

***651 Boulton and Watt v. Bull**

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16 May 1795

(1795) 2 Blackstone (H.) 463**126 E.R. 651**

1795

Analysis

Saturday, May 16th, 1795.

A patent was granted to A. B. for a new invented method of using an old engine in a more beneficial manner than was before known. The specification stated, that the method consisted of certain principles, and described the mode of applying those principles to the purposes of the invention, and an act of parliament, reciting the patent to have been for the making and vending certain engines by him invented, extended to A. B. for a longer term than 14 years, the privilege of making, constructing and selling the said engines.—Q. Whether, under these circumstances, the patent right was valid¹ ?

This was an action on the case for infringing a patent. The first count of the declaration stated, that the king by letters patent under the great seal, bearing date on the 5th of January, 1769, granted to the Plaintiff James Watt the sole benefit and advantage of making, exercising and vending a certain invention of him the said James, being a method by him invented of lessening the consumption of steam and fuel in fire engines, for the term of 14 years, with a proviso for a specification, &c. in the usual manner. It then stated, that by a private act of parliament passed in the 15th year of the king, the benefit of the patent² was extended to 25 years, to Watt and his as- [464] -signs: that on the 5th of September, 1777, he assigned two thirds of the patent right to Boulton the other Plaintiff, for the remainder of the term of 25 years, and that the Defendant, against the consent of the Plaintiffs, made, constructed and sold divers engines, in imitation of the said engine so invented and *652 found out by Watt, and of the like nature and

kind, in breach of the said act of parliament, and against the privilege granted to Watt as aforesaid, whereby, &c. The second count was for making and constructing (not mentioning selling) engines, &c. like the first count. The third was for making, constructing and selling engines, &c. partly in imitation as aforesaid. The fourth, for making and constructing (omitting selling) engines partly in imitation &c. The fifth, for using and putting in practice the invention of the Plaintiff Watt. The sixth, for using and putting in practice part of the said invention. The seventh for counterfeiting the said invention, and using and putting in practice certain engines, counterfeiting the said engine mentioned in the said act of parliament. The eighth, for imitating the said invention. The ninth, for resembling the said invention. The tenth, for counterfeiting in part the said invention, and using and putting in practice engines counterfeiting in part the said engine &c. The eleventh, for imitating in part the said invention. The last, for resembling in part the said invention.

The general issue being pleaded, the cause came on to be tried before the Chief Justice at the sittings after Trinity term 1793, when a case was reserved for the opinion of the court, which stated, that his present majesty by letters patent dated the 5th day of January in the ninth year of his reign, granted to the Plaintiff James Watt, his special licence, full power &c. that he the said James Watt, his executors, administrators and assigns should and lawfully might, during the term of fourteen years therein mentioned, use, exercise and vend, throughout that part of Great Britain called England, the Dominion of Wales, and Town of Berwick upon Tweed, and also in his majesty's colonies and plantations abroad, his the said James Watt's new invented method of lessening the consumption of steam and fuel in fire engines, with the usual proviso for the inrolling of the specification. That Watt did in pursuance of the proviso, cause a specification or description of the nature of the said invention, to be inrolled in the Court of Chancery, which description was particularly set forth in the said act of [465] parliament, and was as follows, “my method of lessening the consumption of steam, and consequently fuel in fire engines, consists of the following principles. First, that vessel in which the powers of steam are to be employed to work the engine, which is called the cylinder in common fire engines, and which I call the steam vessel, must during the whole time the engine is at work, be kept as hot as the steam that enters it; first, by inclosing it in a case of wood, or any other materials that transmit heat slowly; secondly, by surrounding it with

steam or other heated bodies; and thirdly, by suffering neither water nor any other substance colder than the steam, to enter or touch it during that time. Secondly, in engines that are to be worked wholly or partially by condensation of steam, the steam is to be condensed in vessels distinct from the steam vessels, or cylinders, although occasionally communicating with them. These vessels I call condensers, and whilst the engines are working, these cylinders ought at least to be kept as cool as the air in the neighbourhood of the engines, by application of water or other cold bodies. Thirdly, whatever air or other elastic vapour is not condensed by the cold of the condenser, and may impede the working of the engine, is to be drawn out of the steam vessels or condensers by means of pumps wrought by the engines themselves, or otherwise. Fourthly, I intend in many cases to employ the expansive force of steam to press on the pistons, or whatever may be used instead of them, in the same manner as the pressure of the atmosphere is now employed in common fire engines. In cases where cold water cannot be had in plenty, the engines may be wrought by this force of steam only, by discharging the steam into the open air after it has done its office. Fifthly, where motions round an axis are required, I make the steam vessels in form of hollow rings or circular channels, with proper inlets and outlets for the steam, mounted on horizontal axes, like the wheels of a water mill; within them are placed a number of valves, that suffer any body to go round the channel in one direction only. In these steam vessels are placed weights, so fitted to them as entirely to fill up a part or portion of their channels, yet rendered capable of moving freely in them, by the means hereinafter mentioned or specified. When the steam is admitted in these engines between these weights and the valves, it acts equally on both, so as to raise the weight to one side of the wheel, and by the re-action on the valves successively, [466] to give a circular motion to the wheel, the valves opening in the direction in which the weights are pressed, but not on the contrary: as the steam vessel moves round, it is supplied with steam from the boiler, and that which has performed its *653 office may either be discharged by means of condensers, or into the open air. Sixthly, I intend in some cases to apply a degree of cold not capable of reducing the steam to water, but of contracting it considerably, so that the engines shall be worked by the alternate expansion and contraction of the steam. Lastly, instead of using water to render the piston or other parts of the engines air and steam tight, I employ oils, wax, resinous bodies, fat of animals, quicksilver, and other metals in their fluid state.”

And the said James Watt, by a memorandum added to the said specification, declared, that he did not intend that any thing in the fourth article should be understood to extend to any engine where the water to be raised enters the steam vessel itself, or any other vessel having an open communication with it. In the fire engines referred to in the said specification, and which were in use prior to the patent in question, motion was given to the piston by the pressure of the atmosphere acting upon one side of it, while a vacuum or certain degree of exhaustion was produced on the other side within the steam vessel denominated the cylinder, by means of the injection of cold water, whereby the steam was condensed; which operation, prior to the invention of the said James Watt, was always performed in the steam vessel or cylinder itself; when the steam had been condensed, and the piston had descended, such portions of air and water as remained under it within the steam vessel or cylinder, were expelled through valves by the next succeeding steam from the boiler, and that steam counterbalancing the pressure of the atmosphere at the open end of the cylinder, allowed the piston to rise up with that end of the lever to which it was attached, while the other end of the lever and the matters attached thereto descended by reason of their greater comparative weight, and thus the engine was restored to that state in which it was previous to the first condensation. The steam was, for this purpose, as occasion required, admitted through a pipe from a distinct vessel called the boiler, where it was generated, which occasionally communicated with the cy-[467] -linder by means of a valve, which was opened and shut by the action of the engine. The injection of cold water was in like manner admitted, as occasion required, into the cylinder through a pipe from another distinct vessel containing cold water, called the injection cistern, by means of a cock or valve which was also opened and shut by the action of the engine, and such pumps as were used in these engines were also wrought by the engines themselves. The construction and use of pumps for drawing out air, elastic vapour, or water from places or vessels where a vacuum or exhaustion was required, were known and practised before the obtaining the letters patent above mentioned, but had not been applied to the cylinders or condensers of steam engines. The said invention of the said James Watt was at the time of making the said letters patent, a new and a useful invention, and the said privilege vested by the said act of parliament in the said James Watt and his assigns, was infringed by the Defendant in the manner charged upon him by the declaration. The said specification made

by the said James Watt, is of itself sufficient to enable a mechanic acquainted with the fire engines previously in use, to construct fire engines producing the effect of lessening the consumption of fire and steam in fire engines, upon the principle invented by the said James Watt.

And the questions for the opinion of the Court were,

1st. Whether the said patent was good in law, and continued by the act of parliament above mentioned?

2d. Whether the above specification of the Plaintiff James Watt was in point of law sufficient to support the above patent?

This case was twice argued, the first time by Watson, Serjt., for the Plaintiffs, and Le Blanc, Serjt., for the Defendant; and the second, by Adair, Serjt., for the Plaintiffs, and Williams, Serjt., for the Defendant.

On the part of the Plaintiffs, the substance of the arguments was the following. The Plaintiffs have a right to recover damages for the infringement of their patent, which is: 1st, both good in law, and continued by the act 15 Geo. 3, c. 61; and 2dly, duly supported by the specification. It is good in law, as being for a newly discovered method of producing an important effect in the use of the old steam engine, and comes within the provision of the stat. 21 Jac. 1, c. 3, s. 6, [468] which protects inventions of this kind from the declaration mentioned in the former part of the statute. By every fair rule of construction, the words “working or making any manner of new manufactures,” must include the invention of the Plaintiffs. The term manufacture means “any thing made or produced by art,” and the method or invention for which *654 the patent is granted, is to produce an effect by artificial means, by which the consumption of fuel shall be lessened in steam-engines. Whether the word method be used as in the patent, or engine as in the act for continuing it, the meaning is obviously the same, and the Court will not deprive the Plaintiffs, the merit and utility of whose invention is on all sides admitted, of the benefit of that invention by mere verbal criticisms.

[Heath, J. When a mode of doing a thing is referred to something permanent, it is properly termed an engine; when to something fugitive, a method.] This patent is not expressed in terms new or unusual; almost all the patents upon record that have been granted to those who have

made discoveries or improvements in the mechanic arts, being for the method of doing the thing, and not for the thing done. [Heath, J. Is there any instance of a patent for a mere method?] The patent granted to Dollond for his improvement in making the object-glasses of telescopes was, for “an invention of a new method of making the object-glasses of refracting telescopes.” So also, David Hartley's patent was for his method of securing buildings from fire. So likewise are the numerous patents that have been granted for the different improvements which have been made of late years, in chemistry and medicine³. The patent, therefore, of the Plaintiffs is good in law: and it is also continued by the act 15 Geo. 3. That act expressly recites the patent, and extends the benefit of it for 25 years to Watt and his assigns. It was therefore clearly the intention of the legislature that the patent already granted should be continued, and the Court will construe the act in such a manner as to effectuate that intention.

With regard to the specification, that is sufficiently explicit to support the validity of the patent. The improvement made by Watt consists in a discovery, that by letting out the steam from the cylinder into another vessel in order to condense it, [469] instead of admitting cold water into the cylinder for that purpose, as was done in Newcomen's engine, and by keeping the cylinder hot, the consumption of steam and consequently of fuel would be diminished. The communication between the cylinder and the other vessel is formed by means of valves, which were before in use in Newcomen's engine, and therefore not necessary to be more accurately described, and the mode of keeping the cylinder hot is explicitly stated in the specification. There is no new mechanical construction invented by Watt, capable of being the subject of a distinct specification, but his discovery was of a principle, the method of applying which is clearly set forth, and therefore a drawing or model would have been unnecessary. So in Dollond's patent, (to take one of many instances) the specification describes the principle, but not the mechanical construction by which it is carried into effect. It recites, that a patent had been granted to him for the “invention of a new method of making the object glasses of refracting telescopes, by compounding mediums of different refractive qualities, whereby the errors arising from the different refrangibility of light, as well as those which are produced by the spherical surfaces of the glasses, were perfectly corrected.” It then goes on to state, after mentioning the defects of the telescopes then in use, that in the new telescopes the images of objects were formed by the difference between two contrary refractions, the

object-glass being a compound of two or more glasses put close together, whereof one was concave and the other convex: that the excess of refraction by which the image was formed was in the convex glass, which was made of a medium or substance in which the difference of refrangibility was not so great as in the substance of which the concave glass was formed; therefore, their refractions being proportioned to their difference of refrangibility, there remained a difference of refraction by which the image was formed, without any difference of refrangibility to disturb the vision: and that the radii of the surfaces of each of those glasses were likewise so proportioned, as to make the aberrations which proceeded from their spherical surfaces respectively equal, which being also contrary, destroyed each other. But there is no mention of any mechanism, nor does the specification state the degrees of sphericity or curvature of the concave or convex glasses, because it is well known that the curvature of one must be proportioned to that of the other, in order to correct the refrangibility of the [470] rays of light. It is also to be observed, that the jury have found that the specification is sufficient to enable a mechanic acquainted with the fire engines previously in use, to construct fire engines producing the effect *655 of lessening the consumption of fire and steam upon the principle invented by the Plaintiff Watt. It is upon the whole, therefore, submitted to the court, that both the questions stated in the case must be answered in the affirmative.

[Buller, J. The objection to Dollond's patent was, that he was not the inventor of the new method of making object-glasses, but that Dr. Hall had made the same discovery before him. But it was holden, that as Dr. Hall had confined it to his closet, and the public were not acquainted with it, Dollond was to be considered as the inventor.]

On the part of the Defendant the arguments were the following.

This question may be argued on three grounds. 1. On the patent itself. 2. Upon the act 15 Geo. 3, c. 61. 3. Upon the act and patent taken together.

In considering the case upon the patent itself, the patent appears to be void, because it differs from the specification, the patent being for a formed instrument or machine, but the specification for principles unorganized. It is for a new invented method. Now the word invention, when applied to mechanical subjects, properly signifies something which

has been already formed, some manufacture or machine, and is not applicable to mere unorganized principles. The Plaintiff Watt cannot be said to have invented the principles, for those principles were in use in the old or Newcomen's steam-engine. It is true, that the application of those principles in the manner described in the specification is new, but it was well known long before that steam had an expansive power, and was condensed by cold. It is in this sense that the word invention is used in the patent. It recites "that Watt had represented to the king, that he had after much labour and expense invented a method of lessening the consumption of steam and fuel in fire-engines." From these words it seems clear that he meant it to be understood by the crown, that the invention which he represented himself as having made, was completely formed, and not that he had merely conceived in his mind the application of certain [471] known principles by which the consumption of steam and fuel would be lessened in fire-engines: for the ideas of the principles before they were organized could not have been attended with great labour, and much less with great expense. That the representation was understood in this sense by the crown, will appear from considering other parts of the patent itself. The king grants to Watt that he shall "make, use, exercise and vend his said invention." In another part of the patent all persons are forbidden to counterfeit, imitate or resemble the same invention, and to make or cause to be made any addition thereto, or subtraction therefrom. In another part it is provided, that the patent shall not extend to give privilege to Watt to use or exercise any invention or work whatsoever which had theretofore been found out or invented by any other, and publicly used or exercised, but that every other person should use and practise their several inventions. Now it is impossible that any of the expressions thus cited from the patent can be applied to the invention of mere unorganized principles of science. If then the patent be, which it clearly is, for a formed instrument or machine, it is void, because it is admitted that there is no specification descriptive of any formed instrument whatever, nor is there any drawing or model.

But supposing it to be a patent for mere principles, (for the specification states that the invention consists of principles,) it is neither originally good in law, nor is it continued by 15 Geo. 3, c. 61. It is not good in law because it does not fall within the construction of the statute 21 Jac. 1, c. 3, upon which alone it must, if at all, be supported. The sixth section of that statute provides, that nothing therein contained shall extend to any letters patent,

or grants of privilege for 14 years or under, thereafter to be made, of the sole working or making of any manner of new manufactures, within this realm, to the true and first inventors of such manufactures, which others at the time shall not use. The word manufacture is descriptive either of the practice of making a thing by art, or of the thing when made. The invention therefore of any instrument used in the process of making a thing by art, is a manufacture, and the subject of a patent within the statute, because such an instrument is itself a thing made by art. So also medicines may be said to be a species of manufacture, and within the provision of the statute, because they consist in the practice of mixing together and making up by art, the different ingredients of which they [472] are composed, and are the result of principles organized, as far as the nature of the thing will admit. The same observation may be made with respect to Dollond's telescopes, which are certainly a manufacture, and within the statute Jac. 1, but they consist of principles *656 reduced into form and practice as much as the subject will admit, and the patent is for glasses completely formed, not for mere principles, and the specification describes the manner in which the invention is to be carried into execution with all the perspicuity of which the thing is capable. That this is the true meaning of the term manufacture as it is used by the legislature, likewise appears from the words making or working being applied to it, and "which others at the time shall not use," and also from the provision that the patentee shall ascertain the nature of his invention, and in what manner the same is to be performed. The specification is the price which the patentee is to pay for the monopoly. In the construction of specifications it is a rule that the patentee must describe his invention in such a manner that other artists in the same trade or business may be taught to do the same thing for which the patent is granted, by following the directions of the specification alone, without any new invention or addition of their own, and without the expence of trying experiments. 1 Term Rep. B. R. 606, *Turner v. Winter*. This necessarily excludes any supposition that mere principles can be the subject of a patent. That this is the true construction of the word manufactures in the statute, appears also from Lord Coke's commentary on it, 3 Inst. 184, who, as appears from the journals of the House of Commons, was chairman of the committee to whom the bill was referred, and who therefore probably either drew or perused it. This construction of the word manufactures, in the statute, is also fortified by the opinion of Mr. J. Yates in the controversy respecting literary property, 4 Burr. 2361, *Miller v. Taylor*, who there held in illustration of the subject

before him, that mere principles, not embodied and reduced into practice, were not the subject of a patent. Until they are so embodied, (to use the simile of that great judge,) they are like the sentiments of an author, while in his own mind. In that state they are alike the property of him or of another. But when once they are published, then, and not before, his exclusive property in them or in the organization of them commences. In *Sir Richard Arkwright's case* too⁴ the learned judge before whom it was tried, stated in his sum-[473]-ing up, that for a principle alone a patent could not be obtained, for which he gave very convincing reasons. And independent of authorities, the reason of the thing shews that such a patent could not be obtained within the meaning of the statute. By obtaining a patent for principles only, instead of one for the result of the application of them, the public is prevented, during the term from improving on those principles, and at the end of the term is left in a state of ignorance as to the best, cheapest and most beneficial manner of applying them to the end proposed.

It is true indeed that the jury have found, "that the specification made by Watt, is of itself sufficient to enable a mechanic acquainted with fire-engines previously in use, to construct fire-engines, producing the effect of lessening the consumption of fuel and steam in fire-engines, upon the principle invented by Watt." But it is not found that the specification would enable a mechanic to construct Watt's fire-engines; nor is it found to what extent the consumption of steam and fuel would be lessened in fire-engines constructed upon the principles stated in the specification; nor whether those engines would have the effect of lessening the consumption of steam to the same degree with Watt's engines. All this is left uncertain. The merit of the invention must be measured by the quantity of fuel which may be saved by it. Now it is possible, that agreeable to this finding, a fire-engine might be made, which indeed would produce the effect of lessening the consumption of fuel and steam, upon the principles mentioned in the specification, but yet such engine might save only one bushel of coals or other fuel, where Watt's engine would save a hundred. The finding of the jury therefore does not mend the case. The specification ought to have described the method by which the machine might be made to save the greatest quantity of fuel which it was known to be capable of saving, and which it in fact does save when used by the inventor. It is a settled rule of law that if a patentee makes the thing for which the patent is granted with cheaper materials, or if he applies and uses it in a more advantageous and useful manner than

is described in the specification, the patent is void, because he does not put the public in possession of his invention, or enable them to derive the same benefit that he himself derives from it. 1 Term Rep. B. R. 602, *Turner v. Winter* . *657

It is to be shewn in the next place, that the patent is not continued by the act 15 Geo. 3, c. 61. The title of it is, an act for vesting in James Watt, “the sole property of certain steam-engines, called fire-engines, of his invention.” It recites, “that [474] the king by his letters patent had given and granted to Watt the sole benefit and advantage of making and vending certain engines by him invented for lessening the consumption of steam and fuel in fire-engines, with a proviso, that Watt should cause a particular description of the nature of the said invention to be inrolled, and that he accordingly had caused a particular description of the nature of the said engine to be inrolled. It farther recites, that the said James Watt had employed many years, and a considerable part of his fortune, in making experiments upon steam-engines, commonly called fire-engines, but on account of the many difficulties which always arise in the execution of such large and complex machines, he could not complete his intention before the end of the year 1794, when he finished some large engines as specimens of his construction, and that his engines might be of great utility, and then enacts, that the sole privilege of making, constructing and selling the engines therein before particularly described, shall be vested in Watt for 25 years, and that he during the said term shall make, exercise and vend the said engines.” Now is it possible to say, that this act continues a patent for mere principles? Certainly not. If therefore the patent be really for principles, it is not continued by the act. But supposing that though the act does not describe the patent according to the terms of it, yet it does describe it according to its import, namely, as a patent for principles; in that case it would not be within the protection of the statute of Jac. 1 for the reasons already offered.

There is a proviso in the act 15 Geo. 3, that every objection in law competent against the said patent, shall be competent against the act to all intents and purposes, except so far as relates to the term thereby granted. Though this therefore is a grant of a monopoly by the Legislature, yet it is to receive precisely the same construction, as if it had been a grant by letters patent. Now the grant itself is void, being founded on a false suggestion of the party to whom it is made, for it is a rule of law, that if the king's grant be founded on a

false suggestion of the party to whom it is made, it is void; as if any thing mentioned in the consideration of the grant be false. 5 Co. 94 a. *Barwick's case* . The consideration, which is the foundation of this grant in the act, is the recital “that the king had in January 1765, by his letters patent, granted to Watt for the term of 14 years, the sole benefit and advantage of making [475] and vending certain engines, by him invented, for lessening the consumption of steam and fuel, and that owing to the reasons which are mentioned in the recital, it was probable, that the whole term granted by the patent would elapse before he could receive any compensation adequate to his labour; for which reasons the term granted by the patent is prolonged, and the act vests in him the sole privileges of making, constructing, and selling the said engines for 25 years; that is, the engines, the sole making and vending of which the king had granted by his said letters patent. But it is admitted, that the king did not grant by the patent a monopoly for making and vending any engines whatever. The recital therefore, which is the very foundation of the grant, is untrue. It has been also adjudged, that if a private act of Parliament like the present, be founded upon a false recital, the act is void: as where an act, reciting that A. had been attainted of treason, confirms the attainder, and farther enacts that he shall be attainted, and forfeit his lands; the king afterwards grants the lands of A. to another; if in fact A. never was attainted, or if his attainder appear on the face of it, to have been coram non iudice, the act is void, and it shall not be made use of as an attainder de novo, notwithstanding it confirmed the attainder, and expressly enacted that he should be attainted, but A. shall take advantage of it by mere pleading without a writ of error, and shall oust the grantee of the king. Plowd. 390, *Earl of Leicester v. Heydon* , where it is laid down, that statutes which mis-recite things to which they refer, are void, and that in the principal case, the statute which recited that A. was attainted, when in fact he was not attainted, was void, *ibid.* 400, &c. Another objection to this act 15 Geo. 3, is that it professes to vest in Watt the exclusive property in an entire machine, notwithstanding the invention which he claims to be his, is admitted to be of an improvement only of a known machine. And upon this point, it is to be observed, that Lord Coke says, “such 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 *658 addition make the former more profitable, yet it is not a new manufacture in law.” 3 Inst. 184. The act is also defective in not setting forth any specification of a formed instrument or machine;

it is indeed admitted that no such specification is to be found.

[476] If the subject be viewed as arising from the patent and act taken together, the arguments which have been already used respecting those instruments separately, apply themselves more strongly, inasmuch as if the act be considered as explanatory of the patent, or as a part of it, there cannot be a doubt but that it means to grant a monopoly for a formed engine or machine. Upon the whole therefore of the case, it appears either that the patent is for an entire formed machine, when it ought to have been for an improvement only, and in which case the specification does not correspond with it, or it is for mere principles, which, according to the stat. 21 Jac. 1, c. 3, cannot be the subject of a patent.

The sum of the reply was as follows. The patent is neither for a formed instrument, nor is the specification for a principle unorganized. The former is for “a new invented method of lessening the consumption of steam and fuel in fire engines,” by whatever mode that effect may be produced: the latter states both the principle of the invention, and also the mode in which it is to operate, namely, the preserving the cylinder hot by the means described, and the condensing the steam in separate vessels communicating with the cylinder. The difference in the terms used in the patent and the specification, arises from the nature of the subject, but the real meaning of them is the same. Where an improvement is made upon a machine already known, the patent ought not to be for the machine itself, but for the method of improving it. Thus a patent was granted in 1759, to one Wood “for a scheme to work a fire engine, at half the expense of coals,” an effect which must have been caused by an alteration of the engine, yet the patent was for the scheme, or method, and not for the engine itself. And in the case of an improvement in making watches, Jessop's patent was avoided, because it was for the whole watch, when the invention consisted of only one movement. But notwithstanding this rule, if from the nature of the thing a patent for the new method or improvement only should have the effect of giving a right to the whole machine, that is not of itself a ground on which the patent can be set aside.

On this day, after consideration, the judges thus delivered their respective opinions.

[477] Rooke J., after stating the special case at length, thus proceeded. From this state of the case, and from the admission of counsel on both sides, I assume the following facts, viz. that the Plaintiff Watt is the inventor of a new and useful improvement in fire engines, whereby the consumption of steam, and consequently of fuel is considerably lessened: that the improvement is of such a nature that it may legally be the object of protection by royal patent: that a patent has been granted to the inventor, on the condition of a specification of the nature of the invention: that a specification has been made, sufficient to enable a mechanic to construct fire engines containing the improvement invented by the patentee: and that the Legislature six years after the patent had been granted, thought proper to extend the duration of it from the eight years then to come, to twenty-five years, the patent having been granted in the ninth, and the statute having passed in the fifteenth year of the present king.

Under these circumstances, I think I conform to the spirit of the stat. 21 Jac. 1, c. 3, s. 6, if I incline to support this patent, provided it may be supported without violating any rule of law: and I think so for two reasons, first, because the patentee is substantially intitled to the protection of the patent, and secondly because the public are sufficiently instructed, and will be duly benefited by the specification. Against the claim of the patentee certain objections have been made, which, it is contended, deprive him of all legal right to that protection. First, it is objected that the patent is not for fire engines upon the particular construction which contains this new improvement, but for a new invented method of lessening the consumption of steam and fuel: secondly, it is objected, that no particular engine is described in this specification, but that it only sets forth the principles: and the last objection is, that the statute has not duly prolonged the patent, because the patent is for a method, and the statute for an engine. It is obvious that these objections are merely formal: they do not affect the substantial merits of the patentee, nor the meritorious consideration which the public have a right to receive, in return for the protection which the patentee claims. With regard to the first objection, it is that the patent is not for a *659 fire engine of a particular construction, but for a new invented [478] method. It pre-supposes the existence of the fire engine, and gives a monopoly to the patentee of his new invented method of lessening the consumption of steam and fuel in fire engines. The obvious meaning of those words is, that he has made an improvement in the construction of fire engines, for what does method mean

but mode or manner of effecting? What method can there be of saving steam or fuel in engines, but by some variation in the construction of them? A new invented method therefore conveys to my understanding the idea of a new mode of construction. I think those words are tantamount to fire engines of a newly invented construction; at least I think they will bear this meaning if they do not necessarily exclude every other. The specification shews that this was the meaning of the words as understood by the patentee, for he has specified a new and particular mode of constructing fire engines. If he has so understood the words, and they will bear this interpretation, then I think this objection, which is merely verbal, is answered. To which I add, that patents for a method or art of doing particular things have been so numerous, according to the lists left with us, that method may be considered as a common expression in instruments of this kind. It would therefore be extremely injurious to the interests of patentees, to allow this verbal objection to prevail. As to the second objection, that no particular engine is described, that no model or drawing is set forth, I hold this not to be necessary, provided the patentee so describes the improvement as to enable artists to adopt it when his monopoly expires. The jury find that he has so described it. It is objected, that he professes to set forth principles only; but we are not bound by what he professes to do, but by what he has really done. If he had professed to set forth a full specification of his improvement, and had not set it forth intelligibly, his specification would have been insufficient, and his patent void. It seems therefore but reasonable, that if he sets forth his improvement intelligibly, his specification should be supported, though he professes only to set forth the principle. The term principle is equivocal; it may denote either the radical elementary truths of a science, or those consequential axioms which are founded on radical truths, but which are used as fundamental truths by those who do not find it expedient to have recourse to first principles. The radical principles on which all steam engines are founded, [479] are the natural properties of steam, its expansiveness and condensibility. Whether the machines are formed in one shape or another, whether the cylinder is kept hot or suffered to cool, whether the steam is condensed in one vessel or another, still the radical principles are the same. When the present patentee set his inventive faculties to work, he found fire engines already in existence, and the natural qualities of steam already known and mechanically used. He only invented an improvement in the mechanism, by which they might be employed to greater advantage. There is no newly discovered natural principle as to steam,

nor any new mechanical principle in his machine; the only invention is a new mechanical employment of principles already known. As to the specification, some part of it, so much as represents the future intentions of the patentee, may be considered, according to the language of the specification, as merely theoretical; but the greater part describes a practical use of improved mechanism, the basis on which the improvement is founded. The object of the patentee was to condense the steam without cooling the cylinder: the means adopted to effectuate this were to enclose the cylinder in a case which will confine the heat or transmit it slowly, to surround it with steam or other heated bodies, and to suffer neither water nor any other substance colder than the steam, to enter or touch it during that time. These means are set forth. The objection is, that there is no drawing or model of a particular engine; and where is the necessity of such drawing or model, if the specification is intelligible without it? Had a drawing or model been made, and any man copied the improvement, and made a machine in a different form, no doubt this would have been an infringement of the patent. Why? Because the mechanical improvement would have been introduced into the machine, though the form was varied. It follows from thence, that the mechanical improvement, and not the form of the machine, is the object of the patent; and if this mechanical improvement is intelligibly specified, of which a jury must be the judges, whether the patentee call it a principle, invention, or method, or by whatever other appellation, we are not bound to consider his terms, but the real nature of his improvement, and the description he has given of it, and we may I think protect him without violating any rule of law. As to the articles of the specification which denote intention only, and do not state the thing to which *660 [480] it is to be applied, I do not think he could maintain an action for breach of these articles; for he cannot anticipate the protection, before he is entitled to it by practical accomplishment. But the patent is for a method already adopted, and the two first and most material articles are set forth as already accomplished, and the case states it was new and useful at the time of making the patent. I therefore consider the most essential part of the patent, the keeping the cylinder hot, inclosing it in a case, and surrounding it with steam, as carried into practical effect at the time of granting the patent; this the Defendant has infringed; and I will presume after verdict, where nominal damages only are given, that the evidence was applied to, and the damages given for those articles only which are well specified. Now if he has infringed those articles which are well specified, he shall

not be excused from an action, because he has been guilty of an additional infringement on that which is specified as matter of intention only. As to the objection of the want of a drawing or model, that at first struck me as of great weight. I thought it would be difficult to ascertain what was an infringement of a method, if there was no additional representation of the improvement, or thing methodized. But I have satisfied my mind thus: infringement or not, is a question for the jury; in order to decide this case, they must understand the nature of the improvement or thing infringed; if they can understand it without a model, I am not aware of any rule of law which requires a model or a drawing to be set forth, or which makes void an intelligible specification of a mechanical improvement, merely because no drawing or model is annexed. In the present case, I do not hear that the want of a drawing or a model occasioned any difficulty to the jury; they have expressly decided that Mr. Watt has the merit of a new and an useful invention, and that this invention was infringed by the Defendant. How then can I say, that they could not understand it for the want of a drawing? Especially when they have added, that the specification is sufficient to enable a mechanic acquainted with the fire-engines previously in use, to construct fire-engines producing the effect of lessening the consumption of fuel and steam, upon the principle invented by the Plaintiff. For these reasons I think the second objection, that no particular engine is set forth, is not of sufficient weight to destroy the effect of the patent.

[481] Heath J. This patent is expressly for a new invented method for lessening the consumption of steam and fuel in fire-engines. It appears that the invention of the patentee is original, and may be the subject of a patent; but the question is, inasmuch as this invention is to be put in practice by means of machinery, whether the patent ought not to have been for one or more machines, and whether this is such a specification as entitles him to the monopoly of a method? If method and machinery had been used by the patentee as convertible terms, and the same consequences would result from both, it might be too strong to say, that the inventor should lose the benefit of his patent, by the misapplication of his term. In truth it is not so. His counsel have contended for the exclusive monopoly of a method of lessening the consumption of steam and fuel in fire-engines, and that therefore would better answer the purposes of the patentee, for the method is a principle reduced to practice; it is in the present instance the general application of a principle to an old machine. There is no doubt that the patentee might

have obtained a patent for his machinery, because the act of parliament he obtained acknowledged his patent, and he himself in 1782 procured a patent for his invention of certain new improvements upon steam and fire engines for raising water &c., which contained new pieces of mechanism, applicable to the same. Upon this statement the following objections arise to the patent, which I cannot answer: namely that if there may be two different species of patents, the one for an application of a principle to an old machine, and the other for a specific machine, one must be good and the other bad. The patent that admits the most lax interpretation should be bad, and the other alone conformable to the rules and principles of common law, and to the statute on which patents are founded. The statute 21 Jac. 1 prohibits all monopolies, reserving to the king by an express proviso so much of his ancient prerogative, as shall enable him to grant letters patent and grants of privilege, for the term of fourteen years or under, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures. What then falls within the scope of the proviso? Such manufactures as are reducible to two classes. The first class includes machinery, the second [482] substances (such as medicines) formed by chemical and other processes, where *661 the vendible substance is the thing produced, and that which operates preserves no permanent form. In the first class the machine, and in the second the substance produced, is the subject of the patent. I approve of the term manufacture in the statute, because it precludes all nice refinements; it gives us to understand the reason of the proviso that it was introduced for the benefit of trade. That which is the subject of a patent, ought to be specified, and it ought to be that which is vendible, otherwise it cannot be a manufacture. This is a new species of manufacture, and the novelty of the language is sufficient to excite alarm. It has been urged that other patents have been litigated and established; for instance Dollond's, which was for a refracting telescope. I consider that as substantially an improved machine. A patent for an improvement of a refracting telescope, and a patent for an improved refracting telescope, are in substance the same. The same specification would serve for both patents, the new organization of parts is the same in both. I asked in the argument for an instance of a patent for a method, and none such could be produced. I was then pressed with patents for chemical processes, many of which are for a method, but that is from an inaccuracy of expression, because the patent in truth is for a vendible substance. To pursue this train of reasoning still further, I shall consider

how far the arguments in support of this patent will apply to the invention of original machinery founded on a new principle. The steam engine furnishes an instance. The Marquis of Worcester discovered in the last century, the expansive force of steam, and first applied it to machinery. As the original inventor he was clearly entitled to a patent. Would the patent have been good applied to all machinery, or to the machines which he had discovered? The patent decides the question. It must be for the vendible matter, and not for the principle. Another objection may be urged against the patent, upon the application of the principle to an old machine, which is, that whatever machinery may be hereafter invented would be an infringement of the patent, if it be founded on the same principle. If this were so it would reverse the clearest positions of law respecting patents for machinery, by which it has been always holden, that the organization of a machine may be the subject of a patent, but principles cannot. If the argument for the patentee were [483] correct, it would follow, that where a patent was obtained for the principle, the organization would be of no consequence. Therefore the patent for the application of the principle must be as bad as the patent for the principle itself. It has been urged for the patentee, that he could not specify all the cases, to which his machinery could be applied. The answer seems obvious, that what he cannot specify, he has not invented. The finding of the jury that steam engines may be made upon the principle stated by the patentee, by a mechanic acquainted with the fire-engines previously in use, is not conclusive. This patent extends to all machinery that may be made on this principle, so that he has taken a patent for more than he has specified; and as the subject of his patent is an entire thing, the want of a full specification is a breach of the conditions, and avoids the patent. Indeed it seems impossible so specify a principle, and its application to all cases, which furnishes an argument that it cannot be the subject of a patent. It has been usual to examine the specification, as a condition on which the patent was granted. I shall now consider it in another point of view. It is a clear principle of law that the subject of every grant must be certain. The usual mode has been for the patentee to describe the subject of it by the specification; the patent and the specification must contain a full description. Then in this, as in most other cases, the patent would be void for the uncertain description of the thing granted, if it were not aided by the statute. The grant of a method is not good, because uncertain, the specification of a method or the application of principle is equally so, for the reasons I have alleged.

Buller, J. Few men possess more ingenuity, or have greater merit with the public, than the Plaintiffs on this record; and if their patent can be sustained in point of law, no man ought to envy them the profits and advantages arising from it. Even if it cannot be supported, no man ought to envy them the profits which they have received; because the world has undoubtedly derived great advantages from their ingenuity. We are called upon to deliver our opinions on the dry question of law, whether upon the case disclosed to us, this patent can or cannot be sustained. And I shall deliver my opinion first upon the case itself, and secondly on the arguments which have been urged at the bar.

[484] The case states the Plaintiffs' patent, the specification, and the act of parliament. It gives a description of the old engine, and then states that the invention *662 of the Plaintiffs is a new and useful one, and that the specification is sufficient to enable a mechanic to construct fire-engines, producing the effect of lessening the consumption of fuel and steam in fire-engines, upon the principle invented by Mr. Watt. One objection made by the Defendant was, that it did not appear on the case, that a mechanic could, from the specification, construct an engine which should lessen the consumption of fuel and steam, with equal effect, or to the same extent as Mr. Watt himself did. If the negative appeared, viz. that a mechanic could not from the specification make an engine with equal effect, or if it required expense and experiments before it could be done, I agree that either of those facts would avoid the patent. But that is not so stated; and upon this case I think we are bound to say there is no foundation for either of those objections. There is another objection to the case, which I think more important, and that is, that the jury have not told us wherein the invention consists, whether it be in an additional cylinder, or other vessel to the old machine, or what the addition is, or whether it be only in the application of the old parts of the machine, or in what is called at the bar, the principle only, or in what that principle consists. These defects have opened a great field of argument, and have driven the Plaintiffs' counsel to the necessity of endeavouring to support his case on all possible grounds. The old engine consisted of a cylinder, a boiler, a pipe which occasionally communicated between them, an injection cistern, and pumps. The two material parts of the new engine, as mentioned in the specification, are the old cylinder, now called the steam vessel, and the vessel now called the condenser, which it is said must be distinct from the steam vessel, though occasionally communicating with it. The old boiler did occasionally

communicate with the cylinder. The pumps, grease and other things are admitted to be trifling circumstances, and not worthy any observation. Upon this state of the case, I cannot say that there is any thing substantially new in the manufacture; and indeed it was expressly admitted on the argument, that there were no new particulars in the mechanism: that it was not a machine or instrument which the [485] Plaintiffs had invented: that mechanism was not pretended to be invented in any of its parts: that this engine does consist of all the same parts as the old engine: and that the particular mechanism is not necessary to be considered. The fact of there being nothing new in the engine drove the counsel to argue on very wide grounds, and to touch on the possibility of maintaining a patent for an idea or a principle, though I think it was admitted that a patent could not be sustained for an idea or a principle alone.

The very statement of what a principle is, proves it not to be a ground for a patent. It is the first ground and rule for arts and sciences, or in other words the elements and rudiments of them. A patent must be for some new production from those elements, and not for the elements themselves. The Plaintiffs' case is considerably distressed in many parts of it, and as it seems to me, the arguments which have been adduced were very much calculated to keep clear of difficulties, which the counsel foresaw might be introduced into the case; as first, that unless the principle can be supported as the ground of the patent, there may be some danger of confirming the Defendant's objection to it: secondly, that unless the principle can be supported, it may open a fatal objection to the specification, because that does not state in what manner the new machine is to be constructed, how it varies from the old one, or in what way the improvements are to be added: or thirdly, because the patent embraces the whole principle, and is founded on that alone; but the invention is taken to consist of an improvement or addition only. Another objection may arise both to the patent and specification, viz. that the patent is granted for the whole engine, and not for the addition or improvement only. Perhaps it may be convenient and judicious to keep these objections as much as possible in the back ground, and out of the view of the court. But it is our duty to sift and dive into the facts and circumstances of the case, and the bearings and consequences of them, as far as our abilities or knowledge of the subject will admit. There is one short observation arising on this part of the case, which seems to me to be unanswerable, and that is, that if the principle alone be the foundation of the patent, it cannot possibly stand, with that knowledge and discovery

which the world were in possession of before. The effect, the power, and the operation of steam were known long [486] before the date of this patent; all machines which are worked by steam are worked on the same principle. The principle was known before, and therefore if the principle alone be the foundation of the patent, though the addition may be a great improvement, (as *663 it certainly is,) yet the patent must be void ab initio. But then it was said, that though an idea or a principle alone would not support the patent, yet that an idea reduced into practice, or a practical application of a principle was a good foundation for a patent, and was the present case. The mere application or mode of using a thing, was admitted in the reply not to be a sufficient ground⁵; for on the court putting the question, whether if a man by science were to devise the means of making a double use of a thing known before, he could have a patent for that, it was rightly and candidly admitted that he could not. The method and the mode of doing a thing are the same: and I think it impossible to support a patent for a method only, without having carried it into effect and produced some new substance. But here it is necessary to inquire, what is meant by a principle reduced into practice. It can only mean a practice founded on principle, and that practice is the thing done or made, or in other words the manufacture which is invented.

This brings us to the true foundation of all patents, which must be the manufacture itself; and so says the statute 21 Jac. 1, c. 3. All monopolies except those which are allowed by that statute, are declared to be illegal and void; they were so at common law, and the sixth section excepts only those of the sole working or making any manner of new manufacture: and whether the manufacture be with or without principle, produced by accident or by art, is immaterial. Unless this patent can be supported for the manufacture, it cannot be supported at all. I am of opinion that the patent is granted for the manufacture, and I agree with my Brother Adair that verbal criticisms ought not to avail, but that principle in the patent and engine in the act of parliament mean and are the same thing. Besides, the declaration is founded on a right to the engine, and therefore, unless the Plaintiffs can make out their right to that extent, they must fail. In most of the instances of the different patents mentioned by my Brother Adair, the patents were for the manufacture, and the specification rightly stated [487] the method by which the manufacture was made: but none of them go the length of proving, that a method of doing a thing without the thing being done or actually reduced into practice, is a good foundation

for a patent. When the thing is done or produced, then it becomes the manufacture which is the proper subject of a patent. Dollond's patent was for object-glasses, and the specification properly stated the method of making those glasses. And as I mentioned in the course of the argument, the point contested in that case was, whether Dollond or Hall was the first and true inventor within the meaning of the statute, Hall having first made the discovery in his own closet, but never made it public; and on that ground, Dollond's patent was confirmed. Mechanical and chemical discoveries all come within the description of manufactures: and it is no objection to either of them that the articles of which they are composed were known and were in use before, provided the compound article which is the object of the invention, is new. But then the patent must be for the specific compound, and not for all the articles or ingredients of which it is made. The first inventor of a fire-engine could never have supported a patent for the method and principle of using iron. Nor could Dr. James (supposing his patent had been clear of other objections) have sustained a patent for the method and principle of using antimony. In the first case, the patent must have been for the fire-engine, eo nomine; and in the second, for the specific compound powder. Suppose the world were better informed than it is, how to prepare Dr. James's fever powder, and an ingenious physician should find out that it was a specific cure for a consumption, if given in particular quantities; could he have a patent for the sole use of James's powder in consumptions or to be given in particular quantities? I think it must be conceded that such a patent would be void; and yet the use of the medicine would be new, and the effect of it as materially different from what is now known, as life is from death. So in the case of a late discovery, which as far as experience has hitherto gone, is said to have proved efficacious, that of the medicinal properties of arsenic in curing agues, could a patent be supported for the sole use of arsenic in aguish complaints? The medicine is the manufacture, and the only object of a patent, and as the medicine is not new, any patent for it, or for the use of it, would be void. The case of water tabbies which has often been mentioned in Westminster [488] Hall, may afford some illustration of *664 this subject. That invention first owed its rise to the accident of a man's spitting on a floor cloth, which changed its colour, from whence he reasoned on the effect of intermixing water with oils or colours, and found out how to make water tabbies, and had his patent for water tabbies only. But if he could have had a patent for the principle of intermixing water with oil or colours, no man could have

had a patent for any distinct manufacture, produced on the same principle. Suppose painted floor cloths to be produced on the same principle, yet as the floor cloth and the tabby are distinct substances, calculated for distinct purposes, and were unknown to the world before, a patent for one would be no objection to a patent for another.

The true question in this case is, whether the Plaintiffs' patent can be supported for the engine? I have already said I consider it as granted for the engine, and if that be the right construction of the patent, that alone lays all the arguments about ideas and principles out of the case. The objections to this patent, as a patent for the engine, are two: first, that the fire-engine was known before: and secondly, though the Plaintiffs' invention consisted only of an improvement of the old machine he has taken the patent for the whole machine, and not for the improvement alone. As to the first, the fact which the Plaintiffs' counsel were forced to admit, and did repeatedly admit in the terms which I mentioned, viz. that there was nothing new in the machine, is decisive against the patent. And the second objection is equally fatal. That a patent for an addition or improvement may be maintained, is a point which has never been directly decided; and *Bircot's case*, 3 Inst. 184, is an express authority against it, which case was decided in the Exchequer Chamber. What were the particular facts of that case we are not informed, and there seems to me to be more quaintness than solidity in the reason assigned, which is, that it was to put but a new button to an old coat, and it is much easier to add than to invent. If the button were new, I do not feel the weight of the objection that the coat on which the button was to be put, was old. But in truth arts and sciences at that period were at so low an ebb, in comparison with that point to which they have been since advanced, and the effect and utility of improvements so little known, that I do not think that case ought to preclude the question. In later [489] times, whenever the point has arisen, the inclination of the court has been in favour of the patent for the improvement, and the parties have acquiesced, where the objection might have been brought directly before the court. In *Morris v. Branson* which was tried at the sittings after Easter term 1776, the patent was for making oilet holes or net work in silk, thread, cotton, or worsted; and the Defendant objected that it was not a new invention, it being only an addition to the old stocking frame. Lord Mansfield said "after one of the former trials on this patent, I received a very sensible letter from one of the gentlemen who was upon the jury, on the subject whether on principles of public policy, there could be a patent for an addition only. I paid

great attention to it, and mentioned it to all the judges. If the general point of law, viz. that there can be no patent for an addition, be with the Defendant, that is open upon the record, and he may move in arrest of judgment. But that objection would go to repeal almost every patent that was ever granted." There was a verdict for the Plaintiffs with 500*l.* damages, and no motion was made in arrest of judgment. Though his Lordship did not mention what were the opinions of the judges, or give any direct opinion himself, yet we may safely collect that he thought on great consideration, the patent was good, and the Defendant's counsel, though they had made the objection at the trial, did not afterwards persist in it. Since that time, it has been the generally received opinion in Westminster Hall, that a patent for an addition is good. But then it must be for the addition only, and not for the old machine too. In *Jessop's case*, as quoted by my Brother Adair, the patent was held to be void because it extended to the whole watch, and the invention was of a particular movement only. It was admitted in the reply, that the patent should be applied to the invention itself: but it was contended, that if in consequence the patent gave a right to the whole engine, that would be no objection. To this I answer, that if the patent be confined to the invention, it can give no right to the engine, or to any thing beyond the invention itself. Where a patent is taken for an improvement only, the public have a right to purchase that improvement by itself, without being incumbered with other things. A fire-engine of any considerable size, I take it, would cost about 1200*l.* and suppose the alteration made by the Plaintiff, with a fair allowance for profit would [490] cost 50 or 100*l.* is it to be maintained, that all the persons who already have fire-engines must be at the *665 expence of buying new ones from the Plaintiffs, or be excluded from the use of the improvement? So in the case of the watch, may not other persons in the trade buy the new movement, and work it up in watches made by themselves? Where men have neither fire-engines nor watches, it is highly probable that they will go to the inventor of the last and best improvements for the whole machine; and if they do, it is an advantage which the inventor gets from the option of mankind, and not from any exclusive right or monopoly vested in him. But here the Plaintiffs claim the right to the whole machine. To that extent their right cannot be sustained, and therefore I am of opinion that there ought to be judgment for the Defendant.

Lord Chief Justice Eyre . Upon this case two questions are reserved for the opinion of the court; the first, whether the patent is good in law, and continued by the act of

parliament mentioned in the case; the second, whether the specification stated in the case is in point of law sufficient to support the patent? As I take it, the facts of the case are stated with a view to the application of them to these questions, and not to any other question which may be thought to arise upon them. Perhaps indeed, if the court saw that another material question might arise out of these facts which had escaped the attention of the court and jury at Nisi Prius, they might direct the case to be amended or a new trial to be had in order to introduce it. These two questions were thus stated in order to bring before the court the points of law insisted on upon the part of the Defendant, and also to give an opportunity for considering a doubt which occurred to me upon my first view of the case at the trial, which was, whether a patent right could attach upon any thing not organized, and capable of precise specification. As these two questions are framed, there are three points for the consideration of the court. First, whether the patent was in its original creation good or bad? Secondly, taking it to be good, whether it was continued by the act of parliament? And thirdly, taking it to be good in its original creation, and to have been continued by the act of parliament, subject to an objection for the want of a specification, whether there has been a sufficient specification? Though [491] we have had many cases upon patents yet I think we are here upon ground which is yet untrodden, at least was untrodden till this cause was instituted, and till the discussions were entered into which we have heard at the bar, and now from the court. Patent rights are no where that I can find accurately discussed in our books. Sir Edward Coke discourses largely, and sometimes not quite intelligibly, upon monopolies, in his chapter of monopolies, 3 Inst. 181. But he deals very much in generals, and says little or nothing of patent rights, as opposed to monopolies. He refers principally to his own report of the case of monopolies. 11 Co. 86 b.; he also mentions a resolution of all the judges in 2 & 3 Eliz. from a MS. of Dyer, condemning a grant to the corporation of Southampton by Phillip and Mary, for the sole right of importing malmsey wine, and that no malmsey wine should be landed at any other place, upon pain to pay treble customs. He also mentions *Bircot's case* in the Exchequer Chamber, 15 Eliz. for a privilege concerning the preparing and melting of lead ore, but he states no particulars; and the principle on which that case was determined has been, as my Brother Buller observes, not adhered to; namely, that an addition to a manufacture cannot be the subject of a patent. There is also a case in Godbolt ⁶, and there are a few others condemning particular patents, which were

beyond all doubt mere monopolies. The modern cases have chiefly turned upon the specifications, whether there was a fair disclosure. Such was the case of *Turner v. Winter*, 1 Term Rep. B. R. 602. The case of *Edgeberry v. Stephens*, 2 Salk. 447, is almost the only case upon the patent right, under the saving of the statute of Jac. 1, that is to be found. That case establishes, that the first introducer of an invention practised beyond sea, shall be deemed the first inventor: and it is there said, the act intended to encourage new devices useful to the kingdom; and whether acquired by travel or study it is the same thing. Deriving so little assistance from our books, let us resort to the statute itself, 21 Jac. 1, c. 3. We shall there find a monopoly defined to be “the privilege of the sole buying, selling, making, working or using any thing within this realm;” and this is generally condemned as contrary to the fundamental law of the land. But the 5th and 6th sections of that statute save letters patent, and grants of privileges of the [492] sole working or making of any manner of new manufacture within *666 this realm, to the first and true inventor or inventors of such manufactures, with this qualification, “so they be not contrary to the law, nor mischievous to the state,” in these three respects: first, “by raising the prices of commodities at home;” secondly, “by being hurtful to trade;” or, thirdly, by being “generally inconvenient.” According to the letter of the statute, the saving goes only to the sole working and making; the sole buying, selling and using, remain under the general prohibition; and with apparent good reason for so remaining, for the exclusive privilege of buying, selling and using, could hardly be brought within the qualification of not being contrary to law, and mischievous to the state, in the respects which I have mentioned. I observe also, that according to the letter of the statute, the words “any manner of new manufacture” in the saving, fall very short of the words “any thing” in the first section. But most certainly the exposition of the statute, as far as usage will expound it, has gone very much beyond the letter. In the case in *Salkeld*, the words “new devices” are substituted and used as synonymous with the words “new manufacture.” It was admitted in the argument at the bar, that the word “manufacture” in the statute was of extensive signification, that it applied not only to things made, but to the practice of making, to principles carried into practice in a new manner, to new results of principles carried into practice. Let us pursue this admission. Under things made, we may class, in the first place, new compositions of things, such as manufactures in the most ordinary sense of the word; secondly, all mechanical inventions, whether made to produce old or new effects, for a new piece of

mechanism is certainly a thing made. Under the practice of making we may class all new artificial manners of operating with the hand, or with instruments in common use, new processes in any art producing effects useful to the public. When the effect produced is some new substance or composition of things, it should seem that the privilege of the sole working or making, ought to be for such new substance or composition, without regard to the mechanism or process by which it has been produced, which, though perhaps also new, will be only useful as producing the new substance. Upon this ground Dollond's patent was perhaps exceptionable, for that was for a method of [493] producing a new object-glass, instead of being for the object-glass produced. If Dr. James's patent had been for his method of preparing his powders, instead of the powders themselves, that patent would have been exceptionable upon the same ground. When the effect produced is no substance or composition of things, the patent can only be for the mechanism if new mechanism is used, or for the process, if it be a new method of operating, with or without old mechanism, by which the effect is produced. To illustrate this. The effect produced by Mr. David Hartley's invention for securing buildings from fire is no substance or composition of things; it is a mere negative quality, the absence of fire. This effect is produced by a new method of disposing iron plates in buildings. In the nature of things the patent could not be for the effect produced. I think it could not be for the making of the plates of iron, which, when disposed in a particular manner produced the effect, for those are things in common use. But the invention consisting in the method of disposing of those plates of iron, so as to produce their effect, and that effect being a useful and meritorious one, the patent seems to have been very properly granted to him for his method of securing buildings from fire. And this compendious analysis of new manufactures mentioned in the statute, satisfies my doubt, whether any thing could be the subject of a patent, but something organized and capable of precise specification. But for the more satisfactory solution of the other points which are made in this case, I shall pursue this subject a little further. In Mr. Hartley's method, plates of iron are the means which he employs; but he did not invent those means, the invention wholly consisted in the new manner of using, or I would rather say, of disposing a thing in common use, and which thing every man might make at his pleasure, and, which therefore, I repeat, could not, in my judgment, be the subject of the patent. In the nature of things it must be, that in the carrying into execution any new invention, use must be

made of certain means proper for the operation. Manual labour to a certain degree must always be employed; the tools of artists frequently; often things manufactured, but not newly invented, such as Hartley's iron plates; all the common utensils used in conducting any process, and so up to the most complicated machinery that the [494] art of man ever devised. Now let the merit of the invention be what it may, it is evident that the patent in almost all these cases cannot be granted for the means by which it acts, for in them there is nothing new, and in some of them nothing capable of appropriation. Even where the *667 most complicated machinery is used, if the machinery itself is not newly invented, but only conducted by the skill of the inventor, so as to produce a new effect, the patent cannot be for the machinery. In *Hartley's case* it could not be for the effect produced, because the effect, as I have already observed, is merely negative, though it was meritorious. In the list of patents with which I have been furnished, there are several for new methods of manufacturing articles in common use, where the sole merit and the whole effect produced are the saving of time and expence, and thereby lowering the price of the article, and introducing it into more general use. Now I think these methods may be said to be new manufactures, in one of the common acceptations of the word, as we speak of the manufactory of glass, or any other thing of that kind. The advantages to the public from improvements of this kind, are beyond all calculation important to a commercial country, and the ingenuity of artists who turn their thoughts toward such improvements, is in itself deserving of encouragement; and in my apprehension it is strictly agreeable to the spirit and meaning of the statute Jac. 1, that it should be encouraged: and yet the validity of these patents, in point of law, must rest upon the same foundation as that of Mr. Hartley. The patent cannot be for the effect produced, for it is either no substance at all, or what is exactly the same thing as to the question upon a patent, no new substance, but an old one, produced advantageously for the public. It cannot be for the mechanism, for there is no new mechanism employed. It must then be for the method; and I would say, in the very significant words of Lord Mansfield (4 Burr. 2397) in the great case of the copy-right, it must be for method detached from all physical existence whatever. And I think we should well consider what we do in this case, that we may not shake the foundation upon which these patents stand. Probably I do not over-rate it when I state that two-thirds, I believe I might say three-fourths, of all patents granted since the statute passed, are for methods of operating and of manufacturing, producing no

new substances [495] and employing no new machinery. If the list were examined, I dare say there might be found fifty patents for methods of producing all the known salts, either the simple salt, or the old compounds. The different sorts of ashes used in manufactures are many of them inventions of great merit, many of them probably mere speculations of wild projectors: the latter ought to fall, the former to stand. If we wanted an illustration of the possible merit of a new method of operating with old machinery, we might look to the identical case now in judgment before the court. If we consider into what general use fire-engines are come, that our mines cannot be worked without them, that they are essentially necessary to the carrying on many of our principal manufactures, that these engines are worked at an enormous expence in coals, which in some parts of the kingdom can with difficulty be procured at all in large quantities, it is most manifest that any method found out for lessening the consumption of steam in the engines, which by necessary consequence lessens the consumption of coals expended in working them, will be of great benefit to the public, as well as to the individual who thinks fit to adopt it. And shall it now be said, after we have been in the habit of seeing patents granted, in the immense number in which they have been granted for methods of using old machinery, to produce substances that were old, but in a more beneficial manner, and also for producing negative qualities by which benefits result to the public, by a narrow construction of the word manufacture in this statute, that there can be no patent for methods producing this new and salutary effect, connected, and intimately connected as it is, with the trade and manufactures of the country? This, I confess, I am not prepared to say. An improper use of the word principle in the specification set forth in this case has, I think, served to puzzle it. Undoubtedly there can be no patent for a mere principle, but for a principle so far embodied and connected with corporeal substances as to be in a condition to act, and to produce effects in any art, trade, mystery, or manual occupation, I think there may be a patent. Now this is, in my judgment, the thing for which the patent stated in the case was granted, and this is what the specification describes, though it miscalls it a principle. It is not that the patentee has conceived an abstract notion that [496] the consumption of steam in fire-engines may be lessened but he has discovered a practical manner of doing it; and for that practical manner of doing it he has taken this patent. Surely this is a very different thing from taking a patent for a principle; it is not for a principle, but for a process. I have dwelt the more largely upon this part of the case because, in my apprehension,

this is the foundation upon which the whole argument will be found to rest. If upon the true construction of the statute there may be a patent for a new method of manufacturing or conducting chemical processes, or of working machinery, so as to produce new and useful effects, then I am warranted to conclude that this patent was in its original creation good. I will next consider the specification, before I proceed to the consideration of the question arising upon the statute for continuing this patent. The specification has reference to the patent, and not to the statute, and therefore it will be proper to consider it in this stage of the argument. I distinctly admit that if this patent is to be taken to be a patent for a fire-engine, the specification is not sufficient; it is not a specification of mechanism of any determinate form, having component parts capable of precise arrangement, and of particular description. On the other hand, if the patent is not for a fire-engine, but in effect for a manner of working a fire-engine, so as to lessen the consumption of steam, which, as I conceive, the words of the patent import, let us see whether this specification does not sufficiently describe a manner of working fire-engines, so as to produce the effect expressed in the patent, and whether the only objection to the specification is not that it is loaded with a redundancy of superfluous matter. The substance of the invention is a discovery, that the condensing the steam out of the cylinder, the protecting the cylinder from the external air, and keeping it hot to the degree of steam-heat, will lessen the consumption of steam. This is no abstract principle, it is in its very statement clothed with practical application. It points out what is to be done in order to lessen the consumption of steam. Now the specification of such a discovery seems to consist in nothing more than saying to the constructor of a fire-engine, "for the future condense your steam out of the body of the cylinder, instead of condensing it within it, put something round the cylinder to protect it from the external air, and to preserve [497] the heat within it, and keep your piston air-tight without water." Any particular manner of doing this one should think would hardly need to be pointed out, for it can scarcely be supposed, that a workman capable of constructing a fire engine would not be capable of making such additions to it as should be necessary to enable him to execute that which the specification requires him to do. But if a very stupid workman should want to know how to go about this improvement, and in answer to his question was directed to conduct the steam which was to be condensed from the cylinder into a close vessel, by means of a pipe and a valve, communicating with the cylinder and the close vessel, to keep the close vessel in a state of coldness

sufficient to produce condensation, and to extract from it any part of the steam which might not be condensed by the pump; and was also told to inclose the cylinder in a wooden case, and to use a resinous substance instead of water to keep the piston air-tight, can it be imagined that he would be so stupid as not to be able to execute this improvement, with the assistance of these plain directions? If any man could for a moment imagine that this was possible, I observe that this difficulty is put an end to, because the jury have found that a workman can execute this improvement in consequence of the specification. Some machinery it is true must be employed, but the machinery is not of the essence of the invention but incidental to it. The steam must pass from the cylinder to the condensing vessel, for which purpose there must be a valve to open a pipe to convey, and a vessel to receive the steam. But this cannot be called new invented machinery, whether considered in the parts or in the whole, and therefore there can be no patent for this addition to the fire-engines. Suppose a new invented chemical process, and the specification should direct that some particular chemical substance should be poured upon gold in a state of fusion, it would be necessary, in order to this operation, that the gold should be put into a crucible, and should be melted in that crucible, but it would be hardly necessary to state in the specification the manner in which, or the utensils with which the operation of putting gold into a state of fusion was to be performed. They are mere incidents with which every man acquainted with the subject is familiar. Some observations were made in the course of the argument at the bar, on its being left unascertained both in the specification and case, to what extent the consumption of steam would be lessened by the invention; but the method does not profess to ascertain this: it professes to lessen the consumption; and to make the patent good, the method must be capable of lessening the consumption to such an extent as to make the invention useful. More precision is not necessary, and absolute precision is not practicable. The quantity of steam which will be saved in each machine must depend upon a great variety of circumstances respecting each individual fire-engine, such as the accuracy of casting or boring the cylinder, or the dimensions of it, the accuracy of the workman in putting his apparatus together, the care in keeping the cylinder in a proper degree of heat, and the more or less perfect order for working, in which the engine is kept. All these circumstances will affect the quantity of steam to be lessened. Some weighty observations have been made upon parts of this specification, but those parts appear to me not properly to relate to the method described

in the patent; they are rather intimations of new projects of improvement in fire-engines, and some of them, I am very ready to confess, either very loosely described or not very accurately conceived. I do not undertake to pronounce which, but one or the other is pretty clear. They are the fourth and fifth articles: the first, second, third and sixth appear to me to belong to this method, and very clearly to point out and explain the method to every man who has a common acquaintance with the subject, and to be intelligible even to those who are unacquainted with it. If there be a specification to be found in that paper, which goes to the subject of the invention as described in the patent, I think the rest may very well be rejected as superfluous. If indeed the Defendant could have shewn that he had not pirated the invention which is sufficiently specified, but that what he hath done hath a reference to another method of lessening the consumption of steam to which the questionable parts of the specification were meant to relate, the objection to the specification would have remained, and perhaps some other objections which have been alluded to, might have been taken both to the patent and specification. But I would observe here, that with regard to this and some other difficulties, there is no question reserved in this case respecting the infringement of the patent. The general fact only is stated; that it has been in- [499] -fringed by the Defendant and in the consideration of a case reserved, we are not to search for difficulties upon which the parties have not proposed to state any point to us for our judgment, and into which I think we are not at liberty to go. The difficulty which struck me, as it did my Brother Buller, with respect to the declaration, is applied to the patent as it originally stood, not as it now stands continued by the act of parliament. If we were at liberty to go into it, that difficulty might perhaps produce a nonsuit, and that nonsuit a new action in which the difficulty would be removed. But this cause was instituted to try the merits of the patent: I thought therefore that a formal objection was wisely overlooked. Supposing then the difficulty upon the patent itself and the specification to be got over, the act of parliament remains to be considered. The objection stated in the strongest manner would amount to this, that the act continues a patent for a machine, when in fact the patent is for a process. It is to be observed that there is nothing technical in the composition or the language of an act of parliament. In the exposition of statutes the intent of parliament is the guide. It is expressly laid down in our books, I do not here speak of penal statutes, that every statute ought to be expounded not according to the letter, but the intent. 2 Roll.

Abr. 118, Plowd. 350, 363. This doctrine has been carried into effect by cases. Though a corporation be misnamed in an act of parliament, if it appears that the corporation was intended it is sufficient. 10 Co. 5 b. So the statute of *quia emptores terrarum* has said that every one shall hold of the lord paramount *secundum quantitatem terræ*, but this shall be construed to be *secundum valorem terræ*; for so was the intent. Plowd. 10, 57. We all know that an act of parliament may be extended by equity. No authority has been cited which amounts to proof that a mistake in point of description in an act of parliament of this nature when the true meaning can be discovered, and when there is a foundation on which the act can be supported, shall vitiate it. The case cited from Plowden differs essentially from this case. The act of parliament in that case gave effect to a supposed legal attainder, and proceeded upon it altogether. If the groundwork fell, and there was no legal attainder, nothing remained: the supposed attainder in that case fell, consequently all fell. Now the difference between that case and the present is this, here the true patent meant to be described exists, and may [500] therefore be a ground-work to support the act. This case was compared to the case of the king being deceived in his grant. But I am not satisfied that the king, proceeding by and with the advice of parliament, is in that situation in respect of which he is under the special protection of the law, and that he could on that ground be considered as deceived in his grant: no case was cited to prove that position. The objection on the act of parliament is of the same nature as one of the objections to the specification: the specification calls a method of lessening the consumption of steam in fire-engines a principle, which it is *670 not; the act calls it an engine, which perhaps also it is not; but both the specification and statute are referable to the same thing, and when they are taken with their correlative are perfectly intelligible. Upon the wider ground I am therefore of opinion that the act has continued this patent. A narrower ground was taken in the argument, which was to expound the word engine in the body of this act, in opposition to the title of it, to mean a method; and I am ready to say I would resort to that ground if necessary in order to support the patent, *ut res magis valeat quam pereat*. But it is not necessary: for let it be remembered, that though monopolies in the eye of the law are odious, the consideration of the privilege created by this patent, is meritorious, because, to use the words of Lord Coke, “the inventor bringeth to and for the commonwealth a new manufacture by his invention, costs and charges.” I conclude therefore that the judgment of the court ought to be for the Plaintiff.

The court being thus equally divided, no judgment was given, but the parties seemed disposed to put the case upon the record, in the form of a special verdict, in order that it might be carried on to a Court of Error.

Footnotes

- 1 [This question came afterwards before the Court of King's Bench, in the case of *Hornblower v. Boulton* , 8 T. R. 95, on error from the Common Pleas, when it was unanimously resolved that the invention was the subject of a patent, and the patentee's right was valid. It seemed admitted there that under the statute 21 Jac. I. c. 3, s. 6, there cannot be a patent for a philosophical principle only, which has been since held in the case of *Rex v. Wheeler* , 2 B. & A. 345. Upon the construction of the word manufactures in the statute of James I., the Court in the last cited case observed, "It may perhaps extend also to a new process to be carried on by known implements or elements acting upon known substances, and ultimately producing some other known substance, but producing it in a cheaper or more expeditious manner, or of a better and more useful kind." As to patents for improvements, see *Harmar v. Playne* , 11 East, 110. *Macfarlane v. Price* , 1 Stark. N. P. C. 199. *Lord Cochrane v. Smethurst* , *ibid.* 205. *Campion v. Benyon* , 3 Brod. & Bing. 5. See also *Hill v. Thompson* , 8 Taunt. 375. 3 Merivale, 629. 2 B. Moore, 425, S. C. *Savory v. Price* , 1 R. & M. N. P. C. 1.]
- 2 This act is stated at large, in the arguments on the part of the Defendant.
- 3 A great variety of patents of this kind were cited which it is not necessary to repeat, as they all went to the same point.
- 4 See the printed account of that trial, at the Sittings at Westminster after Trinity Term 25 Geo. 3, before Mr. J. Buller.
- 5 By an error of the press, this question and the admission in answer to it are omitted in the statement of the reply.
- 6 Godb. 252. *The Cloth-workers of Ipswich's case* , *ib.* 413, *Lord Zouch and More's case* .
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