

An In-Depth Guide to Patent Applications and Effective Search Techniques

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Abstract

To effectively navigate traditional literature, one must need a specialized approach, strategic thinking and focused measures. Patent searching differs greatly from standard publication searching because to the unique structure of patent papers, their linkages and the way patent databases are organized. This article outlines a well-defined technique and necessary preliminary procedures for even beginners to access, interpret and confidently engage with patent literature.

Keywords: Patent, patent search, process, patent office and resolve situation.

Introduction

Patent searching is a strategic process that necessitates a particular mindset, analytical skills and adaptability. This introduction investigates the patent searching perception, focusing on key construct, techniques and operation rather than promoting any specific tools or databases [1]. The patent system provides a wide understanding of breakthroughs in certain technological sectors, coupled with crucial data comprising the inventor and applicants. Moreover, it makes it easier to judge a technological development stage by examining the progression of records in a certain subject. Furthermore, it makes it easier to identify national significance, particularly situation in which protection is first requested along with the national phase for future safeguarding initiates, among alternative significant components regarding study [2].

This concept of “demand technicalization, innovation patentization and patent standardization” has played an essential role in encouraging economic development and market competition during the process

of technology research and development. High-quality patents make broad claims, rely on few previous art designs and are highly relevant. High-quality patents are critical in guaranteeing the successful implementation of company decision-making processes, product development and so on [3].

Process Framework

This study seeks to analyze the patterns, in patent submissions concerning advancements by individuals and organizations in Colombia like corporations and educational establishments recognized as the owners of these innovations. The research delves into patent requests made in countries, between 2000 and 2019 to unveil the impact of scientists and innovators through their patent filings. Furthermore, it aims to pinpoint the fields and nations exerted the most significant influence [2].

Patent

Patents allow inventors to have rights, over their creations for a period to prevent others from making or selling the

invention, in the US and bringing it into the country; however, having a patent doesn't always mean one can profit from the innovation as another patent may limit its use by the owner. See the common TTO Patent Process in Figure 1 ^[4].

one strategy to manage the competing goals of these laws ^[4].

Patent Extension

Pharmaceutical patents normally last 20 years, however extensions are allowed under the Hatch-Waxman Act to

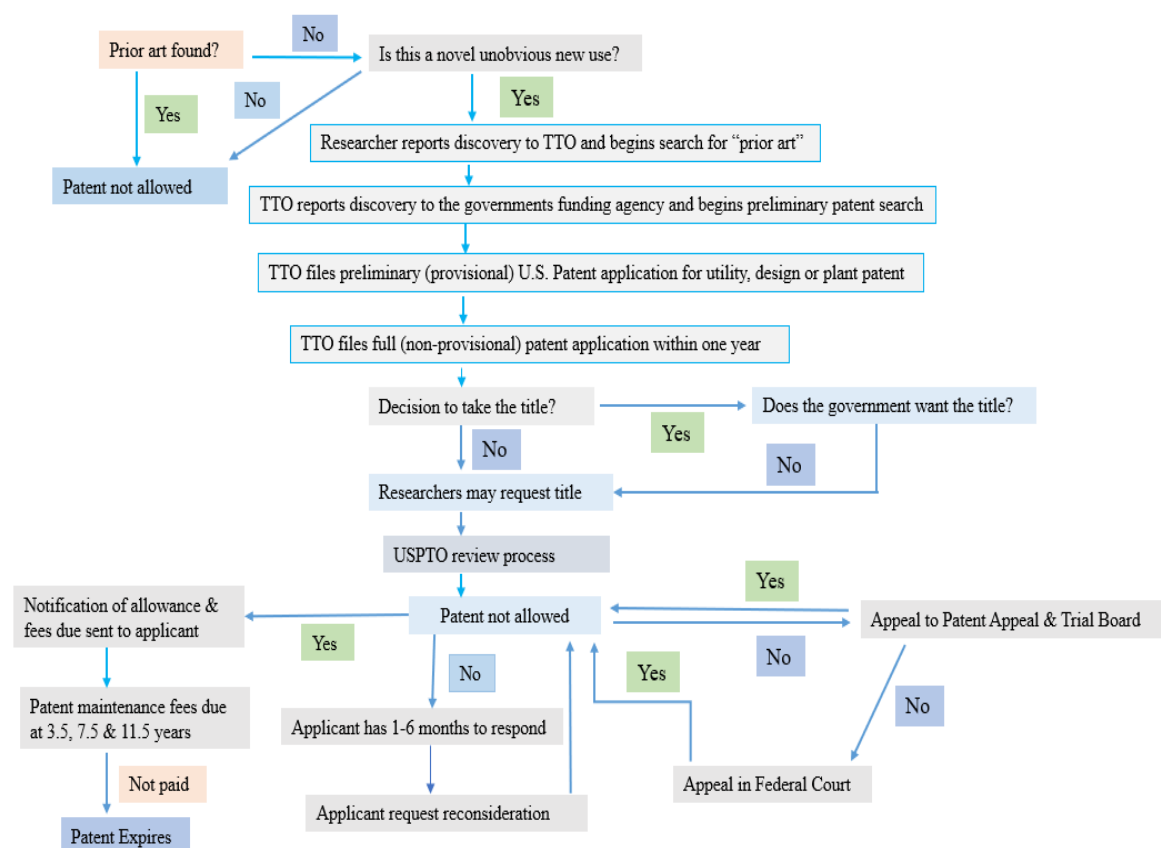


Figure 1: Common TTO Patent Process

Patent Duration

Patent rules plainly contradict the prevailing premise that monopolies are detrimental to a free market in the United States. In the US, antitrust laws limit exclusive control to maintain market competition. However, antitrust laws and patent laws often conflict: antitrust legislation criminalizes monopolistic power, while patent law encourages innovation by awarding specific monopolies. Limiting the term of patents is

compensate for U.S FDA (Food and Drug Administration) clearance delays, with a maximum extension of 5 years and a total post-approval protection limit of 14 years. A three-year exclusive marketing extension may be granted after the patent expires if a new purpose for the medicine is discovered. Other exclusivity options include orphan medication status (7 years), biologics exclusivity (12 years) and ever-greening tactics such as altering formulations or securing supplementary patents to defer generic competition ^[4].

Why searching patents?

The simple answer, to this query is “because they are real”. Nevertheless, there are reasonable grounds for scrutinizing patents such as acquiring knowledge about inventions researching technological progressions or recognizing patents owned by prominent academics.

The release of patent papers which must encompass an explanation of the innovation’ is a vital phase in the patent procedure. Global agreements mandate patent authorities, across the globe to make registered patents publicly available.

With worldwide, there is significant volume of patent paperwork. All of these documents must be published as part of the patent application procedure. Despite the significant increases in publication volume, patent searches are aided by indexing and classification systems that help narrow search results. Patents not only describe inventions, but they also contain useful technical information ^[1].

Reason for conducting a patent search

Does it play a role in regular business operations?

Is the company working on introducing new products?

Is there a need to safeguard existing innovations?

Are opportunities for mergers being explored?

To what extent will the search process be conducted?

Is risk management a key factor in this process?

What are the defined limits for potential risks?

Does the focus align with long-term planning or strategic goals?

Is the approach more short-term and tactical?^[1].

Categories of patent searches

Different kinds of patent searches are available based upon the questions being explored in the field of patents. The unique approaches described for conducting experiments are not readily accessible, for evaluation by a patent examiner in the United States patent system; it is typical for examiners to assume that the numerical values of referenced products in literature are accurate unless the applicant provides



Figure 2: Types of Patent Searches

Is the objective to track technological advancements?

evidence, to the contrary. Categories of patent searches are illustrated in Figure 2:

1. Leading-edge exploration

In this search method which's rather simple to follow. You would need to look through all the material that has been published within a field of interest. This would involve examining patents filed by individuals and any breakthroughs achieved either by these applicants themselves or by inventors. The search process would encompass sources, like journals and dissertations as well as less conventional materials such as press releases and "grey literature", like instructional guides and promotional brochures.

2. Search for prior art, novelty/ patentability

This kind of investigation is a form of a cutting-edge search often carried out in sectors prior, to submitting a patent request for consideration by patent offices as part of their review process to determine the novelty and utility of an invention and verify its eligibility for patent protection by excluding non-patentable categories such, as scientific findings or artistic works.

3. Freedom to operate search

Also known as a "freedom to act" search is considered one of the costly searches, with high associated risks involved in it. The issuance of patents provides individuals with exclusive rights that enable them to limit others from making use of the protected innovation Given that patents are limited by geography and time factors an FTO search aids in

evaluating whether a specific invention can be utilized without violating existing patents. Usually patents are valid, for, up to 20 years starting from the filing date.

4. Opposing Investigation

Individuals or groups acting on behalf of opposing parties conduct this investigation to challenge the decision of the granting authority to approve a patent application. The timing of challenges can vary depending on laws and may occur at any stage of the search process—even after the patent has been approved for some time.

5. (In) Validity Search

In the realm of property, a validity search bears resemblance, to an opposition search. It usually takes place further along in the life cycle of a patent. The main goal is to uncover works that might have the potential to render a patented innovation invalid or to determine if an established patent is robust enough to withstand challenges, on its validity^[1].

What is the price that the public has to pay for this?

- Granting patents of quality may result in financial strains as it could lead to legal disputes and challenges that might disrupt expensive licensing deals.
- If weak patents remain unchallenged, their holders may gain unfair benefits, discouraging competition and delaying the introduction of innovative products and services that could benefit

consumers. Additionally, many improperly granted patents can negatively impact entrepreneurs, forcing them to pay licensing fees or avoid offering certain products and services altogether to prevent legal disputes.

- Poor patent quality can also harm patent owners. They may invest heavily in manufacturing facilities or product development, assuming they have exclusive rights. However, if the patent is later ruled invalid, those may be revoked without compensation. This situation can lead to reduced innovation, weaker patent-driven economics and higher costs for consumers, ultimately affecting society as a whole ^[5].

How can we resolve this issue?

- Remedies for issue in the Patent System is shown in the figure 3.
- Identify important third-party patents that may obstruct the project, saving significant research funding.
- Avoid “re-inventing the wheel” for own patent applications. This method is seen

equals quality out” mind-set. In my role, as a specialist in patent information I view top notch patents as those that clearly outline how others can leverage the concept without violating any rights. This assurance can be guaranteed by conducting research on the idea prior, to submission and approval of the application. In well-established organizations, patent information departments with dedicated specialists play a key role in gathering and maintaining up-to-date information on advancements in the field. Regularly updates throughout the project lifecycle are a standard practice when initiating research or development projects. This is primarily focus include,

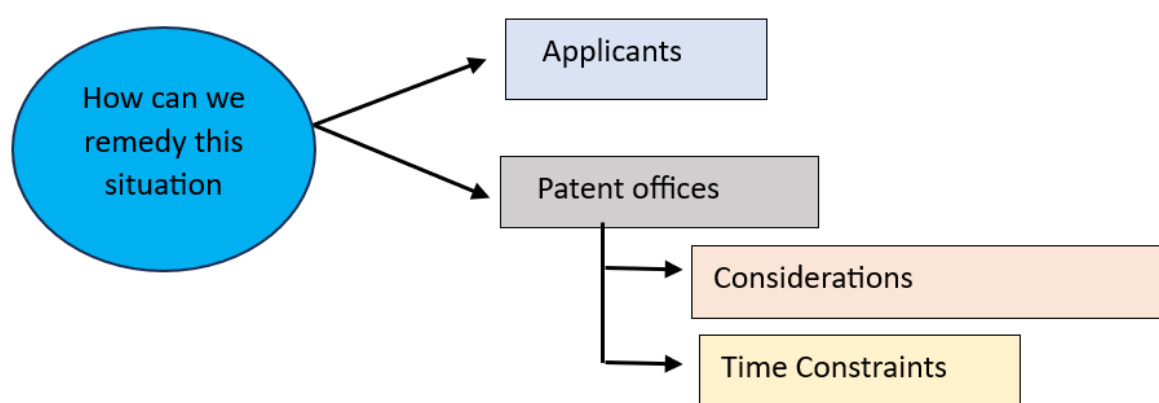


Figure 3: Remedies for issues in the Patent System

1. Registrants

When it comes to enhancing the standard of patent submissions it's important to embrace a “Quality in

as crucial, for steering research and development in the path.

2. Patent Offices

In Europe, the establishment of the European Patent Office has been a significant achievement, evolving into the leading patent authority on the continent within just three decades. Any attempt to re-nationalize it by transferring search or examination to national authorities could be considered a move in the wrong direction.

2.1. Considerations

- Patent agencies might want to consider offering rewards, for precise patent claims as well, as other forms of financial assistance to lower the expenses associated with patent applications.
- Many apps continue to focus on claiming ownership than effectively sharing information with users. Moreover, lack of disclosure, about an invention or intentionally hiding its essence, in a granted patent has frequently made it challenging to understand the extent of its protection.
- There is still some doubt, about whether the inventive step criterion has been met in patent applications and it may be better to consider using the "degree of creativity" method, from Germany in these situations.
- Lately there has been an increase, in the quantity of approved patents asserting chemical substances along with numerical values such as turbidity, viscosity and hydrophilicity. These values are frequently challenging to confirm. The particular measurement methods utilized are seldom readily available. Consequently, validating

claims can be extremely difficult. The unique approaches described for conducting experiments are not readily accessible, for evaluation by a patent examiner in the United States patent system; it is typical for examiners to assume that the numerical values of referenced products in literature are accurate unless the applicant provides evidence, to the contrary.

2.2. Time Constraints

Based on a survey conducted by a staff union among 1300 patent examiners, at the EPO (European Patent Office) most employees feel that they lack time to carry out patent examinations. According to a union study published in nature, three-quarters of employees believe that EPO's management productivity goals prevent them from enforcing specification requirements established by the European Patent Convention. A significant majority felt that they lacked the time to conduct "satisfactory" internal quality control checks [5].

Conclusion

The rapid expansion in patent applications reflects the growing acknowledgement of intellectual property's substantial role in economic and strategic development within society. However, advancements in information retrieval methods have not yet evolved sufficiently to efficiently manage the complexity and volume of patents requiring evaluation. Moreover, two critical aspects- human intellectual capacity and the duration of the examination process-often overlooked. Several factors contribute to excessive

and unnecessary information. Differences, in patent laws lead to patent filings also being made in the United States through a series of patents such as continuation applications or divisional applications. This process often results

in patent documents containing information due, to the common concepts covered in these filings.

Reference

1. Nigel S. Clarke, 2018, The basics of patent searching, World patent information, S4-S10.
2. David Romero Betancur et.al., 2023, Scientific and technological contributions from the 'Periphery': A look at patent application filed with the participation of Colombians, World patent information.
3. Liwei Zhang et.al., 2024, Research on patent quality evaluation based on rough set and could model, Expert systems with applications.
4. Gail A. Van Norman et.al., 2017, Technology Transfer: From the Research Bench to Commercialization, Volume 2.
5. Minoo Philipp, 2006, Patent filing and searching: Is deflation in quality the inevitable consequence of hyperinflation in quality, World patent information, 117-121.