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The role of specification in patent applications: A comparative study on sufficiency of disclosure



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ABSTRACT

A patent can be defined as a temporary and territorial right granted by the state to the patentee to exclusively exploit, license or foreclose third party the subject matter of its invention. When a patent application is filed, the applicant, among other requirements, must sufficiently disclose the claimed invention so that a person skilled in the art can carry out it. Nevertheless, sufficiency of disclosure, besides being one of the requirements needed to grant a patent, also plays an important role in the so-called "quid pro quo". Thus, a patent can be considered not only as a "reward", but also as a "contract" between innovators and society, in which a temporary property right is granted in tradeoff for disclosure. In light of the mentioned above, the aim of this work is to carry out a comparative study on the practices regarding sufficiency of disclosure requirements in three of the largest patent offices around the world; EPO, JPO, USPTO as well as in the Brazilian National Institute of Industrial Property (INPI-BR). The differences and similarities with respect to sufficiency of disclosure requirements among these offices are compared. Ultimately, what innovation could gain with a more harmonized patent specification is discussed.

1. Introduction

In 1594, when was granted to Galileo Galilei a twenty-year privilege for a water pump, the entire specification of the patent application was summarized to two lines [1]. A patent can be defined as a temporary and territorial right granted by the state to the patentee to exclusively exploit, license or foreclose third party the subject matter of its invention. Basically, patent may be granted as long as the invention is provided with novelty, inventive step and industrial application. Nevertheless, when a patent application is filed the applicant must also sufficiently disclose the claimed invention, so that a person skilled in the art can carry it out [2]. Thus, sufficiency of disclosure, besides being one of the requirements needed for granting a patent, it also plays an important role in the so-called "quid pro quo". The term of protection available shall not end before the expiration of a period of twenty years (provided fees are paid to the patent office) counted from the filing date and, after this period of time, the subject matter of the patent comes into public domain, so that others may gain its benefits.

At the earliest stages of the patent system largely as from the Venetian Patent Law of 1474, the granting of the privileges was based

on the natural right of the inventor, theory by which the State recognized the monopoly's exclusivity due to the efforts has expended by the inventor [3], also known as reward theory. Nevertheless, this understanding has been opposed by the concept of social contract or "quid pro quo". This social contract puts the interest of the society ahead of the inventor's one. Thus, patents could be considered as a "contract" between innovators and society, in which a temporary property right is granted in tradeoff for disclosure [4,5]. Therefore, the contract theory holds that the function of the patent system is to promote the diffusion of innovative knowledge [6,7].

Despite the controversy about the beginning of such rationale [8], some authors agree that the increasing emphasis by the judiciary on accurate and full specification could have culminated in Lord Mansfield's decision in *Liardet v. Johnson* (1778), regarded as a landmark in the history of English patent law [9]. According to [10], this decision stipulated that the specification should be sufficiently full and detailed to enable anyone, skilled in the art to which the invention pertained, to understand and apply it without undue experimentation. Accordingly, for the first time the "quid pro quo" for the award of a patent was recognized as the disclosure of the invention.

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¹ Liardet v. Johnson (1778), 1 HPC, 1 CPC 35, 1 WPC 52

According to [1], many of the summary descriptions before 1790's, date considered as a watershed of the modern patent system due to the U.S. Patent Act of 1790 and the French Patent law of 1791, were not meant to enable the reproduction of the invention, function that was typically realized by provisions about training of workers and artisans to build and operate the invention "in loco", concept known as reduction to practice. The reduction to practice requirement has served well the purpose of the early privileges, in which granting authorities aimed to maximize local utility rather than disclosing the invention, which could facilitate knowledge transfer to nearby countries. Accordingly, "If inventors could show that they had reduced their devices to practice or could provide working models for them, why would the King or the State care about how they worked?". Nevertheless, the 1790 U.S. Patent Act and basically the French Patent Law of 1791 do not specified reduction to practice requirements, but instead stated that a patent would be null if the specification "does not contain the whole of the truth concerning his invention or discovery; or that it contains more than is necessary to produce the effect described." [1,11].

At the end of the 19th century and with the advent of the industrial revolution, many transformations that were taking place required a change in the intellectual property system. At a time of large expositions, industrialists have contributed to the discussions with respect to the protection of such new technologies, since the exhibitors were not sure how to present their new devices without a guarantee of protection. Discussions on harmonization begun around 1850 and have culminated in the Paris Convention for the Protection of Industrial Property (CUP) [12], signed in Paris, France, on March 20, 1883. The signatory countries in this first phase were: France, Belgium, Brazil, Spain, El Salvador, Guatemala, Italy, The Netherlands, Portugal, Serbia and Switzerland [13]. Continuous efforts for harmonizing patent national laws was carried out, like the creation of the WIPO - World Intellectual Property Organization in 1967 and the PCT - Patent Cooperation Treaty in 1970, currently with 168 members [14]. The PCT has established some rules about sufficiency of disclosure. These rules can be found in Article 5, as well as its execution Rule 5 attached to the treaty. Nevertheless, the PCT treaty does not intervene in the national legislation of the signatories' countries, i.e., the national phase is sovereign with respect to the proceedings carried out in the international

Harmonization efforts became more expressive in the two last decades of the 20th century when intellectual property rights were introduced for the first time into the international trading system. The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) is a result of the 1986-94 Uruguay Round negotiations, signed at the Marrakesh ministerial meeting on April 1994, which culminated with the creation of the World Trade Organization (WTO), currently with 164 members [15]. It is one of the most important agreements

with respect to IP, since it sets up on minimum basis of protection for intellectual property that must be observed by the contracting states. Due to the Single Undertaking principle, all WTO members have to adhere to all agreements that compose the General Agreement on Trade and Tariffs (GATT), including TRIPs. Unlike Paris Convention, which has no effective type of dispute in case of noncompliance of their articles, the WTO has procedures for resolving quarrels under the Dispute Settlement Understanding, mechanism considered vital for enforcing the rules and ensuring that trade and intellectual property rights flow smoothly [15,16].

Further initiatives to harmonize the patent system were the Patent Law Treaty (PLT), a patent multilateral treaty concluded on June 1, 2000, in Geneva, Switzerland, by 38 States and the European Patent Organization (EPO) [17]. And, the Substantive Patent Law Treaty (SPLT), which aimed harmonizing substantive points of every national patent law. In contrast with the Patent Law Treaty (PLT), that only relates to patent prosecution formalities, the SPLT aimed harmonizing substantive requirements such as novelty, inventive step/non-obviousness, industrial applicability/utility, as well as sufficiency of disclosure and unity of invention. Nevertheless, there was no consensus about such matter among the WIPO member-states, thereby closing the negotiations.

Nowadays some countries have decided to conduct independent bilateral and, even so multilateral agreements in order to establish a common framework for intellectual property, like the Patent Prosecution Highway (PPH) that aim, among other things, harmonizing and developing good practices of prosecuting and patent examining procedures. In Brazil the PROSUR, a South America collaborative project that includes nine countries; Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Suriname and Uruguay, was created to assist in the efforts of improving services to local and international users of the IP system, initially through sharing patent examination results and other intellectual property (IP) resources.

Considering the aforementioned, the aim of this work is to carry out a comparative study on the practices regarding sufficiency of disclosure requirements in three of the largest patent offices around the world; EPO, JPO, USPTO as well as in the Brazilian National Institute of Industrial Property (INPI-BR). The differences and similarities with respect to sufficiency of disclosure requirements among these offices are compared. Ultimately, what innovation could gain with a more harmonized patent specification is discussed. Table 1 summarizes the countries and organizations considered in this study.

2. The TRIPs agreement and the person skilled in the art $\,$

As aforementioned, concrete efforts with respect to harmonization considering sufficiency of disclosure aspects was established in TRIPs

Table 1
Summary of countries and organizations considered in this study.

Country/Organization	Brazil	European Patent Organization	Japan	United States
Patent Office (Acronym)	Brazilian National Institute of Industrial Property (INPI- BR)	European Patent Office (EPO)	Japan Patent Office (JPO)	United States Patent and Trademark Office (USPTO)
Statute Followed	Industrial Property Law N. 9279 (1996)	European Patent Convention – EPC (1973) last amended (2016)	Patent Law N. 121 (1959) last amended (2014)	U.S. Code, Title 35 (1952) last amended (2012)
International Treaties in Force	Paris Convention (1884)PCT (1978)TRIPS (1995)	The EPC constitutes a special agreement within the meaning of the Paris Convention and also apply in the European applications. Since nearly all the contracting states of the EPC are members of the WTO, the relevant provisions of the TRIPs Agreement are implemented in the revised EPC. The EPC further constitutes a regional patent treaty, which means that European patents can be granted on the basis of an international application filed under the PCT.	 Paris Convention (1899) PCT (1978) TRIPS (1995) PLT (2016) 	 Paris Convention (1887) PCT (1978) TRIPS (1995) PLT (2013)

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