INNOVATION AND INTELLECTUAL PROPERTY: EVALUATING PATENT INVALIDITY, INFRINGEMENT, FTO, LANDSCAPE, NOVELTY SEARCHING, AND IPR FOR ROBUST IP PROTECTION STRATEGIES

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By

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DECLARATION

We hereby declare that the work reported in the B.Tech Project Report entitled **"INNOVATION AND INTELLECTUAL PROPERTY: EVALUATING PATENT INVALIDITY, INFRINGEMENT, FTO, LANDSCAPE, NOVELTY SEARCHING, AND IPR FOR ROBUST IP PROTECTION STRATEGIES"** *submitted at* ***Jaypee University of Information Technology, Waknaghat, India*** *is an authentic record of our work carried out under the supervision of* ***Dr. Nishant Jain and Aastha Singhal.*** *We have not submitted this work elsewhere for any other degree or diploma.*

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This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

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It brings me great pleasure to present this project summary for the " Innovation And Intellectual Property: Evaluating Patent Invalidity, Infringement, Fto, Landscape, Novelty Searching, And Ipr For Robust Ip Protection Strategies " project. I want to express our gratitude to Dr. Nishant Jain and Aastha Singhal whose oversight and direction allowed us to work on this project. The Department of Electronics and Communication and JUIT and TT Consultants have to be commended for offering me this opportunity. Without the help and collaboration of my supervisors and the other group members, this project cannot be finished. Last but not least, I would like to thank our friends and respondents who assisted with this project directly or indirectly.

LIST OF ACRONYMS AND ABBREVIATIONS

IPR - Intellectual Property Rights

CMOs - Collective Management Organizations

TM - Trademark

GI - Geographical Indication

ICLD - Integrated Circuit Layout Design

ID - Industrial Design

USPTO - United States Patent and Trademark Office

EPO - European Patent Office

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ABSTRACT

Intellectual property (IP) encompasses original works and innovations created by individuals or organizations. It is a broad term that refers to various legal rights granted to the creators or owners of intellectual assets. These rights provide protection and control over the use and distribution of their creations. Legal systems around the world acknowledge and uphold intellectual property rights to encourage innovation, creativity, and economic growth. These rights enable creators to have exclusive control over their work, allowing them to reap the benefits of their efforts. Copyright is one form of intellectual property right that safeguards original artistic, literary, and creative works. It grants creators the exclusive rights to reproduce, distribute, and display their work. Trademarks protect distinctive signs, symbols, or logos that distinguish goods or services from others in the marketplace. They enable consumers to identify and associate specific brands with certain qualities or reputations. Patents provide inventors with exclusive rights to their inventions. They grant the inventor the right to prevent others from making, using, or selling their invention without permission for a specific period. Industrial design rights protect the visual appearance or aesthetic aspects of a product. They cover the unique design elements that make a product visually appealing or distinctive. Trade secrets refer to valuable business information, such as formulas, processes, or techniques, that are kept confidential to give a competitive advantage. Unauthorized disclosure or use of trade secrets is considered a violation of intellectual property rights. These various forms of intellectual property rights play a crucial role in fostering innovation, protecting creators' rights, and promoting fair competition in the global marketplace. They encourage inventors, artists, and entrepreneurs to invest their time, resources, and talents in developing new and valuable creations, knowing that their efforts will be safeguarded and rewarded.

CHAPTER-1 INTELLECTUAL PROPERTY

1.1 Introduction

Intellectual property (IP) refers to any original work or innovation that is deemed to belong to its author. Legal systems typically recognize and safeguard intellectual property rights, which grant owners certain exclusive privileges, including the ability to distribute their work in multiple markets, license the production and dissemination of their inventions, and pursue legal action against unlawful or fraudulent copying. Copyright, trademarks, patent, industrial design rights, and trade-secrets are among the most prevalent forms of IPRs.

1.2 Objectives of IPR

The majority of intellectual property laws, with the exception of trademark laws, have a common goal of fostering progress by granting creators limited exclusive rights in return for disclosing their inventions and creative works. This arrangement benefits both society and the owners of patents and copyrights, as it provides an incentive for inventors and authors to produce and share their work. By granting exclusive rights, intellectual property owners can derive financial benefits from their creations, which encourages investment in intellectual property and helps cover the expenses related to in the case of patents, innovation and research.

Benefits of IPR are:

- Encouraging innovation
- Sharing knowledge
- Protecting the creator
- Development of work
- Commercial benefits
- Allow public use of work

1.3 Types of Intellectual Property

Intellectual property encompasses two primary domains: industrial property, which primarily concerns the safeguarding of innovations, and copyright, which serves as a shield for literary and artistic creations. Industrial property encompasses a range of facets including patents, industrial designs, trademarks, service marks, integrated circuit layout designs, commercial appellations, geographical indications, and protection against unfair competition. On the other hand, copyright pertains to the realm of artistic endeavors such as books, music, paintings, sculptures, films, computer programs, and electronic databases. Across many European languages, copyright is often referred to as author's rights, underscoring the notion that authors wield exclusive rights over their works, encompassing the authority to forestall distorted reproductions. The term copyright specifically denotes the act of duplicating literary and artistic works, a task strictly contingent upon the author's consent. Conversely, additional rights, such as the right to duplicate, may be conferred upon third parties, including publishers who have acquired a license from the author.

1.4 Rights Related to Copyright

Copyright?

Upon the inception of a literary, melodious, scientific, or aesthetic endeavor by an individual, they ascend to the position of legitimate proprietorship over said creation, thereby wielding absolute dominion over its employment and disposition. This person, known as the "creator," "author," or "rights holder," possesses control over the fate of the work. Copyright law automatically protects

the work from the moment of its creation, without the need for any formalities like registration or deposit, ensuring its legal safeguard. It is of paramount significance to comprehend that copyright diligently safeguards the precise manifestation of a concept, rather than the concept per se.

Copyright grants legal protection to the rights holder of an original work. These rights encompass both economic and moral aspects. Economic entitlements encompass a myriad of privileges, including but not limited to the prerogative to replicate, transmit, publicly enact, customize, translate, declaim, exhibit, disseminate, and other such privileges. Conversely, moral entitlements, positioned at the antipodal end, act as a bulwark to shield the author's prerogative to register dissent against any alterations to their opus that might conceivably impugn their eminence or unadulterated essence.

The rights holder has the ability to exercise both sets of rights, allowing them to utilize the work themselves, authorize others to use it, or prohibit others from using it. In general, the usage of copyrighted works requires the authorization of the rights holder, although certain limited exceptions may exist under national copyright laws. The duration of protection typically extends throughout the lifespan of creator.

The Berne Convention for the Preservation of Literary and Artistic Creations, popularly referred to as the "Berne Convention," bestows global acknowledgment and safeguarding of both pecuniary and ethical entitlements. Having been initially instituted in 1886, this convention has undergone numerous revisions to remain attuned to the evolution of technology, and its governance is entrusted to the World Intellectual Property Organization (WIPO).

Examples of Copyright:

While it is not possible to provide an exhaustive list of copyrighted works, the following are some common examples:

- Literary works such as books, articles, and essays
- Audiovisual works like movies, TV shows, and plays
- Computer software and video games
- Musical works including songs, scores, and lyrics
- Visual arts such as photographs, paintings, and sculptures
- Graphic designs, illustrations, and cartoons
- Web content including websites, blogs, and online articles
- Educational materials like textbooks, lectures, and tests

Copyright safeguards a wide range of creative works.

Copyright protection extends to a wide range of original works, regardless of their artistic or literary value. The Berne Convention, says that the literarry and artiistic works" encompass creations in various domains. Illustrations of these safeguarded creations encompass tomes, treatises, manuscripts, orations, homilies, theatrical opuses, choreographed exhibitions, symphonic opuses, cinematic productions, illustrations, canvases, sculptures, etchings, photographs, cartographic depictions, blueprints, delineations, as well as tri-dimensional renderings pertaining to geographical, topographical, architectural, or scientific domains. Additionally, translations, adaptations, compilations, and sundry modifications of the primal oeuvres are duly encompassed within the protective ambit.

The dissemination of copyrighted works often requires substantial investment in distribution, communication, and financing to reach a broader audience. Creators possess the prerogative to vend the entitlements to their creative endeavors to individuals or corporate entities endowed with superior resources and acumen for the purpose of enhanced marketing endeavors. Such transactions involve the payment of royalties.

In accordance with the provisions stipulated by WIPO treaties, the temporal scope of economic entitlements commonly spans a period of 50 years subsequent to the demise of the progenitor, notwithstanding that domestic legislations may establish protracted temporal confines. This temporal expanse duly affords creators and their successors the opportunity to derive financial remuneration from their artistic endeavors for a commensurate interval. In tandem with economic entitlements, copyright protection encompasses moral prerogatives, encompassing the entitlement to be duly acknowledged as the progenitor of a work and the prerogative to register dissent against any alterations that might detrimentally impact the creator's reputation.

Creators or copyright owners have the authority to enforce their rights through administrative channels or legal proceedings. They may conduct inspections to gather evidence of illicitly produced goods related to their protected works and seek court orders to cease such activities. Furthermore, they are entitled to claim damages for any financial losses or reputational harm resulting from copyright infringement.

Protection of related rights

Copyright legislation confers entitlements upon authors, whereas "related rights," commonly acknowledged as "neighboring rights," pertain to diverse cohorts of rightsholders, including performers, phonogram producers, and broadcasting organizations. The ambit of related rights precisely alludes to the prerogatives upheld by performers, phonogram producers, and broadcasting organizations in connection with their respective enactments, phonograms, and broadcasts. Unlike copyright, related rights are vested in intermediaries engaged in the production, recording, or transmission of works. These intermediaries assume a pivotal role in facilitating authors' endeavors to render their creations accessible to the public. For instance, a musician executes a composition authored by a songwriter, an actor embodies a character in a theatrical piece scripted by a playwright, phonogram producers (or the recording industry) record and produce musical compositions conceived by authors and composers, performed by instrumentalists or vocalists, and broadcasting organizations disseminate works and phonograms via their channels.

Why there is a need for protecting copyright?

Copyright and its affiliated rights play a quintessential role in fostering the cultivation of human ingenuity by bestowing upon creators a plethora of incentives, encompassing recognition and equitable pecuniary recompense. This legal framework empowers creators to freely share their works without the risk of unauthorized utilization or piracy. Consequently, it facilitates global access, enjoyment, and dissemination of culture, knowledge, and entertainment.

Who owns copyright?

The creator who created the art is generally considered the copyright owner. However, when multiple people contribute to the creation of a work, they are considered joint authors and must jointly decide on how the work is used.

If the creator is an employee and created the work as part of their job, the employer is typically considered the copyright owner in many countries. In countries that do not follow this rule, the employer must have the permission of author to use his/her work.

Here are some additional details about copyright ownership:

- Copyright meticulously safeguards innovative compositions of authorship, spanning an extensive gamut of intellectual domains, encompassing literary, dramatic, melodic, and aesthetic opuses, such as novels, verses, theatrical productions, cinematographic masterpieces, melodic harmonies, computational algorithms, and architectural marvels.
- In the United States, the mantle of copyright protection is bestowed upon creative works in an innate fashion, obviating the necessity for registration or any other procedural undertaking to procure and fortify the shield of copyright.
- The fortification of copyright endureth for the duration of the author's mortal sojourn, yea, and for a further span of 70 years, commensurate with the ethereal existence and beyond.
- Copyright proprietors possess the unequivocal entitlement to exercise exclusive dominion over a panoply of privileges, encompassing the replication, dissemination, enactment, exhibition, and generation of derivative opuses arising from their copyrighted oeuvres.
- Copyright owners can grant licenses to others to use their copyrighted works.
- Copyright owners can sue infringers for copyright infringement.

How does a copyright owner benefit from his rights?

The copyright proprietors bear the distinctive prerogative to grant authorization for the utilization of their copyrighted creations. Ergo, any individual seeking to employ a copyrighted work, whether through replication, distribution, enactment, exhibition, or the genesis of a derivative opus, must, in the first instance, procure the assent of the copyright owner, hitherto ensuring compliance with the prescribed protocols and safeguarding against any potential infringements.

Copyright owners possess the capacity to bestow consent for the utilization of their copyrighted works through a diverse array of modalities. They may engage in the establishment of a written covenant with a counterpart, such as a publishing establishment, phonographic enterprise, or broadcasting entity, thus conferring upon the said entity the entitlement to employ the copyrighted work. Additionally, permission can be granted orally or via the issuance of a license, thus effectuating a legitimate channel for the utilization of the copyrighted creation.

Copyright licenses manifest in two distinct forms: exclusivity and non-exclusivity. An exclusive license bestows upon the licensee the solitary prerogative to employ the copyrighted work, thereby precluding all others from partaking in its utilization. Conversely, a non-exclusive license endows the copyright owner with the latitude to bestow consent to multiple parties for the utilization of the copyrighted work, thereby accommodating the permissibility for its exploitation by diverse entities.

The terms of a copyright license can vary depending on the specific circumstances. However, typically, a copyright license will specify the following:

- The identity of the copyright owner and the licensee.
- The scope of the license, such as the specific rights that are being granted.
- The duration of the license.
- The royalty rate, if any.
- The territory in which the license is valid.
- The termination provisions.

Copyright owners possess the capacity to effectuate the transfer of their copyrights to an alternate party through the process of assignment. An assignment serves as a comprehensive conveyance, transferring the entirety of the copyright owner's entitlements pertaining to the copyrighted work to the assignee. The act of copyright assignment can be executed through either written instruments or verbal agreements.

In certain jurisdictions, the contours of copyright legislation delineate a legal framework wherein the employer assumes proprietorship over the copyright to works engendered by employees within the compass of their vocational obligations. Within the confines of these jurisdictions, the employee, by virtue of their employment, is precluded from asserting any remuneration claims for the utilization of their creative output beyond the parameters of their stipulated salary.

Do you need to register to be protected?

Copyright protection does not require any official procedures to be established. Once a work is created, it is automatically protected by copyright.

The Berne Convention for the Preservation of Literary and Artistic Creations represents a globally recognized treaty that erects a foundational framework enshrining rudimentary benchmarks for the preservation of copyright. Central to the tenets of the Berne Convention is the unequivocal proclamation that literary and artistic creations obtain inherent protection within nations that have acceded to the Convention, unencumbered by the exigency of formalistic requirements. Consequently, the World Intellectual Property Organization (WIPO) does not proffer any dedicated copyright registration apparatus.

However, it is worth noting that certain nations maintain their independent national copyright offices, wherein indigenous legislative provisions enable the registration of creative works.

Registration can be useful for a variety of reasons, such as:

- To establish a public record of the copyright owner's claim to ownership.
- To provide evidence of copyright ownership in case of a copyright dispute.
- To obtain certain benefits, such as tax breaks or government grants.

Within select legal domains, the act of registration may also assume the role of prima facie substantiation in a court of law, particularly in matters entangled in the labyrinthine realm of copyright disputes. This means that registration can be used as evidence of copyright ownership, even if there is no other evidence to support the claim.

Copyright registration is not neede for copyright protection. However, registration can be a useful tool for protecting your copyright and for obtaining certain benefits.

The realm of collective administration pertaining to copyright and its affiliated rights

The proprietors of copyright possess the inherent prerogative to exercise exclusive dominion over the authorization of utilization pertaining to their safeguarded intellectual creations. This means that they can decide who can use their works and how they can be used.

Copyright owners can alllow to use their copyrighted works in a variety of ways. They can enter into a written contract with another party, such as a publishing house, record company, or broadcasting station, to grant the other party the right. They can also grant permission orally or through the use of document.

Copyright licenses can manifest in either the form of exclusivity or non-exclusivity. An exclusive license confers upon the licensee the solitary entitlement to exercise the exclusive prerogative of employing the copyrighted work. Conversely, a non-exclusive license empowers the copyright proprietor to bestow authorization upon multiple parties, thereby affording them the latitude to utilize the copyrighted work in consonance with the permissions granted. The terms of a copyright license can vary depending on the specific circumstances. However, typically, a copyright license will specify the following:

- The identity of the copyright owner and the licensee.
- The scope of the license, such as the specific rights that are being granted.
- The duration of the license.
- The royalty rate, if any.
- The territory in which the license is valid.
- The termination provisions.

Copyright owners can also assign their copyrights to another party. An assignment transfers all of rights to the assignee. Copyright assignments can be made in writing or orally.

In some countries, copyright law provides that The legal construct postulates that the employer inherits proprietary rights over works engendered by employees in the course of their occupational duties, thereby entitling the employer to assert copyright ownership over said creations. In such countries, the employee is not entitled to any compensation for their work beyond their salary.

Collective management organizations (CMOs) are organizations that help copyright owners to manage their copyrights. Collective management organizations (CMOs), by and large, undertake the onus of procuring pecuniary remuneration from entities utilizing copyrighted works, subsequently disbursing these accrued royalties to the rightful copyright proprietors. CMOs can be useful for copyright owners because they can help to simplify the process of managing copyrights. CMOs can also help to ensure that copyright owners are fairly compensated for the use of their works.

Here are some examples of how CMOs can help copyright owners:

- CMOs can help to track the use of an owner's works. This can be helpful for copyright owners who want to know how their works are being used and who is using them.
- CMOs can help copyright owners to negotiate licenses with users of their works. CMOs can help to simplify the process and ensure that copyright owners get a fair deal.
- CMOs can collect royalties from users of copyrighted works. It is a difficult process, and CMOs can help to simplify the process and ensure that copyright owners get paid.
- CMOs can distribute royalties to copyright owners. CMOs can help to simplify the process and ensure that copyright owners get paid accurately and on time.

CMOs can be a valuable resource for copyright owners. If you are a copyright owner, you may want to consider using a CMO to help you manage your copyrights.

What can a right owner do when his rights are infringed?

An owner whose moral or economic right has been infringed can undertake several actions. Firstly, they can use the civil remedies available under their national law to halt the illegal activity and obtain compensation for any harm suffered. The infringer may be forced by court to stop their illegal activities. If the infringement has resulted in financial loss for the owner, they can seek damages from the court, including punitive or exemplary damages.

Many countries also have penal remedies for specific instances of infringement, such as the large-scale piracy of protected works for profit. These remedies may include criminal charges and penalties.

1.5 Trademark

What is Trademark?

A trademark constitutes a discernible emblem or representation harnessed by an individual, commercial enterprise, or legal entity to demarcate their merchandise or services as distinct from those provided by others. It affords consumers the capacity to identify and discern that the goods or services associated with the trademark emanate from a singular and unparalleled origin.

Trademarks may be depicted through a variety of symbols, including:

- TM, signifying an unregistered trademark affixed to goods for branding purposes
- SM, signifying an unregistered service mark utilized to identify and promote services
- ®, denoting a registered trademark that has been officially recognized and recorded

A trademark, in its customary manifestation, primarily encompasses a nomenclature, lexeme, idiomatic expression, logogram, emblem, iconography, figuration, or an amalgamation of these constituents. However, it is pertinent to acknowledge the existence of non-traditional trademarks, which transcend the confines of conventional parameters and encompass unconventional attributes such as chromatic hues, olfactory sensations, or auditory frequencies, thereby eluding classification within the customary taxonomies. Trademarks are important for businesses because they can help to:

- Build loyalty
- Prevent using of same logos and signs by other competititons.
- Protect consumers from being misled about the source of goods or services

- Enforc their rights in court if someone infringes their trademark

If you are considering using a trademark, it is important to do your research to make sure that the mark is available and that it is not likely to be confused with other marks. You should also consider registering your trademark with the appropriate government agency.

Here are some tips for choosing a good trademark:

- Make sure the mark is distinctive.
- Make sure the mark is not too similar to other marks that are already in use.
- Make sure the mark is easy to remember and pronounce.
- Make sure the mark is relevant to the goods or services you are offering.

If you are considering registering a trademark, you should contact a trademark attorney to discuss your options.

How to register a trademark?

In the pursuit of trademark registration, it is incumbent upon the interested party to duly file an application with the pertinent national or regional entity entrusted with the administration of trademarks. This application necessitates the inclusion of an explicit depiction of the intended sign, showcasing its chromatic attributes, morphological configuration, or three-dimensional qualities, if applicable. Furthermore, an exhaustive enumeration of the goods or services with which the sign shall be conjoined must be meticulously furnished alongside the application.

To be called a TM, the sign must meet specific criteria. It should be distinctive and easily recognizable by consumers as representing a specific product or service, while also setting it apart from other trademarks that represent different products or services. Importantly, it should not deceive or mislead customers or violate moral standards.

Moreover, proposed trademark must not be identical. The national office conducts an investigation to verify this, and it is also possible for third parties with similar or identical rights to raise objections or contest the application.

How considerable is protection of trademark?

Trademark registration and protection are widely practiced globally, with national or regional offices maintaining Registers of Trademarks. These registers contain comprehensive information on all registered trademarks and renewals, allowing for third-party examination, search, and opposition. However, it's important to note that trademark registration provides protection only within the specific country or region where it is granted.

In order to rationalize and obviate the exigency for discrete registrations within each individual country or region, the World Intellectual Property Organization (WIPO) orchestrates a comprehensive international registration mechanism that encompasses trademarks. This mechanism operates harmoniously under the aegis of two pivotal treaties: the Madrid Agreement Concerning the International Registration of Marks and the Madrid Protocol. Those individuals who maintain a tangible nexus (be it through nationality, domicile, or establishment) with a nation party to either or both of these treaties can successfully procure an international registration. This internationally recognized registration can exert its efficacy across a subset or the entirety of other member countries within the Madrid Union, contingent upon their existing registration or application with the relevant national trademark office of the associated country.

1.6 Geographical Indication

What is GI?
It refers to a distinctive sign or name that is utilized on products originating from a specific geographical region, possessing exceptional characteristics and reputation associated with that area. Typically, the name of the place where the product originates serves as the geographical indication. Agricultural products, for instance, are influenced by unique local factors like soil and climate, which contribute to their distinct qualities. The recognition is determined by the laws of each country.

Geographical indications are capable of being affixed to an expansive array of commodities, spanning from agricultural and natural produce to manufactured articles. It is imperative to underscore that geographical indications transcend the realm of agricultural goods and permeate into the domain of merchandise that harbors distinct manufacturing dexterity and time-honored practices inseparable from their geographical provenance. This provenance may encompass a microcosmic settlement, municipality, region, or even an entire nation. By way of illustration, the appellation "Bohemia" attains recognition as a veritable geographical indication across various nations, specifically designated for exclusive products, such as exquisitely crafted crystalware, which emanates from the Czech Republic.

What is the purpose GI?
It is a designation that identifies the specific place or region from which a product originates and is closely linked to the distinct qualities or characteristics of that product. The reputation and unique attributes of the product are directly shaped by the particular place where it is produced, establishing a strong association between the product and its geographical origin.

Why protect GI?
It serve as important cues for consumers. However, when these indications are not adequately protected, they become susceptible to misuse by unscrupulous businesses. Such fraudulent exploitation of geographical indications by unauthorized parties has negative consequences for both consumers and genuine producers. Consumers are deceived into purchasing products that they believe possess specific qualities and characteristics, only to receive counterfeit or inferior substitutes. Legitimate producers face financial hardships due to revenue losses, and the reputation of their products can be severely damaged.

What is a "generic" GI?
When a geographical term is employed as a generic name for a specific type of product instead of denoting its origin, it ceases to function as a geographical indication. In such instances, the country concerned may refuse to acknowledge or protect the term as a geographical indication. For example, the term "cologne" is now commonly used to describe a particular kind of scented toiletry, irrespective of its actual place of production, such as the city of Cologne.

The Basmati Case

Basmati rice, a distinct aromatic long-grain variety serving as a vital export crop and livelihood for numerous farmers. However, the term "Basmati" has been embroiled in a legal dispute since 1997 when RiceTec Inc, a US rice breeding firm, was granted a patent claiming exclusive rights over various rice lines, including those resembling Basmati. This patent raised concerns about its potential impact on Basmati exports, prompting India to request a re-evaluation in 2000.

In select jurisdictions, the term "Basmati" assumes exclusive connotation, reserving its usage solely for designating the long-grain aromatic rice cultivated in India and Pakistan. Nevertheless, disparate

perspectives emerge, as exemplified by the United States, wherein "Basmati" is construed as a generic expression encompassing any aromatic rice variety. The year 1998 witnessed the US Rice Federation postulating the generic nature of "Basmati," thereby instigating a collective endeavor by a consortium of civil society organizations hailing from both the United States and India. This collaborative initiative entailed the submission of a petition aimed at precluding the deployment of "Basmati" to endorse American-grown rice. However, the petition faced dismissal by the US Department of Agriculture and the US Federal Trade Commission, who ascribed generic status to "Basmati" and deemed its utilization in labeling domestically grown rice devoid of any misleading implications.

This issue extends beyond the US to countries such as Australia, Egypt, Thailand, and France, where Basmati-type rice is cultivated. These countries may also consider "Basmati" as a generic term. To safeguard the name "Basmati," India and Pakistan have the option to register it as a Geographical Indication. However, they may need to address why no action was taken earlier to contest the gradual transformation of "Basmati" into a generic term over the past two decades, including when the US Federal Trade Commission officially declared it as such without any formal objections from India.

1.7 Trade secret

What is Trad-secret?
A trade secret, in its quintessence, denotes clandestine and invaluable intelligence or erudition which bestows upon an enterprise a paramount competitive edge and an economic ascendancy vis-à-vis its rivals and clientele. Such sagacious acumen may encompass intricate formulas, methodologies, blueprints, contrivances, prototypes, or collations of data that remain cloaked in obscurity and elude facile accessibility. While the specifics of protected information may vary across jurisdictions, three fundamental factors define a trade secret:
- It is not publicly known.
- It provides a competitive or economic advantage to the holder.
- Reasonable efforts have been taken to maintain its secrecy.

Notable examples of trade secrets include the formula for Coca-Cola, the undisclosed ingredient "Merchandise 7X," and KFC's guarded the 11 herbs blend of spices used in their chicken. Measures to protect these secrets may include restrictions on executives' interactions or isolation, as well as storing the information in locked file cabinets within heavily secured vaults.

Small or medium-sized enterprises (SMEs) may develop cost-effective manufacturing processes for their products, providing them with a competitive advantage. Such processes would be considered trade secrets, and the SMEs would take steps to preserve their confidentiality. These measures might involve limiting the number of individuals aware of the secret, ensuring their understanding of its confidential nature, and having confidentiality agreements with third parties or licensees. Any unauthorized appropriation of the information by competitors or third parties would be bad.

Trade secrets fall into two categories. The first category comprises inventions or manufacturing processes that do not meet the criteria for patentability and can only be protected as trade secrets. Examples include customer lists or manufacturing processes lacking the required level of inventiveness for a patent. The second category encompasses inventions that meet the criteria for

patentability and could be protected by a patent. In such cases, the SME must decide between patenting the invention or maintaining it as a trade secret.

1.8 Patent

What is Patent?
It is a legal protection for inventors, giving them ownership to their new and useful inventions for some time, typically around 20 years. In exchange for this exclusive right, inventors must disclose their invention to the public. To get a patent, an invention must meet specific criteria, including being practical, novel, non-obvious, and meeting the legal requirements for patentability.

Patent owners have the authority to control who can use their invention during the patent term. This control can involve granting licenses to others or selling the patent to a different owner. Upon the culmination of the patent term, the invention undergoes a transmutation, merging seamlessly into the expansive expanse of the public domain, thereby conferring unrestricted utilization upon all individuals in pursuit of commercial objectives, devoid of any encumbrances.

However, there are certain limitations to what can be patented. Scientific hypotheses, mathematical algorithms, botanical or zoological cultivars, revelations concerning inherent natural substances, operational strategies in the commercial realm, and methodologies pertaining to medical treatments (distinct from medicinal commodities) generally find themselves excluded from the realm of patent eligibility. Securing a patent necessitates the presentation of an elaborate exposé elucidating the intricacies of the invention, accompanied by an irrefutable demonstration of its unprecedented character, utility, and the non-triviality thereof, as perceived by an individual possessing average acumen within the pertinent technical domain.

1.9 Integrated Circuit Layout Design Protection

What is ICLD protection?
These designs are the result of substantial investments in time and resources, involving experts who aim to make integrated circuits smaller and more functional. Integrated circuits are essential components found in various products, ranging from everyday items to complex data processing equipment.

The risk of copying integrated circuits by reproducing their layout designs through photographing each layer and creating masks prompted the introduction of legislation to protect these designs. In the US, a mask work is the layout of an integrated circuit, which consists of semiconductor devices and electronic components. The term "mask work" originates from the photolithographic process that uses masks, known as photomasks, to control light exposure for multiple chips on a wafer simultaneously.

1.10 Industrial Design

What is ID?
The term at hand delineates the ethereal and embellishing attributes adorning a commodity, encompassing a myriad of facets in both two- and three-dimensional manifestations, such as intricate motifs, intricate delineations, resplendent hues, as well as the sculptural contour and tactile texture of the objet d'art. These captivating patterns find application in a diverse array of artifacts,

spanning opulent artifacts, domestic apparatus, automotive marvels, and a pantheon of other spheres.

An industrial design must be original or new to be eligible for legal protection under the majority of national laws, with the degree of originality assessed in relation to pre-existing design works.

An intellectual property right known as an industrial design right protects the aesthetic appeal of non-utilitarian goods. The intricate arrangement, configuration, configuration, or amalgamation of motifs, contours, framework, or chromatic palette that exhibits profound aesthetic merit and allure. and is used to create a product or industrial commodity might be included. It can also be a two- or three-dimensional pattern.

Why protect industrial designs?

Industrial designs are essential for raising the appeal and beauty of items, which raises their marketability and monetary value. Such designs should be protected to ensure a reasonable return on investment for both manufacturers and consumers. In addition, a strong system of protection encourages honest business practises and fair competition, both of which are advantageous to the general populace.

By encouraging creativity in the manufacturing and industrial sectors, industrial design protection also aids in economic growth. This in turn encourages the growth of commercial activity and the promotion of domestic export goods.

How to protect ID?

It must be registered in the majority of nations. The criteria for what constitutes "new" or "original" varies across nations, and the registration process itself varies accordingly. A design must typically be substantially different from any known prior designs in order to be labelled "new." The protection of a design after registration typically lasts for five years, with the potential for extensions of up to 15 years.

Industrial design legislation and copyright law both have the potential to preserve specific industrial designs as works of art. Industrial design and copyright protection are mutually exclusive in some nations, but not in others.

An industrial design may occasionally be protected by the law against unfair competition. However, the terms of protection as well as the available rights and remedies may be very different from those offered by copyright and industrial design legislation.

CHAPTER-2 PATENTS

2.1 Introduction

A patent is a legal prerogative bestowed exclusively upon the progenitor of an original, utilitarian, and non-obvious procedure, contrivance, manufactured article, or compositional amalgamation, or any novel and practical advancement thereof. By means of the submission of a formal patent application, this entitlement is asserted.

The term "utility patent" is utilized in the United States to differentiate it from other types of patents, such as design patents. It is imperative to bear in mind that this distinction exists in contrast to utility models provided by other nations. Illustrative instances of various types of patents encompassing inventions encompass software, chemical, business methodology, and biological patents.

However, certain entities, such as recently discovered minerals or natural plants, laws of nature or physical phenomena, and abstract concepts, do not qualify for patent protection.

2.2 Pros and Cons of Patents

Pros:

1. The power to stop competitors from entering the market is the main advantage of getting a patent. The owner has the legal authority to bar anyone from creating, using, selling an invention. In essence, the patent gives the innovator a legally recognised monopoly as payment for sharing their concept to the world.

The purpose of patents is to encourage innovation in society by rewarding people and businesses who develop fresh and practical goods or procedures. After the patent expires, the technology is openly available to the public. The capacity to exclude rivals can vary depending on the market and industry.

2. Even if they acquire a patent, an inventor might not always be permitted to use their own invention because it might violate another person's patent even though it qualifies for patent protection. Nevertheless, securing a patent can still be advantageous since it might limit the competitor's capacity to put unforeseeable ideas into practise.

Take Company A, for instance, which has a patent on all jar designs. Unexpectedly, Company B learns that giving the jar's lid a grip might make it simpler for persons with weak hands to open. Company B would still be unable to manufacture the invention even after applying for a patwnt and receiving it for a jar with a clamped lid since C1 has the legal authority to forbid manufacturing a jar with a gripping lid is C1. After then, C2 can use this as a bargaining chip to get Company A to grant it a licence.

In a different situation, C1's patent might become invalid in five years and open the door for C2 to start producing jars with gripping lids. Even though C2 might not be able to use its invention for a while, it could still gain a lot of money while the patent is still valid.

3. Licencing the technology to third parties is one approach to get revenue from patents. The licensee often pays an upfront licence fee as well as a royalty, which is typically 5% or less of the overall cost but may differ based on the terms of the licensee-licensor agreement. The royalties can occasionally even be higher than the initial cost.

As an alternative to licencing, the patent might be auctioned. Since no one can anticipate the future and the patented technology could become outdated or less profitable in a few years owing to numerous factors like a recession, this alternative should be taken into account. The monetary remunerations known as royalties are ordinarily distinct from the transactional price upon the sale of a patent, thereby enabling the patent proprietor to procure a greater sum of immediate pecuniary resources but potentially diminishing the long-term inflows.
It is of utmost significance to bear in mind that patents constitute intangible assets, and the overall worth of a company incorporates the inherent worth of said patents. The valuation of a patent assumes a pivotal role in the context of business transactions, such as sales or mergers, and can potentially exert an influence on the valuation of shares.

4. Despite the existence of alternative avenues for safeguarding an invention within the bounds of legality, the pursuit of a patent application often emerges as the most judicious course of action. Publicly divulging the technological innovation in question may indeed impede others from securing patents pertaining to the same notion, but if the enterprise heavily relies on said notion, the protective shield of a patent would engender greater security. The patent office, when cognizant of non-patent publications, tends to disapprove subsequent patent applications encompassing identical subject matter. However, should the examiner remain unaware of the publication, the patent may still be granted, albeit susceptible to potential invalidation if the non-patent publication unveils the same invention as that protected by the granted patent. In such instances, the establishment of the patent's invalidity necessitates litigation, an undertaking that can prove more financially burdensome than the act of filing for a patent. Moreover, non-patent publications may lack unequivocal display of the date of publication, a factor that could undermine the veracity of the claim's validity.

5. The fact that a product is patented doesn't necessarily make it superior to other products, but it can give the salesperson an advantageHave you ever listened to a sales pitch or an advertisement endorsing a "proprietary" product?

6. It is common for individuals to market themselves in some way, and having a patent can be impressive to potential employers. For engineers, a patent can serve as a tool to market their skills and expertise.

Cons:
1. The process of obtaining a patent can be financially demanding, but for a valuable concept, it may warrant the expenditure. According to the Fee Schedule provided on the official website of the U.S. Patent Office in MMVI, the filing fees for a patent application amount to $D for small businesses or independent inventors (small entities) and $M for large enterprises (large entities). Once the patent application receives approval, an additional issue fee of $G for small entities and $N for large entities is imposed by the patent office. To uphold the validity of a patent throughout its lifespan, the patent holder must fulfill maintenance fees before the 4th, 8th, and 12th years following the patent's issuance. The fees for small entities are comparatively lower than those for large entities. Specifically, the fee for small entities prior to the 4th year is $H, before the 8th year is $L, and before the 12th year is $S. These fees represent the minimum essential payments for obtaining and sustaining a patent. Failure to submit any of these fees will result in the rejection of the patent application or the expiration of the granted patent. Additionally, supplementary fees may be levied during the application process, depending on the magnitude of the patent application and potential delays in communications with the patent office.

2. Owning a patent can be associated with legal challenges, including potential lawsuits from competitors trying to invalidate the patent. The onus of enforcing patent rights lies with the

proprietor of the patent. As the rightful owner, it is incumbent upon them to actively safeguard and assert their patent rights, taking appropriate legal measures to prevent unauthorized use, infringement, or misappropriation of their patented invention. This entails vigilantly monitoring the market, identifying potential infringements, and pursuing legal actions, such as filing infringement lawsuits or initiating negotiations for licensing agreements. The enforcement of patent rights requires a comprehensive understanding of intellectual property laws, intricate legal procedures, and effective litigation strategies. It is an arduous and multifaceted undertaking that necessitates the engagement of qualified legal professionals to navigate the complexities of the legal landscape and secure the rights and exclusivity granted by the patent. their patents, which can be costly. Despite the patent office's best efforts to avoid it, there's always a possibility that an invalid patent may be granted. If this happens, the patent owner may face legal action for having an unlawful monopoly. It is advisable to consult a patent attorney to explore any potential liabilities that may arise from owning a patent.

2.3 Types of Patent

2.3.1 Utility Patent

If an individual has conceived something that possesses novelty, utility, and non-obviousness within the realm of their respective field, they may find themselves eligible to seek the coveted protection of a utility patent. Utility patents, a classification that encompasses five distinct categories, namely process, machine, manufacture, composition of matter, and improvement of an existing concept, serve as a means to safeguard inventive endeavors. It is worth noting that certain inventions may fall within multiple categories, thereby exhibiting versatility and complexity. For example, computer software can be aptly characterized as both a process and a machine. Nevertheless, it is imperative to recognize that irrespective of the number of categories an invention encompasses, only a solitary utility patent can be bestowed upon it. The range of creative works that may qualify for a utility patent is extensive, encompassing a diverse array of fields, including but not limited to biological innovations, chemical formulas and processes, computer hardware and software, cosmetics, electrical and electronic creations, gastronomic advancements, household commodities, intricate machinery, and even the mystical realm of illusion. Securing a utility patent not only confers exclusive rights upon the inventor, but also bestows upon them the authority to prevent others from engaging in the manufacturing, utilization, sale, or importation of the patented invention. It is crucial to bear in mind that the duration of a utility patent spans a period of 20 years, commencing from the date of the initial patent application filing, thereby providing an extended period of protection and exclusivity to the inventive individual.

2.3.2 Design Patent

In the event that you conceive an exceptional and non-utilitarian configuration with the aim of enhancing a manufactured item, you may find yourself eligible to seek the prestigious protection of a design patent. This particular breed of patent is bestowed upon the ornamental aspects that define the visual allure of a product's design, encapsulating the captivating appearance of a beloved IKEA chair, a mesmerizing Keith Haring wallpaper, or an exquisite Manolo Blahnik shoe. Remarkably, even the captivating and compact realm of computer screen icons can warrant the acquisition of a design patent. It is important, however, to acknowledge that a design patent comes hand in hand with a set of prerequisites, mandating that the design itself serves a purely ornamental or aesthetic purpose, eschewing any functional attributes. Once the coveted design patent has been secured, a remarkable array of exclusivities is at your disposal, empowering you to impede the activities of others, be it in the realms of production, utilization, sale, or importation, all pertaining to the

registered design. It is worth mentioning, however, that the authority vested in the design patent is time-limited, with its enforcement extending solely for a duration of 14 years from the momentous date of its issuance, bestowing upon the innovative mind a period of exclusive dominion over their visually captivating creation.

2.3.3 Plant patent

A plant patent, bestowed by the government, is an exclusive privilege granted to an inventor, their heirs, or assigns, in recognition of their remarkable discovery and asexual reproduction of a distinct and novel plant variety. It is imperative to emphasize that this specialized patent domain encompasses only those plants that have been reproduced through asexual means, excluding tuber propagated plants and those naturally occurring in uncultivated realms. The granted protection endures for a period of 20 years, commencing from the momentous filing date of the patent application. Its principal objective is to safeguard the inventor's prerogative to impede others from engaging in acts of asexual reproduction, sale, or utilization of the reproduced plant. It is crucial to acknowledge that this protective umbrella exclusively encompasses living plant organisms that exhibit a particular set of characteristics, dictated by their singular genetic makeup or genotype. Within this purview, a myriad of plant variations such as sports, mutants, hybrids, and transformed plants find themselves included. Notably, it is important to differentiate between the classification of plants, algae, and macro fungi, all of which fall under the plant domain, while bacteria lie outside its scope. It is worth noting that while the United States Patent and Trademark Office (USPTO) does entertain utility applications encompassing plants, seeds, genes, and the like, the focus of this publication remains dedicated to patents that revolve specifically around asexually reproduced plants. For more comprehensive insights into utility practice and its intricacies, it is advisable to directly consult the PTO Information or relevant sources of information.

2.4 Criteria For Patentability

2.4.1 Basic Requirements

1. **Novelty-** To achieve patentability, an invention must possess the paramount quality of novelty, which signifies its unparalleled freshness and absence of prior manifestation or execution. It must transcend the boundaries of the prevailing state-of-the-art, emerging as an unprecedented entity. The complexity or intricacy of the invention is immaterial; rather, it must signify a notable advancement in technical prowess vis-à-vis the existing body of knowledge. Novelty stands as an indispensable criterion for the eligibility of patent protection. Consequently, if the subject matter of the claimed invention has been previously disclosed prior to the filing date or the priority date (if priority is invoked), its patentability is compromised. Notwithstanding, certain jurisdictions, such as the United States, Canada, Australia, and Japan, extend a grace period to shield inventors and their successors in title from the authorized or unauthorized disclosure of their invention before the filing date. Within this temporal haven, if the inventor or successor in title disseminates the invention, an application can still be validly lodged within the grace period, typically spanning 6 to 12 months, while retaining the novelty status of the invention. This form of novelty barrier, known as a relative novelty bar, protects inventors from self-disclosure during the grace period, thereby preserving the novelty of their invention.

2. Inventive Step and Non-Obviousness- This stands as a foundational tenet within the realm of patentability, permeating the fabric of numerous patent laws. It stipulates that an invention must exhibit a satisfactory degree of inventiveness or non-obviousness to warrant the mantle of patent protection. Essentially, this principle endeavors to ascertain whether the invention stands as a notable departure or exhibits superiority over the existing prior art. When evaluating non-obviousness, the examiner is empowered to consider multiple references from the vast expanse of

prior art, illuminating diverse facets of the invention that collectively render it obvious. In the European context, the terminology of "inventive step" reigns supreme, while its American counterpart invokes the nomenclature of "non-obviousness" within the tapestry of United States patent law. Nevertheless, the yardstick employed for assessing inventive step and non-obviousness varies from one jurisdiction to another, with the European Patent Office (EPO) embracing a divergent approach when juxtaposed against, say, the United Kingdom. In essence, an inventive step signifies that the invention eludes the grasp of a person possessing ordinary skill in the pertinent field. Stated differently, if the invention would be readily apparent or effortlessly unearthed by a skilled practitioner, it cannot be deemed to possess an inventive step.

3. **Industrial applicability-** Within the domain of patent law, the notion of industrial applicability, or industrial application, encompasses the fundamental tenet that a patent may solely be bestowed upon an invention that possesses the capability to be manufactured or utilized within the realm of industry. This prerequisite asserts that the subject of the patent must be endowed with tangible utility or practicality in relation to industrial activities. In essence, it mandates that the invention in question must be capable of being employed or put into effect within the context of a commercial enterprise or a productive sector of the economy. As such, the criterion of industrial applicability serves as a vital criterion in determining the eligibility of an invention for patent protection, ensuring that only inventions possessing a tangible connection to industry can garner the coveted mantle of patent rights.

2.4.2 Exceptions to The Broad Classes

1. Laws of Nature

These are not eligible for patents. This means that even if a person discovers a naturally-occurring product, they cannot patent it as it already exists in the public domain. This principle is underlying with patent law, which seek to encourage innovation and the development of new products. Allowing someone to patent a naturally-occurring product would give them exclusive control over it, which is contrary to these principles.

Furthermore, It is imperative to acknowledge that even in the event of an individual making a groundbreaking revelation pertaining to a fundamental principle of the natural world or an inherent occurrence within nature, they are precluded from procuring a patent for such a discovery. However, it is possible to receive a patent for a machine, manufacture, or composition of matter that is based on a law of nature. In other words, while the law of nature itself cannot be patented, an invention that uses that law can be patented.

In certain instances, it is feasible to obtain a patent for a naturally transpiring entity that has undergone substantial transformation, resulting in a markedly distinct form. Furthermore, it should be noted that a novel application of a naturally-occurring product can be subject to patent protection, albeit limited to the specific utilization rather than encompassing the product as a whole. In essence, the patentability of an invention hinges upon meeting specific criteria, encompassing aspects such as novelty, non-obviousness, and industrial applicability.

2. Abstract Ideas

The realm of patentability casts a veil of exclusion upon mathematical formulas and other ethereal abstractions, for they fail to align with the established categories of process, machine, manufacture, or composition of matter. Bereft of practical utility, they languish in the absence of specific purpose. Correspondingly, compositions of matter bereft of any known utility meet a similar fate of non-patentability. Yet, perchance an abstract idea, when harnessed to surmount a quandary, begets a

corporeal product or process that boasts novelty and non-obviousness, it may indeed traverse the threshold of patentability. Picture, if you will, a creation or procedure anchored in an abstract notion—a machine or composition of matter, perhaps—now standing on the precipice of patentability. Likewise, an abstract idea interwoven within a process, birthing a tangible culmination—say, a metamorphosis of a composition of matter into a different form—may also ascend to the heights of patentability.

3. Mental Processes

The realm of patent law sternly rebuffs the notion of bestowing patents upon mental processes, deeming them beyond the scope of permissible subject matter. However, if perchance a claim emerges, intertwining a mental process with one of the sanctioned categories of statutory subject matter, namely a machine, manufacture, or composition, it may yet find itself standing on the precipice of patent eligibility, awaiting the discerning gaze of the authorities.

4. Printed Matter

Within the legal annals of In re Miller and In re Gulack, the esteemed courts, their minds keenly attuned, passed down a ruling of profound significance: that printed matter, regrettably, does not rise to the lofty threshold of patent eligibility, for it lacks the requisite essence of a bona fide manufacture. This judicious stance, reverberating with wisdom, artfully safeguards the sanctity of copyright protection, shielding the realm of written works from encroachment by the tendrils of patent rights. Yet, an alternative path, fraught with complexity, beckons from the shadows—an audacious proposition to deem stored information, the very ink upon the page, as a tangible creation, a veritable manufacture. Herein lies the crux, the fickle fulcrum upon which novelty and non-obviousness teeter, hinged upon the distinctions woven into the substrate carrying the printed matter, divergent from the prior art tapestry. Alas, the arduous journey is further entangled by the web of Section 103, wherein the rubric of "claims as a whole" looms large, casting its scrutiny upon the invention's very sinews. Consider, for instance, the luminous example of Mark Twain's Tom Sawyer, a literary marvel meticulously bound—a manufacture indeed, yet bound by the shackles of its lackluster novelty and non-obviousness, its singular distinction confined to the words etched within, bereft of true divergence from the tomes of yore.

5. Computer Software

The intricate matter of patenting computer software, steeped in the annals of convoluted history, shall be unveiled and expounded upon in the forthcoming chapter. Traditionally, a solitary computer program, unadorned and bereft of accompanying elements, has traversed the thorny path of ineligibility for patent protection. However, in the modern epoch, a paradigm shift has dawned, unfurling the fertile terrain where almost any method capable of manifestation through a computer program and bestowing upon humanity a tangible fruition may now don the coveted mantle of patentability, provided it is accompanied by a comprehensive exposition and judiciously demarcated within the realm of adequate description and claim.

6. Methods of Doing Business

In the bygone eras, a plethora of precedents has firmly entrenched the notion that the avenues of patentability remain predominantly closed to the realm of business methodologies. However, the exact contours delineating the ambit of what qualifies as a business method often elude clarity, thereby imparting an air of uncertainty to the proceedings. It is not uncommon for the adjudicatory apparatus to grapple with this intricate matter, for a more judicious approach could have circumvented the patentability quandary by embracing more perspicuous constructs, such as the novelty of the invention when juxtaposed against antecedent knowledge. In the contemporary milieu, business method patents have assumed the mantle of a distinct breed of software patents, interweaving intricate calculations of labyrinthine complexity that necessitate the deployment of

computers for practical implementation. Alternatively, these patents embrace ventures that enrich the domain of electronic commerce on the vast expanse of the internet, adroitly navigating the intricate network of digital transactions and augmenting its efficaciousness.

2.5 Application Types

2.5.1 Provisional Application

An ephemeral harbinger of innovation, the provisional patent application emerges as a transient bastion sought amidst the nebulous realms of invention. It arises when the nascent creation, still ensconced within the realm of experimentation, yearns for recognition and safeguarding. Within its fold, a compendium of descriptions and illustrations grace its pages, devoid of the formal trappings of patent claims, oaths of inventors, or the encumbrances of information disclosure statements. The significance of filing a provisional application burgeons when the statutory preconditions of patentability teeter on the precipice of expiration, impelling expediency in the face of an incomplete non-provisional submission. Furthermore, its advent finds purpose in the aftermath of a public revelation, akin to a shield safeguarding the citadel of the inventor's U.S. patent rights, erecting barriers against the incursion of novelty-related perils in foreign lands, wherein stringent standards govern the safeguarding of intellectual property.

The very act of filing bestows upon the provisional application the mantle of a foreign priority date, a beacon illuminating applications lodged in nations beyond the borders of the United States and those destined for international waters. However, the jurisdiction of design patents remains impervious to its sway. As the ephemeral submission traverses its temporal arc, the probing gaze of the United States Patent and Trademark Office (USPTO) does not grace its contents, for it shall never metamorphose into a fully-fledged patent. After a year of existence, it succumbs to the inexorable currents of abandonment, but its filing date may find redemption within the bosom of a subsequent non-provisional application, tendered within the year of its progenitor's birth. Thus, the provisional application assimilates into the tapestry of any subsequent non-provisional undertaking that invokes its name, emerging from the shadows of obscurity to assume the mantle of public knowledge upon the pronouncement of a patent that reverberates with the echoes of its ancestral priority.

2.5.2 Non-Provisional Application

An unassuming embodiment of patent aspiration, the ordinary application gracefully materializes within the hallowed halls of the Patent Office, devoid of any claims to lineage from a convention country or reference to its brethren navigating the labyrinthine corridors of bureaucratic scrutiny. To attain the lofty status of an ordinary application, it must arrive adorned with the full regalia of a complete specification and claims, forming the bedrock of its intellectual prowess. Within its boundless embrace, a non-provisional application for patent unfurls, encapsulating a written opus that begets a meticulous amalgamation of a specification, description, and claims, each element dutifully accompanied by the solemn oath or declaration that breathes life into its ambitions. And should the need arise, a visual testament in the form of a drawing is summoned forth from the depths of imagination. Yet, the journey to fruition entails more than mere words and imagery, for it necessitates the scribing of a filing fee, a humble tribute to the realm of intellectual property.

But the march towards examination remains a distant prospect, for the application remains dormant until the moment when all its requisite components, bowing to the stringent strictures of the governing rules, assemble in harmonious unity. Alas, if the application bears the scars of incompleteness or defects, the applicant shall receive a missive of enlightenment, unveiling the deficiencies that beset their creation, granting them a fleeting respite to rectify the gaps with an

accompanying surcharge. The mantle of an application number, bestowed in a sequential symphony, adorns this nascent entity, entwining its destiny with the annals of filing lore. And lo, the applicant is not left bereft of knowledge, for a filing receipt emerges, bearing tidings of the cherished filing date, a testament to the moment when the USPTO, in its wisdom, laid eyes upon the tapestry of specification, at least one claim, and the necessary drawings that unravel the mysteries of the subject matter. And if fate should decree an incomplete or defective existence, then the last piece to complete the jigsaw puzzle of the application shall bequeath the hallowed filing date, sealing the fate of this ardent endeavor.

2.5.3 Convention Application

Within the labyrinthine domain of the Patent Office, an application for patent emerges, bearing the distinctive mark of a convention application. This distinguished designation is bestowed upon an application that, with unwavering conviction, lays claim to a hallowed priority date, rooted in the fertile soil of one or more convention countries. To ascend to the revered status of a convention application, the applicant must navigate the temporal tapestry with utmost precision, ensuring that the Indian Patent Office becomes the sanctuary for their innovative creation within a fleeting 12-month epoch. This temporal pilgrimage commences from the sacred moment of the first filing of a similar application in the bosom of a convention country, and the applicant, armed with resolve, must synchronize their steps with the rhythmic cadence of this chronological pilgrimage, heeding the unyielding call of the deadline that looms like an invisible specter.

2.5.4 PCT International Application

In the intricate tapestry of patent law, the Patent Cooperation Treaty (PCT) application emerges as a majestic emblem of international patent pursuit. Within the vast expanse of this treaty's regulations, this extraordinary application takes shape, offering intrepid inventors a remarkable avenue to traverse the global landscape of patent protection. With unwavering ambition, applicants can unfurl their inventive prowess across the boundless canvas of up to 142 countries, each bearing the imprimatur of PCT membership. Simultaneously, they navigate the intricate pathways of bureaucracy, synchronizing their aspirations across borders and cultures, invoking the harmonious symphony of global patent pursuit. Within this realm, the PCT application stands as a beacon, heralding a new era of international innovation and granting inventors unparalleled access to the vast tapestry of global patent protection.

2.5.5 PCT National Phase Application

In the labyrinthine realm of international patent endeavors, where the Patent Cooperation Treaty (PCT) governs the symphony of global harmonization, a wondrous opportunity unveils itself. When an international application, meticulously crafted and fortified with the PCT's protective embrace, designates India as its desired destination, a subsequent chapter beckons. This chapter, known as the national phase application, unfurls its doors, inviting the applicant to traverse its threshold within a prescribed temporal realm. A span of 31 months from the international filing date or the earlier priority date adorns the tapestry of possibility, wherein the applicant may choose to grace the Indian jurisdiction with their intellectual ingenuity. Through this gateway, a convergence of international prowess and local patent pursuit materializes, granting the applicant a transcendent platform to disseminate their innovative essence upon the fertile Indian soil.

2.5.6 Continuing patent application

Within the intricate tapestry of the United States patent system, a profound and captivating phenomenon unfolds—the continuing patent application. This remarkable entity, harkening to the footsteps of an earlier-filed patent application, manifests itself as a beacon of ingenuity and priority. Its existence encompasses a realm of three distinctive classifications, each possessing its own

captivating essence: the ethereal continuation, the resolute divisional, and the transformative continuation-in-part applications. While the manifestation of continuation and continuation-in-part applications predominantly graces the fertile soil of the United States, divisional patent applications, guided by the mandates of Article 4G of the illustrious Paris Convention, find solace in the embrace of other nations, echoing their steadfast commitment to the pursuit of intellectual property.

2.5.7 Reissue

In the vast realm of patent law, where precision and intricacy reign supreme, a remarkable recourse emerges for patent owners when faced with the specter of defectiveness—an act of surrender and rebirth known as reissue. Within this transformative process, the patent owner, driven by a noble pursuit of perfection, willingly relinquishes their flawed creation, only to breathe new life into the original application, rectifying its inherent defects. Among the common afflictions that plague issued patents, one grievous flaw stands tall—the failure to encompass the full breadth of the disclosed invention within its claims.

In the face of such a deficiency, the inventive mind finds solace in the power to submit a fresh application, adorned with broader and more encompassing claims, all within a delicate window of opportunity that spans a mere two years from the moment of grant bestowed upon the original patent. This resolute reissue application, akin to an artisan's brush upon a canvas, endeavors to rectify the flaw that rendered the patent partially or entirely invalid. It strives to harmonize the truth of the invention's essence with the confines of legal veracity.

Within the realm of correction lie a myriad of errors, awaiting their redemption in the realm of reissue. The narrow bounds of the original patent claims, once constricting the invention's grandeur, can be expanded to match its true scope. Inaccuracies within the disclosure, like whispers of misalignment, can be aligned with the truth that birthed them. The errant foreign priority claims, once misplaced and askew, can be righted, finding their rightful place in the tapestry of intellectual property. Even the references to prior copending applications, once entangled in the web of confusion, can be meticulously untangled and mended.

It is paramount, however, that these errors befall not from deceitful intent, but rather as an inadvertent consequence of the arduous journey that led to the patent's fruition. A patent, in all its glory, is entitled to the grace of reissue only if it bears the mark of at least one error, a flaw that cries out for redemption. In its absence, the gates of reissue shall remain resolutely closed, denying passage to the seeker of perfection.

As the tapestry of time weaves onward, an opportune moment arises for the patentee to seek a narrowing reissue, a moment that can be seized at any time before the expiration of the patent's illustrious tenure. Alas, once the hourglass of patent life runs empty, no reissue, no matter how noble or humble, shall be granted.

In this delicate dance between creation and correction, the patentee traverses a path beset by intricate rules and subtle nuances. Yet within this labyrinthine world, the spirit of reissue emerges as a testament to the enduring pursuit of perfection in the ever-evolving tapestry of intellectual property.

2.6 Components of Patent Application

Within the realm of patent applications, a rich tapestry of components weaves together to form a comprehensive and intricate submission. As the grand orchestrator, the applicant crafts each element with utmost care and precision, fashioning a symphony of words and visuals that harmonize to present their invention in its fullest glory.

The overture begins with the resplendent title, a beacon of succinctness that encapsulates the essence of the invention in a mere handful of words. It serves as a gateway, enticing the reader to delve deeper into the marvels that lie within.

Following this alluring introduction, the abstract takes center stage, offering a concise yet captivating synopsis of the invention's core concepts and benefits. Like a shimmering gem, it sparkles with clarity, drawing the reader's attention and piquing their curiosity.

As the audience settles into the cadence of the application, the field of invention gracefully unfolds, unveiling the domain in which the invention finds its purpose. Here, the applicant weaves a tapestry of context, setting the stage for the grand unveiling of their innovation.

The background emerges as a prelude, revealing the trials and tribulations that have led to the invention's genesis. It paints a vivid portrait of the challenges faced by the inventors, creating an emotional connection with the reader and fostering a deeper appreciation for the ingenuity that follows.

In a harmonious crescendo, the summary sweeps the reader into the heart of the invention, offering a glimpse of its revolutionary nature. It encapsulates the novel concepts, breakthroughs, and advantages that set the invention apart from its predecessors, leaving the reader yearning for more.

Like brushstrokes on a canvas, the brief description of drawings adds visual splendor to the application, illustrating the intricate intricacies of the invention. Through meticulously crafted visuals, the applicant guides the reader's gaze, unveiling the embodiment of their ingenious creation.

The stage is now set for the pièce de résistance—the detailed description. Here, the applicant paints a vivid tapestry of words, delving deep into the inner workings of the invention. Each element is meticulously dissected, explained, and exemplified, leaving no stone unturned in the quest for clarity and comprehensiveness.

With the stage set and the foundation laid, the claims make their grand entrance, proclaiming the boundaries of the invention's legal protection. Like a virtuoso's performance, they outline the scope and novelty of the invention, serving as the backbone upon which the patent's strength is built.

Finally, the curtains draw back to reveal the drawings—visual masterpieces that breathe life into the invention. Through intricate diagrams, schematics, and illustrations, they provide a visual roadmap, guiding the reader through the labyrinthine intricacies of the invention's physical embodiment.

In this symphony of components, the patent application reaches its crescendo, a culmination of artistry, innovation, and legal precision. Each element plays its unique role, combining to create a harmonious whole, an eloquent testament to the inventive spirit that propels humanity forward.

2.7 Citations

Citations are a means of linking documents together when one mentions another as having related content. While in non-patent literature, the term "citation" may also refer to a bibliographic extract of a scholarly work, in patent literature, it is important to distinguish it from the more specific patent-related definition. Therefore, in this context, the term "record" has been used instead of "citation" to avoid confusion.
A patent can be cited by another patent for two reasons: either the applicant disclosed it as known prior art, or the examiner found it during the search. For instance, if Patent A was granted in 1993 for a beanie hat with a simple propeller, and Patent B was granted in 2003 for a beanie hat with a motorized propeller, the inventor of Patent B may have been aware of earlier beanie hat patents and was required by law to disclose these known patents, including Patent A. Alternatively, if the inventor of Patent B had no knowledge of earlier beanie hat patents, but the examiner found Patent A relevant during the search, it could still be cited, though not relevant enough to be used for a total rejection.

2.8 Important Dates for Patent Applications

Invention Date
The date of invention is the date when the invention was made or completed. In order for an invention to be considered "made," it must have been conceived by its inventor(s) and reduced to practice, either by the inventor(s) themselves or by someone acting on their behalf. Reduction to practice can be achieved either by building and successfully testing the invention at an appropriate location or by filing a patent application that adequately discloses it.
During patent prosecution, the inventor(s) may be required to provide uncorroborated evidence to prove that both conception and reduction to practice occurred when they claim it did and that they were diligent in reducing the invention to practice after conception. If the validity of the issued patent is challenged, the inventor(s) may need to provide corroborated evidence, such as testimony from witnesses other than themselves, to demonstrate when these acts occurred.

Filing Date
The filing date of a patent application refers to the date on which all required elements of the application, such as the specification, at least one claim, and any necessary drawings, are submitted to a specific patent office. In other words, the filing date is the date on which the application is deemed to have fulfilled all filing requirements.

Priority Date
The priority date of a patent application is the date of the first filing made anywhere in the world, typically in the applicant's domestic patent office, to protect an invention. This date is crucial in determining the novelty of the invention and is therefore an important factor in patent procedures. Although the terms "filing date" and "priority date" are often used interchangeably, they are not the same. The filing date represents the date on which the patent application is first filed with the patent office, while the priority date, also known as the "effective filing date," is used to establish the novelty and/or obviousness of an invention in relation to other prior art.
It is worth noting that the priority date may be earlier than the actual filing date of the application, particularly if the application claims priority to an earlier parent application. In such cases, the priority date may be the same as that of the parent application. However, if the patent application is an original, non-provisional application, and has not been filed in another country, its filing date will usually be the same as its priority date.

Issue Date
The grant date or issue date refers to the date when a patent is officially issued by the patent office. At this point, the patent application is assigned a patent number and is commonly identified by this number rather than its previous application or publication numbers.

Expiration Date
The expiration date signifies the termination of a patent's validity.

Publication Date
The publication date refers to the day when a patent application becomes available to the public, typically 18 months after the priority date

CHAPTER-3 PATENT SEARCHING

3.1 Prior to commencing the search

It is important to grasp three key elements before initiating a search, and engaging in a constructive conversation with the search recipient can assist the searcher in comprehending these crucial aspects.

It is important to have a clear understanding of the legal aspects and motivations behind a search. Whether the purpose is to support product development, gather competitive intelligence, or prepare for potential litigation, legal considerations will always play a role in technology searches. The searcher should strive to comprehend the specific reasons driving the search request in order to tailor it effectively to meet the recipient's requirements. For more information on search requests influenced by legal needs, refer to articles discussing patentability, infringement, and validity searching.

It is important to have a good understanding of the current state of knowledge in the relevant field. This includes being aware of cutting-edge ideas, protected technologies, and commonly used information in the public domain. While it is ideal for searchers to have a technical background closely related to the subject matter, they often need to adapt to areas outside their expertise. To avoid wasting time on widely known features, it is recommended to consult textbooks and online resources like Knovel.com for a foundational understanding of known concepts. Additionally, searching for influential articles and utilizing citation impact features from search providers such as Google Scholar, ISI Web of Knowledge, and Scopus can provide valuable insights. Keeping up with new issues of leading journals and exploring technology blogs can also help users stay informed about current research trends.

It is important to determine the scope of the search and select relevant sources and collections accordingly. This process becomes easier when the motivations behind the search are well understood. The selection of sources depends on the type of documents that are of interest. For instance, an infringement investigation may focus solely on active patent documents, while a patentability search would encompass publicly available information from patents, scientific journals, and the internet. It is also important to consider the search budget limitations. Validity investigations usually justify a higher cost and more extensive searching compared to a quick patentability study. This may allow for the inclusion of more expensive and highly curated collections in the search, rather than relying solely on low-cost searches in major online sources.

3.2 Different Types of Searching

There exist several distinct categories of patent searches, which encompass Novelty searches (commonly known as Patentability searches), Infringement searches (referred to as Clearance, Freedom to Operate, or Right to Use searches), Validity searches (also called Invalidity or Enforcement Readiness searches), and State of the Art searches (also known as Collection searches). Each variant of search serves a unique purpose and requires a specific search approach.

3.2.1 Novelty Search (Patentability search)

The most commonly performed type of patent search is the Novelty search, also known as a Patentability search. Inventors conduct Novelty searches when they have an invention they are

considering patenting and want to determine if similar or identical inventions have been previously created. Novelty searches typically do not impose any limitations on the dates of prior art. In other words, if prior art is discovered that describes the invention, it is considered relevant regardless of whether it was disclosed yesterday or a century ago. This absence of date constraints is rooted in patent law, which states that anything already made available to the public in any manner at any time cannot be patented.

Steps to Perform a Novelty Search:

Step 1: Determine the Novel Features of the Invention
Identify the unique aspects of your invention that set it apart from existing solutions. Creating a list of these novel features will guide the search process and aid in developing effective search strategies.

Step 2: Formulate Relevant Keywords
Conduct preliminary research on your invention to generate appropriate keywords and synonyms. This ensures comprehensive coverage of prior art and minimizes the chances of overlooking important references during the search.

Step 3: Utilize Patent Databases for the Search
Various patent offices maintain their own databases comprising published applications and granted patents. Make use of reputable online resources to facilitate your research, including:

- FreePatentsOnline
- USPTO Patent Database
- Google Patents
- Espacenet
- Patent Lens
- Delphion
- Thomson-Reuters Patent Web
- PatentMax
- PatBase

These databases offer valuable resources for conducting your novelty search effectively.

3.2.2 Validity Search (Invalidation Search)
The purpose of a validity search is to identify potential errors made by the Patent Office when granting a patent or allowing specific claims within it. While patent examiners are skilled in their work, they are not infallible and often face time constraints. It is possible for them to overlook relevant prior art, resulting in the granting of a patent with claims that should not have been allowed. Validity searches typically arise when a company is facing a lawsuit for producing a product that allegedly infringes on another company's patent. One strategy to win an infringement case is to invalidate the disputed patent. By conducting a validity search, prior art that corresponds to the patent's claims can be identified, leading to the removal of those claims from the patent. Consequently, the patent owner loses the legal right to sue for products that would have infringed upon those claims.
Unlike novelty searches that focus on the written description of an invention, validity searches are performed on existing patents, where the patent itself serves as the disclosure. It's important to note

that in a validity search, the objective is to find prior art that directly relates to the validity of the CLAIMS within the subject patent. Each claim is evaluated individually, rather than considering the general idea or the entire patent. As a result, validity searches typically require more time than novelty searches. A successful validity search uncovers references that the Patent Office missed (which is more common than one might think) and provides evidence that the claims should not have been allowed due to prior inventions predating the filing date of the patent in question. The filing date of the patent holds significance in validity searches as it determines the priority date, often referred to as a "get behind" date. It is crucial to establish, for each claim, that similar inventions were known prior to the filing date of the current patent, indicating that the claims should not have been allowed. In simpler terms, the goal is to prove that the inventor of the disputed patent was not the first to come up with the invention. Only the first inventor is entitled to hold a valid patent.

To illustrate this concept, let's consider a fictional example. U.S. Patent 9,999,999, in Claim 1, asserts the superiority of a computer chip that is faster and generates less heat than any other chip on the market. The patent was filed on 1/1/2002 and granted on 2/1/2003. During the prior art search, two relevant pieces are discovered. Piece "A" is an article from a computer magazine dated 11/01/2001, and Piece "B" is a patent filed on 4/1/2002 and issued on 12/1/2002. Both pieces contain information that closely resembles Claim 1 of the subject patent.

To determine the relevance of the references, we find that "A" is the appropriate choice. Piece "A" predates the filing date of the patent in question. On the other hand, Piece "B" was issued prior to the patent but was not filed before it. In this context, the filing date holds significance as it establishes the original conception of the invention, regardless of the speed at which it underwent the approval process.

Tips for Conducting an Invalidation Search:

I. Gain a comprehensive understanding of the subject and claims to be invalidated:

It is crucial to fully comprehend the technical and patent-related aspects. A key consideration in a validity search is interpreting the claims. Since validity searches focus on already examined and allowed patents, a broad interpretation of the allowed claims is necessary to identify relevant prior art. Reviewing the file wrapper and prosecution history at the beginning of the search can assist in clarifying the interpretation of the claim(s) to be invalidated.

II. Search extensively:

Validity/invalidity searches play a significant role in critical business decisions. Overlooking relevant prior art can result in substantial costs for companies in terms of patent infringement lawsuits or product development. Therefore, it is advisable to conduct searches as comprehensively as possible, utilizing available resources and developing strategies creatively. Begin by exploring prior work such as patent office search reports, prosecution histories, opposition proceedings, and litigation proceedings, when accessible.

III. Pay attention to details:

Invalidation searches often involve examining a vast number of patents and literature documents. Analyzing prior art may require careful interpretation to ensure a meaningful comparison. It is important to focus on specific aspects, such as particular dependent claims, while considering case requirements. Detailed analysis may involve converting units of measure, evaluating specification text, tables, figures, and chemical formulas, especially in examples.

IV. Know when to conclude:

Invalidation searches have budget and time constraints. It is crucial to recognize these limitations and develop search strategies accordingly. The searcher should be aware of when to stop the search and communicate findings within the established boundaries.

V. Provide relevant and concise reporting:

Reporting the results in a concise and easily understandable manner is of utmost importance. While there may be a temptation to include all references found during the search, even if they are not particularly relevant, it is essential to focus on what is meaningful for the client. Including irrelevant references adds no value to the client and should be avoided. In most cases, a report containing a brief explanation of the discovered reference along with bibliographic information should suffice. Reporting should be done in a non-characterizing format to prevent any adverse implications for the client based on the comments provided.

3.2.3 Infringement Search

Patent infringement refers to the unauthorized act of engaging in activities related to a patented invention without obtaining permission from the patent holder. Permission is typically granted through a license agreement. The specific definition of patent infringement can vary across jurisdictions, but it generally encompasses the use or sale of the patented invention. In many countries, for an act to be considered patent infringement, it must have a commercial purpose or involve commercial usage [citation needed].

The boundaries and protection of the patented invention are outlined within the claims of the granted patent. These claims serve as a means of informing the public about what is not permissible without the patent holder's consent. It is important to note that patents are territorial, and infringement can only occur in countries where the patent is valid. For instance, if a patent is filed in the United States, individuals within the United States are prohibited from manufacturing, using, selling, or importing the patented item. However, people in other countries may be allowed to produce the same item within their own jurisdictions. The extent of protection can vary from one country to another due to differences in patent examination procedures and requirements in each jurisdiction. As a result, enforcing a granted patent on a global scale can be challenging.

Steps to Conduct an Infringement Search:

Step 1: Identify the Patent in Question

Begin by searching public databases, such as the US Patent and Trademark Office (USPTO) database, to locate the patent that you may potentially infringe upon.

Step 2: Read and Understand the Patent Claims

Thoroughly read and comprehend the claims stated in the identified patent. These claims outline the specific elements protected by the patent, which you need to compare with your product or process to determine potential infringement.

Step 3: Compare Your Product or Process to the Patent Claims

Analyze and compare your product or process to the individual elements stated in the patent claims. Break down the claims and assess each element's similarity or match with your product or process.

Step 4: Consider Potential Defenses
If you find that your product or process may infringe on the identified patent, explore possible defenses. Evaluate whether you can argue the patent's invalidity or demonstrate that your use falls within the scope of fair use or other applicable defenses.

Step 5: Seek Legal Counsel
If you remain uncertain about the infringement status of your product or process, it is advisable to consult a qualified patent attorney. They can provide expert guidance, help you understand the legal implications, and advise you on the best course of action based on your specific situation.

3.2.4 Freedom-to-Operate (FTO) Search

A clearance search, also known as a freedom-to-operate (FTO) search or right-to-use search, is conducted on issued patents or pending patent applications to assess potential infringement of their claims by a product or process. The purpose of a clearance search is to determine whether the product or process may infringe upon any existing patents. It may also involve considering expired patents that provide a "safe harbor," allowing the use of the product or process based on patents in the public domain. Typically, professional patent searchers, supervised by patent attorneys, perform these searches.

3.2.5 Exploration of Current Developments in a Field

The term "State-of-the-Art Search" can carry different interpretations depending on the context. As a professional patent searcher, it is essential to clarify the client's specific requirements before initiating this type of search (as is the case with any search, but particularly important here). Typically, a State-of-the-Art Search aims to provide a rapid overview of ongoing advancements within a particular field. During such a search, the searcher selects representative patents that exemplify a specific technology without necessarily including every single patent related to that technology, as it would result in significant redundancy. However, there may be instances where a client desires a comprehensive collection of patents within a specific technology. In such cases, the more accurate term to use is a Collection Search, although these terms are often used interchangeably.

CHAPTER-4 BASICS OF US PATENT LAWS

4.1 Fundamental US Patent Laws (Prior to AIA 2011)

Patent law is outlined in Section 35 of the United States Code (35 USC) and includes the following provisions:

- Utility Requirement (35 USC 101): An invention must be useful.
- Novelty Requirement (35 USC 102): An invention must be new and distinct from prior knowledge.
- Non-obviousness Requirement (35 USC 103): An invention must not be obvious to someone skilled in the relevant field.
- Written Description Requirement (35 USC 112): An invention must be fully disclosed in the patent application.

4.2 Utility Requirement (35 USC 101)

- According to the law, anyone who invents or discovers a new and useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, may obtain a patent.
- The invention must be man-made.
- Certain things cannot be patented, such as newly discovered minerals or plants found in nature, laws of nature or physical phenomena, and abstract ideas.
- Very few patents are rejected based on being non-useful.

4.3 Novelty Requirement (35 USC 102)

- The invention must be new and different from anything previously known.
- A patent may not be granted if the invention was known or used by others in the US before the date of invention, patented or published anywhere in the world before the date of invention, in public use or on sale in the US more than one year before the patent filing date, patented or published by the inventor or others before the filing date, or not invented by the applicant.

4.4 Non-obviousness Requirement (35 USC 103)

- The invention must not be obvious to a person skilled in the relevant field.
- It should not be easily created or suggested by combining multiple previously known inventions.
- Many inventions are novel, but not all are non-obvious.
- Assumptions like "I've never seen anything like this before" may not hold as patent examiners have access to databases that are not publicly accessible, and there may be similar inventions using different methods (Doctrine of Equivalents).

4.5 Written Description Requirement (35 USC 112)

- In exchange for 20 years of patent protection, the applicant must fully disclose all knowledge about the invention.
- The patent application must provide a comprehensive and enabling disclosure that allows a person skilled in the relevant field to make the invention solely based on the information provided.
- The best mode of the invention (preferred embodiment) must also be disclosed, and no essential information can be withheld from the public.

CHAPTER-5 PROJECTS

5.1 Invalidation Search on Patent Nos- US83xxxxxB2, US73xxxxxB2, US82xxxxxB2, US10xxxxxB2

5.2 Patentability Search

5.3 FTO search

Project: US10xxxxxxB2
Brief description: An optical device that manipulates light. It includes a transparent sheet with ridges and cavities, an artificial light source, a light converting layer with absorbing elements, a reflective back cover, and a total internal reflection surface. The sheet guides light using total internal reflection, while the ridges act as lenses to focus the light. The cavities and absorbing elements modify the light, and the device overall can control and redistribute light in specific ways.

File Wrapper Analysis:

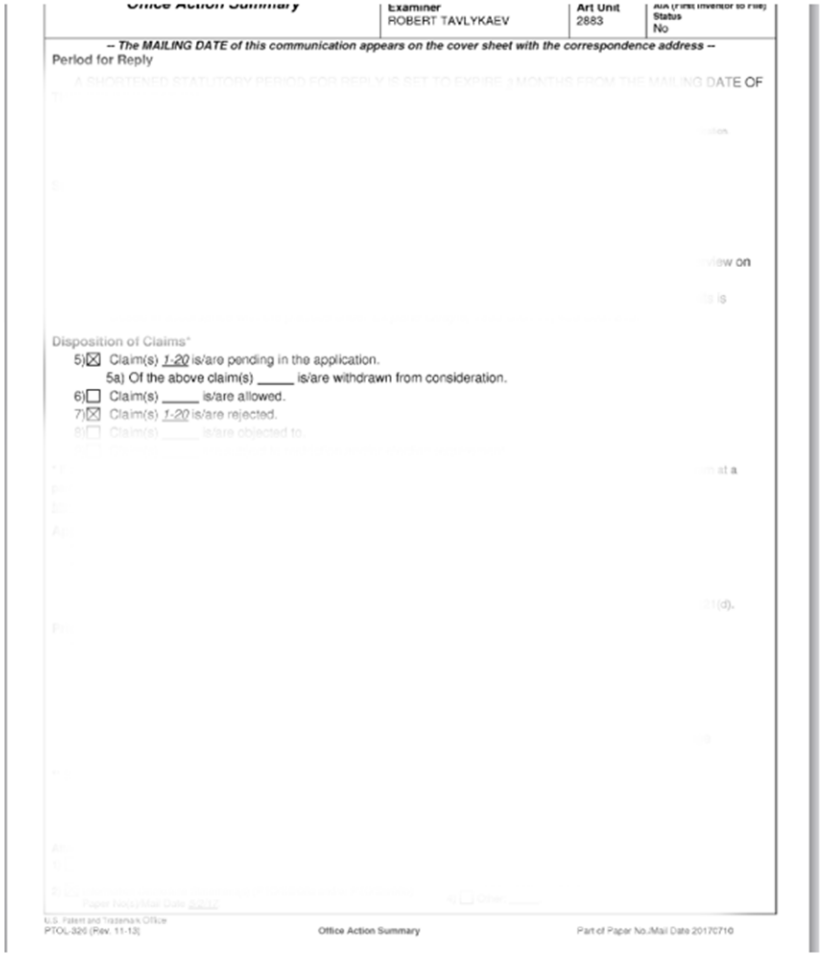
Examiner
ROBERT TAVLYKAEV
Art Unit
2883
Status
No
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply
Disposition of Claims*
5)☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
6)☐ Claim(s) _____ is/are allowed.
7)☒ Claim(s) 1-20 is/are rejected.
U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13)
Office Action Summary
Part of Paper No./Mail Date 20170710

Fig. 5.1: File Wrapper

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that

2. **Claims 1, 6, 7, 9 – 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being**

Figure 5.2: Rejections in FW Analysis

Inputs And Work done:

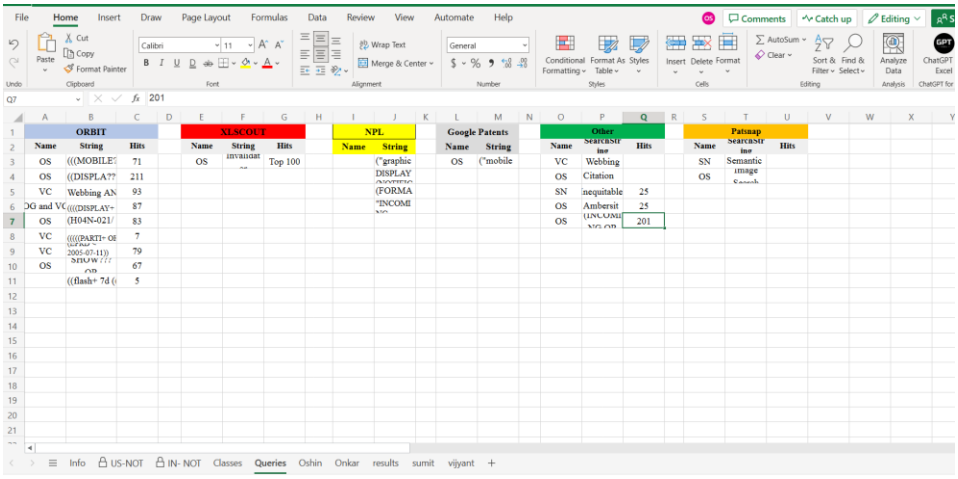

Figure 5.3: Excel sheet comprising inputs and status of work done by all the mebers of team

CONCLUSION

As an electronics and communication student, I have learned a great deal from the Patent Research and Analysis Wing. This prestigious organization mainly focuses on projects related to electronics, telecommunication, and mechanical fields, which align perfectly with my college education. I can now analyze the current trends and research agendas in these domains, as well as gain knowledge about emerging technologies that may become valuable in the future market. During this internship, I realized the significance of patents in the world of technology. Companies worldwide invest a considerable amount of money in intellectual property. Patents are crucial for protecting people's rights to their intellectual property. To obtain a patent, you need to have a unique and non-obvious idea that serves a useful purpose in people's lives without causing harm. The inventor gains protection for the claims stated in the patent, as the rights are tied to those claims. The date criteria are essential for researchers, as they vary depending on the type of search. For a patentability search, we consider patents and non-patent literature (NPL) up to the current date. In the case of invalidation, we review patents and NPL published before the priority or effective filing date of the subject patent. Infringement analysis involves examining products introduced in the market after the priority or effective filing date of the subject patent. Additionally, patents can be provided upon client request.

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PLAGIARISM REPORT