

between the customer and the broker resulted in a sum owing by the customer to the broker, and there were in the possession of the broker securities which had come into his hands in the course of his business as broker to the customer. It is a well-established principle that the broker has as against the customer the right to hold those securities for the amount due." I respectfully adopt that language as my own. Further, in my opinion the securities there mentioned include a transfer of stocks still unexecuted or only partially executed, and the principle there set forth is a principle not only of the law of England but of Scotland.

As has been seen, the proof in this case, and particularly the terms and dates of the letters, are in my opinion to an effect opposite to that conceived by Lord Salvesen. I agree with the conclusion which Lord Mackenzie arrived at on that subject. And as to the principle of law, I think Lord Mackenzie has correctly applied it; and with much respect to the learned Judges of the Second Division, I think that that principle has not been applied to this case by that Court.

A question was raised at your Lordships' Bar as to what was to happen with regard to the amount of £50, 2s., being the balance due to Messrs Hope as the result of selling out against Mr Glendinning. That sum was deposited with the Accountant of the Court to await the orders of the Court. It is clear that the inquiry in this case covered not only the right to retain but the whole conduct of parties, culminating in the selling out which resulted in the debit balance. Messrs Hope's conduct in that particular appears to me to have been justified, and, speaking for myself, it would be with the greatest reluctance that I could consent to a fresh litigation on a substantially identical issue having to be undertaken in order that Messrs Hope might recover that money. Lord Mackenzie, I think, acted wisely in granting a warrant for payment of the consigned money to Messrs Hope. In my opinion the judgment of the Second Division should be reversed and that of the Lord Ordinary should be affirmed in all points. I should add that I think Lord Mackenzie's selection of the defenders' second plea as a ground for absolver was also correct. In the view which I hold, the defenders were entitled to retain the scrip until payment of the debt due to them.

LORD CHANCELLOR—I agree with the conclusion at which your Lordships have arrived.

Their Lordships reversed the judgment appealed against.

Counsel for the Pursuer (Respondent)—Morison, K.C.—W. T. Watson—D. A. Guild. Agents—Sharpe & Young, W.S., Edinburgh—G. R. Thorne Robinson & Company, London.

Counsel for the Defenders (Appellants)—Younger, K.C.—Sandeman, K.C.—Smith Clark. Agents—W. & F. Haldane, W.S., Edinburgh—Neish, Howell, & Haldane, London.

Monday, June 26.

(Before the Lord Chancellor (Loreburn), Lord Kinnear, Lord Atkinson, and Lord Shaw.)

WATSON, LAIDLAW & COMPANY
v. POTT, CASSELS & WILLIAMSON.

(In the Court of Session, February 5, 1909, 46 S.L.R. 348, and 1909 S.C. 1445.)

Patent—Validity—Specification—Insufficient Description—Ambiguity.

A patent was obtained for "improvements in centrifugal machines." It dealt with a means of supporting while preventing the oscillation of the spindle to which the basket rotated is attached, and the means employed was, in typical form, a hollow indiarubber cone suitably supported, into which fitted a counterpart cone formed upon the spindle. The angle of the cone was not stated, but after a narrative of what had been achieved by previous invention the specification affirmed "the present invention consists in the employment of a cone approaching much more nearly to a cylinder, and whose elements do not pass through the centre of oscillation of the spindle." Previous cones had been as flat as an angle of 53 degrees. It was admitted by the expert witnesses that the most appropriate angle was between 25 degrees and 55 degrees. The patent was challenged on the ground of ambiguity and insufficient description, inasmuch as it covered the whole field from 53 degrees to 1 degree.

Held, allowing the judgment of the Second Division, on an equality of their Lordships—the Lord Chancellor and Lord Atkinson being in favour of reversing, and Lords Kinnear and Shaw in favour of maintaining—that the patent was not invalid.

This case is reported *ante ut supra*. Following upon the interlocutor of the Second Division of 5th February 1909, the defenders lodged a minute of amendment and the pursuers' answers thereto, and on 28th May 1909 the amendments were allowed, the record was of new closed, and the parties were allowed a proof of their respective averments so far as raised by the amendments.

The important portion of the defenders' amendment, so far as this report is concerned, was—"The pursuers claim to have effected certain improvements in the construction of elastic buffer bearings applied to centrifugal machines by inventing a single buffer bearing, the angle of inclination of whose sides differs from the angle of inclination of the sides of the buffers hitherto in use. They have failed, however, sufficiently to specify or indicate the particular angle or range of angles at or within which the benefits claimed are secured, particularly having regard to the fact that both cylindrical buffers and buffers of conical form, having their sides inclined at

an angle of 54 degs. or thereby, were already known in common use. The only indication which is given in the specification of the pursuers' patent of the range of angles within which the sides of the conical buffer alleged to be invented by them must be inclined in order to be effective, is that the angle must have a smaller inclination from the vertical than the hitherto fixed direction or inclination, and that the cone to be employed must approach much more nearly to a cylinder than is the case with the buffers hitherto in use. Moreover, in the drawings annexed to the specifications, the angles of inclination of the sides of the buffers shown therein vary from 20 degs. or thereby to 40 degs. or thereby. In point of fact, the sides of the buffers which the pursuers in practice manufacture and sell are inclined at an angle of 10 degs. or thereby, which they maintain to be the angle which gives the best results, but no such angle of inclination is shown in any of the drawings annexed to the specification. At 20 degs. the benefits claimed are to a material extent not secured, and at 40 degs. the benefits claimed are not secured at all. The pursuers thus claim as within their patent an angle which does not give the results claimed, and thereby mislead the public."

The defenders added to their pleas—" (4) The defenders should be assoilzied, in respect that the letters-patent founded on are invalid, because . . . (6) the specification is vague and ambiguous, and does not sufficiently describe or ascertain the alleged invention; (7) the specifications and drawings annexed do not disclose the most beneficial method of making and using the alleged invention; (8) the specifications and drawings annexed are misleading, and the drawings contain false suggestions."

On 9th June 1910, after the proof allowed had been taken before the Lord Justice-Clerk, the import thereof being given in the opinions, their Lordships pronounced this interlocutor—"The Lords having heard counsel for the parties on the reclaiming note for the pursuers against the interlocutor of Lord Salvesen, dated 5th February 1908, and on the supplementary proof allowed by the interlocutor of 23th May 1909, recal the said interlocutor reclaimed against, interdict, prohibit, and discharge the defenders, and all others acting on their behalf, from infringing the letters-patent, dated the 4th day of May 1903, and numbered 10,034 of 1903, granted in favour of James Wright Macfarlane, of the firm of Watson, Laidlaw, & Company, 98 Dundas Street, Kingston, in the county of Glasgow, North Britain, engineer, for improvements in centrifugal machines, by making, using, putting in practice, disposing, selling or offering for sale, or importing into the United Kingdom of Great Britain and Ireland, and the Isle of Man, during the currency of the said letters-patent, and without the consent, licence, or agreement of the said pursuers, centrifugal machines, or parts thereof, which embody the improvements described in the specifications lodged in relation to the said patent, or which are substantially the

same, and from infringing the said letters-patent in any other way or manner: Further decern and ordain the defenders to deliver up to the pursuers all mechanisms, or parts thereof, constructed in breach of the said letters-patent so far as in their possession or under their control, and also to deliver up to the pursuers a list of the names of persons to whom infringements of the said letters-patent have been supplied by them: Further, remit the cause to Lord Dewar, Ordinary, to dispose of the question of the amount of damages due by the defenders to the pursuers in respect of the manufacture by them of improvements on centrifugal machines in infringement of the said letters patent: Find the defenders liable in expenses to the pursuers, and remit the same to the Auditor to tax and to report to the said Lord Ordinary, to whom grant power to decern for the taxed amount of the expenses hereby found due: Further, in terms of the Act 7 Edward VII, caput 29, section 35, certify that the validity of the pursuer's said patent came in question and that its validity was upheld."

LORD JUSTICE-CLERK—In this action the pursuers seek to obtain an interdict against the defenders in respect of an alleged infringement of a patent, and ask for delivery of infringing articles in their possession, and for damages. The question relates to what may be described as a mechanical wringing machine, by which separation may be made by centrifugal force between different parts of a revolving mass in a vessel, as, e.g., between the liquid and solid parts of a quantity of goods placed in the wringer. Thus separation may be made as necessary in the manufacture of sugar from crushed cane, or wet clothes may have the water wrung out of them. To effect this it is necessary that the vessel or basket should be made to revolve at a very high velocity, and this is effected by causing a spindle attached either above or below the basket to turn rapidly by belting brought from shafting revolving by mechanical power from an engine. The very great speed necessary for effectual separation of the liquid from the solid tends to cause vibration. Further, if the load in the basket is even in a small degree unbalanced from inexact arrangement or from the liquid to be thrown parting from the solids irregularly, as in the case of clothes, or for want of homogeneity in the mass of material from any cause, side movement more or less violent may be set up, with the result that there may be serious danger of the machine giving way and doing damage, or even causing injuries to life or limb. Formerly such results could only be avoided by having bearings of enormous strength.

Many devices have been resorted to for the purpose of overcoming these difficulties, in all of which the assistance of an elastic medium was employed. In 1867 a patent (Weston's) was taken out by Lake, in which the spindle rod with the basket attached was surrounded by a thick collar

of indiarubber resting on a metal flange, the spindle being prevented from falling out of the spindle head by another flange on the spindle which projected over the rubber collar. The purpose was to present to the sides of the spindle an elastic surface, so as to prevent any undue lateral motion checking the tendency, while at the same time not grasping the spindle rigidly.

This mode of fitting had a certain measure of success, but it had the defect that when the rubber collar began to diminish in thickness through wear, the wear could not be compensated, and the spindle was no longer checked in its tendency to move away from the proper centre of rotation as it had been at first, and the evil which the device was intended to prevent necessarily again developed, and always in more and more marked degree as the surface of the rubber became more and more worn away.

Thus there was no self-adjustment to counteract the effect of wear—no means of adjustment to secure the fitting of the surface of the rubber to the surface of the spindle, so that the machine might continue to be properly controlled and the prevention of undue and dangerous movement from the perpendicular secured. When wear had set in there was nothing but the top flange resting on the rubber to provide control, which was obviously insufficient.

Several modifications were attempted of Weston's original form of buffer; one by Lafferty in 1869, and two by Weston himself in 1870. But in all of these the buffer and spindle were still set to one another in perpendicular lines, there being no coned or sloped shape by which a spindle could possibly remain in position, unless it had a projecting flange resting on the top of the rubber by direct perpendicular pressure. In Weston's forms of 1870, the detail of the arrangement of 1867 was altered, but only to the effect of introducing two rubber collars, instead of one, with a fixed metal division between them, the spindle having still no support except from the flange at the top.

It may be convenient here to take out of the way a contention made by the defenders to the effect that Weston's original specification did relate to a sloped or cone-shaped arrangement of the spindle and rubber collar. There is nothing in Weston's specification indicating any such thing as part of his invention. The contention was based upon the printed copy of the drawing which was lodged with the specification, and which appears to show an infinitesimal deviation from the perpendicular in the sides of the spindle and buffer. But the evidence establishes, in my opinion, that no such thing was intended to be shown in the drawing lodged as being part of the invention for which a patent was taken out. The inventor in no way indicates that any such thing was part of what he maintained to be his invention, nor does he describe any such sloped form of surfaces of spindle and buffer as having anything to do with the

benefit he expects from his device. And further, it is hardly conceivable that if he had in truth intended to put forward his invention as containing sloped surfaces as a material element, that he should, in his other devices of 1870, have made it quite plain that he did not even then see any virtue in slopes, but adhered to absolutely perpendicular surfaces for spindle and buffer. Further, it is proved that the original drawing lodged with the specification shows the lines absolutely parallel, and that the tapering is all below the part of the spindle which is opposite the position of the rubber buffer, being only for the purpose of lightening the free part of the spindle which is not embraced by the rubber collar. Accordingly the evidence is clear that no machines of Weston's were ever seen which had not the buffer cylindrical, and the spindle when opposite the buffer parallel with the cylindrical buffer.

But even if there had been a taper on the Weston spindle and buffer, it could not, consistently with any drawing given with the specification, have been otherwise than extremely slight, and it is difficult to see how it could be in any true sense self-adjusting, the angle being less than one degree, as any wear, even slight, would cause a very substantial fall of the spindle if it was attempted to use it without a flange resting on the rubber.

On the whole of this matter I have no doubt whatever that the specification of Weston's patent did not indicate, and was never intended to indicate, that the lines of spindle and buffer when they were opposite one another were other than vertical.

The pursuer's firm in 1903 introduced a new form of buffer, which for convenience may be called the "scone" buffer. In this arrangement two discs of rubber were used somewhat thicker at the circumference than at the inner part where the spindle passed through them. These pieces of rubber were of the nature of discs and not of collars. On the spindle were two bosses corresponding in the angle to the discs. A fixed metal disc projected inwards from the circumference of the frame of the driving pulley nearly touching the spindle. The upper disc rested on this fixed metal disc, and the spindle rested by its upper slope on this rubber disc. The lower rubber disc was supported by the lower boss on the spindle. The result was that when a tendency to lateral movement took place in the spindle when revolved, the bosses squeezed or pressed the rubber discs upwards and downwards against the rigid metal disc, and so tended to control the movement. If the spindle inclined to one side, it pressed down the upper disc on that side, and pressed the lower disc upwards against the metal disc on the other side.

This was found to be a more efficient mode of checking the vibratory and oscillating tendencies of the spindle and basket than had been attained before by the collars with perpendicular sides. But the pursuers by whom this device was introduced found that they could not patent it,

in consequence of its having been published before a patent had been applied for, and accordingly they were unable to claim so as to obtain a monopoly. This invention would be of no consequence in the present case were it not that it is founded on by the defenders as constituting a published anticipation of the presently claimed invention, the validity of which is challenged by the defenders. And to this it will be necessary to refer later.

Coming now to the device which is in dispute in the present case, it consists essentially of the adoption of a slope-faced buffer, set at an angle "approaching much more nearly a cylinder" than had ever been specified or used before, the spindle having on it a conical or wedge-shaped boss corresponding in dimensions to a more or less flower-pot shape of the rubber buffer. Thus it was attempted, and as it appears, successfully, to make the apparatus self-adjusting, the sloped boss on the spindle supporting the spindle against the sloped sides of the buffer, and thus, as the buffer got lessened in thickness by pressure and wear, adjusting itself by gravitation, and so maintaining the relation of contact necessary notwithstanding the gradual increase of size of the diameter of the inside buffer. In short, there was a certain amount of wedging action, by which the suitable relation of spindle to buffer was automatically obtained.

I entirely agree with the Lord Ordinary's view as to the merit and utility of this arrangement, and indeed this cannot be disputed, seeing that in the restricted area for the sale of such wringing devices machines made of this description have been extensively patronised by the manufacturers who use mechanical wringers or separators, and that there is still a large market for them. Nor can I have any doubt that if the pursuers have a claim to a monopoly, that the defenders are interfering with that monopoly by infringement.

Two questions therefore arise on the defence made—(1) Can the defenders successfully maintain that the pursuers' patent is void because of anticipation and prior publication; and (2) if novelty and usefulness be assumed, is there ground for holding that the specification is open to such exception as to lead to rejection of the pursuers' demand for protection?

First then—Was there anticipation? I have already pointed out that in the earlier patents there was nothing of the nature of sloped surfaces tending to self-adjustment under wear. Whatever wear took place upon the upright collar or collars was a permanent cause of space being left between spindle and buffer, and there was no support other than that of the flange on the spindle pressing perpendicularly on the top of the rubber collar.

It therefore only remains to be seen on this first head whether there was anything in the scone buffer arrangement which could be held to be an anticipation of what I shall call the "much-nearer-to-a-cylinder" arrangement as now adopted by the pursuers. I am clearly of opinion that there

was not. It appears to me that the operation of the scone buffer was of a pinching or squeezing action only, and in no way provided anything that could be called self-adjustment. The angle of the two scone buffers was extremely flat, being one of 51 degrees, so flat that nothing of a cone or wedge action could take place as the rubber diminished in thickness by pressure or by wear. Whatever loss of thickness there might be upon the top buffer would not cause a wedging descent of the spindle. There was no holding grip. In the case of the lower scone, wear of it would prevent the contact of the surfaces of the lower spindle boss and of the scone from having any controlling effect, until the motion which it was intended to check had established itself, as the spindle boss had to move the scone upwards before contact with the rigid surface above it took place, a thing it was obviously desirable to avoid, and which in the new arrangement is absolutely avoided. The action of the scone buffer system, as already said, was a pinching or squeezing in a practically vertical direction by which discs comparatively flat were squeezed up or down by the bosses or collars of the spindle, an action, as it appears to me, quite different from that of the wedge-like action of the more-nearer-the-cylinder form in the device which is in dispute.

I am satisfied that there is nothing in the contention of the defenders that the scone buffer arrangement is an anticipation of this patent. The scone buffer cannot be in reason described as a cone, looking at that expression as applied to a mechanical device. It is really of a disc character, intended for direct support, not by gripping sides like the new flower pot buffer, but solely by resistance to downward or upward pressure. The upper boss on the spindle resembles in its slopes the slope of the head of a screw nail, which is not capable of wedging its way through wood, but only of squeezing the wood down until it is firmly lodged. A screw nail with a head made so conical that it would continue descending when forced down, would tend to split the wood, and no mechanic would make the head of a nail at such a slope as would do this. It came also to be seen in actual use that the upper scone buffer would not act efficiently by itself. The spindle and buffer were not self-adjusting when wear took place. The pursuers, who supplied many of these scone buffers to sugar works in the West Indies, had complaints of their not working satisfactorily. Their representative who went out to investigate found that the machines were being used without any lower buffer, with the result that the vibration was not controlled, and that the spindles had to be held by men pressing sticks against them to prevent extreme and dangerous side movement. It is thus plain that the upper scone buffer with its 51 degrees of angle did not effect the desired control, and was therefore in no way an anticipation of a control effected by using a more nearly perpendicular angle.

There remains the second question—Is there ground for holding that the specification is open to such exception as to lead to the rejection of the pursuers' action?

The defenders make two points on this part of the case. They say that the pursuers have not definitely stated in what their alleged invention consists, and that their specification is vague from uncertainty. They further say that the pursuers have shown in their descriptive drawings arrangements with such an angle between spindle and buffer as to be unworkable, and that a machine made with such angles could not be used with safety. This latter view was urged upon the Lord Ordinary, being based on evidence, given not merely for the defenders, but upon an admission made under cross-examination by Professor Hudson Beare, to the effect that figure No. 11 in the specification seemed to him to give an unworkable and dangerous machine, from the angle being too great. To the argument based on this evidence the Lord Ordinary reluctantly gave effect and assuozied the defenders. When the case was first argued in this Division it became plain that this matter had crept into the proof without there being any record for it, the defenders having made no averments covering it in any way. The pursuers had no notice to prepare themselves for such a defence, and the pursuers' witnesses had the matter sprung upon them as a theoretical question, there being no opportunity for mature consideration or for preparation by test. Accordingly, seeing that in a patent case the defenders are on such points as this really in the position of pursuers, as for reduction of the patent, it was plainly not fair that, without specific averments as notice to the opposing party, they should be allowed to spring a matter of this kind on those who are defending the patent. Accordingly it was put to the defenders whether they would desire to amend their pleadings so as to give proper notice of their contentions on this head, that the pursuers might, as defenders on that particular issue, have a just opportunity to meet it. The defenders on consideration resolved to amend, and an additional proof was allowed. Without going into it in detail, I shall only say that, in my opinion, it has been proved by actual experiment that the objection which was maintained and was successful with the Lord Ordinary has no substantial foundation, and that in none of the drawings attached to the specification is there any angle shown, the use of which would not give safe and working results. The question of the best angle is another question altogether, and this leads me to the other point upon the specification—Is there vagueness and uncertainty as to the actual invention from want of preciseness in the specification?

This is the only question in the case which has caused me anxiety, the defenders having been able to address to the Court a much more forcible argument upon it than, in my opinion, they were able to do on any other part of the case. Their con-

tion is that the pursuers state their case as to the angle at which the buffer is to be set, and the boss on the spindle adjusted to fit it, much too vaguely and generally, and that while they show a number of angles in the drawings, none of these is under twenty degrees, while the pursuers' angle in practice and the defenders' angle in the alleged infringement are only about half of that figure. I have come to be opinion, however, that this argument fails. It is to be observed that this invention is not for a definite machine to be used always in similar circumstances as to load, adjustment of load, speed of revolution, and size and weight of machine. Nor is it for a machine to be used in one climate. In view of the fact that indiarubber is an essential part of the working elements, it might quite well be that modifications of angle might be advisable according to the circumstances in which the device was to be applied.

The questions which arise are—Has the patentee held back any particular in his description which he was bound to give, as a matter of fair disclosure, and has he failed to indicate sufficiently in what his invention consists? Reading his specification fairly in the light of the nature of the work which the machine is intended to do, I come to the conclusion that he has not failed in either of these particulars. There is nothing concealed. The pursuer does not profess to specify any exact angle, and I do not think he was called upon to do so. It is obvious that the ascertainment of the best angle for each case in which such a machine might be required by a tradesman carrying on work in which such a wringing apparatus might be used, would be an impossible task for a patentee, and would almost inevitably expose him to a defence of disclosure prior to the taking out of the patent, for nothing but practical experiments, numerous and elaborate, could enable this to be done. He must be entitled to some generality, provided he puts it in the power of a skilled mechanic to produce the machine without having to invent for himself, but not necessarily without some degree—as expressed by Cotton, L.J.—of trial and experiment, to obtain the most satisfactory result in particular cases. An illustration may be taken from rifled fire-arms. The original inventor of spiral grooving might have been held to have secured protection for such a mode of controlling the flight of a bullet without confining himself to one inclination of spiral, regardless of the weight of the projectile, the material of which it was made, the force of the charge, or the length of the barrel, the initial velocity desired, or other particulars. So here practice alone could determine the best detail for each special set of circumstances, the essential of the invention being applied in them all, namely, the use of an angle giving a much more near approach to a cylinder than anything that had ever been used before. I cannot hold that the illustrations given in the figures attached to the patent tie the inventor up absolutely within the

angles there shown, particularly that he is not tied up so that he cannot use and have protection for an angle somewhat smaller in degree than the smallest that on measurement appears to be shown in the drawings. Experiment has enabled the pursuers to some extent to standardise—a most important thing in the question of cost of manufacture—and although it has been found that for the machines they generally make 10 degrees is a satisfactory angle, I cannot hold that they are not protected from having their device copied at that angle by others, on the ground that that exact angle is not specified in the patent. I should be inclined to hold that if he had specified “20 degrees or thereby”—which is our Scottish mode of expressing a reasonable limit of variation—a machine made by another at 10 degrees would be nothing but a colourable device to evade his legitimate right. Conversely, if he makes machines at 10 degrees, although showing nothing under 20 degrees in the figures, I cannot hold that he is not protected in doing so.

Lastly, it is necessary to notice that the patentee has, in his specification, made it a part of his description that by his arrangement the elements of the surfaces of his conical faces do not pass through the “centre of oscillation.” A great deal was made in the first debate of the use of the word “oscillation,” and much argument was founded upon its technical inaccuracy, and the Lord Ordinary was led to the conclusion that this also formed a ground for rejecting the pursuers’ claim. Here again, the pursuers were in the position of having no notice of the line of defence to be taken, and on this matter being brought into the defences the additional proof dealt with it. It became abundantly plain that while in the technical scientific language of the of the lecture room the term “centre of oscillation” has a particular meaning, that centre being, in the case of a pendulum, in the body of the weight bob of the pendulum, yet, in the ordinary language of practical men who have to deal with problems of vibration and oscillation, the term “centre of oscillation” is used to describe what technically is the “centre of suspension,” being the point where in theory there is no motion. Now it has been made clear that while in the case of the scone buffer the elements of the buffer pass through or close to the centre of suspension, this is not the case when the much-more-near-a-cylinder arrangement is employed, as in the pursuers’ present machine. Therefore the true question is whether the use of the word “oscillation” instead of “suspension” could or did mislead. The defenders’ principal witness frankly stated that it did not mislead him, and it is now quite clear on the evidence that those who make machines of this class never read the expression in any other sense than that in which the pursuer says it always has been read by everybody. And this is confirmed by some of the other specifications produced, in which it is plain that the same term is used in the sense in which the pursuer used it, and the defen-

ders understood it to be used. Indeed, in one case it appears that in one specification the words are used interchangeably as referring to the same thing.

I cannot say what would have been the effect on the Lord Ordinary’s mind of the additional light we now have; but, however much I might have shared his feeling of difficulty, which prevented him from giving decree for the pursuers on the original proof, I am glad that now we are able, without impugning his judgment, to recal his interlocutor, which he admits he pronounced “very reluctantly.”

LORD LOW—I agree with the Lord Ordinary, for the reasons which he has stated, that the pursuers’ invention was a meritorious one, and that if their patent is valid the defenders have infringed it. Further, as the evidence stood when the Lord Ordinary delivered judgment, I think that it would have been difficult to come to any other conclusion than that at which his Lordship arrived, namely, that the specification was defective in respect that it did not disclose the range of angles to which the conical buffers must be made in order that the best results might be obtained.

The additional evidence, however, which has been led since the record was amended has, in my opinion, met the difficulties to which the Lord Ordinary felt constrained to give effect. That evidence shows that what is the best angle in any particular case depends upon a variety of circumstances, such as the weight of the load, the nature of the material being treated, the driving power, and the like, and I think that a workman possessing ordinary skill and knowledge in regard to the construction and working of centrifugal machines would have little difficulty in ascertaining what angle would give the best results in the particular case with which he was dealing, by mere trial and experiment without any exercise of his inventive faculty. That such trial and experiment may be necessary in a case of this kind is not a ground upon which the specification can be held to be insufficient. If the directions in the specification are such as to enable a person having the requisite knowledge and skill to make the article described without further invention, that is all that the law requires. And although the question is one of difficulty, I have come to be of opinion that the specification is sufficient for that purpose. It is said in the specification that the buffer which is the subject of the invention must approach “much more nearly to the cylinder” than what have been called the “scone” buffers already in use. Now the “scone” buffer had an angle of about 51 degrees, and merely to say that the new buffer must approach “much more nearly to the cylinder” than the “scone” buffer is very indefinite. It is, however, I think sufficient to enable a workman of competent knowledge and skill to make the buffer. The object of the buffer is to give both support and control, and it is, I suppose, obvious that the buffer must be sufficiently sloped

to give adequate support, and sufficiently steep to give the necessary control, and I do not think that a skilled workman would have much difficulty in finding out what was the best angle in any particular case. He might require to experiment, but I think it is plain that he would not require to invent.

It is also said in the specification that the elements of the buffer must not pass through the centre of oscillation. I do not think that anyone who had an adequate knowledge of the subject would be misled by these words, or would fail to understand what they meant, but I do not think that they add anything to the statement that the buffer must be much more nearly a cylinder than the scone buffer.

It was argued, however, that the specification was bad in respect that the drawings annexed to it (1) showed a buffer, in figure No. 11, with so flat an angle that it could not accomplish the object of the invention; and (2) do not include a buffer with so small an angle as 10 degrees, which, however, is the buffer which the pursuers have found to give the best results and which alone they now make.

In regard to the first point, the buffer shown in figure No. 11 has an angle of 40 degrees, and although my impression is that a buffer with so flat an angle is not likely to be found practically useful, the experiments which have been made seem to me to show that it will not only support the weight but will control the oscillation, which is the essential characteristic of the invention.

In regard to the second point, the range of angles shown by the drawings runs from about 20 degrees up to 40 degrees, and it is admitted that for the purposes of their business the pursuers have found a buffer with an angle of 10 degrees to be the most suitable.

The contention of the defenders upon that state of the facts is (1) that the pursuers have not only not disclosed in, but have by their drawings excluded from, the specification the range of angles within which the best results may be obtained; and (2) that the buffer made by the defenders having a much smaller angle than the smallest shown by the drawings is not an infringement of the patent.

The first of these arguments seems to me to raise the most difficult question in the case. I do not think that it would occur to anyone reading the specification along with the drawings that in order to get the best results it was necessary to have the angle anything like so small as 10 degrees. But then I do not think that it is proved that a buffer made at an angle of 10 degrees or thereby does give the best results so far as the object of the invention, namely, the combination of support and control, is concerned. I accept the pursuers' evidence that they have adopted a buffer of 10 degrees as their standard buffer for commercial reasons. That buffer they say gives very good results, and looking to the class of machines which they chiefly deal

in, a buffer of 10 degrees is more profitable to them than a buffer with a larger angle would be. That is quite intelligible, but the fact remains that the smallest angle shown in the drawings is much larger than that of the buffer which the pursuers have found to be the best, at all events, for their business. Further, the inference from the evidence appears to me to be that, unless in an exceptional case, buffers will not in practice be made with so large an angle as 20 degrees. Now whether that is fatal to the patent or not seems to me to depend very much upon the effect which falls to be given to the drawings. If the drawings are to be regarded as a representation that the best results are to be obtained by using a buffer whose angle is within the range shown therein, I think that the patent would be bad. But I do not think that the drawings can be regarded as making any such representation, because their function is merely to aid the skilled workman in making the machine described in the specification, and I think that the drawings in this case are very well adapted for that purpose. Suppose a workman who was making a buffer from the specification at first tried a buffer with an angle of 25 degrees, but found that it did not control the oscillation sufficiently, I think that he would at once see that the thing to do was to decrease the angle so as to make the wedging action stronger, and I am unable to assent to the view that if in order to get the amount of control which he desired he reduced the angle until it was less than 20 degrees, the buffer which he thereby made would not be protected by the patent.

It was further argued for the defenders that the first claim was bad, because all that it could be read as claiming was an elastic conoidal buffer. That argument was founded mainly upon the absence in the claim of any direct indication of the way in which the buffer was to be "carried" so as to produce the result of combined support and control. Whether that objection is or is not well founded seems to me to depend upon the effect to be given to the concluding words "substantially as described." Then reading the specification as a whole, these words seem to me to refer back to the description in the specification, both of the buffer and of the way in which it is to be carried. As I have already pointed out, it is said in the specification that the buffer must approach much more nearly to the cylinder than the scone buffer, and I have given my reasons for thinking that that description is sufficient. Now in the specification (p. 2 lines 16 to 20) the way in which the buffer is to be carried is very distinctly described. It is to be "carried between a counterpart conoidal collar on the spindle and a counterpart seating in the framing of the machine." Now if these descriptions of the buffer and the manner of carrying it are read into the claim, as I think they are by the concluding words, I am of opinion that the claim is not open to objection,

assuming that I am right in thinking that the description of the buffer in the specification is sufficient.

I have therefore come to the conclusion that although the case is narrow, the pursuers are entitled to decree.

LORD ARDWALL—I have had the privilege of perusing the judgments just delivered by your Lordships, and also that about to be delivered by my brother Lord Dundas.

I agree with the result at which all your Lordships have arrived, and the grounds on which that result is supported; and I have nothing to add.

LORD DUNDAS—I am of the same opinion. The Lord Ordinary decided that, assuming the validity of the pursuers' patent, the defenders have clearly infringed it; and also that the patent is valid and effectual, except in regard to two particular matters which constrained him with great reluctance to hold it invalid. As to infringement, I entirely agree with the Lord Ordinary. For the rest I accept, and do not desire to repeat or amplify, what his Lordship has said as to the validity of the patent in all regards except the two special matters which he considered fatal to it. But, for reasons to be explained, I differ from the Lord Ordinary's conclusion upon these two matters, and think that the pursuers' patent is valid in all respects. The two grounds upon which alone the Lord Ordinary decided the case in the defenders' favour were, to use his own language, "That the patentee has not disclosed the range of angles to which the conical buffers must be made in order that the best results may be attained; and . . . that he has shown on one of his drawings a conical buffer of so flat an angle that for practical purposes it is useless." I do not wonder that upon the evidence before him the Lord Ordinary should have felt himself constrained to give effect to the defenders' arguments. But the position of matters is now very different. When the case was debated in this Court upon the reclaiming note, we held that no fair or sufficient notice of these points had been given in the defenders' record; we allowed them to amend (the case is reported in 1909 S.C. 1445), and additional evidence has since been led before the Lord Justice-Clerk. The course thus taken has, I think, been amply justified by the result, for a flood of light has been thrown upon the case by the additional proof, as contrasted with the fragmentary scraps of evidence upon the points now under consideration which had irregularly found their way into the proof in the Outer House. I rather think that if the evidence as we now have it had been before the Lord Ordinary—as it would doubtless have been if the defences had been properly stated to begin with—he would have decided the case in the pursuers' favour in accordance with his general inclination. However that may be, I consider that we ought now so to decide it.

The second of the two objections taken by the defenders seem to drop entirely out of the case. It is now established that a

buffer with an angle of 40 degrees is not useless, but works very well, and can support and control an unbalanced load at high speed. This is the result of Professor Hudson Beare's experiments both with a full-sized machine and with a model, which is produced; and I do not think his evidence is materially shaken in any way. We have also Mr Laidlaw's statement that "with a load of sugar, a buffer of from 20 to 40 degrees would in my view be quite as suitable as regards control and self-adjustment and support as an angle of 10 degrees. . . . So far as sugar is concerned an angle between 20 and 40 degrees would do just as well as an angle of 10 degrees, and in some respects better."

The other objection, based upon want of disclosure in the specification of any definite angle or range of angles, is more formidable, but I have come to the conclusion that it also fails. Mr Laidlaw in his new evidence, which is clear and markedly moderate in tone, gives a detailed account of the whole matter regarding angles. His patent is for obtaining, by means of the one conical buffer, both support and control. That is its essence; and in order to effect this the specification postulates, *inter alia*, "the employment of a cone approaching much more nearly to a cylinder" than the comparatively flat buffers previously known. It is obvious that the new conical buffers must not, as regards angle, approach too nearly to a cylinder on the one hand, or to the flat buffers, whose angle was 51 degrees on the other. I confess I think it would have been a very difficult task indeed—perhaps an impossible one—to define within the limits of a specification the best (or the preferable) angle or range of angles, within the limits thus generally indicated, for the new buffer in centrifugal machines; and one can see that if the patentee had tried to do this, he might have laid himself open to more serious danger by his attempted precaution than that to which he is exposed by his cautious generality. The reason of this is obvious enough; there is no one angle or even narrow range of angles which is best for the buffer in all centrifugal machines, and under all circumstances and conditions. That is and must be a matter which depends on many practical considerations—*e.g.*, the size and design of the machine, the nature of the material to be treated in the basket, the weight of the load, the speed of driving, the form of motive power by which the machine is to be driven, the character of the rubber, climatic conditions, and so forth. Mr Laidlaw explains that what he has done, in fact, is to standardise ten degrees as the best angle for uniform work, this being, as he puts it, good enough for the commercial market and as a commercial business policy, but not by any means best under all circumstances. The angle of 10 degrees is thus usually adopted in his practice; but he might equally well have (and indeed was at one time disposed to have) standardised two angles—a steeper one for smaller machines and a flatter one

for larger machines. And Mr Laidlaw explains that he has in fact made and sold buffers at various angles other than his "standard ten degrees." Now I think it would be exceedingly difficult, under these circumstances, to express in words more precise than those used in the specification an angle (or range of angles), by use of which the best results would be obtained, for the matter plainly is one of circumstances and conditions. The pursuers' counsel urged that the adoption of any particular angle was a simple matter for the workmen, and formed no essential part of the invention claimed by the patentee. I think Mr Williamson himself realised that any precise definition would be practically impossible. This is, in my judgment, a matter where considerable latitude of expression must be permitted to the patentee. Professor Hudson Beare explains that the action of the pursuers' cone buffer is similar to the action of a wedge, and says (very forcibly, I think) — "Supposing anyone were describing a head of something which was to be wedge-shaped or was to act wedge-wise, I should not expect to find the angle of the wedge defined. In point of fact, I could make a wedge so obtuse that it would cease to act as a wedge. I would assume that that was outside the patent; but, on the other hand, so long as the steep cone is steep enough to give the wedging action, I would regard that as within the patent. (Q) Is it possible, except with given data of angle, material, weight, and conditions of user, for anybody to define the angle within which a steep cone like this or a wedge will prove operative? — (A) No, I should imagine not. At all events, I am not prepared to do so." The position seems to be fairly analogous to one where a patentee is dealing with new proportions of materials or ingredients; and in such cases it has been often held that he is not bound to limit himself to definite proportions (e.g., per Sir W. Page Wood, V.C., in *The Patent Type Founding Company*, 1859, 1 Johnson 381; per Wills, J., in *The Incandescent Gas Light Company, Limited*, 1896, 13 R.P.C. 301, 327). I do not think this specification can be held to be controlled or limited in the matter of angles by those which can be ascertained by measuring the buffers shown in the drawings appended to it. These are, in my judgment, merely pictures of the kind of buffer intended, in relation to the adjacent machinery and its action thereon, and are not—nor are they anywhere said to be—intended to demonstrate or define particularly suitable angles of steepness for the buffer. Again, it is difficult for me to see why it should be necessary to specify with precision a particular angle or approximate range of angles, any more than to define exactly the best depth of the buffer perpendicularly, which no one suggests to be necessary; both, as I think, are matters to be safely left to the knowledge and common sense of the skilled person who is to make the buffer. The general law applicable to this question is, I apprehend, clear enough. A specification

must, of course, define the nature of the patentee's invention and the means of performing it. It must, however, be considered as being addressed, not to the general public, but to those skilled in the particular branch of art or manufacture involved in the patent; and such skill may obviously vary in different cases from that of an ordinary skilled artisan to that of a very highly trained chemist or the like. It is not, therefore, necessary to tell skilled people by your specification matters of elementary knowledge, or things which presumably come within their information and experience. The test is always whether or not the person of skill reading the specification can make the thing or exercise the invention, without further invention of his own, though not necessarily (e.g., per Cotton, L.J., in *Edison & Swan Electric Light Company*, 1889, 6 R.P.C. 243, 277) without some degree of trial or experiment. I think, though the question is certainly narrow, that the specification sufficiently complies with the requirements of the law in this matter of angles. The case does not seem to me to be one where the patentee has either designedly made his specification ambiguous, or has by negligence or want of skill failed to make distinct what his invention is. He has, in my judgment, made clear enough the nature of his invention and the field within which outsiders may not trespass.

It remains to notice one other matter, upon which much light has been afforded us by the additional proof. The specification indicates as a distinguishing feature of the new conical buffer, besides its greater steepness, that "the buffers hitherto in use have been of the nature of comparatively flat angular discs, the elements of whose surfaces passed through the centre of oscillation, whereas the present invention consists in the employment of a cone . . . whose elements do not pass through the centre of oscillation." The defenders were able, upon the proof as it stood in the Outer House, to raise some doubt and confusion upon the words "centre of oscillation," but I think the difficulty which confronted the Lord Ordinary was more apparent than real, and has been satisfactorily solved by the new evidence now before us. All the witnesses are agreed that, according to the correct terminology of engineering science, the language of the lecture room, or of text books on mechanics, the "centre of oscillation" as applied in a pendulum is the centre of the mass of the bob of the pendulum. On the other hand, it is equally clear that what is called in this specification "the centre of oscillation" is what in correct scientific phraseology is called "the centre of suspension," or "the point of no motion," viz., a point about the centre of the buffer where the axis of the spindle intersects with a vertical line through the middle of the buffer. This point is shown very clearly, for example, in the various drawings in the pursuers' pamphlet, a glance at which discloses that in the case

of the old scone buffers the elements of their surfaces did pass through this point, while the contrary is the case with the improved conical buffer, the elements of whose surfaces would pass through a point somewhere much lower down. So far then as the use in the specification of the words "centre of oscillation" is incorrect, it is so as a matter of words only—and to the lay mind the phrase does seem to be at least as reasonably applied to the point of no motion as to that at the bob of the pendulum—and the meaning of the specification is quite clear. Indeed, Mr Williamson frankly admits that he was in no way misled by the phrase, with which he had been quite familiar, as meaning, in the business of making centrifugal machines, the intersection of the lines of the old scone buffers, or a spot somewhere about the middle of the original Weston buffer. He says he knew that the "centre of oscillation" in the specification meant the same thing as the "centre of suspension." This by itself might not be enough; but it is further plain from his evidence, and abundantly so from that of Mr Laidlaw, that no one directly or indirectly connected with the very limited "public" engaged in manufacturing machines of the kind in question could have been misled or deceived as to the meaning in this specification of the words "centre of oscillation." I may add that two specifications are produced in which the words are so used; and in the former of these the term "centre of suspension" occurs as interchangeable with "centre of oscillation," both forms of words referring to the same point in the drawings. There is therefore, I think, no room for the defenders' argument that the pursuers' specification is ambiguous, or misleading, or contains any false suggestion in regard to this matter. I am of opinion that the Lord Ordinary's interlocutor of 5th February 1908 ought to be recalled and decree pronounced for the pursuers, except as regards the question of damages, which the Lord Ordinary states has by arrangement been held over. For the expiscation of this question the case must, I suppose, go back to the Outer House.

The defenders appealed to the House of Lords.

At delivering judgment—

LORD CHANCELLOR—In this case I had intended to express my own opinion separately, but after having the advantage of reading in print the opinion of my noble friend Lord Atkinson, I need not say more than that I agree with his views, and cannot with advantage add anything to what he says.

LORD ATKINSON—I think the specification in this case is misleading and the patent therefore invalid. In my view the case is governed by *Simpson v. Holliday*, L.R., 1 H.L. 315. In that case the patent was taken out for "improvements in the preparation of red and purple dyes."

The process was described thus—"I mix aniline with dry arsenic acid and allow

the mixture to stand for some time, or I accelerate the operation by heating to or near its boiling point until it assumes a rich purple colour."

The claim ran thus—"What I claim is the manufacture or preparation of red and purple dyes by treating aniline with arsenic acid as hereinbefore described." The patent was held invalid. Lord Cranworth, at page 322 of the report, states clearly the ground of the decision in these words—"There is no doubt in this case as to the construction of the specification. It specifies the two modes of obtaining the mixture which produces the dyes, one with and the other without the agency of heat. It was admitted on the hearing of the motion before Lord Westbury, and it was admitted on the hearing of this appeal before your Lordships, that no practical result can be obtained without heat. This clearly makes the specification bad. It specifies two processes, whereas only one is practicable. It is no answer to say, as was said at the Bar, that any practical workman would know that the cool process was bad and so would adopt the other. It may be that in construing a specification the Court may sometimes feel justified in understanding the language, not according to its ordinary meaning, but in the mode in which it would be understood by skilled workmen called upon to act according to its directions. But this does not warrant us in giving effect to a specification claiming two things, one practicable and the other impracticable, because a skilled workman would know that one of them would not be acted upon and so would confine himself to the other.

Here the two processes, the cold and the hot, one efficient and one inefficient, were identical in every respect save the application of heat. The area of the monopoly, however, sought to be set up comprised both processes, the area of efficiency only comprised one.

Now the invention in the present case is simply a new device for suspending from a fixed bracket or support the rotating spindles with the baskets attached which form the main and valuable part of this machinery. The particular device or invention consists of a bearing composed of a conical collar attached to the spindle fitting tightly into a hollow indiarubber cone called a buffer, the cone cover fitting into the fixed support like a wedge.

The particular merit claimed for this contrivance or invention is that it prevents oscillation, as it is called, when the spindles and basket are made to rotate at a very high velocity, as they must be made to do in order to cause the moisture to be driven by centrifugal force out of the substances placed in the baskets to be dried.

Now the collar must be conical in shape, therefore its outer side, as indeed that of the rubber cover fitted to it, must make some angle with the perpendicular, else it would not be conical but cylindrical. But the only direction given in the specification as to what that angle is to be is, that it must be less than 54 degrees from the

perpendicular. Monopoly is claimed over the wide field from 51 degrees downwards, because efficiency as a preventative of oscillation is claimed for the invention over the same field. But this is as entirely an exaggerated claim as regards efficiency as was the claim in *Simpson v. Holliday*. The expert witnesses examined for the respondents admitted that unless the side of the supporting cone with its buffer makes an angle of from about 25 to 5 degrees with the perpendicular there is no efficient control of oscillation at all, that is, the invention over this field has no merit, not doing that which it is claimed it will do. It is quite true that in *Simpson v. Holliday* there were two processes covered by the specification. And here there is only one article or device, a rubber-shod cone as a bearing or means of suspension. I do not think that makes any real difference in principle. The specification does not contain any provision which will enable the efficient workman to make an efficient cone. He would have to experiment over one-half the field of monopoly claimed before he could succeed.

Of course in this, as in every other case where a line has to be drawn, difficulty will be experienced in determining whether a cone made at a few degrees more from the perpendicular than 25 or less from it than five would be an infringement of the respondents' patent. Possibly in such a case the question will be whether the device said to be an infringement is in substance an imitation or reproduction of the patented article, but in my view the margin of inefficiency in this case is too wide. It is more than twice the area of the utility.

For this reason I think the patent is misleading and therefore invalid, and that the appeal should be allowed with costs.

LORD KINNEAR—I regret that I am obliged to differ from the opinion of my noble and learned friend. I think that the unanimous judgment of the Court below is right, and that it ought to be affirmed. All the learned Judges were agreed—and I do not think that my noble and learned friend so far differs from them—that the respondents' invention is novel and meritorious, and that if their patent is valid it has been infringed by the appellants, but the Lord Ordinary, on the evidence which had been led before him, came with reluctance to the conclusion that the specification is defective, and the learned Judges of the Second Division, having taken further evidence, held it to be sufficient, and sustained the validity of the patent. I am of opinion that they were right. The question on which the Inner House differed from the Lord Ordinary is one of considerable difficulty, but I do not think that the difficulty arises from any doubt or uncertainty as to the essential nature of the invention, which is, of course, the main point to be regarded.

The patent is for "improvements in centrifugal machines," and there can be no question as to the nature of the advantage

which the patentee claims for his invention. Centrifugal machines are extensively used for extracting moisture from a variety of substances. The substance to be dried is placed in a basket which is suspended by a spindle and caused to rotate at a great velocity, so that the moisture may be driven off through the interstices of the basket, while the solid matter is retained. The rapidity of rotation necessary for separating the liquid from the solid matter tends to cause vibration, and the unequal distribution of the load in the basket about the centre of rotation tends to set up a more or less violent oscillation, and this vibration and oscillation, if not effectively controlled, are apt to cause serious injury to the machine. The object of the invention is to obviate this danger by an improved method of supporting the spindle and controlling the oscillation by the provision of a new form of combined elastic buffer-bearing, so that the machine may be run with a much greater unbalanced load than has hitherto been found possible.

I do not think it is necessary for my purpose to recite in detail the precise description of this new form of buffer; it is enough to say that in my judgment the invention is described concisely and accurately by Lord Dundas when he says that the "patent is for obtaining, by means of the one conical buffer, both support and control. That is its essence; and in order to effect this the specification postulates, *inter alia*, 'the employment of a cone approaching much more nearly to a cylinder than the comparatively flat buffers previously known.'"

The question is whether the patentee has defined this invention in his specification with sufficient exactness to support the patent. The specification has been subjected to a very searching analysis, but after giving to the various acute criticisms which have been made upon it the consideration to which they were certainly entitled, it appears to me that there are only two points which create serious difficulty, and that both will be found to rest upon what seems to me to be one fundamental misapprehension. It is said, in the first place, that the specification is not sufficiently clear and explicit to define the thing patented, and, secondly, that it claims too large an area of monopoly, inasmuch as its language is wide enough to cover machines which would be altogether ineffective for the purpose of the invention. The basis of fact upon which both of these objections are founded is that the conical buffer, since it is not cylindrical, must make some angle with the perpendicular, but that the angle must be within certain limits in order to be effective, and that there is no definition of those limits to be found in the specification. The answer is that the particular angle is not of the essence of the invention. There is, indeed, no definite angle or narrow margin of angles equally suitable for all centrifugal machines. The evidence is that the selection of the best angle for a particular machine depends upon a great variety of considerations in which different machines differ very widely from one

another; it depends upon the size and design of the machine, upon the nature of the material to be loaded, upon the weight of the load, the motive power, and the nature of the rubber of which the buffer is composed. I think it would have been altogether contrary to the intention of the specification to define any particular angle for the purpose of explaining what was desirable to adapt the invention to every one of these varying machines, and it would have been equally impracticable to exhaust all possible machines in different climates, and framed for different purposes, and define the exact angle that was necessary for each. The purpose of the invention, as I read the specification, was to provide a general kind of apparatus which would suit machines in general, but that for the application of this apparatus to a particular machine the patentee found it necessary to leave the exact angle which ought to be adopted to the skill and invention of a properly informed mechanic. I think, in the circumstances, differing as I have the misfortune to do from my noble and learned friend, that he was quite entitled to do so.

It appears to me that the point is put with extreme force and justice in the evidence of Professor Hudson Beare, who explains that the action of the pursuers' cone and buffer is similar to the action of the wedge. Then he goes on to say—"Supposing that anyone were describing a head of something which was to be wedge-shaped or was to act wedgewise, I should not expect to find the angle of the wedge defined. In point of fact, I could make a wedge so obtuse that it would cease to act as a wedge. I would assume that that was outside the patent, but, on the other hand, so long as the steep cone is steep enough to give the wedging action, I would regard that as within the patent."

Now I agree with that evidence that what the patent claims is a cone steep enough to give a wedging action, that it claims nothing more, and that it claims everything that falls within that description. Whether that explanation is sufficiently clear and explicit to enable a workman to construct a machine and to adapt to it this particular apparatus is a question of fact. It is a question upon the evidence, and, agreeing with the learned Judges below, I think that when tested by the evidence the specification is intelligible, clear, and sufficiently explicit. I have come to the conclusion that the invention is explained sufficiently to enable a workman of ordinary skill and information to make the thing patented, and that, according to my apprehension, is what is necessary, and all that is necessary, for the validity of the patent if the invention itself be novel and meritorious.

The most formidable difficulty which appears to me to arise is that which is created by the case of *Simpson v. Holliday*, but I confess for myself that after much consideration of that case it appears to me to illustrate the question which we have now to consider, not by its similarity to

the present case, but by the contrast. In that case the patentee said—"I mix aniline with dry arsenic acid, and I allow the mixture to stand for some time"—that is one thing—"or I accelerate the operation by heating to or near to its boiling point until it assumes a rich purple colour"—that is another and separate claim. It was proved that it was necessary to apply heat in order to produce the patentee's results. Therefore he had specified two methods of procedure, one of which would be effective, and the other of which would not be effective, to produce his results. It was proved that the cool process produced no practical effect, but that the only process which was effective was that of heating, and the patent was held to be bad.

Now I appreciate the force of the observation that the alternative form in which this patent was expressed can make very little difference if a claim in one general form is so made as to cover two distinct and different things, one of which is good and the other bad. But then I do not think that is the nature of the present case. The importance of the alternative form in the case of *Simpson v. Holliday* was simply this, that it points distinctly to two separate and distinct things, for each of which the patentee makes a specific claim. I am unable to see that the patentee in this case makes any specific claim for an angle too flat or an angle too steep to enable his apparatus to be worked. It comes back, therefore, in my opinion really to the original question—Has he done enough to show to a well-informed and properly-skilled workman what the thing patented is which he is required to construct? Agreeing with the learned Judges below, I am of opinion that he has, and that the judgment ought therefore to be affirmed.

LORD SHAW—In this action the respondents seek to interdict the appellants from infringement of certain letters-patent dated 4th May 1903, and numbered 10,034 of 1903, granted in favour of James Wright Macfarlane. A variety of defences are set up by the appellants to the action, and substantially the case which is now made is that the patent founded upon is invalid in respect that, first, it contains no patentable matter, and that, second, the specification is defective from vagueness and ambiguity.

The history of the inventions upon the subject of the case may be simply stated thus: In the course of years, since 1867, patents have been obtained for a variety of inventions which make use of the principle that material, partly solid and partly fluid, put into a basket which is made to rotate, may be dried as the effect of the centrifugal action which occurs with the rotary motion and which separates the fluid matter from the solid. By the perforation of the basket the fluid matter, thus driven centrifugally, flies off and the solid matter remains in the receptacle. The basket or receptacle is swivelled upon the foot of the central bar or spindle. The

central bar hangs vertically, and rotary motion is communicated to the basket by outside gearing connected therewith. It happens that the basket thus swung on the central bar, when it rotates with a certain velocity, begins to oscillate, and the oscillation communicates itself also to the spindle. This oscillation thus accompanying the rotation may cause breakage and loss. It has been the object for many years to secure, as could best be devised, a combination of the support of the central bar with the control thereof as against oscillation.

The inventions began by the central bar or spindle, on to the bottom of which the basket was swivelled, being supported by being hung by the head; and the control was accomplished in this way, that the oscillations were sought to be prevented by the vertical spindle being buffered in a rubber ring. That ring was of course also vertical. This control was in practice found to be insufficient.

In course of time there came the stage of not merely hanging the spindle by the head, but of bulging it at one point into a cone-shaped collar. This was called "scone-shaped" and was as flat as 53 degrees. This bar, thus flattened out in the head, rested upon a rubber ring; and to the extent to which it did so, at an angle downwards of 53 degrees, instead of merely resting horizontally upon the rubber, it was controlled from oscillation. The control, thus slightly assisted by gravitation, was far from complete. Accordingly that rubber ring, which in its turn rested upon a diaphragm of iron, was supplemented for its controlling purposes by another rubber ring inserted on the lower side of the diaphragm with suitable supports. The whole was then tightened together, and the control was accomplished by the action of the two rings compressed together strongly on either side of the diaphragm and up against the vertical central spindle which descended between them. This invention was that of 1891, and the patentee was Mr John Laidlaw, also a member of the respondents' firm. In practice, however, it was found that, clever as it was, it still did not completely reach the object aimed at.

The next important stage in the invention was that of the patent now challenged. The respondents' case describes in popular but quite clear language what that patent means—"It consists in its typical form of a hollow indiarubber cone, suitably supported, into which fits a counterpart cone formed upon the spindle of the machine. By this construction the inventor takes advantage of the wedging action of the spindle cone upon the encasing rubber, and obtains, along with the necessary flexibility, the control previously unknown. As the load increases, the wedging action becomes stronger, so that the greatest control is obtained with the maximum load. There is the further advantage that no outside adjustment of the parts is necessary, because, as the buffer wears, the collar sinks into it to an equivalent extent."

One cannot peruse the various stages of these improvements without being impressed unfavourably by the argument that this particular invention contains no patentable matter. I am satisfied that this is not a case of merely putting, in the language employed in specifications, a scientific or semi-scientific gloss upon what was a simple and practical matter that would have occurred to anyone working such machines, but that, simple and practical as the invention now appears, it was the result of years of calculation and adaptation, and is on its merits entitled to the protection of the monopoly claimed.

The question, however, on the second head of the appellants' case is more difficult. When the transformation was made under the patent now challenged, of substituting one rubber buffer for two, and of simply shaping the bulb on the spindle so as to make it sink down into a rubber ring of the shape of a flower-pot, a combination of a twofold kind was effected. In the first place, as mentioned, the two controlling indiarubber rings were combined into one, and, in the second place, the support of the spindle was combined with the control of it, and this latter was effected so that when by the action of gravitation the spindle with its cone sank deeper into the flower-pot, the more rigid became the control of the machine. We may exert upon the specification all the analytical force to which we were invited by the learned counsel for the appellants, but when the analysis is at an end, it will be found to be summed up in the simple mechanical result that a thing so sloped will be gripped by what contains it, and it is mechanically and practically true that as the slope increases the grip increases.

To use the language of Lord Cairns in *Clarke v. Adie*, this is the pith and marrow of the invention. The language of the complete specification in which this is described is as follows—"By the improved construction of single buffer-bearing herebefore described, not only is the spindle supported and its oscillations controlled in an efficient manner so that the machine may be run with safety though carrying a considerable unbalanced load, but also, owing to the conical shape of the buffer-bearing, the compression of the rubber is proportional to the load, and the use of mechanical means of compression is obviated, though, if desired, such devices may be used in addition." This description covers what has been stated above in less technical language. It should be added, that in addition to the two things secured, namely, control as well as support, a further practical advantage was also provided, viz., that when the rubber buffer in use wore down, the weight of the spindle and what was suspended on it drew the cone down, so that in practice an automatic adjustment was secured. This advantage is described in the later language, also of a technical character, used in the specification.

Following the description thus given, there are statements by way of narrative

of what had been achieved by previous invention, and it is affirmed that "the present invention consists in the employment of a cone approaching much more nearly to a cylinder, and whose elements do not pass through the centre of oscillation of the spindle." In other words, whereas the angle of the cone and its rubber buffer from the spindle was formerly as obtuse or flat as about 53 degs., the cone here used was to approach much more nearly to a cylinder, that is to say, was to become more acute or pointed, so that, as has been said, with the increase of the slope there would be the increase of the grip and control. It is to this point that the appellants have directed a strong argument to the effect that "the specification is vague and ambiguous and does not sufficiently describe or ascertain the alleged invention." The claim against which this challenge of vagueness is pointed is claim 1, which is in the following terms—"In centrifugal machines an elastic buffer conoidal in form and so carried that, while supporting the load, it is self-adjusting as to that load, and in its control of oscillation substantially as described."

It is said that this claim would include spindles having cones at an angle of anything from 53 degs. to 1 deg. I do not think this would truly fit the description of angles approaching "much more nearly to the vertical." It is said, in the second place, that if the cone were at an angle of, say, about 40 degs., it would not sufficiently produce the combination of sufficient control with support. And it is admitted, in the third place, that if the patentee had stated the specific angle as, say, 10 degs., or even from 10 to 20 degs., then the Courts might quite well have held a cone with an angle of 25 degs. to be covered by that specification, on the very ground that, even though a 10 to 20 degs. angle had been named, the pith and marrow of the invention might be seized by a few degrees more being put upon the cone, and to all intents and purposes an identical result being secured.

I incline to the opinion that in cases of this kind practice is a good and useful guide, and that it is not sufficient to say that practice means experiment, and that the claim is invalid through vagueness, because it is by such experiment that discovery of the most suitable practical angle is made. The drawings in this case can be usefully referred to, and they indicate quite clearly that the socketing arrangement never in point of fact reached near to 53 degs., and, secondly, it stands admitted that if anything near 53 degs. were employed, it would not be employed for any useful purpose, and that the patent would never be infringed in that sense, for the simple reason that no practical advantage would come to the infringer in such a case.

Nor can I leave out of view, in regard to the criticism directed against the vagueness of this patent, that there is no evidence that any practical man acquainted with that class of work would fail, on account

of the vagueness of language, to make a machine which would adopt and adapt the idea usefully and successfully. It is right further to say that the circumstances of the use of the machine may vary. In particular, the basket, according to the variety of trades in which it is used, may have to contain material of different kinds, densities, and weights, and the general utility of the machine is partially this, that by the patentee having avoided the statement of a specific angle, he has enabled the machine to become a valuable adjunct in manufacture in these varying cases. In short, the statement of a specific angle might either in practice have to be exceeded or the reverse, according to the needs of the articles treated, otherwise the slightest change of the angle would enable infringers to seize the virtue of the machine, and so to deprive the patentee of his right.

In regard to apparatus to be used in laundry work, sugar making, and other trades, it is evident that it was of importance that the claim and description should not bind the inventor to a specific statement of mathematical angles, so long as the main object was secured and could in practice be clearly accomplished by following out the description given and securing that socketing of the cone in the rubber, which in practice would easily make the adjustment the most useful for the particular needs of the trade. This question of vagueness as against specification is often, of course, a serious question. But, in my opinion, the principle of the matter can be expressed thus—A patentee must not use language so vague as to enable him to secure a monopoly for more than his real invention, and so to invade the rights of free rivals. But, on the other hand, it is permissible to state the real invention in language of such generality as is essential to preserve it and to prevent those rivals from invading the rights of the patentee. In the present case I think that the specification and claim complied with these principles, and that the vagueness is not a deceptive vagueness leading to insufficiency in practical information, but is only that generality which would secure to Mr Macfarlane the substance of his idea. In the case of *Simpson v. Holliday*, referred to by my noble and learned friend Lord Atkinson, a distinctly alternative form was adopted by the patentee in his description of his invention. It was proved that one of the alternatives was an impossible or inoperative alternative. It humbly appears to me that that decision affords no guide or authority in the present case.

I think it only necessary to add, on this portion of the case, that I do not doubt that, from the mathematical point of view, the measurements given by certain witnesses as to the proportions at certain angles in which the two forces of the normal and tangential pressures respectively prevail over each other are correct. But I am relieved to find that the patentee does not commit himself or make any claim by a statement of this character. And I do not think, having read the

evidence, that had he introduced references to the balancing, or comparison of normal and conoidal pressures, he would have improved the clearness of his description, or made that description more useful in practice. It is important in such cases not to permit a mathematical analysis to empty a description in plain language of its practical merit. And I may further say that had the patentee entered upon that dangerous ground he would have been likely, by binding himself down to a specification in that sense, to make the way easy for the infringer, who, by variation of the particular angles, forces, or pressures specified, could maintain with much force that he was outside the exact ambit of the monopoly.

In my opinion this objection to the patent also fails. I think the judgment of the Second Division of the 9th June 1910, granting interdict against the appellants, was well founded, and that this appeal should be refused.

Their Lordships dismissed the appeal without expenses.

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Counsel for the Defenders (Appellants)—Walter, K.C.—Macmillan. Agents—J. & J. Ross, W.S., Edinburgh—Percy J. Nicholls, London.

Wednesday, June 28.

(Before the Lord Chancellor (Loreburn), Lord Alverstone, Lord Shaw, and Lord Robson.)

“GUNFORD” SHIP COMPANY,
LIMITED, AND LIQUIDATOR v.
THAMES AND MERSEY MARINE
INSURANCE COMPANY, LIMITED.

(In the Court of Session, July 16, 1910,
47 S.L.R. 860, and 1910 S.C. 1072.)

Insurance—Marine Insurance—Non-disclosure of Material Circumstance—Warranty of Seaworthiness—Competency of Master—Over-insurance.

The master of a ship had not been to sea for twenty-two years, being employed on shore as a stevedore, and on the last occasion when he was at sea his ship had been lost and his certificate suspended for six months. The vessel, whose market value was about £9000, and whose freight, one-half of which had been paid before sailing, was £4790, was insured on behalf of the owners, on hull, valued at £18,500, £19,000, on freight, valued at £5500, £5500, on disbursements, P.P.I. policy, £4600, on policies effected by the manager of the ship, who took out also P.P.I. policies for £6500 on his own behalf.

The underwriters of the hull were not informed of the master's record, nor of the freight and disbursements policies or the policies on behalf of the manager.

The vessel having become a total loss, and the owners suing under the policies on the hull, *held, affirming* judgment of the First Division, (1) that as the master's competency was covered by the warranty of seaworthiness there was no duty on the owners to disclose to the underwriters his record, and (2) that *in the circumstances* the master was not proved to have been incompetent so as to put the owners in breach of the warrant of seaworthiness; but, *reversing* judgment of the First Division, (3) that there was a duty on them to disclose the other policies of insurance, these being material circumstances which would influence the mind of a prudent insurer in fixing the premium and determining whether he would take the risk, and that the policies were therefore voidable and the underwriters not liable.

This case is reported *ante ut supra*.

The defenders, the Thames and Mersey Marine Insurance Company, Limited, appealed to the House of Lords.

At delivering judgment—

LORD CHANCELLOR—The facts of this case have been exhaustively considered in the opinion about to be delivered by the Lord Chief-Justice, which I have had the advantage of reading, and I need not therefore recapitulate them. I agree with the First Division in thinking that there was no breach of the warranty of seaworthiness, and that there was no concealment of material facts in regard to the qualifications and career of the master.

There is, however, one further ground of defence, namely, the non-disclosure of material facts as to other insurances effected upon hull, freight, and disbursements. Upon this point I am constrained to differ from the First Division with much reluctance because of its great authority. No actual circumstance is in dispute affecting this point, but the question is what ought to be the conclusion of fact. Were the circumstances which the assured or his agent failed to disclose material in the sense described by the statute?

Now it is common ground that owners and agent between them (for I cannot discriminate) effected policies upon her hull, freight, and disbursements for £35,600, apart from master's effects valued at £200. If the insurances be split up they were as follows—Upon hull, £19,000, on freight, £5500, the freight for the voyage being about £4800, of which one-half had been paid in advance and was not at risk, on disbursements £4600, and additional on hull and disbursements (including debts of ship to her managing owners and others) against total loss, £6500.

The actual value of the hull was about £9000. No insurable interest could be shown in respect of the greater part of the