PART X — INFRINGEMENT OF PATENTS

I *Claim Construction*

A *Overview*

The claims of a patent define the scope of the claimed invention. In the case of a valid patent, they therefore determine the boundaries of the monopoly afforded to its patentee. The claims, and those claims alone, are what determine issues of novelty and infringement. Their proper interpretation is therefore fundamental to resolving such issues.

Australian courts presently favour an approach to claim interpretation that comprises three steps. First, the essential integers of the patent claim must be identified. Second, those integers must be construed purposively by the notional skilled addressee. Third, those integers, so construed, should be compared to the alleged source of infringement (or reverse infringement). This test is developed in the sections that follow.

B *Contextualisation*

Claim construction is rarely an uncontested issue in patent litigation. This is because so much hinges upon the actual scope afforded to the patentee's monopoly. When a putative infringing product or process clearly falls within a claim, construction is less problematic. Issues of construction are at their most difficult when the product or process does not obviously fall within a claim ('non-literal infringement').

In this area of patent law, it is useful to start with some basic definitions:

- **Specification**
  A textual description of the patent, describing what it is, the problem it solves, the state of the prior art, how the invention improves upon existing methods, and so on;

- **Claim**
  A definition of the invention by reference to its functional, component or operative parts; where the specification *describes* the invention, the claims *define* it (*Radiation v Galliers & Klaerr*);

- **Integer**
  A specific element or feature of a claim; a claim may be subdivided into integers;

- **Essential integer**
  An integer that has functional significance to the claim; in practice, almost every integer expressly or impliedly stated in a claim will be essential;

- **Literal infringement**
  A case in which the defendant's product or process clearly and on its face exhibits every essential integer of one or more of the patentee's claims;

- **Non-literal infringement**
  A situation where it is not immediately apparent that the defendant's product or process falls within a particular claim; and

- **Mechanical equivalent**
  The substitution for an integer of an equivalent mechanical process; sufficient for infringement if the integer is inessential.

In general, a claim that contains a greater number of essential integers is narrower than one with fewer, since all such integers must be embodied for there to be infringement. This is why infringement is often found of a broad claim at the beginning of a patent specification, but not of a more specific claim found later in the patent document. Typically, as claims proceed, the number of integers increases. Early claims are drafted at a high level of abstraction (and are therefore broad) while later claims are stated with a much more specific level of detail. The reason for this will become clear momentarily.

The scope of a claim is of more significance to a patentee than might first appear. Although, for example, a broad construction of a claim may advantage the patentee by allowing a greater number of competing products or processes to fall within its scope (and thereby infringe it), a broad interpretation also risks a finding of invalidity. This is because, as was noted in Chapter IX above, novelty is determined by reference to a reverse infringement test. Put simply, the more things that would infringe the patent as interpreted, the more likely it is to have been infringed by some prior art such as to deprive the claim of novelty. It must therefore be remembered that claim interpretation is relevant to both validity *and* infringement.

Thus, the reason for adopting a claim structure that progressively increases claim detail is to minimise the portion of a claim that would be invalidated by reverse infringement. The broad claims are more likely to be invalidated by the prior art base. However, they are also valuable to include in that, if valid, they encompass a much broader range of potential infringements. By contrast, the low-level claims of higher specificity may be less susceptible to invalidation or revocation, but correspondingly less useful in alleging infringement. This structure therefore ensures the retention of the maximum level of generality permitted by the prior art base, however it may subsequently be defined.

For example, suppose that claim 1 contains four integers, all of which are embodied in a piece of prior art. Because there is something in the prior art base that would infringe the claim, the claim cannot be novel; it would therefore be invalid. (That is, the test of novelty proceeds negatively, by asking whether something exists in the prior art base that would give rise to an infringement action by the prospective patentee. If so, the claim is not novel.) Claim 2, however, may contain two additional integers not embodied in the prior art, and so retain novelty.

C *Evolution of the Claim*

As 'delineator[s] of the limits of the monopoly granted by a patent',[1] claims play a central role in determining issues of validity and infringement. However, this was not always the case. It was not until 1932 that claims became a requirement in patent specifications in the United Kingdom, and not until the 1938 decision of the House of Lords in *Electrical & Musical Industries Ltd v Lissen* that a judicial statement about their nature and function was recorded.

***Electrical & Musical Industries Ltd v Lissen* (1939) UK HL:**

Reasoning (Lord Russell)

- 'The function of the claims is to define clearly and with precision the monopoly claimed,

[1] Richard Hoad, 'Non-Literal Patent Infringement: More Honoured in the Breach than the Observance?' (2006) 17 *Australian Intellectual Property Journal* 121, 122.

so that others may know the exact boundaries of the area within which they will be trespassers. Their primary object is to limit and not to extend the monopoly. What is not claimed is disclaimed. … As Lord Cairns said, there is no such thing as infringement of the equity of a patent …'

- '[The claim], and [the claim] alone, defines the monopoly, and the patentee is under a statutory obligation to state in the claims clearly and distinctly what is the invention which he desires to protect.'

Lord Russell's statement describes the essential functions of a claim: namely, to limit the statutory monopoly granted by letters patent, and to alert potential competitors, licensees or the broader public about its scope. Since *Lissen*, the law of patents in both the United Kingdom and Australia has evolved in a manner that emphatically requires inventors to include claims in their specifications.

D *Approaches to Claim Interpretation*

1 *Literalism*

The primary tension in claim construction lies between 'literalist' and 'non-literalist' approaches. Under a literalist approach:

> It is not sufficient for the inventor to discover his gold mine — he must also peg out his claim. Outside the pegs, the gold, if it be there, is free to all …

Shave v HV McHay (1935) 52 CLR 709

This strict notion that '[w]hat is not claimed is disclaimed' has sometimes been referred to in United States scholarship as 'hypertextualism'. The scope of patent protection is determined solely by reference to the claims, which cannot be modified by courts so as to add or replace any inherent limitations.

2 *'Pith and marrow'*

By contrast, 'pragmatic textualism' adopts an approach to claim interpretation that is less about finding the 'fence posts' in claims and more about being directed by 'sign posts' contained within them. That is, claim wording is a guide to the scope of protection, but not literally determinative:

> Where the language of the specification … can be so read as to afford protection for that which he actually in good faith invented, the court will endeavour to give effect to that construction …

See, eg, Burchett J in *Elconnex*.

The 'pith and marrow' approach to claim interpretation developed out of historical practices concerning the drafting of patent specifications. Until the rise of the claim to prominence in the mid-twentieth century, patent specifications rarely contained specific claims. Instead, a prospective patentee would describe her invention using textual description and by reference to numerous integers.

Because these integers were less precise and far more voluminous than their modern equivalents, courts tended to interpret them broadly and to distinguish between 'essential' and 'non-essential' integers. Liability hinged upon the taking of the 'pith and marrow' of an invention,

so that the substitution of a 'colourable variation' or 'mere mechanical equivalent' would not be sufficient to avoid liability for patent infringement.

The 'pith and marrow' school has long been considered dead,[2] which is not surprising in light of modern drafting practice. However, its rise and fall are here chronicled for their comparative value in determining current approaches to claim construction. The origin of this approach to claim interpretation lies in the influential — though no longer authoritative — decision of *Clark v Adie*.

Clark v Adie (1875) HL:

Facts
- Clark alleges that Adie has infringed his patent for an improved pair of horse hair clippers
- [Note: at this point, the patent document did not contain 'claims' *per se*; instead, the scope of the patent was discerned from the written text of the specification alone]

Issues
- Has Adie infringed the patent?
- What is the proper approach to be adopted when construing the terms of the patent?

Reasoning
- High Court (Sir William James LJ):
  - The claim for an improved horse hair clipper is a combination of known integers
  - '**[674]** it has been strongly contended before us, that whenever there is a patent for a combination that patent gives protection, not indeed to every distinct thing that enters into the combination, but to every combination, arrangement, and aggregate of two or more of those distinct things, even although such subordinate combination is not expressly or impliedly claimed in the specification.'
  - Such an argument is 'so startling a violation of every principle of patent law' that it should not be adopted
  - However, 'there is, or may be, an essence or substance of the invention' whose taking would be sufficient for a finding of infringement

- House of Lords (Lord Cairns):
  - There are three kinds of patent infringement:
    - **Literal infringement**
      Where the infringer takes 'the whole of the instrument from beginning to end'
    - **Non-literal infringement**
      Where the infringer takes something less than the whole, being 'a certain number of parts of the instrument described'
    - **Novel sub-invention**
      Where the infringer takes a subordinate novel combination of the claimed elements
  - [Note: the third of these classes of infringement is clearly irrelevant today, since the sub-invention would in practice be contained in a separate application]
  - In the case of literal infringement, no issue arises
  - Here we are concerned with non-literal infringement; in such a case, it will be sufficient that the defendant has taken to what amounts to being 'in substance the pith and marrow of the invention'

[2] Ibid 143.

- The issue is '**[320]** whether that which was done by the alleged infringer amounted to a colourable departure from the instrument patented, and whether in what he had done he had not really taken and adopted the substance of the instrument patented. And it might well be, that if the instrument patented consisted of twelve different steps … an infringer who took eight or nine or ten of those steps might be held by the tribunal judging of the patent to have *taken in substance the pith and marrow of the invention*.' (emphasis added)

The 'pith and marrow' approach has never been the law of Australia. In *Walker v Alemite Corporation*, for example, the High Court held that if any essential feature (integer) of a claim was not embodied, there could be no infringement of that claim.

Walker v Alemite Corporation (1933) HCA:

Facts
- Walker is the patentee of a lubricating apparatus to be used in machinery
- He alleges that the defendant's product infringes the patent, despite containing a number of differences in relation to the shape of the lubricating cup, spring and pins

Issue
- Is the patent infringed?

Reasoning
- Rich J:
  - The differences between the two products are not functionally significant
  - However, they do relate to essential features of the plaintiff's claim
  - The defendant's product is therefore not 'a mere mechanical equivalent or colourable imitation', and there is no infringement
- Starke J:
  - '**[653]** The object of the claim is to delimit the invention, to define what is the new thing that is claimed. Anything that is not claimed is disclaimed'
  - The differences here relate to the essential features of the claim
  - Therefore there can be no infringement
- Dixon J:
  - '**[657]** The question is: How wide is the monopoly? Once it is determined that the discarded features are essential to the claim, the substitution of other means of performing the like function cannot amount to infringement by colourable variation, or by the use of a mere mechanical equivalent. … The claim itself makes them cardinal.'
  - Here the cup, spring and pin shapes were essential, so the defendant's product does not infringe

Decision
- No, the patent was not infringed
- Substituting a mechanical equivalent for an essential integer of a claim will not give rise to infringement
- [Presumably, this is so even if the integer, being 'essential', forms part of the 'pith and marrow' of the claim, and the defendant's version is functionally the same]

The High Court later confirmed that the relevance of the pith and marrow approach is necessarily to be curtailed in light of the modern importance of claims (*Shave v H V McKay Massey Harris Pty Ltd*).

Shave v H V McKay Massey Harris Pty Ltd (1935) HCA:

Reasoning (Rich, Dixon, Evatt and McTiernan JJ)

- '**[708]** Before it was necessary for a patentee to include claims in his specification and when, if he did so, it was for the purpose of better defining his invention, it was natural for the Court to regard the strict wording of the claim as of less importance than at the present time, when it constitutes the legal definition of the patentee's monopoly adopted by him or his advisers as their considered expression of what he claims as his exclusive property.'
- The application of the 'pith and marrow' doctrine 'must necessarily be different'

This scepticism was echoed by the Court in *Olin Corporation v Super Cartridge Co Pty Ltd*.

Olin Corporation v Super Cartridge Co Pty Ltd (1977) HCA:

Reasoning (Gibbs J)

- '**[246]** as was pointed out in *C Van der Lely NV v Bamfords Ltd*, the principle that there may be infringement by taking the "pith and marrow" or substance of an invention does not mean that there will be infringement where the patentee has by the form of his claim left open that which the alleged infringer has done. And it does not alter the fundamental rule that there will be no infringement unless the alleged infringer has taken all of the essential features or integers of the patentee's claim.'

The Australian rejection of a 'pith and marrow' approach, at least insofar as it was applied in *Clark v Adie*, is made clear by the decision of the High Court in *Minnesota Mining & Manufacturing Co v Beiersdorf (Australia) Ltd*, where the Court held that whether there has been infringement will be determined by reference to the language of the claims themselves .

Minnesota Mining & Manufacturing Co v Beiersdorf (Australia) Ltd (1980) HCA ('*3M v Beiersdorf*'):

Facts

- 3M's patent concerns a tape that is described as 'inextensible' and 'hydrophobic'
- The defendant produces a competing tape that is largely inextensible, but not entirely so; further, it is initially hydrophilic, though hydrophobic at the relevant time

Issue

- Has the defendant infringed 3M's patent?

Reasoning (Aickin J)

- '**[286]** Notwithstanding the undoubted fact that the doctrine of *Clark v Adie* concerning

the taking of the pith and substance of an invention, but nonetheless staying outside the express words of the claim, is less often applicable at the present time than it was at the time of that decision, it remains the law that a defendant may not take the substance of an invention unless the wording of the claims makes it clear that the relevant area has been deliberately left outside the claim.'

- That is, the claim will determine the scope of the monopoly, and a product will only be regarded as infringing if it takes each of the essential integers of a claim

Decision

- Yes, the patent is infringed because 'inextensible' is equivalent to 'relatively inextensible', and the fact that the material is hydrophobic at the relevant time is enough

3 *Purposive*

The purposive approach to claim construction frames the issue in terms of how a person 'skilled in the art' of the invention would understand the claim. Namely, it asks whether such a person would regard the patentee to have intended a given integer as essential.

This approach differs from the 'pith and marrow' approach in that it determines the scope of the invention by reference to the claims, and places the onus squarely upon the patentee to provide a precise statement of the scope of the invention. However, it is not quite as rigid as a hypertextualist approach. In reality, the purposive test falls somewhere between these two schools of interpretation.

The purposive approach was first expounded in the seminal case of *Catnic Components Ltd v Hall & Smith Ltd*. The test proposed by Lord Diplock may be itemised as follows:

(a) **Determine the integer in question**
State with precision the part of the claim that is in issue;

(b) **Essentiality**
If the integer is not essential, it does not need to have been taken, and the enquiry ends here;

(c) **Literal taking**
If the defendant's article literally embodies that integer, no issue of purposive construction arises, and the enquiry ends here;

(d) **Non-literal taking**
If the defendant's article varies that integer in some way, it will not infringe unless the integer can be purposively construed;

(e) **Material effect**
A variant that would have a material effect upon the functionality of the invention cannot amount to taking, and the enquiry ends here;

(f) **Identify the field**
Otherwise, state the field in which the invention was intended to be used;

(g) **Identify the skilled addressee**
This is a person with practical knowledge and experience in that field;

(h) **Interpret as the addressee**
Ask how the addressee would regard that integer;

(i) **Strict compliance?**
If they would view strict compliance with the integer as being necessary:

- The integer is essential
- To infringe, there must be exact compliance
- Any variation will not infringe the integer

(j) **No strict compliance?**
If they would not view strict compliance as being necessary:

- The integer is not essential
- Variations can still fall within the monopoly of the claim

Catnic Components Ltd v Hill & Smith Ltd (1982) UK HL:

Facts
- Catnic is the patentee of a steel lintel, which is a device to distribute loads over a doorway frame, commonly used in construction projects
- The patent claims 'a second rigid support member extending vertically'
- The defendant produces a lintel with a rigid support member inclined 6 degrees from the vertical plane

Issue
- Does the defendant's competing lintel infringe the plaintiff's patent, despite not being exactly vertical?

Reasoning (Lord Diplock)
- The House of Lords adopts a purposive approach to construction
  - [This approach is similar to that employed in other contexts, such as statutory interpretation]

- The purpose test of infringement:
  - A '**[242]** patent specification is a unilateral statement by the patentee, in words of his own choosing, addressed to those likely to have a practical interest in the subject matter of his invention (ie "skilled in the art"), by which he informs them what he claims to be the essential features of the new product or process for which the letters patent grant him a monopoly. It is those novel features only that constitute the so-called "pith and marrow" of the claim.'
  - 'A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge. The question in ach case is: whether persons with practical knowledge and experience of the kind of work in which the invention was intended to be used, would understand that strict compliance with a particular word or phrase appearing in a claim was intended by the patentee to be an essential requirement of the invention so that any variant would fall outside the monopoly claimed, even though it could have no material effect upon the way the invention worked.'

- The test may be summarised as follows: would the integer in issue be regarded as an

'essential requirement' to someone skilled in the art?
- A person 'skilled in the art' is a person who has 'practical knowledge and experience' in the field in which the invention was intended to be applied
- That is: how would the skilled addressee understand the patentee's purpose in that aspect of the claim?
  - On the facts, this person would be a builder
  - Such a person would be likely to adopt a pragmatic view of 'extending vertically'
- Would such a person understand that strict compliance with this aspect of the claim was intended by the patentee to be an essential requirement?
- If he would regard it as intended to be essential, *any* variant would fall outside the monopoly
- If, however, upon reading the specification, it would be obvious to a builder familiar with ordinary building operations that the patentee did not intend to make exact verticality in the positioning of the back plate an essential feature of the invention claimed, then the feature will not be essential, and variations can still fall within the monopoly

Decision
- The phrase 'extending vertically' does not require 'geometric precision'
- On the facts, the integer should be construed as 'substantially vertical'
- This is because the skilled addressee would not regard the patentee as having intended to make verticality an essential aspect of the claim
- The patent is infringed

Catnic reflects a non-literal, purposive approach to claim interpretation. This approach was endorsed in Australia by the Federal Court in its decision in *Populin v H B Nominees Pty Ltd*.

Populin v H B Nominees Pty Ltd (1982) Full FCA:

Facts
- Populin claims an 'apparatus for planting sugar cane' comprising (*inter alia*)
  - A planting unit having a 'relatively small bin'
  - A 'relatively large supply container'
- The defendant produces a competing apparatus with a single bin containing a recessed area for supply

Issue
- Does the integrated machinery take the essential integers of Populin's claim despite containing two bins rather than one?

Reasoning
- To infringe a patent each and every one of the essential integers of the patentee's claim must be taken
- In determining this, ask whether the substantial idea disclosed by the specification and made the subject of a definite claim has been taken
- '**[41]** the patentee must show that the defendant has taken each and every one of the essential integers of the patentee's claim. … At the same time, however, the courts have avoided too technical or narrow a construction of claims. … It is in reliance on this approach that the courts have held that a defendant will not escape infringement by adopting what are immaterial variations, for example, by omitting an inessential part or

step and substituting another part or step as its equivalent. … It was considerations such as this that led early in the history of patent law to the development of what has been termed the "pith and marrow" or "pith and substance" test. … The existence of this doctrine is still recogni[s]ed by the High Court of Australia. But its limitations must be borne in mind'

- Effectively, all that 'pith and marrow' refers to is the 'essential integers of the claim'
- Application:
    - All the facts must be considered, as must all the claim integers
    - The claim clearly describes two separate bins
    - The separate nature of the small bin and the supply container is an essential integer of the claim, even having regard to a purposive *Catnic* construction
    - This is made plain 'from the words of the patentees' claim'
    - The defendant's machine does not contain two separate bins
    - While the defendant's trough and hopper might, if they existed separately, be considered two separate containers factually they were elements of one large container
    - Therefore, there has not been a taking of all the integers by the defendant
    - Therefore no infringement is possible

- More detailed application:
    - The claim refers to a 'wheel means on which the supply container can be moved when towed by an associated vehicle'
        - This integer is taken by a 'means whereby the relatively large supply container can move in co-operation with the planting unit by, for example, being attached to it'
    - The claim refers to a 'conveyor means'
        - This integer is satisfied by 'any mechanism which is operable selectively and has the effect of advancing billets from the container to the bin'
    - However, these integers also indicate that the presence of two separate bins would have been regarded as strictly necessary and, therefore, as essential

Decision

- The defendant's machine does not infringe Populin's patent

Importantly, the purposive approach does not give effect to the subjective intentions of a patentee. If, for example, the patentee omitted to include something within the claim, it could not later be argued that the defendant infringed the patent by use of that thing (*C Van der Lely NV v Bramfords Ltd*). The meaning of the claim is to be determined by reference to the skilled addressee — not the subjective intent of the patentee, however regretful it might be.

Other examples of purposive construction include:

- *Cabot Corporation v Minnesota Mining & Manufacturing Ltd*: a claim referring to '60% compression' is interpreted as meaning 'substantially 60%', so that the defendant's product, which exhibited 57% compression, infringed the patent; and

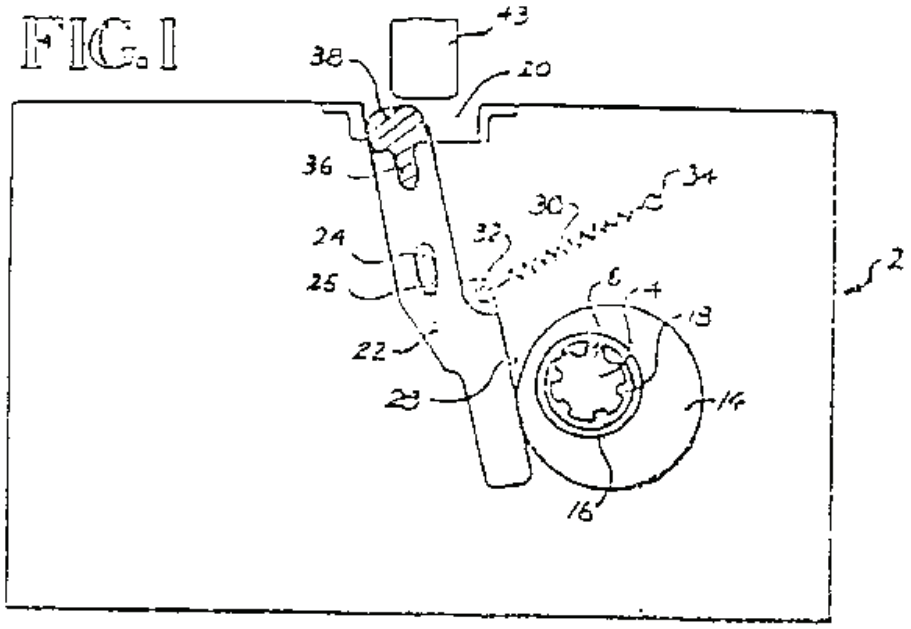
- *Rhone-Poulenc Agrochimie SA v UIM Chemical Services Pty Ltd*: the claim contains three integers (ingredients), one of which is completely omitted by the defendant's product; although the omitted ingredient is unnecessary and the specification refers only to its 'possible inclusion' it was still to be treated as essential; therefore, failing to include it will not be infringement;
    - This is largely because the omission of the third ingredient 'had a material effect' on the utility of the product; it could only be applied by a 'direct injection method'.

The final example that will be described of the purposive approach to interpretation is found in *Allsop Inc v Bintang Ltd*, a case concerning an audio cassette cleaning device. Here, even a purposive interpretation of the patent claims was insufficient to bring the defendant's cleaning device within the scope of the plaintiff's patent.

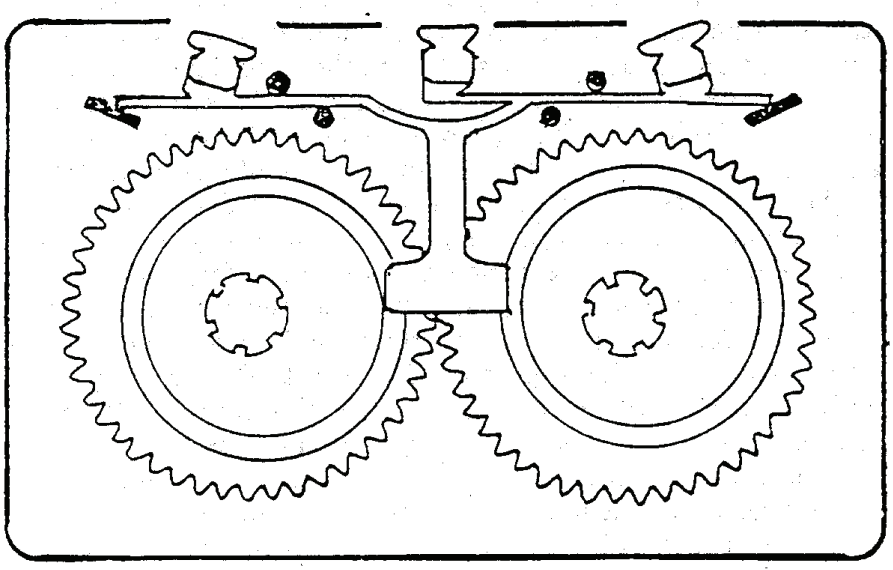
Allsop Inc v Bintang Ltd (1989) Full FCA:

Facts

- The claim concerns a device used to clean audio cassette tapes
- Claim one includes an integer describing 'a lever arm pivotally mounted in the container for reciprocating motion'
    - That is, the cleaning device contacts the head as the device pivots around the tape hole:



- The allegedly infringing device is manufactured by Bintang
- It makes use of an inverted fixed plastic T-piece, which wobbles as the tape rotates:



Issue

- Does Bintang's device infringe Allsop's patent?
- '**[693]** The question raised by the appeal, in respect of the alleged infringement of the first patent, is whether the respondents, in their Flexibar cleaner, have taken the integer "a lever arm pivotally mounted in the container for reciprocating motion". But in order to answer that question, it is necessary first to construe claim 1 of the specification of the patent.'

Reasoning

- The approach to interpretation of the claims is not in doubt:
    - The specification should be given a purposive construction, and not a purely literal one
    - As was noted in *Populin*:
        - 'The complete specification must not be read in the abstract but in the light of common knowledge in the art before the priority date bearing in mind that what is being construed is a public instrument which must, if it is to be valid, define a monopoly in such a way that it is not reasonably capable of being misunderstood. … The essential features of the product or process for which it claims a monopoly are to be determined not as a matter of abstract uninformed construction but by a common-sense assessment of what the words used convey in the context of then-existing published knowledge.'
        - 'Put differently, the specification should, generally speaking, be given a purposive construction, rather than a purely literal one'
    - Counsel's 'definitional dismemberment' of the claiming language is not the correct approach
        - 'Counsel's dismemberment of the statement in the claim into its component words led him to submit that it could be regarded as embracing something which *could* be a lever, although not functioning as such'
        - '[T]his is to drain language of all meaning — a non-functional lever is like a non-functional beam; it is simply a length of rigid material. What differentiates a lever from a beam, or a host of other lengths of material, is its function as a lever.'

    - A variant which would inevitably have a material effect upon the way the invention worked is expressly excluded by the *Catnic* question
        - That is, the variation cannot change the function of the invention
        - 'A change from a lever describing an arc, as it pivots, to an apparatus with no lever, but producing a linear movement, cannot be described as having "no material effect upon the way the invention worked"'
        - Therefore, the *Catnic* purposive approach has no further application to the claim, since, regardless of how it is interpreted, the defendant's version cannot be said to have taken the integer

- Application to the facts
    - 'In general, an understanding of the meanings of the words "lever", "pivotally", "mounted" and "reciprocating", as ordinary English words, may be assumed. However, as these words are clearly used in the specification in their mechanical sense, so far as that sense differs from common usage, it is desirable to set out the appropriate dictionary definitions …'
        - 'Lever': the 'name for a rigid structure of any shape (normally a straight bar) fixed at one point called the fulcrum, and acted on at two other points by two forces, tending to cause it to rotate about the fulcrum'
        - 'Pivotally': 'as on a pivot … a short shaft or pin, forming the fulcrum and centre on which something turns or oscillates'
        - 'Reciprocate': 'to move backwards and forwards'
    - The alleged infringement does not take the integer of the plaintiff's claim 1 in relation to the first patent, because it is not a 'pivot'
    - Nor is the second patent infringed, since the alleged infringement does not contain a 'lever', an essential integer of the claim
        - 'The T-bar is no more a lever, as it pivots about a point on the playing head, than is a post as it pivots about a point on the ground when it is being uplifted at one end in order to drop it into a posthole. Neither is levering anything.'
        - 'The expression "lever arm" is used five times in claim 1. It reflects the recital of the prior art, and also the preferred embodiments of the invention described in the specification, all of which appear to be describing lever mechanisms.'
        - 'To treat the T-bar as a lever … requires the intersection of the two parts of the T to be between the load and the point of application of force; it is at an intermediate point, or as it is put in the *Oxford Dictionary* … "midmost of the three", not at an end.'
    - Further, claim 1 cannot be read as extending to non-pivots, as this would 'materially affect' the nature of the device
        - 'A change from a lever describing an arc, as it pivots, to an apparatus with no lever, but producing a linear movement, cannot be described as having "no material effect upon the way the invention worked"'
    - Therefore, in terms of *Populin* the integer can not be regarded as being taken by Bintang
        - '**[698]** having regard to [these] considerations …, it is impossible to regard the adjective "lever" as expressing in inessential integer, nor can the expression "pivotally mounted" be regarded as capable of being satisfied by something less than mounting on a pivot. It follows that the respondents did not take all of the essential features or integers of the patentee's claim, and that is fatal to the allegation of infringement …'

<u>Decision</u>

- No, there is infringement of Allsop's patent by Bintang

4 *Post*-Catnic *developments*

In *Improver Corp v Remington Consumer Products Ltd*, Hoffman J proposed a series of questions to determine whether an integer has been taken by a defendant's product or process:

(1) **Material effect**
Does the defendant's variant have a material effect upon the way the invention works?

- If yes, the variant is outside the claim and will not infringe;
- If no: continue;

(2) **Obviousness**
Would that the variant had no material effect have been obvious at the date of publication of the patent to a reader skilled in the art?

- If no, the variant is outside the claim and will not infringe;
- If yes: continue;

(3) **Intended strict compliance**
Would the reader skilled in the art nonetheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention?

- If yes, the variant is outside the claim;
- If no, the integer will have a figurative meaning (eg, synecdoche or metonymy), denoting a class of things which included the variant and the literal meaning
    - The variant will infringe

However, Lord Hoffmann has since recanted upon the three *Improver* questions in his Lordship's judgment in *Kirin Amgen v Hoechst* (considered further below in the context of biotechnology patents).

***Kirin Amgen v Hoechst* (2005) UK HL:**

Facts
- The plaintiff's claim concerns a technology to insert EPO, a human oxygen enhancement hormone, within a cell; the production is exogenous
- Hoechst, the defendant, develops a technology that activates a dormant part of a cell to trigger the production of EPO; the production is endogenous
- The lower court, applying the *Improver* question, holds that the patent is infringed

Reasoning (Lord Hoffmann)
- The claim is valid
- What is required is a contextual reading of the claim by a person skilled in the art
- Rejects his previous *Improver* questions

5 *Finding the essential integers*

To succeed in an action for infringement, the patentee need only establish that all of the *essential* integers have been taken by the defendant. An inessential integer may be varied, replaced by a

mechanical equivalent or omitted entirely, and infringement may still result. The question, then, is what constitutes an 'essential' as distinct from a merely 'inessential' integer.

In *Populin*, the Federal Court described the test in the following unhelpful terms:

> The essential features of a product or process for which [the specification] claims a monopoly are to be determined not as a matter of abstract uninformed construction but by a common sense assessment of what the words used convey in the context of then-existing published knowledge.

The quality of essentiality will be clear where the patentee expressly or impliedly describes a claim as such, or otherwise (*Root Quality Pty Ltd v Root Control Technologies Pty Ltd* per Finkelstein J):

> if, expressly or by necessary implication, something is indicated in the descriptive part of the specification to be an essential feature of the invention, the patentee is bound by that assertion. … Likewise, if a feature of the invention is said to be inessential, the court should not go behind that statement.

However, it should be remembered that the specification is only relevant to claim interpretation insofar as one or more of the claims are ambiguous.

Despite these somewhat vague descriptions of the test for essentiality, it seems relatively clear that most, if not all, integers in a claim will be treated as essential. Certainly, it is 'extremely rare' for an integer to be fond to be inessential (*Rhone-Poulenc* per Wilcox J). As a result, the following principle may be taken to be generally applicable:

> If the patentee has chosen to include an integer within a given claim, this will generally be regarded as sufficient evidence that it is essential. It then falls for the Court to determine the scope and content of the claim, and whether strict compliance with the integer would be intended, rather than to doubt its existence entirely.

6 *Variations upon and additions to a claim*

The addition of additional elements will generally not affect infringement, providing the essential integers are still taken (*Winner v Morey Haigh & Associates (Australasia) Pty Ltd*).

However, if the claim is worded as 'comprising', then this limits the claim to containing only those integers that are specified within it. The addition of further elements to such a claim would bring them outside its scope.

The fact that a variation is less effective than the original does not avoid a finding of infringement, providing of course that the essential integers are still exhibited (*Ramset Fasteners (Aust) Pty Ltd v Advanced Building Systems Pty Ltd*).

7 *Policy considerations*

Claims are now the primary determiners of the scope of the monopoly afforded by letters patent. They exist in order to impose clear limits upon the proprietary right, and to permit third parties to structure their affairs in accordance with those limits. They also serve a third purpose that aids the patentee, in that they permit the drafting of a patent document that is known to exclude relevant prior art.

The Australian approach to patent claim construction was summarised by Finkelstein J in *Root Quality Pty Ltd v Root Control Technologies Pty Ltd* (at 235–6):

> what is required is a construction of the [patent] which is *reasonable and fair to both the patentee and the public*. If, upon a reasonable view, the specification can be read to protect the inventor then the court should give effect to that construction. That is what is sought to be achieved by a purposive construction. … It must always be borne in mind that an element of a claim that appears not to be necessary for the invention may nevertheless be regarded by the patentee as essential for some reason that is not apparent. … Accordingly, *the court should act with some care before it broadens a claim in reliance upon a purposive construction of the words* used in the specification.

The policy reasons behind a cautious but purposive approach to claim construction appear sound: patentees should be confident that their drafting intent will be given effect, since it is they who must choose whether to risk invalidity by drafting a broad claim that will encompass more variations. Hoad describes this decision as one of choosing how best to balance the risk–reward equation between breadth of infringement and claim invalidity.[3] Equally, however, the public must also be able to rely upon the claims as defining the true limits of the statutory monopoly.

The purposive approach ensures that claims will only be taken beyond their literal meaning in a cautious fashion. Indeed, the test expressly defines such expansion by reason to informed members of the public, rather than the patentee's intention. This test might in this sense be seen to favour the interests of the public over those of the patentee.

8 *Summary*

An analytical method for claim construction is set forth in the following terms:

(a) **Integer identification**
Identify the essential integers of claim X; that is, the separate aspects or features that define the claim (*Populin*);

- To do so, simply paraphrase the claim text

(b) **Literal infringement?**
If Y's invention exhibits all the integers of X, there is clear infringement;

(c) **Non-literal infringement**
If Y's invention includes a variation, to what extent can X be interpreted as extending beyond its literal meaning so as to include that variation?

- Apply the *Catnic* purposive construction test (above)
- Look for words such as 'substantially', 'relatively' and other imprecise qualifiers
  - 'substantially vertically' (*Catnic*)
  - 'relatively inextensible' (*3M*)
  - 'substantially flat' (*Commonwealth Industrial Gases v M W A Holdings*)

[3] Ibid 144.

II *Patent Infringement*

A *Definition of Infringement*

Patent infringement refers to the unauthorised exercise by a person of the monopoly rights of the patentee. There are three types of patent infringement:

- **Direct infringement**
  When a person exploits the patent without permission;

- **Indirect infringement**
  When a person does not themselves do the acts comprising infringement, but where instead they deal indirectly with infringing articles with a degree of knowledge; and

- **Infringement by authorisation**
  When a person authorises another to infringe a patent, and is somewhat analogous to the notion of secondary liability in the context of copyright law.

These three types of infringements are now examined in turn, followed by an analysis of the statutory causes of action available to patentees, and consequent relief.

B *Direct Infringement*

Direct and authorisation infringement are provided for by *Patents Act* s 13, which sets out the exclusive rights of the patentee. Those rights are defined in terms of being able 'to exploit the invention' and to authorise others to do the same:

Patents Act 1990 (Cth) s 13 — Exclusive rights given by patent:

(1) Subject to this Act, a patent gives the patentee the exclusive rights, during the term of the patent, to exploit the invention and to authorise another person to exploit the invention.

(2) The exclusive rights are personal property and are capable of assignment and of devolution by law.

(3) A patent has effect throughout the patent area.

1 *Limitations upon the s 13 exclusive rights*

By *Patents Act* s 13(2), these exclusive rights are treated as personal property capable of assignment and devolution. That this is so is also implicit in the assignment provisions under s 14 of the Act.

The s 13 rights are territorially limited in that they only have effect 'throughout the patent area': *Patents Act* s 13(3). '[P]atent area' is defined in the Dictionary to the Act:

Patents Act 1990 (Cth) sch 1 — Dictionary:

patent area means:

(a) Australia; and
(b) the Australian continental shelf; and
(c) the waters above the Australian continental shelf; and
(d) the airspace above Australia and the Australian continental shelf.

The rights in s 13 are also limited by the implicit requirement of validity: an invention will not be a 'patent' giving rise to exploitation rights unless it falls within the meaning of s 18 and unless it also satisfies s 40.

These rights are further limited by reference to the notion of what it means 'to exploit' an invention. Exploitation is also defined in the Dictionary to the Act:

Patents Act 1990 (Cth) sch 1 — Dictionary:

exploit, in relation to an invention, includes:

(a) where the invention is a product — make, hire, sell or otherwise dispose of the product, offer to make, sell, hire or otherwise dispose of it, use or import it, or keep it for the purpose of doing any of those things; or

(b) where the invention is a method or process — use the method or process or do any act mentioned in paragraph (a) in respect of a product resulting from such use.

The only way to exploit a claim is to do something in relation to an item that embodies all integers of the claim. All the integers must be taken either literally or non-literally (*Catnic*).

2 *Comparison to copyright exploitation*

It will be observed that rights of exploitation are not as specific as their counterparts under the *Copyright Act*, in relation to copyright materials, and the *Designs Act*, in relation to registered designs. If an invention makes claims 'a', 'b' and 'c', patent protection confers the right to exploit any profit, method or process embodying all of those claims. Exploitation is broad and not delimited by specific categories of right (to publish, to reproduce, and so on). Although making, hiring and selling are given as examples of exploitation, these categories are extended by two features of the definition:

- The definition is inclusive ('includes'); and
- The definition under paragraph (a), which is incorporated into paragraph (b), adds 'or otherwise dispose', suggesting that uses other than 'mak[ing], hir[ing], [or] sell[ing]' can amount to exploitation.

The exclusive rights of a patentee are also broader than those of a copyright owner in another important respect: derivation is not required. Thus, once a patent is on the Register, it may be infringed even if a third party independently arrives at the same invention. This is similar to the

designs regime, but quite unlike copyright. Patent liability, it is said, is 'stricter' than copyright. (Strictly speaking, this description is misleading. Neither type of infringement requires knowledge a mental element — though, in the case of both, innocent infringement will not usually suffice for damages — and hence can both be described as imposing strict liability. Further, derivation under the *Copyright Act* can be indirect so that the defendant may never have heard of the plaintiff's protected work or subject matter. The increased breadth of patent protection relates to the derivation requirement itself — not the defendant's knowledge.)

Offset against this broad protection is the comparatively short duration of the patent monopoly. Patent rights are, in essence, 'short and sweet'.

3 *The meaning of 'exploit'*

The definition of 'exploit' in sch 1 of the Act distinguishes between the exploitation of products and methods or processes. In the case of the former, exploitation includes:

- **Making**
  Any manufacture of the product:
  - Whether this encompasses non-commercial experimental use is unclear
  - A product is not made until the final step: *Sykes v Howarth*
  - All the integers defined in the claim must be taken: *Dunlop Pneumatic Tyre Co Ltd v David Moseley & Sons Ltd* (product made embodying only one integer of several)
  - Repair will not amount to making unless it is so extensive as to 'remake' the product, an in any event is probably covered by an implied licence

- **Selling**
  Hiring, selling or otherwise disposing of the product, including offering to make, sell, hire or otherwise dispose of the product:
  - Selling the product as a kit of parts to be assembled by the consumer can still amount to infringement: *Windsurfing International Inc v Petit*

- **Using**
  Any commercial use of the product;
  - As in the case of making, it is unclear whether non-commercial experimental uses are permitted
  - In the case of a process, any commercial use of the process will infringe, as will selling (etc) a product resulting from that use
  - However, the contribution of the patented process to the final product must be 'important' and not 'trifling' (*Beecham Group Ltd v Bristol Laboratories Ltd*)
  - Similarly, use of a product as part of an intermediary process to produce another product may infringe by analogy (*Bedford Industries Rehabilitation Association Inc v Pinefair Pty Ltd*)

- **Importing**
  Importing or exporting the product for a commercial purpose, or an article the result of a patented process (*Saccharin Corp v Anglo-Continental Chemical Works Ltd*); or

- **Keeping**
  Possession of the product for a purpose of one of the aforementioned commercial dealings, unless acting as a 'mere custodian' of the goods (*Smith Kline & French Laboratories Ltd v R D Harbottle (Mercantile) Ltd*).

In the case of the latter category of invention, exploitation includes:

- Using the method or process to create a product, and then doing any of the above acts in relation to that product.

However, in either case, any of these acts must be done in relation to all integers of the claim. It is insufficient to do these acts in relation merely to some of the integers. *MJA Scientifics*, considered earlier in the context of novelty, provides one example of a case in which there could be no infringement of an invention (here a method claim) since not all of its integers were embodied by the defendant's product. Justice Sundberg's analysis proves instructive.

***MJA Scientifics International Pty Ltd v S C Johnson & Son Pty Ltd* (?) FCA:**

Issue

- Claim 1 is invalid for want of novelty; however, in the event that this finding was incorrect, would it have been infringed by SCJ?

Reasoning (Sundberg J)

- Principles of infringement
  - '**[298]** In order to establish infringement a patentee must show that the respondent has performed an act or exploited the invention within a valid claim of the patent. The claims of a patent define the ambit of the monopoly. In the construction of a claim its essential integers must be ascertained. There will be no infringement unless the respondent has taken all the essential integers of the claim. … However, claims are not construed in a technical or narrow way.'
  - '[A] respondent will not escape infringement by adopting immaterial variations, for example, by omitting an inessential part or step and substituting another part or step as its equivalent: see *Populin* …'

- Claim 1 is the widest here, so if it is not infringed none of the others will be
- The three essential integers of claim 1 are:
  - Dispersing a pesticide in a solvent comprising ink;
  - Printing the dispersion to an item;
  - Drying the dispersion, leaving the pesticide to be contacted by crawling insects

- First integer: not taken
  - SCJ's method does not cause the dispersion of the insecticide in the solvent
  - In any event, the solvent does not comprise ink but is rather an additive used to reduce tack — a kind of Vaseline-like substance
  - This solvent does not contain any water or alcohol

- Second integer: not taken
  - To 'print' means to apply ink to paper (*Shorter Oxford Dictionary*)
  - The process of printing involves the transference of an image by means of a lithographic offset printing press, which involves water being applied to a plate cylinder to repel ink from non-image areas, and then the transfer of an image from the plate to a blanket cylinder, an in turn to paper
  - Here SCJ's method involves no printing, since no characters or designs result from the method
  - Nor was any water used in the process, or any image transferred
  - It is a 'coating' and not a 'printing' method

- Therefore, neither the first nor the second integers are taken, and claim 1 is not infringed

Decision
- Even if the first claim was valid, it would not be infringed
- It follows that none of claims 2–10 are infringed

Naturally, in order to amount to exploitation, all the essential integers must be taken. The factors referred to by Sundberg J in *MJA Scientifics* are derived from the judgment of Sheppard J in *Décor Corp Pty Ltd v Dart Industries Inc*. This case confirms several general principles relating to the construction of claims and their application to cases of alleged infringement

Décor Corp Pty Ltd v Dart Industries Inc (1988) FCA:

Reasoning (Sheppard J)
- General principles:

(1) The claims define the invention which is the subject of the patent. These must be construed according to their terms upon ordinary principles. Any purely verbal or grammatical question that can be answered according to ordinary rules for the construction of written documents is to be resolved accordingly.

(2) It is not legitimate to confine the scope of the claims by reference to limitations which may be found in the body of the specification but are not expressly or by proper inference reproduced in the claims themselves. To put it another way, it is not legitimate to narrow or expand the boundaries of monopoly as fixed by the words of a claim by adding to those words glosses drawn from other parts of the specification.

(3) Nevertheless, in approaching the task of construction, one must read the specification as a whole.

(4) In some cases the meaning of the words used in the claims may be qualified or defined by what is said in the body of the specification.

(5) If a claim be clear, it is not to be made obscure because obscurities can be found in particular sentences in other parts of the document. But if an expression is not clear or is ambiguous, it is permissible to resort to the body of the specification to define or clarify the meaning of words used in the claim.

(6) A patent specification should be given a purposive construction rather than a purely literal one.

(7) In construing the specification the court is not construing a written instrument operating *inter partes*, but a public instrument which must define a monopoly in such a way that it is not reasonably capable of being misunderstood.

(8) The body, apart from the preamble, is there to instruct those skilled in the art concerned in the carrying out of the invention; provided it is comprehensible to, and does not mislead, a skilled reader, the language used is seldom of importance.

(9) Nevertheless, the claims, since they define the monopoly, will be scrutinised

with as much care as is used in construing other documents defining a legal right.

(10) If it is impossible to ascertain what the invention is from a fair reading of the specification as a whole, it will be invalid. But the specification must be construed in the light of the common knowledge in the art before the priority date.

Interestingly, *Bedford Industries Rehabilitation Association Inc v Pinefair Pty Ltd* suggests that exploitation of the patentee's invention (whether by 'using' or 'making' it) can occur during some intermediary stage of the manufacturing process, even if the claim concerns a product rather than a method or process.

Bedford Industries Rehabilitation Association Inc v Pinefair Pty Ltd (1999) Full FCA:

Facts
- Bedford is the patentee of a garden-edging product
- The claims include, *inter alia*, treated pine logs being joined end-to-end and connected by 'elongated band means', secured by staples
- Pinefair makes a competing article which connects the logs with two strips of plastic
- After settlement of an earlier action for patent infringement in connection with this article, Pinefair agrees to modify the design
- The article now consists of plastic stapled to the wood and then severed by a machine later in the production process so as no longer to be connected
- Bedford concedes that the final article does not infringe the patent, since it does not embody the integer of being connected by a band
- However, Bedford argues that Pinefair has still exploited the patent at one stage during the production process

Issue
- Does this new article still infringe the patent?

Reasoning
- Trial judge (von Doussa J): yes, the Pinefair production process involved a step in where the logs were held together by continuous strips
  - This embodiment took all essential integers of the claim
  - This in turn amounts to 'making' or 'using' the patent, and hence an exploitation of the rights of Bedford

- Full Court of the Federal Court of Australia:
  - Mansfield and Foster JJ: uphold this conclusion
  - Goldberg J (dissenting):
    - Bedford should have obtained a method patent if it wanted to protect the intermediate stages
    - Infringement should only be judged in relation to the final product, not that which results from an intermediate manufacturing stage

Decision
- (2:1) Yes, one stage in the production process infringes the patent; therefore, the final article is infringing

C *Infringement by Authorisation*

Section 13(1) of the *Patents Act* also grants the patentee the exclusive right to authorise others to exploit the invention. The meaning of 'exploit' has the same meaning as it does in relation to direct infringement. However, the reference to authorisation creates a distinct head of liability for infringement.

***Rescare Ltd v Anaesthetic Supplies Pty Ltd* (1992) FCA:**

Facts
- B supplies a product to C knowing that it will be used by C to infringe A's method claim
- In doing so, B also warns C of the need to obtain a licence from A

Issue
- Is B liable for authorising patent infringement?

Reasoning (Gummow J)
- There are two possible meanings of 'authorise' under s 13(1):
  - First, that it means to 'sanction, approve or countenance'
  - Second, that it means 'to grant or purport to grant a third person the right to do the act complained of'
- It is unnecessary to express any concluded view as to these interpretations
- It is sufficient that B warned C of the need to obtain a licence from the patentee

Decision
- No, under either interpretation B is not liable as an authoriser on the facts

Although the authorities are not entirely harmonious on this point, it now seems the case that the meaning of 'authorise' is the same as that which prevails in the context of copyright infringement (*Bristol–Myers Squibb Co v F H Faulding & Co Ltd*).

***Bristol–Myers Squibb Co v F H Faulding & Co Ltd* (2000) Full FCA:**

Issue
- What is the meaning of 'authorise' under s 13(1) of the *Patents Act*?

Reasoning
- Trial judge (Heerey J):
  - To 'authorise' a person means 'to give authority or legal power to' them
- Full Court of the Federal Court of Australia (Black CJ and Lehane J):
  - The word should be given its meaning under the *Copyright Act*
  - The two approaches to authorisation should be harmonised: there is no reason to distinguish between them
  - Authorise means 'to sanction, approve or countenance'

As a result of the decision in *Bristol–Myers*, the *Moorhouse* standard must now be taken to delimit the boundaries of authorisation liability under the *Patents Act*.

D *Indirect Infringement*

Section 117 provides a mechanism to enforce certain method claims.

Patents Act 1990 **(Cth) s 117 — Infringement by supply of products:**

(1) If the use of a product by a person would infringe a patent, the supply of that product by one person to another is an infringement of the patent by the supplier unless the supplier is the patentee or licensee of the patent.

(2) A reference in subsection (1) to the use of a product by a person is a reference to:

(a) if the product is capable of only one reasonable use, having regard to its nature or design — that use; or

(b) if the product is not a staple commercial product — any use of the product, if the supplier had reason to believe that the person would put it to that use; or

(c) in any case — the use of the product in accordance with any instructions for the use of the product, or any inducement to use the product, given to the person by the supplier or contained in an advertisement published by or with the authority of the supplier.

1 *Rationale of indirect infringement provisions*

This provision may be summarised: 'shoot the messenger'. It allows distributors to be sued for indirect patent infringement if they sell products that infringe the claim to be used by others, even though such distributors would not themselves use (or, in some circumstances, offer for sale) the products.

For example, in the *NRDC Case*, the supply by a distributor of the pesticide chemicals to a farmer with instructions on how to use them would probably fall afoul of s 117.

There are several reasons for a patentee to rely upon s 117 in preference to an action for direct infringement against the end user:

- Suing customers is bad publicity — sue the competitor, not the 'little guy';
- The distributor may be a competitor, which may allow the patentee to achieve a secondary market objective;
- Distributors may be more solvent than end users;
- The infringing conduct can be stopped more effectively if a small number of facilitators are targeted, rather than having to address a large number of end users; and
- End users may form part of an unidentified class.

2 *'Use of a profit would infringe a patent'*

The phrase 'use of a product would infringe a patent' means that the conduct of the third person would amount to an exploitation of the patentee's rights within the meaning of s 13(1) (*Rescare*).

Rescare Ltd v Anaesthetic Supplies Pty Ltd (1992) FCA:

Facts
- This case concerns two method claims:
  - 'A method for treating snoring by applying air through a nose piece'
  - 'A method for treating snoring substantially as described by reference to [a] drawing'

Issue
- Does the distribution of an infringing article by the defendant to a third party contravene s 117?

Reasoning (Gummow J)
- The words 'use of a product would infringe a patent' in s 117(1) in the context of method claims refers to the concept of 'exploit' under s 13(1)
- The only way a method claim can be 'infringed' by a use of a product is by the use of a product made from an application of the method

Decision
- In method claims, s 117 will be satisfied if the use by the third party would amount to exploitation under s 13(1) of the *Patents Act*

The only way one could infringe s 117 under *Rescare* would be by doing something in relation to the product. This raises peculiar issues in a medical context, where the 'product' is the 'healthy person': methods of treatment, and so forth, are applied to the person. However, one cannot sell, make, use or import a person. One cannot 'exploit' a person under s 13. This interpretation therefore renders s 117 meaningless in relation to this class of patents. (Some might observe that the result is similar to Gummow J's interpretation of anti-circumvention provisions in *Stevens*: Dr Brennan suggests that this tendency to interpret extended intellectual property provisions so as to give them no meaning is more than coincidental.)

The approach of Gummow J was subsequently followed by Heerey J in *Bristol-Myers* at trial. However, this aspect of the decision overturned on appeal.

Bristol–Myers Squibb Co v F H Faulding & Co Ltd (2000) Full FCA:

Facts
- This case concerns 'A method for the administration of taxol to a patient suffering from cancer comprising infusing 135 to 175 mg/m^2 of taxol over a duration not exceeding 6 hours'
- Faulding supplies infringing taxol to a hospital with instructions on how to use it, without authorisation from the patentee
- The alleged infringement is Faulding supplying the drug to hospitals
- (Bristol doesn't want to sue the hospital, since this would be bad publicity — hospitals are its primary customers. It would prefer to sue Faulding, a competitor of the 'worst sort': a

generic manufacturer)

Issue
- Does Faulding's supply contravene s 117 of the *Patents Act*?

Reasoning
- The approach of Gummow and Heerey JJ is inconsistent with the 1984 IPAC Report that led to the enactment of s 117 in the 1990 Act
  - The contrary approach to construing s 117 is 'silly' (words to that effect)
  - Instead, s 117 is given a commonsense reading
- Here, the taxol is supplied with instructions, so s 117(2)(c) applies
- Section 117(1), filtered through the 'dictionary' of sub-section (2)(c), reads:
  - 'If the use of *[taxol]* by a *[hospital]*, in accordance with any instructions for the use of *[taxol]* given to the *[hospital]* by *[Faulding]*, would infringe the patent, the supply of that *[taxol]* by *[Faulding]* to the *[hospital]* is an infringement of the patent by *[Faulding]* (as *[Faulding]* was neither the patentee or a licensee)'

Decision
- Sections 117(1) and 117(2)(c) apply to the supply of taxol by Faulding with the effect that they have been contravened
  - The product is Taxol; the instructions concern an infringing use of that product
  - The recipient is the hospital
  - Section 117 is therefore made out and Bristol succeeds.

However, there does remain some overlap between ss 13 and 117: both sections require the integers of the claim to be embodied. Indirect infringement will only be possible if the defendant is directing the recipient to do something that embodies all the integers.

Always ask: does the method commended to the end user, purchaser or ultimate consumer take each and every essential integer of the invention as claimed by the patentee?

E *Remedies for Infringement*

Section 120(1) enables proceedings for patent infringement to be commenced in a prescribed court; namely, in the Federal Court of Australia. Section 120(2) permits either a patentee or exclusive licensee so to commence proceedings. If the exclusive licensee is the first plaintiff, the patentee must be joined.

Because bringing a claim for patent infringement is very expensive ($750 000–$1 000 000 in the Federal Court of Australia, excluding an appeal to the Full Court), provisions exist to compensate a defendant if a groundless threat of patent infringement is made against it. A counterclaim for revocation is typically made under s 121, which normally encompasses the full gamut of revocation grounds under s 138(3).

If the plaintiff is able to make out a case of infringement, s 122 of the *Patents Act* provides for several forms of relief:

- Injunction; and
- Damages; or

- Account of profit.

'Flagrant' infringement damages have been added to the *Patents Act* as part of recent legislative reforms commencing in September 2006: s 122(1A). This mirrors the situation in place for copyright. Innocent infringement (again, with the same meaning as its counterpart in copyright law) will not give rise to an entitlement to damages.

For an interlocutory injunction to be granted, several additional requirements must be satisfied. Interestingly, the principles applicable to injunctive relief actually developed predominantly in the context of patent litigation. This is due to the fact that most infringement actions start out life as an application for an interim injunction. The parties' rights are typically determined on the basis of the application, with no need for a full trial.

First, there must be a serious question to be tried. Second, the balance of convenience must favour granting an injunction. Third, the plaintiff must give an undertaking as to damages, to be paid to the defendant in the event that the case proves unsuccessful at trial — that is, some payment into court that will be transferred to the triumphant defendant in the event that the injunction is granted but the patentee loses at trial. This is designed to compensate the successful defendant, in such a case, for the loss they suffer from being unable to continue sale of their products during the interim period. This acts as a disincentive against the seeking of frivolous injunctions.

For further details, refer to the remedies section of Chapter V.

Examination note: commencement dates may be relevant if the advice being sought is prospective ('can I do X?'), rather than retrospective ('did Y's doing of X amount to infringement?').

F *Defences*

The prototypical defence to a claim in patent infringement is to counterclaim for revocation on the grounds set out in s 138(3). The availability of such a counterclaim is expressly provided for by *Patents Act* s 121.

Unlike copyright, no 'fair dealing' defences apply. Additionally, the defendant cannot simply argue that their invention was independently created. However, 'innocence' (a subjective lack of knowledge as to the existence of the patent) is grounds for arguing that the remedy should be restricted to an injunction: s 123(1).

As a result of recent legislative amendment in September 2006, a prior use defence has been added: see now *Patents Act* s 119. In essence, this grants to an alleged infringer who has used the invention prior to the priority date a defence to an action in respect to the continuation of those activities after the grant of the patent. The defence is also assignable to third parties: *Intellectual Property Laws Amendment* Act sch 6.

Particular exemptions have also been enacted to protect the practice of 'spring-boarding' in the pharmaceutical patents context. For further details, refer to chapter VIII.

V *Policy Issues*

A *Medical Treatment*

The prohibition on the patentability of methods of medial treatment relates back to the *Statute of Anne*, which required that patents 'be not burdensome or otherwise inconvenient'.

- 'Human beings, and the biological processes for their generation, are not patentable inventions'
    - Senator Brian Harradine amendment in 1990
- Concern directed to technologies effecting genetic manipulation of the human species
- Two Patent Office (Examination) Decisions in 2004 found invalidity under of 18(2)
    - A method of growing pre-blastocyst human embryos in a particular medium (IVF)
    - A method of producing a hybrid human-bovine embryo using inter-species nuclear transplantation techniques

1 *Not a vendible product*

Vendible product test: the resulting 'product' of medical treatment is a person, and a person is not property to be sold. For this reason, medical treatments were seen as excluded from the 'manner of manufacture test'.

2 *Not an economic field of endeavour*

See *Maeder v Busch* (1938): obiter of the High Court — difficult to reconcile the notion that curling artificial hair is patentable, but the curling of human hair is not.

NRDC: exclusion of surgery and other treatments are 'essentially non-economic' — ie, not in a field of economic endeavour under the *NRDC* test. (This arguably misstates the reality of modern medical treatments, but is consistent with the approach to patentability taken by the Court.)

3 *Generally inconvenient*

Turning back to the *Statute of Anne*, it may be considered 'generally inconvenient' to grant patent protection to methods of life-saving treatment, etc. See slide 36.

4 *Inconsistent with judicial ethics*

Re Eli Lilly: criticise the exclusion of methods of medical treatment, which are based 'in ethics rather than logic'; however, legislative change would be required to effect reforms.

5 *Imbalances in industry and society*

In *Wellcome Foundation*, Davison CJ questioned the exclusion. Pharmaceutical products already patentable (and indeed is a large industry), but similar methods are not. This is inconsistent.

However, policy arguments lead the Court of Appeal to the opposite conclusion.

6 *Contrary to international law*

TRIPS optionally permits the exclusion of medical methods from patentability. The European Patent Convention requires their exclusion.

B *Genetic Inventions*

Possible gene subject matter:

- Gene sequence information
- Isolated genes
- Genetically modified genes and organisms
- Technologies associated with genes/gene information
- Gene therapies

The trend is towards convergence between basic research and applied research:

- This creates difficulties for patent law, because it traditionally only protects applied research (rather than basic research)
- Basic research is often public; applied research is private; private research is R&D, and said to require patent incentives

The *University of Rochester Case* illustrates several points:

- Basic research is no longer receiving the same level of funding as it once did
- It is increasingly difficult to distinguish between basic and applied research
- Institutions conducting basic research are increasingly self-funding, and reliant upon royalties to conduct further research

***University of Rochester Case*:**

Facts

- This case concerns research into the Viox and Celebrex drugs
- Researchers at the University of Rochester discover a new enzyme responsible for causing the inflammation associated with arthritis
- Disabling this enzyme, as occurred in previous treatments, caused nausea
- However, if a drug could be developed that only disabled a related, first enzyme, and not the new second one, this side effect could be avoided
- The researchers did not provide a functional solution — only a discovery capable of being used to create a solution in the form of a drug
- The researchers nevertheless claim a patent in a method of producing a drug based on known laboratory techniques, coupled with their insight
- The university has a dispute with the manufacturer of Viox/Celebrex, who claims that the University's patent isn't valid (since it protects a discovery and not an invention)

Decision

- The University lost; no invention was in their possession
- There was no functional solution (the drug); just a mere discovery that could lead to its synthesis, upon further discovery

This case illustrates the blurring of the lines between pure and applied research. It also illustrates some of the difficulties facing universities, who rarely have the same resources as large pharmaceutical companies actually to conduct the assays and further laboratory testing in order to produce a working drug (as distinct from conducting the preparatory research). In the United States, patent law is very much of egocentric design. It is not so much 'who filed first' but 'who is able to prove they invented first'. Researchers must establish the magical moment of invention.

Kirin–Amgen Inc v Hoechst Marion Roussel Ltd (2005) UK HL:

Facts

- This case concerns Kirin–Amgen's claim to the DNA sequence for use in securing expression within a host cell erythropoietin ('EPO')
    - Vector used to transfect cell with an exogenous EPO gene
- Hoechst sold a 'gene activation' product, which switched on the (otherwise inactive) EPO gene in a cell
    - Exogenous control switch used to activate the dormant endogenous EPO gene within a cell

Issue

- Does Hoechst's product infringe the Kirin–Amgen patent?
- Is the patent valid?

Reasoning

- Patent office:
    - Merely discovered information not patentable
    - 'A claim directed to naturally occurring DNA characterised by specifying the DNA coding for a portion of that molecule would likely be claiming no more than a discovery *per se* and not be a manner of manufacture'
    - Simply claiming the genetic sequence is a discovery and not patentable
    - Here, however, the claim was to the molecule in an isolated form (an artificially created state of affairs) — putting in isolated form is the invention
    - This reflects the established practice of putting natural things into an artificially isolated form, and then patenting that isolated form, which has been going on for decades
    - Claims were either to an isolated molecule or a modified molecule and were thus, an 'artificially created state of affairs'

- Trial judge:
    - Accepts validity of claim: the ability to put the gene into a host cell is enough of an application
    - Infringement has occurred: applies *Improver* question
    - Claim was to an invention
        - It is trite law that you cannot patent a discovery, but if on the basis of that discovery you can tell people how it can be usefully employed, then a patentable invention may result. This in my view would be the case, even though once you have made the discovery, the way in which it can be usefully employed is obvious enough.
    - Infringement established by resort to *Improver*
        - The Hoechst variation had no material effect;
        - Lack of such effect was obvious at the priority date; and
        - The PSA would not have understood the patentee as intending strict

compliance with the claiming language

- Court of Appeal:
  - No infringement: emphatic and unanimous on this point
  - The patentees cannot be treated as having a monopoly on any reproduction of EPO within a cell
  - If Hoechst is held to infringe for its triggering product, this is coming dangerously close to granting a monopoly to Kirin–Amgen a monopoly on EPO, which is a discovery and not an invention
  - Issues of discovery and invention are informing the Court's approach to infringement
  - Thus, an expansive reading of the claim will not be adopted because it would monopolise a discovery and go beyond the scope of the valid grant

- House of Lords:
  - Echoes the concern of the Court of Appeal; rejects *Improver* questions
  - The basis of the invention is the discovery and sequencing of the EPO gene
  - The patentee could not monopolise the gene *per se* as that existed in nature
  - The patentee therefore monopolised the DNA sequence encoding for EPO when isolated and was suitable for use to express EPO in a host cell
  - Third parties could reasonably expect that if they did not use a DNA sequence for insertion into a host cell, there would be no infringement
  - Discovery-Invention dichotomy informing approach to claim construction

Decision
- There is no infringement: the claim should be construed narrowly

Level of human 'intervention' for patent grant: the practice of allowing patents to issue on isolated and purified chemical products that exist in nature only in an impure state, when human intervention has made them a available in a new and useful form.

ALRC Report (2004):
- 'Pure and isolated form' theory too long established to recommend change
- Recommended changing section 18 utility requirement to require a use that is 'specific, substantial and credible to the PSA'
- Suggested a new defence of experimental use

C *Other Controversies in Patent Law*

1 *Software patents*

2 *Business patents*

3 *Living organisms*

Eg, Harvard modified mouse (susceptible to cancer) — should the patent system encourage such inventions or should it refuse them protection? ('transgenic subject matter')

4 *'Evergreening'*

The 'evergreening' of patented pharmaceuticals

IV *Hypothetical*

A *Lecture Nine*

1 *Intellectual property rights in the design*

- Patent protection
  - 'While A's design has no particular functional advantage' = (No patent protection)

- Copyright
  - In the two-dimensional drawing
  - In the prototype (as a sculpture, or as a reproduction of the drawing?)
  - Circumventing s 77 *Designs* overlap — work of artistic craftsmanship
    - *Muscat v Le*: made by hand (or for workshop reasons — for testing functionality, so no aesthetic intention?) Unclear
  - s 77 applies:
    - 'Corresponding design': the drawing embodied in the design
    - Commercial quantities (probably >50)
    - Therefore no copyright protection; must apply for registration of a design before the hull design enters into the prior art base

- Design protection
  - s 19 of *Designs Act*: governs validity — ie, would A's design be distinctive?
  - Not identical to the catamaran design, but fairly similar
  - Apply factors —
  - Which particular aspect of design?
  - Statement of newness and distinctiveness should be made

2 *Dealing with manufacturers*

- Confidential information
  - An alternative to designs protection
  - Only feasible prior to sale: first to market advantage
  - (Unless there is an argument that it's a work of artistic craftsmanship, in which case copyright protection might apply)
  - Disclose to manufacturer in circumstances suggesting an obligation of confidence: keep it out of prior art base
  - Need to ensure manufacturer keeps the foil concept secret
  - Extends period of time in which to make design application

- Licence
  - Confidentiality agreement

B *Lecture Ten*

1 *Manner of manufacture*

- NRDC test
  - This is a claim to an application of a principle of physics; not the principle itself

  - Clear industrial application: will fall within patent system

- Threshold inventiveness
  - Threshold inventiveness: use of an analogous 'technique' (rather than material) — the Canadian logging technique
  - This goes beyond the normal standard of threshold inventiveness: difficult to say conclusively whether it would ever be possible to patent the use of a known principle in a new environment

- Even if inventiveness is established, however …
  - [Always go on to consider the alternatives]

- Order of answer:
  - Manner of manufacture, threshold inventiveness
  - Inventive step
  - Novelty
  - …
  - Other hurdles
    - May also want to deal with the fatal issue last, or dealing with the broadest or vaguest, most fundamental issue last

2 *Inventive step*

- Person skilled in the art
  - A person operating oil rigs in arctic regions
  - An arctic aquatic engineer
  - Don't be too specific ('skilled in the art of moving icebergs') or general ('engineer')

- The skilled addressee would not have knowledge of the logging study
  - But can add documents that would be known to be relevant: Canadian logging illustration
  - Would the invention, as claimed, be obvious to such a person lacking in inventive faculties
  - Here: non-energy efficient technique being used for years; suggests that the solution was not widely known, even to such people, with great incentives to discover it, obvious

- Onus: presumption in favour of inventiveness
- Probably inventive step

3 *Novelty*

- Reverse infringement test applies
- First step: determine the integers of the claim
  - Method of preventing a collision between oil rig and iceberg
  - Vessel towing an iceberg
  - Iceberg deflects larger iceberg
  - Larger iceberg misses oil rig
- Literally not infringed
  - Dictionary: iceberg not the same as log, and can never be
- Non-literal infringement: purposive construction
  - Meaning of 'vessel': boat, plane, helicopter, hovercraft?

        - Look to specification: 'ocean vessel'
        - Cf river vessel (logs)?
    - Are the integers embodied by the prior art in a non-literal sense?
        - Would a person skilled in the art understand the patentee to have intended the word 'iceberg' to be an essential requirement of the integer?
        - Person skilled in the art: person involved in exploring for oil in polar regions
        - Substitute 'log' for 'iceberg'? No such person would regard that use as intended by the patentee
        - Could not read as applying to all 'Xs' in water; this would be tantamount to protecting the physics principle
    - No reverse infringement: no non-literal infringement
        - If this analysis is repeated for infringement later: the same analysis applies, so don't repeat it

4 *Utility &c*

- Gummow J in *Rehm*:
    - Substantive: nothing to suggest it doesn't actually achieve the stated purpose (redirection)
    - Linguistic: towing an ice cube (so as not to redirect sufficiently)? Falls within first three integers, but definitely not the fourth: the claim requires actual redirection, so doesn't encompass useless things; even if it did, this would be insufficient since, applying *Décor v Dart*, a person skilled in the art would not

- No secret use
- Not concerning human body

5 *Internal validity factors*

- Clarity: 'vessel' unclear; 'redirect away'; can use the body of the specification to resolve ambiguity (*Décor v Dart*)
- Fair basis: 'ocean vessel' → 'vessel': has it been expanded in the claim? Using the specification also resolves these issues

6 *Infringement: helicopter*

- Must be internally consistent: eg, if narrowed claim earlier (to overcome validity issues), stuck with applying that scope for purposes of infringement
- Using *that* modified scope, the alleged infringement falls to be considered
- Must embody all the integers
- Must confine to 'ocean vessel'; skilled addressee would not regard patentee as having intended to confine the definition solely to vessels floating on the surface of the water
- It might include helicopters that can land on water, or hovercraft, or other objects capable of pulling an iceberg
- Consistency is crucial
- Probably would (non-literally) infringe