past-due bill according to the convention of the parties, and from the moment that the defender's *jus crediti* in the renewal bill accrued by the posting of the letter containing it on the 20th, from that moment the old bill ceased to be available to the defender as a document of debt, and its retention could no longer constitute an impediment to the completion of the new agreement.

"Before concluding I wish to add a few words on the question of the computation of time, as to which I had the benefit of an interesting argument, though as already mentioned, I conceive that the question is settled by decision. It was contended, and indeed is evident, that the language used in the decisions with reference to deathbed is not properly applicable to the case of retrospective bankruptcy. In reckoning time negatively, if we exclude the day of bankruptcy we cannot apply the maxim *dies inceptus pro completo habetur* to the day of granting the security. It appears to me, however, that whether the efflux of time is reckoned positively or negatively the true principle to be applied is the principle of approximation, which necessarily leads to the rejection of one of the limiting days and to the inclusion of the other. In reckoning time *de momento in momentum*, the prescribed period, say sixty days, will run from a particular hour on the first day to the same hour on the sixty-first day. Where the solar day is taken as a unit of time, and hours are neglected, the mode of reckoning the period of sixty days will be the same, except that the time will run from any hour on the first to any hour on the sixty-first day. Under this mode of computation the error in hours can never amount to a whole day, and is therefore a minimum. But if sixty free days were required, as the defenders contend for, the error in hours might amount to more than one additional day, and the error, whether large or small, would always be in excess of the statutory period. The first method is therefore, in my opinion, logically, as well as legally correct."

Counsel for Pursuer—Jameson. Agent—R. C. Gray, S.S.C.

Counsel for Defender—H. Johnston. Agents—Henderson & Clark, W.S.

HOUSE OF LORDS.

Friday, February 23.

(Before The Lord Chancellor, Lords Watson, Bramwell, and Fitzgerald).

HENDERSON *v.* CLIPPENS OIL COMPANY (LIMITED) AND ANOTHER.

Patent—Specification—Combination.

A patent was obtained for improvement in the destructive distillation of shale, &c., and in apparatus therefor. The specification stated that the invention "has for its object the economical and satisfactory obtainment and application of the heat required for the destructive distillation of shale, &c., and it comprises improved arrangements for the utilisation of the spent shale, &c., itself as fuel for supplying the heat or a portion thereof."

The claim in the specification was for "(1) the conducting of the destructive distillation of shale, &c., substantially according to and by means of the arrangements and apparatus hereinbefore described; (2) the arranging of two or more retorts in one oven, but with a separate passage or space for the transference of the contents of each retort directly into a common fire-chamber substantially as hereinbefore described; (3) the applying of a valve in the passage or space through which the contents of each retort are transferred to the common fire-chamber, such valve being in addition to the door or cover which closes the discharge-opening of the retort substantially as and for the purpose hereinbefore described."

The object of the invention was to utilise the spent shale as fuel without loss of heat, by passing it after distillation from the retort into the furnace without exposure to the air. This was accomplished by means of an arrangement of the doors of the retorts in relation to corresponding doors in the roof of the fire-chamber, which prevented the heat in the retorts from becoming too great, and also the door opening out of the retorts from being destroyed by excessive heat.

In a question of infringement of patent—*held* (*aff.* judgment of Second Division) that what the specification described and the patent was obtained for was a certain novel and useful arrangement of apparatus for the purpose of managing the heat for distillation, and utilising for that purpose the spent shale, the essence of which arrangement was the placing and working of the doors in the retort and fire-chamber in a certain manner; (2) that the use of the common fire-chamber was on a proper construction of the specification not claimed as essential to the invention, but was only an incident of it, and therefore, (3) that an arrangement of apparatus which was substantially the same as that patented except that no common fire-chamber was used, was merely a colourable imitation of that of the patentee, as described by him and claimed under the first clause of his claim.

This case is reported 3d December 1881, *ante*, vol. xix., p. 183, and 9 R. 232.

The respondents in the process of interdict (the Clippens Oil Company, Limited, and William Young) appealed to the House of Lords.

Counsel for respondents (complainers in Court below) were not called upon.

At delivering judgment—

LORD CHANCELLOR—My Lords, this is an appeal from the unanimous judgment of the Second Division of the Court of Session in an action of suspension and interdict brought by the respondents against the appellants for the infringement of a patent for "improvements in the destructive distillation of shale or other oil-yielding minerals, and in apparatus therefor." It is not contended at your Lordships' bar that the patent is not susceptible of a construction which will make it good. I therefore will not dwell at any length upon that point, further than to say that I agree generally with the views, as I understand them,

expressed by the Lord Justice-Clerk on that subject, and the evidence satisfies me that the method described in the patent is the description of a new and useful process for accomplishing the end which is in view. Then the question really which remains is, whether there has been an infringement or not, and it depends upon the construction of the specification, both as regards the body of it and the claims with which it concludes.

My Lords, as I read the specification anterior to the claims, the result at which I arrive is this. It describes a certain arrangement of apparatus for the purpose of better conducting the heat for distillation, and for that purpose utilising the spent shale. Tbat is the main object of the whole specification. It describes certain things which, as it appears to me, contain the substance—the indispensable substance—of the invention, and certain other things which are useful and important, but not necessary accessories or modes of carrying it into effect, and the claims, as I understand them, both generally cover that which in my view is described as the substance of the invention as a whole, and also specifically claim certain combinations, of which one, as I view it, is, and the other is not, a necessary and indispensable part of the invention.

The argument addressed to your Lordships has really been this, that what the appellants have done being in all other respects I may say confessedly an adoption of the respondent's process and apparatus is not an infringement, because there is not a common fire-chamber into which two or more retorts discharge the shale. My Lords, without at all going into any minute question as to the manner in which the products of combustion reach the oven, or the possible communication between one of the appellants' fire-chambers and another, I will take it to be strictly as the appellants contend, that what they do is to discharge from each retort the spent shale into a separate chamber, and that there is no common fire-chamber within the meaning of the respondent's patent used by them. On that ground they say there is no infringement. Now, for the purpose of seeing whether that is a sufficient ground for holding that there is no infringement, it becomes necessary to consider whether according to the true construction of the respondent's patent the first claim involves as a necessary ingredient this common fire-chamber with two or more retorts discharging into it, and then, if it do, whether the third claim also necessarily involves this common fire-chamber. I am disposed to think that the second claim does involve a common fire-chamber, and therefore that under the second claim, taken alone, that which does not involve the use of a common fire-chamber might not be held to be an infringement. I do not think, my Lords, it is necessary for your Lordships to decide that point, but I, for the purpose of the observations which I wish to address to your Lordships, will make this concession. The second claim is "the arranging of two or more retorts in one oven, but with a separate passage or space for the transference of the contents of each retort directly into a common fire-chamber substantially as hereinbefore described." With regard to that claim as covered and protected by the patent, namely, that arrangement of two or more retorts with a common fire-chamber, I concede that that particular claim applies only to a combination of which a common fire chamber with two or more retorts is an essential part, and therefore that it is not under that claim that the present allegation of infringement can be made out. I repeat, my Lords, that I do not ask your Lordships so to decide if there is any doubt in any of your Lordships' minds upon the point, but I am content so to assume for the purpose of the opinion which I myself wish to express.

But there remains a question, whether the system mentioned in the general terms of the first claim is a system of which a common fire-chamber with two or more retorts discharging into it is upon the true construction of the specification an essential and indispensable part. My Lords as I read the specification, I think it is not —that is to say, I find in the specification mention indeed made of this discharge of two or more retorts into a common chamber as a thing exceedingly useful and important for the purpose of producing the best results under this patent, but I also find words which satisfy me that it is not described as essential and indispensable to the system, and if therefore the rest of the system as described in the specification is capable of application where those conditions are not found, I think that such an application will be an infringement, although a much better way of doing the thing is to use also that combination which is covered specifically by the second claim.

My Lords, my reasons for the opinion which I have expressed are these—I find that "a series of four vertical retorts arranged in a furnace chamber or oven" (that is, in substance, in a common fire-chamber) is first mentioned as being "according to one modification" of the invention; as far, therefore, as that is concerned I do not find sufficient to justify the conclusion that it is necessary or indispensable. The mention of "one modification" implies that there may be other modifications of this description, but it is so introduced. But that is not all, because, my Lords, I find again that "the arranging of one fire-chamber in connection with two or more retorts as hereinbefore described" is said to be "of great importance in carrying out the invention, as is also the discharging of the retorts at different periods and in regular rotation; as with these arrangements the aggregate heat acting is rendered more uniform and regular," and so forth It is then said that the mid-partition which is a part of this furnace is of advantage in preventing too intimate a mixture and consequent choking of the materials. From that it is manifest to me that three things are mentioned, namely, the mid-partition, the regular rotation of discharge, and the arranging of one fire-chamber in connection with two or more retorts, which has been previously called one modification of the system. They are all put upon the same footing as things of great importance in order to attain the most successful results, but from the words which are used I should certainly infer that they are not indispensable to the use of the general system which has been described before, however desirable they may be in order to produce, as I say, the best results from it.

I am confirmed in that view, my Lords, by a passage upon the context of which very considerable argument was founded—I mean the passage in which the patentee speaks of the possibility of

adjusting his invention to existing vertical retorts. "Existing vertical retorts with vertical discharge doors on their outer sides, close to their bottoms, may be adapted for carrying out my invention, by building or forming a chamber in front of each door, and with a lateral passage or opening leading down into the fire-chamber, and provided with a valve to close the passage, excepting when the retort is being discharged." Now, it was strongly pressed in the argument that before this patent the use of the common fire-chamber was unknown. This passage speaks of the possibility of adjusting the patentee's invention to these existing retorts, without any mention whatever of the addition of a common fire-chamber—that is to say, that these things which are used without a common fire-chamber may be adapted to the invention by the means there mentioned, which are means that have nothing to do with the common fire-chamber; and that passage, to my mind, contains the strongest possible confirmation of the conclusion at which I arrive from a consideration of the whole of the rest of the specification, that it is not meant to represent the plurality of retorts discharging into one common fire-chamber as essential or indispensable, however useful it may be, and that the invention may, by doing those things which are quite independent of the common fire-chamber, be adapted to the existing vertical retorts.

Therefore, my Lords, the result is this, that laying aside the part of the description and of the specification which relates as I said at the outset to that which the patentee at present believes to be the best practicable arrangement and apparatus, the essence of the invention consists in the arrangement of which the description begins—"The bottom of each retort is formed," and so forth going on with the account until we come to the situation of the retort bottom as in "a casement or space made with an iron framing fixed in the building and with its inner end opening into the fire-chamber, which is also open on its outer side," and which description I do not read in detail to your Lordships as it has been read more than once. That is the essence of the invention—the mode in which the fuel is introduced by being so discharged into the chamber in which the fire is as to produce those improvements in the distillation of the oil which are the subject of the patent.

My Lords, it appears to me that the whole substance—though not in all respects the form, because the details are not essential—but that the whole substance of the arrangement of the two valves, either of them being in a casement or space made with a framing fixed in the building, and having those effects which are here described—the whole substance with only immaterial variations of it—is here given, and that appears to me to be all that is essential to the system, and the arrangements and apparatus described in the specification, and which are the subject of the first claim.

Under, therefore, the first claim it appears to me that the infringement is made out, and that makes it not really necessary to consider the remaining claims. I have said that I do not at present myself think that you can disengage the common fire-chamber and the plurality of retorts from the second claim, and therefore that in this case there is not an infringement of that particular claim. The object of that claim, added to the first claim, is to separate that which is useful but not indispensable, and at the same time which is new, from the general system and make it the subject of a distinct claim. And I think, my Lords, that the object of the third claim is to be taken in the same manner as that which in my view is indispensable to the general system mentioned, namely, the arrangement of the retorts with an intervening passage or space (which is an essential part of the apparatus) "substantially as hereinbefore described." It is true that some possible difficulty may seem at first sight to arise in the construction of that third claim from the manner in which the words "the common fire-chamber" are there used—"The applying of a valve in the passage or space through which the contents of each retort are transferred to the common fire-chamber, such valve being in addition to the door or cover which closes the discharge opening of the retort substantially as and for the purposes hereinbefore described." But, my Lords, I cannot but think that the substance of that claim is disengaged from the common fire-chamber, and that the common fire-chamber is there mentioned merely as the thing which is shown upon the drawings into which, according to the plan recommended by the patentee, the contents of the retorts are to be transferred. The thing which really is of the essence of that claim is "the applying of a valve in the passage or space through which the contents are transferred, which valve is additional to the door which closes the discharge opening of the retort "substantially as and for the purposes before described." It appears to me that the essential things are these valves, and that the arrangements which are described as being provided for their use are independent of the common fire-chamber although they are shown upon the drawings with such a fire-chamber. If therefore it had been necessary to rely upon that third claim, I should have been prepared to hold that the infringement was made out under it. It is not, however, my Lords, in my view necessary to do so, because I am of opinion that the infringement is sufficiently made out on the true construction of the specification as a whole under the first and more general claim.

I therefore move your Lordships to dismiss this appeal with costs.

Lord Watson—My Lords, I am of the same opinion. I think that the evidence in this case sufficiently proves that the patentee, Mr Henderson, invented a process which was novel and which was of very considerable utility in the manufacture of oils and other products by the distillation of shale; and I quite agree with the observations which have fallen from the noble and learned Lord on the woolsack, to the effect that some of the objections urged against the validity of the patent hardly bear statement, but that the real question between the parties at the bar turns upon the construction of the specification. The question is not, what did the patentee invent according to the evidence? but what has he secured by his patent as his invention?

Now, my Lords, I think it very important to keep in view that, as I read this instrument, from the beginning to the end of it the patentee discloses as the object and at the same time the merit of his invention an improved method of

distillation, that improvement in distillation being effected by the improved apparatus which, strictly speaking, is the subject of his patent; but the object of the patent and the purpose which his apparatus was intended to serve was the utilisation of the shale spent in distilling for the purpose of fuel in the fire-chamber in which is generated and from which is supplied heat to the retort or the chamber which surrounds it. The apparatus which is specially described, a model of which has been before your Lordships and has been of very great use toward an understanding of this patent, consists, I think, practically of three parts—you have the oven or heat chamber, in which are enclosed and arranged certain cylinders, two or more, in the method described; beneath you have the fire-chamber, the fuel space in which combustion takes place, and from which the products of combustion are transmitted to the oven above; and you have further what appears to me to be one of the most important features, if not the most important feature, in the apparatus—you have arrangements made for transmitting the distilled shale, when all the products of distillation have been taken from it, directly into the furnace below, where it serves the purpose of fuel. That arrangement has these two merits,—in the first place it provides for the complete protection of the sealed door of the retort from the action of the heat, which otherwise might be productive of great mischief to the contents during distillation; and, in the second place, it provides for an easy and convenient method of transmitting the exhausted shale into the furnace. That, so far as I know, and so far as the evidence goes, is novel. The first part which I mentioned is not new, namely, the oven containing a set of retorts; but, so far as I can see, the second part is in point of fact novel as well as the single fire-chamber below.

But, my Lords, when we come to consider what is the claim here, I cannot assent to the able argument addressed to your Lordships by the appellants, to the effect that under the first head of the claim the patentee includes nothing except a combination containing as one of its parts a single fuel or fire-chamber. No doubt in the detailed description which he gives of one of the best modifications, if not the best modification, of his patented apparatus, he shows a single fire-chamber; but I can find nothing in the language of that description indicating that it is a necessary part of the combination or so material a part of the combination that if it was dispensed with and two single fire-chambers were introduced instead of one entire fire-chamber with a mere division of the fuel, the apparatus would no longer represent that which the patentee intended to be the subject of his invention. There is nothing in the words of the description of this modification to exclude a modification which would consist of converting the chamber into two chambers by carrying up the mid-partition to the top; and I think that the reference which the Noble Lord on the woolsack made to the passage, with regard to the conversion of existing vertical retorts with furnaces below into the patented apparatus, is perfectly conclusive upon this point, and that if the patentee has not elsewhere in the patent used language to exclude that claim, he does there in point of fact claim as within the patent the central part of the apparatus—a combination containing other than a single fire-chamber. The description which he gives there of the operation necessary to convert the then known and existing vertical retorts none of which had been erected over a common fire-chamber, conclusively shows that as soon as a slight external erection is put up representing the central part, the casement with its adjustment, that becomes, according to the claim in this patent, one of the patentee's modifications. Accordingly I am of opinion that it is quite impossible, in that reading of the first claim of the patent, to look at the one apparatus and at the other without seeing that an infringement of this invention has taken place.

Then, my Lords, with the second claim it becomes unnecessary to deal; it appears to me to be a claim for a special combination in which the common fire-chamber is a prominent feature. I do not think it necessary to discuss, still less to decide, what the effect would be in any question between the two parties if the case turned upon that claim.

In regard to the third claim, although the construction of it is attended with considerable difficulty, I am of the same opinion as the noble and learned Lord who has addressed your Lordships. I humbly think that the purpose of the patentee in framing that claim disclosed in the language which he uses was to claim a particular application of a valve to the furnace and the heat-chamber separately from the other parts of the combination; in any other view the claim would really be futile. That is not a sufficient answer, but I think that it may be intelligibly and intelligently read as meaning a claim for the application of a valve in the passage or space, however it is used, for the purpose of performing the same function as between the retort and the furnace which the casement supplies in the apparatus described; and accordingly it appears to me that, even if the respondent's case had failed upon the first head of the claim, what has been done by the appellants would have been obnoxious to the third; but I think that the judgment of the Court below was sustainable upon either of these two heads of claim.

Lord Bramwell—My Lords, I concur in the advice which has been given to your Lordships. It appears to me that the second claim is certainly tied up, if one may use the expression, to the use of a common fire-chamber; but I do not think that that controls the specification nor diminishes or takes away from the effect of the general claim which is contained in No. 1, and it appears to me therefore that it is not necessary in order to make out an infringement that the complainer should be bound to show that the shale from the two retorts has been discharged into a common fire-chamber. It seems to me that the specification is good, and entitles the pursuers to claim in the case of the shale being discharged from each retort into its particular fire-chamber. That is all I should say about what seems to me to be the validity of the specification.

Then it is said that that which was done at Fulham was an anticipation of the pursuer's invention. Now I cannot think that it was, and it is not for those who entertain that opinion to give any reason; all I can say is that it does not

appear to me to be so, and that no sufficient reason has been given on the other side. And really I cannot but think that when one looks at the model of what was done at Fulham, and reads the elaborate statement in the specification of the patentee, beginning "Figures 5 and 6" (that paragraph at the commencement) it is impossible to say that the two processes are in any sense identical, or that the pursuer's process has been anticipated by the Fulham one; with all respect to any witness who may have said or thought otherwise, I cannot come to that conclusion—the two things to my mind are wholly different. I cannot see that there is any ground upon which it can be held that there was an anticipation of the pursuer's invention in what was done at Fulham; no doubt it might be said that inasmuch as this patentee states that a horizontal retort would be within his patent, you may take it, on the other hand, that the Fulham retort was a vertical one; but then the mode of dealing with the Fulham retort is utterly and entirely different from that which the claimant has specified in the paragraph I have mentioned. It is really in vain to go into it; all I can say is that it does not in the least strike my mind that there is a similarity notwithstanding the reasons which have been given.

That being so, the only remaining question is whether there has been an infringement, as to which, if the common chamber is but a part of the claimant's invention, it stands confessed that there has been an infringement, and upon the testimony most relied upon by the defenders.

I think, therefore, that the appeal should be dismissed.

Lord Fitzgerald—My Lords, I entirely concur in what has fallen from the noble and learned Lords who have preceded me, and I should possibly do best by saying no more; but I wish to add that this being a case appertaining to a branch of the law in which previously my experience had been rather limited, I thought it desirable that I should carefully consider the materials before us. Accordingly I attentively read this case and the several specifications and the authorities which bear upon it, and arrived at certain conclusions, subject of course to what should be said here upon discussion. I came to the conclusion, or rather to the opinion, that the real question was whether there had been an infringement or not. I have listened with the utmost attention to the able arguments which have been addressed to us by the Solicitor-General, followed by Mr Webster, and I see no reason to divert from the opinion which I had already formed. The complainer is the inventor, his invention is a new invention, and its utility cannot be doubted, as it results in an increased production and an improved quality of the subject of distillation. It only remains for me to consider the question whether an infringement has been satisfactorily established; upon that point my mind was perfectly open; I might have formed any opinion, but I must add that from the moment when the model of the defender's works at Pentland was produced I had not the least doubt upon the subject. I think that it is not open to controversy that there has been bodily, though under a slight disguise, an infringement by appropriating that portion of the complainer's invention which consists of the casement of the valve. It appears to me that the infringement is brought under both claim No. 1 and claim No. 3; I do not offer any opinion upon the intermediate No. 2.

Interlocutor appealed from affirmed and appeal dismissed with costs.

Counsel for Appellants — Solicitor-General (Herschell, Q.C.)—Webster, Q.C. — Macrory—Agents—Grahames, Currey, & Spens—Webster, Will, & Ritchie, S.S.C.

Counsel for Respondents — Lord Advocate (Balfour, Q.C.) — Asher, Q.C. Agents — A. Beveridge—Philip, Laing, & Co., S.S.C.

LANDS VALUATION COURT.

Saturday, February 24.

(Before Lord Lee and Lord Fraser).

THE FALKIRK JOINT-STOCK GAS COMPANY (LIMITED).

Valuation—Principle of Valuation—Gas-Work—Tenants' Profits.

A private gas company who were proprietors of their works and pipes were assessed on the principle of deducting from the income derived from their customers the necessary expenditure, tenants' profits estimated at 15 p. c. on two-thirds of their expenditure, and 5 p. c. interest on their floating capital. *Held* that this method of valuation was wrong, Lord Fraser holding that the proper manner in which to value such a subject was to deduct from the income of the company the annual expenditure and a sum for tenants' profits—which ought to be estimated at a percentage on the nett profits — and a percentage on capital invested in moveable property, the remainder being the annual value for the purposes of assessment; Lord Lee being of opinion that a percentage on the capital value of such works forms a fit, though not the exclusive rule of assessment, and that in the particular case a percentage of 8½ per cent. upon the capital value of the works would have been a proper method of valnation.

At an adjourned Appeal Court of the Magistrates and Town Council of the burgh of Falkirk, under the Lands Valuation (Scotland) Acts, held within the Burgh Buildings there on 18th September 1882, The Falkirk Joint-Stock Gas Company (Limited) appealed against the following entry in the Valuation Roll of the Burgh for the year 1882-3 :—

Description and Situation of Subject.	*Proprietor.*	*Tenant.*	*Value.*
Gas-Works and Pipes in Falkirk Burgh.	Falkirk Joint-Stock Gas Co. (Limited), per Andrew Allan, Solicitor, Falkirk.	Selves.	£1568.

The assessor fixed the annual value of the heritable property of the Falkirk Joint-Stock Gas Company (Limited) at £1709, of which £1568 was applicable to the burgh. He arrived at that result by the following method, which he stated to be in accordance with the principle approved