

***Mühlbauer AG v Manufacturing Integration
Technology Ltd***
[2010] SGCA 6

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Mühlbauer AG v Manufacturing Integration Technology Ltd

In the recent case of *Mühlbauer AG v Manufacturing Integration Technology Ltd [2010] SGCA 6*, the Singapore Court of Appeal (the "Court") upheld the validity of a patent, which claimed, among other things, a device for inspecting and rotating electronic components onto printed circuit boards or tape and reel packaging.

In doing so, the Court reversed the decision of the Singapore High Court that the patent was invalid for lack of both novelty as well as inventive step.

Background

Mühlbauer AG (the "Appellant"), is a company incorporated in Germany. It is the registered proprietor of Singapore Patent No. 117982 entitled "Device for Inspecting and Rotating Electronic Components" (the "Patent") granted by the Intellectual Property Office of Singapore and in force in Singapore since 16 February 2004.

With demand for smaller electronic devices increasing, the Appellant had recognised the need to design a machine to assemble smaller electronic components faster to increase productivity.

The key difference in the Appellant's invention from that of earlier devices for inspecting and rotating electronic components onto a substrate (i.e. circuit board etc.), is that it has two pickup heads (for picking up electronic components) arranged directly opposite each other on a pivoting part, which means that two electronic components can be moved simultaneously (rather than in stages). One pickup head picks up an electronic component while the other pickup head concurrently transfers a previously picked up electronic component to the substrate. Unlike earlier machines, which operate on the basis of a two stage process whereby a single electronic component is inspected by a camera in order to determine the position and orientation of the electronic component, before it is picked up and transferred to the substrate, the Appellant's invention operates on the basis of a continuous cycle of pickup and transfer. By means of a through opening located transversely between the two pickup heads, the electronic component is inspected during the rotational process, which means that no additional time is incurred in having to move the machine into position for optical inspection of each electronic component before pickup. The process time is therefore reduced, resulting in greater output.

Manufacturing Integration Technology Ltd (the "Respondent"), is a Singapore company alleged to have infringed the Patent pursuant to s 66(1)(a) of the Singapore Patents Act (Cap 221, 2005 Rev Ed) (the "Act") by making, disposing of, offering to dispose of, using or importing the patented product and/or keeping the patented product, whether for disposal or otherwise. In particular, the Appellant complained that the Respondent had manufactured and marketed a device under the trade mark or name "CAERUS" which infringed the Patent.

Whilst the Respondent did not dispute that its machine infringed the Patent, and in fact acknowledged (in the High Court) that its machine infringed all 10 claims of the Patent, it did however contend in its counterclaim that the Patent lacked novelty as well as any inventive step *vis-à-vis* the state of the art and should therefore be found invalid.

The High Court Decision

The trial judge (the "Judge") found that the Patent failed on two of the three conditions governing patentable inventions under section 13(1) of the Act, namely, the invention must be new and involve an inventive step.

In reaching his decision, the Judge relied on the evidence provided by the Respondent's expert witness, Mr John Briar, who described four existing patents and a machine as forming the state of the art. Whilst the Judge acknowledged that the Appellant's invention had increased productivity (i.e. 20,000 units per hour compared to the earlier ASA Patent which had only increased throughput to 6,000 units per hour), he was of the view that it was only natural that productivity would increase with time and better equipment. The Judge found that there was no novelty or inventive step and in light of the evidence provided by Mr Briar, the Patent was declared invalid, in view of at least one of the pieces of prior art, namely, the ASA Patent, which he found anticipated all of the key concepts of the Patent.

Court of Appeal

The two legal issues in the appeal were whether or not the invention is new (or novel) and whether or not it involved an inventive step.

Novelty

Under Singapore law, whether an invention is new is assessed against the state of the art (Section 14 of the Act), which is the knowledge existing before a patent application for the invention is filed, or before the priority date.

In determining the issue of novelty, the Court followed the test set out by Sachs LJ in the English Court of Appeal decision of *The General Tire & Rubber Company v The Firestone Tyre and Rubber Company Limited and Others* [1972] RPC 457 ("*General Tire*") which states that "...if the prior inventor's publication contains clear description of, or clear instructions to do or make, something that would infringe the patentee's claim if carried out after grant of the patentee's patent, the patentee's claim will have been shown to lack novelty, that is to say, it will have been anticipated..."

Following the above test, the Court noted that "in seeking to establish anticipation for the purposes of discounting (or even ruling out altogether) novelty, the directions contained in a prior art (which constitutes part of the state of the art) must be so clear that following those directions must inevitably lead to something that would, if the patentee's patent were valid, infringe the patentee's claim." The Court noted that this test had been applied in the local case of *Genelabs Diagnostics Pte Ltd v Institut Pasteur and another* [2000] 3 SLR R 530 where it had further been held that the prior publication must "*not only identify the subject matter of the claim in the later patent*" but must also be an "enabling disclosure", which means that an invention "would be anticipated by a piece of prior art if the teachings disclosed in this prior art *are sufficiently clear and complete to allow the skilled addresses to make the invention.*"

In addition to the above, the Court relied on the guiding principles set out by Lai Kew Chai J in *Trek Technology (Singapore) Pte Ltd v FE Global Electronics Pte Ltd (No. 2)* [2005] 3 SLR 389 which it noted are now considered instructive in resolving the question of fact as to whether or not an invention may be considered "new" for the purpose of section 14 of the Act. These principles are set out below:

- (a) The prior art documents (which contain patent specifications and other literature) must *be construed as if the court had to construe it at the date of publication*, to the exclusion of information subsequently discovered by a reader skilled in the art to which they relate having regard to the state of knowledge in such art at the relevant date. An *ex post facto* analysis is not appropriate. Subsequent events or matters must be disregarded. (*General Tire*) at 485;
- (b) *The court must not combine or "mosaic" disparate pieces of prior art in order to arrive at the invention in question. Each document should be considered separately;* and

- (c) The reader skilled in such art is a *person of competent but average technical skill, who is unimaginative.*

In reaching its decision on novelty, the Court took time to describe each and every piece of prior art separately, and applying the above principles, found that the Patent had not been anticipated by the prior art, and is novel. The novelty being that the Patent operates with two pickup heads on a pivoting part whereby optical inspection and pickup are concurrent; unlike the prior art, which operates by a two stage process with a separate stage for optical inspection and pickup.

The Court acknowledged that the idea of using two pickup heads is mentioned in the prior art, namely, the ASA Patent. However, as this concept was not pursued in the prior art and in fact was mentioned in a negative light in the ASA Patent, or in the words of the Court, in such a way that it “teaches away” from the use of a two head pickup (due to the risk of an electronic component flying off a pickup nozzle due to centrifugal force thereon), the Court was satisfied that the Patent had not been anticipated by the ASA Patent or any of the other pieces of prior art.

Inventive Step

Section 15 of the Act defines an inventive step by stating that “an invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art”.

In relation to Section 15 above, the Court applied the four-step test for inventiveness espoused in the English Court of Appeal decision of *Windsurfing International Inc v Tabor Marine (Great Britain) Ltd [1985] RPC 59* (the “*Windsurfing test*”) which is now widely accepted as instructive in resolving the issue of inventiveness. The test is set below:

- (a) Identify the inventive concept embodied in the patent in suit.
- (b) The court then assumes the mantle of the normally skilled but unimaginative addressee in the art at the priority date, imputing to him what was, at the date, common general knowledge in the art in question.
- (c) Identify what, if any, differences exist between the matter cited as being “known or used” and the alleged invention.
- (d) The court then asks itself the question whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to the skilled man or whether they require any degree of invention.

Applying the above test, the Court found that the inventive step embodied in the Patent is the insertion of a through opening in the middle of a two-head pickup assembly, from a normal opaque one-headed assembly.

Unlike the test for novelty, the Court noted that it is not necessary to look at each piece of prior art separately, and that it is possible to combine or mosaic the prior art in order to determine what the state of the art is with regard to the inventive step. In doing so, the Court noted that whilst one of the pieces of prior art, namely, the Matsushita Patent, established a system for direct vertical inspection, and another related to two head pickups moving in an alternating clockwise/anti-clockwise rotation (both concepts embodied in the Appellant’s invention), no evidence was shown that a two head pickup assembly would be able to facilitate concurrent inspection and pickup. The Court found that combining these two examples of prior art - vertical inspection and alternating clockwise/anti-clockwise - with a new concept, the transverse opening *within* the middle of the pivoting dual head pickup assembly, the Appellant had come up with an invention that was not at all obvious to the notional skilled person and therefore inventive.

In reaching its decision on inventiveness, the Court noted that two prejudices had been overcome by the Appellant's invention: the prejudice against the use of two heads, and the prejudice in favour of multiple heads, and concluded that the fact that three of the pieces of prior art all employed more than two pickup heads "only serves to throw the inventive nature of the step taken by the Appellant into starker relief". This was also noted by Jacob LJ in the English Court of Appeal decision of *Pozzoli SpA v BDMO SA* [2007] FSR 37 at [27] "**A patentee who contributes something new by sharing that, contrary to the mistaken prejudice, the idea will work or is practical has shown something new**".

In view of the above, the appeal was allowed and the Court granted the Appellant a certificate of contested validity in respect of the Patent.

Conclusions

This case is significant as it clarifies the legal position with regard to the tests for novelty and inventiveness of a patent and the difficulties surrounding each of these two areas of patent law. It also highlights the role of "commercial success" in determining whether an invention is novel or obvious. Whilst the Court agreed with the Judge (in the lower court) that increased productivity and higher sales are not conclusive as to matters of novelty and obviousness, the Court took the view that "these facts **do** function in some measure" in determining novelty and obviousness of a patent and in fact, "commercial success" has been approved and applied in previous cases in Singapore by both the High Court and the Court of Appeal in considering and finding inventiveness.

Further Information

Should you have any further queries, please do not hesitate to contact the Intellectual Property Department, Lee & Lee. The contact persons are Mr. Tan Tee Jim, S.C. at tanteejim@leenlee.com.sg or Ms. Anne-Louise McMenemy at annelouisemcmenemy@leenlee.com.sg. You can also reach us by fax at +65 6324 1638.

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