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A Brief History of the Evolution of the Patent of Invention in England

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Abstract

The modern patent of invention evolved over the course of about 500 years from a form of letter of protection into something we would recognize today. An understanding of that process of evolution and the circumstances that drove the process of change is the foundation of a more thorough understanding of the present system. Even the meaning of words such as “invention” have changed so significantly that reading an older case with the modern meaning in mind will lead to confusion. It is also important to understand that patent policy 500 years ago was concerned with more than stimulating industry, and a failure to understand that there were competing policy objectives in play will also confuse the unwary reader.

Résumé

Au cours des 500 dernières années, le brevet d’invention moderne a considérablement évolué, passant d’un type de lettre de protection vers sa forme actuelle. Une bonne connaissance de ce processus d’évolution et les circonstances qui ont mené à ce processus de changement sont à la base de notre compréhension plus approfondie du système en vigueur. Même le sens de mots comme « invention » a tellement évolué que la lecture d’un cas plus ancien en gardant à l’esprit la signification moderne du mot portera à confusion. Il est en plus très important de bien comprendre que les politiques en matière de brevets en vigueur il y a 500 ans visaient beaucoup plus que la stimulation de l’industrie et que le refus de reconnaître l’existence d’objectifs politiques contradictoires confondra aussi le lecteur non averti.

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1.0 Introduction

What we call a patent of invention today, with its description, claims, and drawings, looks nothing like the documents from which it evolved over the centuries. The description and claims were themselves “invented” to deal with issues that arose as the law developed, and only later did they become a statutory requirement. While the history of patents is interesting in itself, knowing a little about that history helps us understand why the modern *Patent Act* requires an invention to be new, inventive, and useful in order to merit the grant of a statutory monopoly.

While the process of development described in this article is based primarily on events that occurred in England, that process still has importance for Canadian patent practitioners. For example, most of the provinces that joined together at Confederation in 1867 had received English law at various dates.¹ Some provinces had their own pre-Confederation patent legislation, but when responsibility for “patents of invention and discovery” was assigned to the federal government by section 91(22) of the *Constitution Act, 1867*, in 1869 Canada adopted its first post-Confederation patent legislation.²

2.0 The Meaning of Letters Patent

Letters patent were not restricted to the granting of monopolies to inventors. The government used them to create joint stock companies, such as the Hudson’s Bay Company,³ and to grant

land in fee simple.⁴ The word “patent” simply means open or public and refers to a document with the Great Seal affixed so that a person asserting a right granted by patent could prove his claim by showing the document.⁵

There is no shortage of materials on the history of patents,⁶ including a series of papers published in the *Law Quarterly Review* and in *Engineering* by Edward Wyndham Hulme.⁷ Hulme spent his career in the British Patent Office, starting as a clerk and retiring in 1919 as its librarian.⁸ The purpose of the present article is to provide a short, and we hope engaging, description of the evolution of a form of letter of protection into the modern patent of invention. Although the development of the modern patent system has been related to a number of economic or political theories, it is not clear that the development of the patent system was motivated by anything other than expediency in response to changing circumstances.

3.0 The First Efforts to Encourage Industry

England’s economy in the 14th century was largely agricultural, and its manufacturing capabilities were far behind those of France, Spain, Italy, Germany, and the Low Countries.⁹ The kings of England sought to remedy this deficiency by bringing knowledge of a number of trades to England. One example¹⁰ is a 1331 letter of protection given by Edward III to John Kempe of Flanders, a weaver of cloths. The letter declared that Mr. Kempe

1 The reception of English law is a process by which an English colony was deemed to adopt, or in some cases expressly through legislation chose to adopt, English statute law and common law as of a particular date. From that date forward, the law of the colony developed separately from English law. The provinces that joined Confederation in 1867 were New Brunswick (English law received in 1660), Nova Scotia (English law received in 1758), Ontario (English law received in 1791), and Quebec. The reception of English law in Quebec is a story on its own, and beyond the scope of this article..

2 *An Act respecting Patents of Invention*, 32 & 33 Vict, c 11, s 14 (Canada) [*Patent Act, 1869*]. As discussed later in this article, the *Patent Act, 1869* generally followed the US patent statute of 1836, although the Canadian legislation was generally interpreted by reference to UK cases.

3 Letters patent creating the “The Governor and Company of Adventurers of England, trading into Hudson’s Bay” (2 May 1670); <www.hbcheritage.ca/things/artifacts/the-charter-and-text>.

4 See, for example, *Conveyancing and Law of Property Act*, RSO 1960, c 66, s 13.

5 See the definition of letters patent, or letters overt, in Jowitt’s *The Dictionary of English Law* (London, UK: Sweet & Maxwell, 1959).

6 For example, Harold G Fox, *Monopolies and Patents: A Study of the History and Future of the Patent Monopoly* (Toronto: University of Toronto Press, 1947); and Christine MacLeod, “Inventing the Industrial Revolution—The English Patent System, 1660–1800” (Cambridge, UK: Cambridge University Press, 1988).

7 In 1854, following the establishment of the British Patent Office, the “Superintendent of Specifications, Indexes, &c.” published three indexes of patents of invention in the period from March 2, 1617 to October 1, 1852. These indexes were arranged chronologically, alphabetically by title, and by subject matter. These indexes are available online through Hathi Trust: chronological, <<https://catalog.hathitrust.org/Record/101716272>>; alphabetical, <<https://babel.hathitrust.org/cgi/pt?id=mdp.39015001793291&view=1up&seq=7>>; and subject matter, <<https://catalog.hathitrust.org/Record/101716271>>. The Patent Office later printed the text of the specifications covered by the indexes in the “Blue Books,” which apparently comprise some 691 thick volumes. We were unable to find an accessible version of these Blue Books either in print in a Canadian library or online. Nothing official was done to address patents of invention that predated March 2, 1617. The only resources we were able to locate dealing with patents in this period are the various articles by Hulme referred to in several of the notes that follow.

8 Thomas Dousa, “E. Wyndham Hulme’s Classification of the Attributes of Books: On an Early Model of a Core Bibliographical Entity,” in *Proceedings from North American Symposium on Knowledge Organization*, vol 6 (Champaign, IL: University of Illinois at Urbana-Champaign), 21–38.

9 The Low Countries are a geographical area in northwestern Europe comprising the lower basin of the Rhine–Meuse–Scheldt delta. The political boundaries within this region have changed several times over the centuries, but today most of the region is located within the Netherlands, Belgium, and Luxembourg. Some portions lie within modern-day France (that is, Flanders) and modern-day Germany. Flanders was known for its textiles and lace.

10 E Wyndham Hulme, “The History of the Patent System Under the Prerogative and at Common Law” (1896) 12 LQ Rev 141 at 142 [Hulme, “The History of the Patent System”].

(as well as his servants and apprentices) had the King's protection, and contained a general offer to extend similar privileges to any foreign weaver, dyer, or fuller who would settle in England and teach their art or trade to those willing to learn.

This general policy was confirmed by a 1337 statute, which provided that "all clothworkers of strange lands, of whatsoever country they may be, which will come into England, Ireland, Wales, and Scotland, and within the King's power, shall come safely and surely and shall be in the King's protection and safe-conduct to dwell in the same lands, choosing where they will; and to the intent that the said clothworkers shall have the greater will to come and dwell here, Our Sovereign Lord the King will grant them franchises as many and such as may suffice them."¹¹

More than a century later, in 1483, during the reign of Richard III, Parliament passed a restrictive trade statute "touching the merchants of Italy." At Richard's behest, the legislation provided an exemption for those who brought with them or produced written or printed¹² books, and thus brought foreign knowledge to England.¹³

As recounted by Hulme,¹⁴ these letters patent with the promise of protection continued to be issued to persons with particular skills, such as clockmaking or mining, into the reign of Henry VI. The nature of the patent related to new trades and technology appears to have changed beginning with a statute passed during the reign of Queen Mary, Elizabeth's half-sister.¹⁵ Instead of a grant of protection, this form of a patent granted a monopoly and

assigned regulation of the trade to those responsible for introducing a new technology.

On the continent, a method of making a class of fabrics including satin was developed. In Norwich, weavers turned wool from the surrounding area into a worsted fabric, but the introduction of the new class of fabric displaced the older worsted fabric, leading to a decline of the weaving business in Norwich.

Those in Norwich believed that the foreign fabric was made of Norwich area wool.¹⁶ Not content to let the industry die without a challenge, the mayor and aldermen of Norwich and several merchants brought Italian clothworkers to Norwich to teach the local weavers the "Misteries" of making satin and similar cloth. By statute, a corporation was created to regulate the quality of the product made in Norwich, to admit new persons to "occupie the said Misterie," and the corporation and those it admitted to the "Misterie" were granted an effective monopoly on the manufacture of this class of cloth.¹⁷

4.0 Patents in the Reign of Elizabeth I

4.1 The Use of Letters Patent to Encourage Industrial Development

From the Patent Rolls and Calendars, Hulme prepared a list said to constitute the first attempt to fix the date of the English patent system. He also believed the list to be a complete record of industrial monopoly licences.¹⁸ It appears that in 1559 James Acontius suggested to the government of Queen Elizabeth that a monopoly would be the most effective means of rewarding an inventor. The idea appears to have been favourably received, because just such a form of patent was issued two years later, in

11 *Ibid* at 143.

12 Printing emerged in Europe during the 1450s with Gutenberg's press.

13 1 Ric III, c 9; Paul Murray Kendall, *Richard the Third* (New York: W.W. Norton, 2002) at 342–43.

14 Hulme, "The History of the Patent System," *supra* note 10 at 143.

15 The details of Henry VIII's marriages, his split from Rome, and the religious strife between Catholics and Protestants that resulted are beyond the scope of this brief history of patent law, but some superficial understanding is helpful to understand the context of the development of the patent system under Elizabeth I. Mary was the daughter of Henry's first wife, Catherine of Aragon, and was Catholic. Elizabeth was the daughter of Henry's second wife, Anne Boleyn, and was Protestant. Their half-brother, Edward, the son of Henry's third wife, Jane Seymour, was Protestant. When Henry died, Edward became Edward VI at the age of nine, and continued (or at least his advisers continued) with the Protestant Reformation begun by his father. An account of this period can be found in Diarmaid MacCulloch, *The Boy King Edward VI and the Protestant Reformation* (New York: Palgrave, 1999). Edward VI died at age 15, and his half-sister Mary eventually became queen. She married Philip II of Spain (who was born in Castile), with an act of Parliament setting out the terms of the marriage, including terms that neither Mary nor any child of their marriage should leave the kingdom and that, should Mary predecease Philip, he would have no claim on the Crown. Mary sought to re-establish Catholicism with considerable vigour. When Mary died childless in 1558, Elizabeth became queen, and reinstated the Protestant Reformation. Philip initially hoped to maintain the alliance between Spain and England, but as they were on opposite sides of the religious turmoil in Europe, this proved to be impossible. An engaging account of Elizabeth's upbringing and reign is presented in Helen Castor, *Elizabeth I—A Study in Insecurity* (London, UK: Allen Lane, 2018).

16 This belief may have been mistaken. See Eric Kerridge, *Textile Manufactures in Early Modern England* (Manchester, UK: Manchester University Press, 1985) at 46.

17 1 & 2 Phil & Mar, c 14 (1554–1555) (available through Hein Online). The preamble of the statute reads in part: "Where of late years passed, Russels called Russells Sattens and Sattens Reverses have bene practiced to be made beyonde the Seas of the Woolles bredd in the Countye of Norfolke, and by reason thereof so greate quantitie of the said Russels Sattens and Sattens Reverses have been brought into this Realme, sold and worne as well in every parte of this Realme as in the partes beyonde the Seas, that therby the Misteries of Woorstedes making and weaving, whereby Merchantes and Inhabitantes of the Cyttye of Norwiche have heretofore bene well maintained and relieved, ys [is] now at this point almost wholye decayed and brought out of estimation and very little worne, either within this Realme or in any other forreine Realmes, to the great hindrance and decaye of the said Cittie and Citisens of the same Citie."

18 Hulme, "The History of the Patent System," *supra* note 10 at 145–50.

1561. (Mr. Acontius himself would have to wait until 1565 before he received a monopoly patent.¹⁹)

This first patent granted a monopoly licence to Stephen Groyett and Anthony Le Leuryer for a 10-year term for the making of Castile soap, which was considered superior for fine laundry work to the best English soap. The grant stipulated that at least two of the servants of the patentees must be native-born and that the soap produced be as good and fine as that made in the “Sope house of Triana or Syvile.” The patent required the patentees to submit their soap to the mayor and aldermen of the City of London for inspection, and if the wares were defective, the patent would be void.²⁰ One is tempted to wonder what part, if any, Philip II’s connection to Castile played in the decision to grant this patent.

It is easier to understand the motivation for the second patent that Elizabeth I granted in 1561. Saltpetre, or potassium nitrate, was one of the three key ingredients in the manufacture of gunpowder. At the time of the grant, England imported all of its saltpetre through Antwerp, which was under the control of Philip II of Spain. Given the circumstances, this was a risk to the security of England. The process leading to the patent began when Elizabeth I made a bargain with a German captain to come to England to teach her subjects “the true and perfect art of making saltpetre” in return for a payment of £300, on condition that the process and all of its secrets be reduced to writing.²¹ When the captain arrived in England, Elizabeth I assigned her bargain to Philip Cockeram and John Barnes, both London tradesmen, and by patent granted them a monopoly licence for a term of 10 years, on condition that they establish the manufacture of saltpetre within a year.²² Some years later, Elizabeth I granted a patent for the manufacture of sulphur, another ingredient of gunpowder.²³ She also granted patents indirectly related to the production of bronze and brass for the casting of ordnance in 1564 and 1565.²⁴

Given the strategic importance of saltpetre to the defence of England, one can understand why the bargain with the German captain included the requirement that he provide a written description of the process. Nevertheless, it is the first instance of

the government requiring a written description of the process as a condition for the granting of a monopoly over the practice of the process. However, even the early 14th-century patents that took the form of a letter of protection had at least an implicit requirement that the holder of the patent transmit his knowledge to others, usually by means of apprenticeship.

In this period, a person wanting to obtain a patent would submit a petition. Generally, the petition would assert that the petitioner had invested time and money and had thereby learned the secrets of a trade or industry. The petition would generally assert that the trade or industry would be of benefit to the Realm, and had not previously been in practice in England. These assertions were then recited in the preamble of the patent.²⁵ The description of the trade or industry in the petition and the resulting patent was generally superficial—of necessity in some cases, such as the saltpetre patent, where the purpose of the grant was to obtain disclosure of the process. The assertions made in the petition were critical to the validity of the resulting patent, because these were representations to the Crown justifying the exercise of the prerogative in the petitioner’s favour. There were three grounds available to revoke letters patent: (1) when the monarch had granted several letters patent for the same thing; (2) when the monarch granted a patent based on a false suggestion by the petitioner; or (3) when the monarch purported to grant anything, which by law he or she could not grant.²⁶

4.2 The Use of Letters Patent to Achieve Other Policy Objectives

The government policy of encouraging new and improved industries and the importation of superior knowledge from abroad is clear from the patents discussed above. However, additional considerations guided the development of the patent system during the reign of Elizabeth I and into the Stuart period. One consideration was to improve employment, including ensuring that no workers were displaced from their trade. Another consideration was the regulation of trade or industry. Many early patents can be considered a form of contracting out of government functions. One example is the letters patent creating the Hudson’s Bay Company, which effectively contracted out to the company the task of colonizing the vast tract of North

¹⁹ *Ibid* at 148.

²⁰ *Ibid* at 145. The text of the patent can be found in the June 22, 1894 edition of *Engineering* at 805. Copies of this publication are available, among other places, at the Gerstein Library, University of Toronto.

²¹ The text of the disclosure is reproduced in the June 15, 1894 edition of *Engineering* at 773. The process, as described, was noxious, involving the mixing of black earth (“the blacker the better”), urine (“namely of those persons whose drink is either wyne or beare”), dung (“especially of those horses which be fed with oots, and be always kept in the Stable”), and lime (preferably made from oyster shells).

²² E Wyndham Hulme, “On the Consideration of the Patent Grant, Past and Present” (1897) 13 LQ Rev 313 at 314 [Hulme, “On the Consideration of the Patent Grant”]; Hulme, “The History of the Patent System,” *supra* note 10 at 145.

²³ Hulme, “The History of the Patent System,” *supra* note 10 at 147.

²⁴ *Ibid* at 147, 148.

²⁵ Hulme, “On the Consideration of the Patent Grant,” *supra* note 22 at 315. This can also be seen in the preamble to 1 & 2 Phil & Mar, c 14 (1554–1555), quoted in note 17 *supra*.

²⁶ *R v Mussary* (1738), 1 Hayward’s Patent Cases 154. The report of this case in Hayward’s Patent Cases is from 1 WPC 41.

America that drained into Hudson's Bay.²⁷ The monopolies granted to Sir Edward Dyer, giving him control over the tanning industry, and to Sir Walter Raleigh, for the regulation of taverns,²⁸ are other examples of the government turning over the regulation of an industry to a private party.²⁹

Another form of patent at the time was a *non obstante* patent, which granted a licence to the holder to carry on a trade or business notwithstanding a general prohibition against the trade or business. An example concerns woad, a type of cabbage plant used to make a blue dye for the textile industry. Woad was relatively profitable compared to grain.³⁰ In some years so much land was used to grow woad that the amount of grain produced was insufficient to last through the winter. As a result, Elizabeth I issued a number of proclamations restricting the growing of woad. However, she also issued patents permitting holders to sow a maximum number of acres of land with woad.³¹ By this means, the government was in effect setting quotas on the production of woad.³²

4.3 The Preservation of Existing Trades Emerges as the Governing Principle

A fuller discussion of patent policy in the reign of Elizabeth I is beyond the scope of this review,³³ but there is no doubt that occasionally these different policy considerations came into conflict with one another. The case of *Darcy v Allein*³⁴ provides a concrete example of such a conflict. *Darcy's* patent was granted to him after an earlier grant of a similar monopoly of 12 years to one Ralph Bowes. *Darcy's* patent recites that Queen Elizabeth "intending that her subjects being able men to exercise

husbandry, should apply themselves thereunto, and that they should not employ themselves in making playing cards, which had not been any ancient manual occupation within this realm, and that by making such multitude of cards, card-playing was becoming more frequent and especially among servants and apprentices, and poor artificers; and to the end her subjects might apply themselves to more lawful and necessary trades." She granted a monopoly first to Bowes, and later to Darcy.

The patent recital states that the purpose for granting the monopoly was to restrict the supply of playing cards to encourage workers and apprentices to concentrate on their trade and not on card playing. It also asserts that the making of playing cards was not an ancient manual occupation in the realm. Despite these recitals, the patent was found to be void because those who had previously made playing cards were deprived of their trade. Among the grounds for declaring the patent void was that a monopoly

tends to the impoverishment of divers artificers and others, who before, by the labour of their hands in their art or trade, had maintained themselves and their families, who now will of necessity be constrained to live in idleness and beggary ... and the common law, in this point, agrees with the equity of the law of God, as appears in Deuteronomy cap. xxiv ver. 6 ... you shall not take in pledge the nether and upper millstone, for that is his life: by which it appears, that every man's trade

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- 27 Among other things, the Charter of the Hudson's Bay Company empowered the company "to make, ordain, and constitute, such, and so many reasonable Laws, Constitutions, Orders and Ordinances" to enforce those laws, and it empowered "the said Governor and Company, and their Successors, free Liberty and Licence, in case they conceive it necessary, to send either Ships of War, Men or Ammunition, unto any [of] their Plantations, Forts, Factories, or Places of Trade aforesaid, for the Security and Defence of the same, and to choose Commanders and Officers over them, and to give them Power and Authority, by Commission under their Common Seal or otherwise, to continue or make Peace or War with any Prince or People whatsoever, that are not Christians, in any Places where the said Company shall have any Plantations, Forts or Factories, or adjacent thereunto, as shall be most for the Advantage and Benefit of the said Governor and Company, and of their Trade": *supra* note 2 at 5.
- 28 Chris Dent, "Patent Policy in Early Modern England: Jobs, Trade and Regulation" (July 2007), U of Melbourne Legal Studies Research Paper No 237; Intellectual Property Research Institute of Australia Working Paper No 06.07, online: SSRN <<https://ssrn.com/abstract=1001611>>, at 4–5.
- 29 The practice of turning over regulation of an industry or several industries to a corporation continues today. One example is Ontario's *Technical Standards and Safety Act, 2000*, SO 2000, c 16 [TSSA], which provides for inspections of devices such as elevators, boilers, and pressure vessels, and also governs the certification of, among others, oil and gas technicians and operating engineers. The TSSA is administered by the Technical Standards and Safety Authority, which was created by letters patent but is continued under the TSSA as a corporation without share capital. Section 3.3 of the TSSA provides, "The Corporation and its members, officers, directors, employees and agents, together with the persons whose services it retains, are not agents of the Crown and shall not hold themselves out as agents of the Crown." There is also Ontario's *Highway 407 Act, 1998*, SO 1998, c 28, which grants the management of a highway to a private corporation.
- 30 Woad was about six times more profitable than corn (what North Americans would call cereal crops such as wheat or oats): see Frederick A Youngs, *The Proclamations of the Tudor Queens* (Cambridge, UK: Cambridge University Press, 1976) at 151.
- 31 Dent, *supra* note 28 at 4; Youngs, *supra* note 30 at 151–53.
- 32 See, for example, the *Canadian Dairy Commission Act*, RSC 1985, c C-15, which established the Canadian Dairy Commission and created a framework for regulating the quantity (by quotas), quality, and price of milk. Section 8 of the Act provides, "The objects of the Commission are to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality."
- 33 See Dent, *supra* note 28.
- 34 *Darcy v Allein* (1602), 1 Hayward's Patent Cases 1 (also known as the *Case of Monopolies*). The reports of this case collected in Hayward's Patent Cases are from 77 ER 1260, 74 ER 1131, 72 ER 830, and 1 WPC 1. In usual Elizabethan fashion, the various reports spell Allein's name in a variety of ways, including Allin and Allen.

maintains his life, and therefore he ought not to be deprived of it or dispossessed of it, no more than his life.³⁵

This impulse to maximize employment went so far as to prevent the issuance of a patent during the reign of Elizabeth I for a new and useful stocking knitting machine, because a patent would put those who produced stockings by hand out of work.³⁶ Later, during the reign of James I, not only was a similar patent refused, but the device itself was abolished.³⁷ Sir Edward Coke, in his chapter on monopolies, refers to a fulling mill that permitted more caps and bonnets to be thickened in a day “then by the labours of fourscore³⁸ men, who got their livings by it.” Consequently, it “was ordained that bonnets and caps should be thickened and fulled by the strength of men, and not in a fulling mill, for it was holden inconvenient to turn so many labouring men to idleness.”³⁹

As noted earlier, the early Elizabethan patents generally had only a superficial description of the subject matter of the patent. Apart from the saltpetre patent, there was no formal requirement to provide a detailed description of the device or process in question. In the few years before Elizabeth’s death in 1603, dissatisfaction with monopolies began to grow, as a result of the perception that many beneficiaries of such monopolies were close to the Queen. In 1601 a bill respecting monopolies was put forward in Parliament, but it was withdrawn when Elizabeth I conceded that the validity of her grants should be left to the law without the force of her prerogative.⁴⁰ In 1602 the Court of Queen’s Bench heard the case of *Darcy v Allein* and held that a monopoly that took away a person’s trade was void.⁴¹

5.0 Descriptions as a Means of Establishing Novelty

In 1611, one Sturtevant applied for a patent on the use of coal for smelting iron, and more generally the use of coal as a substitute for wood in other industries. With his application he included a “treatise” on metals, and promised to supplement this description by a more detailed description to be printed and published within a fixed period after the grant of the letters patent. In his final description, Sturtevant gave the following reasons for providing these descriptions: “(1) that it might appear that his inventions were new, and of his own devising, and not stolen from any other; (2) that the endeavours and inventions of other men, being different from his own, might not be prevented by him; (3) that none other should hereafter presume to petition His Majesty of inventions identical with those described by him.”⁴²

In effect, Sturtevant, or those who assisted him, invented the description as an aid to upholding the validity of the patent should it be challenged later for taking away an existing trade.⁴³

Hulme⁴⁴ refers to a second patent issued in 1712 where the petitioner proposed to describe the invention in writing by filing a written description, to be enrolled in Chancery within a reasonable time after the patent was granted. Eventually this voluntary practice was made mandatory.

6.0 The Beginnings of the Industrial Revolution

From about 1630 until the Restoration in 1660, the Civil War and its prelude had convulsed Britain. Following the Restoration, society began to change. People were publishing new and, for the time, radical ideas. In 1695, the geologist John Woodward argued that fossils were the remains of ancient organisms and not mysterious designs placed in the rocks by God.⁴⁵ Alchemy

35 *Ibid* at 5.

36 Dent, *supra* note 28 at 10.

37 *Ibid* at 10, footnote 44, thus anticipating the Luddite movement by about 200 years.

38 Eighty.

39 Coke’s *Third Institutes (Monopolies)* at 184, reproduced in 1 Hayward’s Patent Cases 75.

40 Hulme, “The History of the Patent System,” *supra* note 10 at 150–52. This was not the end of the matter. Similar concerns with the functioning of the patent system arose in the reign of James I, leading to the passage of the *Statute of Monopolies* in 1623 (it received royal assent in May 1624). See Chris R Kyle, “‘But a New Button to an Old Coat’: The Enactment of the Statute of Monopolies, 21 James I cap.3” (1998) 19 Legal History 203. While the *Statute of Monopolies* had a number of effects, including the demise of the *non obstante* patents, it was effectively a statutory declaration of the common law. Neither the description portion of the specification, nor the claims that define the monopoly, owe anything to the provisions of section 6 of the *Statute of Monopolies*, because the requirement of novelty predated the Statute. However, the later development of the requirement of invention, or inventive ingenuity, arose from the efforts of judges to interpret what section 6 of the Statute meant by “new manufacture.” The following version of section 6 was obtained from Legislation.gov.uk, although there are small differences from other sources. In particular, “tres,” the abbreviation for “letters,” has been printed as “tres” in the Legislation.gov.uk version. “Provided alsoe That any Declaracion before mencioned shall not extend to any tres Patents [letters patent] and Graunt of Privilege for the tearme of fowerteene yeares or under, hereafter to be made of the sole working or makinge of any manner of new Manufactures within this Realme, to the true and first Inventor and Inventors of such Manufactures, which others at the tyme of makinge such tres Patents and Graunts shall not use, soe as alsoe they be not contrary to the Lawe nor mischievous to the State, by raisinge prices of Commodities at home, or hurt of Trade, or generallie inconvenient; the said fourteene yeares to be [accomplished] from the date of the first tres Patents or Grant of such priviledge hereafter to be made, but that the same shall be of such force as they should be if this Act had never byn made, and of none other.” <<http://www.legislation.gov.uk/aep/Ja1/21/3/section/VI>>.

41 *Supra* note 34 at 7 and 25–26.

42 Hulme, “On the Consideration of the Patent Grant,” *supra* note 22 at 315–16.

43 There is a suggestion in a footnote to the report of *Dudley’s Patent* (1622), 1 Hayward PC 47 at 50 that Sturtevant was required to provide his description as a condition of the grant.

44 Hulme, “On the Consideration of the Patent Grant,” *supra* note 22 at 316–17.

45 Jenny Uglow, *The Lunar Men—Five Friends Whose Curiosity Changed the World* (New York: Farrar, Straus & Giroux, 2003) at xv.

was evolving into chemistry, and the growing demands of industry fuelled the development of the metallurgical branch of chemistry. Richard Watson, the fifth professor of chemistry at Cambridge, studied and published on the smelting and processing of several metals, including methods of recovering by-products that would otherwise be waste. Science and religion intersected in ways that surprise us today; indeed, Professor Watson became the Regis Professor of Divinity at Cambridge in 1771.⁴⁶ Lectures and public demonstrations and experiments became a form of popular entertainment, and the study of natural philosophy a socially acceptable pastime.⁴⁷ From this ferment, we see the modern patent system begin to take shape.

7.0 The Description as a Means of Teaching the Invention

The usual stipulation that a patentee describe his invention did not become compulsory until about 1740.⁴⁸ From the beginning of the use of letters patent in England, both with letters of protection and the Elizabethan patents discussed above, instruction in the new art or trade was an essential if not the primary function of the patent grant. In the majority of cases with these early patents, the patentee was expected to fulfill this obligation by taking on and training apprentices. However, as with the case of the saltpetre patent of 1561, there were times when the patent grant required that the details of the process be reduced to writing.

By the 18th century, patents no longer contained a requirement that the patentee instruct apprentices.⁴⁹ The principle that one role of the specification is to instruct those of skill in the trade, in effect assigning to the specification the instructional role formerly performed by the requirement to instruct apprentices, first appeared in the 1778 case of *Liardet v Johnson*.⁵⁰ There, Lord Mansfield stated:

The general questions on patents are, 1st, whether the invention was known and in use before the patent; and, 2^d, whether the specification is sufficient to enable others to make it up. The meaning of the specification

is, that others may be taught to do the thing for which the patent is granted; and if the specification is false, the patent is void, for after the term the public ought to have the benefit of the discovery. Hence the law requires as the price the patentee should pay to the public for his monopoly, that he should, to the very best of his knowledge, give the fullest and most sufficient description of all the particulars on which the effect depends.⁵¹

Subsequent cases expanded on this principle, including the 1785 case of *R v Arkwright*,⁵² which was tried by a jury before Justice Buller. The patent was said to concern “certain instruments or machines, which would be of public utility in preparing silk, cotton, flax, and wool for spinning, and constructed on easy and simple principles, very different from any that had ever been contrived.” The patent described several components of the machine, including a beater or breaker of seeds (no. 1); an iron frame with teeth (no. 2); a piece of cloth with wool, flax, hemp, or any other such materials spread thereon (no. 3); a crank (no. 4); a cylinder (no. 5); rollers fixed to a wooden frame (no. 6); a cylinder box for twisting the contents of the wooden frame (no. 7); a machine for twisting the contents of no. 6 (no. 8); a spindle and flyer (no. 9); and a spindle, which was described as fixed to no. 6 (no. 10). Justice Buller charged the jury that if the specification were such that mechanical men of common understanding could comprehend it and make the machine by following the directions of the specification without any inventions or additions of their own, the specification was sufficient. There was evidence to show that it was not possible to build a working machine from the description alone. The evidence also showed that the specification included elements (nos. 8 and 9) that were of no use and that Mr. Arkwright had never included these elements in his actual device. The evidence also showed that some parts of the machine described in the specification were old. The jury returned a verdict that the patent was invalid.

In *Wood v Zimmer*,⁵³ the patent concerned a method of making verdigris, a blue-green pigment derived from copper. The

46 Mary Archer & Christopher Haley, *The 1702 Chair of Chemistry at Cambridge—Transformation and Change* (Cambridge, UK: Cambridge University Press, 2005) ch 3.

47 Uglow, *supra* note 45 at xvi.

48 E Wyndham Hulme, “On the History of Patent Law in the 17th and 18th Centuries” (1902) 18 LQ Rev 280 at 283 [Hulme, “On the History of Patent Law”].

49 Hulme, “The History of the Patent System,” *supra* note 10. See, for example, the patents numbered by Hulme as I, XII, and XIX.

50 *Liardet v Johnson* (1778), 1 Hayward’s Patent Cases 195 (KB). The reports of this case collected in Hayward’s Patent Cases are from 1 CPC 35, 1 WPC 52, and 62 ER 1000. See also the discussion of this case in Hulme, “On the Consideration of the Patent Grant,” *supra* note 22 at 317; and Hulme, “On the History of Patent Law,” *supra* note 48 at 283.

51 *Liardet v Johnson*, *supra* note 50 at 198. This may fairly be regarded as an early statement of the “bargain theory” of patents of invention.

52 *R v Arkwright* (1785), 1 Hayward’s Patent Cases 249. (Other reports of the various *Arkwright* cases may be found in 1 Hayward’s Patent Cases at 215–311.) The reports of this case collected in Hayward’s Patent Cases are from G 15, 1 WPC 64, 1 CPC 53, and 1 CPC 101. A similar case is *Turner v Winter* (1787), 1 Hayward’s Patent Cases 321. The reports of this case collected in Hayward’s Patent Cases are from G 470, 99 ER 1274, and 1 WPC 77.

53 *Wood v Zimmer* (1815), 1 Hayward’s Patent Cases 652. The reports of this case collected in Hayward’s Patent Cases are from G 502, 171 ER 161, and 1 CPC 290.

specification did not disclose a step that the patentee used in his own process. In charging the jury, Chief Justice Gibbs stated:

A man who applies for a patent, and possesses a mode of carrying on that invention in the most beneficial manner, must disclose the means of producing it in equal perfection, and with as little expense and labour as it costs the inventor himself. The price that he pays for his patent is, that he will enable the public, at the expiration of his privilege, to make it in the same way, and with the same advantages. If anything which gives an advantageous operation to the thing invented is concealed the patent is void. Now though the specification would enable a person to make verdigris substantially as good without *aqua fortis* as with it, still, insomuch as it would be made with more labour by the omission of *aqua fortis*, it is a prejudicial concealment and a breach of the terms which the patentee makes with the public.

8.0 The Requirement of Utility

As we have seen, the early letters of protection were concerned with bringing to England methods of manufacture already known in Europe. Although the requirement of utility was not stated explicitly, it was implicit in the Elizabethan grants, which either required the goods to meet a particular standard (for example, soap as fine as soap from the “Sope house of Triana or Syvile”) or that production of the goods begin by a certain date. If the patent covered subject matter that the patentee could not put into effect profitably, the government had no interest in maintaining a patent that might only interfere with others.

As noted above, the patent specification in *Arkwright* included some elements that would not work.⁵⁴ However, Justice Buller’s charge to the jury seems to suggest that the inclusion of elements that Mr. Arkwright did not use and that would not work related to the issue of the sufficiency of the specification and was not an independent

ground of invalidity. However, by at least 1815 judges were instructing juries that utility was an independent requirement for a valid patent.⁵⁵

9.0 The Patentability of Improvements and Additions

It appears that in Elizabeth I’s time, a valid patent could not be granted for an improvement or addition to an existing process or device. In his chapter on monopolies,⁵⁶ Coke referred to *Bircot’s Case*, decided in Exchequer. He stated:

[S]uch a privilege, as is consonant to law, must be substantially and essentially newly invented, but if the substance was *in esse* before, and a new addition thereunto, though that addition make the former more profitable, yet it is not a new manufacture in law: and so it was resolved in the Exchequer Chamber, Pasch. 15 Eliz. in Bircots case of a privilege concerning the preparing and melting, etc. of lead ore: for there it was said, that that was to put but a new button to an old coat: and it is much easier to adde then to invent. And there it was also resolved, that if the new manufacture be substantially invented⁵⁷ according to law, yet no old manufacture in use before can be prohibited.

Stanyforth’s Case, decided in 1741, held that a patent for a new form of plough was invalid on the authority of *Bircot’s Case*: the patent plough “was not substantially and absolutely a new invention but barely and only a small additional improvement on an old invention, such as was frequently made on many other utensils in husbandry.”⁵⁸ *Jessop’s Case* does not appear to have come up in *Stanyforth’s Case*, although it must have been decided no later than 1738.⁵⁹ In *Jessop’s Case*, the patent was found to be invalid on the basis that the specification described a watch, when it appeared that what Jessop had invented was a new movement in the watch. Implicit in this decision is the principle that if Jessop had confined his description to the movement itself, the improvement would have been patentable.

⁵⁴ See *supra* note 52 at 253.

⁵⁵ See *Bovil v Moore* (1815), 1 Hayward’s Patent Cases 613 at 615: “In point of law, it is necessary that the plaintiff should prove that this is a new and useful invention, in order to entitle himself to the present action.” The reports of this case collected in Hayward’s Patent Cases are from G 74, 47 ER 1048, 1 CPC 320, and 1 CPC 348. See also *Hill v Thompson and Forman* (1817), 1 Hayward’s Patent Cases 717 at 719: “In his direction to the jury, the judge has stated the law on the subject of patents—first, that the invention must be novel; secondly, that it must be useful; and, thirdly, that the specification must be intelligible.” The reports of this case collected in Hayward’s Patent Cases are from G 241, 36 ER 239, 171 ER 367, 129 ER 427, and 1 WPC 225..

⁵⁶ Coke’s *Third Institutes (Monopolies)* at 184, reproduced in 1 Hayward’s Patent Cases 75.

⁵⁷ Hulme points out in “On the History of Patent Law,” *supra* note 48 at 280–81, that the word “invent” has a somewhat more restricted meaning today than it did in the time of Elizabeth I and James I, when it included “to originate, to bring into use formally or by authority, to found, establish, institute or appoint.”

⁵⁸ Christine MacLeod, *Inventing the Industrial Revolution—The English Patent System, 1660–1800* (Cambridge, UK: Cambridge University Press, 1988) at 67. It appears that the records of the case can only be found in the Public Records Office.

⁵⁹ *Jessop’s Case* is referred to briefly in the reports of *R v Mussary* (1738), 1 Hayward’s Patent Cases 153 at 155 and *Boulton and Watt v Bull* (1795), 1 Hayward’s Patent Cases 378 at footnote (a) and 388. The patent apparently failed because the invention was for a particular movement in a watch, but the specification described the entire watch.

About 25 years after *Stanyforth's Case*, the issue of the patentability of an improvement or addition to a known manufacture was considered again, in *Morris v Bramson*.⁶⁰ The invention in that case consisted of an alteration to a previously known knitting machine so that the altered machine produced a different type of fabric. The matter was tried before a jury, and Lord Mansfield, in summing up the case to the jury, stated that he had received a letter from one of the jurors, which he had mentioned to the other judges. The letter was to the effect that if the objection to a patent on the grounds of the invention being only an addition to an old machine were to prevail, that objection would go to repeal almost every patent ever granted. The jury returned a verdict for the plaintiff with £500 damages. The defendant acquiesced in the verdict.

In *R v Else*,⁶¹ the specification described the invention as mixing a fine thread of silk with flax, hemp, or cotton thread for making lace. At trial, the party seeking to invalidate the patent proved that others had used a mixture of silk and cotton for making lace. Although the patentee attempted to show that his product was better than the prior product, Justice Buller held that "[t]he patent claims the exclusive liberty of making lace composed of silk and cotton thread mixed, *not of any particular mode of mixing it*, and therefore, as it has been proved that silk and cotton there were before mixed on the same frame for lace in some mode or other, the patent is clearly void" (emphasis added).

This, however, was not the end of the matter. One of the arguments made in objection to the patent granted to James Watt for the external condenser for use with a steam engine⁶² was that the specification described a steam engine and not just the external condenser.

The development of this invention is a reflection of the new age; indeed, it may well be the invention that made the Industrial Revolution possible. Watt was a member of the Lunar Society, an informal group in Birmingham who met to discuss science at one another's houses.⁶³ Among the members were Erasmus Darwin, grandfather of Charles; Matthew Boulton, who had followed his father into the metalworking trade; Joseph Priestly, who would

become known for his work with gases and the isolation of oxygen from mercury (II) oxide and from saltpetre; and the potter Josiah Wedgwood.⁶⁴

Together, Watt and Boulton had obtained an act of Parliament to extend the patent term from the original 14 years to 25 years. Boulton and Watt brought their original action for infringement of the extended patent in Common Pleas, which the chief justice tried in 1793. The jury returned a verdict for the plaintiffs that the invention was new and useful, it had been infringed by the defendants, and the specification was of itself sufficient to enable a mechanic acquainted with steam engines previously in use to construct a steam engine incorporating Watt's energy-saving external condenser. A case was reserved for the opinion of the court on several questions, including whether the patent claimed the whole steam engine or only the improvement of the external condenser, and whether an addition to a known device was patentable. For reasons not explained in the report, the questions were argued twice by different counsel for both plaintiffs and defendants. In his opinion, Justice Buller referred to *Morris v Bramson* and Coke's discussion of monopolies, including *Bircot's Case*. No mention was made of *Stanyforth's Case*. Two judges found the patent valid, and two found it void; as a result, the court could give no judgment.

The plaintiffs had previously obtained an injunction in Chancery, and following the outcome of the proceedings in Common Pleas the defendant moved to dissolve the injunction. The Lord Chancellor declined to do so or to impose terms on the plaintiffs. The defendants in the Common Pleas proceeding then brought a writ of error in King's Bench. In light of the divided opinions of the judges in Common Pleas, the Court of King's Bench awarded the parties a second argument of the case. As before, different counsel argued on the two occasions. A unanimous court found the patent to be valid.⁶⁵

10.0 The Evolution of Claims

The need for a patent applicant for an addition to or improvement of a known manufacture or process to distinguish between the invention and what was old was decided in *Jessop's*

- 60 *Morris v Bramson* (1776), 1 Hayward's Patent Cases 181. The reports of this case collected in Hayward's Patent Cases are from G 311, 1 CPC 30, and 1 WPC 50.
- 61 *R v Else* (1785), 1 Hayward's Patent Cases 313. The reports of this case collected in Hayward's Patent Cases are from G 190, 1 WPC 75 and 1 CPC 103.
- 62 The reports of *Boulton and Watt v Bull* and the subsequent proceedings in King's Bench by writ of error from the proceedings in Common Pleas as *Hornblower v Boulton and Watt* are reproduced in 1 Hayward's Patent Cases 369. The reports of this case collected in Hayward's Patent Cases are from G 70, 126 ER 651, 30 ER 937, G 263, and 101 ER 1285. For a description of the overlapping jurisdiction of the English courts at the time, and the competition among them for business, see AH Manchester, *Modern Legal History* (London, UK: Butterworths, 1980) ch 6.
- 63 The name came from the fact the meetings took place on the Monday closest to the full moon so that the members would have light to ride home.
- 64 Uglow, *supra* note 45. Uglow's detailed account of the development of the Watt invention into a transformative technology, including the process of obtaining an extension of the patent term by an act of Parliament, is fascinating—see 93–104 and 243–94 especially. See also Simon Winchester, *The Perfectionists—How Precision Engineering Created the Modern World* (New York: HarperCollins, 2018) at 45–51.
- 65 The cost and complexity of patent litigation continue to be an issue to the present day. In *Ungar v Sugg* (1892), 9 RPC 113 at 117 (CA), Lord Esher was moved to say, "Why, that a man had better have his patent infringed, or have anything happen to him in this world, short of losing all his family by influenza, than have a dispute about a patent. His patent is swallowed up, and he is ruined."

Case,⁶⁶ discussed above, and *MacFarlane v Price*.⁶⁷ The patent in *MacFarlane v Price* concerned an umbrella. Lord Ellenborough, the Chief Justice of the Court of King's Bench, stated:

The patentee in his specification ought to inform the person who consults it what is new and what is old. He should say my improvement consists in this, describing it by words if he can, or if not, by reference to figures. But here the improvement is neither described by words nor figures, and it would not be in the wit of man, unless he were previously acquainted with the construction of the instrument, to say what was new and what was old. The specification states that the improved construction was made in manner following: this is not true, since the description comprises that which is old, as well as that which is new. Then it is said that the patentee may put in aid the figures, but how can it be collected from the whole of these in what the improvement consists. A person ought to be warned by the specification against the use of the particular invention; but it would exceed the wit of man to discover from what he is warned in a case like this.

Although claims were not a statutory requirement or even customary,⁶⁸ it appears that as early as 1785 patents were being invalidated for purportedly claiming something more than or different from what had been invented, usually because the specification included old matter.

Another factor that contributed to some unevenness in the application of the developing legal principles was the use of juries to try patent cases. In *Morris v Bramson*,⁶⁹ a juror's question about the statement of the law led to reconsideration of the patentability of an addition or improvement to what was old. In other cases, the juries appear to have been unpersuaded by the law as explained by the judge in his charge to them.

The 1789 case of *Bramah v. Hardcastle*⁷⁰ involved a patent granted in 1778 for a water closet. The specification included the statement "I, the said Joseph Bramah, do hereby declare, that my said invention is composed and made in a manner following: that is to say; The merits of this my invention depend chiefly on two valves, so situated and constructed as totally to prevent the great inconvenience complained of in every sort of water-closet hitherto made use of." In his charge to the jury, Chief Justice Kenyon conceded that Bramah's patent disclosed something "very ingenious and perfectly new"⁷¹—namely, conducting the wire that actuated the valves through a hollow tube so as to prevent obstruction from frost. Earlier water closets ran the wire through the water-filled passage, where it could freeze in place. However, he instructed the jury that because the patent claimed the use of two valves to prevent offensive smells by causing the water to rush in and out at the same time, when a prior device used a valve and a plug for the same purpose, the patent was void. The jury ignored his instruction, and found the patent valid and infringed. It is tempting to wonder whether one or more of the jurors had direct personal experience with use of the prior art in winter.

On the one hand, a patentee who failed to mention a step or element necessary for the best working of the invention could lose his patent for non-disclosure. On the other, including in the description of the invention matter that was old could prove equally fatal to the patent. Over the course of years, inventors

66 *Supra* note 59.

67 *MacFarlane v Price* (1816), 1 Hayward's Patent Cases 687 (KB). The reports of this case collected in Hayward's Patent Cases are from G 294, 171 ER 446, and 1 CPC 309. The full specification is reproduced in the reports.

68 It is difficult to pinpoint a date when patentees began to include a statement that sought to define the scope of the monopoly that they claimed. In *R v Else*, *supra* note 61 at 314, the report states, "The specification stated the invention to be 'mingling a fine thread of silk or other such material with thread, flax, hemp, cotton which has usually been worked in a stocking-frame, which addition gives strength, firmness and durability to the work. The manner of working the same is such as is common in making open work.' There was no separate claim." In *Bovil v Moore* (1815), 1 Hayward's Patent Cases 613 at 614–15, the report summarizes the specification as follows: "The specification stated:—'My invention consists, as represented by the drawings hereto annexed, and is hereinafter described.' Then followed a description of the entire machine. There was no separate claim." This makes sense if the principle that a failure to properly describe the improvement to a machine instead of the whole machine had been laid down prior to 1738 in *Jessop's Case* (*supra* note 59). Both reports with the statement that the specification had no separate claim originally came from Davies' Patent Cases, which were published from 1785 until 1816, and are contemporaneous with the cases being reported.

69 *Supra* note 60.

70 *Bramah v Hardcastle* (1789), 1 Hayward's Patent Cases 339. The report of this case in Hayward's Patent Cases is from 1 CPC 168.

71 *Ibid.* Lord Kenyon stated at 343, "I doubt that: if a thing so near was done, I think it would be an infringement. In my opinion, the stress of the cause mainly depends upon this, whether the thing granted by the patent be entirely new. The conducting of the wire through the hollow tube, to prevent obstruction from frost, I admit, is very ingenious and perfectly new, but is not claimed by the patent. Unlearned men look at specification and suppose everything new that is there. If the whole be not new, it is hanging terrors over them. The plaintiff goes to the King, saying, Here are offensive smells: these are prevented by two valves, causing the water to rush in and out at the same time. That is not new: in the former machine there was one valve and a plug. The question for your consideration is, whether in principle that is the same, whether the effect obtained of stopping the apertures is by the same means? Whether those means differ in shape or not, I think is not material." Lord Kenyon concluded by telling the jury that the patent was void, the invention not being new, and that they should find a verdict for the defendant. The jury, however, found a verdict for the plaintiff.

and their advisers experimented with a variety of ways to avoid these twin problems, and from these experiments a statement resembling a claim evolved.

One approach was to state matter that the patentee did not claim. The specification of *Tennant's Patent*⁷² for a new method of employing calcareous earth, for example, explicitly stated, "I disclaim any right to the discovery of the simple chemical solution of lime in water, commonly called lime water" (emphasis added).

In 1807, Alexander John Forsyth obtained a patent for a method of discharging artillery, which was litigated in *Forsyth v Riviere*.⁷³ The specification explicitly stated, "I do not lay claim to the invention of any of the said compounds or matters to be used for priming; my invention in regard thereto being confined to the use and application thereof to the purposes of artillery and firearms as aforesaid" (emphasis added).

*R v Cutler*⁷⁴ concerned a patent, granted in 1815, for a new mode of feeding the fire in a grate by a supply of fuel from below, instead of from above, in the usual way. The patent was vacated since the patentee in his specification failed to confine himself to this invention because "there is nothing predicated in the specification of raising the fuel from a chamber below into the grate."

In *Hall v Boot*,⁷⁵ the patent specification (granted in 1817) concludes with the claim-like statement, "But I do not claim the exclusive use of any apparatus, or combination of machinery, except in connexion with, and in aid of, the application of inflammable gas to the purposes above described in this specification."

Others tried to specify the subject matter of the invention in a positive way. James Hadden obtained a patent for the processing of wool in 1818. It included the following statement in the specification: "The application of heat to

wool, for the better preparing, roving, and spinning, all or either the same, being to the best of my knowledge and belief entirely new, and never before practiced in these kingdoms, I am desirous to maintain this my exclusive right and privilege."⁷⁶

The specification of a later patent granted on November 1, 1820 to Thomas Crompton ended with the following statement: "Although I have specified with reference to the accompanying drawing, yet I consider any method of conveying paper over heated rollers or plates, for the purpose of drying paper, by means of a conductor or conductors, to be an infringement of my patent."⁷⁷ This form of statement more closely resembles a modern claim.

By 1836, the United States added an explicit requirement to its patent legislation that the inventor in the specification "particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery."⁷⁸ Canada's first post-Confederation patent legislation, which harmonized and replaced the pre-existing legislation of the various provinces, contained the following requirement: "The specification shall correctly and fully describe the mode or modes of operating contemplated by the applicant,—and shall state clearly and distinctly the contrivances and things which he claims as new, and for the use of which he claims an exclusive property and privilege."⁷⁹ In 1884, the United Kingdom added the following provision to its legislation: "A specification, whether provisional or complete, must commence with the title, and in the case of a complete specification must end with a distinct statement of the invention claimed."⁸⁰

11.0 The Requirement of Inventive Ingenuity

In the Elizabethan period, when the policy of monopoly patents was to encourage the copying of foreign technology, the question of invention as we understand the word today was irrelevant. At that time, "invent" had a much broader meaning than it does today; it included "to originate, to

72 *Tennant's Case* (1802), 1 Hayward's Patent Cases 443. The report of this case in Hayward's Patent Cases is from 1 CPC 177.

73 *Forsyth v Riviere* (1819), 1 Hayward's Patent Cases 783. The reports of this case collected in Hayward's Patent Cases are from G 197, 1 CPC 401, and 1 WPC 95.

74 *R v Cutler* (1816), 1 Hayward's Patent Cases 695. The reports of this case collected in Hayward's Patent Cases are from G 152, 171 ER 495, and 1 CPC 351.

75 *Hall v Boot* (1822), 1 Hayward's Patent Cases 835. The reports of this case collected in Hayward's Patent Cases are from G 217, 1 CPC 423, and 1 WPC 97.

76 *R v Hadden* (1826), 1 Hayward's Patent Cases 903 at 906 (KB). The reports of this case collected in Hayward's Patent Cases are from 172 ER 84 and 1 CPC 447. A footnote to the report of *Hadden* (at 906) states that the case was tried on the same day as *R v Lister*. The footnote also states that *Lister* had filed a specification for the same invention. Both sued, and both succeeded in invalidating the other's patent on the basis that the invention had already been in use in 1815 at Kidderminster.

77 *Crompton v Ibbotson* (1828), 1 Hayward's Patent Cases 935 at 938 (KB). The reports of this case collected in Hayward's Patent Cases are from G 135 and 1 CPC 458.

78 *An Act to promote the progress of useful arts, and to repeal all acts and parts of acts heretofore made for that purpose*, 24th Cong, Sess 1, 5 Stat 117 § 6.

79 *Patent Act, 1869*, *supra* note 2. The *Patent Act, 1869* generally followed the 1836 US legislation: *Consolboard Inc v MacMillan Bloedel (Sask) Ltd*, [1981] 1 SCR 504 at 518 [Consolboard].

80 *An Act to amend and consolidate the Law relating to Patents for Inventions, Registrations of Designs and of Trade Marks* (UK), 46 & 47 Vict, c 57, s 5(5), which came into effect 1 January 1884.

bring into use formally or by authority, to found, establish, institute or appoint.”⁸¹

As more cases of patents for improvements came before the courts, the courts had to grapple with the question of whether the improvement amounted to a “new manufacture” within the meaning of section 6 of the *Statute of Monopolies*. In effect, the question of putting “a new button to an old coat,” mentioned in *Bircot’s Case*, reappeared in a new guise. While a claim served to separate what the patentee claimed to be new from what was old,⁸² some means had to be found to determine the degree of novelty that was required to justify the grant of a patent monopoly. The requirement of inventive ingenuity evolved to answer that question.

The question in *Brunton v Hawkes*⁸³ concerned the novelty of the ship’s anchor in the patent. The analysis in the reasons of Justice Bayley concentrated on whether there was sufficient novelty in the construction of the new anchor to justify the patent:

[I]n substance the patent is, for making in one entire piece, that which formerly was made in two. The two flukes of the anchor used to consist of distinct pieces of iron, fastened to the shank by welding. In the present form, the flukes are in one piece, and instead of welding them to the shank, a hole is made in the centre, and the shank introduced through the hole. Could there be a patent for making, in one entire piece, what before had been made in two pieces? I think not; but if it could, I think that still this would not be new. In the mushroom and the adze-anchors, the shank is introduced into the anchor by a hole in the centre of the solid piece; and in reality, the adze-anchor is an anchor with one fluke, and the double fluke-anchor is an anchor with two flukes. After having had a one-fluked anchor, could you have a patent for a double-fluked anchor? I doubt it very much. After the analogies alluded to in argument, of the hammer and pick-axe, I do not think that the mere introducing the shank of the anchor, which I may call the handle, in so similar a mode, is an invention for which a patent can be sustained. It is said in this case, that the mushroom-anchor, and adze-anchor, are

not ships’ anchors, but mooring-anchors. I think they are ships’ anchors; ... the analogy between the case of the mushroom-anchor, and of the adze-anchor, is so close to that of the present anchor, that it does not appear to me that this discovery can be considered so far new as to be the proper ground of a patent. In reality, it is nothing more than making in one piece, what before was made in two, and introducing into this kind of anchor, the shank in the way a handle is introduced into a hammer or pick-axe. I think, therefore, that this not being a new discovery, the patent is wholly void.⁸⁴

Although the argument was framed as a question of sufficient novelty, today it would more likely be framed as a question of sufficient inventive ingenuity.

The question of inventive ingenuity also came up in *Cornish v Keene*.⁸⁵ The case concerned a fabric made by combining threads of India rubber with flax or cotton. The evidence showed that the use of elastic threads wound with filaments of cotton was old, as was the use of threads of cotton or other non-elastic material. What the patent described, however, was a method of alternating threads of cotton or flax in a warp with the threads or bands of India rubber under tension, and then combining them with a weft, so that the threads of cotton or flax in the warp served as a stop or maximum point to which the fabric could be stretched, so that the India rubber threads could not be easily broken. The defendant pleaded that the invention was not the subject matter of a patent because it was merely the application of a known material in a known manner to a known purpose. Chief Justice Tindall of the Court of Common Pleas ruled that the production was altogether new, and a manufacture at once ingenious and simple combining the two qualities of elasticity with a limit thereto. The patent was found to be valid.

Because the argument in these cases was based on whether the improvement was sufficient to qualify as a “new manufacture” within the meaning of section 6 of the *Statute of Monopolies*, for many years what we now refer to as the defence of obviousness or lack of inventive ingenuity was labelled as “want of subject matter.”⁸⁶ The development of the requirement of inventive ingenuity was not a direct and simple process. In some cases, the analysis was framed in terms of novelty, but in reality the cases were decided on the basis that the differences between the

81 See *supra* note 57..

82 *MacFarlane v Price* (1816), 1 *Hayward’s Patent Cases* 687 (KB).

83 *Brunton v Hawkes* (1820–1821), 1 *Hayward’s Patent Cases* 803. The reports of this case collected in *Hayward’s Patent Cases* are from G 97, 1 CPC 405, and 106 ER 1034.

84 *Ibid* at 817.

85 *Cornish v Keene* (1835), 2 *Hayward’s Patent Cases* 481 at 485. The reports of this case collected in *Hayward’s Patent Cases* are from G 127, 1 WPC 497, 2 CPC 314, 132 ER 530, 1 Jur 235, and 1 LonJ 336.

86 The requirement of inventive ingenuity is dealt with in the chapter on “subject matter” in Harold Fisher, Russell S Smart & William Joseph Lynch, *Canadian Patent Law and Practice* (Toronto: Canada Law Book, 1914).

device in the patent and the prior art were sufficient to justify a patent.⁸⁷ Other cases, such as the 1892 decision of *Gadd v Mayor of Manchester*,⁸⁸ clarified the distinction between novelty and the requirement of invention.

The invention in *Gadd* concerned a “gasometer,” which involved an inverted glass bell in a well of fluid. As gas was introduced into the well, the inverted bell would rise, and the higher it rose, the more unstable it became. The problem was to devise a simple mechanism for keeping the bell vertical as it rose and fell. The mechanism devised by *Gadd* for his gasometer was in principle identical to a known mechanism for a floating dock. The applicable legislation at the time was the *Patent Act of 1883*,⁸⁹ but its definition of “invention” referred back to section 6 of the *Statute of Monopolies* and the term “new manufacture.” Lord Justice Lindley stated the following propositions of law:

1. A patent for the mere new use of a known contrivance, without any additional ingenuity in overcoming fresh difficulties, is bad, and cannot be supported. If the new use involves no ingenuity, but is in manner and purpose analogous to the old use, although not quite the same, there is no invention; there is no manner of new manufacture within the meaning of the *Statute of James*.
2. On the other hand, a patent for a new use of a known contrivance is good and can be supported if the new use involves practical difficulties that the patentee has been the first to see and overcome through some ingenuity of his own. An improved thing produced by a new and ingenious application of a known contrivance to an old thing is a manner of new manufacture within the meaning of the *Statute of James*.

By about 1900, it was clear that whether an invention in a patent was a “new manufacture” in light of similar, but not identical, prior art depended on the court finding that some element of inventive ingenuity was necessary to make the changes from what was known in the prior art.

12.0 Conclusion

As early as the 14th century, English monarchs recognized that England lagged behind European countries in technologies such as weaving and clothmaking. The first solution involved granting the King’s protection by letters patent or by statute to foreign tradespeople who would come to England and teach their trade to apprentices. Another approach was to exempt foreign traders from import duties if they brought books with them containing useful knowledge. In the late Tudor period,⁹⁰ the approach shifted to the granting of monopolies to those who brought a new trade to England, as was done by the mayor and merchants of Norwich, who brought in Italian clothmakers to teach new methods of making cloth.

When Elizabeth I recognized that England’s supply of saltpetre, which was essential to making gunpowder, was under Spain’s control, she offered a reward to a German captain to disclose a process for making it. However, because the reward was to be paid to a foreigner, the payment was made contingent on having the captain reduce his process to writing. This requirement was not generally imposed with other patents of the day, but in the circumstances it was a prudent requirement.

Since a patent could not validly be granted that would interfere with an existing trade, inventors took to providing a written description of their devices or processes in order to be able to demonstrate that their patent did not affect existing practices. As time went on, the provision of a written description became more frequent, and eventually was made a requirement.

As we have seen, during the Elizabethan period (1558–1603) and Stuart period (1603–1714), letters patent were used for other purposes, such as the regulation of trade. Some of these patents were found to offend the rule against interference with an existing trade, and eventually led in 1623 to the enactment of the *Statute of Monopolies*, which essentially codified the common law that had developed.

On the authority of the Elizabethan decision in *Bircot’s Case*, a patent could not be granted for a mere improvement. There the law stood for some 200 years, until a jury member saw fit to question this principle in *Morris v Bramson*.⁹¹

⁸⁷ Some discussion of several of the cases decided in this period, and the fact that what was often described as an issue of novelty was what we would today would call an issue of invention, can be found in Lewis Edmunds, *The Law and Practice of Letters Patent for Inventions* (London, UK: Stevens and Sons, 1897) at 81–84.

⁸⁸ *Gadd v Mayor of Manchester* (1892), 9 RPC 516 at 524 (CA).

⁸⁹ 46 & 47 Vict, c 57.

⁹⁰ The Tudor period spans the years 1485–1603 and includes the reign of Elizabeth I.

⁹¹ *Supra* note 60.

The change in the law that made an improvement to an existing invention patentable soon led to two additional developments in the law. The first arose from the decision of Lord Ellenborough in *MacFarlane v Price*,⁹² who held, “The patentee in his specification ought to inform the person who consults it what is new and what is old. He should say my improvement consists in this, describing it by words if he can, or if not, by reference to figures.” This requirement led inventors to insert a statement in their specifications that sought, in a variety of ways, to distinguish their invention from what was old. These statements soon evolved into a form of claim.

The second requirement arose from the need to determine whether the improvement was a “new manufacture” within the meaning of section 6 of the *Statute of Monopolies*.⁹³ This second requirement eventually evolved into the requirement of inventive ingenuity.⁹⁴

By the early 20th century, the framework of a modern patent of invention was more or less complete. It had been built up over a period of some 500 years in response to particular circumstances that arose from time to time. Generally, the legislation followed the common law and common practice, and did not seek to shape the patent system. This may not be apparent to the modern practitioner accustomed to hearing or reading the now familiar refrain that patent law is *wholly* statutory.⁹⁵ It is interesting to speculate what the patent system might look like if the jury member in *Morris v Bramson* had not sent his letter to Lord Mansfield.

Since the beginning of the 20th century, the patent system has continued to evolve; however, these changes have not fundamentally changed the basic structure of the patent system. Some of these refinements have been driven by new technology (for example, whether new life forms are patentable, and software patents). Other refinements attempt to provide a clearer test for inventive ingenuity or for the construction of a patent. This evolution is fully discussed in at least two current textbooks.⁹⁶

The 20th century was also a period when the law of patents became more uniform around the world, and major changes to the *Patent Act* resulted from treaties such as the *Patent Cooperation Treaty*, the *Patent Law Treaty*,⁹⁷ and the *North American Free Trade Agreement*. More changes will come into effect when the *Canada–United States–Mexico Agreement Implementation Act*⁹⁸ comes into force.

While the history of the development of the modern patent of invention is interesting on its own merits, knowledge of it has value for practitioners today. In *Consolboard*,⁹⁹ the Supreme Court of Canada had to address an argument by the defendant that the patent failed because the specification failed to adequately distinguish between what was old and what was new. The Supreme Court referred to a UK decision, *British United Shoe*,¹⁰⁰ to the effect that “distinguishing old from new” does not require an explicit statement of how the invention is different or novel. The true test is simply that “a man must distinguish what is old from what is new by his Claim, but he has not got to distinguish what is old and what is new in his Claim.”¹⁰¹

When one reads the decision of the Court of Appeal in *British United Shoe*, particularly the reasons of Lord Justice Fletcher-Moulton, it is immediately apparent that the basis of the defendant’s objection in *British United Shoe* can be traced back to Lord Ellenborough’s reasons in *MacFarlane v Price*,¹⁰² a case that predated the requirement of claims and was decided some 92 years before *British United Shoe* and some 165 years before the argument was raised again in *Consolboard*. In his reasons, Lord Justice Fletcher-Moulton discussed the evolution of claims, and why the objection, diligently passed on through precedents from one generation of counsel to the next, was no longer sound by 1908. Only by being aware of how the current patent system came to be can we avoid being haunted by obsolete statements of principle from the past.

92 *Supra* note 67 at 688.

93 Reproduced in note 40 *supra*.

94 As discussed earlier, the requirement began as an inquiry into whether the described invention was sufficiently new to qualify as a “new Manufacture” within the *Statute of Monopolies*. Initially, this requirement was described as “want of subject matter,” a label we use today for a very different concept—namely, whether the claimed invention satisfies the definition of an invention in section 2 of the *Patent Act*. Eventually, the requirement of inventive ingenuity became the means to determine whether the claimed invention was sufficiently different from the prior art to merit the grant of a patent.

95 Asserted by the plaintiff in *AstraZeneca Canada Inc v Apotex Inc*, 2017 SCC 36.

96 Donald H MacOdum, *Fox on the Canadian Law of Patents*, 5th ed (Toronto: Carswell, 2020) (a loose-leaf service updated about five times annually); Stephen J Perry & T Andrew Currier, *Canadian Patent Law*, 3rd ed (Toronto: LexisNexis Canada, 2018).

97 The *Patent Law Treaty* came into force in Canada on 30 October 2019.

98 MSC 2020, c C-4.

99 *Supra* note 79.

100 *British United Shoe Machinery Company Ltd v A Fussell & Sons Ltd* (1908), 45 RPC 631 (CA).

101 *Ibid* at 651, quoted by the Supreme Court in *Consolboard*, *supra* note 79 at 532.

102 *Supra* note 67