1940
May 14-16.
Dec. 10.

BETWEEN:

KINGSVILLE GAS APPLIANCES, LIMITED, ELMIRE BECKETT AND FREDERICK K. JASPERSON } PLAINTIFFS;

AND

NEW IDEA FURNACES, LIMITED, AND NORMAN ROBINSON ..... } DEFENDANTS.

Patent—Infringement action—Heating apparatus for curing of tobacco—Prior user—Anticipation—No infringement—Alleged infringing device substantially the same as a patented device known in the art prior to application for patent in suit.

The action is for infringement of Canadian Patent No. 381,441, granted to the plaintiffs Jasperson and Beckett; the plaintiff Kingsville Gas Appliances, Limited, is the exclusive licensee in Canada of Jasperson and Beckett. The invention claimed is said to relate to a "Method of and Apparatus for Curing Tobacco," and consists of a heating structure. The Court found that the alleged infringing apparatus is substantially the same as an apparatus known as the Smith burner which had been in use for some time prior to the application of Jasperson and Beckett for the patent in suit.

Held: That if an invention be nothing more than a particular means to attain a given result which is well known, all that can be claimed as an invention is the particular means described.

2. That since there is no distinction, in the patent sense, between the Smith burner and the defendants' apparatus, the defendants' apparatus cannot be said to infringe plaintiffs' patent.

ACTION by plaintiffs herein to have it declared that Canadian Patent No. 381,441 is valid and has been infringed by defendants.

The action was tried before the Honourable Mr. Justice Maclean, President of the Court, at Toronto.

J. H. Rodd, K.C. and *R. S. Rodd, K.C.* for plaintiffs.

L. H. Carreau for defendants.

The facts and questions of law raised are stated in the reasons for judgment.

THE PRESIDENT, now (December 10, 1940) delivered the following judgment:

This action is one for the infringement of a patent, No. 381,441, granted in May, 1939, to Frederick K. Jasperson and Elmire Beckett, assignees of William A. Beckett, the inventor, who applied for the patent of inven-

tion on March 1, 1938. It will be convenient to refer to the patentees as "Beckett." The invention is said to relate to a "Method of and Apparatus for Curing Tobacco." The first named plaintiff is the exclusive licensee in Canada of Beckett. It is alleged by the plaintiffs that the first-named defendant made and the other defendant used the patented invention in question, in the curing of tobacco, at a place or places in the tobacco growing counties of Western Ontario. The usual defences are pleaded by the defendants.

Generally, tobacco is cured in buildings, frequently called "kilns" and which term I shall likely find convenient to follow. Kilns are usually about 24 feet long, 18 feet wide, and about 18 feet high to the plate within a pitched roof, the kiln being ventilated from below and above, and the ground is usually the floor of the kiln. The usual practice is to tie together the ends of two stems of tobacco leaves and place them straddle of a stick, usually a lath, which is supported by cross beams in the kiln, about 1,000 to 1,200 of these sticks constituting one curing operation and producing about 1,200 pounds of tobacco.

There are two methods of curing tobacco, and the first to be mentioned is the air curing method. In the air curing method the kiln is left open so that the atmosphere cures the tobacco slowly. This method, I understand, is adopted with the coarser tobaccos, the Burley and Black, but in certain weather conditions heat is required to assist in this method. The other method is known as "flue curing." The name comes from the apparatus once generally used to cure tobacco. The old plan was to build a furnace at one end of the kiln, fed by fuel from the outside, with flues or pipes, somewhat similar to stove pipes, running along the bottom of the kiln for the purpose of distributing the heated air throughout the kiln and conducting off the smoke. The air, drawn into the flues by the heat of the furnace fire, passed through the flues and the radiated heat cured the tobacco, and it went out through a chimney into the outside atmosphere.

There are three distinct stages in the curing of tobacco, practised for many years, and well known in the art. First, there is what is called the yellowing stage, which means the bringing of the green tobacco leaf to a lemon-yellow colour, and this stage requires from 24 to 48 hours,

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in a closed and practically air-tight kiln. The moisture must be retained in the leaf to produce the desired colour, the temperature of the heated kiln, as the yellowing stage proceeds, being about ten degrees above that of the outside air. In very dry weather it becomes necessary to throw water on the floor of the kiln, or to introduce it otherwise, as there must be a certain amount of moisture in the air of the kiln at this stage. The second stage is called the fixing of the colour. When the yellowing process proceeds to a certain point the colouring must not be further increased, that is, it must be fixed, and for this purpose the temperature is made to rise gradually until it reaches 145 degrees F.; this stage requires about 15 hours, during which time the leaf and the web lose their moisture, some slight ventilation being introduced to permit the moisture coming from the leaf to pass out into the air through the top of the kiln. The third stage involves the drying of the mid-rib or stem, and as this requires intensive heat the temperature is raised to 180 degrees F. and great care must be exercised to prevent the tobacco being scorched which would lower its grade and price. The leaf of the tobacco, after being subjected to the intense heat of 180 degrees F., or so, is sometimes left very crisp, and under the old practice the doors and ventilators of the kiln were thrown open so that the tobacco leaf might reabsorb a certain amount of moisture so as to make it pliable and prevent its breaking up. This is called bringing the tobacco into the case. The chief difficulty in the flue-curing system—the introduction of air from outside through the flues—was lack of uniformity in curing. The heat rising from the flues nearest the furnace would dry the tobacco above it faster than it would the tobacco at the other end of the kiln.

The patentee, in his Specification, states that the objects of his invention are to provide an improved method of curing tobacco whereby a more uniform curing, without scorching or undercuring, may be effected in less time and at less cost than heretofore, and to provide an improved type of stove or heating structure for the accomplishment of this curing. The patentee then proceeds to describe in general terms his improved method and apparatus, and he states:

My improved process and apparatus comprises the disposition of a plurality of stoves or heating structures at spaced points within the house on the floor of the house. These stoves may be heated from a common source of fuel. Each stove draws air for combustion of its fuel from within the interior of the house, and in the form here shown discharges directly into the interior of the house. The atmospheric air which enters the house from the outside is drawn rapidly down into the stoves and heated and discharged therefrom with the products of combustion.

Functioning in this manner each stove creates a strong draft drawing air in substantial quantity through the stove and discharging the same back into the house. The entire volume of air within the house is therefore caused to pass through the stove within a relatively short time and the interior of the house is heated uniformly throughout and a uniform curing of the tobacco is effected. Currents of air are therefore set up within the curing house. The atmospheric air which enters the house through cracks or ventilation openings does not drift at random throughout the house chilling the tobacco and interfering with the uniformity of the curing but such air is rapidly drawn down through the stoves and discharged therefrom into the house so that the curing is kept at a substantially uniform temperature throughout and the air is kept moving therethrough.

If it is desired that moisture be added to the warm air being circulated through the tobacco, such addition of moisture is provided for in the stove here shown. Such moisture is added to the air being passed through the stove in the manner hereinafter described.

A meritorious feature of my stove is that air is drawn into the fuel tube to support combustion in an upright burner disposed within the surrounding enclosure of the stove and a large quantity of air is drawn into such enclosure about the burner and passes over the burner and is heated thereby and is thereafter mixed within the enclosure with the products of combustion discharged directly from the burner into the enclosure. Such heated air with mixed products of combustion is then discharged into the curing house. The burner is of such a character and the fuel used is such that the products of combustion are gases substantially free from carbon or soot and do not injure the tobacco during the curing.

The burner is so constructed that fuel mixed with primary air is discharged through a plurality of jets upon opposite sides of a space which is constantly being fed with secondary air in a greater amount. Specifically the secondary air passes through two air pipes arranged on opposite sides of the primary air and fuel pipe and these secondary air pipes discharge into an upwardly facing trough or channel. The fuel or primary air which forms the combustion is discharged from jets arranged along the upper margin of the side walls of this trough.

The heating structure of Beckett may be briefly described as follows. First, there is a cast iron rectangular box, referred to by Beckett as a "casing," about fifteen inches high, seven inches wide, and twelve inches in depth, standing on a base supported upon blocks, the casing being cut away at the bottom on each side so as to provide large openings through which the air may enter the casing. The casing is provided on each side near the top with air discharge pipes, similar to stove pipes; these

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four pipes extend laterally from the sides of the casing, terminating in a T shape end, their purpose being to diffuse within the kiln the air which is heated by passing upwards through and around the flame of a gas burner located inside the casing. The casing is also provided with a top portion which is in the form of a pan with a central opening, and this pan may be filled with water if it is desired to add moisture to the heated air passing out from the casing. This pan is in turn covered by a top closure in the shape of an inverted pan, resting within the pan which lies over the opening of the top of the casing. That describes generally the principal features of Beckett's apparatus.

The patented apparatus is, of course, described in much greater detail in the Specification, and I perhaps should describe it a little more fully, particularly the burner elements, and that will sufficiently reveal the mode of operation of the apparatus. The complete apparatus itself is called a "stove" in the Specification and to that designation I shall adhere. The invention provides for a plurality of stoves arranged at spaced points on the floor of the kiln. The casing, the exterior walls of the stove, houses an upright burner structure supported on a base, and embraces two burner units, a large unit and a smaller one. The small burner is merely supplemental to the other and is used to give a low heat when circumstances so require. The Specification describes the construction and arrangement of the burners in great detail, but I think I may describe the same with sufficient accuracy for our purposes here in comparatively short terms. It is to be kept in mind that here the burners are designed and constructed having in mind the use of gas as a fuel, and if oil or other fuel were to be used a burner arrangement adapted for the combustion of such other fuel would have to be provided. The large burner unit comprises an upright fuel and primary air pipe, the gas being fed to the lower end of that pipe from a main gas line, the flow of gas being controlled by a valve, and this regulates the volume of the gas flame. The lower end of the upright fuel pipe is open to receive air which passes upwardly with the gas, and this air Beckett refers to as "primary air." The upright fuel and primary air pipe, at or near the top and on two sides, supports two plates, semi-circular in

shape, and on the inside of each of those two plates are two other plates of the same shape, the two inner plates are apparently structurally united towards the bottom and at or near their centres by a semi-circular element or channel, and this channel forms an enclosure over the top of the fuel pipe. The outer and inner plates are united by screws, and between each of the two series of outer and inner plates there is a narrow space wherein the gas and air will flow from the upright fuel pipe. The inner plates adjacent the outer plates are provided with a series of corrugations which so engage the outer plate as to form between the outer and inner plates a series of ducts or jets for the discharge of the mixture of air and gas which flows upwardly between these two plates, and the gas emerging through these ducts or jets when lighted provides the flames which heat the air. The gas flames, I understand, are directed laterally across the space between the tops of the two inner plates. Between the lower ends of the two inner plates where they are united and the sides of the semi-circular channel which join the inner plates together at their centres, there are what is called "secondary" air pipes, openings through which air may flow upwardly into the space between the two inner plates. These secondary air passages are intended, it is said, to augment the supply of primary air, to be heated by the gas flames. The term secondary air is, I think, employed to distinguish between the air which reaches the burners through the bottom of the fuel pipe along with the gas, and any other air drawn from within the kiln and reaching the flame of the burners, between and around the inner plates. The small burner is of a similar construction except that the secondary air pipes are omitted and the air is drawn in entirely through the primary air pipe; and the channel between the inner plates is also omitted and these two plates come together, or are made as one, the air being fed throughout a single row of ducts on each side. As I have already stated this small burner is merely supplemental to the large burner, and may be used to provide a low heat. The small burner is supplied with gas independently of the larger burner through a separate valve controlled pipe.

The plaintiff relies on all the claims of the patent in suit but it will suffice to mention the following:

1. That process of curing tobacco under relatively high temperatures in a substantially closed tobacco curing house wherein the tobacco is

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suspended in the upper levels thereof which comprises arranging a plurality of air heating stoves at spaced intervals on the floor of the tobacco house, taking air from within the house and causing more than is sufficient for combustion purposes to enter each stove at a level adjacent to the floor and to pass upwardly through the stoves causing the air to be heated to a relatively high temperature and to discharge from the stoves directly back into the house at a higher level therein but below the level of the tobacco suspended in the house.

2. That method of curing tobacco as defined in claim 1 wherein the additional air drawn from the interior of the house into the stoves and mixed within the stoves with the products of combustion therein exceeds by many times the amount of air drawn into the stoves and necessary to support combustion.

4. That method of curing and drying tobacco under relatively high heat in a tobacco house in which tobacco leaves are hung in the upper levels thereof which comprises substantially closing the house so that very little or no air enters the house or escapes therefrom, taking air from the inside the house and causing the same to enter the lower ends of a plurality of stove units arranged on the floor of the house and be heated therein and discharge from the upper ends thereof at a level spaced from the floor but below the hung tobacco leaves, the air thus passing through each stove unit exceeding by many times the amount of air necessary to support combustion and mixing with the products of combination so that upon discharge from the stoves the air mixture has a relatively high temperature and creates a circulatory action in the atmosphere of the house.

5. That method of curing tobacco in a tobacco curing house in which tobacco leaves are hung in the upper levels thereof which comprises arranging a plurality of stove units on the floor of the house in spaced relationship to one another, substantially closing the house so that only regulated small amounts of air are admitted thereto and discharged therefrom, causing the air from inside the house to enter the stove units adjacent to the floor level and rise therein and become heated therein and then discharge from all the stove units on substantially the same level in the house spaced from the floor but below the hung tobacco leaves, the continuous upward passage of the air through the stove units and the heating thereof creating a circulation of air within the house continuously repassing air already heated in preceding passages through the stove units.

10. In a house for curing tobacco under relatively high heat provided with supports in the upper portion thereof for tobacco leaves, a plurality of stoves arranged on the floor at spaced intervals, each of said stoves comprising a casing provided with a plurality of air openings adjacent to the bottom thereof communicating with the atmosphere within the house to draw air therefrom into the interior of the casing and a plurality of air discharge openings adjacent to the top thereof communicating with the interior of the house to discharge heated air therethrough, and a burner within said casing directing its flames of combustion upwardly within the casing thereby inducing air to enter the opening in the bottom of the casing and flow therethrough and out of the discharge openings at the top.

13. In a tobacco curing house provided with supports for tobacco, a plurality of stoves arranged at spaced intervals within said house, each of said stoves comprising, in combination, a casing having an air inlet opening adjacent to the bottom thereof communicating with the atmosphere within the house to draw air therefrom into the interior of the casing and an air discharge opening adjacent to the top thereof communi-

cating with the interior of the house to discharge heated air therethrough, a gas burner in said casing arranged to direct the ignited gaseous fuel issuing therefrom toward the top of the stove and thereby induce air to enter the stove through the bottom opening from the interior of the house, said top and bottom openings in the casing also permitting a substantial quantity of air in excess of combustion requirements of the burner to pass therethrough so that when the burner is in operation a large quantity of air in excess of combustion requirements is caused to flow through the stove from the bottom opening to the top opening and be heated by the burner in its passage through the casing prior to its discharge therefrom.

19. In a tobacco curing and drying house, a plurality of stoves arranged therein each comprising, in combination, a casing opened adjacent its opposite ends and communicating through such openings with the atmosphere in the interior of the house, a burner of relatively large fuel capacity and a burner of relatively small capacity arranged in said casing for discharging the ignited fuel issuing therefrom toward one opened end of the casing so that air is induced to enter through the other opened end of the casing and be heated by the ignited fuel issuing from either one of the burners, said air thus induced to enter the casing mixing with the products of combustion of the burners and discharging in such mixed state from the end of the casing opposite to that which it entered, the burner of small fuel capacity adapted to be used for producing a low heat particularly adaptable to the curing of tobacco leaves and the burner of large capacity adapted to be used for producing a high heat particularly adaptable for the drying of tobacco leaves.

The features of Beckett's method of curing tobacco, and the apparatus for accomplishing the same, which were particularly accentuated in support of the validity of the patented invention might be mentioned. They are: (1) the disposition of a plurality of stoves at spaced points on the floor of the kiln; (2) the improved combustion obtained by mixing the air and gas on their way to the burner; (3) the construction and arrangement of the burner surrounded by the casing in such a way that a large volume of air is pulled in at the bottom, the burner acting as a pump to create a forced circulation of the air within the kiln, thus effecting a saving of time and money in the curing of tobacco; (4) the provision of the four pipes at the top of the stove, extending laterally, through which the heated air is forced to escape, thus permitting it to rise and be diffused over a wider zone than if it were permitted to rise directly upwards, and which, it is said, provides a uniformity of temperature throughout the kiln, thus effecting a more uniform curing of the tobacco; (5) the provision of two burners to provide a high and a low temperature; and (6) the provision of secondary air conduits or pipes through which air may enter into the

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space between the two rows of gas jets, thus, it is said, providing a more lively flame. That, I think, describes the principal features of Beckett's apparatus put forward by the plaintiffs to sustain the claim to invention, and to distinguish it from heating devices heretofore used or disclosed and intended for the same purpose, and which is said to be infringed by the heating structure of the defendants.

I may now refer to the defendants' heating structure, which is alleged to infringe Beckett. This is a plain and simple affair, of cheap construction, and may be described in very brief terms. The casing is circular in form and of ordinary sheet metal, with supporting feet resting on the ground or floor of the kiln, or on some suitable base. The bottom of the casing, which is elevated above the floor, has four or five openings, extending outwardly from the centre, sufficiently large to permit the entrance of any quantity of air necessary to cause combustion, but otherwise the bottom is closed. Inside the casing, and just above the openings in the bottom, is a gas burner, having a series of jets, into which by appropriate means, is fed the gas fuel. The burner itself is of a well known type of gas burner, the Barber Burner, available on the market to anyone. Near the top of the casing are about nine circular openings through which the air heated by passing through and around the flame of the burner may escape, below the tobacco, and out into the kiln. It was obvious that these apertures had to be provided to permit the escape of the heated air from the casing. Above the top of the casing is an inverted canopy, structurally united to the casing so as to close the opening at the top of the casing, its edges projecting considerably beyond the sides of the casing, for the purpose of preventing the heated air going straight up from the casing and causing it to flow laterally through the apertures just mentioned. In the centre of the inverted canopy is an opening provided with a cover. In the defendants' structure we have therefore a circular casing with openings in the bottom through which air is drawn upwards through and around the flame of the oil burner, with outlets above the flame and towards the top of the casing to permit the heated air to escape laterally out into the kiln, and with an inverted canopy superimposed on the top of the casing which prevents the

heated air rising directly upwards and causing it to flow through the openings at the top of the casing, and outwards beyond the sides of the casing. It is intended that a plurality of the defendants' heating apparatus be used, depending on the size of the kiln. That, I think, sufficiently describes the offending structure.

Certain prior users of Beckett were pleaded and referred to in evidence, and to one of them I may refer. One alleged prior user that was particularly stressed was an air heating device known as the Smith heater, and it was indubitably established by the evidence that this heater was used quite extensively, as early as 1934, and in years following, for curing tobacco in certain tobacco growing areas in the United States, and so far as I am aware it is still in use there. This use of Smith in the United States was anterior to any date claimed for the invention of Beckett. A Smith heating apparatus was installed in a kiln on some tobacco farm in Ontario, in 1936, for demonstration purposes, but it is not clear whether or not its use was there continued. This installation comprised forty units of Smith. One of the Smith heaters was produced at the trial and made an exhibit. In principle, its form of construction is substantially the same as that of the defendants. The opening at the bottom is somewhat different in form to that of the defendants, but that is of no consequence. Within the casing is fitted a well known oil burner placed on mountings, the oil being drawn up on a wick from a well which is fed from an outside storage tank by gravity, and there is an adjustment on the feed line whereby the flame may be raised or lowered. On the inner side of the burner is a series of shells perforated with small holes to give a circulation of air in order to intensify the heat of the burner. The top of the casing is wholly open but attached thereto, some inches above its top, is a canopy, its edges extending a little beyond the sides of the casing, and this canopy stops the direct upward flow of the air heated by the burner, causing it then to flow first downwards and thence outwards beyond the casing to be distributed throughout the kiln. This canopy is not inverted and does not extend so far beyond the sides of the casing as in the case of the defendants' apparatus; the Smith casing is not provided with apertures around the top as in the defendants' casing, this being unnecessary

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because there is an open space between the top of the casing and the canopy, and the heated air proceeds upwards until it strikes the canopy when it is deflected downwards and outwards into the kiln. In kilns in which the Smith heater was used in the United States there would be many units employed, as many as forty units, I think, in one kiln that was referred to in the evidence. The casing and canopy of a heating apparatus shown in Exhibit C, a publication issued in 1935, by the Tobacco Division of the Canadian Department of Agriculture is quite similar to Smith, except that it is charcoal that is to be used as a fuel and consequently the burner means would be different from that of a gas or oil burner. In that publication this charcoal burner is recommended for use "if the weather continues cold and damp and the tobacco is not curing well, the temperature should be raised to about 90° by means of charcoal burners, oil burners, or open charcoal fires to reduce the relative humidity . . . . until conditions improve." One might take the structure shown in this exhibit, and install therein a gas burner similar to that found in the infringing structure, as is in fact suggested in the publication mentioned, and the result would be, in principle, a duplication of the defendants' heater. Other prior users were referred to by the defendants, and prior publications also, but it is not necessary to discuss them after a reference to Smith.

Now, if the infringing apparatus of the defendants is substantially the same as Smith, and the latter were in use prior to Beckett, it must then follow that the apparatus of the defendants cannot be held to infringe Beckett. When the plaintiffs contend that the defendants' apparatus infringes Beckett they in effect say that had the defendants devised their apparatus prior to Beckett they would have made an invention and would have been entitled to a patent from the Patent Office, upon application being made therefor. But, Smith having been earlier known and in use, it would seem hardly possible that the defendants would have been granted a patent for their apparatus, if the Patent Office were made aware of the existence and prior user of Smith, and probably such an application would not have been favourably considered even if Smith had never appeared in use. If that be so, then the defendants' apparatus could not be held to

infringe any air heating apparatus, invented in 1937 or 1938, even if it possessed subject-matter for a patent. It is obvious that any air heating structure of the defendants' type, for the curing of tobacco, must comprise a casing, a burner, and means for the admission and discharge of air. These general features were old, and it was well known that if a fire or flame were introduced inside the casing, as in the case of a chimney, it would create a draft of air in that direction, and thus create a circulation of air within the kiln. It was obvious that a plurality of heating units was desirable in order to secure a wide and uniform distribution of heated air throughout a tobacco curing building or kiln, and this had actually been practised before either Beckett or the defendants' structure. The defendants' apparatus comprised and exemplified these general features but surely that would not of itself constitute invention. In the defendants' combination of known elements, to achieve a result that was well known, there could hardly be invention in view of Smith, the common knowledge, and all that had been disclosed in the prior art. In that state of the art the field of invention was inevitably narrow, that is, in respect of heaters of the general character here in question. If an invention be nothing more than a particular means to attain a given result which is perfectly well known, then all that can be claimed as invention is the particular means described, and, I think, that, at the most, was all that was open to Beckett. And there are structural distinctions between Beckett and defendants' apparatus, but whether the distinctions are important is perhaps debatable. Beckett may be more durable, more efficient, more convenient, and less expensive to operate than the defendants' heater, or that of Smith, or any other similar structure, but while these improvements or advantages may be evidence of subject-matter in Beckett's particular construction they are not necessarily important or relevant factors in an action for alleged infringement of Beckett by the making and using of the defendants' apparatus. The issue of infringement here may, I think, be determined by reference to Smith alone. If there is no distinction between Smith and the defendants' apparatus, in the patent sense, and I do not think there is, then the latter cannot infringe Beckett.

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That, I think, affords an effective answer to the claim of infringement here. I do not think it can be said that the defendants' heating structure infringes Beckett and that is the conclusion which I have reached, and therefore on that ground alone the plaintiffs must fail. Having reached the conclusion that here there is no infringement it is not necessary to pronounce upon the question of the validity of Beckett. Whatever may be said in support of invention for Beckett, I see no ground for holding that it is infringed by the defendants' heating apparatus.

The action is therefore dismissed and costs will follow the event.

Judgment accordingly.