CASES.

DETERMINED BY THE

SUPREME COURT OF CANADA ON APPEAL

FROM

DOMINION AND PROVINCIAL COURTS

DANIEL WANDSCHEER, GERRIT WANDSCHEER, JACOB WANDSCHEER, BEN WANDSCHEER, WALTER E. KLAUER, CHARLES L. OSTRANDER AND KLAUER MANUFACTURING COMPANY (PLAINTIFFS)

1947 *Feb. 26, 27, 28 Mar. 3 Dec. 22

ARTE

SICARD LIMITED (DEFENDANT)....

RESPONDENT.

APPELLANTS.

ON APPEAL FROM THE EXCHEQUER COURT OF CANADA

Patent—Invention—Novelty—Subject-matter—Utility—Combination to be subject-matter of valid patent must produce useful and operative contrivance—Possess novelty—Be susceptible of fulfilling its purpose, and must enable a person skilled in the art to carry it out.

The Plaintiffs brought action against the Defendant for infringement of Wandscheer Letters Patent No. 309,848 and Curtis Letters Patent No. 253,159, both of which related to snow removers.

In the Exchequer Court [1946] Ex. C.R. 112, Angers J., held that as to the Wandscheer patent, there had been anticipation, and that the claims alleged to have been infringed only required the use of ordinary mechanical skill and did not involve that amount of inventive ingenuity which should be rewarded by a patent; that as to the Curtis patent, its first object offered no novelty but was anticipated by prior patents, and its second object was inoperative and useless and the patent consequently invalid.

Held: That as to the Wandscheer patent, the judgment of the learned trial judge be affirmed and the appeal dismissed.

Held: Per the Chief Justice, Taschereau and Rand JJ. (Kellock and Estey JJ. dissenting) that as to the Curtis patent, the appeal be dismissed.

^{*}Present: Rinfret C.J. and Taschereau, Rand, Kellock and Estey JJ. 3016—1

WANDSCHEER
ET AL
v.
SICARD LTD.

Per the Chief Justice and Taschereau J.: the Curtis rotating ejector had no usefulness and was not workable. It could not serve the purpose mentioned in the patent. The device patented by the respondent is different and is operative.

- A combination may be the subject-matter of a valid patent, even if it is merely the juxtaposition of known elements, but this juxtaposition must produce a useful and operative contrivance which has the indispensable character of novelty. The alleged invention must be susceptible of fulfilling its purpose, and it must enable a person skilled in the art to carry it out.
- Per Rand J.: On the evidence a prima facie case against utility in rotary discharge by reason of insufficiency in specification has, I think, been made out, but I am unable to say that the onus thus arising has been met by the appellants. On what is before us, I must hold that at best what Curtis presented to the public was both the idea and the task of working it out.
- Per Kellock and Estey JJ. (dissenting): The Curtis patent had not been anticipated by prior patents. The combination to be found in the Curtis patent was a new conception and the element of inventive ingenuity required by the authorities was present in the combination claimed by the patent. The invention was an advance on anything in existence at the time, and the specification, which should receive a benevolent construction, was sufficient. While the utility of the equipment was limited, it would appear from the evidence, that whatever it lacked was a matter of trial involving no invention, which could be worked out by any skilful mechanic, and that the respondent had infringed upon the patent.

APPEAL by the plaintiffs from the judgment of Angers J. of the Exchequer Court of Canada (1), holding that as to the Wandscheer patent there had been anticipation; and that as to the Curtis patent, its first object offered no novelty and was anticipated; and its second object was inoperative and useless.

During the hearing, counsel for the respondent was told that the Wandscheer patent was not an invention, lacked subject-matter, and that it was not necessary to hear him on that point.

The material facts of the case are sufficiently stated in the judgment now reported.

- E. G. Gowling K.C. and J. C. Osborne for the appellants.
- H. Gérin-Lajoie K.C. for the respondent.
 - (1) 1946 Ex. C.R. 112.

The judgment of The Chief Justice and of Taschereau J. was delivered by

WANDSCHEER
ET AL
v.
SICARD LTD.

Taschereau J.:—Two patents are involved in the present case, the Wandscheer and the Curtis patents. Both relate to snow removers. The first is an alleged invention consisting in mounting a cutter bar on each side of the casing which houses the spiral conveyor of a snow plow, in such a way that it extends out in front, thus facilitating the cutting of snow banks which reach above the top of the casing. The second is a type of plow which involves the use of one or more spiral snow conveyors which bite into the snow, and which are disposed laterally across the front of a tractor. The rotation of these spiral conveyors, which are mounted in semi-cylindrical casings, moves the snow along towards a fan which ejects it from the machine, in any direction through an outlet pipe.

The plaintiffs alleged in their statement of claim that both patents have been infringed by the respondent, but their action was dismissed. The learned trial judge came to the conclusion that the Wandscheer patent lacked subject-matter, was anticipated by prior patents and the prior use of cutter bars. As to the Curtis patent, he held that the invention was not novel, was anticipated by prior art, was inoperative and useless, and that the combination it covered was a juxtaposition of old and well-known elements lacking of subject-matter.

It is useless to elaborate on the Wandscheer patent. It is, I believe, as the trial judge said, invalid, because it reveals a total lack of inventive ingenuity. This alleged invention is a most simple one, consisting in the installation on the sides of the casing, of two bars for the purpose of cutting the snow. They are described as extending upwardly above the snow removing mechanism, and to be mounted forwardly of the vehicle, so that they may cut into the snow banks exceeding the height of the casing, and enable the snow to fall down ahead of the spirals, and to be disposed of by the snow removing mechanism.

During the hearing, counsel for the respondent was told that this elementary apparatus was not an invention, lacked subject-matter, and that it was not necessary to hear him on that point. I am still of that opinion, and for WANDSCHEER that reason, I believe the Wandscheer patent to be invalid.

Appellants rely only upon Claim 1 of the Curtis patent. Signal Ltd. It covers a combination in a snow plow of the class Taschereau J. described, comprising:

- 1. A horizontally arranged semi-cylindrical casing.
- 2. A fan casing connected therewith.
- 3. A spiral conveyor as described above which is mounted in the semi-cylindrical easing.
 - 4. A fan mounted in the fan casing.
 - 5. Means for actuating the spiral conveyor and the fan.
- 6. An adjustable conduit connected with the fan casing which can be rotated to throw the snow in different directions.

This claim reads as follows:

1. A snow plow of the class described comprising a horizontally arranged semi-cylindrical casing, a fan casing connected therewith, a conveyor in the first mentioned casing, a fan in the fan casing, means for actuating the conveyor and fan, an adjustable conduit connected with the fan casing for rotary movement.

Of course a combination may be the subject-matter of a valid patent, even if it is merely the juxtaposition of known elements. But, this juxtaposition must produce a useful and operative contrivance which has the indispensable character of novelty.

It is not sufficient, in order to obtain a valid patent, as Viscount Cave said in *Permutit Co.* v. *Borrowman*, (1) for a man to say that an idea floated through his brain; he must at least have reduced it to a definite and practical shape before he can be said to have invented a process.

The alleged invention must be susceptible of fulfilling its purpose, and it must enable a person skilled in the art to carry it out.

I agree with the proposition that the rotating ejector pipe is the main feature of the Curtis patent, and that if the Court is not convinced of its novelty, of its operativeness and utility, the appeal must fail. And if it is impossible to find in the combination of old elements as the spirals, the fan casing, the fan itself for ejecting the snow, a new rotating workable ejector pipe which will direct the snow in different directions, then the invention is not patentable, and must be held void.

ET AL 2).

The informations given by Curtis in his specifications, as to the operativeness of his rotating ejector are more WANDSCHEER than meagre. He has merely disclosed the bare idea of a chimney throwing the snow in various directions. We find Sicard Ltd. no explanation as to how it will function and it is, as it Taschereau J. has been said before "obviously suggestive of experimental or research work". As McLean J. said in Christiani v. Rice (1) "The patentee is not to tell a man to make an experiment, but to tell him how to do the thing."

The reason for this absence of information in the specifications is that the rotating ejector had no usefulness and was not workable. It could not do what it was intended to do, and could not serve the purposes mentioned in the patent. Curtis admits himself that it was not successful, and that he did not like the operation of it. This type of chimney was never used by Curtis or by anyone else, and other means had to be devised after considerable work and ingenuity, to secure a practical outlet for the snow projected by the fan. This is also the opinion of Mr. Arthur Sicard, and of Mr. Arthur Elie Choquette, who was heard as an expert witness. The latter says:

D. Maintenant, ce que je désire savoir de vous, comme expert, quelle est votre opinion relativement à l'opération d'un appareil dessiné et construit de cette manière? Je désire savoir si cette construction, d'après vous, est opérante ou non, et pourquoi? R. Ce conduit, cette cheminée ou conduit de 10, référence des chiffres 10-12-11, ne peut fonctionner pour la neige. La neige est un corps fondant par pression ou friction, et ne peut être lancée qu'en une certaine ligne parabolique dont la trajectoire est comme une balle, elle ne peut suivre un conduit angulaire ou coudé.

A device had to be found, and the respondent had one patented. It is different from the contrivance found in Curtis' patent, and is operative.

In his patent, Curtis made the same mistake, with respect to the chimney, as all other early workers, by providing his machine with a chimney of the nature of a "stove pipe" with a pronounced elbow-joint. Sicard himself made that mistake in the early years and secured a patent in 1925 in which the same type of unworkable pipe is shown. In Sicard's second patent, the upper part of the chimney. due to a special mechanism, rotates on a vertical axis, thus enabling the snow to be delivered almost at any point within the circle. I do not believe that Curtis ever dis-Wandscheer closed a patentable chimney of that type. Sicard's chimney is a comparatively recent development, achieved only in Sicard Ltd. 1936 after years of work and experimentation.

Taschereau J. For these reasons, I think that the action fails, and that the appeal should be dismissed with costs.

RAND J.:—Although several modes of removing snow are described in the specification, the only one dealt with on the argument is that in which the snow is gathered by right- and left-hand spirals from each side of the front of the machine to the centre where it passes back into the blower chamber from which it is ejected through a conduit rotatable on a vertical axis. The determinative question is whether that combination in the light of the disclosure possesses utility.

The method of snow removal in use in 1919 when Curtis first applied himself to the question was, for streets, the ordinary "V" plow which clears a way by pushing the snow to the sides; but the rapid development of automotive transportation inevitably spread to all year use of highways and following the first Great War, both in the United States and Canada the demand for more effective means became urgent.

The difficulty attending that search was enhanced by the fact that only in winter could practical experiments be made. In the season of 1919-20, Curtis made his first attempts to develop such a machine. He began with a spiral in a partial casing, the latter co-operating in the movement of the snow, and in the result satisfied himself of the sufficiency of that mechanical device for the purposes in view. Delivery of the snow to a side blower was found to swing the machine off its course and he was led to delivery at the centre. His work in the first year did not go beyond that stage, but from it he deduced the complete invention, the application for the patent for which was made in the United States on May 25 of 1920. He conceived not only the conduction of the snow to a central blower, but also its discharge by propulsion through a rotating vertical conduit: but it is important to keep in mind that to this point the latter was wholly theoretical.

In the next year, 1920-21, bringing the snow to the centre, he installed a chute leading from a lower side of Wandscheer the blower casing, offering, probably, by its small angle to the horizontal, the least resistance to the expulsion. By the Sicard Ltd. work of this season, the limitations of a single spiral and the practical necessity of greater flexibility in discharge appear to have been made evident.

1947 ET AL Rand J.

In the third winter, 1921-22, he tried out two spirals, one above the other. For the first time, he opened a discharge from the top of the blower casing with a pipe not horizontal but at an angle of 45 degrees, moving apparently only in a transverse plane. The test in this respect was wholly unsatisfactory; the snow would produce "a back pressure" which seemed to "choke the motor", i.e., the blower. His next step was to remove the upper arc of the rounded portion of the blower casing, leaving the vertical sides front and rear intact, and over the opening to insert a plate revolving along the perimeter of the casing through the arc with a discharge orifice to which a conduit could be attached. In this way, the snow could be directed either to the right or the left of the machine in a fixed plane.

Choquette, for the respondent, states the principle of this propulsion to be that of centrifugal force imparted to the snow by the blades of the blower in substantially a parabolic trajectory. He qualified this somewhat by conceding a minor degree of air current, possibly to a slight extent effective on light snow, with the chute at an open angle. But there is no evidence of actual use of the Curtis machine to its latest development in a mode in which the discharge changes its plane of direction after it has entered the conduit.

I come now to the precise claims made by Curtis. In the United States patent, after an enumeration of the elements of the combination, the first claim concludes with the words "and an adjustable conduit connected with the fan casing". That this leads from the top of the casing seems to be clear from the specification. In the second claim the discharge means is described as "an outlet for the fan casing", as broad as could be made.

Rand J.

On the other hand, in the Canadian patent applied for Wandscheer under date of June 6, 1921, the claim is in these words:

U. (1) A snow plow of the class described, comprising a horizontally Sicard Ltd. arranged semi-cylindrical casing, a fan casing connected therewith, a conveyor in the first mentioned casing, a fan in the fan casing, means for

actuating the conveyor and fan, and an adjustable conduit connected with the fan casing for rotary movement.

Now, it is obvious that once the idea of the introduction of snow into such a blower is reached, some mode of discharge is necessarily involved, and in the circumstances of 1920 the particular mode could be of utmost importance. In working out this feature both Curtis and Sicard passed through the first stage of the simple fixed angular chute and then into that of a trajectory in a transverse plane; but neither Curtis nor the appellants have gone beyond the latter, and it was not until 1937 that a rotatable vertical conduit was offered for sale by Sicard.

The second claim in the United States patent by its inclusion of any mode of discharge in substance protects the combination of conveyor and blower; but notwithstanding this the inventor has by precise language strictly limited the Canadian patent to a particular mode which renders the rotary feature, delivery at any horizontal angle, essential to the combination. The mode of snow removal and not the removal itself is the result sought and here it is by a member with full mobility. The angularity in the Curtis conduit actually in use, Ex. 13, does indeed include the vertical, but not with rotary scope, nor is it an improvement in that feature; it is, as treated, a different mode which is not an equivalent because it produces a different result; and it has not been suggested either in the specification or in any experiment or use that any other than a fixed vertical conduit is susceptible of rotary adiustment.

We are then brought to the question of fact whether Curtis by his specification has given a sufficient disclosure for the construction of a conduit that would possess utility under rotary operation. When Curtis failed in 1921-22 in his experiment with the conduit at 45 degrees and took up the lateral discharge, was it because of the obstacles which confronted him or was he content to pursue what

appeared to him the more direct and simpler means. sufficient for his purposes under the United States patent? WANDSCHEER Notwithstanding that, having achieved the development of the conveyor and blower factors, he may have con-Sicard Ltd. sidered the discharge as of minor importance, I am unable to avoid the conclusion that his shift was in fact a forced retreat from the rotary conception to a mode which, at no time, has been under a patent restriction in Canada.

1947 ET AL Rand J.

Because of this absence of demonstrated usefulness, the appellants were limited to opinion evidence of what might have been done under the disclosure, and there is the statement of Ostrander on re-examination that he did not think he would have any trouble in making a workable means; "I would make them of a sufficient radius and anything else that was necessary to make them". He agreed, however, that such chutes must be "designed for the work" and that they had given rise to various patents of invention. But the striking circumstance is that the appellants in production have confined themselves to the single plane angular discharge. In that field, the parties are in this country in competition with similar machines. In no circumstances would Wandscheer have sold a machine with the rotary attachment either alone or as a severable adjunct to the transverse discharge for the reason, as I must assume, that in any form conceived by him and not adversely patented, it is of no practical use.

On the evidence of Curtis himself and of Choquette a prima facie case against utility in rotary discharge by reason of insufficiency in specification has, I think, been made out, but I am unable to say that the onus thus arising has been met by the appellants: Ehrlich v. Ihlee (1) at p. 441, where Cotton L.J. intimated that it did not lie upon the plaintiff until a prima facie case was shown by the defendant: Patterson v. Gaslight and Coke Co. (2) at p. 834, in which James L.J. declared the plaintiff's evidence was

utterly valueless as evidence of novelty and utility. The improvements have not been tried by the plaintiff or any of his witnesses, even experimentally, in a laboratory or with models.

^{(1) (1888) 5} R.P.C. 437.

Vidal Dyes Syndicate Ld. v. Levinstein Ld. (1) at p. 254, Wandscheer where Fletcher Moulton L.J., in the course of the argument, remarked "A plaintiff always gives evidence of Sicard Ltd. utility." And the statement of Ostrander, contradicted as Rand J. it seems to be by the whole business course of the appellants, cannot be taken to be sufficient.

I do not overlook the doubtful implication raised by the 1937 patent of the respondent and the reference to the existing art in the preamble to the specification. That patent aggregates severably both rotation of the blower chamber on a transverse horizontal axis, and the stationary vertical conduit adjustable for rotary movement.

It is said by Choquette that the mechanism possesses features that make practicable the idea suggested by Curtis. What precisely they are was not elicited in the evidence, and from an examination both of the specification and the illustrative drawings, I am unable to satisfy myself on the point one way or the other. Nor is any indication given by the appellants of the extent of experiment required—and that some degree is necessary is clear from the experience of Curtis—to produce a workable rotary chute.

On what is before us, I must hold that at best what Curtis presented to the public was both the idea and the task of working it out. In the language of Lindley L.J. in Lane-Fox v. Kensington and Knightsbridge Electric Lighting Co. (2).

An invention may be useful as indicating the direction in which further progress is to be expected, and yet that same invention may be useless for any other purpose; useless, that is, as an invention without further developments and improvements which have not occurred to the patentee.

I would, therefore, dismiss the appeal with costs.

Kellock J.: This is an action for alleged infringement of a patent of the appellants known as the Curtis patent, the term of which, since this action was instituted, has expired. Prior to the issue of the patent, Curtis had been granted a patent for the same invention in the United States, the date of application for which was May 25, 1920.

^{(2) (1892) 3} Ch. 424 at 431.

The invention as claimed relates to new and useful improvements in snow removers. Claim one of the patent, Wandscheer which alone is in issue, reads as follows:

1947 ET AL 2).

A snow plow of the class described comprising a horizontally arranged Sicard Ltd. semi-cylindrical casing, a fan casing connected therewith, a conveyor in the first mentioned casing, a fan in the fan casing, means for actuating the conveyor and fan, an adjustable conduit connected with the fan casing for rotary movement.

Kellock J.

Figure 8 in the patent illustrates a left and right hand spiral operating in a semi-cylindrical casing which brings the snow to the centre of the machine where it passes through an opening in the back of the casing into the fan casing where it is ejected through a rotatable outlet pipe or chimney connected with the fan casing. The respondent set up that the patent was invalid as lacking in subjectmatter and utility. It also alleged that there had been anticipation. All of these objections the trial judge sustained.

With respect to the last mentioned objection the only evidence of anticipation consisted in certain United States patents, printed copies of which were placed in evidence. It was not established that any of the subjects of invention described in any of these patents had even been in use. It is well established that for a prior patent to constitute anticipation, the patent must disclose the same or give information equal in practical utility to that given by the patent in question; Baldwin International Radio Co. of Canada Ltd. v. Western Electric Co. Inc. et al (1). When the prior patents are examined none of them amount, in my opinion, to anticipation of the patent here in question.

In the Tierney patent, which is dated March 16, 1869. the machine there described had a spiral and a fan, but there any resemblance to the Curtis machine disappears. The Tierney spiral was to be pushed like a drill in front of a railway locomotive, the snow being tossed up above the spiral where, coming in contact with the fan it was dispersed to each side by the fan blades.

The Herran patent discloses two spirals operating in a semi-cylindrical casing and throwing the snow to opposite sides of the road, but nothing else.

The Cutting patent also discloses a spiral conveyor in a cylindrical casing but no fan or fan casing or conduit in

association. In the Yeiter patent there is disclosed a spiral Wandscheer and a fan but no fan casing and no conduit or chimney.

On the basis of these patents therefore the requirements Sicard Ltd. of anticipation as laid down in Baldwin's case are not Kellock J. satisfied.

As to the defence on the ground of lack of subjectmatter the learned trial judge states:

Counsel for defendant further argued that there is lack of subjectmatter in this patent. The combination submitted by Curtis is, in my view, old and well known and it did not require the exercise of inventive ingenuity. I think that any skilled and competent mechanic could have done it. (1).

As there is no evidence of the use of any of the elements described in the Curtis patent, it is plain that in this finding the trial judge rests his view upon what is disclosed by the prior patents upon which he also based his view as to anticipation. As already pointed out, in none of these "paper" patents is there exhibited the combination which is to be found in the Curtis patent. The Curtis combination was therefore a new conception. On the question as to the presence or absence of invention, it is relevant to quote what was said by Green L.J., as he then was, in Wood v. Gowshall (2):

The dissection of a combination into its constituent elements and the examination of each element in order to see whether its use was obvious or not is, in our view, a method which ought to be applied with great caution since it tends to obscure the fact that the invention claimed is the combination. Moreover, this method also tends to obscure the facts that the conception of the combination is what normally governs and precedes the selection of the elements of which it is composed and that the obviousness or otherwise of each act of selection must in general be examined in the light of this consideration. The real and ultimate question is: Is the combination obvious or not?

Fletcher Moulton L.J., as he then was, in British Westinghouse v. Braulik (3), said at 230:

I confess that I view with suspicion arguments to the effect that a new combination, bringing with it new and important consequences in the shape of practical machines, is not an invention, because, when it has once been established, it is easy to show how it might be arrived at by starting from something known, and taking a series of apparently easy steps. This ex post facto analysis of invention is unfair to the inventors, and in my opinion it is not countenanced by English Patent Law.

^{(1) [1946]} Ex. C.R. 112 at 139. (3) (1910) 27 R.P.C. 209.

^{(2) (1937) 54} R.P.C. 37 at 40.

S.C.R.1

In Non-Drip Measure Co. Ltd. v. Stranger's Ltd. (1), Lord Russell of Killowen said at p. 142:

WANDSCHEEF ET AL

My Lords, it is always pertinent to ask, as to the article which is alleged to have been a mere workshop improvement, and to have SICARD LTD. involved no inventive step, has it been a commercial success? Has it supplied a want? Some language used by Tomlin J. in the case of Samuel Parkes & Coy. Ld. v. Cocker Bros., Ld. (2) may be cited as apposite:

Kellock J.

"Nobody, however, has told me, and I do not suppose that anybody ever will tell me, what is the precise characteristic or quality the presence of which distinguishes invention from workshop improvement * * * The truth is that when once it has been found, as I find here, that the problem had waited solution for many years, and that the device is in fact novel and superior to what had gone before, and has been widely used, and used in preference to alternative devices, it is, I think, practically impossible to say that there is not present that scintilla of invention necessary to support the Patent."

On the evidence no one prior to Curtis ever conceived or made a machine of the description in his patent or employed any such machine for the purpose of removing snow. Subject to the question as to utility, which I shall proceed to examine, the element of inventive ingenuity required by the authorities is, in my opinion, present in the combination claimed by the patent. In my opinion therefore this defence also fails.

Coming to the defence of lack of utility, Curtis' first conception occurred during the winter of 1919-1920 when he began his experiments. His equipment consisted of an auger or spiral 16 inches in diameter operating in a semicylindrical casing which was carried horizontally across the front of a motor truck. This spiral had right and left hand parts and carried the snow to its outside ends. At one end there was a fan in a casing which partially enclosed it, the opening being toward the front through which the snow, delivered to the fan by the spiral, was thrown off. Curtis says that on these experiments the auger cut the snow and delivered it well to the fan which took it as fast as it was delivered. However, what he described as "sidedraft", or a pulling to one side, was experienced. So it was decided to reverse the augers, putting the fan in the rear of the centre and delivering the snow from the augers to the fan through an opening in the auger casing.

On the basis of the above Curtis applied on May 25, Wandscheer 1920, for a United States patent. While a number of the drawings in the patent ultimately granted show a dissicant Ltd. charge conduit Curtis had not up to this time used a Kellock J. chimney.

In the winter of 1920-21 he used the equipment generally shown in figure 8 of the patent, namely, a single row of spirals with right and left hand parts which delivered the snow through an opening in the centre of the auger casing to the fan or blower in the rear, the auger shaft being driven by a worm gear in the centre from the blower shaft which ran forward from the blower to the auger shaft and back to a connection with the shaft of the truck. The worm gear is shown in figure 9. Instead of a rotating conduit Curtis used a fixed one which delivered the snow to one side of the machine only. As a result of the experience of this winter Curtis discovered that one 16-inch auger was not large enough in deep snow for which, if only one auger was to be used, it had to be larger. He also discovered that in using the motive power of the truck the speed of the truck motor needed to keep the truck at a proper speed forward did not drive the auger at the required speed for it to do its work. He therefore came to the conclusion that a motor mounted on the truck separate from the truck motor was necessary. It was following upon this that in July, 1921, he made application for the patent in Canada.

The question at issue in this appeal is whether the type of rotating chimney described in the first patent, taken as part of the combination which was the subject of the patent, met the test of utility. As to the worm gear by which the auger shaft was driven from the blower shaft, although appellant's witness, Ostrander, stated that this type of shaft and gear would not be *entirely* satisfactory, it was in fact used by Curtis and he says nothing of any difficulty experienced with it. I do not think therefore that this item need be further considered.

The lack of utility which, apart from the worm gear, it is said the Curtis machine lacked is with respect to the rotatable discharge conduit. When the evidence which is relied upon in support of this objection is analysed the attack really is that, construing the specification as though

S.C.R.1

ET AL

the drawings included therein were scale drawings, the conduit there shown with its elbow having a right angle is WANDSCHEER unworkable. This objection reduces itself on the evidence to a charge that the abruptness of the angle of the elbow Sicard Ltd. taken together with its bore on the above basis, must Kellock J. inevitably cause the snow to choke in the conduit so as to be inoperable. The fact that the Curtis conduit rotates on a vertical axis does not in my opinion constitute any part of the respondent's objection. A conduit which is vertical only is neither helped nor hurt by the fact that it rotates about a vertical axis. The rotary feature serves no purpose except in a conduit which at some point departs from the vertical. In such a conduit the rotary movement changes the direction of the discharge outlet with the result that the discharge itself is directed away from the vertical. That this rotating feature does not constitute any part of the respondent's objection is made more clear when the Sicard patent itself is examined, as I shall do later.

As already mentioned, on the important date, namely, May 25, 1920, when Curtis applied for his patent, while he had conceived the machine described in the application, he had not built a complete one. With respect to utility and sufficiency of the specification at that date, what is said by Parke B. in Neilson v. Harford (1) is relevant, namely:

if such a person (i.e. a person skilled in the art) would construct an apparatus that would answer some beneficial purpose, whatever its shape was, according to the terms of this specification, then I think that this specification is good, and the patent may be supported so far as relates to that.

It is also to be observed that the protection afforded by a patent is not confined to a device made strictly in accordance with the drawings: Thomas v. South Wales Colliery Tramworks and Engineering Co., Ltd. (2), per Tomlin J., as he then was, at 27, where he said:

It is, I think, indisputable that in construing a specification of this kind the figures, unless they are, by express reference, imported into the method which is to be employed, must be taken as illustrations only, and one cannot confine the patent to the particular form indicated in the figures, unless the language of the specification has in terms limited it to that form.

^{(1) (1841)} Web. P.C. 295 at 315. (2) (1924) 42 R.P.C. 22.

In my opinion the proper light in which the respondent's Wandscheer objection is to be regarded appears when one examines the specification in the respondent's own patent of 1937.

Sicard Ltd. It refers to the existing state of the art, inter alia, as Kellock J. follows:

In some instances the blower is provided with a stationary casing having an outlet communicating with either a stationary or rotatably mounted delivery spout through which the snow is delivered to a suitable point of discharge.

Further on it says in describing the respondent's invention:

As distinguished from these prior arrangements, the present invention provides a snow removing appartus in which a rotatably mounted telescopic delivery spout is used in conjunction with a blower of the rotary casing type * * * The delivery spout, being rotatably mounted and of telescopic construction, may be extended and directed a considerable distance toward either side of the roadway or in the direction of a snow loading vehicle.

From this two things emerge: (1) That the construction of a machine of the Curtis type including the rotatable chimney with an elbow to effect a change in direction of the discharge was then well known, and (2) that the respondent's invention was expressly confined to the telescopic construction of the conduit near its discharge end.

The evidence does not suggest from beginning to end that any machine other than one constructed in accordance with the Curtis patent was in contemplation of the respondent when it made the above application.

The Sicard specification is interesting also from another standpoint, namely, its particularity or rather its lack of particularity in the teachings as to the construction of the discharge conduit it claims. It is completely lacking in any details or measurements as to the bore of the conduit or the angle of the elbow at any stage of its extension or retraction of the telescopic parts forming the elbow. The patentee relies and must rely on the ability of a competent workman to build a conduit of some utility from the general description to which the specification limits itself. It is further to be noted that the elbow depicted in the drawings accompanying the specification passes from almost the vertical through and beyond a right angle. In my opinion it is obvious that if the respondent's patent can be said to be unobjectionable on the ground that a

skilled mechanic could, without invention built an operable machine of some utility, the same must also be said WANDSCHEER of the Curtis patent. In my opinion it is properly to be said of both.

1947 SICARD LTD.

Kellock J.

That such a mechanic could produce such a machine from the Curtis patent is established by the evidence of the witness Ostrander. It is to be observed that it is not necessary that such a person should be able to do so without trial or experiments so long as the task involved does not require invention. In Edison & Swan Electric Light Co. v. Holland (1), Cotton L.J. said, at p. 277:

The objection taken as a whole, was that the specification did not sufficiently show how the invention is to be carried into effect. It is necessary that this should be done so as to be intelligible, and to enable the thing to be made without further invention-not, as was pressed upon us, by an ordinary workman, but by a person described by Lord Ellenborough in Huddart v. Grimshow (1 Webs. R. pp. 85 to 87) as a person skilled in the particular kind of work or, as said by Lord Loughborough in Arkwright v. Nightingale (1 Webs. R. p. 60) a person conversant in the subject. But in my opinion it is not necessary that such a person should be able to do the work without any trial or experiment, which, when it is new or especially delicate, may frequently be necessary, however clear the description may be.

See also No-Fume Ltd. v. Pitchford (2); Otto v. Linford (3).

The respondent's evidence on this branch of the case was limited to two witnesses, Sicard and Choquette, whose evidence, as already mentioned, as directed against the Curtis conduit was confined exclusively to an elbow with a right angle as depicted by the Curtis drawings. Sicard said that he had not tried a chimney with an elbow of 90 degrees but he did not think it would work. Choquette gave similar evidence except that he said he thought such an elbow would handle light snow.

In Otto v. Linford (3), supra, Jessel M.R., said at page 39:

I have heard judges say, and I have read that other judges have said, that there should be a benevolent interpretation of specifications. What does that mean? I think, as I have explained elsewhere, it means this: when the judges are convinced that there is a genuine, great and important invention, which, as in some cases, one might almost say, produces a revolution in a given art or manufacture, the judges are not to be astute to find defects in the specifications; but, on the contrary, if it is possible. consistently with the ordinary rules of construction, to put such a con-

^{(1) (1889) 6} R.P.C. 244.

^{(2) (1935) 52} R.P.C. 28.

1947 WANDSCHEER ET AL 1). Kellock J.

struction on the patent as will support it. They are to prefer that construction to another which might possibly commend itself to their minds if the patent was of little worth and of very little importance. That has been carried out over and over again, not only by the Lord Chancellor SICARD LTD. on appeal, but by the House of Lords. There is, if I may say so, and I think there ought to be, a bias, as between two different constructions, in favour of the real improvement and genuine invention, to adopt that construction which supports an invention.

At page 41 he said:

A specification for improvements in gas-motor engines is addressed to gas-motor engine-makers and workers, not to the public outside. sequently you do not require the same amount of minute information that you would in the case of a totally new invention, applicable to a totally new kind of manufacture. In this case the inventor says this: "I am going to turn that which was a sudden explosion of gas into a gradual explosion of gas, and I am going to do that by the introduction of a cushion of air in one place between the piston and the combustible mixture." If a man if left without any more information, he asks, "How much air am I to let in?" He lets in a little air, and he finds the thing explodes as before; and he lets in some more, and he finds directly, on the mere regulation of his stopcock, how much is required; and he finds very soon that he has let in enough, and now there is a gradual expansion, and no longer a sudden and explosive expansion. It does not appear to me that that requires invention. It requires a little care and watching, and that is all.

In my opinion the respondent's witnesses, one of them in answer to a series of very leading questions, endeavoured to make a matter of mystery and difficulty out of the construction of a conduit of the Curtis type, but neither gave any details as to the difficulties to be encountered or how they should be met and as already mentioned the specification of the Sicard patent itself gives no details to enable one from the patent to build a successful conduit. In my judgment the Curtis invention was a great advance on anything in existence at the time, and the specification, which should receive a benevolent construction, when taken in connection with the evidence of Ostrander, already referred to, was sufficient.

In the light of the above the respondent is reduced to relying in support of its objection on the course followed by Curtis himself in the winter of 1921-22. That winter he built a plow with two 20-inch augers, one mounted above the other. During this winter he first actually used a conduit with an elbow in it, but this elbow had an angle of 45 degrees. This chimney did not prove to be satisfactory as, to use Curtis' own words, "It seemed to choke

the motor down too much". There was too much "back pressure". Curtis, instead of proceeding further with a Wandscheef conduit removed it and constructed a double housing over the blower with a hole in it which was adjustable so that Sicard Ltd. the snow could be thrown to one side or the other of the machine. This method of discharge satisfied him. It is to be observed that the type of conduit illustrated by the drawings of the patent was never used with the single auger in connection with which it is described. It had its choking effect on the motor when used with the double row of conveyors which presumably would deliver more snow to the blower or deliver it faster than a single spiral. Instead of making changes in the conduit after he had built the double row of conveyors, Curtis chose to substitute the different mechanism above mentioned.

1947 Kellock J

It is this course followed by Curtis which the respondent says is to be taken as a confession of failure on his part as to the conduit described in the patent, which renders the patent invalid. In my opinion, that is not the conclusion which should be drawn in the light of the whole of the evidence to which I have referred. In my view it is quite consistent with the view that Curtis chose to proceed with what he considered an improved method of discharge. In Edison and Swan Electric Light Co. v. Holland (1), supra, Cotton L.J. said at 277:

* * * a patent is not to be defeated simply because subsequent inventions improve the patented article, or because in consequence of subsequent improvements, no article was in fact made in accordance with the specification.

I am unable to draw any inference adverse to the utility of the Curtis invention from the silence of the evidence as to any machine having been marketed by the appellant with a discharge conduit of the Curtis type. What the fact is does not appear nor the considerations relevant thereto. The fact that Sicard was free, without infringement to market a machine with a conduit of discharge rotating on a horizontal axis may well have evidentiary value on the question of damages, but does not, in my opinion, have any effect on the question of utility.

I think the proper finding on all the evidence is that Curtis had invented the conduit claimed although he had 1947 not constructed a completely satisfactory one which for Wandscheer him, or for any skilled mechanic, was a matter of trial involving no invention. This in my opinion is admitted Sicard Ltd. by the respondent in its specification with which I have Kellock J. dealt.

As I think the respondent has clearly infringed the Curtis patent I would allow the appeal and direct the entry of judgment in favour of the appellant for the relief claimed with costs here and below.

ESTEY J.: The appellant (plaintiff) Klauer Manufacturing Co. Ltd. manufactures snow removal equipment and is the assignee of two patents: Curtis Patent No. 253159 and Wandscheer Patent No. 309848, issued respectively September 1, 1925, and March 31, 1931. In this action it claims that the snow removal equipment manufactured by the respondent in 1936 constitutes an infringement of the foregoing patents.

The learned trial judge in the Exchequer Court dismissed the appellant's action. He held that the essential features of the Curtis patent had been anticipated by prior patents and, therefore, it lacked novelty and subjectmatter and, furthermore, it was inoperative and useless.

The Wandscheer patent he held did not constitute valid subject-matter and his judgment with respect to this patent was affirmed at the hearing of this appeal.

The appellant's main contentions are with respect to the Curtis patent. In his specification Curtis included the following:

This invention relates to snow plows for steam and street railways, trucks and the like and the principal object of the invention is to provide spiral conveyor means for forcing the snow to one or both sides of the track or road.

Another object of the invention is to provide blower means for receiving the snow from the conveyor means for blowing to a distant point.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

* * * * *

In the modification shown in Figures 8 and 9 a double conveyor is used which is so arranged as to feed the snow to the center of the casing * * * The fan shaft is connected in any desired manner with a source of power.

* * * * *

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, WANDSCHEER provided that such changes fall within the scope of the appended claims.

1947 ET AL υ.

Claim No. 1 upon which the appellant bases his action SICARD LTD. reads as follows:

Estev J.

A snow plow of the class described comprising a horizontally arranged semi-cylindrical casing, a fan casing connected therewith, a conveyor in the first mentioned casing, a fan in the fan casing, means for actuating the conveyor and fan, an adjustable conduit connected with the fan casing for rotary movement.

Curtis applied for his patent on July 12, 1921, and patent issued September 1, 1925. (In the United States he applied May 25, 1920, and patent issued April 18, 1922). His application discloses an equipment and certain alternatives in parts thereof. That with which we are concerned has the spiral blades so placed in the shaft as to convey the snow to the centre, force it backward through an opening in the semi-cylindrical casing into a fan casing containing a blower or fan which forces the snow into and through a chimney. The lower portion of the chimney is stationary and commences at the fan casing. It extends upward and then outward from an elbow of about 90 degrees. Below the elbow is an equipment for rotating the upper portion of the chimney containing the elbow and thereby the snow may be distributed in any desired direction

The respondent contends that the Curtis patent is invalid (a) for lack of subject-matter and novelty and in particular that it was anticipated by prior patents, (b) it is inoperative and lacks utility.

The respondent further contents that if the Curtis patent is valid its own equipment is so different in its construction as to involve no infringement.

The respondent's first contention is that the essential features of the Curtis patent, including the semi-cylindrical casing, spiral conveyor, fan casing, blower and rotary adjustable chimney, were all anticipated by prior patents and that Curtis merely effected a juxtaposition of these earlier patented devices and exercised on his part in so doing no inventive ingenuity and, therefore, that the patent lacks subject-matter or novelty.

1947 That the component parts appeared separately or in WANDSCHEER groups in earlier patents is not denied, but it is pointed out that in not one of them are these devices all present ET AL v. SICARD LTD. and therefore they were never before operating as a unit or in combination. Moreover, in not one of these patented Estev J. equipments are the spirals operated in a manner to convey the snow to the centre and force it backward through an opening in the semi-cylindrical casing into a fan casing containing a blower from which the snow is forced up and out through a rotary adjustable chimney which distributes the snow in any desired direction. There is not only the new combination but also the disposition of the snow from the centre of the equipment.

The prior patents were issued throughout the period 1869 to 1907. Curtis adopted some of their features, made necessary adjustments and improvements and developed an equipment which was different and possessed limited utility. His equipment is superior in operation and different from any disclosed in the earlier patents. He worked out a new combination and an improved mode of operation that attained the desired result "in a more useful and beneficial way": Lord Cairns quoting the Lord President in Harrison v. Anderston Foundry Co. (1). He overcame the difficulties that the earlier patents had not solved. It is a combination which exhibits

a degree of ingenuity * * * which must have been the result of thought and experiment, and is sufficient to make these combinations the proper subject of a patent.

Lord Watson in Thomson v. The American Braided Wire Co. (2).

In British United Shoe Machinery Co. Ltd. v. A. Fussell & Sons Ltd. (3) the patented machine was for fixing the soles of boots to the welts by means of metallic screws which

fixing the soles of boots to the welts by means of metallic screws which are screwed in from a continuous screw-threaded wire which is then cut off level with the sole . . . That operation which could, as I say, have been done by hand, has long been capable of being also done by machine. Its merit is that it does this operation at a high speed, and with unvarying accuracy, so that you can work these machines so as to yield a huge output without making wasters.

The validity of the patent was upheld.

^{(1) (1876) 1} App. Cas. 574 at 577. (3) (1908) 25 R.P.C. 631 at 645.

^{(2) (1889) 6} R.P.C. 518 at 525.

Fletcher Moulton L.J. at p. 647:

The invention is the new group. It is admitted that this is a new group. It did not exist before, and when you compare it with the groups WANDSCHEER which imperfectly performed this function in the preceding machines, the difference is so great that it is idle to contrast the two * * * It seems to me a great and important change in these machines, producing a vastly Sicard Ltd. improved effect, properly claimed, not by claims for individual parts, for which, in my opinion, it was wholly unsuited, but by a claim for many parts as a group effecting together the one object wanted, and properly claimed as a group, and in no other way.

1947 ET AL v. Estey J.

In Patent Exploitation Ltd. v. Siemens Brothers & Co. Ltd. (1), Lord Davey stated at p. 547:

It is sufficient for the validity of the Patent if the combination, being the result of thought or experience, is new, and produces some new result or an old result in a more useful and beneficial way.

See also British Westinghouse Electric & Manufacturing Co. Ltd. v. Braulik (2): Electrolier Manufacturing Co. Ltd. v. Dominion Manufacturers Ltd. (3) and Baldwin International Radio Co. of Canada Ltd. v. Western Electric Co. Inc. et al (4).

The cases cited in support of the contention that inventive ingenuity is absent in the Curtis patent because of the prior patents are all distinguishable upon their facts. One particularly relied upon was that of *Durable Electric* Appliance Co. Ltd. v. Renfrew Electric Products Ltd. (5), and affirmed in this Court (6). The patent (relating to improvements in portable electric heaters) was held invalid for lack of subject-matter and novelty. Mr. Justice Masten, delivering the judgment of the Appellate Court of Ontario, stated at p. 536:

Each of the elements in the combination performs exactly the same function as in the earlier patents, and the only difference consists in the slightly different curve which is given at the top and the bottom to the reflecting surface.

In this Court Chief Justice Anglin at p. 9 stated: * * * it is a combination the making of which did not involve any inventive ingenuity. Any competent and well-informed mechanic could readily have effected it.

The improvements effected by Curtis in his patented snow removal equipment cannot be reduced to anything so relatively unimportant as a "slightly different curve",

- (1) (1904) 21 R.P.C. 541.
- (2) (1910) 27 R.P.C. 209.
- (3) [1934] S.C.R. 436.
- (4) [1934] S.C.R. 94.
- (5) (1926) 59 O.L.R. 527.
- (6) [1928] S.C.R. 8.

nor as previously intimated could they have been effected Wandscheer by "any competent and well-informed mechanic". The creation of the Curtis equipment required inventive inscard Ltd. genuity in addition to mechanical skill and therefore it Estey J. has not been anticipated by the prior patents.

The learned trial judge found the Curtis equipment to be lacking in utility. The Curtis equipment as constructed with a rotating chimney having an angle of 45° (as patented it shows an angle of 90°) it is conceded would work in dry, light snow, but in other types of snow "it seemed to choke the motor down too much." Curtis had therefore perfected and patented an equipment which had some utility. He had not merely demonstrated the possibility of such an equipment but had actually produced it and had at least by way of an experiment tested it. It is this feature that was absent in *United Telephone Co.* v. Bassano (1) and which brings this case within the requirements of The Badische Anilin Und Soda Fabrik v. Levinstein (2).

Then in Terrell on Patents, 8th ed., p. 112, it is stated:
A very slight amount of utility will be sufficient to support a patent.
Alderson, B., in Morgan v. Seaward (1 W.P.C. 167, at p. 186), said: "I think if it was of different construction from any other steam engine, and of any use to the public, then that is sufficient". Again, Jessel, M.R., in Otto v. Linford (46 L.T. (N.S.) 35, at p. 41), said: "And, as to this question of utility, very little will do."

It was the inventive ingenuity of Curtis that perfected the equipment, and while its utility was limited, it would appear from the evidence that whatever it lacked to make it a commercial equipment could be supplied by mechanical adjustments. Ostrander, a mechanical engineer experienced in the manufacture of snow equipment, stated that he would have no trouble in making a workable ejector from the Curtis drawings. This is in substance what the appellant contends the respondent has effected in regard to the chimney as used in its equipment.

The respondent also stressed that the appellant never did manufacture for sale an equipment with this chimney as patented. Curtis apparently decided that it was sufficient that the snow be discharged upon either side and therefore in lieu of the chimney he adopted two adjustS.C.R.]

able spouts that directed the snow to one side or the other. That fact, however, does not militate against the validity Wandscheer of the patent as it sometimes happens that improvements immediately follow a patent which supersede it in the Sicard Ltd. market, usually because with these improvements it is more efficient or less expensive. Utility does not depend upon marketability. The Badische Anilin Und Soda Fabrik v. Levinstein (1).

1947 Estev J.

The respondent alternatively contends that its equipment is different in many respects and does not constitute an infringement of any of the main elements of the Curtis patent, namely, (1) a semi-cylindrical casing, (2) a conveyor, (3) an adjustable conduit for rotary movement. Its submissions are that its equipment (a) does not embody a horizontally arranged semi-cylindrical casing, (b) uses baffle plates, (c) has an adjustable fan casing, (d) the power is supplied to the spiral shaft at the side of the equipment rather than at the centre.

The reason and purpose of the semi-cylindrical casing is that it holds the snow in the spiral while it is moved toward the centre. That this casing should be somewhat semi-cylindrical in shape appears to have been accepted for a long time. Some such casings appeared in the earlier patents, particularly that of Tierney issued in the United States in 1869, and in the Herran patent issued in 1889. The respondent suggests that the semi-cylindrical feature is found only where there is a single spiral and as it never constructed its equipment with but a single spiral, it never had a semi-cylindrical casing. It does, however, have a casing that with the baffle plates serves the same purpose. In fact, the presence of a casing in either the Curtis or the Sicard patent does not add a new feature and whatever is different in the respective casings is but a mechanical adjustment made necessary by the introduction of the additional spiral.

The evidence does not establish that the introduction of baffle plates, being sheets of metal to keep the snow from falling from the top spirals into the lower spirals, is such that it would not occur to any skilled mechanic. The adoption of the two superposed rows of spirals does not involve a new principle, nor does it appear that the Wandscheer adjustments or alterations necessary are such as to require v. more than mechanical skill and, therefore, do not involve Sicard Ltd. inventive genius.

Estey J.

In both of these equipments the conduit or chimney is so constructed as to permit of the snow being blown in any direction. The respondent indicates that his chimney is in certain particulars different, but in order to succeed he must go further and show that these differences involve inventive ingenuity. Curtis claimed as above quoted "an adjustable conduit connected with the fan casing for rotary movement." In the Sicard equipment counsel contends that "the upper part of the chimney due to a special mechanism rotates on a vertical axis enabling the snow to be delivered almost at any point within the circle." The evidence discloses that respondent adopted a chimney with a pronounced obtuse angle, or perhaps a curve instead of an angle of 90° as shown in the Curtis patent. It also adopted adjustable sections toward the exit of the chimnev and made changes or alterations in its size. These are, however, mechanical changes. Just what was meant by the phrase "a special mechanism" is not clarified by the evidence. Counsel for the respondent also suggested that there was in the operation of respondent's blower an improvement in the force applied to the snow that made the chimney a more useful outlet but the evidence does not support that contention.

The equipment as it appears in the Curtis patent discharges the snow through the chimney. The Sicard equipment discharges the snow through three outlets, the chimney and a spout on either side of the chimney. By an adjustment of the fan casing the snow is directed to and through whichever one of the three outlets that may at any time be desired. It is the existence of these three outlets that makes the adjustable feature of the fan casing necessary and therefore it is a feature separate and apart from the equipment which may be described as the Curtis equipment. These additional outlets, one on either side of the chimney, and the adjustable fan casing, are additions to the Curtis patent but do not affect the purpose or usefulness of the equipment as patented.

It does not help the Respondents, even though it be conceded, that they have made various improvements on the patented apparatus, as for instance in the drip pans and the means of moving the spit-frame backwards and forwards without opening the doors of the casing and the like. For these improvements, assuming they required invention, they might SICARD LTD. conceivably have taken out a Patent; but without the prior Patentees' consent they would not be entitled to use the original invention. A Patent, even for a combination, cannot be evaded by merely grafting upon it improvements however meritorious. On the whole matter I reach the conclusion that the Complainers are entitled to the interdict they seek.

1947 Wandscheer ET AL v. Estev J.

Lord Salvensen at p. 708 in Lynch and Henry Wilson & Co. Ltd. v. John Phillips & Co. (1).

Respondent in his equipment provided the power for the spiral shaft at the outer end rather than at the centre, as in the Curtis patent. Both methods appeared in earlier patents. In one of Curtis' alternatives he shows gears at the outer end and in his specification he states: "the fan shaft is connected in any desired manner with the source of power." It therefore seems a mere matter of adoption of alternative methods well known in the art.

With great deference to the opinion of the learned trial judge, it appears to me that the Curtis patent is valid and that the respondent in the construction of its equipment has infringed upon that patent. I would, therefore, refer the matter back to the Exchequer Court for the determination of damages suffered by the appellant because of the respondent's infringement.

The appeal with respect to the Curtis patent should be allowed with costs.

Appeal dismissed with costs.

Solicitors for the appellants: Gowling, MacTavish & Watt.

Solicitors for the respondent: Lajoie, Gelinas & Mac-Naughten.