G.P.-S.43575—1969-70—2,000 J 219

In the Supreme Court of South Africa
In die Hooggeregshof van Suid-Afrika

(Provincial Division)
(APPELLATE Provinsiale Afdeling)

Appeal in Civil Case
Appèl in Siviele Saak

MARINE CONSTRUCTION & DESIGN CO. *Appellant,*

versus

HANSEN'S MARINE EQUIPMENT (PTY) LTD. *Respondent*

Appellant's Attorney
Prokureur vir Appellant Symington & de Kock

Respondent's Attorney
Prokureur vir Respondent Claude Reid-Hayhow

Appellant's Advocate
Advokaat vir Appellant

Respondent's Advocate
Advokaat vir Respondent

Set down for hearing on
Op die rol geplaas vir verhoor op 13/16 - 11 1971

3.4.6.7.4

(Court of the Commissioner of Patents)

Bills Taxed—Kosterekenings Getakseer

Date Datum	Amount Bedrag	Initials Paraaf

Writ issued
Lasbrief uitgereik

Date and initials
Datum en paraaf

IN THE SUPREME COURT OF SOUTH AFRICA.

(APPELLATE DIVISION).

In the matter between:

MARINE CONSTRUCTION AND DESIGN COMPANY.....APPELLANT.

and

HANSEN'S MARINE EQUIPMENT (PROPRIETARY) LIMITED.....RESPONDENT.

CORAM: BOTHA, WESSELS, JANSEN, TROLLIP et MULLER, JJ.A.

HEARD: 16th NOVEMBER, 1971. DELIVERED: 6th December, 1971.

J U D G M E N T.

BOTHA, J.A.:

The appellant, a corporation registered in the United States of America, is the proprietor of South African Patent No. 64/5031 entitled "Apparatus and Method for Transferring Fish." The patent was granted on 8 December,

1965, and the effective date thereof is 8 September, 1964. Appellant claimed relief in the Court of the Commissioner of Patents consequent upon the alleged infringement of the said patent by the respondent. In its plea the respondent denied infringement and attacked the validity of the patent on the grounds that -

(a) the claims of the complete specification "do not sufficiently and clearly define the subject matter for which protection is claimed", i.e. vagueness - section 23 (I) (g) of the Patents Act 37 of 1952.

(b) the specification "does not fully describe and ascertain the invention and the manner in which it is to be performed", i.e. insufficiency of description - section 23 (I) (f);

(c) the "invention was not new at the effective date of the application," i.e. that it was anticipated - section 23 (I) (1) as read with the definition of "new" in section I; and

(d) the "invention is obvious in that it involves no inventive step having regard to what was common knowledge in the art at the effective date of the application", i.e. obviousness - section 23 (I) (d).

By.../3

By agreement between the parties at a pre-trial conference the attack on the ground of insufficiency of description was confined to claim 5.

Respondent also counterclaimed for the revocation of the patent on the grounds set out above.

The learned Commissioner found certain claims to be invalid on the grounds of obviousness, and ordered the revocation of the patent. The claim in convention was accordingly dismissed with costs, and the counterclaim upheld with costs. As the learned Commissioner found that invalidity on the ground of obviousness or anticipation was not established in respect of claims 3, 14, 15 and 16, he ordered that the revocation order be provisional, and

(a) that it was to become fully operative if the appellant did not, within one month, file notice of an application to amend the patent, or if, having filed such an application, it is withdrawn by the appellant; and

(b) that if such an application is made as

referred.../4

referred to in paragraph (a), and it is not withdrawn, it shall be decided at the hearing of the application whether or not the revocation order is to be put into operation.

The subject of the invention in suit is described in the specification as relating "to improvements in apparatus and techniques for pumping fish from a net into a hold and for similar applications generally involving pumping water-borne fish to a discharging location", e.g. from the hold of a fishing vessel to a shore-based installation.

It is clear from evidence adduced before the learned Commissioner that, as he found -

> "The major, although not necessarily the only activity in which the invention is useful is in purse seine fishing. That is a type of fishing in which a large shoal of fish is encircled by a long net which is suspended vertically in the sea so

as.../5

> as to form a circular fence around the fish. When that has been achieved, the lower edge of the net is drawn together by means of a rope in the same way as the mouth of a pouch is sometimes closed by means of a drawstring. One then has, alongside the fishing vessel, an open mouthed pouch which may contain as much as 200 tons of fish swimming in sea water. By 'strapping' or drawing in the net, the size of the pocket is reduced, and the fish may be brought close to the surface of the sea and the fishing vessel to which the net is appurtenant. But it is not possible, because of the great weight of the catch, to hoist the pouch of fish on board the vessel. It is necessary to transfer the fish gradually from the net into the hold of the vessel, a process known in the industry as 'brailing'."

The nature and purpose in this regard of the invention appears clearly from the following description in the specification of earlier processes of brailing fish and of the invention in suit -

"The.../6

"The traditional practice for many years in transferring captured fish from a purse-seine or similar net to a fishing vessel has been the brailer. This basket-like scoop is lowered into the net, lifted through the mass of fish therein, swung inboard and then emptied onto the deck or into the hold. The procedure is time-consuming and laborious, often dangerous. Further, it requires some means to hold the net open for passage of the brailer. Such a means may comprise a boom or outriggers or, more commonly, a small seine skiff standing off from the fishing vessel. In foul weather the skiff often bangs against the side of the vessel creating a serious hazard. Moreover, in order to use a brail effectively, the net must be "dried-up", that is it must be gathered in sufficiently to compress the fish into a very small space, and with large catches this creates extreme loads in the mesh, sometimes resulting in serious losses of fish and in gear damage.

In an effort to avoid the problems just mentioned, suction pumps have been

installed.../7

installed on fishing vessels for drawing the fish up from the net through a suction hose for discharge into the hold. The method has proved to be workable and is in use on a number of vessels. Being large, the suction pump is usually mounted out on the main deck or in the main engine room. The pump may comprise any of several commercially available types and makes. It is generally a centrifugal pump with a rounded one or two-vane impeller capable of passing solids without damage.

Besides its large size, the typical suction pump used in those installations has the disadvantage of having to be constantly primed. This requires auxiliary apparatus such as a separate centrifugal pump introducing priming water into the suction hose so as to provide a positive head on the pump inlet at all times. Because the priming head is left in continuous operation during the unloading of the net, the water fed into the suction line by the primer pump reduces the useful capacity of the main pump to pump fish. In another priming arrangement an air chamber in the suction line above the pump is connected to a vacuum

eductor,..../8

eductor, commonly of the Bernouli type, to draw a partial vacuum in the chamber. Such a system usually entails use of an auxiliary pump to produce a heavy stream of water through the eductor so as to create the required vacuum pressure. This arrangement, though more complex than a direct primer pump, has the advantage of maintaining a prime without introducing additional water into the line. The method necessitates some means, such as a check valve or trap, to prevent water from backing up through the pump from the discharge side thereof, and thus permitting air to enter the system.

A further problem encountered with former suction pump brailing system lies in the requirement that the fish transfer conduit withstand high negative pressure without collapsing. To serve the purpose, these hoses are very stiff and heavy, even when empty, and become heavier, of course, when full. Moreover, even a carefully constructed hose and its connections on the suction side of the system develop air leaks, reducing the efficiency of the pump by entrainment of air bubbles in the pump stream.

Still.../9

Still another disadvantage of conventional suction pumping systems lies in the great change of pressure which the fish undergo in being moved from the net to the vessel. While in the net, the fish are under a positive head of pressure, which may vary from a few feet to 10 or 15 feet. Upon being drawn into the suction hose, the fish undergo progressively decreasing pressure, down to as low as minus 20 feet of head at the pump inlet. Then, in the fraction of a second while the fish pass from the pump inlet to its outlet, the pressure jumps to a high positive value of approximately 30 to 40 feet of head. These extreme and sudden changes of pressure tend to rupture the fish and diminish their market value.

A broad object of this invention is to provide a pump brailing system and apparatus which overcomes the above described and similar difficulties with previous systems. A further object is to so simplify the construction and handling and to so reduce the apparatus bulk, weight and cost requirements for pump brailing as to permit

its.../10

its effective and economic use on small vessels as well as large, and to make this possible without appreciable modification of existing vessels, and without necessity for additions thereto of costly power sources, rigging or other equipment. A specific object in this vein is to provide such a pump brailing system which may be handled and energized using rigging and power sources customarily already available on most fishing vessels.

A specific object is to provide a fish transfer system which overcomes the previous problem of fish damage due to sudden excessive changes of pressure.

A further specific object is to provide an improved pump brailing system which overcomes the necessity for pump priming.

Still another specific object is to provide such a pump brailing system in which the transfer conduit need not be designed against collapsing under suction pressure as heretofore but may even be of a collapsible type if desired, and may also

be.../11

be subject to leakage without impairment of system efficiency.

Still another object is to achieve greater efficiency in brailing pump operation and to permit use of a smaller pump, with lower power requirements than heretofore, for the same quantity of fish and water being pumped.

As herein disclosed the improved pump brailing system utilizes a submersible pump unit which is actually lowered down into the net to a suitable depth for operation on the end of a fish transfer conduit, which is a pressure conduit and not a suction conduit and which leads upwardly and over the side of the vessel for discharging the fish into the hold. Suitable supporting means and energizing connections for the pump unit permit it to be operated in its submerged position so to draw fish from the confinement of the net directly into the pump inlet, with the pump inlet being inherently self primed by the fact that it is under the prevailing positive head of pressure determined by the water depth at which the pump unit is

operated.../12

operated. Functioning as a pressure conduit rather than a suction conduit the hose is not required to be sufficiently stiff and heavy to resist pressure collapse; consequently it may be relatively flexible and light in weight so as to be handled easily with conventional rigging and may be stowed conveniently when not in use. Moreover, by operating in submerged position the pump is required to do less work than a deck-mounted suction pump, so that the pump itself may be smaller and will consume less power to do the same useful work than in the case of a deck-mounted suction pump brailer. Moreover, fish passing through the pump undergo only a relatively small increase of pressure, and this drops off gradually to atmospheric pressure as the fish move upwardly in the conduit and are discharged into the vessel."

The inventor's preferred embodiment of the invention is described and illustrated in the specification, but it is necessary to determine the invention claimed, and that can best be done by reference to Claim I, which is the broadest and most comprehensive of.../13

of the claims. Claim I reads as follows -

> "I. Apparatus for transferring water-borne fish to a receiving space, comprising a submersible pump unit having integrally a rotary impeller and a motor drivingly connected to the impeller and having an inlet opening into the water and an outlet connected directly to the lower end of an elongated conduit extending from the receiving space down into the water, energizing means extending to the pump unit for operating the same while submerged, and means connected to the pump unit for positioning the same in the water to draw the fish with water into the pump for discharge under positive pressure through the conduit."

It was common cause that Claim I claims a combination of known devices for a new use, viz. the transfer of water-borne fish from one locality to another.

It.../14

operation. It was contended on behalf of the respondent that, having regard to the ordinary dictionary meaning of the word "unit" as "one of the separate parts or members of which a complex whole or aggregate is composed or into which it may be analysed" (Oxford English Dictionary, s.v. unit), the expression "pump unit" in Claim 1 and in the other claims refers to the pump only, and that only the pump and not the motor driving it requires to be submerged. It was argued, in the alternative, that the claims are in any event not clear in this regard, and accordingly invalid for ambiguity in claiming or vagueness.

It is clear that in the preferred embodiment of

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the inventor, as described and illustrated in the specification of the invention in suit, the motor driving the pump is mounted upon the upper side of the pump in the same housing, and is, in operation, submerged with the pump. That feature, which is descriptive of the preferred embodiment of the inventor cannot, however, as the learned Commissioner rightly observed, as such assist in the interpretation of Claim 1, but I can see no reason why the fact that, in describing the preferred embodiment in the specification, an expression is used in a particular sense, cannot be relied upon in the case of an ambiguity, to assist in the interpretation of that same expression in the claims. It is, I think, clear that in describing the preferred embodiment of the inventor in the specification, the expression "pump unit" was used in a non-dictionary, special sense to denote both the pump and the motor driving it. There is no reason why the same meaning should not, in the absence of some indication to the contrary, be assigned

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to that same expression in the claims. It is a reasonable inference, which arises from a consideration of the intelligibility of language, that, where a word or expression is used more than once in a specification or other document, that word or expression must, in the absence of any indication to the contrary, be understood in the same sense throughout that specification or other document. (See Frank Hirsch (Pty.) Ltd., vs. Rodi and Wienenberger 1960 (3) S.A. 747 (A.D.) at p. 759 E and cf. Minister of the Interior vs. Machadodorp Investments (Pty.) Ltd. and Another, 1957 (2) S.A. 395 (A.D.).

In any event, the expression "pump unit" in Claim I clearly denotes both a pump and the motor drivingly connected to it, the whole of which is submersible. The apparatus claimed in Claim I is said to comprise, inter alia, a submersible pump unit which is described as having - the word "having" in this context clearly meaning "consisting of" - a rotary impeller and a motor

drivingly.../18

drivingly connected to the impeller and having an inlet opening into the water and an outlet connected to the conduit. The rotary impeller and the motor drivingly connected to it, as well as the inlet and the outlet, are in the context clearly described as subordinate parts or adjuncts of the submersible "pump unit". That this is so, is confirmed by the fact that the invention claims "energizing means extending to the pump unit for operating the same while submerged." The energizing means can only refer to the power source operating the motor of the submerged pump unit, and not, as was suggested by counsel for the respondent, as describing the drive shaft between the submerged pump and a motor which is not submerged, for if that were so the words cited would have been clearly tautologous - as counsel was constrained to concede - in view of the earlier claim of a "motor drivingly connected to the impeller."

Moreover.../19

Moreover in Claim 7, which refers to the "combination defined in Claim 6, wherein the pump unit includes a hydraulic drive motor", and in Claims 11 and 13 wherein reference is made to "a submersible integral pump and motor unit", it is clear that the submersible pump unit claimed includes both the pump and the motor driving it.

For these reasons I conclude that the attack upon the validity of the patent based on alleged ambiguity in claiming a "submersible pump unit" must fail.

As indicated earlier, the attack upon the validity of the patent based on insufficiency of description was confined to claim 5 which reads as follows -

"5. The apparatus defined in any one of the preceding claims wherein the conduit is flexible and the pump unit is suspended pendulously from the conduit."

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The attack was based on the ground that, while the claim describes the integer that the pump unit is suspended pendulously from the conduit, the body of the specification does not, in terms of section 23 (I) (f), describe the manner in which this is to be performed, but merely describes a method of suspending the pump unit independently of the conduit. (Gentiruco A.G. vs. Firestone S.A. (Pty.) Ltd., 1971 (A.D.) at page 166/167), (not yet reported).

In my view there is no substance in this contention. It will be remembered that in Claim I an elongated conduit connected to the outlet of the pump in the water and extending to the receiving space is claimed. The final integer described in Claim I is "means connected to the pump unit for positioning the same in the water to draw the fish with water into the pump for discharge under positive pressure through the conduit." The conduit is unspecified and may therefore be either rigid or flexible. The integer described in Claim 5 is (~~an additional~~ a narrower) one. The

main.../21

main purpose thereof is to claim an apparatus incorporating a flexible conduit from which the pump unit is said to be pendulously suspended. The means referred to in Claim I for positioning the pump unit in the water however remains as an integer of the invention, and is not replaced by the flexible conduit from which the pump unit is said to be suspended pendulously. The manner in which this is to be performed is fully and clearly set out and illustrated in the specification in the preferred embodiment as follows -

> "Submersible pump unit 18 is mounted at the lower end of a pressure conduit or hose 20 to which its volute or discharge side is connected through a suitable coupling 22.... A separate line 36 carries the submersible pump 18 and associated connected elements for raising and lowering the pump unit and for positioning and shifting the same about in the net.....".

The attack based on insufficiency of description cannot accordingly succeed.

In.../22

In its plea the respondent relied on several printed publications for its attack upon the validity of the patent in suit on the ground of anticipation, including the Japanese patent of Yoshio Saito which became a public document on 13 August, 1959, in pursuance of application 12680 of 1959. In this Court, as in the Court of the Commissioner, counsel, however, confined himself to the Japanese patent, conceding that if he did not succeed thereon he was not likely to succeed on any of the other documents.

In considering the objection of anticipation or lack of novelty, subject matter or inventiveness must be assumed (Veasey vs. Denver Rock Drill and Machinery Co., Ltd. 1930 (A.D.) 243 at p. 284, and Gentiruce vs. Firestone supra at page 176). The test to be applied in considering whether the invention in suit has been anticipated by the earlier Japanese patent is whether, on a comparison of the two documents, the same or substantially the same

as claimed
apparatus or process, is described in the earlier Japanese patent (Veasy's case (supra) at p. 256, and Gentiruco vs. Firestone (supra) at p. 176/7).

The Japanese patent, although styled "Automatic Suction Fishing Gears" is similar to the patent in suit in that the transference of the fish from the sea to their destination on a fishing vessel is not by suction, as in the deck-mounted pumps, but by pressure exerted by a pump which is submerged. The Japanese patent claims, as does the patent in suit, a combination of known devices, including a submerged pump to the outlet of which is connected a flexible conduit extending to a discharging point on the vessel. The object of the submerged pump is to overcome the problem of priming. A submerged pump does not require priming as does a pump mounted on deck. It is unnecessary, however, to refer to further similarities between the invention described in the Japanese patent and the invention described in the patent in suit. Suffice it to say that, subject to one important distinction to

which.../24

which I must presently refer, the Japanese patent appears to me to describe substantially the same apparatus or method as claimed in most of the claims in suit.

The distinction to which I have referred is this: It is clear that it is an important feature of the claims that the motor which drives the submerged pump is, in the invention in suit, mounted in contiguity with the pump and submerged with it in operation. On the other hand, the motor, which in the Japanese patent drives the submerged pump, is mounted on the deck of the fishing vessel, and is drivingly connected to the pump by means of a flexible axis which rotates the vanes of the pump, and which may be of various kinds, including those joined by universal joints. Because of the contiguity of the motor with the pump in the invention in suit, no flexible axis is required to transmit rotation from the motor to the pump. All that is

required.../25

required is a short, rigid shaft which is rotated by the submerged motor, and to which the impellers of the pump are attached.

That this distinction is a substantial one is, I think, clear from the evidence. The flexible axis in the Japanese patent, not being readily capable of being lengthened or shortened, would lead to some rigidity between the fishing vessel and the pump, which fact would in itself affect the utility of the apparatus as compared with that of the invention in suit.

Mr. Lerch, a qualified marine engineer and the inventor of the invention in suit, who testified for the appellant, expressed grave doubts as to whether a long flexible axis of the kind contemplated in the Japanese patent would be capable of transmitting the necessary power required to drive the submerged pump. Mr. Wiese, an engineer and the general manager of the Oceana group of companies in South Africa which are concerned with the

catching.../26

catching and processing of fish, agreed that the power transmissible by such a flexible axis would be limited, but considered that, depending on the amount of fish to be pumped, it could transmit sufficient power to ensure economic operation. Mr. Lerch also criticised the Japanese invention because it provided no explanation as to how the twisting force or torque of the axis was to be resisted, and considered that this torque would cause the submerged installation to revolve unless the axis was covered by an outer housing. This was not disputed by Mr. Wiese who, although he regarded the flexible axis as somewhat clumsy, nevertheless considered that it was practicable and that it could, with minor adjustments, be made to work efficiently and economically.

It is on the other hand, apparent from the evidence that less power is required to drive a submerged pump if operated by a motor mounted in contiguity with it. A pump submersible with the motor driving it ensures in

addition.../27

addition greater efficiency in operation and allows for greater flexibility between the fishing vessel and the pump.

It is clear, therefore, that a pump submersible with the motor driving it is an essential feature of the invention in suit, and differs substantially from a deck-mounted motor driving a submersible pump some distance away. In the circumstances the Japanese patent does not anticipate the invention in suit.

I come now to the more difficult question of obviousness. A patent may be invalid on the ground that the invention is, in terms of section 23 (1) (d) of the Act, "obvious in that it involves no inventive step having regard to what was common knowledge in the art at the effective date of the application." The test whether

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an invention lacks subject matter and is invalid for obviousness, has been authoritatively stated to be whether or not the ordinary person skilled in the relevant art could, if faced with the problem solved by the invention, and having regard to what was common knowledge in the art at the time, and using his intelligence, easily have provided the solution or taken the step taken by the patentee (Veasy's case (supra) at pages 269 - 71; and Genturico vs. Firestone, (supra) at pages 223 and 227.)

An application of the test therefore involves an enquiry into (1) the ambit of the relevant art or, into what amounts to more or less the same thing, the identity of the persons who would have been faced with the problem solved by the invention; (2) the extent of

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the common knowledge in the art at the time, and (3) whether such persons would, having regard to such common knowledge, easily have solved that problem.

The learned Commissioner did not find it necessary to define the ambit of the relevant art because it was apparently understood to be accepted that, however one may choose to define it, "the addressee through whose eyes the patent must be looked at would be a man with a good knowledge of pump technology, including its application in the fishing industry." In this Court counsel for the appellant disputed this supposition on the ground that the invention does not claim a pump for the pumping of water-borne fish, but a combination of various devices or the use of such a combination. Counsel rightly pointed out that the specification indeed concedes that the pump was not novel, and submitted that the person through whose eyes the patent

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in suit should be looked at would be a fishing technologist, i.e. a person familiar with fishing techniques. Mr. Lerch described a fishing technologist as someone akin to himself, "who has spent a great many years studying fishery, working in various aspects of fishery, particularly on the technical side of detection and various methods of capture, the development of different types of fishing gear or gear handling devices, winches, net haulers, long line handling equipment". Such a person, he said, would not necessarily have a technical mechanical background, but would very definitely have had some practical experience in the art of fishing. Mr. Wiese concurred in this description of a fishing technologist and claimed himself to have had some considerable practical experience in the fishing industry, both on the fishing and the factory side, as well as in pump technology and its application in various fields.

Counsel for the respondent contended, on the

other.../31

other hand, that having regard to the fact that the apparatus claims of the invention in suit must necessarily be regarded as addressed also to a person so placed that he might wish to design and manufacture the apparatus claimed, such a person would be a person with a knowledge of pump technology and its application, including its application in the fishing industry.

As already indicated, Claim I is not limited to apparatus for transferring water-borne fish from the sea to the hold of a fishing vessel, but also from the latter to a shore-based installation, or from one locality on shore to another. It is also clear that Claim I claims a combination of known devices for a new use, including a pump as the essential feature thereof.

The problems sought to be solved by the invention in suit are problems experienced in the prior art in connection with the transference of large quantities of fish from a fishing net to the hold of a fishing vessel

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and from there to a shore-based installation, and possibly from one locality on shore to another. The person who would normally be faced with the problems solved by the invention would therefore be a person with a knowledge of that activity in the fishing industry, both on sea and on land. As deck-mounted suction pumps were used for this purpose in the prior art, such a person would be a person having a general knowledge of pump technology and its application generally, including its application in the fishing industry. Both Mr. Lerch and Mr. Wiese appear to me to be such persons. Both had extensive practical experience of the fishing industry, and both had a knowledge of pump technology. It is significant that Mr. Lerch, the inventor of the invention in suit, consulted an expert on pumps when confronted with the possibility that the submersible motor and pump might, if pendulously suspended, rotate in operation.

Counsel for the appellant suggested that Mr.

Wiese.../33

Wiese, who had joined the fishing industry only after 1960, was an expert on pump technology rather than a fishing technologist, and therefore not the ordinary person skilled in the art to whom the specification is addressed. Mr. Wiese certainly had an extensive practical experience of pump technology and its application in various fields, but there is no evidence to support the suggestion that he must be regarded as an expert on pumps.

It is now possible to consider whether the solution of the problems solved by the invention in suit would, having regard to what was common knowledge in the relevant art at the time, have been obvious or not to the ordinary person skilled in the art.

The system of suction pump brailing by means of a deck-mounted centrifugal pump with rotary impellers was, of course, common knowledge. The main problems presented by this system was the necessity of priming the pump, and the requirement that the transfer conduit, in order to

withstand.../34

withstand the high negative pressure caused by the suction pump placed at its discharging end, had to be rigid and consequently heavy and unwieldy.

Submersible centrifugal pumps with rotary impellers, which do not require priming, were, however, widely known in the prior art. Reference to several pumps of this type was made in the evidence by Mr. Wiese. I need not refer to them all. Such pumps were used in the fishing industry on shore where water-borne fish were pumped from shallow tanks by means of submerged pumps of the type mentioned in Claim I. The motors operating such pumps were, however, not submerged with the pumps, but mounted externally to the tanks and connected to the impellers of the pumps by rigid driving shafts. Various types of such submersible pumps were widely used for pumping water from boreholes. These pumps were directly connected to the motors driving them, and both the pumps and the motors were submerged. The solution of the priming

problem.../35

problem experienced in the transference of water-borne fish by moving the pump from the discharging end of the conduit to the receiving end, could not therefore have required the exercise of any inventive skill, but must have been obvious to a person skilled in the art.

Another example referred to by Mr. Wiese in which both the pump and the motor driving it are submerged in the fluid to be conveyed, is the sludge or slurry pump. In the specification reference is also made to this type of pump where the pump illustrated is described as "a centrifugal-type pump such as one of the type normally used as a sludge pump in sewage systems". This type of pump was widely used in the mines for pumping sludge or slurry, which is a mixture of water and sand. The pump and the motor drivingly connected to it are both simply dumped into the area to be pumped out. The pump is heavy and during operation lies on the bottom of the area pumped. The conduit connected to the delivery or pressure side of

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the pump is a flexible hose. Because the pump is connected to the conduit at its receiving end, positive pressure is exerted by the pump in the conduit, with the result that it does not require to be rigid to withstand negative pressure, as in the case where the pump is connected to the conduit at its discharging end. It follows that it must have been common knowledge that both the priming problem and the problem relating to the requirement of a rigid and unwieldy conduit, was solvable by the simple means of moving the pump used in the suction brailing system from the discharging end of the conduit to its receiving end under the surface of the water. It must have been apparent that the problem of fish damage due to sudden excessive changes of pressure in being transferred in a suction conduit under negative pressure would be automatically solved by the adoption of the said means. The solution of the problems mentioned could not therefore have required the exercise of any inventive skill.

As.../37

As already indicated, in the case of the so-called sludge or slurry pump, both the pump and the motor driving it were, as in the invention in suit, submerged during operation. Mr. Wiese stated in evidence, and it was not disputed, that there was no difference in principle between the submersible pump unit claimed in Claim I of the invention in suit, and the sludge or slurry pump. Both are capable of performing the same function. I dare say that no one would use a sludge pump for the transference of water-borne fish, but as I understand the evidence, there seems to be no reason why a sludge pump could not with some obvious workshop improvements be successfully used for that purpose. Mr. Lerch indeed claimed that they tried to design a pump that would be more efficient than a sludge pump, but in the end returned to it.

Counsel for the appellant contended, however, that the pendulous suspension of the submersible pump unit described in the body of the specification required

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the exercise of inventive ingenuity, in view of the fact that, according to the evidence, submersible pumps used in the past were all rigidly mounted, and it was not expected that a pendulously suspended submersible pump would work, as it was feared that the whole unit would simply rotate in operation. There are several answers to this contention. In the first place, it is wrong to suggest that all submersible pumps used in the past were rigidly mounted. The sludge pump was not, though resting on the bottom its weight was probably sufficient to keep it anchored in one spot while in operation.

It should, in the second place, be borne in mind that Claim I does not claim a pendulously suspended submersible pump unit. As already indicated, Claim I is not confined to apparatus for transferring water-borne fish from the sea to the hold of a fishing vessel, but extends to apparatus for the transfer of fish from a

fishing.../39

fishing vessel to a shore-based installation, or from one locality on shore to another. In the light thereof the final integer of Claim 1, viz., "means connected to the pump unit for positioning the same in the water" clearly cannot be construed as limited to means for suspending the pump unit pendulously in the water, to the exclusion of means providing for the pump unit to be rigidly mounted.

However that may be, it does not seem to me that the fact that a pendulously suspended submersible pump was proved to work satisfactorily, notwithstanding the fact that it was feared by at least some persons that the pump would rotate in operation, indicates the exercise of any inventive skill. There was indeed no problem to overcome and nothing was in fact done to exclude a possible rotation, which fact is, significantly, not even referred to in the specification.

Mr. Lerch testified that when he conceived the idea of mounting a hydraulic motor to the pump and hanging

it.../40

it over the side of the fishing vessel with the old brailing boom, he and his superiors, with whom the idea was discussed, had rather serious doubts about the ability of the pump to function in the way it was subsequently proved to work. As I understand the evidence, which is not clear on this aspect, it was feared that the pump would at first twist, although it was accepted that when the motor was at speed, it would come to rest. A pump specialist whom he consulted, allayed their fears, in theory, at any rate. Mr. Wiese agreed that it was reasonable to expect that when the motor was started, the inertia of the moving parts would tend to twist the whole unit, but when the motor was running it would return to its position. It is clear, however, that without any modification or adaptation of then existing submersible combined motor and pump units, the submersible pump unit described was proved to work satisfactorily whilst pendulously suspended. It has been said that "a man who discovers that a known

machine.../41

machine can produce effects which no one knew could be produced by it before may make a great and useful discovery, but if he does no more his discovery is not a patentable invention" - Terrell on Patents, 11th Edition, par. 313.

It seems to me, therefore, that although the invention was an important step forward in the transfer of water-borne fish in the fishing industry, the step was not an inventive one, for I agree with the learned Commissioner that -

> "No inventive ingenuity was required to adapt or apply to fish pumping the combined motor and pump units which were known and used for other purposes, nor, in my view, can it be said that there was inventiveness in the idea of making such an application."

In arriving at that conclusion I have not been

unmindful.../42

unmindful of the fact that the appellant maintains that the apparatus or process claimed is a combination of integers, and that the respondent must therefore prove that that combination, and not merely each individual integer, was obvious (cf. Gentiruco v. Firestone, supra, at pages 242 to 244). It was not contended for the respondent that the invention was a mere collocation of known integers and not a true combination of them. But even so, I think that once the evolvement of the pump unit was an obvious step, its combination with an elongated conduit (even including a flexible one), energising means to operate it, and means for positioning it in the water, was no less obvious. That was the view of the learned Commissioner and I agree with it.

It is also true that Mr. Lerch only evolved the pump unit after experimentation. That can in appropriate circumstances support an inference of inventiveness, but only if the inventor was at the time equipped with the proper knowledge of the art (see Halsbury, 3rd ed., vol. 29, par. 103;

Levin.../43

Levin vs. Number Plates and Signs (Pty.) Ltd., 1942 C.P.D. 412 at p. 436). Here Mr. Lerch candidly admitted that he did not know much about pumps or pump design, and the evidence indicates that, if he had known more about them, for example, as much as Mr. Wiese did, much of his experimentation would probably have been unnecessary. The above-mentioned inference of inventiveness cannot therefore be drawn here (see Levin's case, ibid).

I have also not overlooked the commercial success which was claimed for the invention and conceded by the respondent. Because of this concession neither the extent of the commercial success nor the causes which gave rise to it, were canvassed during the trial. In view of the concession full commercial success must, however, be assumed for the apparatus claimed for which, according to the evidence, there was a limited market.

While, as pointed out by Terrell on Patents, 11th Edition, par. 307 -

"the.../44

"the practical utility and commercial success of the invention may be a material factor in determining whether the new result was obvious or not, it is always necessary to consider whether any commercial success is due to the patented invention or to extraneous causes. In the latter event commercial success is quite irrelevant when deciding whether the invention is obvious."

In the same paragraph Terrell quotes the following Passage from the judgment of Lord Herschell in Longbottom vs. Shaw, 8 R.P.C. 333 at page 336 -

"If nothing be shown beyond the fact that the new arrangement results in an improvement, and that this improvement causes a demand for an apparatus made in accordance with the patent, I think that it is of very little importance."

See.../45

See too Levin's case (supra) at p. 430.

It follows I think, that commercial success, though never conclusive, may turn the scales in favour of inventiveness, but it cannot, in my view, establish inventiveness where it is clear that none exists, particularly where the commercial success may be ascribed to other causes than inventiveness. It is clear that the apparatus claimed in the invention in suit brought about a substantial improvement in what had gone before, and that this improvement was probably in itself a sufficient cause for the commercial success it earned. As inventive ingenuity in the improvement brought about, must, for the reasons given, be excluded, it would be difficult to ascribe the commercial success of what is claimed as an invention to inventiveness.

Counsel rightly drew attention to the fact that, although the problems which appeared in the former suction pump brailing systems, had awaited solution for many years, at least since 1920, it is significant, if the solution was obvious, that no-one had thought of it before. That is

admittedly.../46

admittedly an important consideration, for, as was observed by Tomlin, J., in Samuel Parkes & Co., Ltd., vs. Crocker Bros., Ltd., 46 R.P.C. 241 at page 248 -

> "The truth is that, when once it has been found .....that the problem had awaited 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."

See also Miller vs. Boxes & Shooks (Pty.) Ltd. 1945 (A.D.) 561 at pages 577/586. In my view the postulates there mentioned are not present here. The introduction of suction pumps for pumping fish must have overcome the problems relating to the scoop-brailing of fish. The new problems

created.../47

created by their introduction (rupturing of fish, cumbersomeness and leaking of rigid conduit pipes, etc.) could not have been serious or urgent, since, according to Mr. Wiese, suction pumps are still being used and purchased despite the advent and success of the appellant's patented apparatus or process. Indeed, Mr. Wiese said that the latter has disadvantages (he was not asked to elaborate on them) and certain fishermen and fish-factory managers still prefer suction pumps. On all that evidence, I do not think it can be held that the problems of suction-pumping of fish were of the kind that "had awaited solution for many years", i.e., that had called out over the years for some solution, or if they were, that the appellant's apparatus or process is so "superior to what had gone before" or is so "widely used in preference to alternative devices" that "the scintilla of invention" can be inferred, or that such inference is so strong that it outweighs the other considerations against inventiveness that I have previously set out (see Miller's case, supra, at pages 586/7).

The.../48

The delay in the advent of any apparatus or process similar to that of the appellant, may also be explicable by the limited market which, according to the evidence, existed for the apparatus claimed. Mr. Wiese stated in evidence (and he was believed by the court a quo) that before the effective date of the patent in suit, the idea, which is of the essence of the invention, indeed occurred to him, but that he did not consider it worth his while to exploit it.

In so far as novelty of purpose or use of the apparatus claimed in the invention in suit is concerned, the following passage from the judgment of Lord Lindley in Gadd and Mason vs. Mayor, etc., of Manchester, 9 R.P.C. 516 at page 524, seems to me to be apposite -

> "A patent for the mere new use of a known contrivance, without any additional ingenuity in overcoming fresh difficulties, is bad, and cannot be supported."

So.../49

So is the following observation by Lord Herschell in Morgan & Co. vs. Windover & Co., 7 R.P.C. 131 at page 137 -

> "..... the mere adaptation to a new purpose of a known material or appliance, if that purpose be analagous to a purpose to which it has already been applied, and if the mode of application be also analagous so that no inventive faculty is required and no invention is displayed in the manner in which it is applied, is not the subject matter for a patent".

It seems to me, therefore, that the commercial success claimed for the invention in suit cannot establish the necessary inventiveness to support the patent.

I accordingly agree with the learned Commissioner that Claim 1 of the patent in suit is bad for want of subject matter, and that the same must be said of the other

claims to which what I have said on the subject of obvious-ness is applicable.

The appeal cannot therefore succeed, but the Commissioner's order as to costs cannot stand in view of the fact that the attack upon the validity of the patent upon the other grounds, including the ground of anticipation, failed. The principals which should guide a court in awarding costs in a case of this kind are fully set out in Genturico vs. Firestone (supra) at page 266 et seq, and need not be repeated here. Several documents were filed and much evidence was adduced in support of the attack based on anticipation and the respondent should pay those costs. Subject to that, the appellant should pay the costs of the action and counterclaim in which it failed, including the costs relating to the issues of obviousness and infringement on which the respondent succeeded. It would be impracticable, if not impossible, to apportion those costs on an exact basis, but I think that justice

would.../51

would be done between the parties if the appellant is ordered to pay only one-half of the respondent's costs of the trial. The time taken up in the court a quo on the questions of vagueness and insufficiency of description could not have affected the costs of the trial, nor did the time taken up in this Court on those questions and on the question of anticipation materially affect the costs of the appeal, and the respondent is accordingly entitled to all its costs on appeal.

Because of a possibility that something of the patent may be rescued by amendment, counsel for the appellant in this Court repeated the request made in the court a quo that the order of revocation be made provisional, and that its operation be made conditional upon the institution and the fate of an application for amendment, and that appellant be allowed a period of six months to file its notice of amendment.

The.../52

The appeal is accordingly dismissed with costs.

The following order is substituted for the order made by the court a quo :

"1. The claim in convention is dismissed;

2. The claim in reconvention is upheld, and, subject to what is ordered in paragraph 5 of this order, South African Patent No. 64/5031 is revoked;

3. The plaintiff is ordered to pay fifty per cent of the defendant's costs of the trial;

4. (a) The costs referred to in paragraph 3 shall include the qualifying fees of Mr. Wiese if he is found by the Taxing Master to have qualified himself to give evidence in this action.

(b) In so far as such declaration may be necessary, Mr. Wiese is declared a necessary witness;

5. (a) The revocation order granted in paragraph 2 is a provisional one.

(b).../53

(b) The order shall become fully operative if the plaintiff does not, within six months, file notice of an application to amend the patent or, if having filed such an application, the plaintiff withdraws it.

(c) If such an application is made, as aforesaid, and not withdrawn, it shall be decided at the hearing of such application whether or not the revocation order is to be put into operation."

BOTHA, J.A.

WESSELS, J.A.
JANSEN, J.A.
TROLLIP, J.A.
MULLER, J.A.

CONCURRED.