infringement?

- Direct Infringement:
  - Another party makes, uses, or sells your invention in the U.S.,
- Indirect Infringement:
  - Another party induces infringement of your patent
    - *i.e.*, sells product with instructions that tell user how to infringe
  - Another party contributes to the infringement of your patent
    - *i.e.*, offers to sell/sells material component of patented invention

# How Do You Determine if Your Patent is Being Infringed?

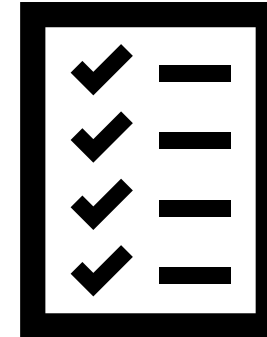
## Monitoring!

- Track competition
- Industry events
  - Trade shows
  - Conferences
- Follow other company's patent portfolios



# Your Patent is Being Infringed - What Next?

- Determine what your end goal is and figure out best way to achieve it
  - Monetary damages
  - Stopping infringement in entirety
  - Limited use of products/territorial limitations

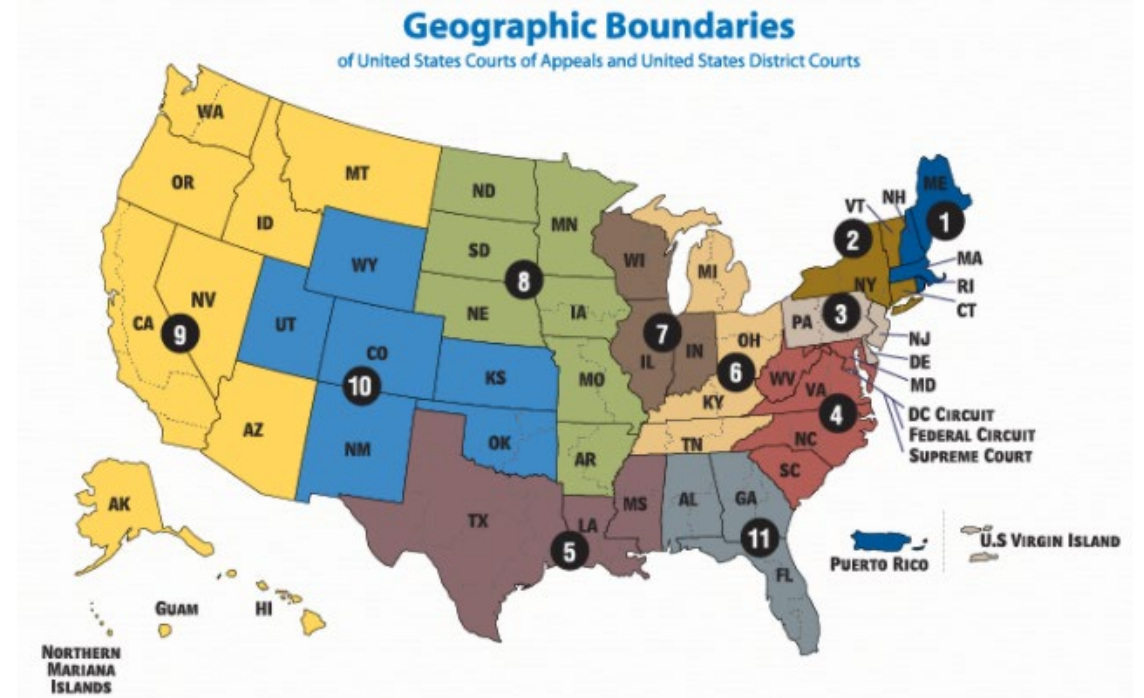


# Steps to Getting What You Want

- Due diligence
- Contacting the infringing party
  - Cease and desist letter/demand letter
- Filing a lawsuit
  - Choosing forum for lawsuit
  - Timing of lawsuit

# Patent Litigation Forums

- District Court
  - Federal court system
  - Districts with increased patent cases
    - Eastern District of Texas
    - Western District of Texas
    - District of Delaware
    - Northern District of California
    - Western District of Wisconsin
    - Eastern District of Virginia



# Patent Litigation Forums

- International Trade Commission (ITC)
  - Independent federal agency in Washington, D.C.
  - Proceedings are conducted under the Administrative Procedures Act
  - Relates to imported products



# District Court v. ITC

District Court	ITC
Federally Appointed Judges	Administrative Law Judges
Bench or Jury Trial	Bench Trial
2-4 Years (Venue Dependent)	Approx. 18 months
Monetary damages or injunction	Exclusion Order
Plaintiff(s) and Defendant(s)	Complainant(s), Respondents(s), and Office of Unfair Import Investigations (OUII)

# Filing District Court Case

- Need to have personal jurisdiction, subject matter jurisdiction, and proper venue
  - **Personal jurisdiction:** Minimum contacts with forum state
  - **Subject matter jurisdiction:** Patent infringement = federal cause of action
  - **Venue:** Changed recently under *TC Heartland*. Can bring suit in (1) state of incorporation or (2) where defendant has committed acts of infringement and has a regular and established place of business.
- Complaint
  - Different venues require different pleading standards
- Filing and Service

# Filing ITC Case

- Need to have *in rem* jurisdiction
  - Establish that respondents imported, sold for importation, or sold in U.S. after importation the infringing products
- Need to establish existence of a domestic industry
  - Prove that complainant (or its licensee) has articles that practice the asserted patent and that it has made significant investment in (a) plant and equipment, (b) labor or capital; or (c) exploitation, such as R&D or licensing with respect to those products
- Complaint
  - Detailed pleading including charts supporting infringement and domestic industry analysis
- Filing and service

# Stages of Litigation

- Fact Discovery
  - Between the parties
  - Written/documents and depositions
  - Used to gather information to support infringement/damages positions
- Expert Discovery
  - Technical/economic experts submit reports and are deposed
- Claim construction
  - If there is any dispute about what certain terms in the patent claims mean, this is decided
- Pre-trial and trial
- Final Decisions/Verdicts
- Appeals (Federal Circuit)

# But What if You're on the Receiving End of Infringement Allegations?

- File declaratory judgment action
  - Non-infringement
  - Patents are invalid
- File post-grant review proceeding (USPTO Patent Trial and Appeal Board)
  - *Inter partes* review
  - Post-grant review (9 month period after issuance of patent)
  - Covered business method review
- Licensing negotiations

# Post-Grant Review Proceeding

- USPTO Patent Trial and Appeal Board
  - Administrative Patent Judges (3 per case)
- Limited to invalidity challenges based on patents and printed publications
- Approximately 18 months from start to finish
- Limited discovery (fact and expert)
- File Petition with the PTAB

# Resources

- <http://www.uspto.gov/inventors/index.jsp>
- <http://patft.uspto.gov/>
- [http://www.uspto.gov/patents/init\\_events/pct/index.jsp](http://www.uspto.gov/patents/init_events/pct/index.jsp)
- <http://www.StopFakes.gov>
- <http://www.ustr.gov/trade-topics/intellectual-property>
- <http://www.wipo.int>
- <http://www.espacenet.com/access/index.en.html>
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