Patent

- **Fundamentals**
- **Obtaining a Patent in India**
- **Technology Transfer**
- **Infringement of Patent**

Fundamentals

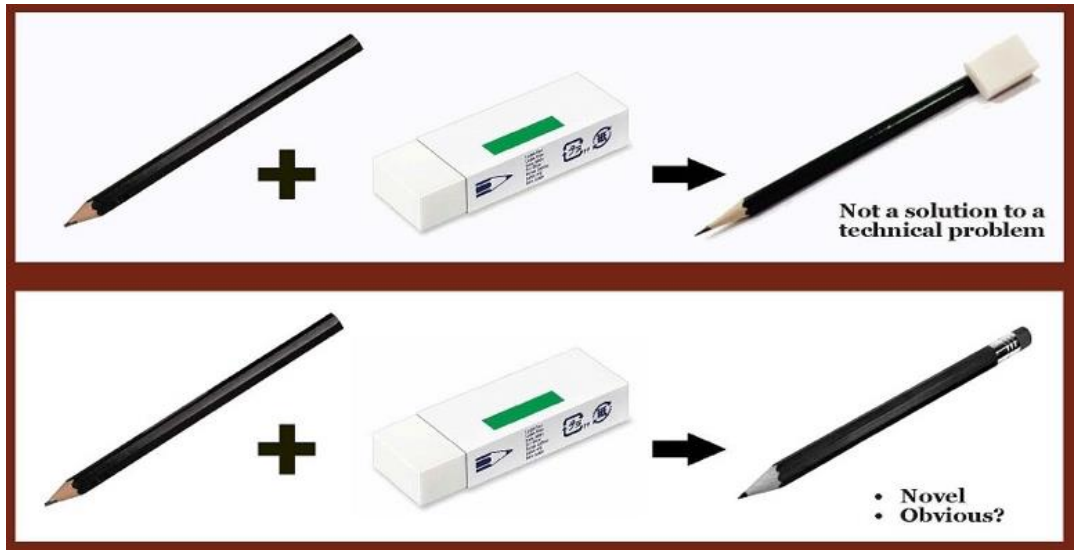
- **What is a Patent?**
- A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem.
- The **limited monopoly** right granted **by the state** enables an inventor to prohibit another person from manufacturing, using or selling the patented product or from using the patented process, without permission.
- Period of Patents - **20 Years**

Fundamentals

- **What Can Be Patented?**

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

  - Novelty
  - Non-obviousness (inventive step)
  - Industrial application (utility)



Fundamentals

- **Conditions of Patentability**
- **Novelty:** Invention not known to public prior to claim by inventor.
- **Inventive Step:** Invention would not be obvious to a person with ordinary skill in the art.
- **Industrial Application**: Invention can be made or used in any useful, practical activity as distinct from purely intellectual or aesthetic one

Fundamentals

- **Grant of Patent**
  - Patents are granted by national patent offices after publication and substantial examination of the applications
  - In India provisions exist for pre-grant and post grant opposition by others
  - They are valid within the territorial limits of the country
  - Foreigners can also apply for patents

Types of Patent

- Categorized mainly into three types:
  - **Utility Patents**
  - **Design Patents**
  - **Plant Patents**

Design

Protects the design or exterior look of an invention.

Utility

Protects inventions such as machines, processes, or systems.

Plant

Protects the invention of new plant variants.

Utility Patents

- Utility patents are granted for the invention of a new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof
  - **Example:**
  - **Smartphones:** A utility patent can be granted for the functional aspects of smartphones, such as their software, hardware, or unique methods of operation.

Example: Utility Patents (Sub-category)

- **Software Patents:** Software patents fall under utility patents and are granted for new and useful processes, including software or algorithms.
  - **Example**: Data Compression Algorithms: Innovative methods for compressing digital data can be patented as they are considered new processes.
- **Medical Patents:** Medical patents, a type of utility patent, are granted for new medical devices, procedures, or pharmaceuticals.
  - **Example**: Artificial Heart Valve: A newly designed heart valve that improves on existing designs could be patented for its utility in medical treatments.

Design Patent

- **Design Patents:** Design patents are granted for a new, original, and ornamental design for an article of manufacture.
  - **Example:** Furniture Design: A unique, ornamental design of a chair or table, which is not dictated by function, could be protected by a design patent.

Example: Design Patents (Sub-category)

- **Fashion Design Patents:** Protects the unique appearance and design of fashion items, including clothing, footwear, and accessories.
  - **Example**: A uniquely designed handbag or a distinctive pattern on a dress.
- **Jewelry Design Patents:** Covers the ornamental design of jewelry items, including rings, necklaces, and earrings.
  - **Example**: A uniquely crafted necklace pendant or a distinctive bracelet design.
- **Furniture Design Patents:** Protects the ornamental design of furniture pieces, including chairs, tables, and sofas.
  - **Example**: An innovative chair shape or a unique table leg design

Example: Design Patents (Sub-category)

- **Automotive Design Patents:** Covers the unique aesthetic features of automotive vehicles, including cars, motorcycles, and trucks.
  - **Example:** The distinct body shape of a sports car or a unique headlight design.
- **Consumer Electronics Design Patents:** Protects the ornamental design of consumer electronics, such as smartphones, laptops, and wearable devices.
  - **Example:** The distinctive layout of a smartphone's camera array or the unique form factor of a smartwatch.
- **Packaging Design Patents:** Involves the design of packaging, containers, and wrappers for various products.
  - **Example:** An innovative bottle shape for a beverage or a unique box design for electronics

Plant Patents

- **Plant Patents:** Plant patents are granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.
  - **Example: Hybrid Orchids:** If a botanist develops a new variety of orchid that is asexually reproduced (not from seeds), they could be granted a plant patent

Example: Plant Patents (Sub-category)

- It covers a wide array of plant types, from hybrids and genetically modified varieties to ornamental and agricultural plants, ensuring protection for innovators in the field of botany and agriculture.
- **Hybrid Plant Patents:** Patents granted for new, distinct hybrid plants that are asexually reproduced, combining traits from two or more different plant varieties.
  - **Example**: A hybrid orchid with unique color patterns developed from crossing different orchid species.
- **Genetically Modified (GM) Plant Patents:** Patents for plants that have been genetically engineered to exhibit specific traits, such as disease resistance or improved nutritional value.
  - **Example**: A genetically modified crop that is resistant to a certain pest or disease

Example: Plant Patents (Sub-category)

- **Ornamental Plant Patents:** Patents for plants primarily used for decorative purposes, such as for landscaping or indoor decoration.
  - **Example**: A new variety of decorative houseplant with unique leaf patterns or colors.
- **Fruit and Vegetable Plant Patents:** Patents for new varieties of fruit and vegetable plants that have been asexually reproduced.
  - **Example**: A new variety of apple with a unique flavor profile or a longer shelf life.
- **Medicinal Plant Patents:** Patents for plants with medicinal properties or plants that have been modified to enhance their medicinal benefits.
  - **Example**: A new plant variety with increased levels of a compound used in pharmaceuticals.

Condition for Patent

- **Novelty:** An invention must be new and not known to the public before the date of the patent application.
  - **Example:** If an inventor creates a new type of solar panel that is more efficient than any existing technology and has not been disclosed to the public before applying for a patent, this invention meets the novelty requirement.
- **Non-Obviousness (Inventive Step):** The invention must not be obvious to a person skilled in the relevant field. It requires an inventive step that is not a natural progression of existing knowledge.
  - **Example:** An electronic engineer develops a smartphone battery with triple the lifespan of current batteries. If this improvement is not an obvious development to other engineers in the field, it meets the non-obviousness condition

Condition for Patent

- **Utility (Industrial Applicability):** The invention must be useful and capable of industrial application. It should have a practical purpose and be operable.
  - **Example**: A new pharmaceutical drug that effectively treats a specific disease demonstrates utility as it provides a concrete and tangible benefit.
- **Subject Matter Eligibility:** The invention must be of a type that is eligible for patent protection. Not all types of creations can be patented (e.g., abstract ideas, natural phenomena).
  - **Example**: An innovative and unique piece of software that improves data encryption. Software can be patented if it offers a technical solution to a technical problem.

Condition for Patent

- **Enablement and Written Description:** The patent application must fully disclose the invention in a manner that allows a person skilled in the field to replicate it. This includes a detailed description of the invention and its operation.
  - **Example**: An inventor develops a new type of eco-friendly pesticide. The patent application must contain detailed instructions on the chemical composition of the pesticide and how it is used, so that another expert in the field could reproduce it

Patenting in India

- **Context**:
  - Governed by the Patents Act, 1970 and the Patents Rules, 2003.
  - Aligns with international standards, including TRIPS agreement.
- **Objective**: To encourage invention and innovation while protecting inventor's rights.
- **Salient Features**
  - Both product and process patent provided
  - Term of patent – 20 years
  - Examination on request
  - Both pre-grant and post-grant opposition
  - Provision for protection of bio-diversity and traditional knowledge

Patenting in India

- **What is an Invention?**

  “Invention” means a new product or process involving an inventive step and capable of industrial application
- **Patentable subject matter**
- **Invention must**
  - relates to a Process or Product or both
  - be new (Novel)
  - involves an inventive step
  - be capable of industrial application
  - not fall under Section 3 (what are not inventions) and 4 (Inventions relating to atomic energy)

“New” Means

Invention must not be

- Published in India or elsewhere
- In prior public knowledge or prior public use with in India
- Claimed before in any specification in India

Inventive step

A feature of an invention that

- involves technical advance as compared to the existing knowledge or
- have economic significance or both and
- makes the invention not obvious to a person skilled in the art

Industrial application means

- Invention is capable of being made or used in any kind of industry

Section 3 Exclusions

Section 3(a)

- Frivolous inventions
- Inventions contrary to well established natural laws

Examples:

- Machine that gives more than 100% performance
- Perpetual machine

Section 3(b)

- Commercial exploitation or primary use of inventions, which is
- Contrary to public order or morality

Examples:

- Gambling machine,
- Device for house-breaking

Section 3(b) Exclusions

Commercial exploitation or primary use of inventions , which public

Causes serious prejudice to health or human, animal, plant life or to environment

Examples:

- Biological warfare material or device, weapons of mass destruction
- Terminator gene technology,
- Embryonic stem cell

- **GMOs–** exploitation of which could be contrary public order or morality or prejudicial to human, animal or plant life or health or to the environment

Example: Only genetically modified micro-organisms (GMOs) which do not fall under section 3(b) are patentable.

Section 3(c) Exclusions

- Mere Discovery of a Scientific Principle or
- formulation of an Abstract Theory or
- discovery of any living thing or
- discovery of non–living substance occurring in nature

Examples

- Newton’s Laws
- Superconducting Phenomenon as such
- Property of certain material to withstand mechanical shock
- Discovery of micro-organism
- Discovery of natural gas or a mineral
- Naturally occurring Micro-organisms

Effect: Genetically modified microorganisms (GMOs) are however, patentable.

Section 3(d) Exclusions

- The mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance

Example: Salts, esters, ethers, polymorphs, metabolite, pure forms, particle size, isomers, complexes, combinations and derivatives of a known substance with enhanced efficacy are patentable

- Mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus, unless such known process results in a new product or employs at least one new reactant.

Example:

- New use of Aspirin for heart ailments,
- Mere new uses of Neem

Section 3(e) Exclusions

- Substance obtained by mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance

  Examples

  Combiflam [Paracetamol (Antipyretic) + Brufen (analgesic)]

  Solution of sugar and color additives in water to form a soft drink

  However, A mixture resulting into synergistic properties of mixture of ingredients however

- Substance obtained by mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance **are not patentable.**

Section 3(f) Exclusions

Mere arrangement or re-arrangement or duplication of known devices, each functioning independently of one another in a known way

Examples:

- A Bucket fitted with torch,
- An Umbrella with fan
- A Clock and radio in a single cabinet
- A flour-mill provided with sieving

Section 3(g) Exclusions

- A method of agriculture or horticulture: This clause essentially means that any process or method directly related to agriculture or horticulture cannot be patented in India.
    - **Example:**
    - **Public Access**: Agriculture is a fundamental activity upon which the entire population relies for food.
    - **Tradition and Innovation:** Many agricultural and horticultural methods are traditional knowledge passed down through generations. These methods are typically developed through collective innovation and are not the result of a single inventor's work.
    - **Broad Application:** Agricultural methods are often adapted to local conditions and are not necessarily novel or unique, making them difficult to justify as patentable inventions under the law.

Section 3(h) Exclusions

- Method of Agriculture or Horticulture

Examples

- Cultivation of algae
- Producing new form of a known plant,
- Preparation of an improved soil

However, Agricultural Equipment are patentable

Section 3(i) Exclusions

Any process for medicinal, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings or a similar treatment of animals to render them free of disease or to increase their economic value or that of their products.

Examples

- Removal of cancer tumor
- Removal of dental plaque and carries
- Surgical processes
- Processes relating to therapy
- Method of vaccination,
- Blood transfusion

However,

- Treatment performed on tissues or fluids permanently removed from the body
- Surgical, therapeutic or diagnostic Apparatus or instruments are patentable

Section 3(j) Exclusions

Plants & animals in whole or any part thereof ……other than micro- organisms, but including seeds, varieties and species and essentially biological process for production or propagation of plants & animals

Example:

- Plants & animals in whole
- Parts of plants & animals
- Seeds
- Varieties & species
- Essentially biological processes for propagation or production of the animals & plants
- Clones and new varieties of plants
- A process for production of plants or animals if it consists entirely of natural phenomena such as crossing or selection
- Essentially biological Process

Section 3(k) Exclusions

- mathematical method or
- business method or
- algorithms or
- computer programme

Examples

  - Computer program by itself or as a record on a carrier
- **However**
  - New calculating machine
  - combination of hardware and software

    is patentable

Section 3(l) and 3(m) Exclusions

Section 3(l): A literary, dramatic, musical or artistic work or any other aesthetic creation including cinematographic work and television productions **These subject-matters fall under the copyright protection**

Section 3(m): A mere scheme or rule or method of performing mental act or method of playing game

Examples

- Scheme for learning a language
- Method for solving a crossword puzzle,
- Method of learning a language
- Method of teaching /learning

However, Novel apparatus for playing game or carrying out a scheme is patentable

Section 3(n), 3(o) and 3(p) Exclusions

Section 3(o): Presentation of information

Examples: Any manner or method of expressing information whether by spoken words, visual display, symbols, diagrams, Information recorded on a carrier

Section 3 (o): Topography of integrated circuits.

Examples: Mask works - circuits layout

Section 3 (p): Inventions which are Traditional Knowledge or an aggregation or duplication of known properties of traditionally known component or components

Examples: Traditional Knowledge already in public domain, - Wound healing property of Haldi, **However,** Any value-addition using Traditional Knowledge leading to a new process or product ,which is novel with inventive step and industrial applicability, Extraction of Azadirachtin from Neem can be *patented*

Section 4 Exclusion

- Non Patentable inventions
- Inventions falling within Section 20(1) of the Atomic Energy Act, 1962 are not patentable
  - ***Example:*** Inventions relating to compounds of Uranium, Beryllium, Thorium, Plutonium, Radium, Graphite, Lithium and more as notified by Central Govt. from time to time**.**

Patent Filling Stages in India

- **Obtaining a patent**
  - File an application for patent
    - With one of the patent offices based on territorial jurisdiction of the place of office or residence of the applicant /agent
    - Pay the required fee
  - Information concerning application form and details of fee available at www.ipindia.nic.in
  - Guidelines for applicants also available on this website

Patent Filling Stages in India

- **Formality Check**
  - An Examiner checks the formal requirements before accepting the application and the fee
  - Issue of application number and the cash receipt
  - In case of receipt of application by post, cash receipt, application number is sent by post
- **Publication**
  - Application is kept secret for a period of 18 months from the date of filing
  - In 19^{th} month, the application is published in the official journal – this journal is made available on the website weekly
  - Applicant has an option to get his application published before 18 months also
  - In that case, application is published within one month of the request

Patent Filling Stages in India

- **Request for Examination**
  - Application is examined on request
  - Request for examination can be made either by applicant or a third party
- **Examination**
- Application is sent to an Examiner within 1 month from the date of request for examination
- Examiner undertakes examination w.r.t.
  - whether the claimed invention is not prohibited for grant of patent
  - whether the invention meets the criteria of patentability

Patent Filling Stages in India

- **Issue of FER**
  - A period of 1 to 3 months is available to Examiner to submit the report to the Controller
  - 1 month’s time available to Controller to vet the Examiner’s report
  - First Examination Report (FER) containing gist of the objections is issued within 6 months from the date of filing of request
- **Response from the Applicant**
  - 12 months’ time, from the date of issue of FER, is available to the applicant to meet the objections
  - If objections are met, grant of patent is approved by the Controller – within a period of 1 month

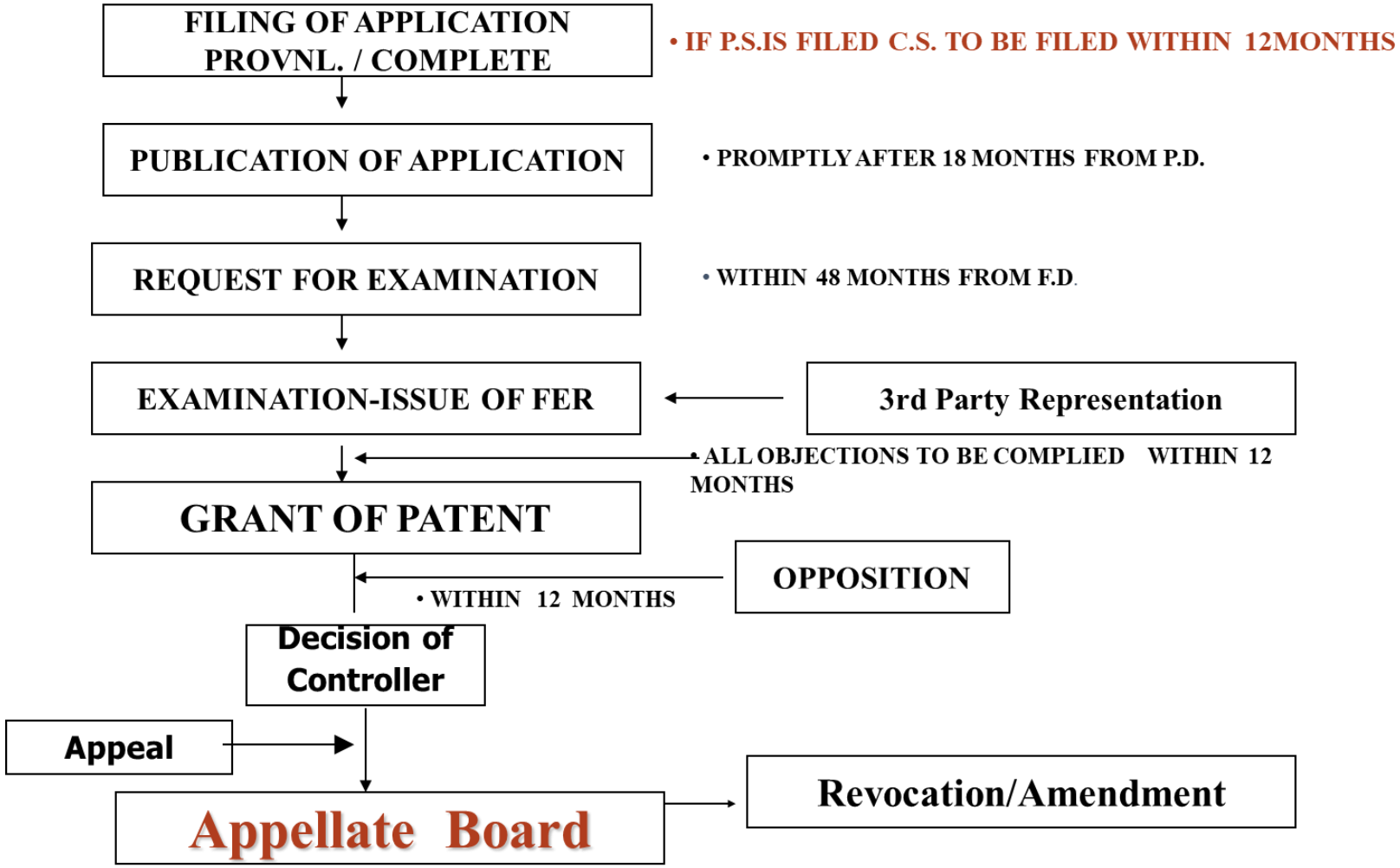
Patent Filling Stages in India

- **Pre-grant Opposition**
  - After publication, an opposition can be filed within a period of 6 months
  - Opportunity of hearing the opponent is also available
- **Examination of Pre-grant Opposition**
  - Opposition (documents) is sent to the applicant
  - A period of 3 months is allowed for receipt of response

Patent Filling Stages in India

- **Consideration of Pre-grant Opposition**
  - After examining the opposition and the submissions made during the hearing, Controller may
    - Either reject the opposition and grant the patent
    - Or accept the opposition and modify/reject the patent application
  - This is to be done within a period of 1 month from the date of completion of opposition proceedings
- **Grant of a Patent**
  - A certificate of patent is issued within 7 days
  - Grant of patent is published in the official journal

Patent Filling Stages in India



Technology Transfer

- **Definition:** Technology transfer is the process of sharing or disseminating technology and skills between entities, such as universities, businesses, governments, and other organizations.
- **Purpose:** To commercialize and apply scientific and technological developments for broader use and benefit.

Importance of Technology Transfer

- **Economic Development**:
  - Drives innovation, entrepreneurship, and economic growth.
- **Academic and Research Benefits**:
  - Transforms academic research into practical applications.
- **Societal Impact**:
  - Addresses societal needs by turning scientific discoveries into real-world solutions.

Models of Technology Transfer

- **Licensing Agreements**:
  - Intellectual property rights are licensed from a holder to another party.
- **Research Collaborations**:
  - Joint research projects between universities and industry.
- **Spin-offs and Startups**:
  - New companies formed to commercialize academic research findings.

Technology Transfer in Universities

- **Technology Transfer Offices (TTOs)**:
  - Specialized departments that facilitate the transfer of university technologies to the market.
- **Role of TTOs**:
  - Patenting, licensing, and supporting startups.

Steps in Technology Transfer Process

- **Identification and Disclosure**:
  - Recognizing and reporting a potentially marketable technology.
- **Evaluation and Protection**:
  - Assessing commercial potential and protecting intellectual property.
- **Marketing and Negotiation**:
  - Finding commercial partners and negotiating terms.
- **Commercialization**:
  - Developing and launching the product or technology in the market.

Challenges in Technology Transfer

- **Intellectual Property Issues**:
  - Navigating complex IP rights and agreements.
- **Cultural and Communication Barriers**:
  - Bridging the gap between academia and industry mindsets.
- **Funding and Resource Constraints**:
  - Securing sufficient investment for development and commercialization.

Patent Enforcement

- Patent enforcement involves legally upholding the rights of a patent holder to prevent unauthorized use, production, or sale of their patented invention.
- It ensures that inventors reap the benefits of their innovation and deters infringement of their intellectual property.
  - **Example:** Legal action taken by a pharmaceutical company against generic drug manufacturers for patent infringement.

Patent Enforcement

- **Detecting Patent Infringement:** Identifying unauthorized use or duplication of a patented invention.
  - Early detection prevents loss of revenue and market share for the patent holder.
  - **Example**: A tech company monitoring competitors for potential infringement of a patented smartphone feature.
- **Legal Actions for Patent Enforcement:** Involves filing a lawsuit in a federal court to obtain remedies for patent infringement.
  - Legal action deters infringement and compensates the patent holder for losses.
  - **Example**: A lawsuit resulting in an injunction against the sale of infringing products and monetary compensation.

Patent Enforcement

- **Injunctions in Patent Enforcement**: A court order preventing the infringer from continuing their infringing activities.
  - Prevents ongoing or future losses to the patent holder due to infringement.
  - **Example:** A court-ordered injunction stopping the production and sale of an infringing electronic device.
- **Damages and Compensation:** Financial compensation awarded to the patent holder for losses due to infringement.
  - Compensates the patent owner for lost profits and/or royalties due to infringement.
  - **Example:** A court ruling awarding millions in damages to a software company for unlicensed use of its patented technology.

Patent Enforcement

- **Settlement and Licensing Agreements:** Out-of-court agreements where the infringer agrees to compensate the patent holder, often through licensing.
  - Avoids lengthy litigation and provides a mutually beneficial solution.
  - An agreement where the infringer pays for a license to legally use the patented invention.
- **International Patent Enforcement:** Enforcing patent rights across different countries and jurisdictions.
  - Protects the global rights of patent holders, especially in a globalized market.
  - **Example**: Coordinated legal actions in multiple countries to protect a globally patented product or technology.

End of Lecture_04