No. 28 of 1928 (5.

High Court of Australia

Aluminio Thermic & Metal Sprayers Ltd.

v.

Engineering Specialties Pty Ltd

Reasons for Judgment

Knox C.J.
Gavan Duffy J. } dismissed

Rich J. dismissed

Isaacs J. dismissed

Starke J. dismissed

Delivered 21.3.1929

ALUMINO THERMIC AND METAL SPRAYERS LIMITED

V

THE ENGINEERING SPECIALTIES PROPRIETARY LIMITED.

JUDGMENT.

KNOX C.J.
GAVAN DUFFY J

Having regard to the statements contained in the Introduction and in pages 1 - 14 of Turner & Budgen's work on Metal Spraying and to the admission made at the trial that that book contains an accurate general description of the development of the art before the patent on which the appellant relies was taken out, and the evidence of Mr. E.P.Lewis, we think the learned Chief Justice of Victoria was right in construing the claims contained in the specification as

limited to the bringing forward of wire cable, bar, tube, sheet, strip or other solid material to a point at which it has to be fused from the solid to the liquid state and thence to be sprayed and as not including the bringing forward of atomized or pulverulent metals to that point. In this view it is clear that the respondent has not infringed the appellant's patent.

In our opinion the appeal should be dismissed.

Adrian K.C.J.

ALUMINO THERMIC AND METAL SPRAYERS LIMITED.

V.

THE ENGINEERING SPECIALTIES PROPRIETARY LTD.

JUDGMENT. MR JUSTICE RICH.

ALUMINO THERMIC AND METAL SPRAYERS LTD. V. THE ENGINEERING SPECIALTIES PROPRIETY LIMITED.

JUDGMENT. RICH J.

I agree that the appeal should be dismissed. The claim upon which the appellant relies is expressed in curiously vague and indefinite language. After a full examination of the materials by which the state of the art and common knowledge is brought before the Court I find myself unable to discover in the claim as drawn the expression of an inventive idea which is new and wide enough to include the respondent's implement constituting the alleged infringement.

G. D. Rich J.

HIGH COURT OF AUSTRALIA

COURT COPY

(pages 1-14.)

ALUMINO THERMIC COY.

v

ENGINEERING SPECIALTIES COMPANY.

JUDGMENT. MR. JUSTICE ISAACS.

ALUMINO THERMIC COY.

v

ENGINEERING SPECIALTIES COY.

JUDGMENT ISAACS J.

The conflicting contentions in this case give rise to some extremely important general considerations touching the construction and validity of patents.

Furthermore, according to the view earnestly pressed upon us by learned Counsel for the appellant, the determination of this appeal, notwithstanding the date of the patent, will not improbably directly affect not only the appellant's privilege, but also and consequentially Australian public rights in the important industry of metal-spraying for a considerable future, and if it be not followed elsewhere, may have indirect consequences difficult to guage.

It is therefore, as I think, very desirable that I should state explicitly the reasons that lead me to the conclusion that the decision of the learned Chief Justice of Victoria is right. Indeed, once it appears to me that the salient points as to the state of the art are mastered, then apart altogether from the scope of the appellant's invention, the facts are of such a nature as to entitle the respondent to succeed, on the principle enunciated by Lord Moulton in Gillette Safety Razor Co. v Anglo-American Trading Co. (30 R.P.C., at 480), quoted in Terrell on Patents, 7th Edn., at 141.

Dealing with the matter in the accustomed manner, the fate of this appeal depends on the answer to one or both of the following questions, namely:-

(1) Does the first claim of Morf's patent extend so far as to cover the process followed by the respondent? And if it does, then,

(2) Is the claim valid?

Before either question can be answered, the Court must, so to speak, qualify itself by possessing its mind of the state of the art of what is called "metal-spraying" immediately prior to the patent sued upon. The Court must, so far as possible, stand in the position of a person who, the day after the granting og the patent, reads it by the light of a full acquaintance with the practice of the art and all that is then incidental to it.

The work of Taylor & Budgen published in 1926, has been regarded by both sides as reliable on the subject of the origin and process of the art up to the requisite moment, and indeed, much of the oral evidence is manifestly based upon what is found in that work.

Obviously, the state of the art as disclosed in that work was treated by both sides, and by the learned Chief Justice if Victoria, as relevant to the understanding and construction of the specification. That, I think, necessarily includes the implication that the state of the art there narrated applied to Australia. But even if not, since the same invention was patented in other parts of the world, and the same construction, whatever that may be, must inhere in the claims, it is not very material from the point of construction whether the des--cription of the art in the book referred to applied to Australia also.

On a given broad construction, the question of validity might, however, be differently decided.

Following the various steps indicated in the work in question, it is clear to me that the first claim should, at the peril of invalidity, be read in a sense so narrow as to exclude any infringement by the resp

The first step in the working progress of metal-spraying consisted of processes with molten metal, which had advantages

and disadvantages. One of its advantages was that the flow of metal could be regulated so as to accord with the quantity sprayed, and this could be done without a valve or mechanical regulator, and by means of a presure or vacuum in the metal container. That is to say, the flow of metal could be synchronized with the spraying, effected by means of an annular blast nozzle. That is shewn and illustrated at page 7 of Taylor & Budgen. The principle of synchronization as there exemplified. I need hardly say that principle, ~~if expediency merits the dignity of the~~ if the expedient merits the dignity of the term "principle", is one which for economic and workmanship reasons must suggest itself to any mind as a desirable object.

But there was one insuperable and commercial defect in the use of molten metal. It was necessarily a stationary operation, a difficulty that if not avoided would have doomed the industry.

The second step to be noted is the use of powdered metal, which conferred portability. "Without portability and the "capability of being directed where desired, metal-spraying could "only have been of small importance" (p. 10).

Cold metallic powders proved failures. Heating the powders was resorted to, and in figure 17 at p. 9 we see an important illustration. Powder flows from a container into a transporting apparatus, operating on the sandblast principle and heated by a

flame and sprayed by a blast issuing from a nozzle.

Again we have synchronization of supply and demand, and this time with portability. The work referred to says at page 10:- "With this device, the regular and uninterrupted introduction of "the metallic powder into the transporting blast is of the greatest "importance for economic and continuous operation". This proved generally effective, particularly when simplified into a form shewn as figure 20 on page 11. "This", say Taylor & Budgen at p. 12, "is a workmanlike, portable device, in which the metal "powder falls from the bottom of the container into the transport-"-ing blast, and is heated on emission from the nozzle by an "annular gas flame".

As a process in a general sense, and remembering the synchronization already mentioned, the appellant's argument would in all probability regard this as an infringement. But notwithstanding the comparative effectiveness of the device, there were still serious defects. It was "suitable for comparatively coarse "powders; the minute particles of the finer grades of powders "tend to stick together and clog up the valve aperture". "Cyclone" apparatus had to be used for very fine powders.

In addition, there appears to have been one very serious fault in the use of all powder sprayers, a fault which up to that time had not been remedied. "They did not produce good results

"with metals of high melting points. This was so because the "higher the melting point of the metal to be sprayed, the greater "was the proportion of the powder, which failed to be treated up "to the particular temperature requisite for the production of "solid adherent coatings. Colder particles simply rebounded from "the surface, their projection having been a waste of energy" (Taylor & Budgen, p. 13). It might be added, "and of material".

Thus there existed a major problem, for which mere synchronization of outflow to the flame and discharge to the object treated, had been proved to be insufficient. The problem as stated by Taylor & Budgen (p. 13) was: "How to produce such regular oper-"-ation that only just so much as could be satisfactorily heated and sprayed was admitted to the nozzle", They add (1) "Experience with the powder process pointed to the "advisability of returning to the use of molten metal" -- in other words, "powder" was to be discarded. Then (2) "Yet portability "was essential". That is to say that molten metal as a feed (from a reservoir) was useless.

It was "Herkenrath who conceived the possible mode of operation". That was to use wire, and of course, that which it typifies. That was the master conception for the present purpose. Molten metal and powdered metal were eliminated as feed, and after experiments with blow-pipe flame and electricity according to melting points,

with a gas blast from the side, the main difficulties were overcome. "It was thus shown to be possible to prepare a coating by blowing "compressed air into a falling stream of metal melted in such a "manner". As Taylor & Budgen point out at p. 14, the principle of that apparatus is still in force. That was the third step for our present purpose.

But synchronization of all operations had yet to be achieved where the new "wire" process was employed. "For continuous working "and uniform action such co-ordination of the three functions" (i.e. advance of the wire, its melting and the spraying) "was essential". The main idea of wire feed was in operation; the idea of synchronization was known; but although long operable with molten (reservoir) metal and powdered metal, it was not yet perceived how it could be practised with wire feed.

We have now reached the point immediately prior to the invention relied on, and so it is wise to take stock, so to speak.

(1) The process of melting fusible material at the nozzle of the tube conveying the transporting and heating and spraying blast was familiar.

(2) Synchronization of supply and demand as a principle was known and sought after.

(3) The use of a pressure or vacuum instead of a mechanical regulation to propel metal for spraying was well known.

(4) Preparing a coating by blowing compressed air into a falling stream of metal melted at the nozzle was known.

(5) The use of a "wire" -- that is, an unbroken, continuous and therefore both unmelted and unpowdered substance -- for melting at the nozzle, was known, and to a great extent successful.

The fourth step is that taken by Erika Morf, The authors of the book referred to say at p. 14, in evident reference to the patent now under consideration:- "It was found possible to unite "two of the three factors by using the spraying blast to operate the "wire feed mechanism." And then reference is made to the air turbine, whereby "the blast was made to operate rollers which "gripped the wire". And so on.

Figure 26 (at p. 15) gives a sectional view of the first metal spraying pistol, the appellant's pistol.

To me, it is clear that a person conversant with the industry immediately before the grant of the patent -- say a local Herkenrath - would, the moment after its issue, read it as limited to the invention of an apparatus completing the solution which Herkenrath had begun, an apparatus which at the time adopted the wire form of feed as displacing the power feed, and synchronised the already existing wire feeding operation with the two other already existing operations of melting the wire and spraying the molten metal thus----------

produced. And further, such a person, if he had understood it as covering such a method as that employed by the respondent, would have regarded it as covering operations already known and practised by those engaged in the business.

It is true that at some later period, as a further step, the American "Gravitas" metal powder sprayer was devised by what is described by Taylor & Budgen (p. 39) as "an ingenious construction", namely, passing the metal dust between two concentric flame zones at the muzzle, where it is instantly heated to a plastic state, and impacted on the surface to be coated. But for the time being, that was not forseen, and Morf's patent discarded all but the wire type.

If it were necessary, I should entertain serious doubts, having regard to the prior use of the "wire" type as shown on page 13 of Taylor & Budgen, whether even in respect of that type the present patent covered anything more than the particular apparatus described, including in that, however, any mechanical equivalent for the turbine. But that is not necessary to determine; all that is necessary to say is that in my opinion, according in that respect with the opinion of Irvine C.J., the claim on proper construction is at all events limited to a process in which wire or its type is used as the feed.

For all that was new was the device of gripping the wire or its substitute (rod, cable, stick etc.) by means of rollers, and moving it along in unison with the outflow, by means of an actuating mechanism moved by a portion of the same blast as sprayed the molten metal. Possibly some other device which performed the same function of moving the wire, etc., if suggested by Morf's device, might be regarded as a mechanical equivalent. But of once the fundamental source of the subsidiary problem she met, the wire etc., be eliminated, it stands to reason mechanical equivalence of her solution is beside the question. To support the appellant's case, it is necessary to go behind the particular problem Morf grappled with, and to claim monopoly for the very principle of synchronisation. That claim cannot be supported for at least three reasons.

The first appears from what has been already said, namely, that the principle itself was no discovery of the inventor, nor was its practical application to powdered metal.

The second, if necessary, is that even if specifically claimed, it would be a confusion of problem and solution. This aspect is well illustrated in the judgment of Lord Sumner (then Hamilton L.J.) in Knight v Argylls Ltd (30 R.P.C., at pp. 344 and 345), in a passage beginning with the words: "I do not profess to be able to "mend the inventors' language", and ending with the words: "I think "therefore that 'means of imparting movement' must of necessity be

"an essential part of this Claim".

The third reason rests on well known rules of construction.

The contrary view pressed is that the "essential feature" of the invention is indicated in a passage stating that it consists in this:- "that the material to be melted, the gases for effecting the melting, "the means for dusting, atomising or spraying in suitable quantities "and under suitable conditions should coincide at the tip of the "nozzle, or at some point in front of it, and co-operate in such a "manner that a regular melting-off and flying-off will take place".

In parenthesis I would observe that in relying on that passage, it is tacitly conceded that the claim may sometimes receive a large or a small connotation from the other parts of the specification. Indeed, the authorities shew that, in order to understand and interpret a claim, the elementary rule of reading the specification as a whole must be observed.

For myself, I can see nothing in the passage referred to, except a statement that variation of arrangement of the different component parts of the apparatus is immaterial so long as the one desideratum is preserved, namely, coincidence at the outlet, or just in front of it, so as to maintain the synchronisation of "melting-off" and the "flying-on". The wire type of feed is

assumed to be an indispensable part of the invention. The word "melting-off" seems to me conclusive. It is the word used by the patentee in her first description of "the process". And indeed, the passage referred to, as Mr. Menzies very properly urged, is only a general summing-up of what was particularly stated in the immediately preceding few lines, in which the word "wire" has a natural prominence, and indicates the force and application of the word "melting-off" in the quoted passage.

One prior passage was relied on by both sides, and therefore I shall refer to it specially. It is this:- "It will be obvious "that the material to be melted can be introduced into the apparatus "or the nozzle in any suitable form other than a wire, as for "example, in the form of a cable, bar, tube, sheet, strip or the "like, etc."

I agree with the respondent's argument that, reading that passage, whether alone or in conjunction with the rest of the specification, the mind is led irresistibly to a type of feed which is undivided and continuous. It is remarkable if powder, commonly used, were within the patentee's contemplation that she did not mention it, that she did not say "any form", but any "suitable" form -- by which I understand suitable to be carried along by the feed roller mechanism, however actuated, and that the express words of description are

adverse to the inclusion of a powdered substance. At this point I would refer to the analogous queries put by Lord Salveson in Wallace's case (39 R.P.C., at pp. 16 and 17).

In view of what I have said as to the state of the art immediately before the patent, the presumption the Court would make, in accordance with acknowledged precedent, if the patentee's words are fairly consistent with it, is that old matters are not claimed. The enlarged ambit contended for and necessary in this appeal, for the appellant's success, is that any process producing synchronisation of melting and spraying is included in the claim. In other words, apparatus is immaterial; result, namely, synchronisation, is the pith of the invention, as being an idea or principle originating in the mind of the patentee, and to which all mechanical methods of producing it are merely accessory and incidental and within the protection of the patent.

The resume I have made in the various steps in the art shew such a claim to be untenable. Putting the passage quoted into shorter form, it amounts to the statement on page 13 of Taylor & Budgen, representing what, prior to Morf's patent, was present to the minds of those engaged in the industry. The statement is:- "The "solution arrived at was to melt only so much as could be projected "immediately". That is the principle. Herkenrath shewed that the wire type was the substance for experiment. Morf produced a specific apparatus dealing with the wire type, but there is

nothing in the patentee's language which expressly or distinctly lays claim to the principle, or goes indeed beyond the wire type.

But if, as is urged for the appellant, such a contention as is advanced is within the first claim, then Lord Loreburn's judgment in the Ingersoll case (25 R.P.C., at p. 83) shews that nothing, not even a more limited description in the rest of the specification, can in the circumstances save the patent. If it is the "idea or "principle" of synchronisation that is protected, then anyone who adopts the ide a with any means whatever of carrying it out in practice, would be liable as an infringer.

There is no difference in that respect between a mechanical equivalent for the described method of carrying out the idea, and a new invention for the purpose of carrying it out. Each would be a ~~subsidiary~~ subsidiary method, and its use would constitute an infringement.

But no idea ~~is~~ is patentable if the public ~~is~~ are thereby prevented from accomplishing an old object to which it relates, and which they already knew how to attain by a different path. If the idea claimed in argument is the essence of the invention, then from what has been narrated, the public would be so prevented.

~~But~~ An idea or principle must be very distinctly claimed. It must be unambiguously set out in the claim itself, and not left to a general inference from the language contained throughout the

specification (see Ridd v Milking Machine Coy (1916 A.C., 550)).

It is a recognised doctrine of patent law that a claim avoidably ambiguous cannot be upheld, whatever, in spite of that ambiguity, the ultimate construction might be, and that is especially important when an idea or principle is sought to be monopolised, thereby shutting out the public from means of attaining the same result that would otherwise be open to them.

I am of opinion that the first claim, read and understood and scrutinised as the law requires, does not state expressly or by plain reference a claim to a principle or idea, nor to a process of synchronising operations where powdered metal is introduced as the feed; that if such were the patentee's intention, her language is avoidably obscure and ambiguous in that respect; that the body of the specification does not carry the matter further, and even if it did, the claim would not be thereby assisted.

But in justice to the appellant, I add that I think the claims read with the rest of the specification unambiguously refer only to the wire process, and to apparatus for operating the wire process synchronously, including, of course, in the apparatus any mechanical equivalent for conveying the wire type of feed.

In the result, the appeal should be dismissed.

JUDGMENT — PEARCE J

I am content with the judgment of the learned Chief Justice of the Supreme Court of Victoria, and with the reasons he has given for it. I can add nothing of any value to that judgment, and the appeal in my opinion ought to be dismissed.

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