***INFRINGEMENT OF PATENTS***

Patents confer rights and obligations to patentees. The grant of a patent allows its owner to exclude others from exploiting the patented invention. The right of the owner is called exclusive because it allows the exclusion of others from exploiting the invention and because the owner is the only one allowed to exploit the invention as long as others are not given an authorization, for example, by way of license to do so. This exclusive right of the patent owner has two main applications in practice, namely protection against infringement and the possibility of assigning or licensing the right, in part or in whole. The making of the invention in particular, and its development for industrial application, usually involve considerable expense for the applicant and for the future owner of the patent for invention. The patent owner thus wishes to recover this expense through exploitation of the patented invention, in particular through the sale of products that incorporate the invention.

It should be noted that **subject to sections 42, 43 and 50, where a person other than the owner of a** patent or a licensee does any of the acts specified in section 38(1) in respect of the patented invention, that act shall constitute infringement of the patent. Thus, where the owner of a patent or the licensee is of the opinion that his or her patent has been or is about to be infringed, he or she may institute infringement proceedings in the High Court for the following relief; (***see section 40 IPA)***

(a) Damages

(b) An injunction to prevent infringement or continuing infringement of the patent;

(c) Any other civil remedy.

However, a defendant to an infringement action may argue none infringement and may seek declarations to that effect. Therefore, one has to be mindful of the likely defenses that may be raised against the infringement action. See rights of a patent holder under section 38 of the Industrial Property Act. Briefly these include

b) (i) when the patent has been granted in respect of a product;

1. making, importing, offering for sale, selling and using the product;
2. stocking the product for the purposes of offering for sale, selling or using the product;

b) (ii)when the patent has been granted in respect of a process—

1. using the process;
2. doing any of the acts referred to in paragraph (a) of this subsection in respect of a product obtained directly by means of the process.

From the foregoing subject to **section 42,** the owner of the patent has a right to preclude any person from exploiting the patented invention in the manner referred to in subsection (1).

 The scope of protection available under the patent is be determined by the terms of the claims, but where these are inadequate, the drawings and the description included in the patent may be used to interpret the claims.

**What is infringement?**

Although the terms “infringe” or “infringement” are used in the Industrial Property Act, case law defines infringement as “any act that interferes with the full enjoyment of the monopoly granted to the patentee” or any activity that deprives the inventor, in whole or in part, directly or indirectly, of full enjoyment of the monopoly conferred by law. According to WIPO an infringement of the exclusive right of a patent owner involves the unauthorized exploitation of the patented invention by a third party.

**Who can sue?**

The exclusive rights enumerated in section 38 of the IPA are granted to “the patentee and under **section 42,** a licensee has a right of action. “Patentee” is “the person for the time being entitled to the benefit of a patent”.

-Owner & licensees have locus to sue **section 50 PA.**

**What constitutes infringement analyzed?**

The question of infringement of a patent involves consideration of two matters. The first is whether the article or process alleged to infringe falls within the scope of the monopoly granted by the patent; and the second is whether the alleged infringer has done, in relation to that article or process, any act the monopoly in which is given by a patent to its proprietor.

Infringement is not determined by comparing the defendant’s allegedly infringing product to the Plaintiff’s product which is representative of the patent. Rather, the appropriate means of determining whether there is infringement is to compare the allegedly infringing product to the patent and, in particular, to the patent claims and this rotates on construction of the claims.

**Construction of claim and specification**

As the specification is addressed to the person skilled in the art, the court must be instructed as to the meaning of technical terms and the background of the art, so as to read the specification with the understanding of the person skilled in the art. The question of construction is necessarily antecedent to the determination of the issue of infringement and of all issues of validity depending upon the scope of the claims.

**The onus of proving infringement lies on the patentee/plaintiff**

Infringement is generally a question of fact (as per ***Whirlpool Corp. v. Camco Inc., [2000] 2 S.C.R. 1067)*** and a matter of construction of the claims. In establishing whether there is infringement or not two approaches are employed

**The literal approach**

In the older cases, if the words of the claim, upon a plain reading of them, aptly described the defendant's device or process, then there was said to be "literal” or “textual” infringement. Under literal infringement, in effect, all claim elements were considered to be essential to the invention and thus, the absence of any claimed element resulted in a finding of no literal infringement. It was therefore an "all elements" test. All the claim elements were considered important because it was the claim that determined the scope of the monopoly:

"In our view, the rule is that the claims must be regarded as definitely determining the scope of the monopoly, having regard to the due and proper construction of the expressions they contain." One of the earliest and most often cited case on claim construction relating to literal infringement is Electric and **Musical Industries, Ltd. et al v. Lissen, Ltd et al,** where Lord Russell of Killowen held at p. 39:

"The function of the claims is to define clearly and with precision the monopoly claimed, 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. The claims must undoubtedly be read as part of the entire document, and not as a separate document; but the forbidden field must be found in the language of the claims and not elsewhere. It is not permissible, in my opinion, by reference to some language used in the earlier part of the specification to change a claim which by its own language is a claim for one subject-matter into a claim for another and a different subject-matter, which is what you do when you alter the boundaries of the forbidden territory. A patentee who describes an invention in the body of a specification obtains no monopoly unless it is claimed in the claims. As Lord Cairns said, there is no such thing as infringement of the equity of a patent. Also see **(Dudgeon v. Thomson, L.R. 3**

**App. Cas. 34)."**

This approach however, seems to have been so restricted and subsequently new methods were employed.

**The purposive approach of construction**

Purposive construction does not ask "What did the patentee say?" which might be a literal interpretation, but rather, "What was the inventor trying to say?" or, better yet, "What would a skilled reader have understood the patent to mean? **Section 42 of the Industrial Property Act** states that the scope of protection available under the patent is to be determined by the terms of the claims, but where these are inadequate, the drawings and the description included in the patent may be used to interpret the claims.

The primacy of the language of the claims was emphatically affirmed in the celebrated case of **Catnic Components Ltd. v. Hill & Smith Ltd., [1982] R.P.C. 183 (H.L.).** Lord Diplock summarized the test as follows:

"A patent specification should be given a purposive construction rather than a purely literal one", where "purposive construction" means understanding language in accordance with what a reasonable person would understand the author to be using the words to mean.

The tests to be used were aptly described **in *Catnic Components Ltd. v. Hill & Smith Ltd. (1982) R.P.C. 183 (H.L. per Lord Diplock) at p. 242-243:***

“My Lords, a 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 (i.e. "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 grants him a monopoly. It is 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…”

 His Lordship stated the test as follows:

“…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 descriptive 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 question, of course, does not arise where the variant would in fact have a material effect upon the way the invention worked. Nor does it arise unless at the date of publication of the specification it would be obvious to the informed reader that this was so. Where it is not obvious, in the light of then-existing knowledge, the reader is entitled to assume that the patentee thought at the time of the specification that he had good reason for limiting his monopoly so strictly and had intended to do so, even though subsequent work by him or others in the field of the invention might show the limitation to have been unnecessary. It is to be answered in the negative only when it would be apparent to any reader skilled in the art that a particular descriptive word or phrase used in a claim cannot have been intended by the patentee, who was also skilled in the art, to exclude minor variants which, to the knowledge of both him and the readers to whom the patent was addressed, could have no material effect upon the way in which the invention worked.”

**The patent should be read as a whole**

Mr. Justice Binnie endorsed a “purposive construction” to give the terms in the claim the meaning intended by the patentee based on a reading of the claims in the context of the patent as a whole. Regard may be had to the whole of the patent specification, including the drawings and the disclosure. This is consistent with **section 42 of the Industrial Property Act.**

Similarly, Taschereau J. stated in ***Metalliflex Ltd. v. Rodi & Wienenberger Aktiengesellschaft:***

"The claims, of course, must be construed with reference to the entire specifications, and the latter may therefore be considered in order to assist in apprehending and construing a claim, but the patentee may not be allowed to expand his monopoly specifically expressed in the claims "by borrowing this or that gloss from other parts of the specifications".”

The principles that Lord Diplock offered in the Catnic case were summarized by Lord Hoffmann in Improver ***Corporation v Remington Consumer Products Ltd[1990] FSR 181, 189*** in terms of the three Improver principles or test procedures. Lord Hoffmann in that same decision observed that a patentee may have intended a word or phrase to have not a literal but rather a figurative meaning, the figure being a form of synecdoche - (a form of the metaphor in which the part mentioned signifies the whole); or metonymy (a form of metaphor denoting the relation between two objects. Metonymy is to synecdoche what a metaphor is to a simile).

In ***Kirin-Amgen Inc v Hoechst Marion Roussel Ltd 8[2004] UKHL 46, [2005] 1 All ER 667, [2005] RPC 169 at 185***, Kirin-Amgen, Inc. ("Amgen"), a Californian pharmaceutical company, was the proprietor of a patent relating to the production of the glycoprotein hormone erythropoietin (EPO) by recombinant DNA technology. Amgen sued Transkaryotic Therapies, Inc. ("TKT") for patent infringement. TKT, a Massachusetts corporation, had also developed a method of making EPO called GA-EPO using a process of gene activation. Hoechst Marion Roussel Ltd ("Hoechst") was sued for proposing to import TKT’s GA-EPO into the United Kingdom. EPO, a previously known glycoprotein hormone, is made in the kidney and stimulates the production of red blood cells by the bone marrow. The essential difference between EPO and GAEPO (for TKT) is that the former is made by an exogenous DNA sequence coding for EPO which has been introduced into a host cell and the latter is made by an endogenous DNA sequence coding for EPO in a human cell into which an exogenous upstream control sequence has been inserted.

The principal issue in the case was whether TKT's EPO fell outside the claims of Amgen's patent suit because of the difference in the way it was made. Lord Hoffman observed: Interpreting the claims of the Amgen patent in the context of its specification, the claims are concerned with the expression of EPO by a gene which is exogenous to the cell. But the genes which express EPO in cells by the TKT process are not exogenous. They come into existence when the cell is formed by division and simply replicate the pre-existing genes already present in the TKT cells. The TKT process works by a technique not generally known at the time when the Amgen patent application was published.

Lord Hoffman stated that: A claim may, upon its proper construction, cover products or processes which involve the use of technology unknown at the time the claim was drafted. The question is whether the person skilled in the art would understand the description in a way which was sufficiently general to include the new technology. Lord Hoffmann concluded that that TKT did not infringe any of the claims and dismissed Amgen's appeal. The other lords all agreed.

**Consequences of the decision**: This case affirmed that: "Construction is objective in the sense that it is concerned with what a reasonable person to whom the utterance was addressed would have understood the author to be using the words to mean. Lord Hoffman cautioned: “Note, however, that it is not, as is sometimes said, "the meaning of the words the author used", but rather what the notional addressee would have understood the author to mean by using those words.” (Paragraph 32 of the judgment)

**NOTE:**

The Catnic decision established the "Catnic principle":

(a) the principle of purposive construction,

(b) but it also provided guidelines for applying that principle to equivalents.

**Forms of infringing activity**

Case law illustrating infringement as envisioned by **section 38 of the Industrial Property Act** deals separately with the issues of

(i) making and constructing;

(ii) using;

(iii) selling; and

(iv) importing.

**Making and constructing**

The manufacture of a patented product during the term of a patent is an infringement of the patent. It is not an infringement to sell non-patented components which later find themselves assembled into an infringing combination unless the vendor induced or procured the assembly of the components. However, the manufacture of all of the components that are later sufficiently assembled to test the fitting of the parts constitutes “making” a patented invention. This is the case even if the components are then disassembled and exported for assembly and use abroad.

A patent licensee may infringe by engaging in activities that are outside the scope of the licence. Where a patent claims a product for a particular use, it does not matter where that product is to be used, or even whether it is ever used. For instance, once the product is manufactured in Canada for that use, there is infringement. Moreover, where a patent relates to a process for the manufacture of a product showing novel features, the product is presumed to have been manufactured by that process in the absence of proof to the contrary.

**Using**

**Section 38** provides the exclusive right, among other things, to use the invention. Determining the meaning of "use" **under s. 38** is essentially a matter of statutory construction. The Concise Oxford Dictionary defines "use" as "cause to act or serve for a purpose; bring into service; avail oneself of". First, the inquiry into the meaning of "use" under the Patent Act must be purposive, grounded in an understanding of the reasons for which patent protection is accorded. Second, the inquiry must be contextual, giving consideration to the other words of the provision. Finally, the inquiry must be attentive to the wisdom of the case law.

Identifying whether there has been infringement by use, like construing the claim, must be approached by the route of purposive construction*:* ***Free World Trust v. Électro Santé Inc.,******4 [2000] 2 S.C.R. 1024, 2000 SCC 66.*** "Purposive construction is capable of expanding or limiting a literal [textual claim]”. The purpose of ***section. 38*** ***IPA*** is to define the exclusive rights granted to the patent holder. These rights are the rights to full enjoyment of the monopoly granted by the patent. Therefore, what is prohibited is "any act that interferes with the full enjoyment of the monopoly granted to the patentee”: Applied to "use", the question becomes: did the defendant's activity deprive the inventor in whole or in part, directly or indirectly, of full enjoyment of the monopoly conferred by law?

A purposive approach is complemented by a contextual examination of ***section. 38 Industrial Property Act,*** which shows that the patentee's monopoly generally protects its business interests. In determining whether the defendant "used" the patented invention, one compares the object of the patent with what the defendant did and asks whether the defendant's actions involved that object. In ***Betts v. Neilson, (1868), L.R. 3 Ch. App. 429 (aff'd (1871), L.R. 5 H.L. 1*** the object of the patent was to preserve the contents of bottles in transit. Though the bottles were merely shipped unopened through England, the defendant was held to have used the invention in England because, during its passage through that country, the beer was protected by the invention. Lord Chelmsford said, at p. 439:

“It is the employment of the machine or the article for the purpose for which it was designed which constitutes its active use; and whether the capsules were intended for ornament, or for protection of the contents of the bottles upon which they were placed, the whole time they were in England they may be correctly said to be in active use for the very objects for which they were placed upon the bottles by the vendors.”

The patented invention need not be deployed precisely for its intended purpose in order for its object to be involved in the defendant's activity. It was not relevant in Neilson whether the invention had actually caused bottles to be preserved during shipping, in a situation in which they would otherwise have broken. As a further example, in ***Dunlop Pneumatic Tyre Co. v. British and Colonial Motor Car Co. 9 (1901), 18 R.P.C. 313 (H.C.J.)***, the defendants placed on display at a car show a car with patented tires which they had intended to remove prior to sale, substituting other tires. The exhibition of the car with the patented tires was nonetheless held to be an infringing use. The common thread is that the defendants employed the invention to their advantage, depriving the inventor of the full enjoyment of the monopoly.

**Monsanto decision**

**(Monsanto Canada Inc. v. Schmeiser, [2004] 1 S.C.R. 902).**

The Supreme Court of Canada discussed the law as it pertains to “use” in the Monsanto decision. In that case, Monsanto sued Schmeiser, a farmer, for infringement of a patent concerning herbicide-resistant canola. The claims in the patent related to a gene to make the canola herbicide-resistant, as well as a cell containing the gene. By saving seed from canola plants that had survived spraying with herbicide, Schmeiser produced a crop of over 1000 acres comprising over 95% patented canola. Based on these facts, the Court ruled that Schmeiser knew or should have known that the crop contained the patented cell or gene. Schmeiser defended that he had not infringed the patent because he had not made, constructed or used the patented cell or gene, or sold it to others to be used. He had simply gathered seeds from successful plants for planting the following year, a practice he had followed for years.

The 5-4 majority of the Court was inclined to agree that Schmeiser did not make or construct the patented cell or gene. The main area of debate was whether Schmeiser had used the patented cell or gene. Schmeiser argued that he had not infringed that patent because the claims concerned a cell or gene, whereas he had cultivated the whole plant. The plant itself could not be, and was not, patented. Schmeiser also argued that, because he had not sprayed herbicide on the crop, he had not exploited the advantage of the invention and thus had not used it. The Court offered the following list of propositions concerning the meaning of “use” (or its French translation “exploiter”);

1. “Use” or “exploiter”, in their ordinary dictionary meaning, denote utilization with a view to production or advantage.
2. The basic principle in determining whether the defendant has “used” a patented invention is whether the inventor has been deprived, in whole or in part, directly or indirectly, of the full enjoyment of the monopoly conferred by the patent.
3. If there is a commercial benefit to be derived from the invention, it belongs to the patent holder.
4. It is no bar to a finding of infringement that the patented object or process is a part of or composes a broader unpatented structure or process, provided the patented invention is significant or important to the defendant’s activities that involve the unpatented structure.
5. Possession of a patented object or an object incorporating a patented feature may constitute “use” of the object’s stand-by or insurance utility and thus constitute infringement.
6. Possession, at least in commercial circumstances, raises a rebuttable presumption of “use”.
7. While intention is generally irrelevant to determining whether there has been “use” and hence infringement, the absence of intention to employ or gain any advantage from the invention may be relevant to rebutting the presumption of use raised by possession.

The majority of the Court dismissed the first non-infringement defense (that Schmeiser cultivated the plant, not the patented cell or gene contained therein), stating as follows: “Provided the patented invention is a significant aspect of the defendant’s activity, the defendant will be held to have “used” the invention and violated the patent… Infringement does not require use of the gene or cell in isolation. “With regard to the second non-infringement argument (that Schmeiser had not sprayed herbicide on his crop and thus had not exploited the invention), the majority of the Court ruled that the argument failed to take into account the stand-by or insurance utility of the properties of the patented genes or cells. Schmeiser benefited from the invention by virtue of the fact that he could have sprayed herbicide if the need had arisen. He did not provide sufficient evidence to rebut the presumption of use that arose from his possession of the crop containing the patented genes and cells.

Where a patent claims a product for a particular use, it does not matter where that product is to be used, or even whether it is ever used. Once the product is manufactured for instance in Canada for that use, there is infringement.

In discussing the presumption that possession constitutes use, the majority noted the general rule that the defendant’s intention is irrelevant to a finding of infringement. The majority also discussed examples in which the “use” of an invention would constitute exploitation of the invention’s stand-by utility. A fire extinguisher is “used” to provide the means for extinguishment should the need arise. This is so even if there is never a fire to be extinguished. Patented pumps on a ship were “used” even though they were never used to pump water in British waters, because there was an intention to use them if the need arose.

***Other examples include:***

Manufacture

The manufacture of all of the components that are later sufficiently assembled to test the fitting of the parts constitutes “making” a patented invention for the purposes of ***section 38 IPA.*** This is the case even if the components are then disassembled and exported for assembly and use abroad.

Where infringing goods pass down a chain of distributors, each person becomes liable as keeper, disposer or distributor. ***See British Shoe Manufacturers V Collier (1910)27 RPC 567***

A person who acquires or imports goods with a view of exporting them/sell abroad will be deemed to infringe. ***See S. 38(1)(b) of the Industrial Property Act.***

How about sale of independent elements of an invention and not the whole of it, does it amount to infringement? In ***Beloit Canada Ltd. v. Valmet-Dominion Inc. (1997), 73 C.P.R. (3d) 321 (F.C.A.),*** the Federal Court of Appeal confirmed at p. 337 that “where the elements of an invention are sold in a substantially unified and combined form for the purpose of later assembly, infringement may not be avoided by a separation or division of parts which leaves to the purchaser a simple task of integration and assembly”.

The exclusive rights of a patent last only during the term of the patent. For example, the manufacture of an article during the term of a patent is an infringement, but the use or sale of that article after the monopoly comes to an end is not.

***Stocking the product for the purposes of offering for sale.***

Note however, that a mere carrier is not a keeper for purposes of the Act. In ***Smith Kline & French V Harbottle*[1980] RPC 363** the 1st defendant, Harbottle ordered a drug patented by the plaintiff in U.K, from Italy. It arranged for its importation into England with the intention of re-exportation. It was carried by British Airways and stored there in their bonded warehouse to the order of Harbottle. The plaintiff alleged that, British Airways thereby infringed the patent as a person who keeps the product whether for disposal or otherwise. Olive J while holding that British Airways did not infringe the patent by carrying the goods or warehousing them, interpreted keeping as:

“…What the draftsman had in his mind was keeping in the sense of keeping in stock so as to give effect to the words of the Convention “stocking the product for these purposes” and while referring to the Shorter Oxford English Dictionary as to the means of the verb’ to stock…as meaning to keep goods in stock for sale”

 ***Repairs***

The owner of a patented article is entitled to make genuine repairs (These repairs must not, however, amount to making a substantially new article: ***see Dunlop Pneumatic Tyre Co Ltd v Neal***), or to replace parts of a combination which normally wear out more quickly than other parts, even if, in so doing, he would otherwise infringe any copyright belonging to the proprietor of the patent. The implied licence to repair extends to the purchaser's agents and contractors. See ***Solar Thomson Engineering Co Ltd v Barton [1977] RPC 537, CA.***

However, this implied license does not apply where the work goes beyond repair and amounts to remanufacture of the patented article resulting in a new merchantable article. Such remanufacture constitutes infringement of the patentee’s exclusive right to ‘make’ or ‘construct’ the invention. Whether work performed on a patented article constitutes repair or amounts to remanufacture is a question of fact that will depend on the nature of the patented article and the character of the work carried out upon it. For example, in the case of ***Rucker Co. v. Gavel’s Vulcanizing Ltd. (1985), 7 C.P.R. (3d) 294, [1985] F.C.J. No. 1031 (F.C.T.D.) at p. 325***, it has been held that, when a manufacturer takes the whole thing and sells what is a new tire with merely the old wires in it, there has been no license to use those old wires for the purpose of putting them into and making up precisely the same combination which is the subject of the patent.

**The doctrine of variants**

This means that the court decides whether the defendant was employing the patentee’s inventive concept through some measure of equivalence to what had actually been claimed. It has long been established that if a person takes the substance of an invention he is guilty of infringement even if his act does not in every respect fall within the express terms of the claim defining it. This basic principle was stated as early as 1875 by James L.J. in ***Clark v. Adie (1875), L.R. 10 Ch. 667*** at p. 675 in the following terms:

“A patent for a new combination or arrangement is to be entitled to the same protection, and on the same principles, as every other patent. In fact, every, or almost every, patent is a patent for a new combination. The patent is for the entire combination, but there is, or may be, an essence or substance of the invention underlying the mere accident of form; and that invention, like every other invention, may be pirated by a theft in a disguised or mutilated form, and it will be in every case a question of fact Whether the alleged piracy is the same in substance and effect, or is a substantially new or different combination.”

When ***Clark v. Adie went to the House of Lords (1877), 2 App. Cas. 315***, the Lord Chancellor (Lord Cairns) discussed the various ways in which a patent for an apparatus could be infringed. In the course of his discussion he said, at p. 320:

“The infringer might not take the whole of the instrument here described, but he might take a certain number of parts of the instrument described; he might make an instrument which in many respects would resemble the patent instrument, but would not resemble it in all its parts. And there the question would be, …, 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, although there were one, two, three, four or five steps which he might not actually have taken and represented upon his machine.”

Lord Cairns appears to have been the originator of the mixed metaphor “the pith and marrow of the invention”. While the metaphor has been criticized the principle enunciated in ***Clark v. Adie***, supra, has been followed and applied in many cases, both in Great Britain and in Canada, and has never been repudiated: vide, for example

* ***Proctor v. Bennis (1887), 4 R.P.C. 333 at pp. 345, 352, 362;***
* ***Benno Jaffe und Darmstaedter Lanolin Fabrik v. John Richardson & Co. (Leicester) Ltd. (1893), 11 R.P.C. 93 at pp. 112; 261;***
* ***Incandescent Gas Light Co. V. De Mare Incandescent Gas Light System Ltd. (1896), 13R.P.C. 301 at p. 331; 559 at pp. 571, 579;***
* ***Marconi v. Br. Radio Telegraph & Telephone Co. (1911), 28 R.P.C. 181 at p. 217;***
* ***Br. ThomsonHouston Co. V. Metropolitan-Vickers Electrical Co. (1928), 45 R.P.C. 1 at p. 25;***
* ***Rheostatic Co. v. Robt. McLaren & Co. (1935), 53 R.P.C. 109 at p. 118;***
* ***Lightning Fastener Co. V. Colonial Co. [1932] Ex. C.R. 89 at pp. 98, 100; [1934] 3 D.L.R. 737 at pp. 743-4, 51.***

In Clark v. Adie, supra, Lord Cairns did not specifically refer to the doctrine of mechanical equivalency but it is implied in his statement. Indeed, it is only a particular application of the general doctrine enunciated by him. That this is so was stated by Romer L.J. in ***R.C.A. Photophone Ld. v. Gaumont-Br. Picture Corp. & Br. Acoustic Films Ld. (1936), 53 R.P.C. 167 at p. 197;*** where he said of it:

“The principle is, indeed, no more than a particular application of the more general principle that a person who takes what in the familiar, though oddly mixed metaphor is called the pith and marrow of the invention is an infringer. If he takes the pith and marrow of the invention, he commits an infringement even though he omits an unessential part. So too, he commits an infringement if, instead of omitting an unessential part, he substitutes for that part a mechanical equivalent.”

To determine whether a claim element is essential or not, ask

* Was it obvious to the skilled reader at the time the patent was published that a variant of a particular element would not make a difference to the way in which the invention works? If modifying or omitting the element changes the way the invention works, and that was obvious at the relevant date, then the element is essential;
* According to the intent of the inventor, expressed or inferred from the claims, was a particular element essential irrespective of its practical effect? If the element appears to have been intended to be essential, then the element is essential.

If the claim element was not found to be essential under either Q1 or Q2, then the element is non-essential.

**How to determine infringement by a variant?**

This can be resolved by considering whether the differences between the variant and the patented invention are material, that is, do they differ in essential or inessential respects. The invention claimed can be considered as comprising essential and nonessential integers (components), those that are fundamental to the invention and those that are not. If the alleged infringer has taken all of the essential integers, then there is infringement even if there are substantial differences in respect of the nonessential integers. 65This has been described by various judges as the “pith and marrow” of the invention. In applying this principle, the scope of the patent claims is vital. Viscount Radcliff said in ***Van Der Lely NV V Bamford Ltd {1963} RPC 61 at 78:*** When…. the pith and marrow principle is invoked to support the accusation; one must be very careful to see that the inventor has not by the actual form of his claim left open to the world the appropriation of just that property that he says has been filched from him…”

Thus, an inventor must be very careful when drafting his claims to make sure that they are not framed too narrowly that some slight and insignificant modification can be affected without infringing the patent.

The question of construction of patent claims in the context of variants was considered in ***Catnic Components Ltd V Hill & Smith Ltd {1982} RPC 183,*** which involved several variants of steel lintels. The claimant was a proprietor of a patent for steel lintels that had a rear support member which was vertical and so described in the claim of the specification by the phrase ‘second rigid support member extending vertically from or from near the rear edge of the first horizontal plate or part adjacent its rear edge’. The defendant made a similar lintel, but with the rear support member inclined between six and eight degrees (depending on the particular mode of lintel) from the vertical. The defendant’s lintel had a reduced load-bearing capacity compared to the claimant’s lintel, but because of the small inclination from the vertical this reduction was small. The HOL found the claimant’s patent had been infringed and the defendant’s argument that the verticality of the claimant’s lintel was essential to its function and that, therefore, there was no pith and marrow infringement was rejected. It was confirmed that a purposive approach should be adopted in the construction of the patent specification. Lord Diplock ***in Catnic Components Ltd V Hill & Smith Ltd (at 243)*** stated the test as being whether practical persons skilled in the art, would understand that strict compliance with a particular word or phrase was intended by the patentee to be an essential requirement of the invention. If so, any variant that did not comply would fall outside the claim regardless of whether it had any effect, if the variant did have a material effect, there would be no infringement. Lord Diplock suggested the test for deciding whether variants infringe later adopted by Hoffman J in ***Improver Corp V Remington Consumer Products Ltd {1990} FSR 181 at 189.*** The three-part test is as follows;

1. Does the variant have a material effect on the way the invention works? If yes, the variant is outside the claim (and does not infringe). If no
2. ii. Would this (i.e that the variant had no material effect) have been obvious at the date of placation of the patent to a reader skilled in the art? If no, the variant is outside the claim. If yes-
3. iii. Would the reader skilled in the art nevertheless have understood the language of the claim that the patentee intended strict compliance with the primary meaning was an essential requirement of the invention? If yes, the variant is outside the claim. (Can be expressed as: whether a skilled reader would understand from the language of the claim that strict compliance with the primary meaning of the claim was intended).

On the other hand, a negative answer to the last question would lead to the conclusion that the patentee was intending the word or phrase to have not a literal but a figurative meaning denoting a class of things which included the variant and the literal meaning, the latter being perhaps the most perfect, best –known or striking example of the class.

NB. The first 2 questions in Improver case are qns of fact and the 3rd is based on interpretation.

The purposive approach and the Catnic case have become the basic methods of determining whether variants infringe.

***Doctrine of equivalents***

Sometimes the alleged infringement may contain mechanical equivalents, an alternative that works equivalently. A mechanical equivalent may be more than a mere variant as in the Catnic case. It is then a question of deciding which are the essential integers of the claim in the pith and marrow approach to interpretation discussed above. E.g in ***Rodi & Wienberger AG V Henry Showell Ltd [1969] RPC 367*** it was held that replacing two U-shaped bows in a flexible watch strap with a single large C-shaped bow was not an infringement because the U-shaped bow was an essential integer. Alternatively, in ***Marconi V British Radio Telegraph & Telehone [1991] FSR 223*** the replacement of an auto-transformer with a two-coil transformer did not prevent a finding of infringement because the auto-transformer was not an essential integer.