The Sunlight Incandescent Gas Lamp Company, Ld. v. *The Incandescent Gas Light Company, Ld., and others.*

IN THE HIGH COURT OF JUSTICE.—QUEEN'S BENCH DIVISION.

Before MR. JUSTICE WILLS.

July 19th, 20th, 21st, 22nd, and 23rd, 1897.

THE SUNLIGHT INCANDESCENT GAS LAMP COMPANY, LD. *v.* THE INCANDESCENT GAS LIGHT COMPANY, LD., AND OTHERS.

Patent.—Construction.—Anticipation.—Infringement.—Action dismissed.—Costs.— Patents, &c. Act, 1883, Section 29 (6).

In 1886, a patent was granted to R. for "Improvements relating to the pro- "duction of light by the incandescence of refractory materials." The patent was intended to meet the difficulty in the transmission of Welsbach mantles after ignition, and the Specification stated "that the difficulty might be overcome "by dipping the mantle after ignition into a liquid which would thoroughly "penetrate the interstices of the material, and would afterwards set to such a "degree of hardness as to protect the material from danger of breakage in "packing or handling, and which could afterwards be removed without "mechanical injury to the mantles and without leaving any objectionable "residue." It then stated that a satisfactory method consisted in dipping into a hot solution of volatile hydrocarbon mixed with paraffin wax or paraffin alone, and described the process for paraffin. Then it continued, "Other "materials may be employed as long as they set hard at ordinary tempera- "tures, and &c. &c." The claims were (1) the treatment of the mantles after ignition by immersion in a liquid which will afterwards set and will burn away without prejudicial results to the mantles for the purposes set forth; (2) the use of paraffin substantially as described in the treatment claimed under the first claim. An action for infringement having been brought on this patent by the S. Company against the I. Company, alleging infringement by the use of collodion with various solvents, the defences relied on at the trial were (1) that the Patentees were not the true and first inventors, the invention having been communicated to them by W.; (2) non-infringement; (3) want of utility; (4) want of novelty by reason of anticipation by an invention of Bright *in the year 1848 for stiffening the wicks of lamps by dipping in wax, and by the importation into this country of* Clamond's *magnesian baskets coated, for strengthening purposes, with dextrine or collodion, and the subsequent burning of them; (5) expiration of the patent by non-payment of fees.*

Held, that, according to the proper construction of the Specification, it did not claim any setting except that effected by cooling; that the invention was not anticipated by Bright, *and that the importation and burning of* Clamond's *baskets, coated as mentioned, was not a publication of* Clamond's *process,*

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although, if it had been, Clamond's *process would have constituted an anticipation; that the alleged communication of the invention by W. was not established; that utility was established; that the use of collodion was not an infringement, since the setting of collodion is not by cooling but by evaporation. The action was accordingly dismissed, the Defendants having given to them the general costs of the action, but the Plaintiffs having the costs of the issue of validity except as to its expiration. A Certificate of validity was granted.*

Section 29 (sub-section 6) of the Patents, &c. Act, 1883, does not take away the jurisdiction of the Court to give the costs of the issue of validity to an unsuccessful Plaintiff.

On the 1st of September 1886, Letters Patent (No. 11,161 of 1886) were granted to *Frederick Lawrence Rawson* and *William Stepney Rawson* for an invention "Improvements relating to the production of light by the "incandescence of refractory materials."

The Complete Specification, as amended (by leave of the Comptroller given on the 18th of September 1895), was as follows:—"This invention relates to "improvements in the manufacture of mantles and apparatus connected with "the production of light by means of incandescence of refractory materials "known as the Welsbach Incandescence Light.

"~~It is found that it is of the utmost importance that the mantles which "are to be rendered incandescent by the Bunsen burner should be as regular "as possible in their contour and also should be slightly conical in shape so "as to allow the flame to play evenly upon their surface.~~

"~~This is effected by stretching them upon a platinum mandril previous to "ignition and after lighting them from above and allowing them to smoulder "down slowly we play a blowpipe flame upon them with gradually increasing "force so as to compel them to take the exact shape of the mandril which may "be previously moulded to any desired form.~~

"~~By these means the mantles are also raised to their full efficiency at once "which would otherwise require four or five hours burning over the usual "Bunsen flame.~~

"~~The mantles having thus been given their proper shape at a higher "temperature than they will afterwards be raised to are less likely to lose "their shape and therefore their efficiency.~~

"~~The platinum foil should be of just sufficient thickness to keep its shape "which can always be renewed by smoothing out upon a former. The heat of "the blow pipe will in this way be more easily kept up and not lost by the "cooling of the metal. The mantles may be stretched and treated upon the "mandril either before or after they are attached to the upright which supports "them in the finished lamp.~~

"Difficulty has been found heretofore in the transport of these mantles "without breakage and various methods have been proposed. This difficulty "may be overcome by dipping the mantle after ignition into a liquid which "will thoroughly penetrate the ~~pores~~ *interstices* of the material and will after- "wards set to such a degree of hardness as to protect the material from danger "of breakage in packing or handling and which can afterwards be removed "without mechanical injury to the mantles or without leaving any objection- "able residue.

"We have found that a very satisfactory method consists in dipping the cone "into a hot solution of volatile hydrocarbon mixed with paraffin wax or of "paraffin alone; by this means the mantle is covered with a thin coating of "wax which becomes sufficiently hard on cooling to allow of packing and "handling without fear of breakage. The paraffin being capable of burning away

" without any residue except carbon, which will always be burned completely " away by the flame of the Bunsen burner. It is quite easy to ignite the " mantle from the top previous to placing it into position over the burner " and allowing it to burn down, which it does somewhat after the fashion " of a candle and leaves no residue prejudicial to the light giving properties " of the mantles.

" If preferred the mantle can be ignited when fixed in its position over the " burner before lighting the gas at the mouth of the burner.

" We prefer to use a high boiling point paraffin such as ozokerit and dip the " mantle into it while at a high temperature. By these means only a small " quantity is left on the mantle, but quite sufficient to protect it satisfactorily.

" We may also afterwards suspend the dipped mantles in a hot air bath and " remove all unnecessary paraffin which adheres between the meshes of the net, " this runs slowly to the bottom of the mantle where it can be taken off by " absorption with blotting paper or by like means.

" We find the following a suitable plan for combining the paraffin with the " mantle. The paraffin is kept at a suitable temperature in a glass cylinder " resting in a metal cylinder closely fitting it and containing oil which can be " raised to a high temperature without giving off vapour.

" The mantle is then dipped into the paraffin and being slowly withdrawn the " greater part of the paraffin runs off and the only part holding an excess of " paraffin is the lower edge. This excess is best removed by wiping with a " warm piece of glass down which the paraffin will run. While the lower edge " is still pliable and before the paraffin has hardened we find it advisable to " give the requisite shape to the mantle by carefully moulding it over the " rounded end of a glass test tube of the right dimensions. Thus the mantle " assumes a perfectly rounded shape when the paraffin sets hard.

" We find that quite sufficient paraffin then remains in the ~~pores~~ *interstices* " of the netting to protect it from injury.

" ~~We find also this method of treatment to be of service in the preparation " of mantles previous to ignition but after they have been impregnated, for a " definite shape may be given them by dipping them while extended over a " former, and we find that in burning the paraffin serves the purpose of " helping to keep that shape without distortion, thereby ensuring greater " symmetry and consequent increase of light when the mantle is placed over " the burner.~~

" Other materials may be employed as long as they set hard at ordinary " temperatures and burn away without mechanical destruction to the mantle " and without leaving any residue which would injure the light giving properties " of the mantle, but we find that paraffin which can be obtained very pure is " the least sticky and leaves less residue than any of the others.

" It also serves to protect the mantle from dust, which is of great harm to it " for the dust which may adhere to the paraffin wax is entirely carried away " when the paraffin is burnt.

" ~~Instead of the usual mode of attachment by suspending the mantle from " two fixed points which allows of considerable movement and consequent " danger of breakage of the mantle, it is preferred to attach it to three or " more points symmetrically placed placed round a ring to secure greater " rigidity.~~

" ~~To effect this easily a platinum wire is inserted through the whole " circle of a thick hem at the top of the mantle leaving the ends free so as to " form one attachment and two or more other platinum wires are passed " round this ring of platinum wire so as to form the other attachments, in this " way no strain is put upon the fragile substance of the mantle.~~

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" The ring to which these wires are attached is preferably slotted on its " upper side with three or more pairs of slots close together and symmetri- " cally placed round the ring and wide enough to admit the two wires twisted " together.

" These wires are passed into one slot then round the ring support and over " again through the other slot after which the wires may be cut flush with the " outside of the ring without fear of loosening and so a neat attachment is " made with no projecting ends the movement of which is apt to alter the " position of the mantle.

" The gallery or support for the chimney carries a screw attachment for the " wire support of the mantle and it is preferred to make this attachment in " such a way that it allows of a small horizontal variation in the position of " the mantle in addition to the usual vertical movement so as to cause the " latter to hang exactly vertically over the burner without bending the wire " support. This may be done by stamping a piece of brass plate into small " corrugations close to each other and large enough to receive the wire support " one end of the plate being rivetted to one of the gallery supports and the " pressure on the other end being regulated by a thumb screw. The wire " support is then inserted into that semi circular corrugation which enables the " mantle to hang exactly in the right position. The spring of the plate " prevents the support slipping suddenly down when the thumb " screw is loosened which would lead to the breakage of the mantle on the " top of the burner.

" The usual gallery is dispensed with on account of its interference with the " light immediately below the burner and a support of as skeleton a nature as " possible is employed.

" We find the position of the chimney to be of great importance and " whereas it has been the custom to place it so that its lower edge is one or " two inches below the top of the burner the gallery should be constructed so " that the chimney is supported with its edge flush with the top of the " burner.

" This increases the temperature of the burner so that an increase of from " 10 to 20 per cent. takes place in the light emitted by the mantle and this " increase is found more marked when the pressure of gas is low than when " it is high but in all cases a substantial increase takes place.

" We prefer to use below the chimney a glass ring separated from the " chimney by about $\frac{1}{8}$th of an inch. This ring does not interfere with the " light and prevents any accidental fracture of the mantle by matches or " tapers being pushed against it in the act of lighting the lamp.

" The cone shaped portion of the gallery is perforated with holes of a suitable " size to allow the flame of a match or taper to ignite the lamp without the " necessity of pushing it far enough to endanger the mantle.

" The burner has a small pin inserted just above the shoulder upon which " the gallery rests and a slot is cut in the ring in the gallery encircling the " burner so that by a sort of bayonet joint the burner and gallery can be firmly " locked together and thus ensure a firm support for the glass work above as " well as rigidity in packing for travelling.

" As it is very important that the flame should issue exactly vertically " from the burner and as it is found that a considerable proportion of gas " fittings are so constructed that when the burner is screwed upon the nipple " it is not exactly vertical and therefore causes the flame to issue otherwise

" than vertically, it is preferred to attach to the gas nipple a ball and socket " or other form of joint which can be turned so that its nipple is exactly " vertical—it is then firmly screwed into this position and the burner with its " mantle and glass work is screwed on to this nipple instead of the original gas " thread and the whole apparatus is then in the proper position for giving its " full efficiency.

" Any subsequent movement of the gas bracket or arm can be easily " corrected by loosening the screw of the joint and resetting the apparatus " vertically.

" For chimneys it is preferred to use what is called frosted glass as being " the best adapted to diffuse and modify the intense light with a minimum of " absorption. The reflection from the back of the chimney largely com- " pensates for the absorption in front so that the total loss does not exceed " 0·15 per cent of the light passing through a plain glass chimney.

" DESCRIPTION OF THE DRAWINGS.

" Figure 1 is a sectional elevation of the gallery supporting the chimney the " latter resting upon three screws A A in such a manner that its lower edge " is level with the top of the burner.—B is the glass ring and C is the " skeleton cone through which the lamp is preferably lighted.

" Figure 2 is a section on the line X X Figure 1 showing one spring " holder D for the upright support of the mantle. This holder is tightened on " the upright by means of the screw E.—F is the pin which locks together the " burner and gallery while G is the slot through which the pin passes when the " gallery is slipped on to the burner.

" Figure 3 shows another method of forming the spring holder with " corrugations in the spring plate D so as to allow of horizontal adjustment of " the upright.

" Figure 4 shows a ball and socket joint for supporting the burner.—The " burner is screwed on to the thread H.—The thread J may be of any suitable " size for screwing on existing fittings.

" A lead washer K with a hole in the centre through which the gas passes is " placed between the ball and the socket so that by tightening the screw of the " cap L the whole is made into one rigid support for the lamp the moveable ball " portion being set at any required angle with the lower part to ensure the " burner being vertical.

" To avoid the likelihood of the movement of the ball its lower surface is " grooved so that the compression of the cap may cause it to hold more firmly " to the washer which penetrates the recesses of the grooves.

" Figure 5 is a vertical section and Figure 6 is a plan showing to twice the " natural scale the arrangements for attaching the mantle to the top of the " support.—M is the ring to which the hood is attached.—Its ends are twisted " together as shown at N Figure 6 and are secured by being wound round the " ring O entering slots in its top as shown in Figure 5.—P P are separate wires " secured in a similar way.

" Having now particularly described and ascertained the nature of our said " invention and in what manner the same is to be performed we declare that " what we claim is :—

" 1. The method of treating the mantles of refractory materials with a " blow-pipe flame substantially as described.

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" ~~2.~~ *1.* The treatment of the mantles after ignition by immersion in a liquid " which will afterwards set and will burn away without prejudicial results to " the mantles for the purposes set forth.

" ~~3.~~ *2.* The use of paraffin substantially as described in the treatment claimed " under the ~~second~~ *first* claim.

" ~~4. The process of shaping the mantles before ignition by immersion in paraffin or other liquid which will afterwards set substantially as described.~~

" ~~5. The method of attachment of the mantle to the upright support substantially as described.~~

" ~~6. The method of fastening the upright to the gallery substantially as described.~~

" ~~7. The combination of a burner of this class with a gallery such as will support the chimney so that its lower end is approximately at the same level as the top of the burner substantially as described.~~

" ~~8. The method of attachment of the gallery to the burner substantially as described.~~

" ~~9. The use of a ball and socket or other adjustable joint to carry the burner so that it can readily be set in a vertical position substantially as described.~~"

On the 11th of November 1895, *The Sunlight Incandescent Gas Lamp Company, Ld.*, in whom the said Letters Patent were alleged to have become vested, commenced an action in the Chancery Division of the High Court, which was subsequently transferred to the Queen's Bench Division, against *The Incandescent Gas Light Company, Ld.*, and *Julius Moeller*, *George de la Poer Beresford*, *Charles Jones*, *Fred Williams*, and *E. Pemberton Pigott*, for infringement of the said Letters Patent, claiming the usual relief. The Plaintiffs, by their Statement of Claim, alleged (1) that they were the registered proprietors of the said Letters Patent of which the said *F. L. Rawson* and *W. S. Rawson* were the first and true inventors; (2) the amendment of the Complete Specification; (3) that the said Letters Patent were good and valid; (4) that the Defendant Company was registered in England, and that the Defendant *J. Moeller* was managing director and the other Defendants were directors of the Defendant Company; and (5) that the Defendants had infringed the said Letters Patent in the manner set forth in the Particulars of Breaches. The Particulars of Breaches alleged that the Defendant Company and the Defendant *J. Moeller* had infringed the said Letters Patent by manufacturing, using, selling, and offering for sale mantles for incandescent gas lighting treated after ignition by immersion in a liquid which would afterwards set and burn away without prejudicial results to the mantles, for the purposes set forth in the Complete Specification of the said Letters Patent, and in infringement of the first claim thereof as amended; and, in particular, alleged the sale of twelve mantles by the Defendant Company on or about the 15th of November 1895, which had been treated in the manner set forth, and alleged infringement by the Defendants other than the Company by ordering or causing to be manufactured, sold, or offered for sale by the Defendant Company such mantles as aforesaid.

The Defendants, by their Amended Defence, alleged (1) that the Plaintiffs were not the proprietors of the said Letters Patent; (2) that the said Letters Patent were the property of the Defendant Company—the Defendants in proof thereof referred to paragraph 9 of an agreement, of the 31st of March 1886, between *The Welsbach Incandescent Light Company, Ld.* (the predecessors in title of the Defendant Company), of the one part and *O. E. Woodhouse* and *F. L. Rawson* of the other part, and to an agreement between the same parties

cancelling the said agreement, and dated the 1st of January 1887; (3) non-infringement; (4) that the said *F. L. Rawson* and *W. S. Rawson* were not, nor was either of them, the first and true inventors of the said alleged invention; (5) want of novelty; (6) want of proper subject-matter; (7) want of utility; (8) that the final Specification described an invention larger than and different to that described in the Provisional Specification; (9) that the final Specification did not sufficiently describe the nature of the said alleged invention, nor the manner in which it was to be performed; (10) the determination of the said Letters Patent on the 1st of September 1896, by non-payment of fees. By their Particulars of Objections, as re-amended, the Defendants stated the following objections:—(1) That the said *F. L. Rawson* and *W. S. Rawson* were not, nor was either of them, the first and true inventors of the said alleged invention; (2) that the said alleged invention was not new, and had been published prior to the date of the said patent by the deposit in the Patent Office of the Specifications of the following patents:—*Bright*, No. 12,305 of 1848, page 5, lines 24 to 30; *Imray*, No. 2110 of 1880, page 2, lines 32 to 86, page 4, lines 49 to 52; *Imray*, No. 2305 of 1882, page 2, lines 25 to 28; and had also been published prior to the date of the said patent—(A) By the public use of paraffin wax and shellac for the stiffening of incandescent mantles after the method described in the Specification of the said patent by the Defendant *Fred Williams* in the month of August 1886 at 6, Jeffrey Square, in the City of London; (B) by the importation into this realm by *The Welsbach Incandescent Light Company, Ld.*, from Austria, in the months of June, July, and August 1886, of mantles for incandescent gas lighting stiffened and strengthened by (1) a coating of collodion, (2) a coating of shellac, (3) a coating of caoutchouc, and by the public user of mantles so stiffened and strengthened by the said *Welsbach Incandescence Light Company, Ld.*, during the said months: (C) by the exhibition and full description of the said mantles referred to in paragraph (B) by one *Ferdinand Sattler* at 6, Jeffrey Square, St. Mary Axe, E.C., the premises of *The Welsbach Incandescent Light Company, Ld.*, in the month of August 1886; (D) by the introduction into this country by the Defendant *Frederick Williams*, and by the possession here by the said *Frederick Williams* and *The Welsbach Incandescent Company, Ld.*, of mantles burned off and toughened in the month of February 1886; (E) appliances of the nature of hoods or mantles for use in producing light by incandescence were manufactered by *Charles Clamond*, of Paris, at Paris, and were continuously, from the year 1882 down to the date of the Plaintiffs' patent, strengthened by being coated with (*a*) collodion, (*b*) dextrine, (*c*) stearine. Such appliances in the nature of hoods or mantles so strengthened were imported into this realm by and on behalf of *Charles Clamond* by *Louis Gudman*, by *Golfier, Servier*, and by the French *Clamond Company*, and by *Gerson Trier*, and publicly exhibited, explained, burnt off, and used at (*α*) The Gas Exhibition, held at the Crystal Palace, Sydenham, in the years 1882-3, (*β*) in the months of June, July, and August, 1886, at 34, Eastcheap, in the City of London, by *Puggard and Galschiot* and others; (*γ*) in the months of June, July, and August, 1886, at 34, Eastcheap, in the City of London, at the premises of *Gerson Trier*; (*δ*) in the winter of 1883–84 at the offices of *The General Gas Heating and Lighting Apparatus Company*, 66, St. Paul Street, London, N.; (*ε*) in the months of May, June, July, August, and September, 1883, at the old offices of *The South Metropolitan Gas Company*, Surrey Canal Bridge, Old Kent Road; (*θ*) in the months of June, July, and August, 1886, at 155, Cannon Street, in the City of London, at the premises of *Henry Green and Sons*. The said alleged invention had also been published in this realm by the public general use of paraffin wax and other similar substances for the stiffening of cotton for use in lamps and for the stiffening of other fabrics; (3) alleged want of subject-matter; (4) alleged want of utility; (5) the final Specification

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of the said alleged invention, as disclaimed, described one larger than and different to that described in the Provisional Specification; (6) the final Specification did not, if the first clause of the amended Specification covered the method of stiffening mantles used by the Defendants, sufficiently describe the nature of the same or the manner in which the same was to be performed.

In an affidavit made by *Julius Moeller* on an interlocutory motion for an injunction, he said :—"Shortly after the date of the said patent a process of "strengthening incandescent mantles was invented in Vienna, which consisted "of obtaining a strengthening fabric of nitrocellulose upon and between the "fibres of the mantle, and this is the process and the only process which has "been used by the Defendant Company." In answer to interrogatories, he stated, "The process of strengthening incandescent mantles, referred to in the "said affidavit, consists in dipping the mantles after ignition into a cold "solution composed of a mixture of soluble guncotton, acetone, absolute "alcohol, ether, Canada balsam, and methylated spirits. The superfluous "liquid is allowed to drain off the mantles as they are lifted out of the liquid, "and the mantles are subsequently dried in a hot-air bath."

The ninth paragraph of the agreement of the 31st March 1886, referred to in the Defence, was as follows :—"The contractors shall be at liberty to patent "in their own name all improvements invented by the contractors or their "workmen in the apparatus, appliances, and materials for the production of the "said incandescence light during the existence of this agreement, and shall, if "called upon during that period by the Company, grant licences to the "Company to manufacture, use, or sell the apparatus, appliances, or materials "covered by such patents, receiving for such licences a royalty from the "Company of 10 per cent. upon the price of each article made under or in "accordance with any such improvements &c."

The agreement was cancelled on the 1st of January 1887.

The passage from *Bright's* Specification relied on in the Particulars of Objections was as follows :—"Sometimes I stiffen the woven wicks of the "ordinary manufacture by inserting into them paper cases, formed as aforesaid "and gummed on the outside, or by dipping them (not partially but wholly) "in wax, or in any other suitable stiffening matter. I am aware that flat and "solid round wicks have been before stiffened throughout, but hollow cylin- "drical wicks, such as those required for argand lamps, have never, to the "best of my knowledge, been before manufactured in a stiffened state ready "for use."

This was the trial of the action.

Bousfield, Q.C., *Roger Wallace*, Q.C., and *C. E. E. Jenkins*, Q.C. (instructed by *Maddisons*) appeared for the Plaintiffs; *Moulton*, Q.C., *Terrell*, Q.C., and *A. J. Walter* (instructed by *Faithfull and Owen*) appeared for the Defendants.

Bousfield, Q.C., for the Plaintiffs, after stating the nature of the action.—Your Lordship will have in your recollection two prior cases tried before you in reference to incandescent mantles.* The first patent of importance in incandescent lighting was *Welsbach's* patent of 1885, which was shortly followed by his second patent. In 1885, *Welsbach* was engaged in pushing the invention in this country in partnership with a Mr. *Williams*. Then *The Welsbach Incandescent Gas Light Company* was started. It met with great practical difficulties, one of the chief being the difficulty of transporting the

* NOTE.—The e were *The Incandescent Gas Light Company, Ld.* v. *The De Mare Incandescent Gas Light System, Ld.*, and the same v. *The Sunlight Incandescent Gas Lamp Co., Ld.*, reported in 13 R.P.C., pages 301, 355, and 333 respectively.

mantles owing to their brittleness. The patent of 1885 stopped at the unburnt-off mantle, and the only direction was to place it on the burner and light it. They had to send people round to the houses to burn off the mantles. On the 31st of March 1886, the Company entered into an agreement with *Woodhouse* and *Rawson*, under which they were to make experiments for perfecting the invention. *F. L. Rawson* was a partner, and was assisted in his experiments by *W. S. Rawson*. They are the Patentees. *Woodhouse* and *Rawson* were to have the sole right of manufacturing mantles and of taking out patents for improvements which they might make. The Company were to have the right of using them on paying a certain royalty. It is alleged that the invention was anticipated, and that *Williams* was the true and first inventor. The method now employed with the mantles is to dip them, after burning off, in a solution which sets, so as to make them more or less elastic and transportable bodies. When they are lit the stuff in which they are dipped burns off, and leaves the mantle ready for use. *Welsbach* and others were working round this subject before the *Rawsons* found the solution of the difficulty. The whole invention is contained in the Provisional Specification in the paragraph beginning "Difficulty has been found, &c" In working it out, they found that paraffin, or a solution of it, in a hydrocarbon was the best method, and we have the broad claim for dipping into a liquid which will penetrate and set, and the narrow one for dipping into paraffin. The Defendants use collodion, but that exactly answers the description. Coming to the defences, the first defence is that the Plaintiffs are not proprietors. [*Moulton*, Q.C.–As to that I shall not trouble you.] Then the Defendants, in answer to interrogatories, have set up that *Williams* was the first and true inventor. The fact that the patent has expired by reason of non-payment of fees does not affect the claim to royalties on the mantles that have been made, which under the agreement are 10 per cent., or, at any rate, to an account up to that time. The Defendants were entitled to it on those terms, and the claim back from September 1896 for some years would be very large. [The agreement of the 31st of March 1896 was then referred to.] In the beginning of 1887 this agreement was cancelled, and a new incandescent company formed, which did not succeed. In 1892 a committee, of which *Rawson* was one, was appointed, and they drew up a scheme of re-construction, which was carried out. About 1892 *Woodhouse and Rawson*, then the owners of the patent, went into liquidation, and the liquidator, in 1893, applied for leave to bring an action on the patent against the *Welsbach Company*, but leave was refused. The patent was then purchased by *F. L. Rawson*, and was ultimately sold to the Plaintiffs. In August 1886, the *Rawsons* were working under this agreement. On the 1st of September 1886, they applied for the patent. They were working in communication with *Williams*, who was managing director of the Company. It is contended, that on the cancellation of the agreement the patent somehow became the property of the Defendants. I am unable to suggest how that can be. [*Moulton*, Q.C.—I will not say that it is immaterial, but it is not our defence.] Then the alleged anticipations are not serious. I shall not treat them as serious at present. Coming to the patent, it is said that the invention is not in the Provisional Specification, but it is there described at page 1, lines 21 to 26, in an absolutely satisfactory manner.* The hot air bath is of some importance, as the Defendants follow us in that. The Complete Specification is at the commencement the same as the Provisional. [Specification read.] Paraffin is soluble in volatile hydrocarbon. If you dissolve paraffin in benzine, for example, you can mix those things in any proportion ; but supposing you had, for instance, one of paraffin and one of benzine at a temperature of 70 or 80 degrees, that would be a

* This paragraph is repeated in the Complete Specification, *ante* p. 658, l. 41.

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clear solution. If you let it fall to 40 or 50 degrees (the figures are only illustrative), you would have a flocculent mass of paraffin floating about in it. The result differs from a clear fluid to a solid according to the proportions. [*Welsbach* mantles burnt off and dipped in a solution of paraffin in benzine were then produced, and afterwards lit.] It is sufficiently strong for transit. You can do it in various ways. You can take a solution of dextrine and water, or shellac, or an india-rubber solution, or beeswax, or spermaceti, or a large number of things of that sort; you can dissolve in a hydrocarbon like benzine or benzoline, or you can take such solvents as ether or acetone, or things of that kind. What has turned out to be the best in practice, and what both the Plaintiffs and Defendants use, is surgical collodion. It does not matter, to our case, that collodion is better, but the invention is summed up in the passage I read. You are to dip this mantle into a liquid which will set hard at ordinary temperatures, and burn away without mechanical destruction to the mantle, and without leaving any residue which would injure its light-giving properties. If it is desired, I will put one of the *Rawsons* into the box on the question of the true inventor; but I leave it to the other side to make their case that *Williams* was the inventor, and that the patent was anticipated. Some of the Particulars of Objections are only given by recent amendments. [2 (A), (B), (C) were then read.] *Williams* was managing director of the Company, but now he says that he publicly used things which everybody must have known the Company would want to take out a patent for. It is a case that needs explanation.

The following witnesses were then called for the Plaintiffs:—Dr. *Otto Hehner*, Sir *William Crookes*, Professor *Vivian Lewes*, and *W. S. Rawson*.

Moulton, Q.C., for the Defendants.—We do not object to the invention claimed in Claim 2, because if the question were about it we should not be here. I do not say it is good. It has so little utility that it has never been used; but our case is that, if the first claim is to be treated as a broad claim for treating mantles by something which is in a fluid state when the mantles are heated, and then becomes hard, toughening and stiffening the mantles, and which can be burnt off without injuring the mantles, it has every possible fault. [WILLS, *J.*—Is not the question whether this is a patent for an essentially novel conception, showing one way how to do it?] That is the first answer to the patent—that it is not of that nature; but there is the further answer that, if it is to be taken in that breadth, it was not novel; also it would fail for want of utility and for want of sufficient directions as to what would do or what would not do. [WILLS, *J.*—Is that not necessarily the case with a patent of that description?] I do not think the law has gone so far as that, but I say that, on a fair reading of the Specification, that is not its meaning. The object was a known object, which had been attained before by means of a class of substances indicated in the Specification and of the type of the paraffins. If confined to that, we have never infringed. Before I go to the documents, I will state what the public knowledge was at the date of the patent. Of course, stiffening things by dipping into fluids was common; but *Bright*, in 1848, gave a way of stiffening wicks for transit by dipping into melted wax. Of course, I do not say *Bright* was thinking of incandescence. [WILLS, *J.*—I do not think the thing necessarily has anything to do with incandescence. There is a very valuable and frail thing, and he is seeking to make it portable.] That is really it, but you must stiffen with something that will not interfere with the subsequent use. *Bright* was a direct user of the same broad general idea. Then, in the two *Imray* inventions, communicated by *Clamond*, the idea is to put a thing into a combustible case, so the idea of strengthening by something which burnt away was not novel. Then we shall prove *Clamond* made and sent to England to an exhibition at the Crystal Palace his delicate magnesian baskets dipped into a solution of dextrine, and also into stearine, and also into

collodion, and they were burnt off in user here. The Specification must be read in the light of this knowledge. We shall also show that Dr. *Welsbach*, in Austria, had been experimenting on methods of preserving by dipping into fluids, and I will show that this was brought to the knowledge of one of the inventors. The idea was not novel; what was wanted was something that would work practically. If you send out the mantles unburnt, there are a certain number of breakages in burning off by unskilled persons; unless the number of breakages in transport is less than the number of such breakages, there is no sufficient utility as a commercial thing. What was found out by the *Rawsons* was worse than what Dr. *Welsbach* had suggested. The idea, if it were a patentable one, was imported by *Williams*. Then, referring to the Specification, the idea is that of using a fusible wax-like substance; there is no suggestion of setting by evaporation or otherwise than by cooling. They say, "a hot solution of volatile hydrocarbon mixed with paraffin wax." My evidence will be that paraffin wax may be softened by being melted with a certain proportion of volatile hydrocarbon. That will set on cooling. "A hot "solution" shows that melting was intended. It must be a small quantity of hydrocarbon with a larger quantity of the paraffin wax. No one would ever think of getting rid of a volatile hydrocarbon by cooling; in order to separate the series you have to heat. No one would say that the hydrocarbon would go off on cooling; the Patentees meant something, whether the paraffin alone or the mixture, which sets on cooling. The high-boiling point paraffin meant a paraffin that was very hard when cooled. The hot-air bath is to keep it fluid. If it were a question of evaporation, the hot air would make it set. Then the other materials which may be employed must "set hard at ordinary tem- "peratures." In the claim, the "liquid which will afterwards set" must be read with that enlarging paragraph, which says "set hard at ordinary temperatures." Therefore, they mean something which can be melted, but which, when allowed to cool, sets. Then let us see what the Patentees' duties are. The Patentees have shown a method of using a well-known class of substances, but it is said they included all substances which, for whatever cause, set; it may be by evaporation, by dipping into another liquid, or in many ways. What knowledge have they given to the public to enable them to use these other substances? The successful one is quite outside their type. No further information is required if it is a mere question of melting; but, if not, it is a question of the idiosyncracies of all the different fluids. For instance, gelatine will not do; it breaks up the mantle in burning off. It might be made to do, but that is experiment and invention. Take also collodion; in drying, the mantle shrivels up and is rendered useless. If it be a question of strength, it is a question of experiment. Sir *William Crookes* says he would add castor-oil to make it flexible. How are the public to know that flexibility is required to counteract the contraction? It is only after long experiment that we have found a fluid of practical value. They say they like paraffin because it is less sticky; we have succeeded with collodion with acetone in it, and adding Canada balsam, which is very sticky. There is a clear and satisfactory interpretation of the patent with sufficient directions for it. Why should one include all these things which require experiment? They introduce a new class of difficulties which they have not touched. If Claim 7 is to be supported, it must refer to things of the type of paraffin or paraffin wax. If it be extended beyond that, you are going into realms in which the inventors made no discovery, and into an invention in the use of which they never succeeded; and it is saying merely "I claim that which succeeds," defining it, not by anything which can be recognised without experiment, but by the results of experiment. *Bright* only differs in that his invention was applied to wicks instead of mantles. *Rawson's* evidence established publication by himself in

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his works by showing these things when they were discovered. [*Bousfield*, Q.C.—You will have to amend to bring that forward.] No; the Defendants are entitled to rely on any admission by the Patentee; *Germ Milling Company, Ld.* v. *Robinson*, 3 R.P.C. 254 and 399.

The following witnesses were then called for the Defendants:—Professor *Dewar*, Messrs. *Ballantyne*, *Clamond*, *H. Talbot*, *A. Turpin*, *L. Gudman*, *G. Trier*, *D. J. Williams*, *W. J. Moore*, *F. Williams*, *J. Imray*, *J. Swinburne*, *J. Moeller*, *E. Nieustaedt*, *L. Golfier*, and *C. Pottier*.

F. L. Rawson was also called for the Plaintiffs to give rebutting evidence, and for the same purpose *W. S. Rawson* was recalled.

Moulton, Q.C.—I start by going to *Bright's* Specifications, which describes the method of stiffening woven wicks and sending them about in such a way that they might not lose their shape—stiffening them by dipping them in wax. That was in 1848. *Bright's* was not a paper anticipation, but the evidence shows that it was habitually used. Therefore, the idea of stiffening by dipping into a substance which was easily fusible and became fluid, even for things in which the stiffening was afterwards burnt out, was old. The patent is an application of the same device for the same purpose, namely, to prevent deformation in transit. I am not driven to say that there was no invention in stiffening mantles. To get a fluid to do for mantles may be the subject of invention—that is, the selection of that which will give success in the new circumstances. But there was no novelty in the general idea of choosing for stiffening a fusible substance that was combustible. Next I come to *Clamond*, who invented the ingenious magnesian basket. He first tried paper cases, and then strengthening by dipping into a combustible fluid. He used dextrine and collodion. The evidence shows that from 1882 to 1886 he was sending into England baskets so strengthened. [The evidence of *Clamond*, *Talbot*, *Golfier*, and *Pottier* was then referred to.] [*Bousfield*, Q.C.—It is not contested that *Clamond* dipped these things in France, and some were sent here.] Then the description is, that there was in burning a little smoke, and then an incandescent light. We have, therefore, got the user of this invention in England; *Neilson* v. *Betts*, L.R. 5 H.L. 1, and Goodeve, page 52. Suppose a person took out a patent for dipping *Clamond* baskets in dextrine or collodion, he would restrain *Clamond* from doing what he had done; but there is no sounder principle in patent law than that no man can, by a patent, take away from a person the right to continue what he has been doing. If this be shown to be the effect, the patent must *ipso facto* be bad. It was not merely in an experimental stage, but was perfected. *Clamond* was using the invention in England for the purpose of his business. Sending articles made according to a patented process into England is user in England. *Elmslie* v. *Boursier*, L.R. 9 Eq. 217, and *Von Heyden* v. *Neustadt*, L.R. 14 Ch.D. 230, have established that. In *Neilson* v. *Betts*, it was a question of infringement by user in England. Here the function was protection during transport with capability of being burnt off, so there was user of the invention throughout. It is not a question of publication, but of public use. There may be public use of the invention even if there is a secret process. I have got two prior users, *Bright* and *Clamond*; it is impossible to say the general idea could be novel. Then did the Patentees ever claim such a thing as the general right to stiffen by dipping into a fluid? I have to deal now with the construction of the Specification. This case is exactly like *The Automatic Weighing Machine* v. *Knight*, 6 R.P.C. 297. It was there held you could not claim a machine by its function, and, since machines worked by the penny in the slot were known before, you could not generally claim weighing machines by that, or claim the whole of a type because you were the inventor of one of that type. Just so here. The strengthening of things by dipping is old. They want to do it to mantles; they cannot claim every

method of doing it. [WILLS, *J.*—They thought they had a new idea and claimed everything, on the view that they showed one way of doing it and were entitled to the whole of it.] The thing does not depend on incandescence, simply on its being a fragile body. The real fact is, they did not know of *Bright* or *Clamond*. If the patent includes us, there is not novelty, and the patent is bad. Nothing but the broad claim can help the Patentees on the question of infringement. With us the liquid never sets. We have a thing which always remains liquid until one of the constituents passes away, when it leaves a toughened flexible residue. They must say that anything which will leave a strengthening layer is within their claim. As another defence, we could insist on a more limited construction of the Specification. What the Patentees were thinking of was using substances solid at ordinary temperatures. Our stuff is not solid at ordinary temperatures, and only becomes solid when the liquid passes away. The means they use to keep the material soft would, if evaporation were relied on, make it hard. I submit that, on the construction, they are confined to liquids which set on cooling. Coming back to Claim 1, if it receives the broad interpretation it is bad, because they never invented anything but the use of paraffin. No one could tell what liquid would succeed, or what solution would do. Collodion would not do, and there is no knowledge disclosed by the Specification as to how to make it do. Experiment was necessary before getting to the invention. There is no direction enabling a person to use the invention except in the case of fusible things which set hard on cooling. The Specification casts on the public the burden of experiment, and is bad ; *Rex* v. *Wheeler*, 2 B. and Ald. 345. Unless there is a practically successful way, there is no real utility. Paraffin has never been used. *Welsbach* had the idea ; in 1886, he was experimenting to find something practically useful. *Williams* told *Paget* of this invention before the date of the patent, and he certainly was not wrong in telling anything he got from *Welsbach*. The communication, not confidential, by a man in England to another prevents a patent being taken out. [*Bousfield*, Q.C.—This is not pleaded.] *Rawson* says he made no secret of it. [WILLS, J.—I think the fair construction is that that was confined to the works.] We have proved that *Williams* brought two toughened mantles into England. I submit that the idea in its breadth was not novel. That the practice of dipping things to stiffen and make them bear transport was known ; that the first claim is invalid ; and that, if it is limited to liquids of the type of paraffin wax or which vary by means of temperature, we do not infringe.

Bousfield, Q.C., in reply.—Your Lordship has relieved me from going into the case of communication of this idea by *Williams*. We say, however, that there was no idea at all of this invention in Vienna before a mantle imbedded in paraffin was sent from England to Berlin. That was the first thing, and from there the idea went to Vienna. The point has merely become a matter of prejudice now. So also as to the two mantles alleged to be brought over by *Williams*. It comes to nothing without publication or communication. The case is now reduced to small limits. It was of immense importance to find some method of transport. We were set to work, under the agreement, to solve it. Four mechanical means were devised. *Paget* himself, in July 1886, took out a patent for one of these. No questions as to the practicability of paraffin were put to the expert witnesses ; it was only raised by *Moeller's* evidence at the end of the Defendants' case. *Williams* had not got the patent before him when he tried it. The evidence of the *Rawsons* shows that it was a practical success. Hundreds of such mantles were sold to customers. There are cases, as in the " Incandescent " case last year, when it is open to give a broad or a narrow interpretation to a claim. When that is so, the Court is influenced by the state of the art. Here the claim is clear. There are several points in it ; first, the

mantles are to be dipped ; secondly, it is to be done after ignition ; thirdly, it is into a liquid which will set hard ; fourthly, it is to be a liquid which will not hurt the mantle and will burn off without leaving any residue. The first claim is a broad claim based on the absolute novelty of the idea. Then the second claim is for a specific substance, paraffin. The real question as to the first claim is whether it can be sustained, having regard to the knowledge at the time. *Bright's* was merely the idea of starching a wick with paraffin. The only link with ours is that both inventions have to do with lamps. The functions of a lamp and a mantle have nothing to do with the matter. Our mantles are dipped after ignition. The invention is limited to *Welsbach* mantles, and the process is altogether inapplicable to wicks. *Bright* has no relevance at all. Then the invention was not obvious to those who were working at the subject. *Paget* tried mechanical means, but directly the idea of paraffin was suggested to him, he could find numbers of substances. The real invention was the idea. *Welsbach* tried to toughen the original mantle. One would naturally have thought that these delicate mantles would not stand dipping. It is admitted now that collodion would do if sufficiently diluted ; that flexible collodion, diluted with ether, will work very well. In the face of that, it is impossible to say that there is any difficulty ; of course, you may have to experiment to get the best result. Then it is said that *Clamond* is an anticipation ; because an article made abroad by a patented process and imported into this country is an infringement of the patent. That is a long way off this case. The doctrine was carried furthest in *Von Heyden* v. *Neustadt*, L.R. 14 Ch.D. 230, Goodeve, page 485. This case goes further than *Neilson* v. *Betts*, and shows the vice of applying the principle of infringement to a question of anticipation. The substance was old, but the patent was for a new process of making it. The importation of the article made abroad by the patented process was held to be an infringement, otherwise the Patentee would not get the whole benefit of his invention. But you cannot turn that round. The importation of an article made by a process may reveal nothing of the process by which it is made. Unless the process were revealed by the article, there would be no anticipation of a subsequent patent taken in this country for the process, and there is no case saying that there would be anticipation. As to the *Clamond* baskets that were sent over here, the evidence shows that they revealed nothing as to the process—nothing of it became part of the stock of public knowledge. There was a brown glaze on the baskets that looked like a coat of paint, but did not fill up the interstices. Nobody could tell what it was, how it was put on, or that it was put to strengthen. There is no foundation for the proposition of law as to anticipation. [WILLS, *J.*—It is also put that you could not prevent a man doing what he had been in the habit of doing. *Terrell*, Q.C., referred to the sixth section of the Statute of Monopolies.] Supposing the article sent here were made by a secret process abroad, and somebody went over and discovered it and patented it, that is a meritorious thing, and I am inclined to think he could stop people from importing the things ; *Edgeberry* v. *Stephens*, 1 Web. P.C. 35. The point here is a novel one ; but I am not concerned really with it, because this Specification does not purport to stop *Clamond* from doing what he had done. It is confined to *Welsbach* mantles ; it is merely a stage in *Welsbach's* invention, and *Clamond* has no relevance. Then it is said that, outside paraffin, experiment is necessary. That goes to validity, but not to limiting the construction. The first claim is clear. [WILLS, *J.*—If you have a new idea and have shown a practical way, and that covers all ways of doing it, that involves covering things you want experiment for.] Then I will not argue that point. The infringements of *Edison's* telephone transmitter took forms which had not occurred to him. He only had the one form. [WILLS, *J.*—The man who shows how successfully to put his new large idea into

practical operation gets protection for other means of attaining the same ends which have not occurred to him. There is the question, though, whether it is a claim limited to wax-like substances.] The Specification is open to the broader construction. The words are perfectly appropriate. The description as to paraffin is necessarily confined to a particular kind of setting, but the particular example ought not to govern the meaning of the word "set." The particular kind of setting evidently does not really affect the essence of the invention. The evidence of Professor *Crookes* shows that the word "set" is familiar in connection with collodion. It is not equivalent in the Specification to cooling. A solution of paraffin wax in a volatile hydrocarbon sets by volatilisation as well as cooling. Collodion sets at ordinary temperatures. Take the cork out of the bottle and it will set. A 20 per cent. solution of paraffin wax is liquid at ordinary temperatures, but pour it out and it will set by evaporation of the hydrocarbon. It is said we want volatility because we want fluidity; but that is not so, for the alternative suggestion is taking a high boiling point ozokerit, so they are not depending on volatility for fluidity in that case. When you use the solution of paraffin, the setting is not complete until the solvent has evaporated. The construction is not limited by the particular example. Outside the example there is nothing to limit the generality of the language as to setting. The words "set hard at ordinary temperatures" may be put in because these mantles are intended to travel; anything that would soften much in summer would not do.

WILLS, *J.*—The first and most important question in this case, as in most other patent cases that I have had to deal with, is the construction of the Specification, and the claim which it contains. Now, as to what the subject of the patent is there is no room for doubt. It is for improvements in the manufacture of mantles connected with the production of light by the *Welsbach* process—that is to say, it relates to improvements in the construction of *Welsbach* mantles. Then it goes on to explain that difficulties have been found in the transport of these mantles without breakage, and various methods have been proposed. Then it is said how the difficulty may be overcome "by "dipping the mantle after ignition"—that is, in the state in which it would be used, and when it is in its frailest condition—"into a liquid which will "thoroughly penetrate the interstices of the material, and will afterwards set "to such a degree of hardness as to protect the material from danger of "breakage in packing or handling, and which can afterwards be removed "without leaving any objectionable residue." Then it proceeds to describe what the Patentees say is a very satisfactory method, and that is what I may call the paraffin or wax method. For the present moment I do not go into those details. Then it proceeds to say that other materials may be employed so long as they set hard at ordinary temperatures, and burn without injuring the mantle and without leaving any objectionable residue. The Patentees find that paraffin is the least sticky, and is better than any others. Then comes the claim, which is, first: "The treatment of the mantles after "ignition by immersion in a liquid which will afterwards set and will burn "away without prejudicial results to the mantles for the purposes set forth." And, secondly, "The use of paraffin substantially as described in the treatment "claimed under the first claim."

Now, to my mind it is obvious that the Patentees considered that they had got hold of a new idea, and one which was so far novel that it would give them the benefit of the principle which has been applied to certain classes of patents embodying new ideas, namely, that having shown one successful method of accomplishing the object, the Patentees were entitled to protection against all methods by which that same object, whatever it was, could be accomplished. I think it is quite clear that that was the Patentees' view, and that that is the view upon which the patent has been framed.

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But then comes an extremely important question. To my mind it is the question in this case, and that is, how far the generality of the claim extends. Now, it is quite clear that the Patentees, in terms, claim that it shall extend to the treatment of mantles after ignition by immersion in a liquid which will afterwards set. Now, there are two kinds of setting which appear to me to be essentially distinguishable in their chemical and physical properties and nature; and it is also clear, I think, that the expression "set" had been used, and was commonly used, with respect to both of them. If, therefore, there is nothing in the rest of the Specification to limit the expression "setting" to one class of setting, it would be general undoubtedly; and the real question, to my mind, is one upon which I have heard very able arguments indeed on both sides, but which seems to me, I confess, the more I consider it, tolerably clear. The question is—Is there in the Specification an indication that the Patentees meant to limit it to substances which I may characterise generally as of the wax or paraffin type? Now, the essential differences between the two appear to me to be these—that, with regard to substances of that type, the setting which is to be effected is a setting by reduction of temperature. They are substances which dissolve in a solvent liquid at a considerable temperature, and they then afterwards set by cooling, which is, as I understand it, a molecular change due to lowered temperature. It is one in which I think, notwithstanding what has been said by Mr. *Bousfield*, who is, in the small matters which bear upon it, supported by what he quoted from the witnesses—it is one in which, to my mind, evaporation plays so subsidiary a part that it may be neglected. That is not the real thing that does the work. On the other hand, the setting, where the term is applied to such substances as collodion and similar substances, is one in which the setting is effected by evaporation, and in which lowered temperature plays no part; or, if it plays any part at all, it is to retard and not to assist the operation of setting. Therefore, there are, as it seems to me, these essential differences between the two classes of setting.

Now, when I come to investigate the question of whether, within the limitation on page 4 of the Specification, there is to be found a limitation of the setting to the former process, I am not unmindful of the fact that, under a patent of this kind, one which is framed upon a new idea, or a new principle which has been carried out by one way, it is not a sufficient answer to say that the only way pointed out indicates only one particular kind of setting, although, of course, it is a circumstance to be taken into consideration, when one is endeavouring to ascertain in the best way one can what is in the mind of the Patentee and what he has conveyed to the public in what he has written. But it seems to me the key, on this point, to the interpretation of this Specification is to be found in the words at line 47 :—"Other materials may be employed "so long as they set hard at ordinary temperatures." Now, I really cannot bring myself to doubt, especially looking at the illustration which went before, that what the Patentees meant when they speak of "setting hard at ordinary "temperatures" was that they were to be dealt with at a higher temperature, and that they were then to set upon arriving at that ordinary temperature. I cannot conceive why the reference to ordinary temperatures should have been introduced, except to stamp that idea into the patent. Now, it follows that, in my opinion, the Patentees did not intend to claim, and have not claimed, any setting, except that which is effected by the operation of cooling; and that alone seems to me to be the key to the whole thing. I think I cannot put what occurs to me better than by saying that, supposing it turned out that collodion was an impracticable substance, of which no use could be made—supposing the patent had been attacked on that ground, and supposing it had been said, "You have embraced by your claim something which is utterly impracticable, "and, therefore, your patent is bad," I think that the Patentees would have had a perfect answer. They would have said, "We have shown you in our

" illustration nothing except the kind of setting in which cooling is the real " and substantial agent by which the operation is effected; and, in the enlarged " part of our description of our process, we have told you that we refer to other " substances which will, like wax, set at ordinary temperatures." Now, as I understand, there is a wide field of substances over which the Patentees had a right to range, and over which they had a right to claim the beneficial operation of the construction to which I have alluded, namely, that, having embodied a new idea in their patent, and having shown a practicable method of attaining the object in question, they were entitled to extend it to other things besides those which were substantially mentioned; because it is plain that shellac and dextrine and a number of other substances which have been mentioned and discussed in this case stand substantially on the same footing, and it would give the Patentees a wide field over which they might claim the beneficial operation of the principle to which I have alluded. I do not think it is any use my saying more upon this question of construction. Those seem to me to be the guiding lines, and I only add this, that I doubt very much indeed whether a claim so wide as to include every method of dealing with the operation of setting by any liquid, no matter what it was or how it operated, would be sustained. I doubt whether that would not be pushing the principle a great deal too far; as it seems to me, that even that principle ought to be confined to substances or operations which present some analogy with the process which is described and which is specifically claimed. It appears to me that these essential differences which I have pointed out between the two processes prevent the one from having the necessary analogy to the other, and would limit it in case the widest application was given to the patent; but, for the reasons I have given, I think that the proper construction of the Specification is the narrower one which I have indicated.

Now, the patent has been attacked upon the ground of anticipation. I am against the Defendants upon, I think, all the anticipations. I agree with Mr. *Bousfield* that the notion of dipping one of the *Welsbach* skeletons, with its extraordinary fragility of structure and its earthy constitution, into these melted substances for these purposes can hardly be said to have been anticipated by the dipping of a cotton wick for a moderator lamp into a solution of wax. It seems to me that the things are too far apart, and that the application of this thing to the *Welsbach* mantle, although it is for the same purpose, namely, of strengthening it in order to enable it without change of form or substance to undergo transport, is, as it seems to me, miles off the other; and I should be very sorry if I felt it my duty to upset a meritorious patent on the ground of such an anticipation as that. It seems to me to be a great deal too far off what has been done in this case, and that the application of something like it to the circumstances of this case involved so much of invention and independent thought and consideration that it may very well stand, notwithstanding the anticipation of the idea in the rough, not merely by this patent of *Bright's*, but by a thousand things which are done in common life and in common operations—not excluding the starching of shirts, to which Mr. *Bousfield* referred. Of course, it is not burnt off the shirts afterwards, but still the general notion of strengthening in that kind of fashion is a very old one; and, of course, it was to be applied to a substance which was to be used by setting fire to it, so the burning off would follow as a matter of course. I do not think that anticipation, therefore, would damage the patent.

With regard to the *Clamond* process, I think it uncommonly near to it, and if there were sufficient evidence of its being known in England to make it a part of the general knowledge on the subject, I should say it was essentially the same thing—that is to say, adopting the larger construction of the patent,

and supposing it includes collodion ; but I think dextrine was also used, and therefore in any case I should have said that it really was an anticipation, because these baskets of *Clamond* performed exactly the same functions as the mantles of *Welsbach*, and they were treated substantially in the same way and for the same purpose. But, then, it does seem to me that Mr. *Bousfield's* argument on that point is well founded, and that the mere fact that it was used in England without anybody having the opportunity of seeing what it was that was being used ought not to be enough, and in my judgment is not enough, to make it a prior publication. It would have been seen at the time, if it had occurred to anybody, what was passing in my mind on this subject by the questions which I asked of M. *Clamond* himself, viz., whether the burning off of this dextrine was made a part of the public exhibition so as to be a piece of scientific information, or information connected with the art intended to be made public property ; but it seems that that was not so, and that all that he did was to do this when he wanted to change his mantle, not showing people what he was doing, and then let them see what he wanted them to see, viz., the good result of the incandescence of the magnesian oxide. Well, again, it is no use going into details about a matter of this kind. I point out the general views which have influenced my judgment, and I think that that is not such an anticipation as could reasonably be said to have made what he did part of the public knowledge on this subject to-day. It is quite true that things which are indistinguishable, I think, in principle, and in almost everything else from what is done with the paraffin in this case by this patent, were used in England ; but they were used on a very small scale, chiefly or almost, as far as the evidence goes, exclusively by the experimenter or inventor himself and his staff, and I do not think that there was anything in what was shown by them that would indicate to the public that the result was brought about in any fashion such as that which Messrs. *Rawson* hit upon. Therefore, I do not think that anticipation is sufficient.

Mr. *Moulton's* test, by which he sought to make out that, if a person who had been in the habit of doing certain things in England could be stopped by a patent taken out subsequently which embodied what he had done, the patent could not be good, may be a good test or it may not. I should not like to express an opinion upon so difficult a matter offhand, but it seems to me it is not worth considering, because again I adopt what Mr. *Bousfield* has pointed out—that *Clamond* did not propose to apply his process to *Welsbach* mantles. He proposed to apply it to his own particular substances, and, therefore, there would be nothing in this patent which would interfere with *Clamond*, after the patent, doing exactly what he had been doing before. The patent does not claim to apply to anything except to *Welsbach* mantles.

There remain the question of anticipation by communication to and by Mr. *Williams*. It is sufficient to say that I think that is left far too doubtful. I speak with real respect of the evidence given by Mr. *Williams*, which was, I think, given in a style very creditable to him, excepting the last fling at the Messrs. *Rawson*, which I would rather had been absent, and for which I am glad to find there is no foundation. But I also wish to speak with great respect of the evidence of the Messrs. *Rawson*, who seemed to me to tell the truth emphatically. I believe them, and I believe that, however the misconception may have arisen—and it is not worth inquiring how that is—I am sure it has not arisen in any way discreditably to Mr. *Williams*, and I wish that to be thoroughly understood. I believe the Messrs. *Rawson*, and, however the misconception may have arisen, I believe that nothing of this kind had ever been conveyed to their mind, and that one of them was the true inventor of what they have patented. As far as he is concerned, I am sorry

enough—in these matters it goes somewhat to one's heart to decide against anybody—but I cannot myself honestly give to the patent the wide construction which it is necessary to claim for it in order to succeed in this action.

On the question of utility, a good deal has been said that I can deal with very briefly, I think. I do not think commercial success is at all the test of utility in a patent. A great many very meritorius patents would go to the wall if it were so, and probably the *Welsbach* patent itself might have been at one time successfully attacked on that score. It was attacked before me on that ground in the case which I heard last year, and I made very short work of it. I should like to make equally short work of it in this case by saying I think it is beyond question that there was a degree of utility in it, and it does not in the least follow, because better things have been done afterwards, that it was not a substantial contribution to the knowledge of the world at the time when the patent was taken out. Therefore, I do not think there is anything in that objection on the ground of it not being commercially a success.

Now, the only remaining question is that of infringement. What I have said about the construction of the Specification of course really disposes of that, because, if I am right in saying that it is limited to the wax-like substances, the use of collodion is not an infringement, and I do not know that even the radical difference, as it seems to me, between the two processes can be better illustrated (and this observation might have been used at the time when I was dealing with the question of construction, if I had thought of it) than by pointing to the use of the hot hair bath in the two processes. What is the use in the Patentees' process of a hot air bath? It is to keep the paraffin in solution. It is not to drive off the volatile hydrocarbon. It may drive off some of it, but, it it succeeded in driving it off, the purpose for which the heating is applied would be defeated, and the melted paraffin would cease to run down to the bottom and be collected there and taken away so as no longer to be a source of encumbrance, whereas, in the Defendants' process, the use of the vapour bath is to drive off the volatile stuff and to get at the remaining consolidated fabric quicker by hastening that operation. Therefore, it is a use not only different, but it is diametrically opposed to the use of the heated air bath, which is made by the Patentees.

The result is, that I find for the Defendants on the question of infringement. On all the other issues, except the one about the expiry of the patent, which is of no consequence whatever for the present purpose, I find for the Plaintiffs; and, of course, I must give judgment, holding these views as to the meaning of the patent, for the Defendants on the ground of non-infringement.

Bousfield, Q.C.—Then as to the question of costs?

WILLS, *J.*—You will have the costs of all the issues except infringement.

Terrell, Q.C.—I submit that the Patents, &c. Act provides for the costs in patent cases, and that that Act does not give your Lordship power to give an unsuccessful Plaintiff costs of Particulars of Objections, even though he has succeeded on those Particulars, but that it gives your Lordship power to deprive him of them if you think fit so to certify that, although the Defendants have failed to prove them, their Particulars are reasonable and proper. I do not think my friend will be able to remember or point your Lordship to a single case where the Plaintiff has been given costs of Particulars, even though he has succeeded as to them, when he has failed in the general action. I have succeeded on the infringement issue. I have failed on my issues with regard to my Objections to his patent. There is nothing in the Act which enables your Lordship to give the Plaintiffs the costs of those Particulars of Objections, even though I have failed; but your Lordship can certify that they were reasonable, and then I should get the costs of them, or

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your Lordship can refuse to certify at all, and then no one will get them. Speaking from my own recollection, I do not know a case where a Defendant has been ordered to pay costs where the Plaintiff has failed.

WILLS, *J.*—I think we will try and make a precedent, because it is obviously just; and what is just I very seldom find to be otherwise than in accordance with the law. It seems to me that Mr. *Bousfield* does not want any certificate. Particulars have been launched against him, as to which he has succeeded. Suppose, as sometimes happens, that those Particulars required a Commission to South America or Timbuctoo, or what not, and a very expensive enquiry—who ought to pay for that enquiry, the person who has provoked it unnecessarily or the other side?

Terrell, Q.C.—Well, I submit that a person resisting an action for infringement is entitled to come fully armed into Court, and if he succeeds generally, whether he kills his enemy with his dagger or with his pistol, he is entitled to be told that it was reasonable for him to take his dagger or his pistol or both with him.

WILLS, *J.*—The Taxing-Master will work out the difficulty; there will be judgment for the Defendants on the issue as to infringement; for the Plaintiffs, on all the other issues except that on the tenth paragraph of the Statement of Defence, which is about the patent having lapsed.

Terrell, Q.C.—We get the general costs of the action?

WILLS, *J.*—You get judgment in the action; therefore, of course, you get the general costs of the action. It needs no special order for that. The costs will follow the event, and the Taxing-Master will work it out. I do not think he will give the costs as you say.

Terrell, Q.C.—Then do I understand they get the costs of these issues?

WILLS, *J.*—Yes.

Terrell, Q.C.—And I get the general costs of the action?

WILLS, *J.*—Yes.

Bousfield, Q.C.—May I ask your Lordship to give a certificate that the validity of this patent has come in question.

WILLS, *J.*—Certainly.

Terrell, Q.C.—I do not know that your Lordship can. The patent has expired.

WILLS, *J.*—I will try, Mr. *Terrell.*