

Canadian Patent Law

Chapter 2 - What Is an Invention? Patentable Subject Matter

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"I don't think necessity is the mother of invention - invention, in my opinion, arises directly from idleness, possibly also from laziness. To save myself trouble."

Agatha Christie, *An Autobiography* [1977] quoted in *David W. Anderson, New Perth Agritech Inc. v. Les Machineries Yvon Beaudoin Inc.* (1994), 58 C.P.R. (3d) 449 per Tremblay-Lamer J.

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2.1. *The Legislative Basis*

The *Patent Act* defines an "invention" as "... any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter."¹

The *Patent Act* also says what cannot be patented: "No patent shall issue for any mere scientific principle or abstract theorem."²

2.2. *Prerequisites*

There are three prerequisites to patentability:

1. Novelty
2. Utility, and
3. Ingenuity.

In addition, there must be present:

1. a concept and
2. an implementation: a way of putting the concept into practical form.

The usual course in creating an invention is:

1. recognition of the problem.
2. having a concept for a solution.
3. creating a way to implement the concept.

The recognition of the problem to be solved (only the first element) is not an invention.³ In order for there to be an invention, there must be both a concept and an implementation (a way of putting the concept into practical form).⁴ It is not enough to have an idea floating through an inventor's brain. The inventor must have at least

¹ *Patent Act*, R.S.C. 1985, c. P-4, s. 2, definition of "[invention](#)".

² *Patent Act*, R.S.C. 1985, c. P-4, [s. 27\(3\)](#).

³ *Reynolds v. Herbert Smith & Co. Ltd.* (1903), 20 R.P.C. 123 (per Buckley J.) at [p. 127](#).

⁴ *Reynolds v. Herbert Smith & Co. Ltd.* (1903), 20 R.P.C. 123 (per Buckley J.) at [p. 127](#); *Diversified Products Corp. v. Tye-Sil Corp.* (1991), 35 C.P.R. (3d.) 350 (F.C.A. per Décarry J.) at [pp. 364-5](#).

reduced it to a definite and practical shape before it can be said that an invention has been made.⁵

Without both the second and third elements, there is no patentable invention. There need not be an "invention" at both of stages 2 and 3 (concept and implementation). But there must be invention at either or both stages.⁶

If the invention is at the "concept" stage, then the invention is considered to be a "pioneering" invention and the patentee is entitled to claim the concept, regardless of the embodiment used.

The date an invention is made is established by showing that the invention was either described in enabling writing (or drawing) or built. The machine does not have to be built; that is merely one way of establishing a date of invention.⁷

2.2.1. Novelty

For an invention to be patentable, it must be "new".⁸ In order to be novel, the invention must not have been done before in a way that made it available to the public.⁹

Provided that each is novel, a patent can be granted for a process as well as a product.¹⁰

The invention need not be revolutionary. Many inventions are a combination of old things.¹¹ In some cases, a patent can protect a new use for an old thing.¹²

However, there is no invention in substituting equivalent new materials.¹³

⁵ *Permutit Co. v. Borrowman* [1926] 4 D.L.R. 285 (Privy Council per Viscount Cave, L.C.) at [p. 287](#), 43 R.P.C. 356 (P.C.).

⁶ *Tye-Sil Corp. Ltd. v. Diversified Products Corp.* (1991), 35 C.P.R. (3d) 350 (F.C.A.) at [p. 364](#).

⁷ *Koehring Waterous Ltd. v. Owens-Illinois Inc. et al* (1981), 52 C.P.R. (2d) 1 (F.C.A.) at [p. 2](#).

⁸ *Patent Act*, s. 2, definition of "[invention](#)".

⁹ *Patent Act*, [s. 28.2](#).

¹⁰ *F. Hoffmann-LaRoche & Co. v. The Commissioner of Patents* [1955] S.C.R. 414 (per Rand, J.) at [p. 417](#).

¹¹ *Philco Products Limited and Cutten-Foster & Sons, Limited v. Thermionics Limited et al.* [1943] S.C.R. 396 (per Taschereau, J.) at [pp. 412-413](#).

¹² *Canadian General Electric Co., Ltd. v. Fada Radio Ltd.* (1930) 47 R.P.C. 69 (H.L.) at [p. 90](#); *Shell Oil Co. v. Commissioner of Patents* [1982] 2 S.C.R. 536 at [pp. 548-549](#).

¹³ *Johnson Controls, Inc. v. Varta Batteries Ltd.* (1984), 80 C.P.R. (2d) 15 at [p.16](#)

In order to be novel, the invention must not have been built before or described in a single document with sufficient information to allow someone to make the invention.¹⁴

Patents are available for improvements to existing machines or processes. It must be appreciated however, that the patent to an improvement does not grant the patent owner any right to use the underlying technology, which may be patented by the original inventor.

2.2.2. Utility

The invention must be "useful" for the purpose for which it was designed¹⁵ as specified in the disclosure and the claims.¹⁶

An invention has "utility" if:

It gives a benefit to the public.

It is useful in achieving a particular purpose.

It makes a process better or cheaper.

It is advantageous under certain circumstances.

It works.

Where utility is not clear, the Commissioner of Patents can request a model.¹⁷

Claiming substances that do not work can expose the patent for an attack of "inutility".¹⁸

Older case law held that an invention had to result in a "vendible product" in order for it to be patentable.¹⁹ The trend in other jurisdictions and in Canada is now drifting towards the requirement that the invention produced a "technical result".

¹⁴ Sometimes called an enabling disclosure.

¹⁵ *Mullard Radio Valve Co. Ltd. v. Philco Radio & Television Corp. of Great Britain Ltd. et al.* (1935), 52 R.P.C. 261 (per Maugham L.J.) at [p. 287](#).

¹⁶ *Rodi & Weinberger A.G. v. Metalliflex Ltd.* (1959) 19 Fox Pat. C. 49 at [p. 53](#).

¹⁷ *X v. Commissioner of Patents* (1981) 59 C.P.R. (2d) 7 (F.C.A. per Thurlow C.J.) at [pp. 10-11](#).

¹⁸ *Société des Usines Chimiques Rhone-Poulenc v. Jules R. Gilbert Ltd.* [1968] S.C.R. 950, 55 C.P.R. 207, at [pp. 228-234](#), 69 D.L.R. (2d) 353.

¹⁹ *Re G.E.C.'s Application* (1942), 60 R.P.C. 1 at [p. 4](#).

2.2.3. Non-Obviousness or Inventive Ingenuity

The subject matter of the patent must have that "extra something" beyond mere workshop improvements. It must be non-obvious or "inventive".

Through the case law, the Courts added the requirement of non-obviousness or Inventive Ingenuity. This arose out of a desire by the Courts not to allow a patent to cover any routine improvement. There had to be "an invention".

In the *Edison Bell* case,²⁰ the court described it this way:

"It really comes to this, that, although the invention is new - that is, that nobody has thought of it before - and although it is useful, yet, when you consider it, you come to the conclusion that it is so easy, so palpable, that everybody who thought that for a moment would come to the same conclusion; or, in more homely language, hardly judicial, but rather business-like, it comes to this, it is so easy that any fool could do it."

That requirement has now been incorporated into the Canadian *Patent Act* under section 28.3.

2.2.3.1. *the test for inventiveness*

The test for inventiveness has been very difficult to articulate.

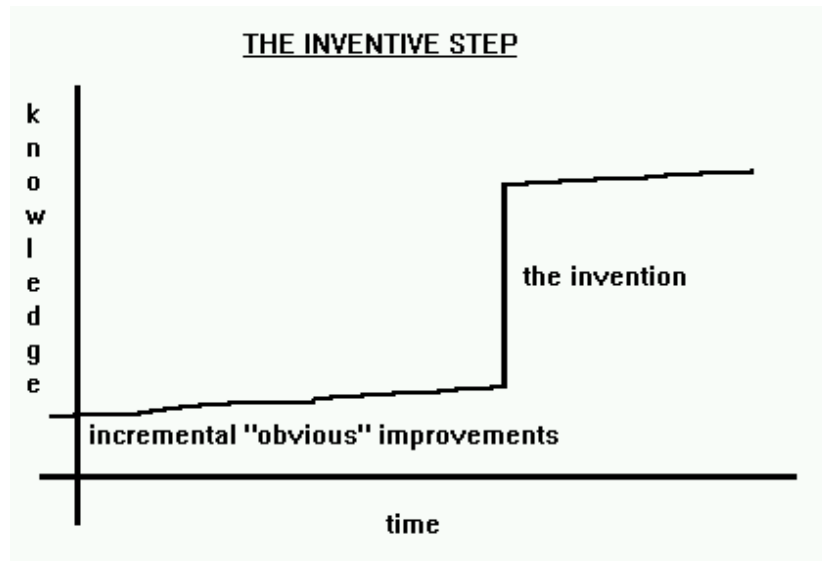
The invention is sometimes defined by the process that was used to create it. It must be the application of an inventive mind; it must be the product of original thought or inventive skill.²¹ The corollary is that someone without any inventive abilities would create something obvious. This definition, begs the question to raise a further one: what is inventive skill.

An invention is sometimes identified by its measure over the prior art. The comparison is made between what was invented and what has taken place before hand. The courts have sometimes said that there is a quantum leap or spark ("scintilla") of invention.²² Here's a non-calibrated depiction of an inventive step (note there are no units on the vertical axis):

²⁰ *The Edison Bell Phonograph Corporation, Limited v. Smith and Young* (1894), 11 R.P.C. 389 at [p. 398](#).

²¹ *Canadian Gypsum Co. Ltd. v. Gypsum, Lime & Alabastine Canada Ltd.* [1931] Ex. C.R. 180 (Ex. Ct. per Maclean J.) at [p. 187](#).

²² *Samuel Parkes & Co. Ltd. v. Crocker Bros. Ltd.* (1929) 46 R.P.C. 248 (per Tomlin J.) at [p. 248](#).



The test for inventiveness in Canada has now evolved to asking whether the invention would have been obvious to a hypothetical individual, possessed of all the relevant prior art but what lacked any inventive abilities. Would that person have been led directly and without difficulty to the solution disclosed and claimed in the patent?²³

2.3. Combinations not aggregations

The mere placement side-by-side of old integers, so that each performs its own proper functions independently of any others, does not give rise to an invention.²⁴ Where each element functions independently and there is no common result, then there is no inventive combination.²⁵

The mere juxtaposition of parts insufficient. Elements must combine for a unitary result. If any element in the arrangement gives its own result without any result flowing from the combination, then there is no invention.²⁶

What then of a pencil and eraser?²⁷

2.4. Approved categories

²³ See *Beloit Canada Ltd. v. Valmet Oy*, (1986) 8 C.P.R. (3d) 289 (F.C.A. per Hugessen J.A.) [at p. 294](#).

²⁴ *British Celanese v. Courtaulds* (1935) 52 R.P.C. 171 at [p. 193](#).

²⁵ *Lester v. Commissioner of Patents* (1946) 6 C.P.R. 2 at [p. 3](#).

²⁶ *Domtar Ltd. v. MacMillan Bloedel* (1977) 33 C.P.R. (2d) 182 (F.C.T.D.) at 189-90; *Cri-la Plastic Industries Ltd. v. Ninety-Eight Plastic Trim Ltd.* (1986) 10 C.P.R. (3d) 226 (F.C.T.D.) at [p. 236-237](#); *affd* (1987) 18 C.P.R. (3d) 1 (F.C.A.).

²⁷ It's an aggregation. See *Reckendorfer v. Faber*, 92 U.S. 347 per Justice Hunt at [pp. 356-357](#), quoted in *Domtar Ltd. v. MacMillan Bloedel* (1977) 33 C.P.R. (2d) 182 (F.C.T.D.) at p. 190.

Not everything is patentable - only those things which fall into the categories of proper subject matter under the relevant *Patent Act* are patentable.

The Canadian *Patent Act* provides for certain subject matter to be patentable:

"... any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter."

Similarly, s. 101 of the U.S. *Patent Act*, 35 U.S.C. S. 101 provides:

"...[w]however invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent thereof."

The term "subject matter" is used in these materials to mean the subject matter that is protected by the *Patent Act* ("art, process, machine, manufacture or composition of matter" or improvements to them). It is not meant to include, in this context, the quality of the subject matter (novelty, utility and ingenuity), which are discussed elsewhere.

2.4.1. "art"

An art or operation is an act or series of acts performed by some physical agent upon some physical object and producing in such object some change either of character or of condition.²⁸

Fox on Patents says "art":

"...may be taken to mean a mode, or method or manner of accomplishing a certain result as distinct from the result. It is a mode of treatment of certain materials to produce a given result."²⁹

It means "learning" or "knowledge" as in the phrases "state of the art" or "prior art".³⁰ "Art" may include a method or process.³¹

²⁸ *Lawson v. Commissioner of Patents* (1970), 62 C.P.R. 101 (Ex. Ct. per Cattanach J.) at [p. 111](#).

²⁹ *Fox, Harold; Canadian Patent Law and Practice*; 4th ed.; Carswell; 1969; p. 16.

³⁰ *Shell Oil Co. v. Commissioner of Patents* [1982] 2 S.C.R. 536 at [pp. 548-549](#).

³¹ *Refrigerating Equipment Ltd. v. Drummond & Waltham System Inc.*, [1930] 4 D.L.R. 926, [1930] Ex. C.R. 154, Maclean, J. at [p. 937](#).

2.4.2. "process"

A process implies the application of a method to a material or materials.³²

"Process" means "method"³³ - a particular method of operation in any manufacture.³⁴

Fox defines "process" as being:

"... the use of a method or the performance of an operation to produce a result. There cannot be a process by itself. It must of necessity consist of two elements, namely, a method or a procedure and the material or materials to which it is applied."³⁵

The use of an old method to known materials which produces and new and useful compound is patentable provided there has been inventive ingenuity.³⁶

2.4.3. "machine"

Fox defines "machine" as:

".. the embodiment in mechanism of any function or mode of operation designed to accomplish a particular effect."³⁷

2.4.4. "manner of manufacture"

In 1799, "manufacture " was defined as "something made by the hands of man." The term was virtually synonymous with "invention" under the English *Patent Acts*.³⁸

"Manufacture" connotes the making of something.³⁹

A method or process can also be a "manner of manufacture" if it results in a vendible product or improves, restores or preserves a vendible product.⁴⁰

³² *Commissioner of Patents v. Ciba Ltd.* [1959] S.C.R. 378 (per Martland J.) at [p. 383](#).

³³ *Refrigerating Equipment Ltd. v. Drummond & Waltham System Inc.*, [1930] 4 D.L.R. 926, [1930] Ex. C.R. 154, Maclean, J. at [p. 937](#).

³⁴ *Tennessee Eastman Co. v. Commissioner of Patents* [1974] S.C.R. 111 at pp. 116-117, [120](#)

³⁵ *Fox, Harold; Canadian Patent Law and Practice*; 4th ed.; Carswell; 1969; p. 17.

³⁶ *Commissioner of Patents v. Ciba Ltd.* [1959] S.C.R. 378 (per Martland J.) at [p. 383](#).

³⁷ *Fox, Harold; Canadian Patent Law and Practice*; 4th ed.; Carswell; 1969; p. 17.

³⁸ *Hornblower v. Boulton* (1799), Dav. P.C. 221; *Johnson v. Johnson* (1894), 60 Fed. 618.

³⁹ *Lawson v. Commissioner of Patents* (1970), 62 C.P.R. 101 (Ex. Ct. per Cattanach J.) at [p. 111](#).

⁴⁰ *G.E.C.'s Application* (1943) 60 R.P.C. 1 (per Morton, J.) at [p. 4](#).

2.4.5. "composition of matter"

This term typically includes chemical compounds or mechanical mixtures.

A new and useful chemical can be protected as a chemical *per se* and need not be limited to the useful purpose.⁴¹

The isolation of a virus strain which does not naturally exist is patentable.⁴²

2.4.6. "improvements"

Most inventions are improvements to existing machines or processes rather than "pioneering" inventions. The Wright Brothers patented a control system for an airplane making it capable of being steered. Edison's invention related to filaments and the use of inert gases around them to prolong their useful life.

The new use for an old compound can be patentable.⁴³

The combination of old elements can be patentable (See "[Combinations](#)" above).

Substituting materials may be patentable where the substitution results in a new method of construction or new and useful result not attainable by the use of other materials.⁴⁴

The adage "Less is more" can be true where the elimination of parts may be patentable.⁴⁵

2.5. *Non-statutory subject matter*

Patent law does not protect ideas or schemes.

A patent will not protect a series of mental steps. (See [Computer-Implemented Inventions](#) below).

"Systems" of doing things, which do not result in a vendible product, have often failed to be patentable. Fox has outlined the following systems as being held to be non-patentable subject matter according to a series of decisions:

⁴¹ *Marzone Chemicals Ltd. v. Eli Lilly & Co.* (1978), 37 C.P.R. (2d) 37 (F.C.A) at [p. 39](#).

⁴² Re Application 400,069 Patent Appeal Board decision, September 20, 1988.

⁴³ *Shell Oil Co. v. Commissioner of Patents* [1982] 2 S.C.R. 536 at [pp. 548-549](#); *Re Shell Canada Ltd. Patent Application* (1989), 28 C.P.R. (3d) 213 (Pat. App. Bd.)

⁴⁴ *Samson-United of Canada Ltd. v. Canadian Tire Corp. Ltd.* [1939] Ex. C.R. 277 at [p. 281](#); *affd* [1940] S.C.R. 386; *Canadian Patent Scaffolding Co. Ltd. v. Delzotto Enterprises Ltd.* (1980), 47 C.P.R. (2d) 77 (F.C.A.) at [p. 81](#).

⁴⁵ *Electrolier Manufacturing Co. Ltd. v. Dominion Manufacturers Ltd.* [1934] S.C.R. 436 at [p. 441](#).

the arrangement of houses or a plot of land⁴⁶

becoming rich

better government

efficient conduct of a business

securing payment of a discount

buoying channels for navigation with different coloured buoys

indexing

colouring substances for identification

musical notation

lettering systems

bookkeeping forms

navigational charts for aircraft

2.5.1. Prohibited Subject Matter

The *Patent Act* s. 27(3) provides:

"No patent shall issue for any mere scientific principle or abstract theorem."

This element has been considered to include mathematical formulae (See Computer Program-Related Inventions below).

2.6. The New Technologies

The definition of "patentable subject matter" has been stretched in recent years, particularly in the areas of computer software-related inventions and biotechnology. For further information, see:

⁴⁶ *Lawson v. Commissioner of Patents* (1970), 62 C.P.R. 101 (Ex. Ct. per Cattanach J.) at [p. 111](#).

- Computer-Implemented and Business Method Patents
 - D.M. Cameron, R. Scott MacKendrick & Yuri Chumak; “[Patents for Computer-Implemented Inventions and Business Methods](#)”; Chapter 4 of [Electronic Commerce: A Practitioner’s Guide](#), Gahtan, Kratz & Mann ed.; Thomson Carswell, 2003-2006
- Business methods
 - See USPTO [Technology Center 3600's Business Method Web Site](#)
- Biotechnology patents
 - Harvard Mouse patent cases:
 1. *President and Fellows of Harvard College v. Canada (Commissioner of Patents)* ([1998] 3 F.C. 510; (1998), 79 C.P.R. (3d) 98; 146 F.T.R. 279) [full decision online](#)
 2. *President and Fellows of Harvard College v. Canada (Commissioner of Patents)* (F.C.A.) [2000] 4 F.C. 528 [full decision online](#)
 3. *Harvard College v. Canada (Commissioner of Patents)* 2002 SCC 76, December 5, 2002 [full decision online](#)
 - Roundup patent cases:
 1. *Monsanto Canada Inc. v. Schmeiser* (F.C.T.D. per Mackay J.) 2001 FCT 256, (2001), 202 F.T.R. 78, 12 C.P.R. (4th) 204, [2001] F.C.J. No. 436 (QL). [full decision online](#)
 2. *Monsanto Canada Inc. v. Schmeiser* (F.C.A.) 2002 FCA 309 [2003] 2 F.C. 165; September 4, 2002. [full decision online](#)
 3. *Schmeiser v. Monsanto Canada Inc.* (S.C.C.) 2004 SCC 34; May 21, 2004 [full decision online](#)