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Case No: CA-2022-001976

IN THE COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE, BUSINESS AND PROPERTY
COURTS OF ENGLAND AND WALES, INTELLECTUAL PROPERTY LIST (ChD),
INTELLECTUAL PROPERTY ENTERPRISE COURT
Mr Nicholas Caddick KC sitting as a Deputy High Court Judge
[2022] EWHC 2197 (IPEC)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 18 July 2023

Before :

LADY JUSTICE KING
LORD JUSTICE ARNOLD
and
SIR CHRISTOPHER FLOYD

Between :

VERNACARE LIMITED	<u>Claimant/</u>
	<u>Respondent</u>
- and -	
MOULDED FIBRE PRODUCTS LIMITED	<u>Defendant/</u>
	<u>Appellant</u>

Tom Alkin (instructed by **Walker Morris**) for the **Appellants**
Michael Hicks and **Jamie Muir Wood** (instructed by **W P Thompson**) for the **Respondents**

Hearing date: 20 June 2023

Approved Judgment

This judgment was handed down remotely at 10.30am on [date] by circulation to the parties or their representatives by e-mail and by release to the National Archives.

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Sir Christopher Floyd:

Introduction

1. This appeal, from a judgment and order of Mr Nicholas Caddick KC sitting in the Intellectual Property Enterprise Court as a Deputy High Court Judge, concerns the judge's finding that claims 1 and 9 of GB Patent No 2 439 947 ("the 947 patent") were valid. The issue arose in patent infringement proceedings between Vernacare Limited ("Vernacare"), the proprietor of the 947 patent, and Moulded Fibre Products Limited ("MFP"). MFP contended that claims 1 and 9 of the 947 patent were invalid for lack of inventive step in the light of the disclosure of Japanese patent application No JPH7-137726, published 30 May 1995 ("Shimooka"). A second Vernacare patent, GB Patent No 2 446 793, was found to be valid but not infringed by MFP and there is no appeal from that part of the judge's order. The judge gave MFP permission to appeal in respect of his conclusions on the 947 patent.

Technical background

2. The 947 patent, which has a priority date of 31 July 2006, describes and claims an open-topped, detergent resistant washbowl. In practice, the washbowls with which the action is concerned are used in hospitals, care homes and nursing homes to hold water for washing patients who are confined to bed or find it difficult to reach washing facilities to wash themselves. The washbowl of the invention is made from moulded paper pulp of the kind one sees in packaging inserts, egg boxes and trays for holding take-away drinks. The resistance to detergents is conferred by the addition of a fluorocarbon to the paper pulp in the course of the manufacturing process. The products with which the 947 patent is concerned are intended to be single use and disposed of in a macerator, a device which reduces the paper particles to a size which enables them to be discharged into the normal sewer system.
3. The manufacture of moulded paper pulp products starts with the pulping of wood chips or recycled paper using hot water, high energy and high shear mixing. Various chemicals can be added to the resultant pulp. The pulp mix is then compressed against a shaped screen so that the pulp is moulded to the required shape before being dried. The chemicals added to the wet pulp are known as wet end or internal additives to distinguish them from the dry end surface treatment of the finished article. Some wet end chemicals known as process chemicals (or control additives) assist in the manufacturing process. One example of these is a biocide which is essential to control microbial growth in the warm organic medium of the pulp. Other wet end chemicals are added to produce properties that are desirable in the end product. Examples of these are binding agents or binders which enhance the structural tensile strength of the moulded paper pulp product and sizing agents or sizers which make the product more resistant to penetration by liquids.

The skilled person

4. The judge found at [23] that the skilled person (or team):

“a. is a designer of single-use, maceratable, paper pulp products;

b. understands how such products would be stored, used and disposed of in, for example, hospitals;

c. has an understanding of the moulding techniques needed to achieve particular shapes;

d. does not have a particularly broad chemistry background or knowledge, but has a working knowledge of the ingredients typically used in the pulp formulations used to make moulded paper pulp products (including the sizing agents, binding agents and biocides that were in use in the moulded paper pulp sector);

e. would be interested in the wider world of paper pulp products but would, in general, be unlikely to question the *status quo* with regard to matters of pulp composition used in the moulded paper pulp sector; and

f. would, if a technical issue arose regarding, in particular, pulp formulation, seek specialist advice.”

5. The judge rejected a contention by MFP that the skilled team included a skilled paper chemist. That conclusion was not challenged on this appeal.

Common general knowledge

6. The judge made the following findings about the common general knowledge of the skilled person:

(a) at [93]: “that moulded paper pulp could be (and was being) used to make a broad range of products, including food containers, cup holders, egg boxes, packaging for products, seed trays, plant pots and a variety of single use medical items such as those offered by Vernacare and its competitor, Cullen. Such medical use items included disposable, one use, urine bottles, bed pans and general purpose bowls (sometimes called vomit bowls). However, it was also known that such products were not detergent resistant and that there was no detergent resistant moulded paper pulp washbowl.”

(b) at [94] that “there was no evidence as at 2006 of any product being made from moulded paper pulp whose composition included a fluorocarbon.”

(c) at [95]: that “whilst it was known in the wider paper/paperboard industry that adding a fluorocarbon to a pulp mix would make the paper/paperboard more resistant to oil, water and grease, this would not have been part of the common general knowledge of the skilled person within the moulded paper pulp sector.”

(d) at [96] that “even if the skilled person in the moulded paper pulp sector had been aware of the use of fluorocarbon in the

wider paper/paper board industry ... that skilled person would not have known that such use of a fluorocarbon would also or was likely to provide detergent resistance.”

The 947 patent

7. At page 1 lines 5-23 of the description the 947 patent explains the nature of the problem as follows:

“It is known to form disposable urine bottles, bed pans and the like from paper pulp which, after use, can be placed in a macerator to reduce the particles to a size where they can be discharged into the normal sewer system. It would also be desirable to form other articles, notably wash basins, from paper pulp so that they too are disposable. However, whilst the moulding of wash bowls and the like presents few technical problems, it has been found that the presence of soap or detergent in the water carried by the wash bowl renders the moulded paper pulp article very absorbent, with the consequence that the article disintegrates very quickly, thereby rendering it unusable.

Therefore, for receptacles which are likely to come into contact with soap or detergent, it is not possible to form them from disposable paper pulp and instead reusable receptacles, usually formed from plastics, are used. These require thorough cleansing after each use, but even with very thorough cleaning, the risk of cross-contamination and cross-infection between patients remains.

It is an object of the present invention to provide a paper pulp formulation which can be made into moulded paper pulp articles which will allow the article to retain its shape and rigidity.”

8. As the description goes on to explain, by including a fluorocarbon, which it calls a “detergent resistant binding agent”, in the paper pulp formulation, the moulded wash bowls do not disintegrate when they come into contact with soap solution or detergent solution. The fluorocarbon additive is in fact what the industry would describe as a sizing agent, not a binding agent, but it is common ground that, although initially confusing, nothing ultimately turns on this. To avoid confusion in this judgment I will use the term “detergent resistance agent” to refer to the required additive.
9. At page 4 of the description one finds this passage which is of relevance to claim 9 of the 947 patent, which is suggested to have independent validity:

“It has been found that an amount from 10ml to 200ml of the detergent resistant binding agent per Kg of dry base material is effective to provide the desired properties of resistance to soap and detergent. An amount of 10 to 100ml of detergent resistant

binding agent per Kg of dry base material is preferred, more preferably 30-40 ml.”

10. It was common ground before us that these suggested quantities, on their own, told the reader virtually nothing about the relative amount of fluorocarbon in the mix, because the fluorocarbon would be suspended or dissolved in the liquid volume of carrier at an unspecified concentration. Although the description goes on to refer the reader to a particular proprietary product (a fluorocarbon resin emulsion called Mystolene), claim 9 of the patent is limited solely by reference to the proportion of carrier in the dry mix.

The claims

11. Claim 1 is in the following terms:

“An article manufactured from:

a mouldable paper pulp composition comprising an aqueous suspension

of:

(a) a base material comprising paper particles; and

(b) a detergent resistant binding agent for the paper particles, in an intimate and substantially homogenous mix;

wherein the article is an open-topped washbowl;

wherein the detergent resistant binding agent comprises a fluorocarbon;

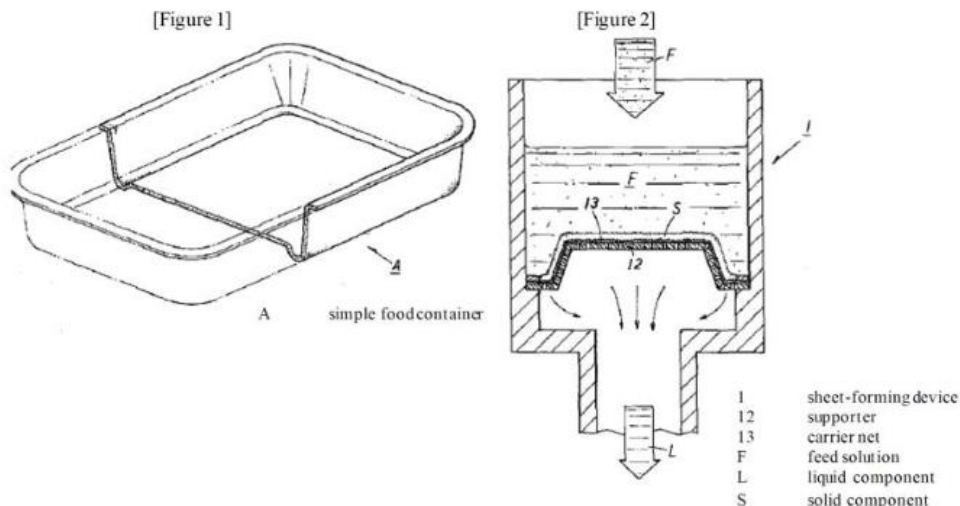
and wherein the composition further comprises a biocide.”

12. Claim 9 adds the requirement that:

“the detergent resistant binding agent is present in the mouldable paper pulp composition is an amount from 10ml to 200ml per Kg dry weight of base material.”

The disclosure of Shimooka

13. Shimooka is entitled “Simple food container”. As can be gleaned from the title, Shimooka is not concerned with washbowls for use in hospitals. The abstract of the disclosure states that the purpose is to “provide a short-time use food container in a variety of shapes that is made by sheet-forming, has excellent water and oil repellence, and is for use at parties and picnics, etc”. The two figures from Shimooka are reproduced below:



14. In Figure 2, pulp is fed as shown by the arrow marked F into the device 1 where it settles on a carrier net 13 on support 12. The solid component S of the pulp feed is extracted on the net to form a layer and the liquid component L drains through the net and out of the device where indicated by the arrow marked L. Although there are repeated references to sheet forming in the disclosure, there was in the end no dispute that what Shimooka specifically describes is a product being formed by moulding paper pulp, and the references to sheet-forming would be understood as encompassing that mode of manufacture.
15. At [0001] Shimooka explains that the food containers may be “tray-shaped or cup-shaped”. At [0002] it continues (in a passage headed “Background of the Invention”):
- “Conventionally, disposable food containers are used as single-use tableware at picnics and parties, etc. Most of these simple food containers are made of Styrofoam or various synthetic resin films. However, such Styrofoam and various synthetic resin films cannot be recycled and are disposed of as rubbish after use, causing such problems as toxic gases to be generated during incineration and damage to incinerators due to high-temperature combustion.”
16. That passage makes plain that Shimooka’s food containers include tableware.
17. Shimooka goes on to explain that such food containers are also made from “sheet-shaped thick paper” which is laminated with resin in order to give it water and oil resistance. These paper products are said to limit the shapes which can be made. For example it is not possible to make a container with an internal partition or a product having a deep bottom. At [0004] Shimooka then says:
- “Therefore, if a manufacturing method using sheet-forming rather than pressing is adopted, it is possible to manufacture a product having a partition inside or a product having a deep bottom, and the degree of freedom in shape can be expanded. However, in a paper container made simply by sheet-forming, as food, etc. comes into direct contact with the container, if

water or oil contained in this adheres to the container, there is a problem such that the container absorbs the water or oil, and softens or loses its shape. Namely, instead of having a degree of freedom in shape, a food container made by sheet-forming has the intrinsic property of being vulnerable to water and oil.”

18. At [0006] Shimooka explains that the object of the invention is to develop a container made from moulded paper pulp that can hold food containing water and oil, and that has a degree of freedom in shape during manufacturing whilst also being low cost and not posing hygiene or safety problems. The means of achieving this is set out at [0007]:

“[Constitution of the Invention]

[Means of Achieving the Purpose] Namely, the making of the simple food container according to the first invention of the present application is characterised by being a container formed by feed solution the main raw material of which is pulp being formed into sheets, and by a fluoro-resin being added to this container”.

19. There is no dispute that the fluoro-resin described by Shimooka is a fluorocarbon. Having described a number of embodiments in some of which the fluoro-resin is added to the pulp mix, Shimooka describes the effect of the addition of the fluoro-resin and other benefits of the invention at [0026] thus:

“First, when a fluoro-resin is added to the sheet-formed container, as the surface of the sheet-formed container has excellent water and oil repellence, it can hold foods containing water and oil, unless it is used for a long time it will not lose its shape. And no water or oil will seep through, making it ideal as a short-time container for picnics and parties.... Further, as the container is manufactured by sheet-forming, it is possible to have a wide variety of shapes, such as having a partition in the container.”

20. In summary, Shimooka discloses that a wide range of shaped articles, including tableware, can be made by moulding paper pulp and that if a fluorocarbon is added at the wet end the shaped articles will have enhanced water, oil and grease resistance. It says nothing about resistance to soap or detergent.

The judgment of Mr Caddick KC

21. The judge followed the well-known structured approach to the assessment of inventive step explained by Jacob LJ in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588 at [23]. At [80], in the section of his judgment dealing with the construction of the claims of the 947 patent, the judge identified an issue between the parties as to the interpretation of the term “washbowl”. He considered that that issue had been “subsumed into the broader point of construction subsequently raised by MFP in its closing submissions (the nature of the inventive concept disclosed by the claim)” and proposed to deal with it in the context of that point. At [82] to [87] the judge

considered the rival contentions as to the inventive concept of claim 1. Vernacare contended that the inventive concept was that a detergent resistant washbowl can be made using a fluorocarbon agent in the composition from which it is made. MFP contended that the inventive concept was an article with the following features (1) it is an open topped receptacle (of any size) that is capable of being used as a washbowl in the sense that it can hold a volume of water and (being open-topped) can be dipped into by the user, (2) it is made from mouldable paper pulp and (3) its pulp composition included a detergent resistance agent that comprised a fluorocarbon such that the article is in fact detergent resistant.

22. The judge accepted Vernacare's construction and rejected MFP's. This was because he considered that it was not correct to say that the claim extended to any article which could be used as a washbowl. He considered that "the skilled person would attach more significance to the term "washbowl"". Thus:

"the skilled person would be well able to distinguish between an article that "is an open topped washbowl" as required by claim 1 and another article, for example a plant-pot or an egg box, that is not an open topped washbowl but that is merely capable of serving the same function (i.e. of containing a volume of water and of being dipped into in order to carry out a wash). The latter would not in any normal sense be referred to as a washbowl."

23. Accordingly, when the judge analysed the difference between the disclosure of Shimooka and the inventive concept for the purposes of *Pozzoli* question (3), he did so on the basis of the inventive concept advanced by Vernacare. The first difference (which was common ground) was the absence of any reference in Shimooka to the addition of a biocide to the paper pulp. This he dismissed as irrelevant as being part of the common general knowledge and Vernacare accept that he was right to do so. The judge went on, however, to identify further differences, namely that whilst Shimooka disclosed the use of a fluoro-resin to give oil and water resistance to a "simple food container", claim 1 disclosed the use of a fluorocarbon to give detergent resistance to a washbowl.

24. With these distinctions between Shimooka and claim 1 in mind the judge went on to dismiss the obviousness case in the following terms at [123]:

"As a starting point, the skilled person would have read Shimooka with interest and would have seen that it disclosed the use of a fluorocarbon to provide oil and water resistance in a food container. I do not think that the skilled person would have been put off by the confusion as to whether Shimooka was talking about a food container made by sheet forming rather than by moulding. Nevertheless, it seems to me that the skilled person in the moulded paper pulp sector had no particular need to think more about oil or water resistance and, given that person's common general knowledge, no reason to think that the use of a fluorocarbon to make a food container resistant to water or oil may be relevant to the issue of making a detergent resistant washbowl from moulded paper pulp. There was, in

effect, nothing in Shimooka that would have led the skilled person in the moulded paper pulp sector to try adding fluorocarbon to the pulp mix as a means to address that issue, let alone to the conclusion that to take such a step was obvious. Such a step would require the skilled person to take what to him or her would have been an inventive step. It seems to me that having read Shimooka with interest the skilled person (being uninventive) was likely to conclude (in the words of HHJ Birss QC in the EPP Proceedings at [41]) that “I have read it with interest, but I am not interested”.

25. The judge dealt with claim 9 at [128]. He said:

“In closing, MFP’s case was that because the effects of adding fluorocarbon would depend on the fluorocarbon content of the liquid additive, which was not specified in the claim, the claimed range was arbitrary and obvious on the basis discussed in T939/92 *AgrEvo/Triazoles* [1996] EPOR 171. However, as MFP’s pleaded case is simply one of obviousness over Shimooka ..., I do not think that this is an argument open to MFP. So far as I can discern, there is nothing in Shimooka ... to render claim 9 obvious.”

26. The judge then went on to consider briefly and then reject a case of long felt want and commercial success which had been advanced by Vernacare in support of the validity of the claims of the 947 patent. He concluded that although Vernacare’s product had been a success, this of itself did not support a case of non-obviousness. He also found the evidence regarding long felt want to be of no assistance. Vernacare does not challenge those conclusions.

The grounds of appeal

27. MFP have three grounds of appeal:

Ground 1: The judge failed to articulate a construction of the term “washbowl”.

Ground 2: The judge wrongly formulated the inventive concept of claim 1.

Ground 3: The judge wrongly found claim 9 to be independently inventive.

Ground 1

28. Mr Alkin, who appeared for MFP before us as he did below, submitted that the judge had failed to articulate his own construction of the term “washbowl”. If, by that, he meant that the judge had not produced a comprehensive definition of the term, then he is correct. It is not, however, universally true that a judge must articulate a comprehensive definition of every word or phrase used in the claim. In some cases it may be sufficient to point out that, whatever else the term covers, it does not cover the particular disclosure alleged to fall within the claim, provided, of course, that the judge identifies the reason why this is so.

29. The judge's construction of the term washbowl was that it excluded articles such as an egg box or plant pot which have a demonstrably different purpose, by which I understood him to mean articles the physical features of which would lead one to identify the article as something other than a washbowl. He also accepted, as I read the judgment, that it must contain sufficient water to be useful for washing. I would therefore acquit the judge of failing altogether to articulate a construction of the term washbowl. I do not think that this particular ground of appeal, on its own, leads MFP anywhere.

Ground 2

30. Mr Alkin argued that, by defining the inventive concept as being that a detergent resistant washbowl *can be made* using a fluorocarbon agent, the judge introduced an illegitimate purpose-based element into the claim. The claim had no such element. The consequence was that the judge's construction wrongly excluded a detergent resistant washbowl which was made for reasons other than achieving detergent resistance.
31. Mr Alkin relied on *Hallen v Brabantia* [1991] RPC 195. That case concerned coating the helix of a corkscrew with a friction-reducing material. The judge held that it was obvious to coat any such helix in order to assist its insertion into the cork. Doing so, however, had the additional benefit with a particular type of corkscrew (called the self-puller) that the coating eased the extraction of the cork as well. This additional benefit, so the judge had held, was not obvious. At page 213 Slade LJ (giving the judgment of the court which also included Taylor LJ), identified the insertion of the helix into the cork as "purpose (a)" and the extraction of the cork as "purpose (b)". At page 213 line 31 he said:
- "If the plea of obviousness is to succeed, the court has to be satisfied that it would have appeared to the hypothetical technician, skilled in the art, but lacking in inventive capacity, worthwhile to coat the helix of a self pulling corkscrew with a friction-reducing material for purpose (a) or purpose (b) or both of them."
32. As the addition of a friction-reducing coating to a self-puller was obvious to assist insertion, it did not matter that the added benefit of easing the extraction was not obvious. The patent was accordingly held invalid. Adapting that statement to the facts of the present case, Mr Alkin submitted that if it was obvious to make an article fitting the description "washbowl" from a fluorocarbon pulp for the purposes of achieving oil and water resistance (purpose (a)) then it was irrelevant that it was not obvious that detergent resistance (purpose (b)) would also be achieved.
33. Mr Alkin argued that Shimooka either disclosed or made it obvious to make an article meeting the requirements of the claim. The skilled person carrying out Shimooka would do so in the expectation of obtaining an article with oil, water and grease resistance. It did not matter that Shimooka did not disclose the additional benefit of detergent resistance. Although not expressly disclosed in Shimooka, it was common ground that the products which it taught would in fact be detergent resistant. The addition of a biocide was obvious in view of the need to prevent bacterial growth in the pulp machinery. The cup-shaped food container disclosed by Shimooka had all

the characteristics of a washbowl. Even if that was not right, a bowl was an obvious implementation of Shimooka, particularly given the reference to making deep-bottomed articles and the fact that tableware was expressly within Shimooka's contemplation.

34. Mr Hicks, who appeared for Vernacare with Mr Muir Wood, as they did below, argued that this obviousness argument was constructed artificially and with the benefit of hindsight. There was no evidence that any Shimooka product had ever been made, and it neither disclosed nor rendered obvious a washbowl according to claim 1 of the 947 patent. It was common ground that a washbowl needed to have a degree of detergent resistance, and the skilled person would not understand from Shimooka that its products would have this property. Moreover a washbowl was for hospital use and needed to hold a substantial quantity of water and be capable of being carried from one part of the hospital to another. He supported the judge's conclusion as to the inventive concept, namely that it must be rendered obvious that a detergent resistant washbowl *can be made* from paper pulp with the use of a fluorocarbon.

Conclusion on ground 2

35. The statutory test for obviousness is that set out in Section 2 of the Patents Act 1977. That section precludes the grant of a patent for an invention which is obvious in the light of the state of the art. Although the various structured tests are useful in answering this question, they are aids to and not substitutes for the test laid down by the statute. The application of the *Pozzoli* test needs to be undertaken with that fundamental point firmly in mind.
36. Questions 2 and 4 in *Pozzoli* refer to the inventive concept. Bearing in mind what I have said about the ultimate purpose of the application of the test, it is clear that inventive concept is synonymous with "the invention". The purpose of using the phrase "inventive concept" is to make the process of analysis more straightforward by allowing the court to focus on the important features *of the claim*. It is not a licence to re-write the claim, or to import features or requirements that are not present in the claim when properly construed.
37. The first step, therefore, is to construe the claim. In the present case that task included asking oneself what were the necessary features of a washbowl. Both sides agreed that a washbowl must have a degree of resistance to water containing soap or detergent. It must also be a bowl. As Mr Alkin accepted before us, the judge was correct to hold that not every receptacle which can hold water would be described as a bowl. He accepted that the judge was right to say that an egg cup or plant pot would not be so described, as they had a recognisably different purpose. Beyond being appropriately described as a bowl, however, a washbowl must be capable of holding a sufficient quantity of water to be useful in washing a patient. So I would hold that a washbowl is a bowl (appropriately so called) which has a degree of detergent resistance and which can hold a sufficient quantity of water to be useful in washing a patient.
38. It follows that the inventive concept of claim 1 is a washbowl (as I have defined it) made from paper pulp containing a fluorocarbon. The biocide can be ignored for these purposes because it is a common general knowledge addition to the pulp.

39. By formulating the inventive concept as the appreciation that a detergent resistant washbowl can be made from pulp containing a fluorocarbon, rather than as a detergent resistant washbowl so made, the judge introduced an additional element into the claim. In my judgment, he fell into error in doing so. Properly construed, there was no requirement in the claim that the fluorocarbon be added for the purpose of conferring detergent resistance, or that the maker of the washbowl appreciates that the fluorocarbon is added for that purpose. The claim would be infringed whether or not the fluorocarbon was added for that purpose and whether or not the infringer appreciated that the consequence of adding the fluorocarbon was to achieve detergent resistance.
40. Given the nature of the attack on the patent, namely that it was obvious to make a bowl which fell within claim 1 for a reason other than achieving detergent resistance, it is unfortunate that the judge was not referred to *Hallen v Brabantia* (cited above). That case brings home the proposition that an invention may be rendered old or obvious by a disclosure which does not articulate all the benefits of the claimed invention.
41. *Pozzoli* question 4 was therefore whether a washbowl (as I have defined it) made from paper pulp containing a fluorocarbon was obvious to a skilled but unimaginative person armed with Shimooka and the common general knowledge.
42. It was not seriously disputed by Mr Hicks that the skilled person would understand Shimooka to be suggesting that an object appropriately described as a bowl could be made using the fluorocarbon containing pulp which Shimooka suggests will confer water, oil and grease resistance. It is common ground that such a bowl would in fact be detergent resistant as well. I do not accept that the use of the term washbowl in the claim imparts additional requirements, such as hospital use, the ability to hold any specific volume of water (beyond holding enough to be useful for washing) or any definable feature to enable carrying around a hospital.
43. That left the question of whether the bowl obtained following the teaching of Shimooka would hold a sufficient quantity of water to be useful in washing a patient. Mr Alkin relied on a passage of evidence from the witness statement of a Ms Turner-Gardner, a factual witness called by Vernacare in support of its case of commercial success:
- “Moulded pulp wash bowls were also known to be used but to a very limited extent. The only moulded pulp wash bowl of which I was aware was the ‘LA Wash Bowl’, an early non-detergent resistant bowl sold by Vernacare. These were used on some wards but quickly got soggy, especially when soap was added. The LA Wash Bowls were also small, ~ size of a cereal bowl so had limited use other than for a hands and face, limiting their usefulness when bed bathing patients.”
44. Ms Turner-Gardner described the product she was using as “the LA Wash Bowl” (perhaps indicating some form of trade name), as well as describing it as a “wash bowl”, but Mr Hicks told us on instructions that it was not so marketed. Rather, it was marketed as a general purpose bowl, and I will assume that this was so. To my mind the significance of Ms Turner-Gardner’s evidence is that it shows that a bowl

the size of a cereal bowl contains a sufficient quantity of water to be useful in washing a patient, albeit not enough for a full bed wash. If that is so, then it follows that there is no surviving distinction between a bowl made by following Shimooka (for Shimooka's purposes) and a washbowl according to claim 1 of the 947 patent. It would not require invention to make a bowl the size of a cereal bowl from the teaching of Shimooka.

45. It is, of course, necessary to step back and ask whether the obviousness argument is one which is artificially constructed with the benefit of hindsight. Having done so, I do not think that the obviousness argument presented against claim 1 suffers from this vice. Shimooka provides perfectly good reasons for making a bowl which would, in fact, have all the requirements of claim 1. Those reasons would have been apparent to the skilled reader at the time. No hindsight is required to see that they provided a motive to make a bowl which would, in fact, fall within claim 1.
46. Ground 2 therefore succeeds and claim 1 is invalid for obviousness over Shimooka.

Ground 3

47. Claim 9 requires the detergent resistance agent to be present in the mouldable paper pulp composition in an amount from 10ml to 200ml per Kg dry weight of base material. It is apparent from the description, and not in any event disputed by Vernacare, that by saying that the detergent resistance agent is present in an amount by volume per Kg dry weight of material, the claim is telling one virtually nothing about the relative quantity of the agent. It is merely specifying the relative amount of liquid carrier. The amount of detergent resistance agent present will depend on how much agent is dissolved or suspended in the carrier, and that is not specified in the claim. The amount could be anywhere between a minimal mass (10ml of a low concentration preparation) and the maximum mass of fluorocarbon that can be carried by 200ml of liquid. This upper end would constitute a significant proportion of the dry composition. Claim 9 is therefore very wide.
48. Mr Alkin does not dispute that the judge was entitled to hold that the argument that the claim was arbitrary and therefore obvious on the basis discussed in T939/92 *AgrEvo/Triazoles* [1996] EPOR 171 was one which ought to have been pleaded and is no longer open to him. He contended, however, that this argument was not the only one that he had advanced before the judge in his closing speech. He is clearly right about that. Paragraph 165 of MFP's closing submissions were as follows:

“The effects of adding fluorocarbon in an amount from 10ml to 200ml per Kg of dry pulp (claim 9) would depend on the fluorocarbon content of the liquid additive. This is not specified, hence the claimed range is arbitrary and thus obvious (see T 939/92 *AgrEvo/Triazoles* [1996] EPOR 171). It is also obvious on conventional grounds (see Hirn 2, §2.7 unchallenged).”

49. Paragraph 2.7 of the second report of Prof. Hirn, MFP's expert, said this:

“The dosages stated in ... [claim 9] ... would be obvious to try to any Skilled Person.”

50. The judge did not explain how he dealt with Prof. Hirn's evidence. In the final sentence of paragraph 128 of the judgment he says that he could see nothing in Shimooka to render claim 9 obvious without referring to the evidence at all.
51. The judge also does not explain on what basis he is considering the validity of claim 9. The *independent* validity of Claim 9 over claim 1 needed to be approached on the assumption that the judge had reached the wrong conclusion on claim 1, otherwise there is no point in considering it. The judge might have reached the wrong conclusion because he had wrongly concluded on the evidence that the inventive concept put forward by Vernacare was obvious. Alternatively, it could be that he was wrong about the inventive concept, and the inventive concept was (as I have held it to be) that which had been advanced by MFP.
52. It is not clear to me that the judge made any assumption about the invalidity of claim 1 in coming to his conclusion on claim 9. Even if that is wrong, however, it is clear that he did not consider the question of obviousness of claim 9 on the basis of MFP's inventive concept. He had not done so in relation to claim 1, and there is therefore no reason to suppose he did so for claim 9.
53. In my judgment, the fact that the judge did not deal with the evidence of Prof. Hirn, which was the only relevant evidence on claim 9, entitles this court to re-evaluate the issue of obviousness of that claim. We are also entitled to do so because the judge has not considered the validity of claim 9 on the assumption that the inventive concept is that advanced by MFP.
54. Prof. Hirn was not cross-examined on paragraph 2.7 of his second report and Vernacare did not attempt the task of showing by positive evidence that the wide range of amounts of detergent resistance agent specified by claim 9 was not obvious.
55. Mr Hicks submitted that Prof. Hirn was giving his evidence on the basis that the use of fluorocarbons to impart detergent resistance was part of the common general knowledge of the skilled person, but the judge had rejected this. The relevant question was what volume of fluorocarbon would be added per Kg dry weight of base material by someone seeking to implement Shimooka for the purposes of achieving water, oil and grease resistance, rather than detergent resistance. Prof. Hirn had not directed his mind specifically to this question. The judge had therefore been entitled to reject the conventional obviousness argument as well.
56. I do not accept Mr Hicks' argument for the following reasons. First, although it is correct to say that the use of fluorocarbons to impart detergent resistance was not part of the common general knowledge of the skilled person, the judge found as a fact that the skilled person would, if a technical issue arose regarding formulation, consult a specialist for advice. This would be so whatever purpose the skilled person had in view for the addition of the agent. Secondly, it is common ground that an article made following the teaching of Shimooka would in fact be detergent resistant. This shows that it is unlikely that there is any difference between the amounts of fluorocarbon which need to be added to achieve water, oil and grease resistance on the one hand and detergent resistance on the other.
57. In these circumstances, it does not matter that Prof. Hirn's evidence was given on the basis of imparting detergent resistance rather than water, oil and grease resistance.

Given that the amount of fluorocarbon is not different for the two purposes, it is not plausible that the amount of carrier that would be chosen for the two purposes would be significantly different either. Prof. Hirn's evidence that the wide range of relative volumes of carrier in claim 9 would be obvious ones to try was therefore fatal to claim 9.

Conclusion

58. For the reasons I have given, claims 1 and 9 of the 947 patent are invalid. I would allow the appeal.

Lord Justice Arnold:

59. I agree.

Lady Justice King:

60. I also agree.