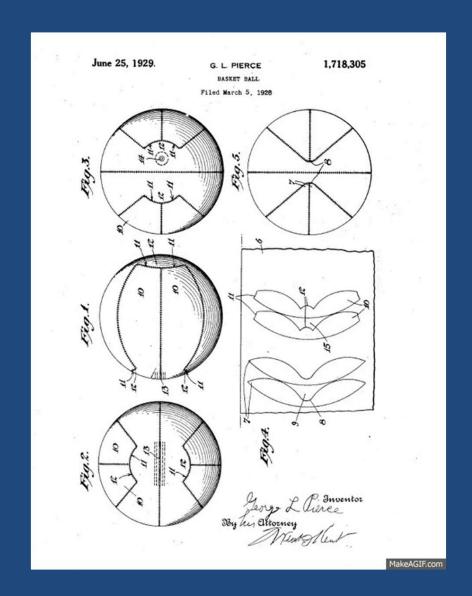


### Intellectual Property

The Economic Engine of Knowledge

Laura S. Huffman Georgia Tech IP Advisory Board



### **Economic Historical Context**

Generally speaking...



1700's & early 1800's – Agricultural Economy



1800's & early 1900's –
Industrial Economy



Late 1900's to present – Knowledge Economy

# What is intellectual property?

• "Intellectual property" (or "IP") refers to: creations of the human mind that have commercial value and receive legal protection.

• Different than other tangible types of property like "real property" (e.g. land) and "personal property" (e.g. moveable goods).

# What is intellectual property?

Device Process



Brand





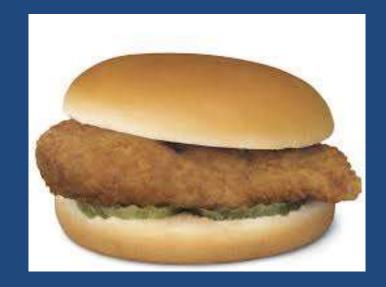


# What is intellectual property?



Work of Art

Recipe



# How is intellectual property an "economic engine"?



http://nyti.ms/1Co

Christopher Seward The Atlanta Journal-



Super Soaker creator awarded \$72.9M from Hasbro

MEDIA

The New Hork Times http://nyti.ms/1eapD5W

Ascap Topped Streaming

BUSINESS DAY

BUSINESS BRIEFING

By BEN SISARIO MARCH 3, 2015 Marvell Ordered to Pay \$1.54 Billion in Patent Suit

IOC secures \$8bn US broadcast deal

May 8, 2014

# Mogl raises \$8 million to expand beyond restaurants venture

Real time rewards app firm aims to power e-commerci August 20, 2015 UPDATED 6 HOURS AGO

(/staff/mike-freeman/) By Mike Freeman(/staff/m

offer actually spends money at the mere

Freudenberg Medical buys majority these three credit card companies. It ha stake in Hemotea

HEALTH CARE

Pfizer Wins \$2.15B Patent Suit with Teva, Sun Pharma



rket leader in 30 technology patents



By Jennifer Booton Published June 12, 2013

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**FOXBusiness** 

# Why should you care about IP?

IP Careers

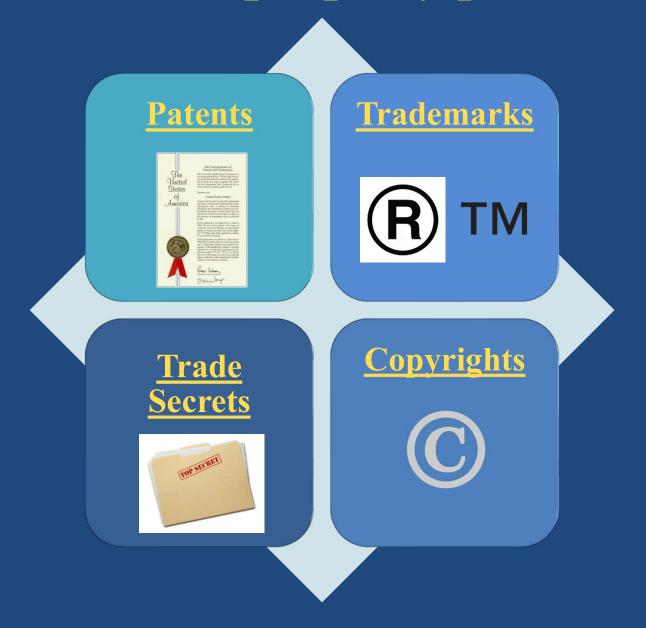


Engineers generate and use IP

Entrepreneurs often rely on IP for funding

Business managers leverage IP

# How is intellectual property protected?



# Patents and Copyrights come from the U.S. Constitution

• Article I, Section 8, cl. 8:

Congress shall have the 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

 Congress enacts laws that specify subject matter eligible for patent or copyright and the conditions to establish patent or copyright

# **PATENTS**

### What is a Patent?

• A patent is a <u>legal document</u> that gives its owner <u>exclusive rights</u> to a claimed <u>invention</u> for a <u>limited time</u>.

- A Patent is a quid pro quo:
  - The inventor discloses the invention.
  - The government grants exclusive rights to the invention for a limited period of time.

### **How Does a Patent Work?**

- The patent owner can sue someone for infringement if they are commercializing the patented invention without the owner's permission (whether knowingly or not)
  - Commercializing means making, using, offering for sale, selling, and/or importing the invention

### **Example**:

1. A device comprising:
a platform; and
at least one leg that supports
the platform above the
ground.

### **Infringing Devices:**



### How Do You Get a Patent?



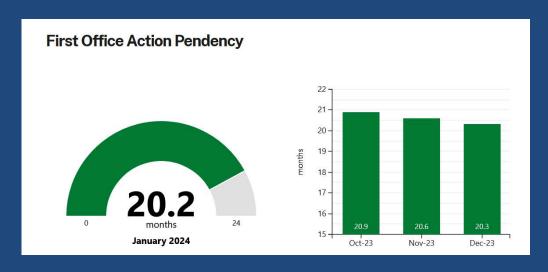
- US is now a "first to file" country
  - Lab notebooks still important

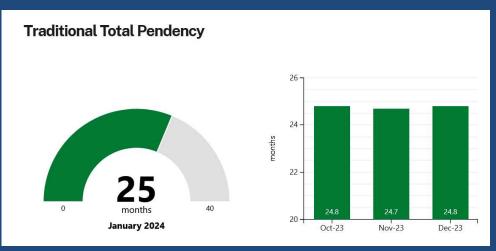
### **Provisional Patent Application**

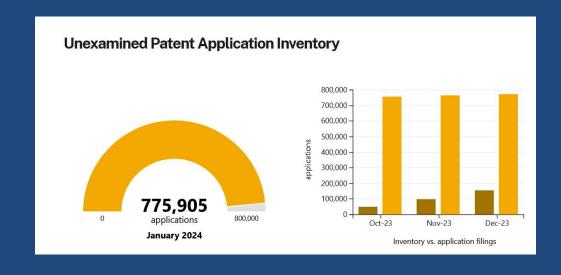
- Since June 8, 1995, the USPTO has offered inventors the option of filing a provisional application for patent
- Provisional patent is a lower-cost first filing in the United States
- The filing date of a provisional application is the date on which a written description of the invention, and drawings if necessary, are received in the USPTO
- A provisional application must also include a filing fee, and a cover sheet specifying that the application is a provisional application for patent
- The applicant has 12 months to file a nonprovisional application for patent as described above

King & Spalding

# **USPTO Patent Dashboard January 2024**







### What does a Patent Look Like?



Title

Inventors

Assignee

Filing Date

#### (12) United States Patent Siegel et al.

- METHOD AND SYSTEM FOR DRONE DELIVERIES TO VEHICLES IN ROUTE
- (71) Applicant: HTI, IP, L.L.C., Arlington, VA (US)
- Inventors: Robert S. Siegel, Atlanta, GA (US); Stephen Christopher Welch, Atlanta, GA (US); James Ronald Barfield, Jr.,
- 3) Assignee: Verizon Telematics Inc., Atlanta, GA
- Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 140 days.
- (21) Appl. No.: 14/310,261
- (22) Filed: Jun. 20, 2014
- Prior Publication Data US 2015/0370251 A1 Dec. 24, 2015
- (51) Int. Cl. G05D 1/00 (2006.01) B64C 31/02 (2006.01) B64D 1/08 (2006.01) B64D 1/22 G05D 1/10 (2006.01) (2006.01) (2012.01) G06Q 10/08 G01C 21/20 (2006.01) G01C 21/34 (2006.01)
- B64C 39/02 (52) U.S. Cl.

G05D 1/0027 (2013.01); B64C 39/024 (2013.01); B64D 1/08 (2013.01); B64D 1/22 (2013.01); G01C 21/20 (2013.01); G05D 1/00 (2013.01); G05D 1/101 (2013.01); B64C 2201/128 (2013.01); B64C 2201/146 (2013.01); G01C 21/3438 (2013.01); G06Q 10/083 (2013.01)

(2006.01)

#### (45) Date of Patent:

(10) Patent No.:

(58) Field of Classification Search CPC ......... G06Q 10/083; B64C 2201/128; B64C 39/024; G01C 21/20; G05D 1/00; G05D

US 9,494,937 B2

Nov. 15, 2016

See application file for complete search history.

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2015/0120094	Al*	4/2015	244/137.1 Kimchi B64C 39/024
2015/0332206	Al*	11/2015	701/3 Trew G06Q 10/0836 705/330

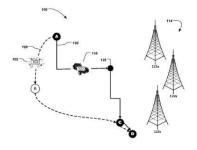
\* cited by examiner

Primary Examiner - Yonel Beaulieu Assistant Examiner - Thomas Ingram

#### ABSTRACT

A system comprise a server configured to communicate vehicle information with a vehicle transceiver of a vehicle moving along a vehicle route and communicate drone information with a drone transceiver of a drone moving along a drone route. A computing device with a memory and a processor may be configured to communicatively connect with the server, process the vehicle information and the drone information, identify a plurality of pickup locations based in part on the vehicle information and drone information, select at least one of the plurality of pickup locations based in part on a priority score associated with a travel time to or wait time for each of the plurality of pickup locations, and update the drone route based in part on the selected pickup location.

#### 18 Claims, 9 Drawing Sheets



#### Patent Number

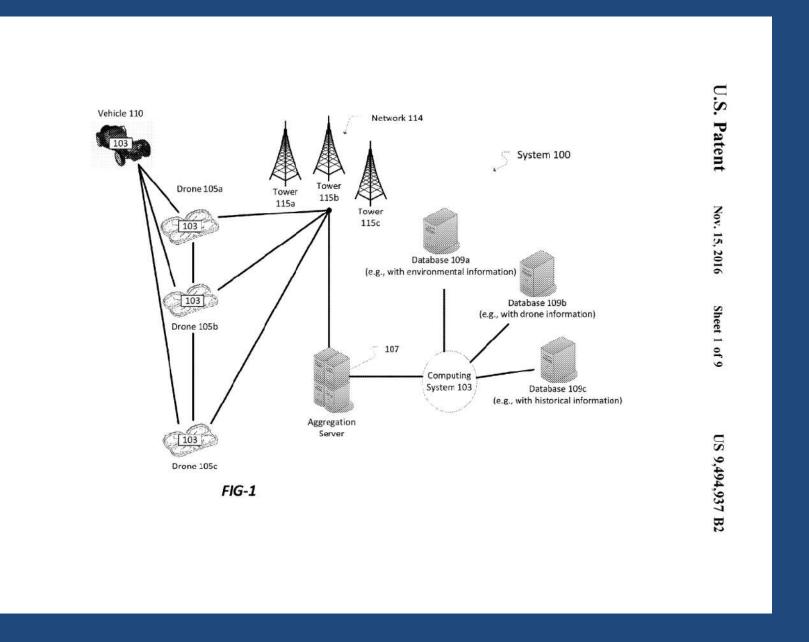
Issue Date

Prior Art Considered

**Abstract** 

Claim Count and **Drawing Sheets** 

### What does a Patent Look Like?



### What are Claims?

US 9,494,937 B2

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could be added, or that certain steps described herein could be omitted. In other words, the descriptions of processes herein are provided for the purpose of illustrating certain embodiments, and should in no way be construed so as to limit the claims.

Accordingly, it is to be understood that the above description is intended to be illustrative and not restrictive. Many embodiments and applications other than the examples provided would be apparent upon reading the above description. The scope should be determined, not with reference to the above description, but should instead be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled. It is anticipated and intended that future developments will occur in the technologies discussed herein, and that the disclosed systems and methods will be incorporated into such future embodiments. In sum, it should be understood that the application is canable of medification and variation.

All terms used in the claims are intended to be given their broadest reasonable constructions and their ordinary meanings as understood by those knowledgeable in the technologies described herein unless an explicit indication to the contrary in made herein. In particular, use of the singular articles such as "a," "the," "said," etc. should be read to recite one or more of the indicated elements unless a claim recites an explicit limitation to the contrary.

The Abstract of the Disclosure is provided to allow the reader to quickly ascertain the nature of the technical disclosure. It is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. In addition, in the foregoing Detailed Description, it <sup>30</sup> can be seen that various features are grouped together in various embediments for the purpose of streamlining the disclosure. This method of disclosure is not to be interpreted as reflecting an intention that the claimed embodiments require more features than are expressly recited in each 3s claim. Rather, as the following claims reflect, inventive subject matter lies in less than all features of a single disclosed embodiment. Thus the following claims are hereby incorporated into the Detailed Description, with each claim standing on its own as a separately claimed subject.

#### What is claimed is:

- 1. A system comprising: a server configured to:
- communicate, by way of a network, vehicle information with a vehicle transceiver of a vehicle moving along a vehicle route, wherein the vehicle information at least includes a vehicle location, and
- communicate, by way of the network, drone information with a drone transeeiver of a drone moving s along a drone route, the drone transeeiver including a coarse-grain transeeiver for communication with the network and a fine-grain transeeiver for communication with the vehicle transeeiver, wherein the drone information at least includes a drone location, s wherein the coarse-grain transeeiver of the drone transeeiver is configured for cellular communication with the network to rendezvous with the vehicle and the fine-grain transeeiver of the drone transeeiver is configured for direct wireless communication with 6 the vehicle transeeiver to engage a docking station; and
- a computing device with a memory and a processor configured to: communicatively connect with the server.
- process the vehicle information and the drone informa-

identify a plurality of pickup locations based in part on the vehicle information and drone information.

- select at least one of the plurality of pickup locations based in part on a priority score associated with a travel time to or wait time for each of the plurality of pickup locations, and
- update the drone route based in part on the selected pickup location and the vehicle location relative to the drone location.
- The system of claim 1, wherein the processor is further enfigured to:
  - nerate at least one of an updated vehicle route and an updated drone route based at least in part on at least one of the vehicle information and the drone information, and
- communicate the updated route between the vehicle and the drone.
- The system of claim 1, wherein the processor is further enfigured to:
- eccive, using the network, cargo information including a cargo location associated with a cargo to be retrieved by the drone and delivered to the vehicle,
- generate an additional updated drone route based at least in part on the cargo information, and
- communicate the additional updated drone route to the drone and the vehicle.

  4. The system of claim 1, wherein the network is further
- 4. The system of claim 1, wherein the network is further enfigured to communicate traffic information to at least one of the vehicle transceiver and drone transceiver, wherein the traffic information indicates traffic congestion along the whicle route.
- The system of claim 4, where the processor is further enfigured to:
- update at least one of the vehicle route and drone route based at least in part on traffic information, and communicate the updated at least one of the vehicle route and drone route to at least the vehicle.
- 6. The system of 1, wherein the coarse-grain transceiver of the drone transceiver is configured to receive the vehicle leation from the network and the fine-grain transceiver of the drone transceiver is configured to receive a fine vehicle leation from the vehicle transceiver, and wherein the processor is configured to compare the vehicle location from the mwork and the fine vehicle location from the vehicle management.
- 7. The system of claim 1, wherein the coarse-grain tunsceiver of the drone transceiver is configured to position the drone relative to the drone route and the fine-grain tunsceiver is configured to position the drone relative to the vhicle.
- 8. The system of claim 1, wherein the coarse-grain to asserver of the drone transceiver is configured to position the drone relative to the docking station as part of the whicle.
- A drone comprising
- drone transceiver including a coarse-grain transceiver for communication with a network and a fine-grain transceiver for communication with a vehicle transceiver, wherein the coarse-grain transceiver is configured to:
- communicatively connect with at least a network, transmit drone information to the network while the drone moving along a drone route to a destination point, wherein the drone information at least includes a drone location, and

• Claims are the numbered paragraphs at the end of a patent.

#### A system comprising:

- a server configured to:
  - communicate, by way of a network, vehicle information with a vehicle transceiver of a vehicle moving along a vehicle route, wherein the vehicle information at least includes a vehicle location, and
  - communicate, by way of the network, drone information with a drone transceiver of a drone moving
    along a drone route, the drone transceiver including
    a coarse-grain transceiver for communication with
    the network and a fine-grain transceiver for communication with the vehicle transceiver, wherein the
    drone information at least includes a drone location,
    wherein the coarse-grain transceiver of the drone
    transceiver is configured for cellular communication
    with the network to rendezvous with the vehicle and
    the fine-grain transceiver of the drone transceiver is
    configured for direct wireless communication with
    the vehicle transceiver to engage a docking station;
    and
- a computing device with a memory and a processor configured to:
- communicatively connect with the server,
- process the vehicle information and the drone information.
- identify a plurality of pickup locations based in part on the vehicle information and drone information,
- select at least one of the plurality of pickup locations based in part on a priority score associated with a travel time to or wait time for each of the plurality of pickup locations, and
- update the drone route based in part on the selected pickup location and the vehicle location relative to the drone location.

# TRADE SECRETS

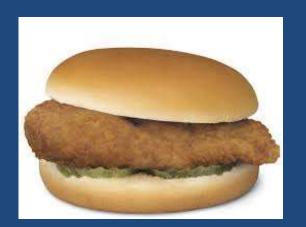
### What is a Trade Secret?

• Information which:

- SECRET
- is not generally known or reasonably ascertainable,
- confers economic benefit on its holder, and
- is subject to reasonable efforts to maintain its secrecy
- If stolen, you can sue for theft/misappropriation
- **But note**: if someone else comes up with it independently, you lose your protection *and they could potentially patent it, thereby*precluding YOU from using it
- No registration process for trade secrets
- Cost = "free", except for the cost to keep it secret (can be quite high)
- <u>Term</u> = as so long as the information is confidential (indefinite)

### **Trade Secrets**

- drink formula
- recipe
- survey method
- manufacturing technique
- computer algorithm













### Waymo v. Uber

- Anthony Levandowski is directly involved with autonomous driving at Waymo and has a confidentiality agreement with Waymo
- December 2015 Levandowski leaves Waymo [with 14,000 documents, including source code]
- August 2016 Uber acquires Levandowski's new company OttoMotto for \$680M
- February 2017 Waymo brings trade secret and patent infringement claims against Uber based on LiDAR design
  - Waymo learned of the design when it was inadvertently copied on an e-mail from a third-party vendor
- February 2017-February 2018 Waymo, Uber, and Levandowski (all of whom have their own attorneys) litigate fiercely
- May 2017 Uber fires Levandowski

### Waymo v. Uber

- February 2018 Waymo and Uber settle. Waymo gets .3% of Uber (worth \$245m at the time). Levandowski refused to cooperate with Uber's defense. The federal judge recommends the case for criminal investigation
- August 2019 Levandowski is charged with 33 counts of theft and attempted theft of trade secrets.
- March 2020 Levandowski agrees to plead guilty to one count of theft
- August 2020 Levandowski sentenced to 18 months in federal prison, \$700,000 in restitution, and to give public speeches on "Why I Went to Federal Prison" judge allows Levandowski to self-surrender due to health risks of Covid-19

### Waymo v. Uber

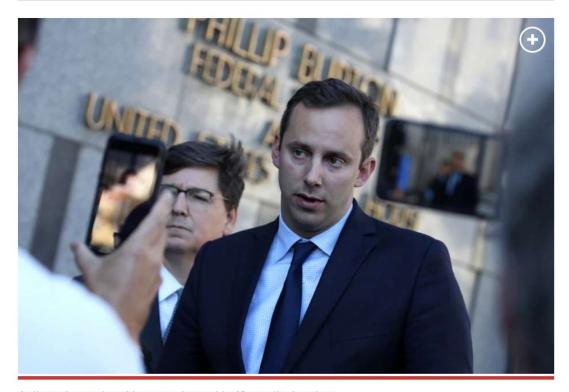
- "All of us have the right to change jobs, none of us has the right to fill our pockets on the way out the door," U.S. Attorney David Anderson said. "Theft is not innovation."
- "The FBI will not tolerate the theft of trade secrets," FBI Special Agent in Charge John Bennett, told NPR in an emailed statement. "These are the Crown Jewels of companies and this unlawful behavior has a real impact on our economy, local jobs, and consumers around the country and even the world. Silicon Valley is not the Wild West."
- Levandowski's attorneys argued he should get home confinement. U.S. District Judge William Alsup responded that would give "the green light to every future engineer to steal trade secrets. Prison time is the answer to that."

BUSINESS

### Trump pardons convicted ex-Google engineer Anthony Levandowski

By Noah Manskar

January 20, 2021 | 8:45am | Updated



Anthony Levandowski was sentenced to 18 months in prison.

### Trade Secrets vs. Patents

- Trade Secret:
  - Protection lasts forever, or until someone legitimately discovers the secret.
  - No registration costs.
  - Goes into effect immediately.
- Patent:
  - Protects against reverse engineering.
  - More protection in exchange for making public.
  - TS can be patented by someone else if they legitimately come up with it.

# **COPYRIGHT**

# What is a Copyright? ©

- Anything creative
- Protects "expression" but not "ideas"
  - Paintings & Photographs
  - Movies, TV Shows, Commercials
  - Novels
  - Songs
  - Computer programs
  - Video games
- Current Works: life of author + 70 yrs. or 95 yrs. from publication for anonymous author

# How do I obtain a copyright?

- Copyright exists from the moment work created
- Registration is not required to have rights



- Registration is required if you are suing for infringement of a U.S. work
- Registration is with U.S. Copyright Office (division of Library of Congress)

# **TRADEMARKS**

### What Is a Trademark?

- Words -- Brands
- Symbols
- Distinctive, nonfunctional features
- Product or packaging designs
- Sounds

















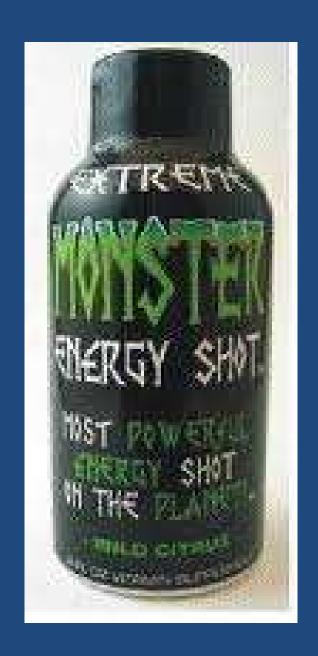


### Where do trademarks come from?

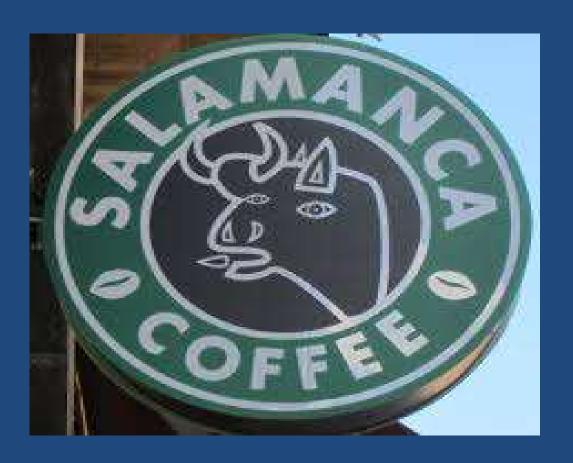
- Rights can be obtained either:
  - By registration
    - state
    - federal
  - By use (common law)
  - By assignment, provided the good will is also assigned
- Rights are territorial
- Limited to specific goods and/or services
- Must police your trademarks

# Likelihood of confusion?



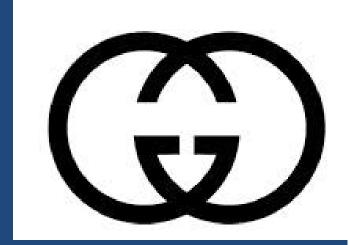


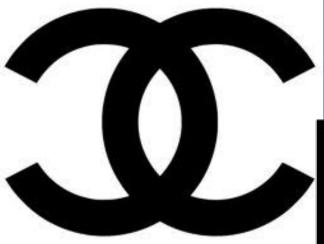
# Likelihood of confusion?

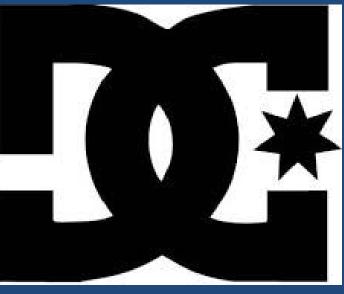




### Likelihood of Confusion?







# Likelihood of confusion?





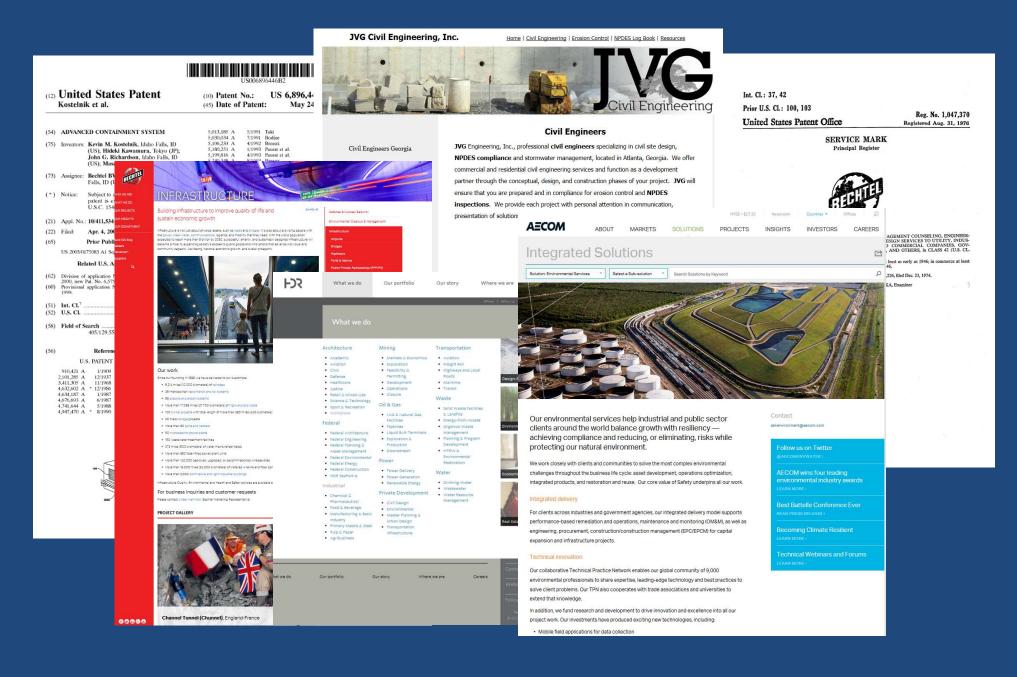




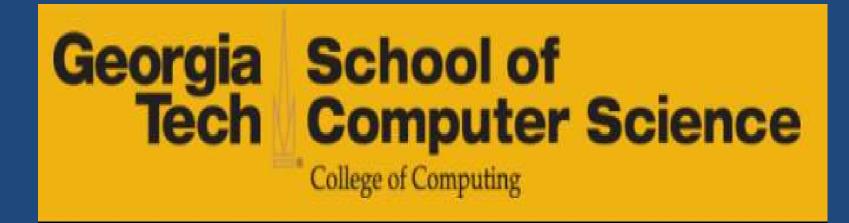
# Distinguishing the Types of IP

Legal Right	Subject Matter	Protects	Examples
Patents	Inventions	New technology	Machines, hardware, software, tools
Trade Secrets	Secrets	Useful secrets	Customer lists, pricing information, software, algorithms, business processes
Trademarks	Brands	Goodwill, brand identity	Words, symbols, logos, icons, slogans, sounds
Copyrights	Creative Works	Expression, creativity, image	Music, writings, software, photographs

### How Will You Use IP?



# QUESTIONS?



# Intellectual Property The Economic Engine of Knowledge

Laura S. Huffman