Australian
Intellectual Property Law
Bulletin

# Considerations relating to drafting the patent specification

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## Practical tips

- Whilst there is no definition of "invention" in the Patents Act 1990 (Cth) (the Act), an invention is generally understood as the generation of a new idea or knowledge which aims to solve a specific technical problem that is tied to a potential commercial opportunity. A patent specification defines the invention, and is one of the most difficult legal instruments to draw with accuracy. In this article, I discuss the three main reasons why patent specifications are complex to draft.
- There are not likely to be any hard and fast rules to mitigate the complexities that arise during drafting of a patent specification, but rather it can often come down to the attorney's skill and experience in judiciously deciding what to include and what to leave out, how broadly to pitch the claims, what terminology to use and what to avoid and importantly, the essential features of the broadest claim.
- Ideally, prior to drafting the specification the applicant has a clear problem they are solving, and clearly understands the inventive concept and the advantages it provides over the prior art, and how it is particularly suited to address that problem. It is also highly advantageous for the inventor to have all the required experimental data that supports the full width of the claims. Further, from a commercial perspective, it is ideal if the applicant has some understanding of how the product will be commercialised, so the claims can be tailored to suit the commercial objectives.

## Introduction

Financial resources can and do provide a real impediment to moving forward with any business opportunity, but a well-drafted patent specification should be considered as an investment, especially as the cost is quite minor in comparison to the amount of money required to commercialise the invention. Drafting a patent specification is a complex task which courts have noted is one of the "most difficult legal instruments to draw with accuracy". This complexity arises due to several factors which, for convenience, have been grouped into three in this article, namely:

- there being a lack of clarity around the inventive concept to begin with
- insufficient data to support the claims at the outset of the drafting process
- the inherent complexity in drafting the patent specification itself

## Types of patent applications and requirements of the patent specification

To file a patent application, a patent request must be filed with IP Australia along with a patent specification. The patent application can be in respect of a provisional application or a complete application,[1] and the associated patent specifications are termed a provisional specification and complete specification, respectively. The patent specification is defined as the description, claims and drawings contained in the relevant patent application.[2]

Section 40(1) of the Act defines the requirements relating to a provisional specification, which must "disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the relevant art" (disclosure requirement).

Section 40(2) of the Act defines the requirements relating to a complete specification. They include the disclosure requirement, and to include the best method known to the applicant of performing the invention.[3] The complete specification must end with claim(s) defining the invention,[4] which must:

- "be clear and succinct" (clarity requirement)
- "supported by matter disclosed in the specification"[5] (support requirement)
- "relate to one invention only"[6]
- "not rely on references to descriptions or drawings unless absolutely necessary to define the invention"[7]

The best practice guide[8] provided by IP Australia suggests that the patent specification should be arranged with a title and the description, followed by:

- the claim(s) (optional for a provisional application)
- an abstract
- drawing(s) (if applicable)
- the sequence listing (if applicable)

## Patents protect inventions

A patent is a legal document granting its holder the exclusive right to exploit the invention, as set forth in the patent's claims, within a limited area and time by preventing others from, among other things, making, using or selling the invention without authorisation.[9] Patents may be granted to protect inventions that are, among other things, new, involve an inventive/innovative step and are capable of industrial application.[10]

The purpose of the patent is twofold — to provide the public with details of the new invention and to reward the inventor with a time-limited monopoly[11] in return for making public the details of the invention. This is reflected in the specification itself, which is basically a two-part document comprising a description, which is largely technical in nature, and the claims which frame the concomitant legal monopoly the applicant seeks in return. The parts not only need to fulfil their respective functions but need to do so in a consistent manner.

The term "invention" is not defined in the Act but is understood to have several possible meanings.[12] However, it is generally understood that an invention is defined as the generation of a new idea or knowledge which aims to solve a specific technical problem.[13] As the specific technical problem being solved is typically associated with a perceived need in the marketplace, patents are inherently tied to a potential commercial opportunity.

## Drafting the patent specification

To draft a patent specification a patent attorney requires tertiary qualifications in scientific or engineering disciplines relevant to the technical problem[14] and relevant legal qualifications in intellectual property law and practice.[15] Given that an invention is aimed at solving a commercially relevant problem in the marketplace, an attorney should also have some understanding of how products and services are commercialised in order to properly frame the patent specification and draft the claims, and so that the patent ultimately meets the applicant's commercial objectives. The work of patent attorneys therefore spans science, law and commerce.

Patent specifications are complex to draft, even where the inventive concept has already been crystallised and a client's commercial objectives have already been given deep consideration, let alone in cases in which the inventive concept is still its initial stages and the scope of it is more "nebulous". Indeed, courts have marvelled at how difficult it is to draft a patent application. For example, the US Supreme Court explained that drafting of "the specification and claims of a patent … constitute[s] one of the most difficult legal instruments to draw with accuracy".[16] Further complicating matters is that the patent specification is often drafted under a tight time frame as there may be, for example, an imminent public disclosure. It is often difficult for patent applicants to determine at an early stage the level of resources that should be invested in supporting the drafting of an application.

It is interesting to explore the reasons why patent specifications are complex to draft. The following discussion is aimed exploring why, from a practical perspective, this is the case and what can be done in some cases to mitigate these complexities. The issues generally fall into three main areas:

- lack of clarity around the inventive concept
- insufficient data to support the claims
- drafting the patent specification itself

### *Lack of clarity around the inventive concept*

In practice, it is not uncommon for an attorney to find themselves in the position where an applicant presents them with an inventive concept that is somewhat of an unfinished idea, or is perhaps still a work in progress, in which case the attorney must work to foreshadow many embodiments and alternatives in the specification to cover as much ground as possible around that "preliminary" inventive concept. Drafting a patent specification around an inventive concept that has not yet fully crystallised requires a generous measure of creativity and skill on the attorney's part.

In some cases, the inventor thinks the inventive concept relates to, for example, a particular relationship between components of a composition, and the specification is drafted accordingly. However, with the passage of time, and with more experimental data generated, it becomes apparent that the inventive concept actually relates to some other relationship. A shift in the understanding of the inventive concept will necessarily cause a shift in the focus of the patent specification.

In other cases, the inventor may have developed something interesting, but may not have a clear problem in mind that is being solved, making the drafting of the patent specification difficult as the attorney needs to peer into their "crystal ball" and contemplate what problems

could be applicable. Alternatively, sometimes inventors create a solution for a very specific purpose, and have not fully considered whether the solution could be applied to other fields, in which case the patent attorney again must contemplate other possibilities.

Not all inventions stem from a good idea. In some cases, applicants are commercially driven to protect valuable niches in the commercial space. In cases such as this, where the invention is market-driven rather than technology-driven, the invention may be technically and legally tenuous but commercially valuable.

These complexities are some the practical realities patent attorneys face on a daily basis, and there are not likely to be any hard and fast rules to mitigate these issues. If the inventive concept has shifted radically over time it may be easier to redraft the specification from scratch, rather than recasting the existing specification and adapting it for the new inventive concept. This can be important as it can avoid the mix of different terminologies, which can cause clarity issues during prosecution, or can cause a terminology originally intended to define a particular feature to have different meanings, and therefore affect the intended claim scope. Drafting a specification from scratch can also avoid a seemingly disjointed patent specification, which can diminish its value to the applicant as a "sales" document.

### *Insufficient data to support the claims*

Sometimes, there may be insufficient data at the time the patent application needs to be filed to support the entire breadth of the claims and meet the disclosure and support requirements, in which case drafting the specification is especially difficult as the attorney needs to balance what is exemplified with what claim breadth can be reasonably supported. If the claims are drafted too broadly, and only something narrower will survive prosecution (closer to what is actually exemplified), the surrendered claim scope is effectively given away and can prevent protection of that surrendered claim scope in the future, despite there being future experimental support for it. If the claims are drafted too narrowly the applicant may not be getting the protection it is entitled to, and the value of the patent will be lower than necessary. Again, there are probably no hard and fast rules in the careful balancing act, but rather it comes down to the attorney's skill in knowing where to pitch the claims.

The detailed description section of the specification should provide a sufficient disclosure of the invention that a skilled person in the relevant field could make and understand the invention, and should breathe life into the claims. However, it can be challenging when the inventor wishes to protect a concept they believe is inventive but have no enablement, in which case the attorney must understand the common general knowledge and the skill set of the skilled person and, as a stop gap measure, undertake some reasonable "thought experiments" to provide the necessary enablement — so-called "prophetic examples", which should be confirmed by the applicant with real experiments in the immediate future. These kinds of examples might be perfectly reasonable in the predictable arts (eg, simple mechanics) but inadequate in non-predictable arts (eg, biotechnology). In yet other cases, where an inventor has something novel and commercially valuable, but the inventiveness of it is arguable, drafting the specification and claims can be a challenge. In this case, early consideration should be given to filing an innovation patent application instead of a standard patent.

### *Drafting the patent specification itself*

A patent specification, although it covers technical subject matter, is ultimately a legal document. Drafting a high-quality patent application is important because it sets out the terms by which the patent owner and others will be bound, and in this sense it is different from writing a scientific paper. The patent specification will be reviewed over the years by public officials such as patent examiners, judges and business partners. The patent attorney should therefore be drafting the specification with these important audiences in mind, all the while considering the rules and requirements of each major jurisdiction in which the patent application will be filed and ensuring that it meets the legal tests in those jurisdictions. In this regard, there is a great responsibility in the choice of words that are used, as the difference between one word and another in the drafting of a patent claim can mean the difference between a valuable and a voidable patent. Attorneys should review the closest prior art for assistance in this regard.

During the drafting process, the patent attorney must reasonably also consider how the patent may be prosecuted before a patent office and what objections could be raised during the examination phase, and therefore what additional information may need to be included into the specification to assist in addressing those objections. Claims, for example, may need to be amended for a number of reasons:

- to clarify terminology
- to overcome relevant prior art
- to overcome other rejections cited by the examiner
- to better fit with the eventual marketed product
- to better represent the invention as it matures, to encompass an infringing product or
- to survive an opposition

By way of example, a definition for the key terms used in the claims may need to be included, especially if

those terms are being used in a non-standard way. Where generalities or relative terms are used in the claims it is preferable to think through the specifics that fall within that generality and include them in the specification. Also, because some jurisdictions have strict amendment laws, to avoid an "added subject matter" objection the specification should be drafted to include as many perceivably different fallback embodiments as possible (ie, narrower embodiments of the invention), as one can never be certain what prior art will be raised during prosecution and therefore what (supportable) claims amendments may be required to navigate around that prior art. If a fallback embodiment is not available, then the applicant may need to resort to unnecessarily narrow claims, which can affect the value of the patent.

Drafted claims should be simple to understand, concisely isolate the invention and meet the clarity requirement. This is inherently difficult to do, primarily because claims, by their very nature, tend to describe complex concepts; but it is because the concepts are difficult that the claim language needs to be easy to understand and the claim itself should not be unnecessarily prolix. It is preferable to draft claims that are simple, clear, concise and which are readily comprehendible. Indeed, a well-drafted claim has a certain "beauty" to it.

It is critical to have an understanding of the applicant's commercial objectives prior to drafting the specification. Understanding these objectives will inform how the specification is drafted, and especially the claims. For example, understanding whether the claims should be directed to the apparatus, the method, the use of it in certain circumstances, or a kit of parts, a system, a composition of matter or combinations of these. It can also be important to protect the "supply chain". For example, the upstream supplier of a part supplied to for the invention and the downstream user (ie, to capture the context of its use, how is it used and how it might it be modified, etc). The attorney needs to think like a potential competitor trying to avoid the patent and draft the claims to avoid this situation. Also, if possible, claims should cover competing products and therefore the attorney should understand what competitors are doing in the marketplace, or what they may do.

Finally, the broadest claim must have no inessential features — if it does, a competitor could simply copy the broadest claim without that inessential feature and would not infringe the patent. In this regard it is important to avoid use of terminology in the specification itself which could inadvertently force an inessential integer into the broadest claim, for example by avoiding use of words such as "critical", "special", "peculiar", "superior", "very important", "essential", "key" and "necessarily".

## Conclusion

The easiest patents to draft are those in which the applicant has a clear problem they are solving, and clearly understands the inventive concept and the advantages it provides over the prior art and how it is particularly suited to address that problem. It is also highly advantageous for the inventor to have all the required experimental data that supports the full width of the claims. Further, from a commercial perspective, it is ideal if the applicant has some understanding of how the product will be commercialised, so the claims can be tailored to suit the commercial objectives.

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## Footnotes

1. A complete patent application may be a standard patent application (granted under s 61 of the Act), a divisional patent application (made under ss 79B or 79C of the Act), a patent of addition application (granted under s 81 of the Act) or an innovation patent application (granted under s 62 of the Act). Note that under s 29A(1) of the Act, a Patent Cooperation Treaty application is to be treated as a complete application for a standard patent.
2. See Sch 1 of the Act.
3. Patents Act, s 40(2)(aa).
4. Patents Act, s 40(2)(b). Note that an innovation patent must end with no more than five claims (s 40(2)(c)).
5. Patents Act, s 40(3).
6. Patents Act, s 40(4).
7. Patents Act, s 40(3A).
8. IP Australia, Best practice guide for filing a specification, 12 April 2016, www.ipaustralia.gov.au/best-practice-guide-filing-specification.
9. Patents Act, s 13 and see definition of "exploit" in Sch 1.
10. Patents Act, s 18.
11. Twenty years for a standard patent, and eight years for an innovation patent.
12. *Kimberly-Clark Australia Pty Ltd v Arico Trading International Pty Ltd* (2001) 207 CLR 1; 177 ALR 460; [2001] HCA 8; BC200100261 at [20].
13. C M Kalanje, Role of intellectual property in innovation and new product development, 28 February 2005, www.wipo.int/export/sites/www/sme/en/documents/pdf/ip_innovation_development.pdf.
14. Patent Regulations 1991 (Cth), reg 20.3(1)(b).
15. Patent Regulations, reg 20.3(1)(c).
16. *Topliff v Topliff* 145 US 156 (1829); 36 L Ed 658; 12 S Ct 825.