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The Patent Specification *The Role of *Liardet v Johnson**

JOHN N. ADAMS* and GWEN AVERLEY**

Introduction

Little work has been done on the history of patent law in the eighteenth century since the pioneering articles of Wyndham Hulme and Seaborne Davies, the most recent of which is now over fifty years old.¹ Holdsworth relied heavily on this work.² Hulme took the view that Mansfield's decision in *Liardet v Johnson* (1778)^{2a} was crucial to the development of the modern law. He believed that the law took a wrong turning at that point. Under the old practice the test of novelty was whether or not the invention had already been used and worked in the realm. Under the 'new' practice, the test was whether a prior disclosure in any form had been made. The result was first of all to attach undue importance to the patent specification, and secondly to debar the inventor from incorporating in his claims unused public knowledge. He considered that the valuable consideration which the inventor brings in return for the patent monopoly is the expenditure of personal effort and capital, and that this obligation should never have been allowed to disappear from the law.³ It is worth quoting Hulme's views on the significance of *Liardet v Johnson* at length, for in the course of this paper it will be argued that they are largely wrong. He suggested that:⁴

In 1778 Lord Mansfield in *Liardet v Johnson* – a trial which may be regarded as a landmark in the history of English patent law – invested the patent specification with a character and function totally distinct from that with which it had originally been introduced . . . From [Bramah's letter] we gather that the doctrine of the instruction of the public by means of the personal efforts and supervision of the grantee was definitely and finally laid aside in favour of the novel theory that this function belongs to the patent specification – an instrument introduced by the irony of fate to make the grant more certain! At the same time, the novelty of the invention was subjected to a new and more searching test. Hitherto the novelty of no grant appears to have been successfully challenged

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except upon the ground of prior user within the Realm, but in this trial the practice of what is known as 'mosaic anticipation', was admitted in impeachment of the inventor's privilege. So complete a *volte face* could hardly have been effected if the history of the law had possessed some sort of continuity. This however does not appear to have been the case.

He goes on to note that for over a century the reports are destitute of any decision of importance in this branch of jurisprudence.⁵ At the end of the eighteenth century, therefore, the Common Law judges were left to pick up the threads of the principles of law without the aid of recent and reliable precedents.

A re-examination of this topic is timely because the question as to whether or not the patent system could be improved or supplemented is very much alive. The Green Paper on Intellectual Property Rights and Innovation⁶ is unfortunately somewhat superficial in its analysis. A more interesting proposal has been made by Mr William Kingston of Trinity College, Dublin, which would involve the re-introduction of something like the old system under which limited monopolies would be granted in return for the introduction of new industries.⁷

There are other reasons too for taking a fresh look at this topic. Since Hulme and Davies' time much work has been done on eighteenth-century patents by historians of science, and by economic historians,⁸ but, interesting as these are, they have tended to neglect the legal aspects. Professor Robinson's work on the Boulton and Watt Papers has also revealed some exceptionally interesting material.⁹ The Mansfield Court Notebooks have been found and these contain the notes of one of the two *Liardet v Johnson* hearings as well as other cases. Moreover a great deal of work has been done on the background to *Liardet v Johnson* by Frank Kelsall.¹⁰ Finally, it has become much easier to gain access to law-related materials such as printed pamphlets, through the Bibliography of Eighteenth Century Legal Literature,¹¹ and, in the case of the British Library holdings, through the Eighteenth Century Short Title Catalogue as well, which is available through BLAISE.¹² All of these sources have been used in writing this paper.

The traditional account

Holdsworth writes:

Perhaps the greatest change in patent law, which [the transfer from the Council] to the courts made,¹³ was the view taken by the courts as to the consideration for the grant of the patent. Under the old practice the consideration for the grant was the introduction into,

and working of, a manufacture which was new to Great Britain. Under the new practice the consideration is the written disclosure of the invention contained in the specification.¹⁴

He goes on to point out that the reason why the courts were able to introduce this new principle into the law was a change in the kinds of invention for which patents were sought. He goes on to cite Hulme:¹⁵

So long as the monopoly system aimed at the introduction of new industries such as copper, lead, gold and silver mining, or the manufacture of glass, paper, alum etc. etc., the requisition of a full description would have required a treatise rather than a specification . . . But when, by natural development, the system began to be utilised by inventors working more or less on the same lines for the same objects, the latter for their own protection draughted their applications with a view of distinguishing their processes from those of their immediate predecessors, and of ensuring priority against all subsequent applicants. Hence, while the recitals of the sixteenth century deal almost exclusively with suggestions of the advantages which would accrue to the State from the possession of certain industries, or with statements respecting steps taken by the applicants to qualify themselves for the monopoly, those of a later date not infrequently deal with the technical nature of the proposed improvement. These recitals, therefore, while forming no part of the consideration of the grant, are undoubtedly the precursors of the modern patent specification . . . About the year 1730 the form of the proviso voiding the grant in the case of the non-filing a specification was substituted. Still the practice of requiring a specification cannot be said to have been recognized as essential to the validity of the grant prior to the middle of the eighteenth century.

Now the question of the origin of the practice of enrolling specifications is of some importance. If enrolment were *required* from the outset, it would suggest that the function of the specification had always been the dissemination to the public of information about the invention,¹⁶ in which case *Liardet v Johnson* looks much less revolutionary. Hulme had another explanation of the origins of the practice, however. He suggested that the enrolment of specifications was done in the first place at the suggestion of the grantees, to make the grant more certain. This suggestion was largely based on certain words in Nasmyth's Patent 1711, which is the first patent to involve enrolment of a specification,¹⁷ in particular the words that the grantee had 'proposed to ascertain the same

in writing'. He also relied on an apparent anticipation of enrolment in Sturtevant's Patent of a hundred years before. However Davies demonstrates that Hulme may have over-estimated the importance of this particular instance.¹⁸ Seaborne Davies however adduced two further arguments to support Hulme's view: (1) if the Crown had insisted on enrolment, it is strange that for the next twenty years¹⁹ or so, enrolments are intermittent, and it is not until 1723 that it is definitely stated that a patent will be voided for non-enrolment within the time specified;²⁰ (2) a letter in State Papers Domestic dated 20 May 1710 addressed to Boyle, the Secretary of State, from one 'T.T.' discloses the dangers of piracy to which inventors were exposed,²¹ suggesting that inventors at the time were exercised to find a solution to this problem. We will argue that alternative explanations are available both for the fact that enrolments were at first sporadic, and for the fact that the system of enrolment was introduced in 1711. The best support for Hulme's argument is the wording of Nasmyth's Patent. As Seaborne Davies pointed out, however, it is dangerous practice to rely too much on the exact language of historical documents. Even in the limited field of patent law, examples can be found of suggestions emanating from the Crown being embodied in patents in language which suggests they were made by the patentees, and *vice versa*.²²

No direct evidence appears to exist about the origin of the practice, and we must therefore make what we can of the circumstantial evidence. In this respect both Hulme and Davies seem surprisingly to have overlooked two obvious facts. In the first place, there is a time stipulated in the proviso for the filing of the specification and the time stipulated differs from patent to patent throughout the century.²³ Secondly, the filing of drawings and plans of mechanical inventions becomes increasingly common from about 1741.

The fact that the time stipulated for filing is sometimes one month, sometimes two, sometimes three, sometimes four and sometimes six months is difficult to explain if the filing of the specification was suggested by the patentees.²⁴ Surely a uniform time would have been fixed? More importantly, why in fact stipulate a time at all? It looks more likely that a bargain was struck between the Crown and the applicant on a case by case basis.²⁵ Why then were specifications not filed in all cases between 1711 and 1734? A clue may possibly be gathered from the early practice of the American patent system. The Patent Act of 1790 provided for an examination of novelty by a Board of Examiners. It was soon discovered however that the Board of Examiners could not cope with the workload. The 1790 Act therefore dropped the examination as to novelty, and provided that a specification had to be filed only where required. Otherwise, registration involved simply a clerical act.²⁶ Now the English

patent system throughout the eighteenth century similarly involved purely clerical acts. The procedure for the grant described by Collier in his *Essay on the Law of Patents* of 1803 is the same as at the beginning of the eighteenth century, with of course the requirement of enrolment of specification by then being invariable. A petition accompanied by an oath taken before a Master in Chancery declaring the invention to be new was formally made to the Crown. It was dealt with by the Secretary of State who in turn passed it to the Attorney-General or Solicitor General for a report. The particular Law Officer then reported to the Crown as to whether it should be granted. Assuming the reports were favourable, the patent would be issued and the specification would then have to be enrolled within the time specified. The report of the Law Officers was a matter of course.²⁷ At no point did the system offer any real opportunity for examination as to novelty, nor in due course as to adequacy of the specification. These matters would only be tested if the validity of the patent were challenged. The fact that the Law Officers probably administered the system in the most cursory way, is suggested by a case as late as 1774 where the Lord Chancellor refused to append the Great Seal to a patent, presumably on the ground that the claim was so obviously fraudulent.²⁸ Indeed the very fact that the specifications were required to be enrolled in Chancery, rather than form a part of the petitioning procedure, suggests that the Law Officers did not wish to be encumbered with additional administrative work. We must remember that they were busy men, who throughout the century had to handle their work through their chambers. No doubt enrolment could be helpful to inventors themselves in assisting them in asserting their patent rights against infringers and the idea of some form of enrolment may have gained currency among them.²⁹ Equally however it seems probable that it was the Law Officers themselves who, having become dissatisfied with the dissemination of information about inventions, hit upon the idea of requiring enrolment where they thought fit, and when they thought fit, which in the early days was no doubt when, occasionally, they actually put their minds to it.³⁰ It is also to be noted that, throughout the century, specifications were enrolled which could in no way have enabled those skilled in the art to carry out the invention, and which would have been valueless in an infringement action, suggesting therefore that enrolment was always a requirement imposed upon persons often reluctant to disclose their inventions.³¹

It seems likely moreover that from the outset failure to enrol, or failure to enrol an adequate specification, would have been liable to render the patent void *if challenged*. If we are correct in assuming that enrolment was from the outset a requirement, it is unlikely that anyone would be required to enrol a specification which did not necessarily have to convey any

useful information at all. Why indeed, as we have just observed, are so many specifications vague and evasive if patentees were trying to make their grants more certain?³² Why bother to enrol such specifications? The fact that it is not specifically declared that the patent is void for failure to file until 1723³³ is not necessarily particularly significant.

Why then did enrolment first become a requirement in 1711? We have noted the evidence adduced by Seaborne Davies that inventors themselves were concerned about piracy. However a possibly more significant development which supports our argument has been suggested to us by Dr Jeremy Phillips: from 1709 a proprietary monopoly in books was granted, actionable when copies were deposited, the value of the 'monopoly' depending on the text of the book.³⁴ It seems quite likely that this system was transferred to patents, and indeed the tendency to confuse the two types of monopoly continued for most of the century. For example, 'The Patent' (a poem) begins with the lines

Hail to the Patent! Which enables Man
To vend a *folio* [emphasis added] or a warming pan.³⁵

The second point we believe to be significant is the tendency to file plans and drawings after about 1741. This is no doubt connected with the increasingly technical nature of inventions, which were difficult to explain in words, but it is consistent with the view that the doctrine that the function of the specification was to instruct the public long preceded *Liardet v Johnson*. The older doctrine of instruction by means of personal efforts and supervision must simply have fallen into disuse: it was certainly not expressly abolished either in *Liardet v Johnson* or in any other known case. The filing of plans must also have become increasingly necessary because many inventions were improvements to existing manufactures, rather than entirely new manufactures. Coke had held in *Bircot's Case*³⁶ that an addition to an existing manufacture was not patentable, but in the quite different industrial climate of England in the eighteenth century this view was clearly untenable, and actual practice seems to have significantly anticipated an actual decision to this effect.³⁷ Apart from anything else, adherence to Coke's view would have begged the awkward question as to when an improvement transformed a machine into another machine. In general, from quite early on, specifications for well-known but complicated machines spell out the novel features and make these the specific subject of the patent. This is well illustrated by the harpsichord and piano patents.³⁸ It is not always the case, however; in this respect too specifications are sometimes vague and evasive and, as we have pointed out already, this was inevitable in the absence of an examination system.³⁹ Moreover, as we will see later, there is clear evidence that even before *Liardet v Johnson* inventors had to confront the

agonising choice between exact specification, with the risk of 'inventions' being distinguished by minor variations, and over-general specifications with the risk of invalidity.

Finally, if *Liardet v Johnson* were of central importance, we would expect it to be well recorded, and much used in the literature on patents which appeared from early in the nineteenth century. As we shall see, it is not. After a short popular notoriety, because of the parties involved in the litigation, it virtually passed out of public consciousness. Let us now consider the case.

The Patent

On 3 April 1773⁴⁰ John Liardet was granted a patent for a composition or cement upon what was by this time the usual proviso that he should enrol a specification, in this case within four months.⁴¹ According to his naturalisation Bill⁴² John Liardet was born in Lausanne, in the Canton of Berne, Switzerland. He was the son of George and Margaret Liardet. He was a Protestant and apparently a clergyman. For many years before 1773 he had 'employed his time and thoughts in philosophical and mercantile researches for the improvement and embellishment of arts, and your orator attentively pursued a course of speculation and experiments for that purpose, with a prospect and view of deriving some profit and emolument from such his discoveries'.⁴³ These researches produced his patented stucco, which formed the bone of contention in *Liardet v Johnson*. This invention had 'been taken up by the Duke of Northumberland who put Liardet in touch with the Adam family. The Duke recommended a partnership, Liardet being 'a very studious abstracted man and wholly inexperienced in transactions of that nature'. In April 1774 Samuel Smith, an attorney of Marylebone, drew up an agreement. Liardet, it appears, could not understand English, and Lady Straghan, a friend of Liardet's wife, approved the draft. The partnership was dated 20 May 1774, and in consideration of £100 paid on that date, and £400 to be paid later, Liardet assigned the patent to the Adams.

The patent was reassigned to Liardet on 10 February 1776 so that Liardet could apply for an Act of Parliament extending the term. An Act extending the term to 18 years was duly passed. The Act required Liardet to enrol a specification within four months, giving details of improvements to his original specification.⁴⁴ The enrolment was made on 4 September 1776. This Act fixed the prices which could be charged to the public at 6d per square foot on the surface of all plain buildings, and 2d per foot running measure for arrises. No reassignment of the patent to the Adams took place, but the Adams continued making and using the composition (presumably by the implied licence of Liardet).

John Johnson who, at the time of the trial, was living in Berners Street, came originally from Leicester. He was at the beginning of a successful career, in the course of which he built up a successful practice in London and designed several country houses. He also became county surveyor to Essex, and designed several buildings in Chelmsford. The Shire Hall there is perhaps his most famous work. The substantial allegation against Johnson was that he had inspected the specification,⁴⁵ copied it, and used the composition. There was also, however, an allegation that he had suborned some of the Adams' workmen to acquire the trade secrets.

In May 1777 a bill was filed by Liardet and the four Adam brothers: John, Robert, James and William against John Johnson, Edward Downes and Edward Bellman, and praying an account and an injunction.⁴⁶ An affidavit setting out the grounds of complaint was filed on 27 May 1777. Johnson in reply put in an affidavit which tended to impeach the novelty of Liardet's cement and also to prove that what he had used was materially different from it, but which did not directly deny the novelty of Liardet's composition.⁴⁷ Counsel having been heard, Bathurst L.C. on 12 July 1777 issued an injunction against Johnson and his servants restraining him from making, using or vending the composition, on the plaintiff's undertaking to bring an action at law and proceed to trial without delay. Johnson, Downes and Bellman⁴⁸ put in Answers on 2 September 1777.

Johnson's Answer first of all asserted that he had been told that Liardet was not the inventor, nor were the 'imaginary improvements' made by Liardet.⁴⁹ The allegation was supported by citing supposedly similar recipes to those of Liardet's specification: (a) '*A New and Universal Dictionary of Arts and Sciences*' published by John Hinton (1751) and the second edition of this work published by Mr Owen (1764); (b) Charles Rawlinson's patent for a composition for slates on roofs (published in his *Directory for Patent Slating*, 1772). He also asserted that his own invention did not infringe Liardet's but improved on it by the addition of serum of blood. He had inspected Liardet's second specification to make sure that he was not infringing the patent.⁵⁰ Johnson's Answer was signed by Johnson himself, and by Lloyd Kenyon and John Mitford his counsel.

Upon the Answers coming in, the plaintiffs brought an action on the case against Johnson. The declaration contained four counts:

- (1) 'making, using and putting in practice' his invention;
- (2) 'making, using and putting in practice part' of his invention;
- (3) 'counterfeiting, imitating and resembling it';
- (4) 'making and causing to be made additions to his invention, whereby to pretend himself the inventor and for pretending himself the inventor'.

The case was first tried before Lord Mansfield on Saturday 21 February 1778 at Westminster Hall. The trial lasted six hours, and the jury was out

one hour and brought a verdict for the plaintiff.⁵¹ The fact that the Adam brothers were fellow Scots, and had stuccoed Mansfield's own house at Kenwood (Caen Wood) with the composition, caused some unfavourable comment, and allegations of bias.⁵² It may explain Mansfield's subsequent readiness to grant a new trial, on what does not seem to have been markedly different evidence from that given at the first trial.⁵³ He granted a rule saying that they ought to consider whether on the first trial the cause had been so completely discussed as to be a ground of perpetual injunction.⁵⁴ The second trial which is reported as having taken place before Mansfield on 18 July 1778⁵⁵ at the Guildhall lasted 14–15 hours.⁵⁶

The cements

As Frank Kelsall has noted,⁵⁷ the trial, which should have been on the law of patents, rapidly turned into a trial of the relative merits of the cements.

The practice of stuccoing buildings went back as far as the sixteenth century, but became widespread only in the eighteenth century, with the fashion for Palladian architecture. The trouble was that the English climate is not as kind to stucco as the Italian, and the search therefore began for a more durable and lasting composition. In general the supposition seems to have been that an oil-based cement would be more durable, and the compositions considered in *Liardet's* and *Johnson's* all employed this medium. It was not until the scientific experiments conducted by Dr Bryan Higgins (a witness in *Liardet v Johnson*)⁵⁸ and by Smeaton demonstrated the fallacy of this theory, that a durable stucco emerged. Oil-based cements are a kind of putty, and as we all know, oil dries out of putty and cracks develop. Water can penetrate these cracks and the frost then causes the stucco to come away from the wall. This in fact seems to have happened to *Liardet's* cement, as is apparent from the subsequent case of *Liardet v Adam* in which he attempted to obtain from the Adams an account of the profits made.⁵⁹

The plaintiff's invention consisted of a mixture of whiting, sand, lead (white or red), oil and drying ingredients, mixed together in certain proportions for the first coat, and differing proportions for the second coat. The chief novelty of this invention allegedly lay in the addition of a drying agent. The defendant alleged his composition consisted of lime and sand, oil and serum of blood, i.e. that the plaintiff's recipe had no serum of blood, the defendant's no lead and no drying ingredients. However, as the evidence came out in court it appeared that serum of blood was a useless addition, and that the defendant did in fact use both lead and drying ingredients. Dr Higgins performed an experiment upon a sample provided by the plaintiff, and upon a sample removed from a

house which Johnson had plastered. He found the differences trifling.⁶⁰

Thus the question of the validity of the plaintiff's patent came to be raised. Was the cement a new invention or not? On this question much evidence was adduced, which in effect amounted to a challenge to the validity of the patent on the ground of 'mosaic anticipation';⁶¹ Alberti's 'book',⁶² a dictionary of 1726⁶³ and four more to 1764. None of these contained lead. Next Emerton's specification of 1737 and Rawlinson's of 1772 were produced. Rawlinson's patent was for a mortar for laying slates in, and it contained neither sand nor drying ingredients. Rawlinson alleged that in 1772 he had used a recipe similar to the plaintiff's, but had not patented it. Dr Higgins again did experiments on Rawlinson's three recipes and found the differences between them and the plaintiff's recipe to be very great. The questions for the jury were therefore: (1) whether the defendant had used the composition; (2) whether it was new or old; (3) whether it was in use in the trade, or really a new invention; (4) whether the specification was sufficient to teach other artists to make use of it. Mansfield, it might be noted, relied on no authorities in posing these questions but it is clear that the important fourth question reflected a view current before the case.⁶⁴ The jury brought in a verdict for the plaintiffs, and on 5 July 1780 Eyre B issued a perpetual injunction against Johnson.⁶⁵

The subsequent record of the case

The *nisi prius* trials are not reported in any law report series. The first trial was reported in *The Morning Post* of 23 February 1778, *The Public Advertiser* of the same day and the *St James's Chronicle*, 21–24 February 1778.⁶⁶

The second trial is known to us principally through pamphlets published by the parties after the second trial. Johnson caused to be published 'An Appeal to the Public on the Rights of Using Oil-Cement or Composition for Stucco'.⁶⁷ The Adams published a Reply to this pamphlet which sets out Mansfield's summing up to the jury and Wallace's reply to Dunning who had been one of Johnson's counsel.⁶⁸ Joseph Bramah also wrote an account of the case to Eyre CB when he was involved in *Boulton v Bull*.⁶⁹

As soon afterwards as 1787 in *Turner v Winter*⁷⁰ Buller J. mentions only the case of trusses,⁷¹ but not *Liardet v Johnson*. The reporter has added a reference to the 5th edition of Buller's *Nisi Prius*, at page 75 which is in fact *Liardet v Johnson*. This is no doubt the source of subsequent confusion, for a number of later authorities identify *Liardet v Johnson* as the case of trusses. Buller's *Nisi Prius*⁷² in fact incorrectly records the outcome. His version is evidently based on the defendant's pamphlet.⁷³

This version finds its way into Carpmael's⁷⁴ and Webster's⁷⁵ Patent Cases which therefore also misrecord the outcome. Davies' collection of cases published in 1816 only has Lord Ellenborough's citation of the case in *Hamar v Playne*⁷⁶ (sic) for the proposition that the specification must teach persons of reasonably competent skill to make the invention, not persons utterly ignorant of the whole art. This is interesting, as Davies worked in the Rolls Chapel Office and clearly had a fairly good knowledge of the case. His collection begins with the *Arkwright* cases.⁷⁷ These, *Turner v Winter*⁷⁸ and the cases on Watt's steam engine⁷⁹ are the principal cases relied on in the treatises for the principles of law they expound. The only decision of Mansfield correctly and regularly relied on is *Morris v Branson*⁸⁰ which we have already mentioned.

Liardet v Johnson does not fare at all well in the treatises either. Collier's 'Essay on the Law of Patents'⁸¹ does not list the case in the table of authorities, and though it is mentioned at p. 99 where the somewhat enigmatic assertion appears that it was decided 'consistently with the principle that grants of any known trade are void as against freedom of trade'. Godson's *Treatise on the Law of Patents*⁸² and John William Smith's *Epitome of the Laws Relating to Patents*⁸³ confuse it with the case of trusses. We can find no mention of the case at all in Carpmael's *Law of Patents*.⁸⁴ Webster's *Law and Practice of Letters Patent*⁸⁵ correctly states that the subject matter was stucco, but misrecords the outcome. Hindmarch's *Treatise on the Law of Patents*⁸⁶ also confuses the *Liardet v Johnson* case with the case of trusses. Webster's *Law and Practice of Letters Patent*⁸⁷ correctly states that the subject matter was stucco, but misrecords the outcome.⁸⁸ Billing's *Law and Practice of Patents*⁸⁹ mentions the case twice,⁹⁰ once for the famous water tabby example of an accidental discovery,⁹¹ and once for the proposition that the meaning of a specification is that others may be taught to do the thing for which the specification (sic) is granted.⁹²

The only law report of *Liardet v Johnson* concerns the Chancery proceedings on 5 July 1780 in Lincoln's Inn Hall subsequent to the trials at *nisi prius*.⁹³ It records that, the plaintiffs in Chancery having replied, the cause was at issue, and the defendants examined a number of witnesses, chiefly those who had been produced by them at the trials at law, with a view to establish the same points on which they had relied before the jury. The plaintiffs only proved the records of the two verdicts in their favour, contending that as no new trial had been moved after the second verdict, it was too late to impeach its truth, and that the temporary injunction ought now to be made perpetual. The defendants replied that the Court would never grant a perpetual injunction upon a verdict at law, that it would always direct an issue first and if dissatisfied with the verdict direct a new trial, that the defendants' evidence most completely contradicted

the verdict as to novelty, fitness and clearness of the specification and infringement by the defendants. Eyre B and Masters Graves and Leeds sitting for the Lord Chancellor decided that the injunction should be granted. It was observed that if the verdict was not to be conclusive, the plaintiff had been deceived by being brought into an undertaking to bring an action, the result of which could not ascertain the right. Eyre B observed however that the injunction might not benefit the plaintiffs, because if the defendant were subsequently to be alleged to be infringing the patent, the defendant might adduce the evidence adduced to the Court of Chancery and perhaps show that no infringement had taken place.

This report is appended to the report of *Thomas v Jones* (1842) 1 Young and Collyers Chancery Cases 510 with a note that it had been extracted from the 20th volume of Sergeant Hill's MSS, and, though not cited in that case, it would have been had argument been addressed to the Court on the question whether the Court would grant a perpetual injunction after a verdict at law, where the verdict was in an action brought by the plaintiff in equity, and not in an issue or action directed by the Court. The reporter is stated to have been Douglas.

The Law of Patents in 1800

In 1785 a Committee of Patentees was formed with a view to effecting reforms and improvements in the law of patents. Abraham Weston, one of Boulton and Watt's attorneys, reported to that Committee:

the books are silent in agitating the Question. What is the Law of Patents? In the reports since last Mansfield has sat on the bench, there are not even the Titles 'Patent' or 'Monopoly' in the Indexes to any of the reports of Cases adjudged in his time, tho' it is very well known, that a great number of Patent Cases have been tried before him; nor are there any other of the Books that furnish any information on this head.⁹⁴

In fact it was not until after the Arkwright and Boulton and Watt cases that any significant literature appeared.

A note in Watt's hand probably dating from 1795 lists his own 'Doubts and Queries upon Patents':

- (1) Whether the King can grant a patent for a method of doing or performing a mechanical process.
- (2) Whether in such a case patents would be valid without a description of an *organised* machine.
- (3) Whether a man improving his invention after patent granted, does not invalidate the patent.⁹⁵

- (4) Whether patentee refusing to add his patent to an old machine does not render patent void [i.e. for failure to exploit invention presumably].
- (5) Whether a patentee asking more than a common fair profit does not invalidate.
- (6) Whether a patent for an improvement of an old invention is valid.
- (7) Whether patent for a new mode of using old instruments valid.
- (8) Whether a patent for a chemical process valid?⁹⁶

Questions 1, 2 and 8 were in fact resolved in the Watt litigation. Question 6 had in fact been discussed by Mansfield in *Morris v Branson*, cited in *R v Else*.⁹⁷ Watt himself appears to have thought that Question 7 should be answered in the affirmative, as it subsequently was. Question 3 remained unanswered even by the time of the 1829 Commons Select Committee. Questions 4 and 5 seem to reflect the ancient fear about monopolies and involve issues which are debated to this day.

Watt himself was much concerned to effect reform of the law of patents and actually drafted a Bill. It never of course reached the statute book. Probably vested interests in the fees which the existing system provided fairly abundantly were as much of a block on change as lack of general understanding and sympathy.

Two publications which it is not clear were known to Hulme, nor possibly to Davies or Holdsworth (though the first of them is listed in the Sweet and Maxwell bibliography) are of some interest in trying to evaluate the extent to which the law and practice had developed by 1800. These are John Dyer Collier's *Essay on the Laws of Patent* (1803) and John Clennel's paper on the 'Expediency of Disclosing the Process of Manufactories' (1807) delivered to the Literary and Philosophical Society of Newcastle upon Tyne.⁹⁸

Collier appears to have been a patent agent.⁹⁹ His Preface attributes the obscurity of English law (he means the law generally, rather than patent law) to the technical phraseology to which the professors are confined and the comprehensive nature of the subject matter. He asserts that Mansfield facilitated the formation of Digests by instructing juries on the legal principles of cases, and that since this time there have been special cases on points of law which his book attempts to collect. His only other reference to Mansfield in the Preface is for the observation that if patent grants were examined with rigorous attention, they might all, with very few exceptions, be rendered nugatory. The book is divided into fourteen Chapters with an Appendix listing new inventions since 1800. The Chapters of principal interest are Chapters IX onwards.

Chapter IX deals with the question as to what is a new manufacture. It

is something made by the hands of man.¹⁰⁰ It can be granted for improvements only.¹⁰¹ An import can be a new manufacture.¹⁰² A mere method is not a manufacture,¹⁰³ the product ought to be vendible. Machinery or substances such as medicines are 'manufactures'.¹⁰⁴ Chemical method patents in reality are patents for a vendible substance. You could not on the other hand patent the principle of using steam, only the engine.¹⁰⁵ Dr James could not have got his patent for the principle of using antimony, only for a special compound or powder.¹⁰⁶ The remainder of the Chapter is devoted to an extensive reproduction of the case of *Boulton & Watt v Bull*.

The only mention of *Liardet v Johnson* is in the following chapter, for the enigmatic assertion already mentioned that all grants of a known trade are void.¹⁰⁷ This Chapter however contains the important observation that an invention must not have been published prior to the patent. A patent is an agreement between the King and the inventor that the subject will put the public in possession of a useful secret. If the public is already in possession of the knowledge, the inventor can make no compensation or return for the grant.¹⁰⁸ Although this is consistent with the views Mansfield expressed in *Liardet v Johnson*, and inconsistent with the view that it was working the invention which mattered, there is no mention of that case as an authority supporting this proposition (nor indeed any authority). Yet, as we have already suggested, if that case were so revolutionary it would surely have been mentioned at this point.

Chapter X is also of the same interest. It deals with the specifications. It begins by citing the proviso's requirements that a particular description of the invention be enrolled within one month.¹⁰⁹ As to what description is required it cites Buller J's dictum in *R v Arkwright* that the patentee must 'disclose this secret, and specify his invention in such a way that others of the same trade may be taught to do the thing for which the patent is granted, by following the directions of the specifications without any new invention or addition of their own'. This case and *Boulton & Watt v Bull*¹¹⁰ and *Turner v Winter*¹¹¹ are the only cases cited in this Chapter, though Dr James's patent and Dolland's are discussed. The summing up to the jury in *R v Arkwright* is set out *in extenso*. Ashurst J's observation in *Turner v Winter* that every patent would be against the principles of law, were it not for the public advantage derived from it, is also cited. He also states that it could not be dispensed with, even on the argument that it would benefit foreigners.¹¹²

There are other interesting developments noted by Collier. The rule that a patent licensee can challenge the validity of a patent was laid down in *Hayne v Maltby*.¹¹³ By contrast, a patentee could not challenge the patent's validity *vis-à-vis* an assignee.¹¹⁴

He also gives an account of a procedure for protecting priority while the

invention is being perfected.¹¹⁵ This consisted of lodging caveats at the chambers of the Attorney-General or the Solicitor-General. These were effective for one year, but renewable. The practice was that if applications were made by a third party, notice would be given to the person lodging the caveat, and evidence could then be presented to the Attorney-General by both parties as to who in fact had priority.¹¹⁶

In general the book is very crude. It is much padded out, with *R v Arkwright* and *Boulton & Watt v Bull* forming a substantial part of it, a fact not without significance in indicating the paucity of material known to the author.

John Clennel's paper is specifically concerned with the importance of disclosure of inventions. He first of all catalogues inventions lost to the world through non-disclosure, and asserts that the progress of science through the eighteenth century was through disclosure. His preferred solution was a system of rewards given by the government to inventors, in return for putting the invention into the public domain, an idea which he may have borrowed from France. It is not altogether clear whether Clennel was aware that specifications were enrolled. He may well not have been, for his alternative scheme is disclosure at the expiry of the patent. He may possibly however have considered the existing system ineffective. At all events, his concerns include trade secrets generally, and not merely patented knowledge. On the other hand, the specifications do seem to have been inspected by the public.¹¹⁷ Collier actually gives information about this and the opening hours of the Petty Bag Office.¹¹⁸ Perhaps this information had not penetrated as far north as Newcastle or possibly Clennel, who was a schoolmaster and popular lecturer, simply did not know his subject well enough.

The central criticism of the law at that time was in fact that it had been impossible to specify a patent in a way which would satisfy the courts.¹¹⁹ If the invention were specified too exactly, pirates could seize on minor variations to distinguish their 'inventions', if too generally, the specification would be invalid anyway. This problem can be seen in the agonising over the drafting of the Watt specification. In a letter to Watt of 5 February 1769 (nearly a decade before *Liardet v Johnson*) William Small wrote that Boulton and he considered that

you should neither give drawings nor descriptions of any particular machinery (if such omissions be allowed at the office) but specify in the clearest manner you can . . . as to your principles, we think they should be enunciated (to use a hard word) as generally as possible, to secure you as effectively against piracy as the nature of invention will allow.¹²⁰

It was subsequently felt that this advice was erroneous, both on not

appending a drawing and in apparently attempting to patent a principle of action rather than an application of principle, and indeed, the patent came close to being declared invalid in the subsequent litigation. In 1784 we find Argand agonising over the same problems on the specification for his lamp, as Watt and his partner had in 1769. As Robinson points out,¹²¹ clearly *Liardet v Johnson* only six years earlier had done little to clarify the minds of the lawyers about the exclusive weight now to be laid upon specifications. Argand specified in general terms and filed no drawings. Subsequently he had his patent declared invalid on the grounds of want of novelty; it may well have been invalidated however for want of specification.

Apart from the defects of the system we have already mentioned the most obvious problem for inventors throughout the century was the expense of the procedure.¹²² This is the substance of the poem 'The Patent' by the author of 'The Graces' published in 1776.¹²³ In *R v Eley*¹²⁴ Kenyon C J (later Lord Kenyon) had apparently described patents as a 'great oppression practiced on inferior mechanics by those who are more opulent', which in turn provoked a pamphlet apparently written by the inventor of a patent washing machine noted above.¹²⁵ As noted above, vested interests in the fees involved probably operated as a block on the reform of the system.

Conclusion

Such developments in the law and practice of patents as did take place in the eighteenth century were almost certainly gradual. The few legal decisions probably followed commercial thinking and practice, rather than anticipating and instigating it. It is highly unlikely that *Liardet v Johnson*, or indeed any of Mansfield's decisions, differed from this pattern. Perhaps the most interesting aspect of the case for us today is the way in which the outcome turned on the opinion of expert witnesses. There was nothing novel of course about the use of expert witnesses, who continued to be used after the modern rule against opinion evidence emerged,¹²⁶ and Mansfield himself naturally adhered to the view that in scientific matters experts should be called.¹²⁷ However, the length, technicality and no doubt expense of the hearings in *Liardet v Johnson* must have been unusual at the time, though they are familiar enough to us in patent infringement actions at the present day.¹²⁸ In retrospect that is probably the most significant feature of the case.¹²⁹

APPENDIX

– A technical note on Liardet v Johnson

The lead compounds added to Liardet's composition would act as driers.

Johnson's composition seems seriously defective in having no driers. Serum of ox blood was added to cements down to modern times, but for the purpose of causing apparent ageing. It is possible that Johnson's serum of blood was in fact red lead¹³⁰ or potassium permanganate, well known linseed oil driers, and that Johnson was simply trying to conceal his activities.

NOTES

1. Hulme (1896) 12 LQR 141; (1897) 13 LQR 313; (1900) 16 LQR 44; (1902) 18 LQR 280; (1907) 23 LQR 348; (1917) 33 LQR 63, 180; Davies (1932) 48 LQR 394; (1934) 50 LQR 86, 260.
2. His account of 18th-century developments is contained in XI HEL 424 et seq.
- 2a. The references for this case are given under the relevant points in the text.
3. (1917) 33 LQR 194-5.
4. (1897) 13 LQR 313.
5. There are no reported cases from *Edgeberry v Stephens* (1693) Salk. 447 to *Turner v Winter* (1787) 1 TR 602. However, cases such as *Dolland's* (1766) did find their way at a later date into the specialist series produced by Davies, Carpmael and Webster.
6. 1983 Cmd. 9117. See now the White Paper, Cmnd. 9712.
7. *The Times*, 21 Aug. 1983; William Kingston, 'Invention and Monopoly', 15 *Woolwich Economic Papers* (this was the first prize and discretionary award of the British Association and Shell Chemicals). See also the essay by Kingston in Philips, ed., *Patent Law in Perspective*, European Study Conferences, 1985.
8. See e.g. Mountfield 2 *Industrial Archaeology* (1978); Winship 16 *Industrial Archaeology* 261 (1981).
9. 'James Watt and the Law of Patents', 13 *Technology and Culture* (1972), 18.
10. Unpublished at the time of writing. We are indebted to the author for copies of his drafts.
11. Adams, Averley and Robinson, *AVERO* (1982).
12. The British Library Information Service. This is a whole text retrieval system. Provided the words searched for appear in the titles or bibliographical notes, all works held will be shown by the computer.
13. I.e. the transfer to the courts of the Council's jurisdiction in patent cases.
14. XI HEL 427.
15. (1897) 13 LQR 313, 317.
16. The distinction between the description element of the specification and the claim was a statutory creation - Patents Act, 1883, s.5 - First Schedule. Actual practice long pre-dated that Act, however, to the extent that patentees did end their specifications with a statement of the features of the invention that they considered new and important. See *R v Else* (1785) Dav. Pat. Cas. 144, 1 Web 76, Carp 103; *Bovill v Moore* (1816) 2 Marsh 211. The requirement of a claim was introduced in the United States by the Act of 1836.
17. Patent Roll 10 Anne Part 2.
18. (1934) 50 LQR 260.
19. It did not become the rule until after 1734, and was not uniformly required until after 1740. There are exceptions thereafter e.g. Nos. 581 and 653 - Davies, loc. cit.
20. Davies does not give the reference, but it is in fact *Champion's Patent* 1723, No. 454. See also *Barlow's Patent* 1731 No. 526.
21. S.P.Dom. Anne, Bd. 12, No. 74.
22. (1934) 50 LQR 86, 91.
23. Towards the end of the period it is generally, but not always, one month.

24. In Nasmyth's grant itself, a period of one month was originally fixed, but at his request the period was extended to six months – S.P.Dom. Anne, Bd. 16 No. 88. This is cited by Davies, loc. cit. Indeed, we can find the odd example of what amounts to a specification being included in the grant itself to quite a late period, e.g. Plenius's Patent 1745, No. 613.
 25. See e.g. Puckle's Patent 1718 No. 418, which was for a precursor of the Gatling gun. It recites that the Petitioner 'having humbly prayed etc. but thinks it not safe to specify wherein the new Invention consists . . . ascertained etc. . . . three months'. A plan of the gun was enrolled.
 26. See Coryton *A Treatise on the Law of Letters Patent* (1855).
 27. Godson *Treatise on the Law for Patents and Inventions* (1823), p. 140.
 28. Hannay's Patent, 1774. The subject was a protective wash against venereal disease. See also *Ex parte Reilly* (1790) 1 Ves. Ch. 112 – refusal to seal the patent for presenting Italian operas.
 29. See Davies (1934) 50 LQR 86 and 260 for possible 17th-century anticipations.
 30. Nasmyth's application passed through the hands of the Attorney-General. It is unlikely however that such an innovation would have been made without consultation. In Lombe's Patent No. 422 (1718) which involved the pirating of an Italian machine making organzine (silk), the discovery of the Italian secret was considered so important that a requirement that models (presumably plans) be permitted to be taken and lodged in the Tower was inserted.
 31. The validity of the patent may not have been of prime importance to many 'inventors'. Merely to be able to describe the goods as 'patented' seems to have had a marketing draw. 'The Patent': A Poem by the Author of 'The Graces' (1776) contains the following lines:

Hail to the Patent! which enables Man
To vend a folio . . . or a Warming-pan.
This makes the Windlass work with double force,
And Smoke-jacks whirl more rapid in their course;
Confers a sanction on the Doctor's pill,
Oft known to cure but oft not known to kill.
What man would scruple to resign his breath,
Provided he could die a Patent death.
- There were two opposing views on the desirability of permitting patents for useless inventions. One view was that it did not matter: if an invention were a commercial success, that indicated its utility (a view which survives to this day); if not, no harm was done because obviously no one wanted the thing. The other view was that these valueless patents were an oppression. See *Hornblower v Boulton* (1799) 8 TR 95, 98 per Kenyon C J (later Lord Kenyon), and see 'Observations on the Utility of Patents' (1791) catalogued in the BL under 'Kenyon, Lloyd' passim but especially pp. 18–19. It is probably by Beetham, the inventor of a washing mill, given the extensive 'plug' given for that apparatus.
32. Most of the early specifications are vague, but some are particularly so. See e.g. Allen's 1729 No. 513; Churchman's 1730 No. 514 and 1733 No. 539; Henry's 1744 No. 601.
 33. Champion's Patent 1723, No. 454.
 34. 9 Anne C 19 (1709). Copyright is not of course a monopoly in the same sense that a patent is. *Millar v Taylor* (1769) 4 Burr 2303 illustrates this tendency to equate the two, see especially p. 2387 et seq.
 35. See 31 above. Sometimes imprints were in fact patented. Isaac Watts' hymns were published under a patented imprint for example.
 36. Inst. 181, 182–3.
 37. *Morris v Branson* (1776) a decision of Mansfield referred to in *Boulton & Watt v Hornblower* (1795) 2 Hy. Bl. 489.
 38. See Nos. 581 (1741), 613 (1745), 1081 (1774). Similarly watch patents e.g. No. 698 (1755). In Jessop's case, referred to in *Boulton v Bull* (1795) 2 H. Bl. 487, 489, a watch patent was held void because it extended to the whole watch, not the particular movement.

39. See e.g. No. 947 (1769) Shudi's Patent for a harpsichord.
40. Part 15 No. 5 ms. 10–12.
41. Enrolled 3 Aug. 1773 – i.e. within the time. 1 Y & CC 527.
42. 16 Geo. III c. 41, passed 25 March 1776.
43. For the following account of the background to the case, and the subsequent case of *Liardet v Adam*, we are indebted to Frank Kelsall of the GLC Historic Buildings Division, and particularly to his paper presented to the BIBA Library Group on 28 Jan. 1974.
44. 2 B 411 Hil. 1777.
45. This allegation presumably referred to the second specification. In fact he appears to have inspected both – n. 50 below.
46. PRO/C. 12/1346/22.
47. 1 Y & CC 527, 528.
48. 'I suppose though, as no proceedings were had against him, his answer was not stated in the briefs for the Plaintiff' – 1 Y & CC 527, 530. This insertion is presumably by the actual reporter of the case, Douglas.
49. He also questioned whether the original specification was enrolled in time, but this point does not seem to have got anywhere. 1 Y & CC 527.
50. Probably both specifications – see 'An Appeal to the Public on the Right of Using Oil Cement' (1778).
51. *London Chronicle*, Tuesday 24 Feb. 1778, *Daily Advertiser*, 24 Feb. 1778. A fuller report combined in the *Morning Post and Daily Advertiser* 23 Feb. 1778 is quoted verbatim by Hulme in (1897) 13 LQR 313. Mansfield's own notes of this trial survive in his Notebooks, but not of the second trial.
52. Evidence to the effect that Mansfield's house had been done four years previously was given by [Thomas] Rose, a well-known plasterer.
53. This is confirmed by the notes on the first trial taken by Mansfield. The evidence given at the second trial appears in 'An Appeal to the Public on the Right of Using Oil-cement or Composition for Stucco'.
54. 1 Y & CCC 526 – this was in the following Easter term.
55. It is reported in the *Morning Post and Daily Advertiser* 20 July 1778 and the *Gazetteer and New Daily Advertiser* of 20 July 1778. The Notebook which must have contained Mansfield's notes of the trial is missing.
56. Open letter Joseph Bramah to Eyre CJ, British Library Law Tracts 1716–1816. Bramah asserts that he was present throughout the trial. 1 Y & CCC 526 gives it as lasting from 9 a.m. to 11 p.m.
57. Loc. cit. n. 43 above.
58. Higgins was working on his own recipe at the time of the trial and obtained a patent on 8 Jan. 1779. See Gibbs, 'Bryan Higgins & His Circle', *Chemistry in Britain* (1965), pp. 60, 63.
59. Complaint of Reverend John Liardet 18 Dec. 1782. PRO/C12/921/11. Again we are indebted to Frank Kelsall for details of this case. The Answers filed by the Adams complain about the failures of the cement.
60. This evidence by Higgins provoked the following lampoon from the Johnson camp:

Mr Alderman Cuttle, of Pudding Lane being much disordered on the morrow of the last city feast, dispatched his apothecary with four ounces troy of the indurated faeces, protruded a retro in the form of a Bologna sausage, requesting the Doctor to make an assay of the compound, and return the particulars of the analysis; a request he complied with in the terms and manner following:

Of turtle 3 oz. 0 dt. 0 gr
 Of green fat 0 oz. 10 dt 0 gr. or more
 Of marrow pudding 0 oz. 9 dt. 20 gr. or less
 Of crumb pudding 0 oz. 0 dt. 4 gr. or less
 Total 4 oz. 0 dt. 0 gr

Let the world judge if an adept capable of decomposing aliment, so levigated by the animal organs or secretia and excretia as must have been the calipash, palipee, marrow pudding etc. above mentioned – Let the impartial world judge,

we say, if such an adept in chemistry can be incapable of discriminating in like manner the same quantum of sand, calcareous earth, linseed oils, and calx of lead, made up in the form of stucco.

Magna est veritas et praevaleret

'Observations on Two Trials', London (1778), pp. 12–13.

61. According to Hulme, this was a further innovation for which this case was responsible – see text above n. 5.
62. Presumably the 1726 translation of his works by J. Leoni – see 'An Appeal etc.', p. 52.
63. See 'An Appeal etc.', p. 56, and Mansfield summing up in 'A Reply to Observations and Two Trials at Law' (1778).
64. See a letter written to Wolf in 1769 by William Small cited Robinson loc. cit.
65. 1 Y & CCC 526.
66. Wyndham Hulme records having found only these three reports, having searched: *Morning Chronicle, Gazetteer & New Daily Advertiser, Daily Advertiser, London Chronicle, London Evening Post, General Advertiser and Morning Intelligencer, General Evening Post, Westminster Journal & London Political Miscellany* – see the documents placed by him in the Patent Office Library under the title 'Liardet v Johnson'. It also appears however in the *London Chronicle*, 24 Feb. 1778. It is by no means clear that he realised that a second and longer trial had taken place on 18 July 1778, and that it is that to which the pamphlets refer.
67. Printed 1778 and sold by J. Hand, 409 Oxford Street, J. Ben, Paternoster Row and J. Pridden, 100 Fleet Street. See also the reports in the *Morning Post & Daily Advertiser*, 20 July, and the *Gazetteer & New Daily Advertiser*, 20 July.
68. 'A Reply to Observations on Two Trials At Law' (1778).
69. BL Law Tracts 1716–1816, 'A Letter to the Rt Hon Sir James Eyre CJCP on the subject of the cause Boulton & Watt v Hornblower & Maberley', John Stockdale, Piccadilly 1797.
70. (1787) 1 TR 602. Web. 77, Buller J observes that 'Many cases upon patents have arisen within our memory, most of which have been decided against the patentees on the ground of their not having made a full and fair disclosure of their inventions' – he held the specification bad in that case.
71. This appears to involve Brand's Patent 1771 No. 996. The case does not appear in the Mansfield Court Notebooks. It is the only patent case referred to in *Evans Decisions of Mansfield* Vol. 1, p. 404 under 'Patents'. Evans cites Buller J in *Turner v Winter* as his source.
72. 5th ed. p. 75.
73. Hulme (1902) 18, LQR 280, 287.
74. (1843) p. 118.
75. (1884) p. 53.
76. At p. 318.
77. *Arkwright v Mordaunt* (1781), Webster 59. *Arkwright v Nightingale* (1785), Webster 60.
78. (1787) 1 TR 602.
79. *Boulton & Watt v Bull* (1795), 3 Ves. Jun. 140, 2 H. Bl. 463. *Hornblower v Boulton & Watt* (1799), 8 TR 95.
80. (1776) Webster 51.
81. (1803) – see below for a description of this work.
82. (1823) p. 12.
83. (1836) p. 18. This carries Amos's lectures at London University on Patents as an Appendix. Amos cites Buller's *Nisi Prius* and the case of trusses.
84. (1832).
85. (1841) p. 45.
86. (1845).
87. (1844).
88. P. 167. There are two other citations – at p. 175 for the point for which it was cited by Lord Ellenborough in *Harman v Playne* (above), and again at p. 484 for the proposition that the patent can be voided for want of specification.

89. (1841) p. 45.
90. Pp. 25 and 89.
91. Cited by Buller J in *Boulton v Bull* (1795) 2 H. Bl. 487. Mansfield does refer to accidental inventions in *Liardet v Johnson* but cites Sir Epicure Mammon's discovery of the cure for the itch (Jonson's 'The Alchemist') not the water tabbies (a kind of watered silk).
92. Citing Buller's *Nisi Prius*.
93. (1780) 1 Y & CCC 527. Counsel for the plaintiffs at this hearing were [James] Mansfield, MacDonald, Arden, Thompson and Douglas. Counsel for the defendants were Maddocks, Kenyon and Mitford.
94. Observations on Patents, Parcel E, Boulton & Watt Collection. Birmingham Reference Library cited Robinson 'James Watt on the Law of Patents' in *Technology and Culture* (1972), p. 115. The *General View of the Decisions of Lord Mansfield* by William David Evans, which appeared in 1801, gives only Buller J's citation of the case of trusses under the heading 'Patents'. That citation is alleged to have been made in *Farrer* (sic) *v Winter* 1 TR 602.
95. It will be recalled that Liardet had done this, and nevertheless had his patent extended.
96. See Robinson, loc. cit.
97. (1785) Dav. Pat. Cas. 144; 1 Web. 76; 1 Carp. 103.
98. I am grateful to Dr F.G. Robinson who has found the work in the course of his researches for the Nineteenth Century Short Title Catalogue.
99. There is a flier inserted at the end of the Bodleian copy of the book offering the author's services, and giving his address as Little Smith St., College St., Westminster.
100. Citing *Hornblower v Boulton* 8 TR 95.
101. No citation at this point, *Morris v Branson* is cited later. See also 'Observations on the Utility of Patents', London (1791), pp. 16 and 54 catalogued under Kenyon, Lloyd in the BL Catalogues.
102. Citing *Edgebury v Stephens*, 2 Salk. 447.
103. *Watt v Bull* i.e. *Boulton & Watt v Bull* (1795), 2 H. Bl. 464.
104. Id. citing Heath J.
105. Citing Buller J in *Boulton & Watt v Bull* (above).
106. Dr James's Powders were a very popular patent medicine – see e.g. 'The Patent', a poem, n. 31 above, and the Torrington diaries. Mansfield in *Liardet v Johnson* doubted the validity of his patent, and Hulme considered that it may have been threatened litigation over Dr James's patent which resulted in the transfer of jurisdiction from the Council to the Courts – see (1917) 33 LQR 194.
107. P. 99.
108. Id.
109. As noted above, however, this time varied to the end of the century.
110. (1795) Bl. Rep. 479.
111. (1787) 1 TR 602.
112. P. 173, citing *Ex parte Hoops* (sic) (1802) 6 Ves. 559.
113. (1789) 3 TR 438.
114. *Oldham v Langmead* cited in *Hayne v Maltby* at p. 439.
115. As distinct from the period of grace for enrolling the specification, which we have seen, Mansfield laid it down was to enable the invention to be perfected.
116. This practice led to abuse. So called 'floating caveats' would be lodged as a means of getting wind of inventions so that for example the unfortunate investor's workmen could be bribed to disclose their master's secrets – John William Smith, op. cit. pp. 15–16. Evidence on this was given to the Commons Select Committee on the Law of Patents (1829).
117. The Committee of Patentees formed in 1785 actually strongly objected to the ease with which specifications could be consulted – see Robinson, loc. cit.
118. 10.00–2.00 and 5.00–8.00.
119. See Robinson, loc. cit.
120. Cited Robinson, loc. cit.
121. Loc. cit.

122. See Collier, *op. cit.*, Ch. XIV. According to the evidence given to the Commons Select Committee on the law of Patents, a simple English patent was about £20 but a lengthier one was about £200. Patents to cover England, Ireland and Scotland cost about £300. See also Charles Dickens, 'A Poor Man's Tale of a Patent'.
123. See n. 31 above.
124. Unreported. This case is possibly *R v Else* in n. 97 above, but the citation should probably be *Hornblower v Boulton* (1799) 8 TR 95, 98.
125. 'Observations on the Utility of Patents' (1791) catalogued in the BL under Kenyon, Lloyd. See also the report of the *Boulton & Watt v Hornblower* case, *The Times*, 26 Jan. 1799.
126. See 9 H.C.L. 212.
127. See e.g. *Folkes v Chadd* (1782) 3 Doug. 157, 159.
128. The study of expert witness cases can provide important evidence of the current state of scientific opinion on particular topics. For a good example from outside the field of patents see Fullmer, 21 *Technology and Culture* (1980), p. 1, which describes the evidence given in the case of *Severn & King v Imperial Insurance Co.*, 11 April 1820.
129. There is an interesting and lengthy case in Mansfield's notebook shortly after *Liardet v Johnson* (22 Feb. 1780) which also involved technical evidence. The plaintiff, Joseph Medlin, was the patentee of a 'compound harpsichord' i.e. an instrument combining a harpsichord and pianoforte action. One Ephraim Coulson had allegedly infringed this patent. John Brockwood among others gave evidence.
130. He was clearly aware of the drying properties of red lead, as is shown by his pamphlet 'An Appeal etc.'