

Patent Agents in the European Periphery: Spain (1826–1902)

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INTRODUCTION

Although some recent studies have provided fresh intellectual insights on the role of patent practitioners during the nineteenth century, they have largely overlooked the activity of these actors in international patenting and peripheral countries. The focus of much of this historical writing about patent advisers and intermediaries has been the ‘core’ industrial countries of Western Europe and North America, and not the so-called peripheral countries.¹ However, given that patent institutions became increasingly interdependent in the second half of the nineteenth century, it is also necessary to study the connections among various national systems and the broad role of patent practitioners as links in international patenting.

This study will fill a gap in the existing scholarship through an examination of the role and influence of patent agents in Spain from the introduction of the country’s first modern intellectual property law in 1826 to the regulation of agents’ practice in 1902. The study explores the range of activities carried out by those individuals employed by Spanish and foreign patentees to deal with both the patent application process and the commercialization of property rights. Our argument here is that a focus on patent agents and other forms of agency can provide us with a better understanding of processes of invention, innovation and technology transfer in the European periphery during the nineteenth century. The history of technology in the periphery requires attention not only to the incentives for innovation but also to the social procedure of transmission of knowledge, ideas and information as well as the actors involved in this activity. It is important to note that our focus cannot be solely on the transfer and communication of knowledge and information from advanced industrial nations to ‘backward’ ones; it must also include the processes of interaction, exchange and appropriation that occurred in both directions.

The essential insight of this chapter is that patent agents were significant actors in the functioning and historical evolution of the Spanish patent

institution during the nineteenth century, especially its final decades. We begin the next section by briefly reviewing the main characteristics of the Spanish patent system, which was designed in a hybrid way that guaranteed property rights to original inventors while promoting technology transfer and industrialization. In the third section we will explore the origins of industrial property agency in Spain before 1878 – that is, before the new patent law and the institutional changes achieved during the last quarter of the century.² The fourth section will show that from the end of the 1870s, when professional patent specialists began to dominate national and international patenting in Spain, their activities became indispensable for successful patent and trademark application and management. The final section will explore the regulation of Spanish patent agents' activity at the turn of the twentieth century.

THE NINETEENTH-CENTURY SPANISH PATENT SYSTEM AS A HYBRID INSTITUTION

The establishment of patent systems throughout the Atlantic economies in the nineteenth century has been analysed mainly as the twofold result of the extension of intellectual property rights observance and the widening of international agreements signed with respect to intangible assets, such as those derived from invention activity. Patent systems have also been studied as the natural consequence of the industrial development, technological change and expansion of scientific knowledge that stemmed from capitalist expansion and, additionally, a consequence of the necessity of guaranteeing appropriation of intangibles in order to foment inventions and economic progress. Hence, many economists and economic historians, with few exceptions, have used and are using patent data as a partial technological proxy, aggregating each and every patent statistic from different countries and periods, and making international comparisons without regard to the fact that there were huge differences among national systems. There has likewise been a failure to take into account the hidden aspects of laws and their enforcement, which in turn reflect on institutions and agents.

We maintain that the nineteenth-century Spanish industrial property institution can only be explained through the study of its interactions with other national patent regimes and systems of innovation. In that sense, the patent system in Spain was explicitly designed to promote technological emulation, rather than to protect and foster domestic inventive activity. The modern patent laws of 1820 and, mainly, 1826 were aimed at stimulating technology transfer as a strategy for improving the country's relatively backward industrial position.³ During the whole nineteenth century and even most of the twentieth century, Spanish patent legislation stimulated technological diffusion with a variety of policies including patents of introduction, utility models, a lack of technical exams and compulsory working clauses.⁴ The diffusion and emulation of foreign technology was also facilitated by a weak, non-specialized judicial system.

During the nineteenth century a close interdependence existed between the different patent systems and the political economy of the different nations. Nineteenth-century patent institutions were the product of a particular

historical period in which core industrial nations acted as technological leaders, yielding the greatest number of patents, while peripheral-dependent countries sought to emulate foreign technology and stimulated international patenting (patents of introduction included) in their own systems. It is likely that the degree of institutional diversity in patent systems during those years stemmed from the relative position of their home nations as innovative or emulative. Nineteenth-century patent systems were designed not only as economic institutions for protecting invention activity and fostering innovation processes but also, and above all, as a mercantilist political strategy by which to promote industrialization. This was the predominant viewpoint during a time when technology transfer and human capital movements mattered greatly and when copying or establishing new technologies from other countries was encouraged by all nations.

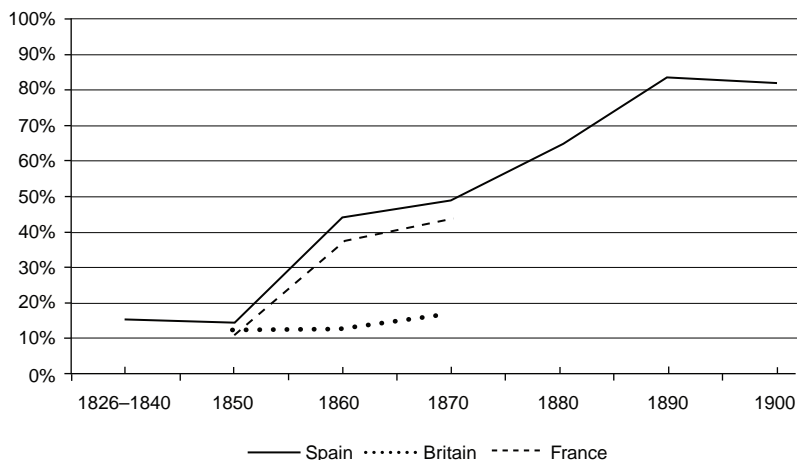
It was especially after the 1870s that national patent systems began a process of interconnection, harmonization and, to certain point, unification that influenced international agreements on patent law. In the last decades of the nineteenth century, Spanish politicians, political economists, industrialists and engineers widely agreed that patent protection was a good way to promote technological imitation and encourage national exploitation of patented technologies imported from abroad. Among them, industrialist and patent practitioners – many of them engineers – were some of the most enthusiastic advocates of the patent institution.

PATENT AGENTS IN SPAIN DURING THE FIRST INDUSTRIALIZATION PROCESS

From the establishment of the Spanish patent register in 1826 through 1850, only 890 patents were requested in Spain, half of them patents of introduction. The limited scope of the Spanish patent system in that period precluded the participation of actors other than inventors. The proportion of individuals acting as representatives, assistants or patent traders was decidedly low. Although there were several privileges of introduction and property rights assignments granted through intermediation, it was not yet possible to clearly identify a community of Spanish patent practitioners.

As the original patent files reveal, until the 1850s no one had specialized in patent issues, not even as a complementary professional activity. Only a few foreign diplomats and engineers living in Spain occasionally stepped outside their primary activity to dabble in patent-related business during the first 25 years of the country's patent system, usually assisting foreign inventors in registering their technologies.⁵ Likewise, the duties of 'patent jobbers', who obtained patents on behalf of their clients, seem to have been recurrent during the first decades of the patent institution's existence, as they were in other countries.⁶ It is nevertheless difficult to assess the importance of patent jobbers' activities during these formative years because of the lack of complementary sources that could allow us to define who the 'first' and 'true' inventor was.

As Graph 7.1 shows, the number of patent applications channelled through intermediation rapidly increased from the 1850s. Although this chart reflects



Graph 7.1 Percentage of Spanish Patent Applications Involving an Agent (1826–1900)

Source: Spain: OEPM, Historical Archive (1826–1900); France: Philippe Peyre, ‘Les Armengaud, la Petite École et le Développement de l’Innovation’, *Les Cahiers d’Histoire du CNAM*, 1994, 4: 93–113; and Britain: Ian Inkster, ‘Machinofecture and Technical Change: The Patent Evidence’, in *The Golden Age: Essays in English Social and Economic History*, eds Colin Griffin, Ian Inkster, Jeff Hill and Judith Rowbotham et al. (Aldershot, Ashgate, 2001).

only patent applications (not consultancy, assignments or litigation services), it accurately reflects the increasingly significant role of patent practitioners in the Spanish system during this period. The growth of patent intermediation from the 1850s was primarily rooted in the increasing technical complexity of inventions and the new regulations on industrial property law. The growth of patent intermediation from the 1850s was also facilitated by the favourable economic conditions stemming from the new liberal policies of the 1840s and 1850s – years during which significant legislation on land disentailment, railways, bank and financial systems were promulgated. Indeed, the increasing industrialization process triggered patenting. However, compared to leading industrial nations, the patent activity in Spain was still extremely limited, as were the economic incentives for foreign inventors to protect their property rights in that country.

The nature of the technical memoranda presented by patentees to the patent office before 1850 did not require specialized assistance. Before the 1850s, the level of formalization of the patent text was reduced and technical explanations were usually based on practical experience. From the early 1850s a series of more strict requirements became necessary to effectively secure patents. After 1849, for instance, independent notarized reports of patent work were required by the state, thereby increasing control over the actual implementation of patents. A public notary had to assess whether a given invention had

been put in practice and an engineer had to certify it. Formal patent specifications and precise technical drawings thus became essential for effectively securing valuable and technically complex inventions in Spain.⁷ The use of standardized language, mathematical representations, chemical formulas and professional technical drawings also became a tacit requirement.

Despite the increasing percentage of patentees who resorted to representatives after 1850, the application for patents did not yet necessarily require the specialization of engineers and lawyers, and the individuals who assisted patentees were not yet full-time professionals dedicated to patent issues. Indeed, direct patenting by Spanish inventors and firms remained commonplace through the 1850s and 1860s. In contrast to France, Britain and the United States, individuals working on patent issues in mid-nineteenth-century Spain were not yet professionally engaged as patent agents and did not recognize themselves as such. In the third quarter of the century, the vast majority of these individuals worked in an extremely diverse array of activities and comprised a very heterogeneous community. Rather than serving as professional patent agents, they were employed, primarily, as general attorneys, international merchants, mechanical draftsmen, machinists, model builders, engineers and scientists, and some of them were important patentees in their own right.

Rather than the consolidation of a new profession, before the mid-1870s we could identify an increasing rent-seeking behaviour among pre-existing professionals and firms who smoothly entered the patent system. Above all, lawyers, general trade firms and commissioning houses provided non-professional patent services for an increasing number of foreign capitalists seeking individuals to mediate in patent rights applications in the Spanish system and facilitate trade with patented technology. The lawyers Juan and Leopoldo Barrié y Aguero and the commercial house C. A. Saavedra dominated the field during the 1850s and 1860s, most notably in the extension of patent rights to foreigners in Spain. Although agency-related activities were part of their principal business, none of these were specialized as patent lawyers, consultants or intermediaries. They were in fact subagents of large foreign agencies based in Paris and London. The lawyers 'Barrié y Aguero' worked mainly as correspondents in Spain for the French engineering firm Maison Armengaud Aîné, which specialized in patents.⁸ Between 1853 and 1878, these lawyers, based in Madrid, procured 'letters patents' in Spain for, among others, the German engineers Carl Wilhelm Siemens and Alfred Krupp.⁹ However, it was the commercial firm C. A. Saavedra,¹⁰ often subcontracted by the international industrial property agency of the French civil engineer Charles Thirion, that was most active in the provision of patent services from the 1850s through the mid-1870s. With offices in Madrid, Paris and London, the C. A. Saavedra business engaged in diversified international activities, including the import and export of a variety of products; translations and interpretations; consignments; representation of foreign railway companies in Spain and so on.

Business partnerships around a patented invention also became commonplace from the 1850s. This strategy reduced the costs and risks encountered by foreign inventors seeking to patent in Spain. The series of patent agreements undertaken between the Basque commercial and steel company Ybarra

Brothers and renowned foreign inventors during the late 1850s is an excellent example. Although the history of the Ybarra Company is well known,¹¹ the patent strategies this firm developed are worth investigating. José de Vilallonga, a Catalan metallurgist and manager of Ybarra Brothers, oversaw the signing of patent agreements between foreign inventors such as the French mining engineer Adriane Chenot and the British industrialist and engineer Henry Bessemer.¹² In 1856, for instance, Vilallonga signed a £5,000 licence agreement with Bessemer for the exclusive use of his converter in Spain to produce iron and steel from pig iron without fuel.¹³ Interestingly, apart from signing a patent licence with Bessemer and Chenot, Vilallonga acted as an industrial property intermediary and business partner, making all the administrative arrangements required for the extension of Bessemer's and Chenot's patents in Spain.¹⁴ In 1854, Vilallonga, Ybarra and Chenot established a firm in Bilbao for the improvement, management and application of Chenot steelmaking inventions in Spain.¹⁵

THE PROFESSIONALIZATION OF AGENCY AT THE BEGINNING OF THE FIRST GLOBALIZATION

The 1870s marked a transition in the organization of innovative activity in Spain. In the last quarter of the century, a community of specialized engineers, lawyers, consultants and business partners who assisted and interacted with inventors emerged in the country's largest cities. From that moment onwards, the participation of these techno-legal actors in the Spanish industrial property system dramatically increased and became highly significant. Patent practitioners came to occupy a central position in the increasingly larger and more complex Spanish innovation system. As Graph 7.1 shows, the percentage of patent applications in Spain involving an agent increased from 50 per cent in the 1870s to over 80 per cent at the century's end. Unfortunately, the data available for France and Britain (also represented in Graph 7.1) is limited to the period 1850–70, but recent scholarship, using contemporary accounts and reports, maintains that in the late nineteenth-century agents in both countries likewise monopolized industrial property application and management.¹⁶

A series of changes occurred in the second half of the nineteenth century that may help explain the division of innovative labour and increased professionalization of the patent business throughout the world, particularly in latecomers such as Spain. First, and foremost, the growth of patent activity managed by agents can be interpreted as a response to the increased incentives for assisting foreign inventors in extending their property rights to other countries. For instance, late nineteenth-century professional inventors, such as Thomas Alva Edison, Guglielmo Marconi, Alfred Nobel and William Thomson, as well as large companies, including Krupp, American Bell, Vickers Ltd., Siemens-Halske, General Electric and Schneider Cie., increasingly relied on Spanish engineers, lawyers and trade firms to secure their inventions in Spain. These changes were closely related to the international agreements on industrial property that transpired during the 1880s and facilitated international patenting through a reduction in uncertainty, costs and bureaucracy. Meanwhile,

the 1878 Spanish industrial property law had incentivized patenting through a reduction in fees and the granting of two years of priority rights to inventions already patented abroad.¹⁷ From the approval of the 1878 law, the system gained in dimension and complexity. The number of patent applications per year, the trade in property rights and the technical and economic value of the inventions protected increased significantly from that moment. From 1878 to 1902 there were approximately 31,000 applications for patents in Spain, versus around 5,000 during the much longer period of 1826 through to 1878.

Economic and political transformations that occurred from the 1870s in Spain were likewise a factor in increasing the propensity for patenting, especially from abroad. After a financial and political crisis that lasted from 1864–8 to 1874, the first phase of the '*Restauración*' (1875–1902), was a period of stability and industrial development, characterized by new and significant economic regulations including, among others, the Public Works Law (1875), the Railways Law (1877), the Patent and Industrial Property Laws (1878, 1902) and the new Commerce Law (1885). It was a period of economic convergence in which many institutional reforms were completed. That said, the patent data indicate that the industrial take-off of the last decades of the century had arisen out of technological dependency, insofar as Spain was heavily dependent on German, American, British and French patented technology, specifically in the metalworking, electrical, communication, chemical, railways and gas and lighting sectors.¹⁸ Between 1878 and 1907 approximately 60 per cent of patent applications were by foreigners, a percentage of technological dependency that reached an average of almost 70 per cent if we include the patents of introduction on foreign technology for which Spanish residents applied.

The unprecedented amount of foreign patented technology that flooded Spain from the 1870s contributed to a mushrooming of new patent professionals in the country's two large urban centres: Madrid, where the patent office (*The Conservatory of Arts*) was established, and Barcelona, Spain's leading industrial city. The phenomenon was also reflected in the increasing number of advertisements for patent businesses in the specialized and general press and the growing number of technical journals devoted largely to industrial property issues. The steady stream of international enquiries for patents in Europe and America during the last decades of the century was noted in an 1885 article by the consulting industrial engineer Gabriel Gironi, director of *La Semana Industrial* (The Industrial Weekly).¹⁹ Similarly, the engineer and patent agent Teodoro Merly, in a series of articles published in the daily *El Liberal* in March 1890, stressed how the 'enormous' transfer of technology to Spain during those years had fostered the rise of a number of occupations whose *raison d'être* was to secure the rights of foreign inventors and firms.²⁰

In the last decades of the century Spain's patent business underwent a process of professionalization. Specifically, this meant a transition from the generalist patent practitioner of the mid-nineteenth century to the specialized large patent agency that came to dominate at the turn of the century. The patent business was becoming a full-time professional niche for lawyers and engineers. Two agencies active in the 1870s – *El Centro Auxiliar de la Industria* (Industry Assistance Centre), created in 1871 in Barcelona by the aforementioned

industrial engineer Teodoro Merly,²¹ and the Vizcarrondo agency – can be considered the pioneers of the professional patent business in Spain. These agencies also epitomize the two distinctive types of patent firms that emerged during the last decades of the century: those formed by engineers and those set up by lawyers and business agents. The two types would merge during the first decades of the twentieth century.

The first Spanish professional agency to work intensively for foreign firms and inventors such as Thomas Alva Edison and the German steelmakers Krupp was the Anglo-Spanish General Agency and Commission House, established in 1865 by Julio Vizcarrondo (1829–89), a Puerto Rican lawyer based in Madrid. Although Vizcarrondo's general agency in Spain was founded in 1865, it did not come to specialize in industrial property management until ten years later. Vizcarrondo appears to have been the first professional agent (professional in that he had specialized knowledge of patent application, control and management) to engage in international patenting activities in Spain. He was also Spain's leading patent agent from the mid-1870s through the late 1880s, intermediating in about 20 per cent of Spain's total patent applications during this period. In yet another distinction, he was the first Spanish agent to become a member of foreign patent agent associations such as the French *Syndicat des Ingenieurs-Conseils en Matière de Propriété Industrielle* and *The British Chartered Institute of Patent Agents*.

Especially interesting was the tendency from the early 1860s of a number of distinguished engineers, machinists and chemists – many of whom owned patent rights themselves – to begin acting as patent professionals. Several of these engineers and scientists were trained in France and Britain and frequently doubled as technical assistants and draughtsmen. The new demands of the Spanish innovative system during those years provided opportunities for the relatively small number of professionals residing in Spain who had a technical and scientific background and shared a common technical language with inventors and industrialists.

Good examples of this tendency were the industrial engineer Magín Lladó and the chemist Federico Cajal, both editors of the weekly publication *El Porvenir de la Industria* (The Industrial Future), who in 1857 established a technical agency in Barcelona dedicated to mechanical and chemical consultancy, valuation of inventions and management of patents and trademarks.²² A few years later, in 1865, José Alcover, also an industrial engineer and the director of the weekly review *La Gaceta Industrial* (The Industrial Gazette), established a consulting engineering firm in Madrid from which he advertised patented inventions and public exhibitions of foreign machinery, integrating engineering, commercial and patenting services.²³ This company operated until 1891, at which point it became an electrical consulting firm whose participation in the patent business was minimal owing to the emergence of larger specialized industrial property agencies during the last two decades of the century.

The expansion of agents' activities in Spain during the last third of the century was closely related to the increasing number of mechanical and chemical consultancies established in Barcelona and Madrid during those years. This relationship may explain why patent businesses began to be dominated in part

by industrial engineers, a small elite community with close ties to the industrialization process. Moreover, in the second half of the century, Spain's industrial engineers were the preferred professionals selected by both inventors and the state to certify the practical implementation of patented inventions that had been required by law since 1849.

A look at late nineteenth-century business directories suggests how different the Spanish patent system had become by the last two decades of the nineteenth century. Over 30 Spanish individuals and firms were consistently listed and advertised in national and international patent directories in the late 1880s and 1890s.²⁴ However, although business and city directories give a sense of the increasing importance of the industrial property business in Spain, they do not reflect the fact that by 1900 a mere handful of agencies had come to monopolize the patent business via mergers between complementary firms. The overwhelming majority of Spanish agents and agencies during the last decades of the century were practising in Madrid or Barcelona for both economic and administrative reasons. As Table 7.1 shows, the services and economic sectors assisted by these agencies often differed, as did the qualifications and backgrounds of their employees.

At the turn of the century, the country's patent agency business was already consolidated and controlled by a very low number of increasingly large professional agencies specializing in different types of services. Among them, the two firms set up by lawyers – ‘*Vizcarrondo-Elzaburu*’ and ‘*Clarke, Modet & Co.*’,²⁵ both established in Madrid – worked almost exclusively for foreign corporations and inventors. These two firms did not offer technical assistance; instead, they functioned mainly as agents who communicated rights and knowledge as part of a transnational sociotechnical network of agents that dominated the field of communication of foreign industrial property rights to Spain. Engineering firms, for their part, occupied a separate niche of the market for patent professionals. Beyond their international clientele, the consultancies of Gerónimo Bolibar and Teodoro Merly, both in Barcelona, devoted a substantial part of their activity to assisting Spanish inventors and industrialists. Gerónimo Bolibar was the editor of the patent journal *Industria e Invenciones*, published weekly in Barcelona since 1884. Bolibar was a renowned professional who acted as Secretary of the International Engineering Conference celebrated in Barcelona in 1888.

These engineers tended to participate in various interrelated activities and offered their clients a wide range of services (testing, installations and exhibitions) that overlapped with those of electrical and mechanical consultancy and technology trade. In the 1890s the firm *El Fomento Industrial*, established by the registered business agent Agustín Ungría,²⁶ became an important player in the Spanish patent business. The company was a general commission house, not specialized in industrial property rights, that saw an opportunity to engage in the commercialization of patents and trademarks through its trade journal *El Fomento Industrial y Mercantil* (The Industrial and Mercantile Promotion).

According to patent documentation for the year 1900, a half-dozen industrial property firms controlled about 70 per cent of Spain's total patent applications along with the commercialization of patents; the leaders of this sector were *Vizcarrondo-Elzaburu*, *Clarke, Modet & Co.* and *The International Patent Office of*

Table 7.1 Services Provided by Main Industrial Property Agencies 1878–1900

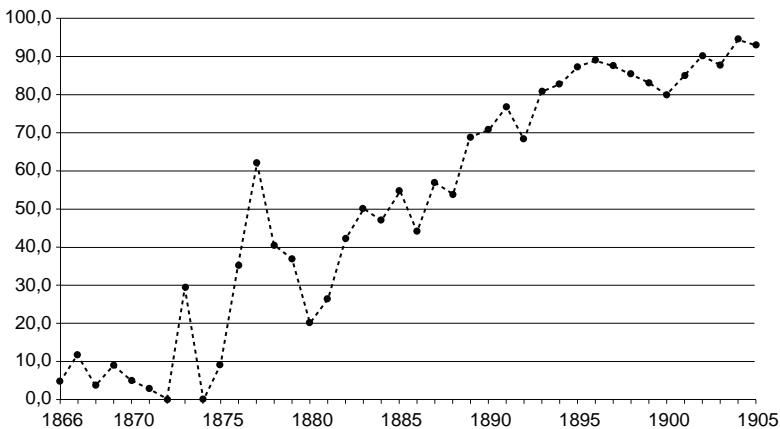
	Year Foundation	City	Background agents (in origin)	Patents	Trademarks	Litigation	Technical Assistance	Colonial Patents	Technology Trading	Journal	Other literature
Alfonso Piquet	1860s	Madrid	Engineer	x			x	x	x		
Elzaburu-Vizcarrondo	1865	Madrid	Lawyers	x	x	x		x			x
'Agencia General de Patentes y Marcas, Clarke, Modet and Co.' (Alberto Clarke, Fernando Modet, José Gómez-Acebo)	1879	Madrid	Lawyers	x	x	x		x			x
'El Fomento Industrial y Mercantil' (Agustín Ungría)	1891	Barcelona Madrid Valencia	Business Agent	x	x				x	x	
'Oficina Internacional de Propiedad Industrial' (Gerónimo Bolibar)	1884	Barcelona	Industrial Engineer	x	x		x		x	x	x
'Centro Auxiliar de la Industria' (Teodoro Merly, Félix Sivilla, Ventura Serra)	1871	Barcelona Madrid Lisbon	Engineers	x			x	x	x		x
Carlos Bonet	1886	Barcelona Madrid	Engineer		x						
José Pella	1880s	Barcelona	Lawyer			x					x

Sources: Original Patent Files at the OEPM (1826–1900); *BOPJ* (1886–1910); *International Directory of Patent Agents* (London: William Reeves, 1893, 1897, 1901); Advertisements and directories in *La Gaceta Industrial, Industria e Invencciones, La Semana Industrial, El Porvenir de la Industria, Revista de Obras Públicas* and *Anuario de la Electricidad*.

Gerónimo Bolibar.²⁷ It seems that almost the totality of ‘elite’ foreign patents were channelled through these leading agencies. Meanwhile, four agencies monopolized trademarks application and management: Elzaburu, Ungría, *Clarke, Modet & Co.* and, above all, the industrial engineer Carlos Bonet. The latter, based in Barcelona, specialized almost exclusively in the application and management of trademarks and channelled approximately 44 per cent of trademark applications between 1885 and 1905.²⁸ As Graph 7.2 clearly shows, from the 1875 Restoration onwards, agents’ intermediation grew exponentially – to such an extent that at the beginning of the twentieth century they managed virtually every trademark ever registered (93–94%).

Thus, it is clear that foreign inventors and entrepreneurs considered agents the best means of obtaining and controlling patent and trademark rights in Spain, given the reduction of transaction and information costs. Foreign patenting activity would have been constrained without the presence of these intermediaries. However, the indispensable participation of agents in international patenting and trademarking in Spain also reflects the various barriers to, and changing imperatives for, technology transfer to peripheral economies during the years of the Second Industrial Revolution and reveals, among other things, that foreign patenting in Spain was limited to inventors who could afford the high state and, especially, agent fees.

Once a patent had been issued, some patent professionals continued assisting foreign inventors in patent maintenance, the compulsory enactment of the invention and the sale and transfer of property rights. Indeed, assisting foreign patentees to assign and license their property rights and facilitate external investment may have been an important part of professional agents’ activities, despite Spain’s relatively small market for patented technology during the last decades of the century. Although the presence of professionals who assisted patentees in commercializing their inventions cannot be readily measured, by



Graph 7.2 Spanish Trademark Applications Involving an Agent (1866–1905)

Sources: OEPM, Historical Archive, Trademarks 1866–1905.

the 1870s a commonality of technical and general press advertisements saw agents selling patents and inventions. In any case, agents' co-ownership and partnership with inventors and their activities as brokers who dealt commercially with patents were controversial, since these activities seemed to confer an excessive power to agents and entail a conflict of interest insofar as the agents' commercial and professional duties clashed.²⁹

The study of dozens of assignment contracts of 'elite' patents from 1870 to 1900 makes two ideas clear.³⁰ First, all contracts of assignment and licence of foreign patents were established through professional industrial property agents. Second, from the 1880s, the same agents who provided assistance in patent procurement were drafting licences and providing counsel in property rights assignments. For instance, the patent firm *Clarke, Modet & Co.*, through its lawyers José Gómez Acebo and Alberto Clarke, assisted Guglielmo Marconi in the 1897 assignments of his Spanish patent on wireless technology to *The Wireless Telegraph and Signal Company Limited* of London. In 1896, following instructions from Edward's Carpmael's London-based patent firm, *Clarke, Modet & Co.* had mediated to obtain Marconi's Spanish patent. In 1897 the same Spanish agency intermediated with the state to officially prove that the invention was in practice following the legal requirements of the 1878 law.³¹

Spanish patent professionals may also have been active in the last two decades of the century in assisting Spanish industrialists and inventors in the process of information searching. Some industrial engineers, like Teodoro Merly and Gerónimo Bolibar, provided clients with summaries and copies of letters patent, specifications, technical memorandums and drawings of patents already granted confirming ownership, titles and assignments. This service was most likely a principal source of technical information contained in patents, along with patent journals and related literature, since the complete specifications were not published by the official organs of the patent office, namely the *Gaceta de Madrid* and, from 1886, the *Boletín de la Propiedad Industrial (BOPI)*. This service may have been connected with the agents' experienced assessment of patentability, international priority rights and infringement of inventions within the country. For this reason Spanish agents advised national and international patentees in the preparation of their applications so as to avoid litigation.

Another complementary service provided by some lawyers was assistance in industrial property disputes. This activity is extremely difficult to document given the dispersal of patent trials documentation.³² In any case, it seems that the limited number of patent cases that occurred was essentially monopolized by a small number of patent lawyers as well as engineers acting as expert witnesses, who presumably increased the cost of obtaining justice in industrial property issues.³³ The most renowned patent lawyer at the turn of the century was José Pella. Based in Barcelona, Pella often collaborated with the engineering firm of Gerónimo Bolibar in patent trials, although Pella only provided legal assistance in patent and trademark matters and represented patentees in courts of law in the event of infringement proceedings. Pella was also the author of *Patents of Invention and the Rights of Inventors* (1892), which at the time was the most relevant doctrinal treatise on industrial property law in the Spanish language and a paradigmatic example of pro-patent discourse.³⁴

THE INSTITUTIONALIZATION OF AGENTS ACTIVITY

Although industrial property professionals had placed themselves at the centre of the Spanish innovation system from the 1870s, neither the patent law of 1878 nor the minor regulations passed in the last two decades of the century regulated the participation of third parties in the acquisition and management of patent rights of invention. Apart from the acknowledgement that representatives could apply for patent rights under the inventors' names, no other references can be found in the 1878 law. This law reflected a lack of awareness among legislators that actors other than inventors and state officers could participate in the patent system. It was with the major reform of the patent law of 1902 that Spanish patent agents' activities became regulated by the state through the establishment of a mandatory register of industrial property agents as well as formal requirements for their practice.

The 1903 by-law regulating the 1902 Industrial Property Law established both a mandatory register of patent agents and formal requirements for their practice.³⁵ This regulation established that no one could intermediate in more than three files of patent and trademark applications without being registered in the *Negociado Especial de Patentes* (the Spanish Patent Office of the time) as an industrial property agent. The law, however, did not introduce clear barriers to entry into the profession. It simply specified that only Spanish citizens with a legal or engineering degree or an accredited equivalent competence could be registered as Industrial Property Agents. Registered agents also had to be members of the official *Colegios de Agentes de Negocios* (Associations of Business Agents) and have a minimum of five years of experience working as agents without any judiciary reclamation for malpractice.

As the patent lawyer Francisco Elzaburu pointed out in correspondence to the *Society of Patent Agents* of London, the new law passed by the Spanish Parliament represented 'great progress' for Spanish agents.³⁶ From that moment, the contours of the agents' occupation became both more controlled and more normalized. However, the new regulation left room for abuse. The main issue, according to professional and technical journals edited by agents, was that it remained unclear precisely what kind of expertise and qualifications were required in order to practise as a patent agent. The profession of 'industrial property agent', in short, was still fairly vague. Conversely, in the United Kingdom, France and the United States, no exam or specific training was required. Due to Spain's lack of official registration or exams, Spanish agents' reputation as experts in international patenting was obtained through personal and professional connections with colleagues in foreign cities and their participation as foreign members in international mutual associations.

The 1902 industrial property law opened up the patent business to the three types of professionals who had brought the most individuals into the industrial property field: engineers, business agents and lawyers. From the late 1870s, members of these three occupations had seen a professional opportunity in the patent business. Moreover, they represented the three realms that patent agents mediated: science, the market and the law. The 1903 patent regulation did not privilege any one of them. Engineers managed to preserve the exclusivity of

drafting and signing technical memorandums, technical drawings and models that was already regulated by the budget law of 1893–7, even though it had not been acknowledged by the Spanish Patent Office.³⁷ Business agents and lawyers celebrated the new regulations insofar as they limited industrial property agencies to professionals with experience and sufficient economic resources for a mandatory deposit, thereby ensuring a minimum level of competence in the profession.³⁸ The register did not begin to function and was not published in the official organ of the Patent Office (the *BOPÍ*) until 1905.³⁹ In the first Register of Industrial Property Agents, in November 1905,⁴⁰ only 28 individuals were registered – 21 in Madrid, 6 in Barcelona and 1 in Bilbao, most of them working for Spain's six largest professional agencies, which had monopolized the country's industrial property business since the last years of the nineteenth century.⁴¹ Interestingly, the regulation of agents' activities through the introduction of a mandatory register of agents seems to have stimulated large agencies to absorb smaller ones and increasingly integrate individuals with technical and legal backgrounds.

It was as late as 1907 that Spanish industrial property agents founded their first mutual organization, the *Asociación Española de Agentes de la Propiedad Industrial y Comercial* (The Association of Industrial and Business Agents), through the initiative of Francisco Elzaburu, the organization's first president. In May 1909 this organization acquired official character insofar as it was recognized by the state. It was a very late professional association considering that Britain, France and the United States had already established professional associations by the 1880s, while countries like Germany, Switzerland and Italy had done so by 1900. In December 1916 the *Consejo de la Propiedad Industrial y Comercial* (Council of Industrial and Business Property) was created as a state consultative cabinet for the reform of industrial property laws and related issues. In 1917, two of Spain's leading patent professionals, Francisco Elzaburu and Agustín Ungría, were among the cabinet's first members alongside representatives who were industrial engineers, members of the Academy of Sciences and industrialists; the cabinet was presided over by the former Minister of Public Works, Rafael Gasset. In any case, before the establishment of agents' associations and the state council, industrial property practitioners had never conformed an underrepresented collective. From the 1880s some agents – including Julio Vizcarrondo, Gerónimo Bolibar and Alberto Clarke – carried lobbying activities through their journals, privileged political connections and active membership in foreign associations such as the *London Chartered Institute of Patent Agents* and the *International Association for the Protection of Industrial Property*.

CONCLUSION

During the last two decades of the nineteenth century there emerged in Spain a community of specialized engineers, lawyers, consultants and business partners who assisted patentees. Although people acting as representatives and assistants of patentees could be found in Spain between 1826 and 1878, there was no inventive community in that country until the last two decades of the nineteenth century. Moreover, the activities of Spanish agents throughout most

of the nineteenth-century were less specific than in other countries. Spain's lack of a qualifying exam, lax enforcement of property rights and reduced levels of indigenous patenting collectively explain its meagre agency activity and relatively late extension of a community of patent professionals.

This paper has demonstrated how, during the last decades of the nineteenth-century, foreign inventors and firms increasingly relied on the services offered by industrial property agents, who guided and assisted patentees in registering, publicising and commercializing their inventions in Spain. The increasing activity of patent agents in Spain in the second half of the century also reveals the increasing openness of the Spanish patent system – a finding consistent with previous studies on Spain's dependency on foreign technology during this period. The globalization of technological knowledge, the international agreements on industrial property law and the increasing amount of corporate 'elite' patenting in the Spanish system seem to explain the rise in the participation of these intermediaries and the professionalization of their activity.

The leading Spanish agents of the late nineteenth century had substantial expertise and considerable training in legal and technical issues. Spanish agents, specifically engineers and lawyers, were active in the last decades of the nineteenth century in assisting inventors and firms in translating their ideas into techno-legal documents and these documents into functional technologies. The activities of the leading Spanish patent practitioners during the late nineteenth century overlapped with other occupations, including the evaluation of inventions, legal assistance, commercialization of technology, technical journalism and engineering consultancy.

Given this dependent and peripheral nature, the history of the Spanish patent system during the nineteenth century should be seen not just as an example of the history of invention but above all as a significant historical case of the history of technology transfer and diffusion. During this period, the overwhelming majority of foreign inventors patenting in continental and colonial Spain used intermediaries. For large foreign industrial corporations and wealthy independent inventors, international networks of intermediary agents were the best way to reduce transaction costs – mainly information costs – and avoid spending time visiting Spain. The resort to agents became imperative for industrial property control and management in Spain, even as it also functioned as a barrier limiting international patenting and trademark activities to those foreign inventors and firms that could afford the high costs of intermediation.

Notes

1. Good examples of recent historiography on the subject focused on French, American and British cases are Gabriel Gálvez-Behar, 'Des Médiateurs au Coeur du Système d'Innovation: Les Agents de Brevets en France (1870–1914)' in *Les archives de l'invention: écrits, objets et images de l'activité inventive* dir. Marie-Sophie Corcy, Christiane Douyère-Demeulenaere and Liliane Hilaire-Pérez (Toulouse: Médiennes, 2006): 437–47; Philippe Peyre, 'Les Armengaud, la Petite Ecole et le Développement de l'Innovation', *Les Cahiers d'Histoire du CNAM* 1994, 4: 93–113; Anna Guagnini, 'Patent Agents, Legal Advisers and Guglielmo Marconi's Breakthrough in Wireless Telegraphy', *History of Technology* 2002, 24: 171–201; Naomi R. Lamoreaux and Kenneth L. Sokoloff, 'Intermediaries in the US Market for Technology, 1870–1920', in Stanley L. Engerman, Philip T. Hoffman, Jean-Laurent Rosenthal and Kenneth L. Sokoloff (eds), *Finance, Intermediaries, and*

Economic Development (Cambridge: Cambridge University Press, 2003): 209–46; Harry I. Dutton, *The Patent System and Inventive Activity: During the Industrial Revolution 1750–1852* (Manchester: Manchester University Press, 1984): Chapter 5; or Ross Thomson, *Structures of Change in the Mechanical Age: Technological Innovation in the United States, 1790–1865* (Baltimore: The Johns Hopkins University Press, 2009): Chapter 7.

2. Patricio Sáiz, *Propiedad industrial y revolución liberal. Historia del sistema español de patentes (1759–1929)* (Madrid: OEPM, 1995): 121–50.

3. Patricio Sáiz, ‘Patents, International Technology Transfer and Spanish Industrial Dependence (1759–1878)’ in *Les chemins de la nouveauté. Innover, inventer au regard de l’histoire*, dirs. Liliane Hilaire-Pérez and Anne-François Garçon (Paris: CHTS, 2003): 223–45.

4. Patricio Sáiz, ‘The Spanish Patent System, 1770–1907’, *History of Technology* 2002, 24: 45–79, section 2.

5. For instance, in the 1830s the secretary of the Belgian embassy Ernest Dalwin (OEPM, *Privilegio* 208) and the ambassador of France in Madrid, Juan Lagoanere (*Privilegios* 109, 110 and 119) were occasional representatives of inventors from their respective countries. Examples of foreign engineers living in Madrid and occasionally representing foreign inventors during these formative years are the Parisian Enrique Mambert (*Privilegios* 64 and 65) and the British Charles Green (*Privilegios* 207, 690 and 1,892). Similarly, renowned professionals like the Spanish botanist and utopian socialist Ramón de la Sagra (*Privilegios* 684, 694 and 695) and the merchant Enrique O’Shea (*Privilegios* 147, 148, 165, 167 and 300) were also occasional intermediaries of foreign inventors in their application to obtain patents in Spain in the 1830s and 1840s.

6. This practice also seemed to be frequent in international patenting in Spain before the international agreements of the 1880s. A good example of patent jobber activity is that performed by the lawyer of Madrid Antonio María Blanco (OEPM, *Privilegios* 257, 275, 276, 277 and 440).

7. Royal Order of the 11 January 1849.

8. For an illustration of Barrie’s activities see OEPM, *Privilegios* 3,070, 4,195 and 4,609.

9. For an example of Barrie y Agüero as representatives of Siemens see OEPM, *Privilegios* 4,902 and 2,669. For their representation of Alfred Krupp see *Privilegio* 5,373.

10. C. A. Saavedra (for a while renamed Saavedra and Riberolles) and the commercial agents associated with this firm, like Telesforo and Domingo Algarra, channelled hundreds of patents from 1853 to the early 1880s, their services disappearing with the emergence of professional sizeable patent agencies specialized in patenting.

11. Pablo Díaz, *Los Ybarra. Una Dinastía de Empresarios, 1801–2001* (Madrid: Marcial Pons Historia, 2002).

12. For Henry Bessemer’s profuse use of patenting for protecting his inventions see Ian Inkster, *Science and Technology in History: An Approach to Industrial Development* (Basingstoke: Rutgers University Press, 1991), 161.

13. For the series of agreements the Ybarra Brothers signed with the company Bessemer & Longsdon and with the inventor André Chenot, see Pablo Díaz, *Los Ybarra*, 83–95.

14. On January 1857, the Henry Bessemer Company, Bessemer & Longsdon, was granted a Spanish patent of invention for 15 years and immediately transferred the rights to Ybarra Brothers. A few weeks before, in December 1856, Ybarra Brothers had been already granted a five-year Spanish patent of introduction for the Bessemer converter. Thus, Ybarra Brothers had already obtained the Spanish patent rights for the Bessemer invention and, yet, decided to sign a patent license agreement with Bessemer in order to receive technical assistance and probably to extend the duration of the monopoly insofar as patents of introduction could only last 5 years. Bessemer himself supervised the installation of his invention in the Ybarra’s plant of Santa María de Guriezo in December 1858 (OEPM, *Privilegio* 1,510).

15. OEPM. *Privilegio* 1,212.

16. Inkster et al. See note 1.

17. Patent Law of the 30 July 1878. See Patricio Sáiz, ‘The Spanish Patent System (1770–1907)’, Table 1.

18. Id. *Ibidem*, Tables 2 and 7 and comments.

19. Gabriel Gironi, ‘Los Privilegios de Invención’, *La Semana Industrial* (22 January 1886).

20. Teodoro Merly, ‘La Unión Internacional para la Protección de la Propiedad Industrial: análisis de la misma’, *El Liberal* (20–31 March 1890).

21. Teodoro Merly was a well-known industrial engineer, who often wrote in technical and professional journals like the prestigious *Revista de Obra Públicas*. The experienced industrial engineer Ventura Serra, editor between 1881 and 1883 of the patent journal *Gaceta de la Industria y las Invenciones* and director of the International Patent Agency, and Felix Sivilla, director of the *Centro Auxiliar Mecánico*, both established in Barcelona, joined Merly in his technical office in the late 1870s working all of them as consultants of patentees in Spain and Portugal.

22. Some examples are OEPM, *Patentes* 10,466 and 10,467.

23. See OEPM, *Privilegios* 4,561; 4,542; 5,774 and 5,778. See also David Pretel, 'Inención, nacionalismo tecnológico y progreso: el discurso de la propiedad industrial en la España del siglo XIX', *Empiria*, 2009, 18: 59–83.

24. Directories and advertisements of Spanish and foreign patent agents can be found in several technical journals and official publications, including the *Boletín de la Propiedad Industrial (BOP)*, the *Almanaque de la Gaceta Industrial* and the *Anuario de Electricidad*. For Spanish patent agents in international directories see the *International Directory of Patent Agents* (London: William Reeves, 1893, 1897 and 1901).

25. The firm *Clarke, Modet & Co.* originated in 1892 in the merge of *Agencia General de Patentes y Marcas* and *Clarke and Co.*, both established in Madrid in 1879. The lawyers José Gómez Acebo and Francisco Modet joined the firm in the late 1880s. See, for example, OEPM, *Patentes* 8,239 (Edison); 18,733; 21,771 and 23,158 (Vikers) and 20,041 and 23,449 (Marconi).

26. A fine literary description of Agustín Ungría's business agency activities in the 1920s in the 'hundreds of official departments' and the origins of this firm in the late nineteenth century can be found in Arturo Barea, *The Forging of a Rebel* (London: Davis-Poynter, 1972): 390–3. Examples of patents registered by Ungría in 1900 are OEPM, *Patentes* 25,314; 25,319 and 25,349.

27. OEPM, patent applications and assignment contracts for the year 1900.

28. OEPM, trademark register from 1885 to 1905.

29. For contemporary accounts of patent agents activity to commercially exploit inventions see Gerónimo Bolibar, 'Misión de los Agentes de Negocios', *Industria e Invenciones* 14 August 1908, 7: 61–2; and Frederick Walker, 'Patent Agents and Patent Brokers', *Journal of the Society of Patent Agents*, March 1902, 3(27): 39–41.

30. Assignment contracts of, among others: Edward W. Serrell, Charles F. Brush, George Westinghouse, *International Bell Telephone Co.*, *Marconi Wireless Telegraph*, Eugène Turpin, Thomas Alva Edison, Thorsten Nordenfelt, Isaac Peral, Nicolaus A. Otto, *Portilla & White Co.*, *Siemens & Halske A.G* and *Compagnie d'Electricité Thomson Houston*.

31. OEPM, *Patente* 20,041. Marconi applied patents for his invention in Britain, Austria-Hungary, France, Germany, Spain, Italy, Russia, United States of America and India. See Anna Guagnini, 'Patent Agents', 199.

32. A good indirect source of patent litigation trials for this period are the copies kept with patent files in the OEPM, as well as the contemporary accounts written by patent agents regarding patent infringement and litigation in Spain.

33. For a contemporary account on the high cost and time-consuming nature of the Spanish patent trials see Gumersondo Vicuña 'Complemento de la Ley de Patentes', *La Semana Industrial*, January 1886, year V, Vol. V: 7; and 'Sindicato de Inventores', *Industria e Invenciones* 28 August 1886, 139: 93.

34. José Pella, *Las Patentes de Invención y los Derechos del Inventor: Tratado de Utilidad Práctica para Inventores e Industriales* (Barcelona: Administración de Industria e Invenciones, 1892).

35. Royal Decree of 12 June 1903 (*Colección Legislativa de España, Nueva Serie, XV*). Section V on industrial property agents and their register. A translation to English furnished by Francisco Elzaburu was also published in London by the *Journal of the Society of Patent Agents*, 1903, IV(47–8): 162–6.

36. Letter from Francisco Elzaburu to the Society of Patent Agents reproduced in the *Journal of the Society of Patent Agents*, July, 1902, III(31): 109–10.

37. Gerónimo Bolibar, 'Observaciones al Proyecto de Ley de Propiedad Industrial', *Industria e Invenciones*, 2 November 1901, 18: 158–64.

38. See, for instance, the series of articles by Agustín Ungría celebrating the new regulation and the compulsory requirement to be registered as business agent: Agustín Ungría, 'Los Agentes de Negocios y la Propiedad Industrial', *El Fomento Industrial y Mercantil*, 20 June 1902, 404 : 991–2 and 20 July 1902, 407: 1016.

39. The remarks of the Royal Order of 22 May 1905 on this issue are eloquent. The Royal Order urged the introduction of a Register of Industrial Property Agents, arguing that 'the actual situation must no longer continue because it only protects those who [work as industrial property agents] without fulfilling any sort of requirement', and 'in detriment of those who from the beginning fulfill the legal requirements, thereby offering a guaranty to those who may need their services'. *BOPI*, July 1905, 453: 837–8.

40. *BOPI*, November 1905, 461: 72.

41. During the few years following the first registration, the number of individuals registered remained low, with most working for only a few patent firms. In March 1906 there were 32 individuals registered (*BOPI*, 470: 423–4); in April 1907, 36 (*BOPI*, 496: 616) and in June 1908, 37 (*BOPI*, 523, 810–11).