make advances at their discretion to Mrs Catherine Paterson or Bett mentioned in the petition out of the capital of the trust estate of the deceased Alexander Easson Bett, hotelkeeper, Thistle Hotel, Milnathort, of an amount not exceeding one hundred and twenty pounds per annum for two years for the maintenance and education of such children as are living in family with her and unable in whole or in part to support themselves; and decern. . . ."

Counsel for Petitioners—Taylor. Agents—Bonar, Hunter, & Johnstone, W.S.

Tuesday, November 15.

SECOND DIVISION.

[Lord Blackburn, Ordinary.

WALLACE AND OTHERS *v.* TULLIS, RUSSELL & COMPANY, LIMITED.

Patent—Infringement—Validity of Patent—Specification—Defective Description—Want of Subject-matter.

In the specification of a patent "for improvements in and relating to the removing of esparto or the like from stationary digesters used in papermaking and the like," a claim was made for "the method and means for removing the digested material from digesters, which consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same, substantially as herein set forth." In an action at the instance of the owners of the patent against a papermaking company for interdict and damages in respect of an alleged infringement of the patent, *held* that the claim in the specification, as that claim was stated, did not cover any principle or idea, but was limited to a claim for the method and means therein set forth of attaining a particular end by specially described apparatus and appliances; that the method of performing the invention claimed was insufficiently described in the specification; and that, accordingly, the patent was bad for want of sufficient description. *Held further*, that the defenders did not use the combination claimed by the pursuers, but a method of working substantially different from that described, and therefore did not infringe it.

Opinion per Lord Salvesen that the patent in so far as it claimed in general terms the process of removing digested materials from digesters by means of a stream of water applied at suitable pressure was bad for want of subject-matter.

William Morgan Wallace, managing director of the Carrongrove Paper Company, Limited, and others, *pursuers*, brought an action against Tullis, Russell, & Company, Limited, paper manufacturers, Markinch, Fife, *defenders*, for interdict against their infringing the patent No. 104,578, dated 18th April 1916, "for improvements in and relating to the removing of esparto or the like from stationary digesters used in papermaking and the like by using, exercising, or putting into practice, in whole or in part, without the consent or licence of the pursuers, the invention forming the subject of the said patent and described in the specification relative thereto, and against their using, exercising, or putting into practice . . . any process, method, or appliances for the removal of digested grass from stationary grass digesters constructed or applied according to the method or in the manner described in the said specification or according to any method or in any manner substantially the same therewith, or embracing in the construction thereof any of the improvements claimed by the pursuers and set forth in the said specification, or any improvements substantially the same therewith, and . . . from using the process or method of applying jets of water under pressure to disintegrate and break up the digested grass in stationary grass digesters and to wash it out of the digesters; and from further or otherwise infringing in any manner of way the rights and privileges granted by the said patent."

Conclusions for an accounting of profits or otherwise for damages followed.

The pursuers averred that they were vested in the patent and produced the complete specification relative thereto. The specification contained the following claims, *inter alia*:—"1. The method of and means for removing the digested material from digesters which consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same substantially as herein set forth. 5. In the method of and means for removing the digested material from digesters as specified in claim 1, the arrangement of the nozzles for directing the disintegrating streams of water at the upper or top part of the digester with a conical or like member at the bottom substantially as and for the purposes herein set forth."

The pursuers averred, *inter alia*—"(Cond. 7) Since January 1918 the defenders have been infringing, and they are still infringing, the said letters-patent by using for the removal of digested esparto grass from their stationary grass digesters a process or method constructed or applied in a manner substantially the same as that described in the said specification. In particular, during said period they have been infringing and are still infringing said letters-patent by applying jets of water under pressure to disintegrate and break up the digested grass and wash it out of the digesters."

The defenders denied infringement, and averred, *inter alia*—"(*Ans.* 5). . . . The pursuers' said alleged letters-patent are invalid in respect (1) The alleged invention was not at the date of the alleged letters-patent the subject-matter of a grant of letters-patent within the meaning of the Patents and Designs Act 1907. The invention claimed does not show any ingenuity or any new device of general utility. The method of

clearing out solid or semi-solid material from a vessel by the injection of water, which disturbs and dilutes the mass and serves as a vehicle for carrying away the material, has long been familiar and in common use. With regard to claim 3, in so far as this claim covers the method of disconnection indicated, this method of disconnection is well known and has long been utilised in mechanical construction. The method of diverting a current of water by means of a guide claimed under claim 5 is also matter of common knowledge and has long been in use. (2) There is no sufficient distinction between what was old, or was in use and known at and prior to the date of the said letters-patent, and what was new or claimed as new by the said alleged inventors. Further, there are claimed as new methods and inventions which were old and well known at the date of the said patent. (3) The alleged invention was not new or original. At least material parts of the said alleged invention, and in particular the inventions claimed in claims 1, 3, and 5 of the said specification, were not new or original. In so far as the letters-patent relate to the method of removing the digested material from digesters, which consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same, this method was not at the date of the said letters-patent new or original, The alleged inventors were not the first and true inventors of the alleged invention described or alleged to be described in the said letters-patent and relative specifications, and it was not first disclosed in Great Britain by them. It was disclosed and was publicly known and used in Great Britain prior to the date of the said letters-patent. Inventions similar to or substantially the same as the said alleged invention were described and disclosed in letters-patent, with their relative specifications, granted to. . . . [*Here followed an enumeration of patents*]. The said alleged invention, so far as it relates to the method of disintegration and washing out of semi-solid matter from vessels or receptacles by streams or jets of water, has been a matter of common knowledge in Great Britain for many years before the date of said letters-patent, and has been commonly and publicly employed in numerous processes and industries there. In the paper-making industry said method has for many years before the date of said letters-patent been in common use for beaters, chests, digesters, and other vessels and paper machines containing grass pulp in various stages of manufacture. The said method is described in a published book by Hoffman entitled Praktisches Handbuch der Papier Fabrikation at volume ii, page 1524, line 5 *et seq.*, and a published book by E. Kirchner, entitled Das Papier, at Part iii B.u.C. Zellstoff, pages 436, 437, 402, 483. The said books were published and publicly placed in the library of the Patent Office before the date of the said alleged letters-patent. Messrs Boving & Company, Limited, hydraulic engineers, 56 Kingsway, London, W.C.2, have for many years, and in particular during 1913 and the years subsequent, made a business of manufacturing for sale digesters and other vessels for use in paper manufacture, in the construction whereof they have habitually embodied the method of disintegration and washing out of the pulp by jets of water from pipes. The said digesters and other vessels manufactured by them are specially fitted and adapted for operating the said method, and have been publicly sold and offered for sale by them throughout the said period. The said company in the course of their business have prepared drawings and specifications of digesters and other vessels fitted with water-pipes for the operation of said method in which the said method is clearly shown. Throughout the said period the said drawings and specifications have been publicly exhibited and circulated by the company in the various departments of their offices and works, and to their subcontractors for piping and materials, and also to their own customers and prospective customers. For many years prior to the date of the pursuers' said letters-patent, and in particular in 1910 and the years subsequent, the West End Engine Works Company, Dundee Street, Edinburgh, have publicly manufactured and sold a pattern of beater or breaker for use iu paper manufacture, fitted with a high-pressure water-valve through which numerous jets of water under pressure are injected into the mass of grass pulp in the vessel, thereby disintegrating and breaking up the digested grass pulp and washing it out of the vessel. Prior to the said letters-patent and at the date thereof the defenders have used in their mills in the manner described a breaker and valve similar to the said pattern manufactured and sold by the said West End Engine Works Company, which was supplied to the defenders on or about 1st August 1904 by Messrs James Bertram & Son. Limited, Leith Walk, Edinburgh. (4) The said alleged invention was not at the date of said letters-patent of any practical utility, and the defenders believe and aver that the same has not in fact been put in use. It has been found necessary in practice to reintroduce hand labour. As the result of recently-made experiments the defenders have ascertained and aver that none of the means or appliances shown or described in the specification or relative drawings is useful or effectual for the purpose of carrying the alleged invention into effect or practice without substantial modification and without further device such as a flexible hose or moving nozzle through which a stream of pressure water can be directed by a human operator against any portion of the mass of boiled material in the digester and in a manner essentially different from any manner described in said specification. The said means and appliances shown and described when competently and carefully made and operated in accordance with the said specification and drawings or any of them and without substantial modification and further device are incapable of carrying the alleged invention into effect or practice. (5) The said specification does not describe

the alleged invention so that a workman of ordinary skill could understand the same, or make or use the alleged invention without further invention. It does not sufficiently disclose the nature of the alleged invention, or how it is to be perfected; in particular, no means of carrying out claims 1, 2, 4 or 5, so as to be useful, is shown, and experiments would be necessary in order to make the plant described so as to secure the result alleged to be thereby attainable."

The pursuers pleaded—"1. In respect that the defenders have infringed and are still infringing the letters-patent belonging to the pursuers, as condescended on, the pursuers are entitled to interdict as concluded for. 2. The pursuers having suffered loss and damage through the illegal infringement by the defenders of said letters-patent, the defenders are liable to the pursuers in reparation. 3. The pursuers are entitled to payment of the said increased profits made by the defenders through the illegal use by them of said patented process, or alternatively, in the option of the pursuers, to the loss and damage sustained by them in respect of said infringement of said patent. 4. Claims 3 and 5 being subordinate to claim 1, the objections stated to these claims should be repelled."

The defenders pleaded—"1. The action *quoad* the conclusions for an account of profits is incompetent and should be dismissed. 2. The pursuers' averments are irrelevant and insufficient in law to support the conclusions of the summons. 3. The pursuers' averments, so far as material, being unfounded in fact, the defenders are entitled to be assoilzied. 4. The defenders not having infringed the said alleged letters-patent, should be assoilzied. 5. The defenders are entitled to decree of absolvitor, the said alleged letters-patent being invalid, in respect—(*a*) The alleged inventors were not the first and true inventors of the alleged invention; (*b*) the said alleged letters-patent do not embrace any subject-matter for which a patent could be granted; (*c*) the said specification does not sufficiently distinguish what is new and claimed from what is old and not claimed; (*d*) the said specification includes excessive claims extending to subject-matter for which a patent could not validly be granted; (*e*) the said alleged invention was publicly known prior to the date of said letters-patent; (*f*) the said alleged invention was publicly used prior to the date of said letters-patent; (*g*) the said alleged invention is of no practical utility; (*h*) the said specification is not so expressed as to be intelligible to a workman of ordinary skill; (*i*) none of the means or appliances shown or described in the specification or relative drawings is useful or effectual for the purpose of carrying the alleged invention into effect or practice without substantial modification and without further device as averred in answer."

On 28th April the Lord Ordinary (BLACKBURN), after proof, *assoilzied* the defenders.

Opinion. — "The pursuers are papermakers who are vested in letters-patent No. 104,578 for improvements in and relating to the removing of the digested grass from stationary grass digesters, as commonly used for digesting esparto and the like in the course of papermaking. In the present action they sue the defenders, another firm of papermakers, for infringing the patent, and ask interdict against them from using or exercising the invention forming the subject of the said letters-patent and described in the specification relative thereto, and also from using or exercising any process, method, or appliances for the removal of digested grass from stationary grass digesters constructed or applied according to the method or manner described in the specification, or according to any method or in any manner substantially the same therewith. Finally, they ask that the defenders should be interdicted 'from using the process or method of applying jets of water under pressure to disintegrate and break up digested grass in stationary grass digesters and to wash it out of the digesters.' There follow conclusions for damages. The defence to the action is the usual one that the patent is invalid for want of subject-matter, of novelty, of utility, and of sufficiency of specification, and in addition that it is unworkable.

"The use of esparto grass for the manufacture of paper was first introduced into this country in 1860—Chalmers on Papermaking, p. 4—and it has ever since been extensively used for the making of high-class paper. The art of papermaking is much the same whether the material out of which the paper is made is rags, wood pulp, or grass. The material is first of all, if necessary, treated mechanically to clean it and get rid of dust, &c. It is then boiled in closed digesters with a solution of caustic soda to dissolve out all non-cellulose matter which it may contain, leaving in the boiler the cellulose fibres used to manufacture paper. This takes the form of a pulp, which is then washed in the boiler, preferably with hot water, and thereafter transferred to another machine called a breaking machine, which further disintegrates and washes it. It is unnecessary to follow the art beyond the breaking machine, as the patent in this case relates to a method of transferring the boiled esparto grass from the boiler to the breaking machine.

"The pulp of the boiled grass left in the bottom of the digester is materially different in consistency to the pulp of any other material out of which paper is made. The effect of the boiling on rags or wood is to disintegrate the cellulose fibres into such small particles that the pulp can with compartive ease be washed out of the boiler through a discharge pipe at its foot and conveyed by gravity or by a pump to the breaker. Numerous devices have been patented and used for transferring the pulp of wood and rags from the digester to the breaker through a pipe in this way by water or by steam pressure. Boiling, however, has no effect in disintegrating esparto or other grasses, but leaves each blade at its full original length, which may vary from 12 inches to 2 feet according to the quality of grass used, with nothing removed from it except the non-cellulose substances. The

boilers ordinarily in use, which measure 9 feet high and 9 feet in diameter, are capable of dealing with about 2½ tons of grass at one boiling, and what is left at the conclusion of the operation is described by Mr Ballantyne as a 'tangled matted mass like a large cylinder of felt.' He goes on to state that it extends from side to side of the boiler and is not broken up in any way, and that while the fibres singly can easily be torn apart, the mass of interlocked fibres as a whole is very strong and hold together tenaciously. He also adds that while the fibres are entangled in all directions they are less entangled between layer and layer owing to the manner in which the grass is put into the boiler in the first instance. This description is accepted by other witnesses, and it is obvious that a mass of this character could not be washed out of the boiler through a pipe without being first very completely disintegrated. For many years endeavours have been made to discover a method of removing the boiled grass by mechanical means from the digester, but prior to the patent in the present case no process had been discovered to supersede the elementary method generally practised of forking the mass out of the boiler by hand labour into boxes on wheels, and so conveying it also by hand labour to the breaker. For this purpose there is a door in the side of the boiler near the bottom which opens to just above the top of the boiled grass. After the contents of the boiler have been cooled by flooding with cold water, and the water has been drained off, the top of the boiler is removed and the door at the side is opened. A man then enters the boiler through the top and proceeds to fork the boiled grass through the door into the boxes. This is described as being very hard work, as I have no doubt it is, and the whole operation from the conclusion of the boiling process to the emptying of the digester takes from an hour to an hour and a-half and necessitates the employment of two or three men. Now, considering that it is seventy years since esparto was introduced into this country, and that for thirty years at least it has been very largely used in the manufacture of paper, it is most surprising to find that it never occurred to anyone until quite recently that it was perfectly easy to disintegrate the boiled grass in the digester and to wash it away through a discharge pipe to the breaker by directing on it through the opening in the top of the boiler a jet of water under pressure. No additional machinery is required, as the operation can be performed successfully by hand with a flexible pipe with a nozzle at the end similar to a fire-hose. All that is required is to direct the jet of water on to the boiled grass at a point above the discharge pipe, when the water will cut through the tangled mass, disintegrating the fibres as it goes until the entrance to the discharge pipe is cleared. Thereafter by directing the jet of water round the edges of the hole already formed the rest of the grass can be gradually disintegrated, and the whole of it discharged to the breaker through the discharge pipe in from thirty-five to forty-five minutes. This was practically the discovery made by the defenders about midsummer 1917, when under the necessity of war conditions they were compelled to economise labour and turned the fire-hose on to a digester to see what effect it would have on the boiled grass, and it is this method of disintegrating the boiled grass which the defenders have been using, and of which the pursuers complain as an infringement of their patent.

"The pursuers' patent, which was completed on 15th March 1917, describes a more complicated method of disintegrating the boiled grass by water pressure through nozzles. But very soon thereafter it must have been realised that the operation could be performed in the comparatively simple manner above described, as a new patent was applied for on 10th April 1917, which was completed on 4th April 1918, and which gives effect to this method although the nozzle of the pipe is not held in the hand, but operated mechanically by a very ordinary system of hand levers. This second patent is not founded on by the pursuers, and the question in the case is whether the original patent is valid and sufficient to protect the pursuers against the method adopted by the defenders of disintegrating the boiled grass by water pressure.

"The completed specification of the patent sets out that the 'invention relates to an improved process or method and appliances for removing the digested grass from stationary grass digesters as commonly used for digesting esparto and the like, and consists in applying jets of water under pressure to disintegrate and break up the digested grass and wash it out of the digester.' It then goes on to describe the apparatus to be used for the purpose, which is illustrated by drawings on which the different parts are indicated by numbers. I will endeavour to describe briefly its material features and the method by which the process is carried out. Figs. 1, 2, and 3 give sectional, end, and plan views of an apparatus to be attached to a cover plate on the door on the side of the boiler, through which it was formerly the practice to fork out the boiled grass. Figs. 4, 5, and 6 illustrate slightly modified arrangements on this apparatus, but these modifications, as I understand them, relate to such matters as the attachment of the apparatus to the cover plate, and have nothing to do with the process of disintegrating the grass. Fig. 7 refers to a different process, which I shall deal with separately, and meantime I refer only to figs. 1, 2, and 3. The apparatus fitted to the cover plate consists in the first place of a discharge pipe (3) on which there is a valve (7), by means of which the flow of water from the boiler can be checked and controlled. There are three nozzles shown on the drawings, each fitted with a separate valve through which water under pressure can be directed into the boiler. One of these (12) is fitted into the discharge pipe at the bend of the pipe so as to direct a jet of water through the discharge pipe. The only practical purpose of

this jet would appear to be to clear the boiled grass away from the mouth of the discharge pipe at the commencement of operations, or at a later stage if it should become choked. The other two nozzles (8) are fitted into the cover plate or shell of the boiler at each side of the discharge pipe, and operate directly into the boiler. All three nozzles are supplied with water under pressure from the pipe (9); but to understand the working of the process I do not think it is necessary to refer to anything more than the three nozzles and the discharge pipe with its valve. This apparatus comes into operation at the time when the boiling of the grass has been completed, the solution of caustic soda drained off, and when under the former process in use the flooding of the boiler for cooling purposes would have commenced. The boiled grass accordingly, though still damp, is not flooded. The first thing which requires to be done in working the apparatus is to partially flood the boiler. This can be accomplished by turning on the water through any or all of the nozzles and closing the valve on the discharge pipe, and has the effect of diminishing the cohesion between the layers of grass and the downward pressure of the whole mass on the lower layers. Then the valve on the discharge pipe is opened so as to equalise to some extent the inflow and outflow of water into the boiler. The nozzle (12) is turned off, and the two nozzles (8) are worked alternately. The effect of this alternate working is to produce and keep up a swirl of the flooded mass, and to bring different parts of the mass under the influence of the jets in succession, with the result that they disintegrate the grass by degrees from the bottom to the top of the mass into small fibres, which escape easily through the discharge pipe to the breaker. Now it is proved that this process can be worked, and that the boiler under favourable circumstances can thus be emptied in about half an hour. The time may vary according to the quality of the grass, the extent to which it has been boiled, and the pressure of water actually applied. Accordingly the defenders' averment that the patent is unworkable fails. They have also, in my opinion, failed to prove that it is lacking in novelty or utility. But their averment that the method of working is not sufficiently disclosed in the specification appears to me to be a very formidable one. The partial flooding of the boiled grass and the alternate action of the two nozzles (8) are essential to the success of the operation. It is proved that without partial flooding the only effect of the jets is to bore two tunnels through the grass, and that it is only by the swirling movement imparted to the mass when in a flooded state that different parts of it come in succession under the influence of the jets. The lower layers are thus disintegrated first, and then the upper layers settle down into the place of the lower and are disintegrated in their turn. Now there is not a word about all this in the specification. The machinery is described, but so far as directions for working it are concerned they appear to be confined to the statement on page 3—'Two nozzles (8), arranged one on each side of the pipe 3, direct streams or jets of water into the digester so as to disintegrate and discharge the material into the pipe 3.' There is nothing said about their acting alternately, and the only reference to the valve on the discharge pipe, which plays an important part in regulating the amount of water required to flood the grass, is—'A valve (7) is arranged in the pipe 3.' Now although it is not sufficient to invalidate a patent that the description should not be so explicit as to enable a person skilled in the art to work the invention without any trial or experiment (*Edison & Swan*, 6 R.P.C. 243; *Haskell Ball*, 22 R.P.C. 478), he must, I think, be supplied with some directions as to how the trial or experiment is to be conducted, and in this specification there appears to be none. It is not proved that the pursuers ever had this apparatus in use at their works for manufacturing purposes, and, as I have already mentioned, they certainly have not had it in use recently, as they have been employing instead an overhead moveable jet acting vertically downwards on the grass. But since this action was raised both they and the defenders have fitted up temporary machinery for the purpose of testing it. Four witnesses for the defenders, very eminent in their respective professions of engineering and chemistry (Mr Swinburne, Professor Hudson Beare, Principal Irvine, and Dr Macdonald), gave evidence that with nothing but the specification to assist them they had been unable to work the method so as to disintegrate the grass or empty the boiler. They failed to make a proper use of the valve on the discharge pipe so as to keep the grass partially flooded, and they failed to use the nozzles (8) alternately, so as to set the mass of grass in motion. Their experiments had no effect except to bore the tunnels through the grass which I have referred to, and which are illustrated by the photographs produced. They are none of them, of course, practical papermakers, but they all had some knowledge of papermaking. I have little doubt that they would have discovered how the apparatus worked if they had been very anxious to do so. But they made numerous experiments to discover if it would work in accordance with such directions as the specification gave, and these did not lead them to experiment upon the partial flooding of the boiler, although they tried the effect of flooding the whole boiler and then immediately draining all the water off. Mr Swinburne admitted to having had a suspicion that success might lie in the direction of partial flooding, but he did not follow out the idea. As he says himself, 'I was in a minority of one.' On the other hand, the one witness for the pursuers who tested the apparatus did succeed in finding out how to work it. This was Mr Alexander Wilson, the works manager of Guardbridge Paper Mills, and a practical papermaker. He says he was provided with the specification to study,

and then visited the pursuers' works on 17th November 1920, where he found the apparatus ready for him attached to a boiler containing 2½ tons of boiled grass, and that without any other information, and after experimenting with the valve on the discharge pipe and the nozzles, he succeeded in emptying the boiler in 2 hours and 20 minutes. At a second visit, on 17th December 1920, he, after his previous experience, emptied it in 45 minutes. Now this result is founded on as proving that there is a sufficient description in the specification to enable any practical papermaker to work the machine. It, of course, proves that the apparatus can be worked successfully; but the evidence of one practical man, who may be a person of great ingenuity, or who may hit upon the method of working by accident, is, in my opinion, hardly sufficient to establish that the description in the specification is sufficient for any ordinary practical man. Further, Mr Wilson approached the problem with this advantage, that he was already familiar with the possibility of disintegrating grass while stationary in the boiler by means of an overhead moveable jet of water, as he was in course of introducing this process at Guardbridge. And with this knowledge it does not appear to me to require great ingenuity to conclude that if your jets are fixed and immoveable, as they are in this apparatus, it might be necessary somehow or other to put the mass of grass in motion so as to bring different parts of it under the action of the jet. But this knowledge was not available to any practical maker at the date of the patent, and certainly was not disclosed in the specification. Again, Mr Wilson's experiments were made by him after his examination as a witness in this case on 23rd June 1920 and before his additional evidence was given on 16th March 1921, and I cannot help feeling that this placed him at a considerable advantage as to how the problem should be approached. The conclusion I have come to is that the description in the specification leaves the reader, whether a practical papermaker or not, to discover for himself how the process described in figs. 1-6 can be worked, and that the discovery involves the exercise of considerable ingenuity on the part of the reader. In my judgment accordingly the patent, so far as concerns figs. 1-6, is bad for want of sufficient description.

"There remains fig. 7, which describes an entirely different method of working to that set out in figs. 1-6. I am confident that fig. 7 was only intended to come into operation if any grass was left in the bottom of the boiler after the side nozzles shown in figs. 1-6 had completed their work. This might very easily happen, for the discharge pipe is 9 inches above the bottom of the boiler, and as the boiled grass does not float the layers of grass below the level of the two nozzles 8 might not come under their influence. It actually did happen on the occasion when Mr Ballantyne saw the method described in figs. 1-6 in operation, for he says that there was 9 inches depth of fibre left in the bottom of the boiler below the level of the door, which he did not wait to see emptied out, and the proof does not disclose how this residuum was disintegrated. That the whole drawings (figs. 1-7) are intended to illustrate in combination a process of completely clearing out the boiler is, I think, plain from the terms of the specification, and that the important part of the process is shown in figs. 1-6, and a merely incidental part in fig. 7 may be deduced from the fact that figs. 1-6 could be used as working drawings, while fig. 7 is only a diagram. It shows only a boiler fitted at the side with a discharge pipe, and on the bottom with a conical member from 12 to 18 inches high. In the opening at the top of the boiler there is represented a bent nozzle pointing into the boiler through the opening. This fig. is first referred to in the specification as illustrating 'in a diagrammatical manner a *further* modified arrangement,' the previous modifications being figs. 4-6. The letterpress referring to fig. 7 is as follows:—'In the arrangement diagrammatically illustrated by fig. 7 the nozzle (8) is arranged above the digester (2), preferably in the centre of the filling opening (23), and the jet or stream of water under pressure is directed on to a conical or like member (24) fixed in the bottom of the digester, which deflects same, and thus washes out the whole digester.' In my judgment the last words of this description mean that the washing out of the whole of an already partially emptied boiler might thus be completed. It cannot, I think, possibly be assumed that the patentee after illustrating the methods described in figs. 1-6 with six working drawings, should go on to illustrate by a diagram only what is now claimed to be a different method of disintegrating and washing out the whole mass of grass from the boiler. That the whole seven drawings refer to a single combined method by which the boiler might be emptied is, I think, clear from the paragraph in the specification which immediately follows the description of figs. 1-7, and in which the advantages of the invention are set out as being 'obtainable from *this* method of discharging the digesters.' The pursuers, however, found on fig. 7 as fully disclosing the method now practised by both themselves and the defenders of disintegrating the grass and emptying the boiler by vertical jets of water through a flexible nozzle used independently of a conical or any like member. Accordingly at the proof a question which was much discussed was whether the nozzle represented in fig. 7 was fixed or moveable. In one sense it must be moveable, as it cannot remain in position when the boiler is shut. In my opinion the drawing and description indicate that once in position the nozzle was to remain fixed—it is to be 'preferably in the centre of the filling opening,' and the water is to be directed on the cone. This certainly suggests that the nozzle, having been placed in a position, was to remain stationary in that position. But this question appears to me to be rather immaterial, because on this part of his case the pursuer has to jettison the

cone as superfluous, while in my opinion the patentee must have regarded the cone as the most important feature shown in the drawing. Its purpose is to deflect the jet, or in other words to convert the water pressure from a vertical to a lateral direction. Now according to the accepted description of the mass of boiled grass as given by Mr Ballantyne it is much less tangled between the layers than it is in other directions, and accordingly it would offer less resistance to a lateral than to a vertical attack. I think it is apparent that it was with this idea in his mind that the patentee has approached the whole problem, and that it was only after he had ascertained by the expenditure of much time and ingenuity that the mass could be disintegrated by water pressure applied laterally and after he had completed his patent that it was realised how easily the same effect could be attained by vertical pressure through a flexible nozzle. Had fig. 7 been intended to indicate such a method it is difficult to account for its being only illustrated by a diagram, and the taking out of the second patent would have been superfluous. It is for these reasons that I reach the conclusion that fig. 7 is not described as a separate method of disintergating a whole charge of boiled grass, that the cone must be regarded as its most important feature, and that the method there disclosed and described is different to the overhead method now practised by both parties to this action. That the exercise of the method illustrated in fig. 7 may have led to the pursuer's discovery of the simpler method now practised by them is highly probable, but they have not proved that they ever exercised the method of fig. 7 in the manner described in the specification by confining the direction of the stream of water to the cone so as to empty a whole charge of grass out of the boiler. There is no evidence that they ever tried to do so, and I cannot hold it proved that it is possible to do so, although there is some evidence for the pursuers that it could be done in this manner, and in cross-examination Mr Swinburne admitted that possibly it might be done.

"So far then as concerns the methods discribed in the specification, figs 1-6 fail for want of description as to the manner of working, and fig. 7 in not disclosing a separate method capable of disintegrating and washing out a full charge of grass in the manner described. This materially affects another part of the pursuers' argument. It was maintained that the description of the invention already quoted, coupled with the first claim in the specification, which is "The method and means for removing the digested material from digesters which consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same substantially as herein set forth," entitles the holders of the patent to protection against any use of water under pressure for the purpose of disintegrating boiled grass. Now, had the specification disclosed an effective method of carrying out the process, I should have held that the pursuers were entitled to protection to this wide extent. In my judgment the discovery or idea that boiled grass could be disintegrated—for the disintegration is the crux of the whole matter—by water pressure through jets was a novel and valuable discovery involving ingenuity and invention, and although water pressure is a well-known force and was applied in a manner already known, yet the character of the substance to which it was applied is so peculiar that the use made of it does not appear to me to be strictly analogous to any previous use to which my attention has been drawn. Numerous existing patents were referred to in the proof in which water is used to wash the boiled pulp of wood or rags out of digesters, and these were founded on not as anticipations of the pursuers' patent but as illustrations of the analogous use of water pressure The action of the water on the pulp of rags or wood appears to me to be quite different and to consist in separating fibres already broken up and not in breaking up large fibres into small particles. I think that, had the uses to which water was put as disclosed in these patents been in any way analogous to the use to which the patentee succeeded in putting it, this means of disintegrating boiled grass would have been discovered and adopted long ago. In short, I think the discovery falls within the principles laid down by C. J. Tindal, in *Crane* v. *Price* (1 Webster at 409—see also *Murray* v. *Clayton*, 1872, L.R. 7 Ch. Ap. 570), and is not affected by the decision in *Harwood* v. *G.N.R.* (1865 11 H.L. Ca. 654). But while I think that the discovery or idea that boiled grass could be disintegrated by water pressure might be a good subject-matter for a patent, it is essential that in the patent a method of carrying out the idea should be disclosed, even if it be afterwards discovered that there are other methods by which the same idea may be more easily carried out (see L. J. Fletcher Moulton in *Hickton's Patent Syndicate*, 1909, 26 R.P.C. 339), and it is the failure of the specification to disclose an effective method of carrying out the idea which leads me to the conclusion that the patent is bad and that the defenders must be assoilzied. I have reached this result with some regret as I think the discovery was a meritorious one which leads to great economy in both time and money in the manufacture of paper out of grass. It was, as I have said, the result of much investigation and ingenuity on the part of the patentee, for which I think he was well entitled to be rewarded by the protection afforded by a patent, but I am unable to read the specification as disclosing any method by which it can be carried out without the exercise of some additional ingenuity and discovery on the part of the operator."

The pursuers reclaimed, and argued—(1) The specification was sufficient. If it was insufficient the onus of proving that it was insufficient was upon the defenders, because it was they who were challenging the patent. It was necessary for the pursuers to present a *prima facie* case only, and slight evidence was enough as to the sufficiency of

the specification—*Turner* v. *Winter* (1787), 1 Durn. and East 602, *per* Buller, J., at 607. In point of fact the specification was sufficient. It disclosed a process and the means of carrying it out and the appliances for so doing. The evidence showed that the apparatus described in the specification could be worked by an ordinary skilled workman. If a practical man was able to understand it the absence of detailed directions did not matter — *Aktiengesellschaft für Autogene Aluminium Schweissung* v. *London Aluminium Company, Limited*, (1920), 37 R.P.C. 153, *per* Sargant, J., at 164, *affd.* (1921), 38 R.P.C. 163, *per* Lord Sterndale, M.R., at 176; *Osram Lamp Works, Limited* v. *Pope's Electric Lamp Company, Limited* (1917), 34 R.P.C. 369, *per* the Lord Chancellor (Finlay) at 384, Lord Parker at 391, and Lord Parmoor at 402; *Watson, Laidlaw, & Company, Limited* v. *Pott, Cassels, & Williamson*, 1909 S.C. 1445, 46 S.L.R. 348; (1910), 48 S.L.R. 782, 27 R.P.C. 541, *per* Lord Justice-Clerk (Kingsburgh) at 48 S.L.R. 786, 27 R.P.C. 558; *affd.* (1911), 48 S.L.R. 782, 28 R.P.C. 565, *per* Lord Shaw at 48 S.L.R. 795, 28 R.P.C. 580; *Haskell Golf Ball Company* v. *Hutchison* (*No.* 2) (1905), 22 R.P.C. 478, *per* Buckley, J., at 493; *Leonhardt & Company* v. *Kalli & Company* (1895), 12 R.P.C. 103, *per* Romer, J., at 116; *Edison & Swan Electric Light Company* v. *Holland* (1889), 6 R.P.C. 243, *per* Cotton, L.J., at 277, and Lindley, L.J., at 279 and 282; *Badische Anilin und Soda Fabrik* v. *Levinstein*, (1887), 12 A.C. 710, *per* the Lord Chancellor (Halsbury) at 713; Frost, Patent Law and Practice (4th ed.), vol. i, pp. 216, 218, and 222; Terrell, Patents (6th ed.), p. 107. The use of the word "substantially" was simply verbiage—Terrell, Patents (6th ed.), p. 105. (2) There was sufficient subject-matter for a patent. If there was something new and useful a mere scintilla of invention was sufficient to support a patent — *Hickton's Patent Syndicate* v. *Patents and Machine Improvements Company, Limited*, (1909), 26 R.P.C. 339; *In re Alsop's Patents*, (1907), 24 R.P.C. 733, *per* Parker, J., at 753; *Neilson* v. *Harford*, (1841), 1 Webster 295, referred to in Terrell, Patents (6th ed.), p. 32; *Crane* v. *Price and Others*, (1842), 1 Webster 393, *per* Tindal, C.J., at 409 and 411 (see Roberts' Grant and Validity of British Patents for Inventions, p. 195); Frost, Patent Law and Practice (4th ed.), vol. i, 35; Terrell, Patents (6th ed.), pp. 39, 47, and 83; Patents and Designs Act, 1907 (7 Edw. VII, cap. 29), sec. 93, "Invention"; Statute of Monopolies, (1623), 21 Jac. I, cap. 3, secs. 6 and 7—see Terrell, Patents (6th ed.), p. 449. (3) The defenders had infringed the patent—Frost, Patent Law and Practice (4th ed.), vol. i, pp. 341 and 342. (4) In any event the Court ought to grant relief in respect of such of the claims as were valid —Patents and Designs Act 1919 (9 and 10 Geo. V, cap. 80), sec. 9; Terrell Patents (6th ed.), p. 480.

Argued for the respondents—(1) The specification was insufficient—*Ackroyd & Best, Limited* v. *Thomas & Williams*, (1904) 21 R.P.C. 737, *per* Cozens-Hardy, L.J., at 750; *Bailey* v. *Roberton*, (1877) 4 R. 545, 14 S.L.R. 348, *aff.* (1878) 5 R. (H.L.) 179, 15 S.L.R. 748, *per* Lord President (Inglis) at 4 R. 563, 14 S.L.R. 354; *Plumpton* v. *Malcolmson*, (1876) L.R., 3 Ch.D, 531, *per* Jessel, M.R., at 568; *Simpson* v. *Holliday*, (1866) 1 E. & Ir. 315. The words "substantially as herein set forth" were important—*Brooks* v. *Lamplugh*, (1897) 15 R.P.C. 33. In case of doubt a patentee must be held not to have claimed more than was substantially set forth in the specification—Patents and Designs Act 1907 (7 Edw. VII, cap. 29), section 2 (2); Frost's Patent Law and Practice (4th ed.), vol. i, pages 162 and 212. (2) There had been previous publication of the patent—*Winby* v. *The Manchester, &c., Steam Tramways* (2) *Company*, (1890) 8 R.P.C. 61, *per* Bristowe, V.-C., at p. 67; *Humpherson* v. *Syer*, (1887) 4 R.P.C. 407, *per* Cotton, L.J., at 412, Bowen, L.J., at 414, and Fry, L.J., at 416. (3) There was not sufficient subject-matter for a patent. The pursuers' invention was merely the application of an old aud well-known process to a new material, and it did not contain enough of ingenuity or discovery. Moreover, it covered no general principle, but was confined to a particular method and means which was described in the specification. That was not sufficient—*British Thomson-Houston Company, Limited* v. *Duram, Limited*, (1918) 35 R.P.C. 161; *Morris & Bastert* v. *Young*, (1895) 12 R.P.C. 455; *Murchland* v. *Nicholson*, (1895) 20 R. 1006, 30 S.L.R. 857; *Lane-Fox* v. *The Kensington and Knightsbridge Electric Lighting Company, Limited*, (1812) 9 R.P.C. 413, [1892], 3 Ch. 424, *per* Lindley, L.J,, at 9 R.P.C. 416, [1892] 3 Ch. 428; *Windby* v. *The Manchester, &c., Steam Tramways Company* (2), (1891) 8 R.P.C. 61, *per* Bristowe, V.C., at 67; *Morgan & Company* v. *Windover & Company*, (1890) 7 R.P.C. 131, *per* the Lord Chancellor (Halsbury) at 134; *Bamlett* v. *Picksley* (1875); Griffin's Patent Cases, 40; *Tatham* v. *Dania*, (1869); Griffin's Patent Cases, 213, *per* Willis, J., at 214; *Harwood* v. *Great Northern Railway Companp*, (1864) 11 Clark (H.L.) 654, *per* the Lord Chancellor (Westbury) at 682; *Brook* v. *Aston*, (1859) 28 L.J. (Q.B.) (N.S.) 175, *per* Martin, B., at 176; *The Patent Bottle Envelope Company* v. *Seymer*, (1858) 20 L.J., C.P. (N.S.) 22, *per* Willis, J., at 24. (4) In any event the defenders had not infringed the patent. (5) There was no record which would allow the pursuers to plead section 9 of the Patents and Designs Act 1919 (9 and 10 Geo. V, cap. 80). [*The Lord Justice-Clerk referred to Ridd Milking Company, Limited* v. *Simplex Milking Company, Limited*, [1916] 2 A.C. 550].

At advising—

LORD JUSTICE-CLERK — This reclaiming note raises several questions in patent law which are both interesting and important, and we have had able arguments from both sides of the bar and a full citation of authorities. The pursuers and reclaimers maintained that the specification was not defective, as the Lord Ordinary has held, and that they were entitled to decree in terms of the conclusions of the summons. They also urged that even if adverse to their pleas

otherwise we ought not to grant decree of absolvitor, but should grant them relief under section 9 of the Act of 1919. The defenders while supporting the Lord Ordinary's judgment so far as in their favour, contended further that the patent was bad on other grounds than those upon which the Lord Ordinary had founded, and that there had been no infringement.

The patent applies to the manufacture of paper from esparto grass and the like, and relates to improvements in removing the boiled esparto from the digesters in order to have it transferred to the breakers. Digesters are usually Sinclair boilers — circular in form and erected perpendicularly. The most common practice prior to the date of this patent was to remove the mass of grass from the digesters by means of spades or forks or similar instruments, the boiled grass being passed through an aperture in the side of the boilers on to trolleys which carried the stuff to the breakers. This process was one which entailed heavy manual labour, and it was both costly and tedious. The pursuers say that by the method which they have patented they were able to dispense with all manual labour in emptying the digesters and to save much time in getting the digesters emptied.

The removal from a closed or partially closed container of material saturated with water and reduced almost to a pulpy condition by jets of water or steam directed on to the mass was, I think, on the evidence known prior to the date of the pursuers' patent, and had been practised in the paper-making industry before that date where the basic material was wood pulp, and when employed, this process not only removed the wood pulp from the digester, but also to some extent caused or conduced to the disintegration of the wood which was subsequently completed in the breakers. On the other hand, it has not in my opinion been established by the proof that before the pursuers' patent this method of washing out the digester and partially disintegrating its contents had ever been applied to esparto grass or any similar material. The pursuers argued that their invention consisted in the discovery of this principle, that the application of jets of water to esparto and like grasses could be used for, and was an effective means of, disintegrating or partially disintegrating boiled esparto and washing out the digested and disintegrated grass from the digester, and that this discovery afforded ample subject-matter for a valid patent if it were combined with some practical method of carrying it into effect. In claiming a patent covering a principle the pursuers relied entirely on their first claim. To this the defenders replied that all that the pursuers had done was to apply an old and well-known process or method to a new material, and that there was in this not enough of ingenuity or discovery to provide suitable subject-matter, and further, that the pursuers' invention was confined to the particular method and means described in the specification, and covered no general principle the discovery of which can be protected by letters-patent.

In this connection I shall in the first place consider what the pursuers' invention is. As has been repeatedly said—to quote Lord Cairns' language in *British Dynamite Company* v. *Krebs* ((1896) 13 R.P.C. 190, at p. 192) —"This is a question of construction, and the construction of the specification is for the Court, to be determined like the construction of any other written instrument, the Court placing itself in the position of some person acquainted with the surrounding circumstances as to the state of art and manufacture at the time, and making itself acquainted with the technical meaning in art or manufactures which any particular word or words may have."

We have then specially to construe the first claim, with such help as to its meauing as may be legitimately obtained from the rest of the specification. That claim is thus stated — "The method of and means for removing the digested material from digesters which consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same substantially as herein set forth."

Now the legal principles which ought to be applied in such a question of construction have been particularly elucidated in two cases, viz., *Ackroyd & Best* v. *Thomas* (21 R.P.C. 737) and *Ridd Milking Machine Company* ([1916] 2 A.C. 550) decided in the Privy Council.

In *Ackroyd's* case Cozens-Hardy, L.J., said (at p. 750)—" If a patentee desires to claim a general principle, it is his duty to make that intention reasonably clear. The Court ought not to be called upon to spell out such an intention from the use of ambiguous language." He also said — "I have been unable to find in the body of the specification any assertion of any general principle. I find an illustration of a particular combination." He further said—"We are now really asked to disregard 'substantially as set forth'" (words which occurred in the claim). "For my part I am unable to do that." Romer, L.J., also relied on these words as important.

In *Ridd's* case the judgment was delivered by Lord Shaw (the members of the Board taking part in the determination of the case being Lord Buckmaster, L.C., Earl Loreburn, Lord Shaw, and Sir Arthur Channell). The claim in that case was materially different from the first claim in the present case. But Lord Shaw in his judgment made some very important general pronouncements, with which I very respectfully desire to express my agreement. In particular, he said—"It might be possible in very many cases of a claim for apparatus—if the argument presented were sound — to evolve a claim for a principle from a description given of the results achieved, and to maintain accordingly that it was the principle of the invention in that sense which was the real subject of the claim. This is, in their Lordships' opinion, a method of construction of patent claims which is accompanied with serious danger, and their Lordships

content themselves with saying that they see no occasion in the present case for resorting to such a method." He then quoted the first sentence in the above passage from Cozens-Hardy's, L.J., judgment in *Ackroyd's* case, and proceeded—"To which their Lordships would add that if any claim for a principle is made it must undoubtedly appear in the claim as that claim is stated, and must not be left to an inference resting on a general review of the specification, or a general search among the language employed therein for the meritorious element of principle or idea. The necessity for a clear and definite statement in the claim itself is in the case of an alleged principle all the greater, because whenever it is not the specific apparatus or combination which is claimed, but something underlying or stretching beyond that apparatus, the exact ambit of such a claim would require the strictest scrutiny. Otherwise it is manifest that the scope of the alleged principle might—left nebulous—embrace anything from a law of nature to the most familiar principles of statics or mechanics, and therefore it is clear that the claim said to embrace a principle does specially require articulate and precise statement. If this were not so, the bringing of a general rule or principle within the scope of monopoly might form a serious hindrance to the development of ideas and the progress of invention." Further on he added—"In their Lordships' opinion, even assuming that there was, as contended, a principle claimed, that principle must be judged of by the words employed in the claim." He concluded by saying—"The judgment of the board is upon the broader ground already stated."

These two cases, and especially *Ridd's* case, differed in their circumstances in not unimportant respects from the case with which we are now concerned, but they gave expression to broader grounds, which in my opinion have a most material bearing on the question which we have to consider in this case in determining whether the pursuers' patent covers any principle or idea. In my opinion the pursuers' specification is not so expressed as to do so. As Lord Chancellor Cairns said in *Dudgeon & Thomson* (L.R., 3 App. Ca., at p. 44) as long ago as 1877—"That which is protected is that which is specified, and that which is held to be an infringement must be an infringement of that which is specified."

I cannot read the first claim in the pursuers' specification as one from which it undoubtedly appears in the claim as that claim is stated—to use Lord Shaw's language—that any claim for a principle is put forward. Oh the contrary, I think it is a claim for a method of and means of removing digested material. I cannot read that as a claim for a principle. It is not so expressed, nor if asked could I formulate from the claim or even the specification as a whole what the principle claimed is.

The same claim says that the method and means claimed "consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same substantially as herein set forth." I cannot find in that sentence the enunciation of any principle the discovery of which is claimed. In my opinion we cannot read this claim or the specification in which it occurs as covering any claim for a principle. What it claims is a method and means of attaining a particular end by specially described apparatus and appliances.

I am further unable—assuming the investigation is competent—to find "on a general review of the specification," or by a "general search among the language employed therein," any expression of the principle which is claimed, or any sufficient guide which would enable me to formulate the principle which is said to be claimed. The patentees say—as I think the specification must be read—"The invention we claim consists in subjecting the material to the action of a stream or streams of water so as to disintegrate and wash out same substantially as herein set forth." That again I cannot read as any statement, far less any "clear and definite statement," of what the principle claimed is. Furthermore, in my opinion, to read claim 1 as the patentees desire would be to disregard the words "substantially as herein set forth," which I can find no warrant for doing. I think these words were deliberately inserted by the patentees for the very purpose of "particularly describing and ascertaining" the nature of their invention, and cannot be disregarded or dealt with as an unimportant factor in determining what the invention sought to be protected was. The specification says that this invention "consists in applying jets of water under pressure to disintegrate and break up the digested grass and wash it out of the digester." Not only, in my opinion, are these words insufficient to suggest a claim for a principle, but they seem to me to be inconsistent with any such claim. At the same time I am not prepared to say that the pursuers did not make a discovery or invention which involved some principle which might have been covered by a patent. But in the view I take it is not necessary for the disposal of this case to decide that point, and I do not think we have before us sufficient material to enable us to decide it.

To my mind it is reasonably "clear on construing this claim that the patentees have limited their monopoly to this precise method shown of carrying out their invention," and that the patent is limited to the particular "method" and "means" they have specified. This view is, in my opinion, confirmed by the manner in which claim 5 is expressed. It begins thus—"In the method of and means for removing the digested material from the digesters as specified in claim 1." To my mind that must be read as saying—"We have specified in claim 1 a particular method and means which we claim as our invention."

I think the patentees have not made any claim to any principle as covered by their invention.

Claims 1 and 5 were the only claims which were founded on in the argument before us.

As regards claim 5, I rather incline to the view that the Lord Ordinary is right in regarding this claim as really ancillary to claim 1, inasmuch as it enables the washing out of the digester to be completed by removing the digested material lying below the outlet pipe and in the bottom of the digester. This view, however, was not supported by the respondents in the argument before us, and need not therefore be further considered. In my opinion claim 5 is a claim for a combination, its main features being a pipe and nozzle at the top of the digester playing upon a conical or like member at the bottom so as, by the dispersal of the jet of water through the action of the cone, to wash out any material which the "method" and "means" of claim 1 might leave still untouched in the bottom of the digester. On the fair and proper reading of the specification I think the pipe and nozzle at the top must be taken to be fixed and not moveable. The defenders do not use a fixed pipe and nozzle, nor do they use any such conical member or any equivalent therefor—they do not therefore use the combination claimed by the pursuers, and in my opinion therefore do not infringe claim 5. The defenders' method of working the apparatus they employ is substantially different from what is described in claim 5, and the relative passage at page 3. Moreover, the only method of working under claim 5 which the pursuers rely on in the proof is, in my opinion, entirely different from what the patentees describe in the specification, and which one of the pursuers' witnesses (Ransford)—as I understand his evidence—speaks of as "too stupid for anyone to try."

I agree with the Lord Ordinary's views as to the pursuers' failure to describe in the specification the manner in which the invention is to be performed. As to figures 1 to 6, indeed the pursuers do not maintain that they have described any such manner. The witness Ballantyne says—"With reference to the mode of working the apparatus, that is not described in the specification, and it is not the way which I understood on reading the specification would be the best way to adopt. I think the natural impression one would get from the specification was that you start by turning on the valves" (*i.e.*, valves 8 as I understand) "and leaving the outlet valve open." The method of working figures 1 to 6, which the pursuers' witnesses speak to, as that which was in fact adopted as the only practical or useful method, viz., by alternately opening and closing nozzles 8 and manipulating the valve 7, is in no way, in my opinion, even suggested, far less described, in the specification. I am not surprised that when the pursuers proposed to amend their specification by deleting a large part of it, the deletion included all that related to figures 1 to 6.

The witness already referred to, Ballantyne, when asked about figure 7—"And is the overhead method of emptying the digester described in the specification only in the paragraph which I find on page 3, lines 43 to 47?"—replies, "I don't think the method is described even there," and he says the conical member has never been used. The pursuers, so far as the nozzle from the top is concerned, now say it must be moveable, must be worked by hand, must begin by clearing the opening in the side of the digester, and must then work round the circumference, and apparently it is never to play on the conical member, and indeed there has never been a conical member at all.

I agree with the Lord Ordinary's views as to the insufficiency of the description in the specification as to the manner of working or performing the invention. As actually practised, all hand labour employed in emptying the digester is not dispensed with. I am further of opinion that as regards figure 7 the true import of the specification is that the nozzle shown therein must be held to have been represented as fixed, but further, that in any event, if that is not so, there is nothing to indicate that it is to be moveable and to be manipulated by hand in the manner which the pursuers in their evidence say is necessary for the proper and efficient working of the apparatus shown in figure 7.

I am further of opinion that the specification cannot be read as setting forth or specifying the invention or discovery of any principle or idea as claimed and protected. I think that what is claimed in claim 5 is a mechanical combination, one essential feature of which is the conical element—that the defenders have not adopted any such element or any equivalent thereof, and do not infringe what is claimed, in claim 5.

As to the point raised on section 9 of the statute—in the view I have taken it seems to me that the conditions necessary to raise that question do not exist, and therefore it is not necessary for me to express an opinion regarding the defenders' contention that there is no record which would allow the pursuers to raise the plea as to granting relief.

In my opinion the reclaiming note should be refused.

LORD SALVESEN—The Lord Ordinary has stated with admirable fulness and precision the material facts which bear upon the decision of this case, and as I entirely accept his conclusions on the evidence it is unnecessary for me to re-state the facts. I propose, however, to deal with the legal questions to which the facts give rise, more especially as the defenders were not content to rest their case on the ground on which the Lord Ordinary decided in their favour.

The main grounds on which the defenders maintained they were entitled to a judgment of absolvitor were—(1) that they had not infringed the patent on a sound construction of the specification and claims; (2) that that document does not disclose valid subject-matter for a patent; and (3) that assuming they were wrong on both these contentions, the patent, in so far as it concerns the particular claims, is bad from want of sufficient description. All these pleas depend more or less on a construction of the specification itself.

I start with the assumption that the patentee had made a useful discovery in ascertaining that by applying jets of water under pressure it was possible to disintegrate digested esparto grass in the digester and to wash it out at the same time. Although the use of esparto grass in paper-making dates back forty or fifty years, the ordinary method of removing the digested material was by hand labour, and it did not occur to anyone apparently that this tough and interlaced mass could be dissipated by the action of a jet of water applied under pressure. As I read the patent however, there is no general claim to the process apart from the means which the patentee describes of effecting his purpose, which, of course, would cover any mere mechanical equivalents of these means. What was in the mind of the patentee was to substitute a mechanical process which would, by the mere turning on of the jet or jets of water, do all the work that had hitherto been done by hand; and accordingly the first advantage that he claims is that all hand labour for emptying digesters is dispensed with. Now the means that he describes for effecting this operation are set forth in figures 1 to 6, and figure 7 seems to indicate an alternative appliance for the same purpose. Figures 1 to 6 show two fixed nozzles through which water under pressure can be admitted into the opening through which the digester is emptied, and when worked in a particular way (to which I shall afterwards have to refer) these means could be made effectual for the purpose, although, according to the evidence, instead of dispensing with all hand labour, about 50 per cent. of the hand labour only would be dispensed with. The main point, however, seems to me to be this—that the patentee throughout dealt with a fixed nozzle or nozzles through which the jet or jets of water were to pass. In figures 1 to 6 there were to be two nozzles; and I think it proved that in order to work at all two nozzles were necessary for this arrangement. In figure 7, as I read the specification, a single fixed nozzle applied at the top of the digester is substituted for the two fixed nozzles, the jets from which played horizontally upon the mass. But the patentee obviously thought that the jet from a fixed nozzle would not effect the purpose, for he combined with it a conical member fixed in the bottom of the digester, which was to deflect the water under pressure to all the sides and wash out the whole contents. Judging from the diagram alone, it appears to me that the nozzle 8 on figure 7 is necessarily a fixed nozzle, and in the specification it is described as being "arranged above the digester, preferably in the centre of the filling opening, and the jet of water under pressure is directed on to the conical member." I think this description makes it clear that the jet was to play always upon the conical member, which was situated in the centre of the bottom of the digester, and it was apparently assumed that the combination of the jet with the conical member would effect the necessary disintegration to enable the water to wash out the contents of the digester. If this method had been an efficient one it would have answered the patentee's idea of dispensing entirely with hand labour, for all that the operator would have to do would be to turn on the jet of water and to turn it off when the operation was finished. It is noteworthy that while the word used is "arranged," the same expression is employed when dealing with the two nozzles which are admittedly fixed.

Now the defenders do not use any of the appliances described by the patentee. What they use is a flexible hose, a jet of water from which is directed by the hand of the workman, first towards the opening in the bottom of the digester so as to disintegrate the mass in that region, and then all round the remaining contents. They do not use a fixed nozzle at all. Nor do they profess to dispense with all hand labour, for during the whole operation the hose must be directed by a workman's hands. They, of course, make the operation much more simple than it used to be, because where three workmen were required before, only one is necessary now, and instead of the work being heavy and disagreeable, it is now of the simplest description. But if I am right in holding that the patentee's appliances all involve a fixed nozzle or nozzles, and that that is of the essence of his discovery, then the defenders are in no way infringing it. It is somewhat remarkable that the patentee did not hit upon this very simple mode of carrying his idea into effect, but was at pains to devise elaborate appliances which in fact have never been used in practice, and which have all been superseded by the method of playing on the mass from the top by means of a jet passing through a flexible hose. If it is permissible to look at the subsequent patent granted to the pursuer, which involves an adaptation of the simple flexible hose directed by hand, it is reasonably plain that this idea did not come to him until later, and meanwhile it had apparently been independently discovered by the defenders and used by them.

It follows from what I have said that the defenders are not infringing any of the means described in the specification, as they are admittedly not using those described in diagrams 1 to 6, and unless, therefore, the patentee has validly claimed every means by which a jet of water under pressure can be used to disintegrate esparto pulp, the defenders are not infringing. Now in the state of knowledge which already existed as to the disintegrating power of water under pressure, I doubt very much whether such a claim, if made, would have been valid. It was well known that water under pressure had a disintegrating effect upon a fibrous mass of vegetable material. It had been so used for many years in order to disintegrate masses of peat. And it was known that it could be successfully applied by means of a flexible hose to the mass which results from boiling wood pulp, which is one of the materials from which paper is made. Two German text-books published

in this country described this method of washing out the pulp from digesters in which wood fibre, treated by the sulphite process, had been boiled. And Messrs Boving had some years before exhibited drawings showing how a flexible rubber pipe with a nozzle could be applied from above so as to direct a jet of 25 lbs. pressure on to the pulp in the bottom of the digester and so to clear out the mass. No doubt such pulp was very much more easily disintegrated than esparto pulp, but it is to my mind plain that 25 lbs. of pressnre would not have been used if the water was merely to rinse out the contents from the digester without having any disintegrating effect upon the particles themselves. If therefore the first claim had been so expressed as to claim in general terms the process of removing digested material from digesters by means of a stream or streams of water applied at suitable pressure so as to disintegrate and wash out the same, I do not think that would have been a valid claim. Such a claim would have covered what was already known and in use. In point of fact, however, the first claim is "for the method of and means for removing, &c., substantially as herein set forth," and is not, as I read it, a claim for a pioneer or master patent at all. Apart from this, if the patentee had in terms claimed as the means for carrying his idea into effect the use of a flexible hose applied at the top, such as the defenders employed, I think the patent would be bad for want of subject-matter. No doubt the patentee had made a discovery, but as Lindley, L.J., points out in *Lane Fox*, [1892] 3 Chan. 424, at page 428, a useful discovery is not necessarily a patentable invention. "A patentee must do something more; he must make some addition not only to knowledge but to previously known inventions, and must so use his knowledge and ingenuity as to produce either a new and useful thing or result, or a new and useful method of producing an old thing or result." Now the only discovery that the patentee here made was that esparto pulp, although more refractory than sulphite wood pulp, could be disintegrated in the same way by the action of a jet of water playing upon it. In short, he discovered that a known tool could be applied with effect to a known material upon which that tool had never been used with resultant useful effects. This, apart from special appliances invented for the purpose, appears to me not to be good subject-matter for a patent at all. Besides, the claim as framed is not confined to esparto grass, but to digested material generally, although in the description "esparto grass and the like" is the expression used. This claim would be bad for claiming too much.

It is true that in the removal of sulphite wood pulp a pressure of 25 lbs. had been found sufficient to effect the purpose, and that a higher pressure (in the neighbourhood of 100 lb.) in order to be practically useful must be used in the case of esparto pulp. But the patentee nowhere founds on this distinction. He uses the words "suitable pressure," and leaves it to the operator to find out what such "suitable pressure" would be. I accordingly do not agree with the Lord Ordinary in holding that the patent could not be successfully challenged on the ground of want of subject-matter, or that if it is good otherwise as disclosing a new means of applying water jets under pressure to digested materials the defenders have infringed it.

As regards the grounds upon which the Lord Ordinary has decided in favour of the defenders, I agree with the result at which he arrives although I do not altogether adopt his reasoning. The Lord Ordinary applies the test whether the description in the specification is sufficient for any ordinary practical man, by which I understand he means an ordinary workman with a competent knowledge of the processes required in successful paper-making. He holds that Mr Wilson, the pursuer's witness, who succeeded in making the method by means of two fixed nozzles to work, did not come under that category. Apart from the fact (on which I agree with the Lord Ordinary) that Mr Wilson had been previously instructed to use the valve which closed the opening of the digester, I think Wilson would just have been the kind of man to whom the patent was addressed. The law in this matter seems to me to have advanced very much in recent years. I refer to the case of *Osram*, (1917), 34 R.P.C. 384, and especially to Lord Parker's speech, reported at page 391. In that case the House of Lords held that the fact that some of the directions contained in a specification might have to be carried out by skilled mechanics and others by competent chemists, did not render it invalid for want of description. In the present case I think the specification was addressed to paper-makers, and that if the means described could have been successfully carried out by the staff that paper-makers usually have at their command, the patent would not have been void for want of sufficient description. Applying, however, this more rigid test, I think the defenders have proved that the description was insufficient. It is now admitted that in order to clear out the whole mass of digested material it is not sufficient to use two fixed nozzles, even if these are used alternately, although no directions to that effect are given in the specification. The effect of so using them would simply mean to make a tunnel under the mass and would clear out only a small portion of the material with no useful result. In order to effect complete clearance with the means provided by the patentee, the operator must from time to time close the valve at the bottom, so as to flood the digested material in water and again apply alternately the jets of water under pressure to the floating mass. There is then communicated to it a rotary motion which ultimately brings every part of the mass into contact with the jets of water by which it is disintegrated. Several eminent men of science who followed the directions of the patentee found

that the means he provided for working his process did not achieve the desired result. The only reference to the valve 7 is that it is arrauged in the pipe, and there is no suggestion that it is to be used during the process of disintegration by being closed until the jets from the fixed nozzles have flooded the mass, and then to be opened from time to time in order that the disintegrated material may run out. Wilson's experiment is invalidated, because he was previously told that this valve 7 was to be used if the process was to be successful. Now it was only by constantly using valve 7 and alternately using the two fixed nozzles that Wilson was enabled to clear out the digested material so as to make the invention useful, and in order to effect this he required the aid of an assistant working the various valves while he himself made observations from above. This complicated method of using the appliances is nowhere hinted at in the specification, and I believe had not been discovered before the patent was challenged. Ballantine, the pursuers' leading witness, when first examined, had only applied the fixed jets, shown in diagrams 1 to 6, on a digester which was half-filled with material, and it was in the end admitted that it would have been ineffective if the digester had contained its normal charge. It is significant that none of the appliances disclosed in the patent have ever been put to practical use, and that they were only made for the purpose of showing that they might be effectively operated. As regards figure 7, all that I need say is that I think it proved that if used as directed by the patentee the only effect of the jet of water is to bore a hole through the mass and not to disintegrate it and wash it away unless an amount of water is employed which would make the process commercially useless.

On the whole matter therefore I agree with the Lord Ordinary in holding that the specific claims are bad for want of sufficient description, and, indeed, because of mlsleading description so far as figure 7 is concerned, and that therefore on this as well as on the other grounds stated the defenders are entitled to absolvitor.

LORD ORMIDALE—I had an opportunity of reading your Lordship's opinion, and I concur in it.

LORD DUNDAS was absent.

The Court adhered.

Counsel for the Reclaimers (Pursuers)—Sandeman, K.C.—Wilson. Agents—Finlay & Wilson, W.S.

Counsel for the Respondents (Defenders)—Moncrieff, K.C.—Burn Murdoch. Agents—Davidson & Syme, W.S.

Wednesday, November 23.

FIRST DIVISION.

[Sheriff Court at Perth.

BARTY *v.* JOHN HARPER & SONS.

Reparation — Negligence — Road — Motor Car Colliding with Dogcart — Right of Vehicle to Whole Road in Absence of Competing Traffic — Duty of Vehicle Approaching "Blind" Corner.

A motor car which was being driven at the rate of fifteen miles per hour round a blind corner came into collision with a dogcart proceeding at a walking pace in the opposite direction. At the time when the vehicles first came into sight of one another there was a distance of about twenty yards between them; the motor car was on its proper side of the road, and the dogcart was so far on its wrong side as to prevent the passage of the motor car. In these circumstances the driver of the motor car attempted, unsuccessfully, to pass the dogcart by driving with his near wheels on the grass slope, and the collision followed. *Held* that, although the driver of the dogcart was guilty of negligence in driving round a blind corner on his wrong side, the proximate cause of the collision was the fault of the driver of the motor car in attempting to pass the dogcart when he admittedly could have avoided the accident by bringing his car to a standstill.

Observed (*per* the Lord President) that the general right which traffic had to occupy any part of the road in the absence of competing traffic did not apply to a blind and dangerous corner, especially in view of the conditions of modern rapid traffic.

William Barty, blacksmith and fencing contractor, Meikleour, Perthshire, brought an action against John Harper & Sons, motor engineers, Blairgowrie, concluding for £1030 damages in respect of a collision between the pursuer's dogcart and a motor car belonging to the defenders and driven by their servant.

The defenders pleaded, *inter alia*—"1. The pursuer not having been injured by any fault of the defenders, or by any servant for whom they are responsible, the defenders should be assoilzied with expenses. 2. The pursuer having himself caused or materially contributed to the accident by his own negligence he is barred from suing the present action, and the defenders should be assoilzied with expenses."

On 19th October 1920 the Sheriff-Substitute (BOSWELL) after proof pronounced an interlocutor making findings in fact and in law, and decerning against the defenders for £630.

The defenders appealed to the Sheriff (SANDEMAN), who on 11th March 1921 recalled the interlocutor of the Sheriff-Substitute, pronounced new findings in fact and in law, and decerned against the defenders for the same amount £630.