



College of Engineering

GE106: Introduction to Engineering Design

Intellectual Property (IP)

By

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Types of Properties

Movable Properties

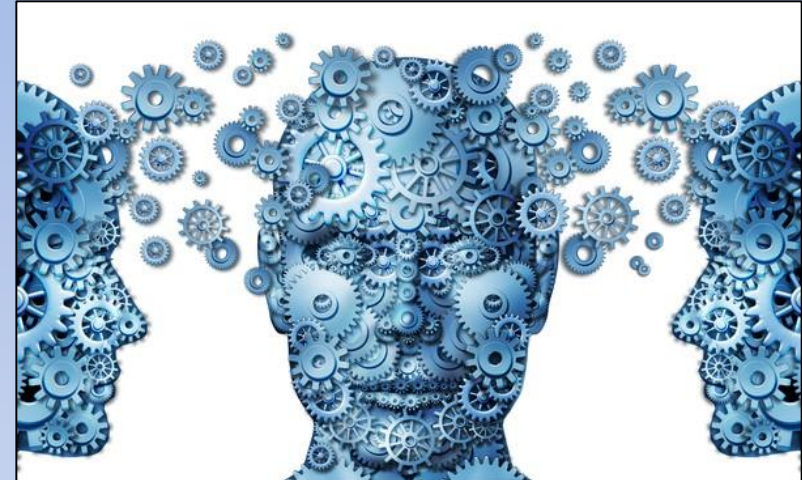
- Car, pen, furniture, etc.

Immovable Properties

- Land, building, etc.

Intellectual Property

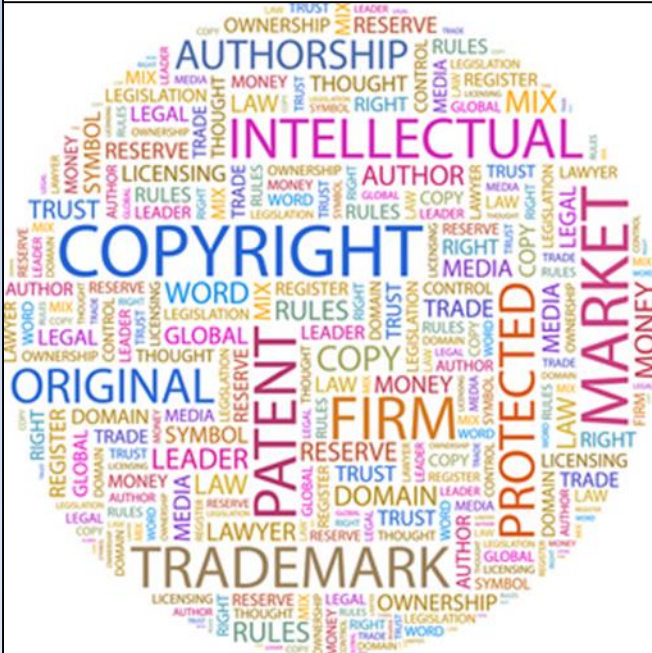
- Literary works, inventions, etc.



Intellectual property are products of the human intellect that have economic value.

<https://www.aocs.org/stay-informed/inform-magazine/featured-articles/the-america-invents-act-groundbreaking-us-patent-law-changes-are-here-november/december-2012>

Topics for Discussion



- Patents
- Copyrights
- Trademarks
- Trade secrets

What is a **PATENT**?

- It is a right granted for an invention (a **product or a process**) providing a new way of doing something.
- It enables an inventor to prohibit another person from manufacturing, using or selling the patented product without permission.
- Intended to provide incentive for effort and expense of invention.
- Period of Patents span 20 years.
- Patented inventions can be used by others through licensing and royalty arrangements.

The Objectives Behind Granting of Patents

It is desirable in the public interest that **industrial techniques** should be improved.

In order to encourage improvement, and to encourage also the disclosure of improvements in preference to their use in secret, any person devising an improvement in **a manufactured article, or in machinery or methods of making it**, may upon disclosure of his improvement at the **Patent** Office demand to be given **monopoly** in the **use** of it for a period of **twenty years**. After that period it passes into the public domain.

The temporary monopoly is not objectionable, for if it had not been for the inventor who devised and disclosed the improvement nobody would have been' able to use it at that time or any other time since nobody would have known about it.

What can be patented?

Inventions in all fields of technology, whether products or processes, if they meet the following criteria:

- Novelty (originality).
- Non-obviousness (inventiveness).
- Industrial application (utility).



- Patent is granted to the first to file (i.e. first to report and document invention with the patent office), not the first to invent.

Who Grants Patents?

- Patents are granted by national patent offices* after publication and substantial examination of the applications.
- They are valid within the country in which they are granted i.e. granted patents are only enforced in countries where they were granted.
- If you want to have wider restriction on your intellectual property, file patents in more countries, based on the business case.

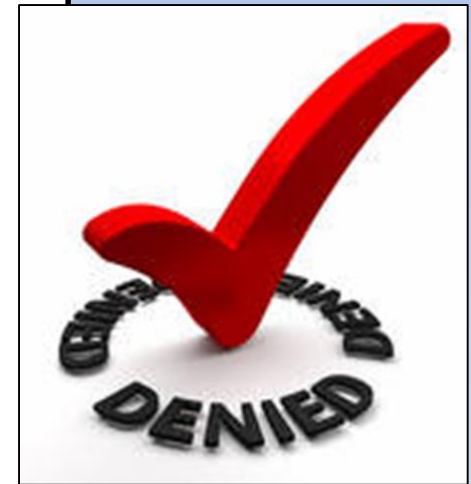


In KSA: <https://www.kacst.edu.sa/eng/IndustInnov/SPO/Pages/spo.aspx>);

With KSU : <http://iptl.ksu.edu.sa/en>

What Cannot be Patented

- An invention which is useless.
- An invention contradicting established natural laws (e.g., more than 100% performance)*
- Scientific principles, abstract theory, algorithms, or computer programs (outcomes of mental process only).
- Discovery of any living thing or non-living substance occurring in nature.



What Cannot be Patented Cont'd

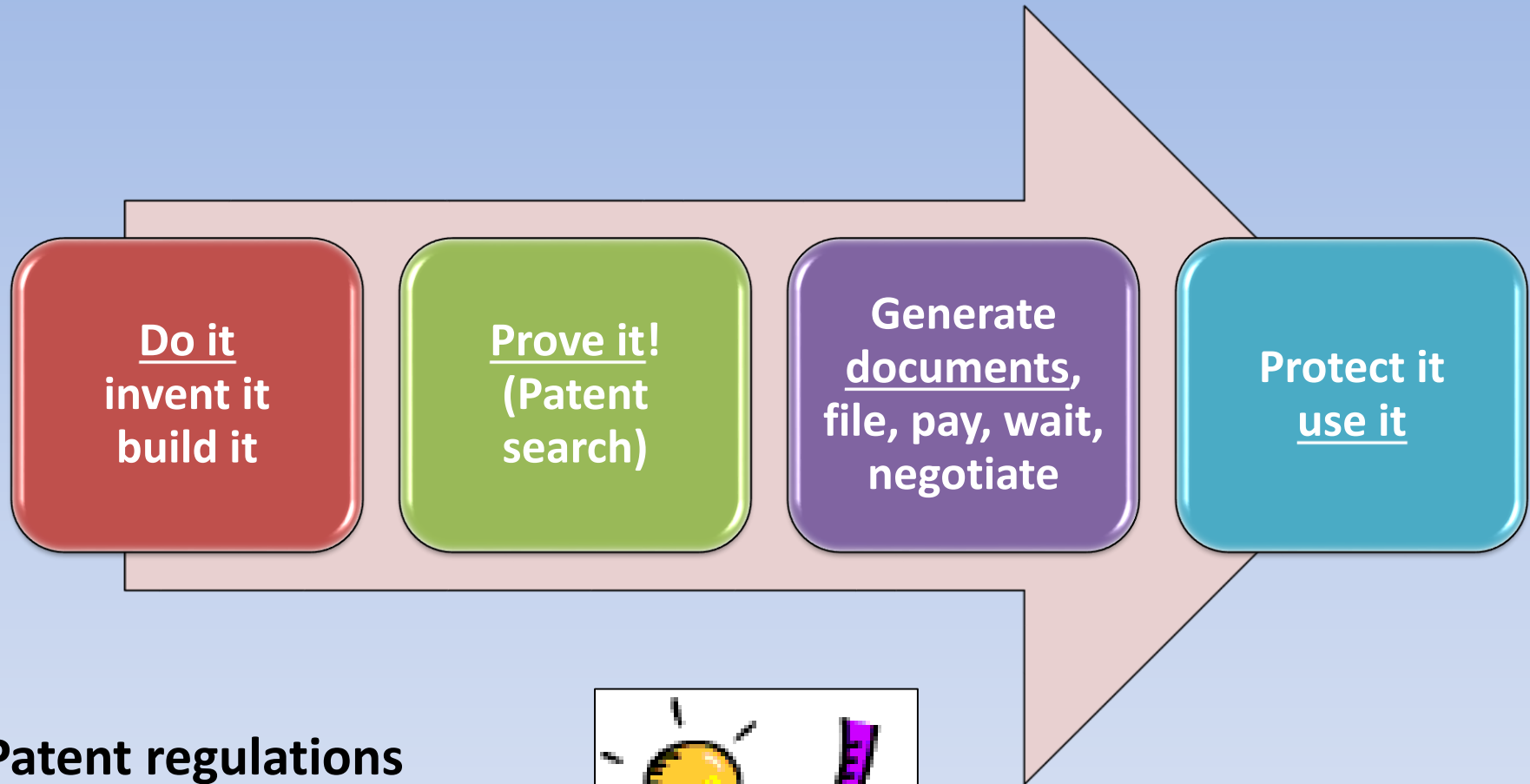
- An invention contrary to public order or morality or which causes risk to human, animal, or the environment

Examples:

- Gambling machine.
- Invention for breaking into homes.
- Biological warfare material.
- Terminator gene technology*



Filing a Patent



Patent regulations
**differs in different
countries of the
world.**



Filing an Application with a Patent Office

- The **inventor, or his nominee** files an application with the Patent Office.
- Must be accompanied by a **specification** which may be provisional or complete.
- If provisional the inventor has a **limited time** available to complete the development of his invention and so complete the specification.
- At this stage the Patent Office executes a search through previous patents to verify the novelty of the application. **Prior disclosure, even if not patented**, will be sufficient grounds for not confirming the application.
- The examination will also consider whether the application relates to a patentable invention and whether the claims are reasonable and acceptable.

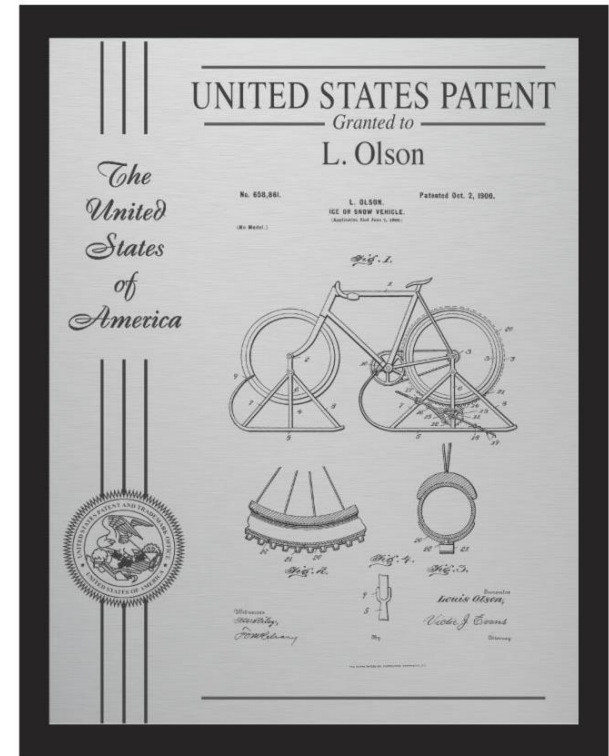
To Patent or not to Patent?

- **Patents offer IP protection through the legal system.**
- **Attorneys are needed to defend a patent.**
- **A large corporation can out-maneuver a small company and tie up decisions in legal action (court case) for many years.**
- **Patents may not be useful for product with short life less than time for granted patent.**

Contents of Patent Document

A patent document has the following sections included:

- Title
- Abstract
- Drawings
- Background of invention
- Summary of invention
- Description of drawings
- Claims



How to file a patent: <https://youtu.be/kmvAeCLOIHQ> (USPTO)

Why Patents are Denied

- **Insufficiency—the specification does not sufficiently describe the invention or the manner of its application.**
- **Non-disclosure of best method known to applicant of implementing the invention.**
- **Claim not fairly based on the matter disclosed in the specification.**
- **Ambiguity (vagueness) of claim.**
- **Inutility (uselessness) of application of invention.**
- **Prior grant of patent rights.**

Why Patents are Denied Cont'd

- **Lack of novelty-the invention is not new having regard to what was known or used before the date of lodging the claim.**
- **Obviousness-the specification does not involve any inventive step having regard to what was known or used.**
- **Applicant not entitled to apply —i.e. not the inventor or his nominee.**
- **False suggestion or representation.**
- **Use of invention would be illegal.**
- **Prior secret use of the invention.**

Copyright

- **Original Literary, Dramatic, Musical and Artistic Works (Work: ideas expressed in material form)**
 - **Cinematograph Films**
 - **Sound Recordings**
- No copyright on ideas or facts**



- **Duration of Copyright is lifetime of author + 60 years**

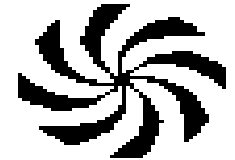
Requirements for Copyrights

- Have some originality
- Have some creativity
- Be an expression, not an idea or formula
- Be visibly indicated by:
“© date, name of owner”



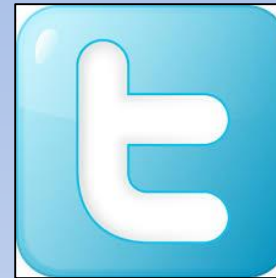
Trademark

- A name or symbol capable of being represented graphically, distinguishing the goods or services of one person or company from those of others.
- A Trademark can be:
 - Sign, words, letters, numbers
 - Drawings and pictures
 - Colors or combination of colors
 - Shape of goods
 - Graphic representation or packaging



Trademark Examples*

- Coca Cola (soft drink)
- Twix (Chocolate)
- Facebook (social media)
- Apple (computer)



What you need to know about Copyright, Patents, Trademarks and Open Source!

<https://youtu.be/61lgkb9BC54>

Registration of Trademark

- Trademarks are registered by national trademark registries and are valid in that country.
- Registration is made after examination and publication.
- Period of registration is for 10 years but can be renewed indefinitely.



Trade Secrets

- Some important information cannot be protected by any of the available means of IP; it is held confidential as a trade secret.
- A Trade secret can be an invention, idea, survey method, manufacturing process, experimental results, chemical formula, recipe, financial strategy, client database, etc.



Trade Secret

- Anything that gives an advantage and if “stolen” will immediately help the competition (example: Coca-Cola formula[®]).
- It involves non-disclosure agreements.
- Cannot prevent invention by others.
- Cannot prevent reverse engineering.



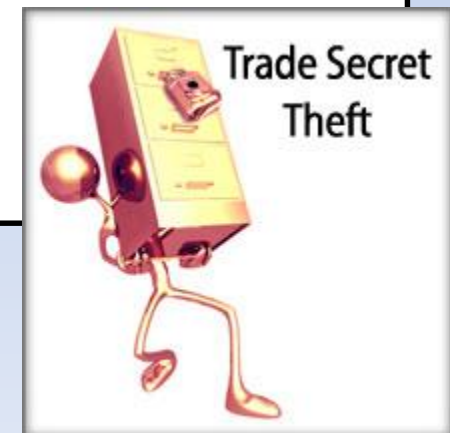
When are Trade Secrets preferred?

- When the invention is not patentable.
- Patent protection is limited to 20 years, while a secret can be kept beyond that period.
- When it is difficult to reverse engineer.



How to Guard a Trade Secret?

- Restricting number of people having access to secret information.
- Signing confidentiality agreements with business partners and employees.
- Using protective techniques like digital data security tools and restricting entry into area where trade secret is used or held.



Final Thoughts

- Intellectual property is to be respected.
- Violating the IP is punishable by very strict laws.
- KSU resources used inside/outside of classwork give KSU IP claim on an invention or discovery by staffs or students.
- KSU employees and students automatically (by default) agreed to KSU's IP policy by virtue of employment and enrollment in the University.

الملكية الفكرية وترخيص التقنية
Intellectual Property & Technology Licensing

<http://iptl.ksu.edu.sa/>



جامعة
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