
1932

Jan. 21, 25-30, Feb. 2. Oct. 7.

BETWEEN:—

J. O. ROSS ENGINEERING CORPORATION AND ROSS ENGINEERING OF CANADA LIMITED..... } PLAINTIFFS;

AND

PAPER MACHINERY LIMITED AND GUSTAF HELLSTROM ..... } DEFENDANTS.

Patents—Combination—Aggregation—Patent Law—Infringement—Proof of Date of Invention

Held (following the decision of the Supreme Court of Canada *In Re Christiani and Neilson* v. *Rice* (1930) S.C.R. 443), that by the date of discovery of the invention is meant the date at which the inventor can prove he first formulated, either in writing or verbally a description which affords the means of making that which is invented. There is no necessity of a disclosure to the public. That he who first communicates an invention to "others," would be the true and first inventor in the eyes of the patent law of Canada, as it stood previous to September, 1932.

2. That where each element in a combination functions with all the other elements for the purpose of attaining a result, and when one of the elements is removed from the combination the usefulness of all disappears, then such a combination is a true combination within the meaning of patent law, whereas in a mere aggregation, if any one element is removed the remaining elements would continue to function.

The Court found that the claims relied upon by the plaintiffs herein were not anticipated, were valid and were infringed by the defendants.

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ACTION by the plaintiffs to have it declared that their patent No. 219,224, issued to Emil A. Briner in 1922 was infringed by the defendants.

Action was tried before the Honourable Mr. Justice Maclean, President of the Court, at Ottawa.

O. M. Biggar, K.C., and *R. S. Smart, K.C.*, for the plaintiffs.

W. F. Chipman, K.C., and *H. Gerin-Lajoie, K.C.*, for defendants.

The facts of the case together with the parts of the specification and claims material to the discussion of the case are stated in the reasons for judgment.

THE PRESIDENT, now (October 7, 1932), delivered the following judgment:

This is an action for infringement of patent No. 219,224, issued to Emil A. Briner, in June, 1922, upon an application made in March, 1922, and is now owned or controlled by the plaintiffs.

The invention is said to relate to the art of heating and drying materials, and has special reference to the recovery of heat from the waste hot air, vapours, and gases, resulting from the drying of paper, textiles, etc., and the improvement of conditions in the room in which such drying operations are carried on. While the specification describes the method of operation and the improvements in the alleged invention as applied for use in connection with paper making machinery, yet it states that, in its broader aspects, the invention is capable of general application wherever used with drying processes from which vapour laden gases arise. I think I may usefully quote from the specification at some length because it will describe the alleged invention, its objects and uses, much better than I could do, and will at the same time reveal, correctly I think, the state of the art in question at the times material here.

Heretofore in nearly all processes of drying, the resultant hot moist air, gases, or vapours have been allowed to escape in a wasteful manner. The temperature has been raised to a high degree in order to permit the absorption of more vapour. The hot mixture has heat energy in the form of the sensible heat of the air and vapour and the latent heat of the vapour. In many processes the latent heat energy is greater than the sensible heat energy. Not only is this loss of heat energy an economic one which is considerable in some processes, but there is also an indirect

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loss to the plant on account of impaired working conditions generally heretofore unavoidable in rooms wherein drying processes were carried on.

As is well known, the present method for drying of paper web on a paper machine is effected by passing the web over a series of hot rolls which are heated internally by steam. This results in the formation of a large volume of water vapour which is absorbed by warm air near the machine and allowed to escape through openings in the roof, either by natural draft or by suction draft caused by any air moving device drawing the hot air and vapour through a hood placed immediately over the machine and discharging the moisture laden air outdoors.

The usual practice in the drying of paper in paper mills is to allow the vapour to be carried toward the roof by warm air near the machine. The roof being at a lower temperature than the vapours causes a condensation of part of the vapours on the under side of the roof and results in what is known as "drip." To prevent this condensation, hoods are often used and steam coils are placed under the roof to keep the air warm, or hot dry air is directed against the under side to warm the roof. But in so doing, these methods augmented by the drying process raise the temperature of the whole room to a point where conditions are not satisfactory for comfort of the operatives of the machine.

In nearly all processes of drying, the resultant hot air or gases or vapours are allowed to escape as waste. The purpose of this invention is to recover part of the heat of the hot air or gases or vapours and use it to heat fresh air for drying, or heating and ventilating purposes. The efficiency of the drying process is the ratio of amount of heat utilized to the total amount of heat supplied.

I increase this efficiency by increasing the amount of heat utilized in any given dryer or provide fresh warm air for various other purposes.

It is therefore an object of my invention to so process these vapours that their heat energy may be largely retained in the system, so that the economic loss is minimized. Such a process includes a subjection of the waste gases or vapours to an economizer where they are cooled to such an extent that the air cannot retain more than a small portion of the vapour with which it was first charged. The vapour is condensed in the economizer and forced to give up its latent heat energy, thereby raising the temperature of the economizing medium, generally fresh air. This warm fresh air has a much lower relative humidity than it had originally and is available in large quantities for heating, or for providing warm fresh air to absorb the vapours necessary for continuing the process. The condensate is returned as warm liquid ready to be used as such.

Another object of my invention is to remove the vapours from the room rapidly so that working conditions may be improved.

Another object of my invention is to improve conditions directly under the roof so that the objectionable drip is avoided without the use of auxiliary heaters.

Another object of my invention is to provide an economizer suitably arranged and associated with fans, ducts and ventilators, so that the waste vapour laden gases may be drawn through the economizer in one direction and exhausted to the atmosphere in a cooled condition, and so that fresh air may be drawn through the economizer wherein it is warmed and then directed into the room.

Another object of my invention is to provide suitable ducts for directing warmed air under the roof where it will raise the temperature sufficiently to keep the moisture from condensing.

Another object of my invention is to improve the conditions near the floor of the work room by providing an exhaust fan which takes the warm air from overhead and discharges it on to the drying rolls or into the drying machinery thereby preventing any great disturbance of a cooler layer of air near the floor. This cool air will be supplied generally through cracks, crevices and the opening of doors in the room.

Another object of my invention is to pass the heated and vapour laden air through passages in an economizer arranged to collect the condensed moisture and deliver this moisture to a drip, while the fresh air is drawn through other passages in the economizer and thoroughly agitated so that it becomes warmed.

What the patentee refers to as an "economizer" and sometimes as an "interchanger" is in principle a well known device. In this case it consists of a series of thin corrugated plates, placed parallel to each other and forming alternate spaces for carrying currents of cool air, and warm moist air, for the purpose of raising the temperature of the cool air. I shall adopt as the designation of this device, the term "economizer."

The plaintiffs rely upon claims Nos. 1, 3, 4, 9 and 22, which are as follows:—

1. In the drying art, an economizing process comprising exhausting heated vapour laden air at substantially atmospheric pressure through passages in a cooler to the atmosphere, drawing through other passages in the cooler atmospheric air, and using it in two states, first for ventilation, and second, for drying.

3. In the paper drying art, an economizing process comprising exhausting heated vapour laden air from the space above the dryer rolls of a paper-making machine in a drying room through passages in a cooler to the atmosphere, drawing through other passages in the cooler atmospheric air, and discharging the warmed air from the cooler into the drying room immediately underneath the roof.

4. In the drying art, an economizing process comprising exhausting heated vapour laden air from a drying room through passages in a cooler to the atmosphere, drawing through other passages in the cooler atmospheric air, collecting the condensate, and discharging the warmed air from the cooler into the drying room immediately underneath the roof.

9. In the drying art, wherein paper drying apparatus is used, the method of preventing drip from structures over the drying apparatus, comprising exhausting the heated vapours from the drying apparatus, and directing warm air against the structures, such warm air being heated by recovered latent heat.

22. The combination with a hood adapted to receive the vapour laden air above paper drying machines, of means for exhausting the vapour laden air from the hood, means for abstracting both latent and sensible heat of the vapour laden air and for absorbing the heat energy so abstracted, said means warming fresh air, and means for distributing the fresh warm air where it will absorb free vapour outside the hood.

So far as we are here concerned, the plaintiffs' claim to invention in Briner is therefore, first as a process, and, secondly as a combination of several elements, such as the

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drying rolls, the hoods over the paper machiner, the ducts, fans, economizer, etc. The defendants urge the usual defences of lack of subject matter, anticipation, prior user, and that Briner's apparatus is a mere aggregation of elements, each of which remains unchanged in function and effect.

The substance of Briner's claim to invention is that he was the first to conceive the idea of recovering the latent heat contained in the hot vapour arising from the steam heated rolls or cylinders in a paper making machine, and which had been absorbed by the air to the point of saturation, by condensing the waste hot air while being exhausted through one passage in an economizer and which is accomplished by cooling the same with air of a much lower temperature—even zero temperatures—which is introduced from outside and passed through an adjacent passage in the same economizer. By this process, the latent heat in the form of condensed vapour is released in sufficient quantities to heat automatically the incoming cool air, which, by suitable means, is then circulated throughout the machine room for the purpose of providing fresh warm air to absorb the hot vapour arising from the heated rolls under the hood which it does because it is less humid than it was originally, and this fresh warm air, after having absorbed to the point of saturation the hot vapour arising from the rolls, is exhausted through the economizer and this heats the incoming cool air as already explained. And thus the process goes on. In the specification of his corresponding United States patent, Briner explained that to ensure the success of his system the hot waste vapour had actually to be condensed because the temperature of the exhausted waste hot air was usually too low to be of any commercial value. In the older practice, preheated air of a high temperature, but in limited quantities, was introduced into the machine room, or steam coils were used, to prevent condensation, or " dripping," within the machine room. Briner was proposing to introduce fresh warm air in the manner mentioned, into the machine room, at a lower temperature than what was then the general practice, and because he was aiming to get the heat for warming the incoming cool air from a waste source, he proposed to increase the quantity of the incoming air for the purpose of more effectually

absorbing the vapour; his idea was to get the desired results by using a larger volume of air at a lower temperature, instead of a smaller volume at a higher temperature which was then the usual practice in paper making mills. Having once completely conceived the idea I think it may be said that no great engineering or structural difficulties were in the way in order to make the idea operable; the adoption or application of such well known means as hoods, ducts, fans, economizers, etc., would readily suggest themselves. There is no suggestion that the heating and ventilating system or process described by Briner was ever in use on this continent until he introduced it, and it is now apparently considered as standard equipment in most paper mills. It is claimed however that the same or a similar process was installed by one Ullgren in a paper mill in Orebro, Sweden, in 1918, and that Ullgren had described the same process in a Swedish patent issued to him in 1911; and the major issue developed at the trial was whether or not Ullgren had invented, made known, or used, the process or system in question here together with means of making it operable before Briner.

I think there was subject matter for a patent in a process and combination of elements, such as described by Briner, whoever was the first to invent, publish, or make use of the same. First, in the idea and its application to paper making machinery. I am of the opinion that the apparatus described by Briner, or its equivalent, falls within the definition of a combination patent as laid down by Lord Davey in *Klaber's Patent* (1):

> A proper combination for a patent is the union of two or more integers, every one of which elements may be perfectly old, for the production of one object which is either new, or at any rate is for effecting an old object in a more convenient, cheaper, or more useful way. But the point in a combination patent must always be that the elements of which the combination is composed are combined together so as to produce one result.

The different elements entering into the combination here may have been well known, the theory and principle of the recovery of latent and sensible heat by means of an economizer or heat interchanger may also have been known, but the organization of such an apparatus as Briner describes was in some degree novel, it undoubtedly pos-

(1) (1906) 23 R.P.C. 461 at p. 469.

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sessed utility as its general adoption in paper mills in Canada and the United States shows, it was practical and useful, it effected economies, and it had the merit of simplicity and success; and I think there was invention, in the bringing of all this knowledge together, whoever was the first to do it. While Briner at first encountered difficulties in getting paper mill managers and engineers on this continent to adopt his idea for one reason or another, yet, when once its utility was demonstrated, it was apparently adopted rapidly by paper making concerns in Canada and the United States. Only two prior patents were really relied upon by the defence, a British patent issued to Braithwaite in 1897, and a Swedish patent issued to Ullgren in 1911. The invention claimed in the former patent was for an apparatus, an economizer or heat interchanger, for heating a current of fresh air by means of a warm or hot current of waste or exhaust air or vapour, but there is no suggestion in the patent of the utilization of the latent heat in exhausted air or vapour recovered by condensation. In the case of the patent to Ullgren, which was an arrangement for drying pulp and other material, there is mention of the patent heat of the moisture of the heated air in one chamber being transmitted to the air in another chamber, but there is no mention of the heating of outside fresh air, by condensing the latent heat in the exhausted hot air. Neither patent affords, in my opinion, a disclosure of a process and means such as described by Briner, and there is nothing in either which would enable the hypothetical person to construct or put into successful operation the process which Briner described. I think both of these patents may be discarded as anticipations. It was also urged that Briner is but an aggregation of elements each performing well known ends, but I do not consider there is force in this contention. As was urged by plaintiffs' counsel each element functions in combination with all the others for the purpose of attaining the result, and if any one element was removed from the combination the usefulness of all of them would disappear, whereas in a mere aggregation if any one element is removed the remaining elements would continue to function.

It will perhaps be convenient at this stage to refer to the law which the plaintiffs contend is applicable to the

facts of the case. The plaintiffs are relying chiefly upon certain memoranda made by Briner at Lafayette, Indiana, in January, 1917, and certain verbal disclosures made by Briner to one Carrier, early in January, 1918, all relating to the alleged invention of Briner. The defendants on the other hand rely chiefly, as I have already stated, upon an installation of a heating and ventilating system made by Ullgren in a paper mill constructed at Orebro, Sweden, in 1918, but the principle of which installation, it is said, had been disclosed by Ullgren to the proprietors of this paper mill early in 1918, and of which sketches had been made in June, 1918, and definite plans later on. Mr. Biggar for the plaintiff urged that the case of *Christiani and Neilson* v. *Rice* (1) was a controlling authority in the facts of the case under consideration. In that case the judgment of the Supreme Court of Canada was rendered by Rinfret, J., and he there laid down this principle:

> The holding here, therefore, is that by the date of discovery of the invention is meant the date at which the inventor can prove he first formulated, either in writing or verbally a description which affords the means of making that which is invented. There is no necessity of a disclosure to the public.

He also held that he who first communicates an invention to "others," would be the true and first inventor in the eyes of the patent law of Canada as it then stood. The judgment referred to the case of *Hickton's Patent Syndicate* v. *Patents, etc., Limited* (2). The invention there in question involved a conception by no means obvious, but once it had been conceived it could not be denied that the application was obvious and Swinfen Eady, J., had held the patent invalid on this ground. In the Court of Appeal, which sustained the validity of the patent, Moulton, L.J., discussing this point said:

> The learned Judge says, "an idea may be new and original and very meritorious, but unless there is some invention necessary for putting the idea into practice it is not patentable." With the greatest respect for the learned Judge, that, in my opinion, is quite contrary to the principles of patent law, and would deprive of their reward a very large number of meritorious inventions that have been made. I may say that this dictum is to the best of my knowledge supported by no case, and no case has been quoted to us which would justify it. But let me give an example. Probably the most celebrated patent in the history of our law is that of Bolton and Watt, which had the unique distinction of being renewed for the whole fourteen years. The particular invention there was

(1) (1930) S.C.R. 443

(2) (1909) 26 R.P.C. 339 at p. 347.

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> the condensation of the steam, not in the cylinder itself, but in a separate vessel. That conception occurred to Watt, and it was for that that his patent was granted, and out of that grew the steam engine. Now can it be suggested that it required any invention whatever to carry out that idea when once you had got it? It could be done in a thousand ways and by any competent engineer, but the invention was in the idea, and when he had once got that idea, the carrying out of it was perfectly easy. To say that the conception may be meritorious and may involve invention and may be new and original, and simply because when you have once got the idea it is easy to carry it out, and that that deprives it of the title of being a new invention according to our patent law, is, I think, an extremely dangerous principle and justified neither by reason, nor authority. . . . In my opinion, invention may lie in the idea, . . . and it may lie in the combination of the two; but if there is invention in the idea plus the way of carrying it out, then it is good subject-matter for Letters Patent.

The plaintiffs contend that the facts disclosed in this case bring Briner within the rule laid down in Christiana and Neilson v. Rice (supra).

Coming now to a consideration of the date to be given to Briner's alleged invention, and the evidence applicable thereto. This point is perplexed by reason of the facts which I am about to state. An action between the plaintiffs in this action, and St. Lawrence Mills, Ltd., involving the question of the validity of Briner, was tried in 1925, but the case was settled by the parties before judgment was pronounced by the learned trial Judge. In that action Briner gave evidence as to the date of his invention and he stated it to be much subsequent to the date claimed in this action, which at once creates some confusion. It is now claimed by Briner's assignees, the plaintiffs, that the date of invention which was sought to be established in the former action was, on advice of counsel, that date when it was reduced to some practical shape, when it was first described in writing, or when some drawings were made of it, and that the evidence given in that action was directed to proof of the date of invention on that footing. Briner testified very clearly in that action that his invention was made after June, 1918, and that the first complete formulation of his invention was in May, 1919, when he described the same in writing to his United States patent attorney for the purpose of preparing an application for a patent therefor. In this action oral and documentary evidence was introduced by the plaintiffs to fix the date of invention as of either January, 1917, or January, 1918, and the plaintiffs particularly rely upon certain memoranda made

by Briner in a small note book at Lafayette, U.S.A., early in January, 1917, and verbal communications made by Briner to one Carrier, none of which was disclosed at the trial of the former action. There is no necessity I think for discussing in detail the evidence of Briner in the former action, or his evidence on discovery in that action. That evidence is obviously inconsistent and in conflict with the case which the plaintiffs seek to set up in this action. But Briner explains that his evidence in the former action was tendered, on the theory of law, upon which he was instructed by counsel, that reduction to practise, or some complete and comprehensive formulation of the same in writing was necessary, and that certain evidence introduced in this case was not thought in the former action to be relevant or of substance. I at once say that I have no reason to disbelieve this explanation of Briner. I think he was quite frank and truthful about the whole matter. I have no hesitation in finding that Briner made the Lafayette notes when he said he did, and that they were not manufactured for the purposes of this case. I equally accept the evidence of Briner and Carrier as to the interview said to have taken place between them relative to Briner's heating and ventilating system, the alleged invention, early in January, 1918, and to which I shall refer later. In any event, the question as to when invention is made is always one for the Court upon the facts before it, and it need not be concerned with what was the view held as to that by either the patentee or his counsel in the former action. I must upon the evidence before me, upon the facts and the law, determine what date of invention is to be given to Briner.

I will now narrate the principal facts upon which the plaintiffs rely to bring their case within the rules laid down in the authorities which I have mentioned. Briner, in January, 1917, and prior thereto, was in the employ of Carrier Engineering Corporation, in the United States, a concern having to do with the installation of heating and ventilating systems, particularly in paper mills, and he had for years specialized in that branch of engineering. In January, 1917, Briner, on behalf of his employer proceeded to Lafayette, Indiana, to make an estimate of the cost of a heating and ventilating system for a paper box mill oper-

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ated by the Lafayette Box Board Company, and while there he made an estimate for ventilating that mill, which also included a scheme for the utilization of the waste hot air arising from the drying rolls; and he states that he then designed a heat interchanger or economizer, and made an estimate of the quantity of surface that would be required in the economizer, together with the approximate cost of construction. In fact, however, no installation such as Briner was suggesting was then made at the Lafayette mill. However, Briner then recorded certain data concerning his scheme for the utilization of waste heat in a small book which was put in evidence. The first page of the book on which these notes appear bears the date of January 22, 1917, and with the heading "Interchanger." The notes contain a reference to the temperature of fresh air entering the economizer from outdoors, and the temperature of that fresh air leaving the interchanger. Then there is a notation of the temperature of the exhaust hot air, and he testified that he actually made tests of such temperature at the Lafayette mill and found it to be 110 degrees F., and completely saturated with vapour. Other notations are made as to moist air and dry air. Then a calculation is made of the number of square feet that would be required in an economizer and it is there stated that 17,550 square feet would be required and there follows an estimate of the cost of the same and the observation, "good enough to recover 100 H.P. from 200 H.P. actual heat in exhaust vent at 100 degrees saturated." Importance is attached by the plaintiffs to the use of the word "saturated" and it is suggested that it would have no significance if only sensible heat were in mind; it is claimed that this indicates that it must have been Briner's intention to make use of saturated air in an economizer and that saturated air could not lose any temperature without losing latent heat. Then on another page of the note book appear dimensions of an economizer; it is to be 12 feet by 12 feet in cross section, and about 12 feet high without counting the transformation pieces at the top and bottom, and this it states should be placed vertically. Then Briner again records the fact that the discharge air under the hood is at a temperature of 110 degrees F. when it leaves the exhaust fan, and he enters the humidity of the air at 100 per cent, so that

it could not go down in temperature without losing vapour and giving off latent heat. Several other statements and calculations are recorded in the book, but I do not think it is necessary to mention them. The memoranda contained in the note book, it was argued, indicates that Briner was then concerned with the recovery of latent heat from the vapour laden and saturated air withdrawn from the paper machine room, for the purposes already mentioned. I am satisfied from these notes that Briner had in January, 1917, worked out and understood the theory and principle of the heating and ventilating system that he much later described in the patent in suit, but there is no evidence that there was any disclosure of it to others at that time.

Early in January, 1918, Briner, still in the employ of Carrier Engineering Corporation, approached Mr. Carrier —the head of that corporation—who was by profession a heating and ventilating engineer, with the suggestion of the utilization of waste vapour for the heating and ventilating of the machine room of paper mills by the use of an economizer. Carrier testified that Briner had with him at the time, the notes or memoranda made at Lafayette and the plans of the Lafayette mill, and that he explained to him his idea of the utilization of the moist hot vapour exhausted from the hoods of paper machines by passing the same through an economizer in order to transfer the latent heat therein to the incoming fresh air, as a substitute for the use of live steam for heating the incoming fresh air and which, Briner stated, would prevent condensation in the machine room; Carrier stated that Briner stressed the savings which would thereby be effected. Briner showed Carrier the records he had made of tests showing the temperature and the humidity of air taken from the hood of the machine room at the Lafayette mill. Briner's readings showed, said Carrier, that the hot air before it was discharged varied from 105 to 110 degrees F., and that Briner proposed passing the fresh air from outdoors, it mattered not how low the temperature, through an economizer, transferring the latent heat from the air exhausted to the incoming air which would be delivered automatically into the machine room at somewhere between 80 and 90 degrees F. Carrier testified that he understood clearly the idea or process that Briner then had in mind. He checked Briner's

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various calculations, and while he thought that from an engineering standpoint Briner's idea was feasible still he thought the idea was not practical. Carrier did not think that with warm air at such low temperatures, as 80 to 85 degrees F., condensation in the machine room could be as successfully prevented as with steam heated air blown into the machine room at a temperature of 120 degrees F., which was then the general practice. He was otherwise sceptical of the idea and declined then to adopt the use of Briner's suggestion. Briner's scheme of heating and ventilating paper mills did not at once meet with a favourable reception from engineers or paper mill owners, and it was not until some time after such an installation was made in a paper mill in the State of Pennsylvania that his idea found favour with those interested in paper making mills. The plaintiffs contend that at least the disclosure to Carrier is sufficient to bring them within the rule laid down by Rinfret, J., in the case of *Christiana and Neilson* v. *Rice* (supra). Upon the evidence, I cannot avoid the conclusion that Briner, in January, 1917, conceived the idea or process which he later described in his patent. The Lafayette notes show this very clearly, I think, and really nothing more was to be done. The essence of the invention was in the idea which is expressed in the Lafayette notes. That however may not be sufficient to fix the date of invention as of January, 1917, but I am at least of the opinion, that under the authorities I have mentioned, it must be held that Briner's invention was complete when he communicated to Carrier, early in January, 1918, his scheme or method of heating and ventilating the machine room of paper making mills. Mr. Combe, one of the defendants' expert witnesses, testified that when once the idea of using an economizer for the purposes in question here was submitted to an engineer competent in the art, he would at once understand how to construct and install the system or process described by Briner in his patent. Once the idea was understood it was not difficult to convert the abstract into the concrete.

But it is alleged and pleaded by the defendants that a drying and ventilating system similar to Briner, was in use in a paper mill at Orebro, Sweden, in 1918, and since, and prior to any invention made by Briner. If the evidence of

Ullgren taken under Commission at Stockholm, is to be relied upon as giving a true description of the actual installation made at Orebro in 1918, then, I am unable to see how it is distinguishable from Briner. I think they must be regarded as being practically the same. There was, however, no user of Ullgren till late in 1918, and if I am correct in holding that Briner made his invention in January, 1918, the defence of prior user at Orebro fails. But I do not care to dispose of the evidence of Ullgren merely as it affects the question of prior user alone, but rather whether, prior to, or in January, 1918, Briner's process was known to Ullgren. In December of 1917, a paper mill at Orebro was destroyed by fire, and in January, 1918, Ullgren an engineer, who was in the employ of a concern manufacturing paper making machinery, was consulted by the proprietors of the destroyed mill regarding a drying and ventilating system for the machine room of a proposed new paper mill. Ullgren states that he made his first sketches of the drying and ventilating system which he installed at Orebro in May, 1918, the final drawings in September following, and that the mill was completed and in operation in December, 1918. This installation made at Orebro by Ullgren was the first of that type ever made by him. Ullgren testified that he had in 1916 and in 1917 spoken to others of his heating and ventilating system, that he had previously offered it for sale to others, that he had explained his system to the Orebro Mill proprietors when they first consulted him. He had never described his system in any technical journal or in writing in any form, nor did he ever make any sketch or drawing of it until 1918 as mentioned; at least there is no evidence of anything to the contrary. No person to whom he had communicated any explanation of his system was called to give evidence, and no one representing the owners of the Orebro mill was called to testify what disclosure Ullgren made in January, 1918, to that concern. There is no specific evidence as to when Ullgren first conceived of his heating and ventilating system for paper mills; he did say however that his patent of 1911 disclosed it, which, I think, is not at all maintainable. If the idea Ullgren had in mind in January of 1918, in connection with the Orebro installation, was that disclosed in his patent of 1911, then I say, he could not then have had in mind a system for

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heating and ventilating paper mills, similar to Briner, or similar to that which he describes as having been installed at Orebro. That described in the patent of 1911, and the Orebro installation, are different things. Now, I do not think that invention, or prior knowledge, in patent cases, can be established in this way, or upon evidence of this character. The testimony of Bergling who assisted Ullgren in the sketches and drawings of the Orebro installation, does not add weight to the evidence upon this aspect of the case. Except as to the description of the Orebro installation, the Stockholm evidence is inconclusive and unsatisfactory, which I can understand, because the examination was intended primarily to establish the fact of prior user of Briner in the Orebro mill, on the assumption that Briner's invention was much subsequent to January, 1918.

Upon the evidence before me, and under the authorities mentioned as to what was the law in Canada at the time material here, I feel justified in holding that Briner made his invention in January, 1918. If Ullgren independently invented the same thing at an earlier date, or had prior knowledge of Briner, or the Orebro installation, then there is not sufficient evidence to hold that the date of such invention, knowledge, or user, was prior to or in January, 1918. I do not think Briner should be deprived of his patent of invention upon the evidence before me, and therefore I hold that the claims of the patent here relied upon are valid.

If I am correct in holding that the patent to Briner is valid, then I think there can be no question but that the installation made at Cornwall by the defendants constitutes infringement. It is, in my opinion, practically the same thing as Briner. I am also of the opinion upon the facts disclosed, that Paper Machinery Ltd. was properly joined as a defendant in the action and I do not think that this point calls for any extended discussion.

The plaintiffs are therefore entitled to the relief claimed and will have their costs of the action.

Judgment accordingly.