

PATENTS

PROTECTING YOUR INVENTIONS



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PATENT AGENTS

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WHO WE ARE

Ade & Company Inc. was founded in Winnipeg, Manitoba, Canada and has been in the business of patents in Western Canada since 1947. The firm acts for many direct clients, including individuals, companies, universities and research institutions from various locations across Canada and abroad, in many different fields, including agricultural engineering, mechanical engineering, computer science, electronics, bio-technology, oil & gas, pharmaceuticals, healthcare, and chemical engineering.

Due to the firm's vast experience in serving many individuals, and small and medium sized companies, our Patent Agents always endeavor to match their actions to the needs of the customer. In doing so, we have adopted several practices to ensure the strongest patents for our clients, while handling matters with the most efficiency to minimize patent costs for our valued customers.

Please contact Ade & Company Inc. for a free initial consultation with one of our Patent Agents before proceeding with any patent matter, or visit our website at www.adeco.com to see how Ade & Company can minimize your patenting costs and assist you in addressing all your intellectual property needs.

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INTRODUCTION

Anyone who invents a new process, machine, manufacture or composition of matter, whether entirely new or an improvement on a prior invention, or who designs an article with an original, ornamental appearance, may pursue a patent or an industrial design registration to protect that invention or design.

Inventions, which are distinguished from designs by having some functional aspect or practical application, are protected primarily by way of utility patents, whereas ornamental designs are protected by industrial design registrations, or design patents as they are known in USA. Unless otherwise specified, the term “patent” is used in the following chapters to refer to a utility patent.

Every country has its own patent laws. They all differ somewhat but all have the same object, namely to encourage technological progress by rewarding inventors with a limited monopoly. This means an exclusive right to control the manufacture, use or sale of the invention for a certain number of years in exchange for making the details of the invention public. The patent monopoly is only awarded for something that is new, so as not to take away the rights of others to practice something that the public already enjoys.

In the interest of balancing fairness between the patent holder and the public, something that is only new as a result of minor insignificant changes is not entitled to patent protection. That is, the new invention cannot be merely an “obvious” variant on things that were previously available to the public (prior art). The creation of the new invention must have involved some ingenuity in order for the invention to be patentable.

It can be difficult to briefly summarize this notion of what makes an invention patentable. In hindsight, a patentable invention might seem simple, and cause one to wonder "Why didn't I think of that?" However, the test of whether an invention is patentable cannot rely on such hindsight reasoning. Instead, the test is whether under comparison against the prior art, the invention possesses something clever, or non-obvious.

Very few inventions these days are considered to represent an entirely new category of product or process, sometimes termed a pioneer invention, where the novel and inventive character is very apparent. Instead, the majority of patents cover improvements to existing products or processes, and the improvement may be subtle and not readily recognized as a significant change. A slight improvement may produce a new result, but there must have been some ingenuity present in the creation of the new improvement before a patent will be granted.

This booklet is intended to give only a brief summary applicable to the patent regimes of most countries, which are becoming more universal in view of ongoing efforts to bring global harmonization to the patent system. However, particular emphasis is placed on Canadian and United States patent practices in the following chapters.

In no way is the following information intended to be exhaustive guidance on the patenting process, and a qualified Patent Agent should always be consulted for specific advice relating to inventions and their protection.

At Ade & Company, our Patent Agents are registered at both the Canadian Intellectual Property Office (CIPO) and the United States Patent & Trademark Office (USPTO), and can therefore advise our Canadian clients on both Canadian and

U.S. patent matters while avoiding the added expense of a U.S. Patent Agent or attorney.

Through our network of associates situated across the globe, we can also attend to foreign filings on your behalf for the convenience of managing your international patent portfolio through a single office.

CHAPTER 1

The Importance of Prompt Action

If someone manufactures, sells, uses or imports a patented invention without the permission of the patent holder (patentee), thereby contravening the exclusive right that was granted under the patent, the patentee can seek an injunction from the courts to stop this infringement from continuing. In addition to stopping continued infringement, the patentee may be entitled to an accounting of profits arising from, or damages suffered through, the unlawful use of the patented invention by the infringing party. Furthermore, the court may order that the infringing articles be delivered up for destruction.

If an inventor does not obtain a patent on an invention, there is nothing to prevent others from manufacturing, using or selling the invention on the open market. That is, in the absence of a patent, an inventor has no legal basis to prevent others from exploiting the same invention, or to pursue recourse should such copying occur. Accordingly, should an inventor believe there to be significant potential value in the invention, care should be taken to at least explore the possibility of filing for a patent, and to do so in a timely manner to avoid inadvertently forfeiting their right to apply.

Individuals are constantly working on new inventions, whether creating something entirely unique or improving on existing articles and processes. There have been many instances where people with practical ideas have made test models and tried them out successfully, but have delayed applying for patents, thereby unintentionally allowing the inventions to fall into the public domain. In other instances, a failure to pursue patent protection in a timely manner can result in loss of the potential patent rights to another

inventor who independently made a similar invention and filed a patent application sooner.

If the details of an invention have been made publicly available in any way at any time by someone other than the inventor, then it is too late to apply for a valid patent in Canada, unless that person learned of the invention either directly or indirectly from the inventor. Where the invention has been made available to the public by the inventor or someone who learned of the invention from the inventor, a Canadian application must be filed within one year from the date when the public availability first occurred.

To prove the origin of where another person learned of the invention can be difficult, and thus maintaining the confidence of an invention until a patent application can be filed, and then filing as early as possible, is the safest course of action. Even a disclosure to a single person can qualify as a public disclosure if the disclosure is not made on a confidential basis, as without the understanding of confidentiality, the recipient is free to disclose the information to others. As such, even if the information is not actually shared with others, this potential for the information to reach the public qualifies as a “public” disclosure from the perspective of the patent system.

U.S. patent law provides a similar one year grace period in which public disclosures by the inventor, or someone who obtain the details of the disclosed invention directly or indirectly from the inventor, do not destroy the patentability of the invention, so long as a patent application is filed within one year of the first such disclosure.

If the application is not filed on time, and yet a patent ends up being granted due to failure of the Patent Office to realize that a patent-disqualifying disclosure was previously made,

the granted patent is nonetheless invalid in the eyes of the law. Therefore, it is not sufficient to be the first to think of an invention and later be able to prove that you were the original inventor. To the contrary, to safeguard one's rights to a patent, it can be critical to apply for a patent as soon as possible.

Most countries do not provide any grace period for filing after a public disclosure, and so if protection in other countries is desirable, it is absolutely essential to file an application in at least one country before any public disclosure is made in order to secure a valid filing date before any such disclosure.

In most fields, it is not necessary to build and test the invention before applying for a patent, provided there is a sound basis to expect that it will function as expected when built. As such, if one is satisfied that the invention is new, useful, and will function satisfactorily, preparation and filing of a patent application may be undertaken without delay. You should also of course be satisfied that the invention has reasonable prospects for commercial adoption in order to justify the expense of obtaining a patent. After the application has been filed at the Patent Office, a model can be constructed with the assistance of others if necessary.

In summary, it is wise to apply for a patent with the least possible delay, as the first one to file an application for patent at the Patent Office will be granted a patent for the invention. The right to apply for a patent belongs only with the inventor(s), or someone who has legally obtained rights to the invention from the inventor(s). Therefore, an inventor should not be too concerned about someone else stealing an invention. It is far more important to be concerned that someone else with as much inventive ability, working somewhere else, may think of the same thing independently and file his or her application first.

CHAPTER 2

Use of a Registered Patent Agent

In Canada, persons who are registered with the Canadian government for the purpose of drafting, filing and prosecuting patent applications before the Canadian Intellectual Property Office (CIPO) are referred to as “Patent Agents”. Such persons are only registered for such practice upon successfully passing a rigorous examination process testing their competence in the areas of patent application drafting and prosecution, and patent infringement and validity analysis. Candidates qualify for the examination after accumulating 2-years of patent practice under the guidance of a registered agent.

A critical skill for any Patent Agent is the ability to comprehend technical subject matter in his or her dealings with the inventor on one hand, and with the Patent Office on the other. An understanding of how technology works is essential in order to be able to prepare a proper patent application that correctly and thoroughly describes and illustrates the invention, and claims the inventive aspects of the invention in terms of its essential elements with sufficient breadth to obtain the best protection for the inventor.

Accordingly, the vast majority of Patent Agents possess some sort of technical background, typically a university degree in science or engineering. While some Patent Agents are also lawyers, a legal background is not essential to the technical role of a registered Patent Agent, and thus is not mandatory.

At least in USA, the majority of registered patent practitioners are attorneys, hence the common use of the term “Patent Attorney” or “Patent Lawyer” by the public to describe those who professionally prepare, file and prosecute patent

applications. However, non-lawyer Patent Agents are also registered with the United States Patent & Trademark Office (USPTO), and are likewise genuinely qualified to prepare, file and prosecute U.S. patent applications.

Among the qualified practitioners registered at the USPTO are Canadian Patent Agents who have been granted authority to represent Canadian applicants before the USPTO. Accordingly, selection of a Canadian Patent Agent who files directly at the USPTO can save Canadian applicants the added expense of filing through a U.S. associate.

In Canada, confidential communications between a client and a registered Patent Agent, made for the purpose of seeking or giving advice in respect to any matter relating to the protection of an invention, are now afforded the same solicitor-client privilege that was previously afforded only to lawyers. Accordingly, in addition to the agent's professional obligation to maintain the client's information in confidence, such communications will no longer be compelled in Canadian court proceedings.

It is recognized that an inventor will save time, expense, and continual uncertainty by utilizing the services of a registered Patent Agent in active practice. As the U.S. Supreme Court pointed out long ago in the late 1800's (*Topliff v. Topliff* 145 U.S. 156, 2 S.Ct. 825, 36 L.Ed. 658):

The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specification and claims, it is a matter of no

surprise that the latter frequently fail to describe with requisite certainty the invention of the patentee and err either in claiming that which the inventor has not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention.

While it may be possible for an inventor to persuade a Patent Office Examiner to allow some sort of patent without expert help, it is probable that the inventor will fail to obtain the full protection to which the invention is entitled. Any inadvertent weaknesses in the resulting patent will certainly be noticed by a Patent Agent acting for a competitor who is attempting to avoid the claims of the patent, thereby enabling the competitor to commercially exploit a non-infringing alternative that falls outside the scope of the patent, and leaving patentee without legal recourse.

A list of Registered Canadian Patent Agents is available from the Canadian Intellectual Property Office, whose website is www.canada.ca/patents. Likewise, the Office of Enrollment and Discipline at the United States Patent and Trademark office maintains a listing of registered practitioners at <https://oedci.uspto.gov>, including Canadian Patent Agents who have been granted registration for the limited purpose of representing Canadian applicants.

CHAPTER 3

Patent Searches

An important part of a Patent Agent's practice consists of performing patent searches, and studying and reporting upon the results with an educated opinion. As well as performing searches for individual inventors, Patent Agents often do so for manufacturers, importers and the like. These manufacturers, importers and the like may have invented an item or they may have seen an item somewhere else, and may wish to know if it can be manufactured freely in Canada.

There are various types of searches including preliminary patentability searches, infringement searches, or validity searches. The type of search to be made depends on the type of information that is being sought from the records at the Patent Office, i.e. whether the client is looking to assess the patentability of their invention, whether the product they wish to manufacture or import is covered by someone else's patent, or whether they can find earlier patents that might be used to invalidate a patent that presents them with a potential infringement issue for their product.

While inventors can perform their own patent searches through publicly accessible online databases, as discussed in more detail further below, or employ a patent searcher that is not a registered Patent Agent, the search itself is only a small part of the overall task at hand: assessing whether an invention is patentable or whether a patent is infringed or invalid. Such assessment will typically require the expertise of an educated and experienced Patent Agent with the necessary tools to navigate the complexity and subtlety of such issues.

The Patent Offices of the world constitute perhaps the largest repository of technological information available to the general public. This information may be of great assistance to an inventor in making the assessment of whether an invention is novel, and therefore potentially patentable. Although any prior published document may be relevant to the question of an invention's patentability, patents have the advantage of being classified into different technological categories to enable more effective searching than other resources that are only searchable by keywords.

Previously, in order to do a patent search, it was necessary to hire a searcher to physically go to the Patent Office and manually search through the patent records for prior patents that were related to the invention in question. While this task was not quite as daunting as it sounds given that patents are categorized in different classes based on the type of invention concerned, rather than merely organized in numerical order, it was still a time consuming and costly process. However, with the release of a number of patent databases on the internet, it is now much easier to carry out a patent search.

Publicly accessible patent databases maintained by the government Patent Offices in different jurisdictions include the Canadian patent database offered by the Canadian Intellectual Property Office (CIPO) at www.canada.ca/patents, the Espacenet patent database offered by the European Patent Office (EPO) at <https://worldwide.espacenet.com/>, and the United States patent database offered by the U.S. Patent and Trademark Office (USPTO) at www.uspto.gov. Other notable search engines for conducting free patent searches include Google Patents and Free Patents Online, found respectively at <https://patents.google.com> and www.freepatentsonline.com. Please note that links to many of these search engines as well as a number of other useful

resources can be accessed from our web page www.adeco.com, which is regularly updated to reflect any changes to these website addresses and post other useful resources

The CIPO and USPTO databases only contain applications and patents published and granted in only their respective countries, while the other databases include patents from multiple jurisdictions. This is significant, since in order to be patentable, an invention must be new not only in the particular country where the inventor is filing for patent, but also on a global scale.

For the most part, U.S. patents are considered a very good indicator of whether an invention is new, since far more patents are filed in USA than in any other singular jurisdiction due to the highly important status of the U.S. market in the global economy. On the other hand, it is also very true that many inventors outside of USA will often file patent applications only on a more local level, and not pursue protection in USA. Accordingly, relevant patents can certainly exist elsewhere, especially if the invention or product in question is rather specialized to use in a particular field with limited market value in U.S.A. For example, inventions relating to issues associated with cold weather climates or the sport of curling may be more readily found among Canadian patents than U.S. patents.

The USPTO search interface is divided into two halves, one for searching published applications, and one for searching granted patents, and keyword searching functionality is limited to documents published from 1976 onward. Older patents granted before such time are searchable only by patent number or classification code. On the other hand, by using optical character recognition, Google Patents is able to locate older U.S. patents using keyword search techniques.

The CIPO database uses a single interface to locate both published applications and granted patents, eliminating the need for two separate searches when looking specifically for patents filed in Canada. Neither the USPTO nor CIPO database will locate international patent applications that are currently pending and may later become effective in USA and/or Canada.

The search interfaces of the various databases have comparable layouts offering a number of search types that differ from one another in terms of how search criteria are entered and interpreted. The Google and Espacenet databases offer a smart search functionality that allows users to enter multiple keywords in a single search field without requiring use of search operators to specify how each keyword should be treated. The CIPO and USPTO databases require a better understanding of Boolean search methods and the different particular Boolean operators used by these interfaces.

Examples of commonly used Boolean operators are AND and OR, which when used between two words will dictate whether a patent must contain only one of these words or both in order to be found with this two-word query. Other operators, such as brackets or quotations, may be required depending on the search engine being used in order to treat the two word expression as a phrase so that only patents that include those two words in that particular order will be found. Other operators include field codes which specify where in the document to look for a particular word or phrase, for example whether to look specifically in the title, abstract, description or claims of the patent, or whether to look more generally for patents that contain the keyword(s) anywhere within the full text of the patent document and its associated bibliographic information.

The other databases, such as Google Patents and Espacenet, likewise include similar advanced search options for those familiar with such Boolean search methodology. Care must be taken by any new user of a database to familiarize themselves with the particular operators and field codes used by that database to ensure accurate results.

One can therefore choose which search engine and which search type to use according to their familiarity with more advanced search techniques. However, there are trade-offs. For example, while an inexperienced searcher may find the Google interface easier to use than the USPTO, the official USPTO database is more up to date in terms of downloadable full PDF copies of the most recently published U.S. patents and applications. Similarly, while the Google database includes Canadian patents and applications, it does not offer direct downloading of full PDF copies of Canadian documents. Accordingly, the user may find that Espacenet offers a better balance between a user-friendly smart search interface, and availability of full document copies. Convenient access to full copies is significant, since the drawings of a patent are often the easiest way to briefly gain an understanding of the invention, particularly in the mechanical arts.

In addition to searching by keyword, patent references can be searched by patent number, patent application or publication number, inventor name, applicant name, assignee/owner name, classification codes, filing date, issue date, etc.

The general operability of each search engine is similar, in that the search results are presented as a list of all "hits", each identified at least by the title of the located document. The title of each document is a link which will direct you to a more comprehensive summary page for the particular patent or application concerned. The summary page includes

additional information, particularly the inventor(s), the applicant(s) and/or owner(s)/assignee(s), the filing date, the abstract and in some cases the full text of the patent and a link to view a full copy of the patent document that includes all of its drawings.

Each title in the original list of “hits” is accompanied by some additional identifying information, typically at least a publication number, which may or may not be the same as the patent or application number depending on the document’s country or region of origin.

With the exception of the CIPO database, all the databases mentioned above provide another helpful search tool in that the summary page for each located patent includes a listing of prior references that were cited against that patent. This way, when a searcher finds one patent that is at least somewhat relevant to the search topic, there is a convenient tool for looking at the cited references, where one would expect to find at least some comparable features based on the fact that the Patent Office Examiner who examined and approved the patent considered these prior references to be at least somewhat pertinent to the patented invention.

In addition to the free publicly available databases discussed above, there are also a number of account-based databases available. These sites typically contain much more detailed and in-depth information, such as the current status of pending applications in all countries where the application was filed, information on an assignment of the application or patent that may have taken place, and the status of the patent after grant. However, such subscription databases can carry notable expense that may not be justifiable for individual inventors or companies with limited need for these more extensive patent resources. Registered Patent Agents will typically employ such subscription services in order to

benefit from the efficiency of these bundled tools and quickly obtain meaningful results for their clients.

A preliminary patentability search performed on any of the forgoing databases cannot guarantee that a patent will be granted, especially since patent applications are normally only published 18 months after they are first filed. Accordingly, a patent application that was filed less than 18 months ago cannot be found during a preliminary patentability search, unless the applicant specifically requested early publication. During examination of the inventor's patent application at the Patent Office, a more thorough search will be conducted by the Patent Office, at which time more pertinent references may be revealed that were not located in the preliminary search, or that were not publicly available at the time of the preliminary search.

The intent behind a preliminary search is therefore to see whether the patentability of the invention can be easily ruled out, thus saving the inventor the further effort and more significant expense of filing a patent application in one or more countries, only later to have the Patent Office reject the patent application on the basis of prior art that could have been located in such a preliminary search.

While it is advisable to involve the services of a Patent Agent when conducting a preliminary search due to their familiarity with the appropriate search resources and their operation, the publicly accessible databases above are available free of charge and may be searched initially by the inventor before contacting a Patent Agent, who can then use their expertise to help the inventor assess whether any distinctive features of their invention may still be patentable over the located references. The Patent Agent can also assess whether any patent located in the inventor's preliminary search presents an infringement risk to the inventor.

CHAPTER 4

Preparation of a Patent Application

A patent application is primarily made up of a written specification setting forth a detailed technical description of the invention and one or more claims. The specification is typically accompanied by one or more drawings to provide additional context and detail to ensure a proper understanding of the written details by the reader. Initially, the Patent Agent will consult with the inventor to gain an understanding of the invention, and perform an assessment of the potentially patentable aspects thereof in view of any relevant prior art found in a preliminary patentable search, as discussed in the preceding chapter, after which the Patent Agent and inventor collaborate on the preparation of a patent application.

Drawings

To initiate this process, the inventor should provide the Patent Agent with a visual representation of the invention, for example sketches, or a model, or photographs of a model. This is particularly important in the mechanical arts where a visual representation of the invention is especially helpful to understanding the way in the invention works. Occasionally, a written description is sufficient, either when the idea is relatively simple, or when the field of endeavour is one that doesn't require illustration to explain the general operability of the invention. It does not matter if the initial drawing or model is somewhat crude or rough, as at this stage, the intent is to merely enable the Patent Agent to gain an initial understanding of the invention. If some features are not sufficiently clear, the Agent can obtain clarification from the inventor. Dimensions and materials are typically not relevant

in the preparation of a patent application, unless they are key to the invention's function or performance.

Depending on the type of application filed and the rules or requirements of the jurisdiction in which it is filed, a patent application may require formal patent drawings specially prepared by a draftsman trained in their preparation. On the other hand, specialized patent drawings and the associated cost of same can often be avoided by using hand-drawn sketches of sufficient clarity, or computer drafted drawings that have already been prepared for the purpose of modeling, prototyping or manufacturing the invention.

Often, patent drawings can differ from "shop drawings" or "blueprints" in a number of ways. For example, patent drawings need not be to scale, can often employ schematic representations that need not be true to the actual visual appearance of the finished product, and can focus particularly on the inventive aspects of the design without detailed illustration of other components that are of conventional or well-known design.

Accordingly, a Patent Agent can assess the optimal approach to preparation of suitable drawings based on the details of the invention, the drawing standards prescribed by the Patent Office(s) in question, the inventor's illustrative ability, any critical filing deadlines, and the cost of involving a professional draftsman.

Especially in the mechanical arts, the drawings of a patent application play a crucial role in cooperating with the written description of the invention to clearly convey structure and operation of the invention to the reader, including the Patent Office Examiner who will need to understand the invention in order to assess its patentability, and potentially a judge presiding over an infringement or validity proceeding in a

court setting should the patent ever be litigated, for example, in a lawsuit filed by the patent holder against an infringer.

Accordingly, failure to file sufficient illustrations in a patent application can be destructive to the ability to gain successful grant of a patent, or to the ability to effectively enforce the patent against an infringer.

Claims

One of the most difficult tasks which the Patent Agent undertakes is the drafting of claims for the patent application. Each claim is an attempt to define an invention in a particular degree of detail. Essentially, the intent of the claims is to set forth a definition of the invention in terms of the components that are essential to its novelty and inventiveness and operability, while keeping the definition as broad as possible, as it is the claims that are later used to gauge whether the patent is infringed by a competitor. Claims are therefore, in effect, "written blueprints" of the invention.

Often, a claim will define an invention only in terms of its structure and not its function. This is typical of claims for an invention that may be characterized as an apparatus, though method claims are also very common, either to protect inventions that are unique processes rather than physical products, or to protect a particular method of manufacturing or using a physical apparatus.

The task of the Patent Agent is to draft claims which give the inventor the broadest coverage to which the invention is entitled, yet the claims must not be so broad as to encompass more than the inventor has in fact invented. Only by careful drafting of the claims can the full scope of protection to which the inventor is entitled be obtained. It must be remembered that the claims are the essence of the patent

and they cannot be prepared and prosecuted without a great deal of skill and attention to detail.

Description

The patent application must also contain a detailed written description of the invention, which together with any included drawings forms a comprehensive “disclosure” of the invention from which a person of ordinary skill in the field concerned would be able to reproduce the invention. The description often sets forth the advantages of the invention over known devices or practices that were previously employed for the same or a similar purpose. At minimum, it must include a detailed description of the construction, and method of operation and use of the invention, with particular care not to omit anything that is essential to the construction or operability of the invention.

Often, without the aid of a Patent Agent, an inventor will have a tendency to describe an invention as a simple combination of different parts, each assigned a functional name representing what that part is intended to do, but without a clear explanation of how these parts achieve their respective functions and interact with one another to provide a collective result. Another common shortcoming in a do-it-yourself patent application is the failure to describe the context or environment in which the invention works to provide this unique result. It is through collaboration with a registered Patent Agent that an inventor can avoid filing a patent application that is defective by way of an insufficient disclosure, bearing in mind that new subject matter cannot be added to the application after filing.

The wording of the description should conform with that of the claims so that there can be no misunderstanding of the claims. That is, while the claims will define the invention more

broadly than the description, the terminology used in the claims should be easily connectable to corresponding features of the invention that are outlined in more detail in the description. The description can therefore be used to guide and clarify a proper understanding of the claims by the reader.

Abstract

An abstract is also required to set forth a brief outline of the invention and the problem it is intended to solve, thereby providing a brief summary from which one can quickly gain an understanding of a patent's substance once issued.

The abstract will be printed on the front page of the issued patent, usually together with a representative image selected from the drawings. The reader can thus quickly deduce what the patent is about, and this same abstract/image combination is likewise used in patent search engines to allow searchers to quickly garner whether a patent is relevant to the subject of the search.

Provisional Patent Applications

In the United States, it is possible to file "provisional" patent applications. A provisional patent application is one that is filed as a temporary or interim measure to establish rights in an invention. The papers filed are not required to be in a particular format, but at minimum must purport to disclose an invention. While claims are not explicitly required in a provisional patent application, it is often advantageous to include carefully worded claims or similar statements that define the invention broadly in terms of its essential components.

A provisional application is, by its very nature, temporary, and will not be examined by the Patent Office. A provisional application must be replaced with a complete non-provisional application within one year of the provisional filing date. The non-provisional application may claim the filing date of the original provisional application for subject matter common to the two applications. Similarly, in addition to the U.S. non-provisional application, the complete application may be filed in any other country and claim priority back to the original U.S. provisional filing date for the common subject matter shared between them.

While the U.S. Patent Office will accept any document that purports to disclose an invention as a provisional patent application, the reason it is beneficial to ensure a reasonably thorough description and ideally include one or more claims or similar statements of the invention, is that in order for the later applications to claim benefit of the earlier provisional filing date, the disclosure of the provisional application must support the claims of the later applications.

Accordingly, while provisional applications can be filed quickly and affordably with minimal documentation, it can be of dramatic benefit to employ the services of a Patent Agent to prepare a thorough provisional patent application that will more confidently serve as a valid priority date for the later non-provisional application.

Advantages of a provisional application include the ability in add in more information when filing the later non-provisional application based on further developments made within the one-year provisional period, and the fact that the term of a patent is measured from the filing date of the non-provisional application. As a result, the final expiry date of a patent can be effectively extended by one year through filing of a provisional application to start.

CHAPTER 5

Procedures at the Patent Office

When the inventor has reviewed the patent specification for accuracy, the Patent Agent will submit the application to the Patent Office (or to multiple Patent Offices if applications are being filed in more than one country). The day an application is received by the Patent Office is known as the Filing Date of the application, which in the case of modern electronic filing systems, is typically the same day the application is sent out by the Patent Agent.

The received application and the accompanying bibliographic information are processed by the Patent Office, and an application number is assigned. The applicant will be notified of these particulars when they are received by the Patent Agent. If the application is filed electronically, and depending on the country concerned, the application number may be automatically assigned at the time of submission and immediately provided to the Patent Agent in the electronic submission acknowledgement.

The application number should not be treated as a patent number. In Canada, applications filed after October 1, 1989 use the same number for both the application and the granted patent, but earlier filed applications do not. In the United States, the two numbers are different and the patent number will not be assigned until after the application has been officially allowed and the patent is about to issue.

Prosecution of the Application

“Patent pending” status applies to an invention immediately upon filing, meaning that the patent procurement process has commenced, but a patent has not yet been granted. The

term “patent pending” serves as a deterrent, warning others that a patent has been applied for, and thus is used by the applicant in relation to the marketing of their patent pending product or service to deter copying of the invention by would-be competitors.

In Canada, an application may remain in this patent pending state for up to five years before further substantive action is required. By the five year mark, the applicant must request examination of the application, thus initiating the Patent Office’s investigation into the novelty and inventiveness of the claimed invention. Examination may be requested at any earlier time during this five year period, or even on the original filing date of the application, at the discretion of the applicant. If it is not requested by the end of the five year period, the application will become abandoned.

After a Canadian application has been pending for two years, maintenance fees must be paid to the Patent Office on an annual basis to keep the application pending, or if the patent has already been granted within such time, to maintain the patent in force.

In USA, patent pending status similarly applies once either a provisional or non-provisional patent application has been filed. The provisional application will maintain patent pending status for one year, after which it will simply lapse if it is not replaced with, or converted to, a non-provisional application by such time. As mentioned above, the provisional application is not subjected to examination by the Patent Office, and thus will never itself result in grant of a patent. Only a non-provisional patent application will move the matter onward toward grant of a patent.

Unlike in Canada where the examination request and associated fees can be deferred up to five years, the filing of a

non-provisional application in U.S.A. is subject to payment of filing and examination fees either at the time of submission, or shortly thereafter. Accordingly, once the filing of the necessary specification and drawings, signed forms and fees has been completed, the non-provisional application will automatically go into queue for Examination.

Due to this difference in when the examination fees must be paid in USA and Canada, a common approach is to file patent applications in both countries, but instead of requesting examination in Canada right away, waiting to see how the matter progresses in USA before incurring the Canadian examination fees.

Any U.S. non-provisional application and any Canadian application will typically be published 18 months after the earliest filing date (e.g. 18 months from the provisional filing date, if applicable, or 18 months from the filing of the non-provisional application if no earlier provisional application was filed). At this time, the application will be searchable in patent databases, and available for inspection by members of the public. Should a patent eventually be granted on the application, the publication date marks the start of a period for which the patent holder can claim reasonable compensation for unauthorized use of the patented invention by an infringer.

In Canada, the publication date is instead referred to as the “laid open” date, i.e. the date on which the application was laid open to public inspection.

In USA, the rights to claim reasonable compensation is referred to as a provisional right, and is conditional on the infringing party being notified of the published application, and the claims of the granted patent being substantially

identical to those that were published in the pending application.

During examination, the application will be scrutinized by an Examiner in an examining division or “art unit” that specializes in the particular technological area to which the invention relates. After gaining an understanding of the invention from a reading of the description and review of the drawings, the Examiner will carefully study the claims. Having done this, he or she will attempt to find evidence of any earlier invention that was already filed for by another inventor or known to the public, and which falls within the scope of the claims of the pending application. This evidence is known as prior art, and may take the form of prior patents or publications anywhere in the world.

To the extent that he or she is able to discover prior art that appears to show a lack of novelty or inventiveness in the claimed invention, the Examiner will reject, or require amendment of, all or some of the claims. This will involve further work upon the originally filed application by the Patent Agent, who after studying the cited prior art and consulting with the inventor, may either comply with the Examiner’s requirement for amendment of the claims, make other amendments that distinguish the claimed invention over the prior art, or merely argue against the objections by pointing out errors in the Examiner’s interpretation of the claims and/or the prior art.

Occasionally, an application will be approved with no need for amendment or argument. However, it is the Agent's purpose to obtain not merely a patent, but the broadest possible patent to which the invention is entitled: one that "fences in" as much novel territory as possible. As a result, whether due to different interpretations of claim language or prior art by the Patent Agent and the Examiner, or due to citation by the

Examiner of new prior art that was not previously known to the Patent Agent, it is quite common that the initially broad claims will receive at least some initial objection. The Agent may then narrow the claims to the minimum extent necessary to avoid the prior art, thus endeavoring to obtain the best possible coverage to which the invention is entitled.

Upon agreement being reached between the Patent Office Examiner and the Patent Agent in relation to the novelty and inventiveness of the claimed invention, the application will be formally allowed by the Patent Office. The issuing and printing fees will then be required by the Patent Office. After payment of these fees, the patent will be issued.

Where Canadian examination has initially been deferred, the allowance of the U.S. application and resulting grant of the U.S. patent is typically used as a sign that similar approval can be expected in Canada, and so the Canadian request for examination is then filed. Provided that the scope of protection achieved in USA was satisfactory, the Canadian examination request is often accompanied by a voluntary amendment entering similar amendments to what successfully led to allowance in USA.

A significant number of Patent Offices around the world have entered into agreements concerning a program called the Patent Prosecution Highway (PPH), where the approval of a patent in one country can be used to request expedited examination of a pending application in the other country, provided that the applications share some common filing date between them. For example, in a deferred Canadian examination strategy, the Canadian application can receive expedited review by accompanying the exam request with PPH request based on the allowed U.S. application, provided that the Canadian and U.S. applications are connected in some way by a commonly shared earliest filing date.

If there is some urgency in obtaining a patent quickly, notable backlogs in the normal examination process can be avoided by requesting examination in Canada right away, and opting to pay an extra government fee for “advanced examination”. In such instance, the Canadian application will be advanced out its normal turn in the queue, and reach an Examiner much more quickly than during normal examination. The advanced exam request must include a request to lay the application open to the public right away, rather than wait for expiration of the normal 18-month confidentiality period, thus giving the public fair notice that a patent may be granted in the near future.

Upon gaining allowance of the advanced Canadian application, expedited handling of the corresponding U.S. non-provisional application can be requested under the PPH program.

In Canada and the United States, most patents now have a maximum life of twenty years from the filing date of the application. Canadian patents granted on applications filed before October 1989 and still in force, and United States patents granted on applications filed before June 8, 1995, have a term of seventeen years from the date of issue of the patent, or twenty years from the filing date of the application, whichever is longer. In Canada, the annual fees payable to keep an application in force must continue to be paid to keep the resulting patent in force. In the United States, maintenance fees are payable at 3 ½, 7 ½ and 11 ½ years after the date of issue, in order to maintain the patent in force.

In both Canada and the United States, different fee scales are applicable for different categories of applicant. The standard government fee schedule generally applies to applications and patents where rights to the invention have been

transferred or licensed to what is known as a "large entity". Briefly paraphrased, a large entity in relation to Canadian patent applications is an entity, other than a university, with more than fifty employees or which is controlled directly or indirectly by an entity having more than fifty employees. In the United States a large entity is a company, including subsidiaries and related companies or organizations, having more than five hundred employees. An individual inventor or a small company is known as a "small entity" and is entitled to lesser fees in many instances. In the United States, non-profit organizations and certain other entities are also classified as "small entities".

In USA, a further reduction in government fees is offered to micro-entity applicants. A micro-entity applicant must qualify as a small entity, and meet the further limitations that they have not been named on more than 4 prior U.S. non-provisional patent applications, and that their gross income in the preceding calendar year was less than three times the U.S. median household income for that year.

It is important to inform the Patent Agent of any completed or obligated transfer or license of rights from the inventor, as payment of small or micro entity fees without proper entitlement to do so may jeopardize the validity of a patent. The Patent Agent will be in a situation to aid in determination of the appropriate fee scale using the prescribed definitions of the different applicant categories for the country in question.

Before the publication of the application at the end of the typical 18-month confidentiality period, the entire record of the patent application is kept secret from the public. No one can obtain access to these records without written authority from the applicant or the Patent Agent appointed by the applicant. However, once the application has been "laid

open" or published, copies of the application are made available and the entire record becomes open for inspection by any member of the public. Publication of applications in the United States applies only to applications filed as of November 29, 2000. Previously, application records in the United States were not made available to the public until issue of the patent.

In USA, an applicant still has the option of filing a non-publication request, in which case no publication will take place until the patent is granted, provided that an application for the same invention has not been filed by the applicant in any other country. Should the applicant later decide to file elsewhere, the non-publication request must be rescinded, after which the U.S. application will be published.

CHAPTER 6

Claiming International Priority

Most countries have subscribed to the Paris Convention treaty, which among its other provisions, establishes a right of priority for patent applicants, whereby filing a first application in one country reserves the effectiveness of that filing date for use in other countries provided that the applicant files in any such other country within a prescribed period of time.

More specifically, if an application for a patent is first made in any single member country and then applications for the same invention are made in additional member countries, within twelve months thereafter, the applicant is considered as having filed his application in the additional countries on the date on which he or she filed in the first country.

As an example, a Canadian citizen or resident may apply first in Canada. The same effective filing date may then be obtained in any other member country provided the foreign filing occurs within twelve months of the Canadian filing date. This is just one example, as the Canadian applicant could alternatively file the first application in any Paris Convention member country, for example in USA, and file in any other member country, for example Canada, within the one year period to gain the benefit of the earlier filing date.

In some instances, an applicant may still apply for corresponding patents in other countries more than twelve months after the filing date of first application, but the later application will not be entitled to claim back to the earlier filing date in the first country. This is only applicable under certain scenarios, as for most countries, it would be too late to file more than 12 months after the first application if the invention was already publicly used, disclosed or published

anywhere in the world. As mentioned before, Canada and USA offer a one year grace period for filing a patent application after public disclosure of the invention by the inventor, so a second non-convention application could be filed more than one year after the first application, provided that second application was filed before, or within one year of, any public disclosure.

Therefore, if an inventor is interested in filing only in Canada, and/or the United States, (or a limited number of other countries that provide similar grace periods, of which Australia is one example) limited use or disclosure may take place before filing in the first country. If the inventor wishes to file anywhere other than such grace-period countries, then it is essential that an application be filed in a convention country prior to first use or disclosure anywhere. For example, if an application is filed in Canada or USA, and then a public disclosure of the invention is made, then most other applications outside of North America must be filed within twelve months of filing the first application. The inventor can then claim the first filing date as the effective filing date of the foreign application, which therefore pre-dates the public disclosure of the invention.

As an alternative to filing specifically in individual countries within the one year of the first application, one could instead file an international patent application under the Patent Cooperation Treaty (PCT). The PCT application does not itself result in actual grant of a patent in any country, but effectively extends the amount of time to file in most PCT member countries from 12 months to 30 or 31 months from the earliest priority filing date. This buys the applicant more time to work on commercializing the invention and finding partners or distributors in other countries before facing a final decision on what countries to file in.

Before the 30 or 31 month mark, the applicant must enter the national phase of the PCT process in selected PCT member countries in order to continue working toward grant of a patent in those countries. If the 30/31 month deadline passes without action, the PCT application lapses, though late national phase entry may be possible in a small number of member countries.

While the PCT currently has more than 145 member countries, thus covering a significant portion of the globe, it is not truly worldwide, and so discussion with a Patent Agent about specific countries of interest to the applicant should take place before the filing of the first patent application, or at least within the 12 month priority period, to ensure that direct applications are filed in any non-PCT countries of particular importance to the applicant.

CHAPTER 7

Inventorship/Ownership Issues

If two or more inventors have jointly made an invention, they all must be named as inventors on the patent application. Other names should not be listed as inventors, or the subsequently issued patent may be rendered invalid. If an inventor believes that others may be joint inventors, he or she should state the facts accurately to the Patent Agent so that the matter may be handled correctly at the outset.

Sometimes the sole inventor has a partner or financial backer who inadvertently gets named as a joint inventor during the filing process when they did not in fact contribute to the actual invention itself. It is important that this question be settled beforehand to avoid such errors. If the other party desires to be "named" on the patent, this can be done by assignment of part of the inventor's patent rights to the partner or backer, or by forming a corporate entity for the purpose of owning the patent rights, and listing this entity as the applicant.

An inventor should also be cautious in pursuing a patent for an invention he or she made while under the employ of another party. Ownership of any patent rights from the invention may be property of the employer, whether as a result of the inventor's employment contract or common law in the relevant jurisdiction. This issue is particularly relevant in the case of employees who specifically are hired in roles where design, creation, or fabrication of new or improved products are part of the employee's normal duties, or in situations where the invention was made using company resources.

Also, in Canada, public servants are bound by the Public Servants Inventions Act to disclose the details of their invention to the relevant federal minister in order to resolve whether the invention is vested in the Crown. Any public servant inventor must be identified as such in any Canadian patent application filed, and the public servant must not file outside of Canada without first having obtained permission of the Crown.

Accordingly, it is essential that such matters of inventorship and ownership be discussed with your Patent Agent, and care should be taken never to execute assignments of an invention or patent without clearly understanding the ramifications.

Likewise, employers should take care to ensure that those hired specifically to contribute to the design and creation of new and improved products are clearly bound to assign patent and other intellectual property rights to the employer to avoid subsequent dispute over the ownership of such rights. This is especially critical in the case of outside contractors, where common law principles that apply to direct employees may not be applicable to such contractors.

CHAPTER 8

Types of Protection

Utility Patents

Generally speaking, utility patents are granted for inventions relating to technical matters. These include:

- (1) articles, machines, and new constructions generally;
- (2) new chemical compositions or processes differing from any naturally occurring counterpart;
- (3) new methods or processes resulting in some practical effect; and
- (4) new biological products and processes differing from any naturally occurring counterpart.

Excluded from patent eligibility, regardless of whether they are novel, non-obvious and useful, are such things as scientific principles, mathematical formulas and algorithms per se, laws of nature, abstract ideas, and higher life forms.

Software

In some cases, the patent eligibility of an invention can be difficult to ascertain. This is particularly true in modern computer implemented technology. For example, the explosion of novel and innovative software applications running on mobile devices has had an undeniable impact, both commercially and in the daily lives of consumers. Yet, while there is unquestionably a significant amount of innovation taking place in this sector, the inventions themselves, being at least partially executed in form of

software code running on non-specialized hardware, does not consistently fit into either a clearly patent-eligible or patent-ineligible category.

Generally speaking, software that merely takes in some input data, performs some calculations, and generates output data may not be patent eligible, as it could boil down to a mere algorithm having no practical effect. A good sign that a computer implemented invention is not patent eligible is whether the same process could be completed with mental calculations or pen and paper techniques with no real impact on the way functionality of the invention and resulting outcome. If the computer is only a manner of practical convenience, allowing much faster execution of the process, then the invention is likely not a patentable one.

On the other hand, if the process carried out by execution of the software has a clear practical effect, such as improving the operation of the computer itself, or having some tangible output interaction with a physical environment (e.g. controlling a physical piece of equipment in an industrial process), then the collective invention is likely patentable, despite the use of computer executed software as one of the essential components thereof.

Unfortunately, there is no standardized singular test by which a computer implemented invention can be easily categorized as either eligible or ineligible, as demonstrated in Canada by clear contradiction between CIPO's current practice guidelines and the relevant case law, and by the U.S. Federal Court's ongoing failure to establish a clear definition of what denotes an "abstract idea" that is excluded from patentability. An experienced Patent Agent can help you assess whether your invention clearly falls into a patent eligible category, or not.

Regardless of the ongoing issues surrounding the patentability of these types of innovations, it should be appreciated that any software related invention will inherently be afforded some level of protection under copyright law, which protects against others who might otherwise make and distribute unauthorized copies of the software. Copyright automatically resides in the creation of a unique work, though additional benefit arises from optional registration of a copyright, where this registration serves as evidence of the original authorship of the work should the copyright ever need to be enforced.

On the other hand, if the technology is potentially patent eligible, successful grant of a patent can notably improve the scope of protection, as it would be enforceable against others who have infringed, regardless of whether this infringement was the result of “copying” or the result of coincidental development of something similar to the patented invention.

That is, a patent is infringed regardless of whether the infringing party had any prior knowledge that the technology was patented or that the patent holder had invented such technology. Patents are thus not limited to enforcement against those who knowingly copied the patent holder’s invention, and can validly cover the actions of another party who just coincidentally manufactured, sold or used something falling within the scope of the patent claims.

Industrial Designs

As mentioned earlier, another type of protection relates to the ornamental appearance of an article. This may be surface ornamentation or it may be the configuration or shape of an article. This form of protection is available in Canada as an Industrial Design Registration under the Industrial Design Act.

In the United States, similar protection is available in the form of a Design Patent.

Design applications are formed primarily by a set of images showing the unique design in question, typically best conveyed in the form of a set of black and white line drawings with contour lines or stipple shading to better show the three dimensional angles and contours of the article. A brief written specification accompanies the drawings, but is much shorter than the much more elaborate and complex specification required by a utility patent.

The filing and prosecution process is similar, involving the initial filing of the application, followed by examination of the claimed design for novelty or originality, and then registration of the industrial design or issue of the design patent once approved. In both Canada and USA, the initial filing fees include the examination fee, and so examination is not deferrable. In Canada, the filing fees also cover the registration step. On the other hand, an issue fee is payable in USA once the patent is approved for issue.

Canadian Industrial Design Registrations protect the design for an initial period of five years from the date of registration. They are renewable for a further and final period of five years, providing protection for a total term of ten years. They must be applied for before the design has been publicly known for one year. In the United States, Design patents require no renewal, and remain in force for a non-extendable period of fifteen years from the issue date.

Like with utility patents, one year grace periods allow filing in Canada and USA up to one year from a first public disclosure, but many other countries require filing before any public disclosure to obtain valid protection.

Design protection is becoming increasingly important, although the coverage is often not as useful as that afforded by utility patents. However, so much depends upon the appearance of the design or "styling" of articles in commerce that greater attention is being given to this type of protection, often supplementing utility patent protection. However, it can cover only the appearance or decorative features of an article, and cannot cover the actual mechanical design or functionality.

The cost of obtaining a design patent is usually considerably lower than that for a utility patent, and therefore, in some instances, a design patent may be one relatively inexpensive means of obtaining at least *some* protection for a product.

Trademarks

Of further assistance in successful marketing is a well-chosen trademark, either a "word mark" or logo or a combination of both. A registered trademark agent can aid with searching prior trademarks to ensure the novelty of your mark, and file for registration of same.

Registration of trademarks, industrial designs, and copyrights in Canada and USA are carried out by the same governmental agencies responsible for granting of utility patents, namely the Canadian Intellectual Property Office (CIPO) and United States Patent & Trademark Office.

Although our firm does not work in the realm of trademarks and copyright, we can connect you with a firm or agent that does.

CHAPTER 9

Closing Comments

Some inventions are simple and others very complex. Sometimes a physically large invention is simple in construction, while a small invention may be quite complex and difficult to describe. These differences influence the expense both of preparing applications and of prosecuting them after they reach the Patent Office.

Questions which every inventor should consider before applying for a patent may include:

- (a) Is the invention practical?
- (b) Does the invention do something more efficiently than is presently possible?
- (c) Will it cut production costs for a manufacturer?
- (d) Is there a sufficiently wide need for the invention?
- (e) Will the retail cost of it be low enough to attract a market?

The reactions of friends or others who are familiar with the field are also often well worth having, and often, such reactions can be obtained without revealing the novel details of the invention. However at the end of the day, it is the inventor who must make the decision whether to seek patent protection and pursue commercialization of the invention.

It is not always the greatest inventions that prove most profitable during their patented term. The smaller ones, the practical and appealing, the slight improvements, are

frequently the inventions most wanted by manufacturers. Generally speaking, relatively small improvements gain market capture more quickly because the public is not as wary of incremental developments as it is about major new innovations. Manufacturers are aware of this and often prefer items that do not require vast consumer education to achieve public acceptance.

On the other hand, major developments are more likely to find acceptance today than in years gone by. We live in an age of such rapid advances in engineering and communication that new ideas often do not meet the resistance they once did.

If you are interested in more information, or have an invention you wish to discuss, please contact us at any of the phone numbers listed on the inside cover page of this booklet to setup your free initial consultation with one of our Patent Agents.