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PATENTS ACT 1977

CLAIMANT	Vapormatt Limited
DEFENDANT	Phibo Industries BVBA
ISSUE	Application under section 72 for revocation of patent EP(UK)2801443
HEARING OFFICER	H Jones

DECISION

Introduction

1 An application under section 72(1) of the Act for revocation of EP patent EP(UK)2801443 was filed by Vapormatt Limited ("the claimant") on 6 July 2020. The patent stands in the name of Phibo Industries BVBA ("the defendant") and was granted on 4 November 2015. It was filed on 7 May 2013 with no declaration of priority.

2 Prior to the application for revocation, two Office opinions had been issued in relation to this patent. In response to a request for an opinion under section 74A filed on 8 January 2018, the first of these opinions (number 02/18, issued on 29 March 2018) concluded that the claims of the patent were novel and inventive over the prior art identified by the requester. The requester subsequently filed another request for an opinion on 16 August 2018 in light of newly discovered prior art. In response to this request, the proprietor of the patent filed a request to amend the claims of the patent under section 27. The amendments included, *inter alia*, incorporating the subject matter of claim 4 into claim 1. While the proceedings under section 27 were ongoing, an opinion (number 19/18) was issued on 14 November 2018 which concluded that both claims 1 and 4 of the patent were obvious in light of the fresh prior art. The Office subsequently reported on 5 December 2018 that the request for amendment under section 27 should not be allowed, and the proprietor confirmed that they were not proceeding with the amendments on 16 September 2019. The Office reported on 7 May 2019 that the comptroller would be taking no action under 73(1A) to initiate revocation proceedings on his own initiative. It is worth noting here that Office opinions are non-binding and I have not given the opinions any weight in reaching my decision.

3 The claimant's application for revocation was filed on 6 July 2020 and set out the grounds on which the application is based, namely that the invention is not new and does not involve an inventive step.

4 On 14 October 2020 the defendant filed a counterstatement which included four sets

of proposed amendments under section 75, conditional on an adverse finding of the unamended claims. The defendant did not provide any defence of claim 1. The amendments were in the form of a main request, a first auxiliary request, a second auxiliary request and a third auxiliary request. Evidence rounds followed where both sides filed witness statements from experts.

5 In their final round of written submissions on 7 October 2021, the defendant withdrew the previously filed main, first auxiliary and second auxiliary requests for proposed amendments and put forward a new main request for proposed amendment based on the previous third auxiliary request. The claimant was given advance notice of this action by the claimant on 4 October 2021 but nonetheless was granted additional time to file their final submissions given the defendant's new request was made so late in proceedings. The claimant's final submissions were filed on 14 October 2021.

6 The claimant's final submissions highlighted that there was some uncertainty as to whether the proposed amendment was conditional or not. The defendant subsequently clarified by email on 27 October 2021 that the proposed amendment is unconditional. The claimant also contested the allowability of the amendment by virtue of it not being submitted in accordance with rule 35 of the Patents Rules 2007 (claimant's final submissions, paragraphs 11-12). However, I consider that the proposed amendment has been suitably delivered and I informed both sides of my view at the time.

7 The amendment was advertised for opposition on 15 December 2021. Objections to the amendment were filed by the claimant on 29 December 2021. The claimant's opposition to the amendment is on the grounds that it did not solve the lack of novelty or lack of inventive step over the prior art identified in their statement of grounds. The claimant also opposes the amendment on the grounds that it adds matter and is not clear.

8 Both sides confirmed that cross-examination of witnesses was not required and so agreed to vacate the hearing originally scheduled for 14 October 2021. The matter is therefore being decided with reference to the written submissions on file.

The patent and proposed amendment

9 The patent relates to processing stainless steel or other metallic surfaces with a processing medium. The processing medium is to be ejected out of a nozzle of a gun by compressed air and may be used to clean or degrease stainless steel (or other metallic) surfaces. The invention is particularly concerned with the composition of the processing medium, this being a suspension that includes a liquid (for example, water) and a mixture of a least two different types of products consisting of chemically inert abrasive particles. In examples described in the patent, the particles include irregularly shaped abrasive particles and spherically shaped abrasive particles. The irregularly shaped particles consist of fused alumina particles and the spherically shaped abrasive particles may be glass beads. The patent explains that when stainless steel is treated, very pure and iron-free fused alumina particles have to be used, otherwise there is a risk of iron-inclusion in the stainless steel surface that may cause unwanted oxidation or corrosion of the surface. Soluble chemical additives may also be added to the suspension. These may include a biocide agent for disinfecting the processed surface (especially important in the food, dairy or pharmaceutical industries), a degreasing agent for reconditioning old surfaces, a

corrosion inhibitor to protect treated surfaces from rust or a passivation agent for accelerating automatic passivation of stainless steel.

10 Claim 1 of the proposed unconditional amendment is based on claim 14 of the granted patent incorporating the features of claim 4, and reads as follows (strikethrough and underlining added to emphasise what has changed in comparison to granted claim 14). For ease of reference, I have broken the claim down into features corresponding to those used by the claimant in their statement of grounds.

a) A method for ~~of~~ processing a stainless steel or other metallic surfaces

a1) to improve hygienic properties of the stainless steel surface,

b) ~~by means of~~ which method comprises ejecting a processing medium which is ejected out of a nozzle of a process gun onto the surface by means of compressed air,

~~CHARACTERIZED IN THAT~~ wherein said method is a single step-method wherein, and said

c) ~~surfaces are processed with~~ a processing medium consists out of a suspension

d) comprising a liquid and a mixture of at least two different types of products

e) consisting of chemically inert abrasive particles,

f) said particles at least comprise particles having an irregular shape,

g) said particles being dispersible in said liquid,

h) said irregular shaped particles consist of fused alumina particles

i) said fused alumina particles are substantially iron-free, and

j) said particles have an average particle size of between 0.9 µm and 110 µm,

k) the processing serving to render the topography of the surface less sensitive to bacterial and soil adhesion.

Grounds for revocation

11 The claimant's opposition to the amendments are on the following grounds:

i) Lack of novelty

12 The invention defined by claim 1 of the proposed amendments is anticipated in view of prior art document E1:

E1: Ryan Ashworth and Craig Johnson, "The benefits of wet-blasting", Aluminium International Today (www.aluminiumtoday.com), November/December 2012 issue, pages 33-35.

ii) Lack of inventive step

13 The invention defined by claim 1 of the proposed amendments is obvious in light of

E1 and the common general knowledge. Alternatively, claim 1 of the proposed amendments is obvious in light of E1 in combination with the teachings of E4 or E7 with E8a or E8b:

E4: Greystar Pink Fused Aluminium oxide technical data sheet, 16 September 2009, (accessible at http://web.archive.org/web/20120618005313/https://www.graystarllc.com/products/pink-aluminum-oxide).

E7: Greystar White Fused Aluminium oxide technical data sheet, 16 September 2009, (accessible at http://web.archive.org/web/20120618005323/http://www.graystarllc.com:80/products/white-fused-aluminum-oxide-powder).

E8a: Performance specification for glass beads used for cleaning and peening, 26 September 2005, (available at https://www.shotpeener.com/library/pdf/2005131.pdf).

E8b: Apex Abrasives Industries glass beads information, available from internet archive dated 26 September 2012: http://web.archive.org/web/20120926004745/http://steel-abrasives.com:80/glass-beads.html.

iii) Added matter and lack of clarity

14 Feature a1) defines the method as improving the hygienic properties of the surface, but there is no reference to what the hygienic properties are, or to the extent of what constitutes “improved”. The only criteria mentioned in the specification in relation to what is meant by a hygienic surface, at paragraph [0071], are not defined in the claims. Feature k) defines the processing as rendering the topography of the surface less sensitive to bacterial and soil adhesion. However, the specific surface topography features discussed at paragraph [0025] of the specification are not present in claim 1. The claimant therefore argues that matter is added by virtue of intermediate generalisation.

15 The claimant also argues that these features define the invention in terms of a result to be achieved and are therefore unclear. They also argue that removal of the phrase “or other metallic [surfaces]” introduces clarity issues.

Witnesses

16 Evidence from the claimant takes the form of a witness statement from Ryan Ashworth and an expert witness statement from Timothy Berry.

17 Mr Ashworth is co-author of E1 and an employee of Vapormatt Limited. His witness statement is to demonstrate the nature and composition of the EX-blend abrasive mix referenced in E1. He states that the EX-blend is created with a mixture of iron-free aluminium oxide (angular) and glass bead (spherical) abrasive particles. Particle size, colour and ratio of aluminium oxide to glass bead is application dependent. Mr Ashworth states that the result of using EX-blend is dual-action and has led to customers using the media for many industries.

18 Mr Berry’s expert statement is to demonstrate the view of the skilled person at the

priority date of the patent. He is a previous sales engineer at Vapormatt Limited and is currently employed as sales manager at Kuhmichel Abrasiv Limited. He has 25 years of practical experience within the abrasive industry including the recommendation of abrasives and machinery to customers. In his statement, Mr Berry discusses the state of the art with respect to choosing abrasive blends to achieve a desired surface finish on metals such as stainless steel. He states that a non-metallic abrasive such as aluminium oxide would be used to remove coatings or surface contamination on stainless steel, and then a glass bead would usually be used to finish the process if a certain finish is required. Mr Berry states that it is common practice to blend these two products together as it can save processing time or reduce the aggressiveness of 100% aluminium oxide. He also considers what the skilled person would understand from prior art document E1, and how they would have implemented the process disclosed therein.

19 The defendant provided evidence in the form of an expert witness statement from Pieter Haers. Mr Haers is a business development manager at Phibo Industries and is responsible for business related to the process and corresponding processing medium described in the patent. He describes how the process was developed due to evolution of hygiene requirements in the food industry, whereby surfaces processed by dry blasting were found to be too rough, resulting in traces of food adhering to the surface and increasing the risk of food contamination. Phibo Industries therefore experimented with alternative surface treatment processing media to find an abrasive medium leading to the desired hygienic surface characteristics. A suspension comprising microparticles in the range of 0.9-110µm resulted in the desired topographical characteristics of the treated surface and use of such a processing medium has achieved commercial success for Phibo Industries.

20 Neither side has challenged the technical knowledge, the objectivity or the impartiality of each other's expert witnesses even though they disagree with some of their opinions.

The law

21 The comptroller's powers to revoke a patent on the application of another person are set out in section 72(1) of the Act, the relevant part of which read as follows:

> *72.-(1) Subject to the following provisions of the Act, the court or the comptroller may by order revoke a patent for an invention on the application of any person … on (but only on) any of the following grounds, that is to say –*
>
> *(a) the invention is not a patentable invention;*
>
> *(b) …*

22 An invention is patentable if it meets the conditions set out in section 1(1) of the Act, namely that the invention is new, it involves an inventive step, it is capable of industrial application and is not excluded.

23 Sections 2 and 3 of the Act define what is meant by "new" and "inventive step" respectively. Section 2 states that an invention shall be taken to be new if it does not form part of the state of the art, and goes on to define the state of the art as comprising anything made available to the public before the priority date of the invention. Section 3 states that an invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art.

24 Amendment of a patent in revocation proceedings is governed by section 75(1), and section 75(2) allows another person, in the present case the claimant, to oppose any such amendment. Any opposition to amendment under section 75 must be limited to questioning whether the amendment overcomes the defects which led to the amendment request, and whether the amendment meets the requirements of section 76, i.e. that they do not add matter or extend the scope of protection.[1]

Arguments & analysis

Novelty

25 In order to decide whether claim 1 of the proposed amendments is novel it is first necessary to determine its scope and meaning. Section 125 of the Act specifies that an invention shall be taken to be defined by the claims as interpreted by the description and any drawings in the patent specification. Section 125(3) says that the extent of protection conferred by a patent or application for a patent shall also be determined in accordance with the Protocol on the Interpretation of Article 69 of the European Patent Convention. The claim must be given a purposive construction[2] and to ask what the person skilled in the art would have understood the language of the claims to mean.

Skilled person

26 The claimant identifies the skilled person as "a process gun designer, particularly one who utilises processing medium for processing stainless steel and other metallic surfaces using wet and dry blasting techniques". This does not seem to be in dispute by the defendant.

27 I am largely in agreement with this formulation. However, I note claim 1 of the proposed amendments is directed to a method of processing stainless steel surfaces with a processing medium, rather than to the process gun itself. I therefore do not consider that the skilled person would be limited to a process gun designer, but instead would consider them more broadly to be an abrasives engineer.

28 The defendant contends that the common general knowledge of the skilled person would cover how process guns work, how to use process guns to process surfaces and would include knowledge of the suitability of existing processing media for use with such process guns. They would also be aware of typical morphologies, size distributions and chemical activity of processing media. This appears to correspond to the view of the common general knowledge expressed by Mr Berry in his witness statement. Again, none of this is disputed by the defendant, and I agree.

Construction of claim

29 Feature a) defines that the method is a "method of processing a stainless steel surface". The skilled person would understand this to mean that the processing method is limited to stainless steel surfaces.

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[1] Ability International Ltd v Monkey Tower Ltd, Office decision BL O/484/14

[2] As confirmed by Arnold J in *Generics v Yeda* [2017] EWHC 2629 (Pat) (at paragraphs 134-138), having considered the earlier judgment of the Supreme Court in *Actavis v Eli Lilly* [2017] UKSC 48.

30 Feature b) would clearly be understood by the skilled person to mean that the method requires a processing medium to be ejected out of a nozzle of a processing gun by means of compressed air onto the surface. The method being a “single step-method” would be understood to mean that the surface is processed in one single step, rather than two separate processing steps as described in relation to the prior art in paragraphs [0021]-[0023] of the patent for instance.

31 Feature c) requires the processing medium to consist *only* of a suspension. As stated in paragraph [0032] of the patent, the term “suspension” takes its usual meaning in the art of a solid substance suspended in a liquid. Paragraph [0063] of the patent makes it clear that a suspension is also known as a “slurry”.

32 Feature d) simply defines the suspension of feature c) as comprising a liquid and a mixture of at least two different types of products. Examples of such “products” are given in paragraph [0064] as fused alumina particles and glass beads.

33 I agree with the claimant that feature e) would be understood to mean that the two different types of products contain *only* chemically inert abrasive particles. In light of paragraph [0033] of the patent, “chemically inert abrasive particles” are understood to be particles which will chemically not interact with other products and which will not resolve in a liquid.

34 Feature f) defines the particles of feature e) as comprising particles having an “irregular shape”. This can be construed in light of paragraph [0034] of the patent as meaning any form of particle which is not spherical, more specifically having round or sharp angles. I agree with the claimant that this feature is construed to mean that at least one of the two or more different types of products have an irregular shape.

35 I agree with the claimant that feature g) would be understood to have its usual meaning of the particles being spread within the liquid to form the suspension and that this is inherent from the term “suspension” defined earlier in feature c).

36 Feature h) specifies that the “irregular shaped particles consist of fused alumina particles”. I agree with the claimant that use of the words “consist of” would be readily understood to mean that the irregular shaped particles consist of fused alumina particles and nothing else. I note that “fused alumina” is a term in the art typically used to refer to aluminium oxide (Al_2O_3).

37 The claimant notes that the feature i), defining the fused alumina particles as being “substantially iron-free”, is not well defined in the patent. While this is true, it is evident from paragraphs [0035] and [0064] of the patent that it is necessary to use very pure and iron-free Al_2O_3 particles for processing stainless steel. I do not consider the skilled person would have difficulty in understanding that this feature therefore requires very pure fused alumina to be used in the method.

38 Feature j) specifies that “said particles have an average particle size of between 0.9 µm and 110 µm”. It is clear from paragraph [0063] of the patent that the “said particles” are the chemically inert abrasive particles (defined in feature e)), rather than just the fused alumina particles of feature i). This means the overall average particle size of the mixture of at least two different types of products is between 0.9 µm and 110 µm, and not necessarily that particles of each type of product must have the same average particle size (as is made clear by the fact that dependent claim 4

of the proposed amendments is directed to this feature (in light of paragraph [0063])).

39 The claim therefore requires at least one product of the at least two different types of products of the mixture defined in feature d) to be irregularly shaped, substantially iron-free fused alumina particles. The other product of the mixture must include chemically inert particles of a different product type, and the mixture of at least two different product types have an average particle size of between 0.9 µm and 110 µm.

40 Feature a1) and feature k) are not present in the claims as granted but have been included as part of the proposed amendments. Feature a1) states the purpose of the method is "to improve hygienic properties of the stainless steel surface". Similarly, feature k) requires the processing "to render the topography of the surface less sensitive to bacterial and soil adhesion". Both of these features would appear to define the invention by the result to be achieved, rather than limiting it to any intrinsic technical features. These features are merely statements of an advantage of the method. It is considered that these results would be implicitly achieved when performing the method of ejecting the particular processing medium out of the nozzle of the process gun onto the surface being processed. These features are therefore not considered to further limit the scope of the claim.

The prior art

41 Document E1 is an article entitled "The benefits of wet-blasting" from the November/December 2012 issue of Aluminium International Today. It relates to a wet-blasting system and process for cleaning, polishing and peening dies that are used for aluminium extrusion. In their final submissions, the claimant argues that proposed claim 1 lacks novelty over E1 when implicit disclosure is taken into account.

42 In relation to feature a), the defendant argues that the surface material of the dies is not specified in E1 and therefore there is no disclosure of processing stainless steel surfaces. The defendant states that the dies of E1 are probably carbon steel rather than stainless steel. The claimant agrees that the extrusion dies are likely to be hardened steel. I agree that E1 does not show the processing of a stainless steel surface. I therefore conclude that feature a) is not anticipated by E1.

43 E1 discloses using water and an abrasive medium to form a slurry, and introducing compressed air as the slurry is pumped towards the gun heads in order to form a powerful blast stream through the nozzles to impact on the surfaces of the extrusion dies in a single processing step. Feature b) is therefore clearly disclosed. As construed above, a slurry is another term for a suspension and therefore feature c) is thus also disclosed by E1.

44 E1 states that the recommended abrasive used for the die cleaning application is a pre-mixed compound of both aluminium oxide and glass beads. This meets the requirement of feature d). The claimant states that it is well-known in the industry that aluminium oxide and glass beads are both chemically inert. The defendant does not dispute this. Both the aluminium oxide and glass beads are referred to in E1 as particles and the mixture of the two as an abrasive. Feature e) is therefore clearly shown by E1.

45 There is no explicit disclosure in E1 that the particles comprise particles having an

irregular shape. The claimant argues that the skilled person would appreciate that aluminium oxide used as an abrasive has irregularly shaped particles due to its manufacturing process. This is not challenged by the defendant. I agree that the skilled person would understand the aluminium oxide particles of the mixture are inherently irregularly shaped. Feature f) is therefore implicitly shown by E1.

46 Feature g) is inherent in the forming of a slurry as discussed with respect to feature c) and is clearly shown by E1.

47 As noted above, fused alumina is another name for aluminium oxide. The defendant does not dispute this. Feature h) is therefore clearly shown by E1.

48 Feature i) requires the aluminium oxide to be substantially iron-free. This is not explicitly disclosed by E1. The claimant argues that the photograph of the abrasive "EX" blend of aluminium oxide and glass beads shown on page 34 of E1 is an implicit disclosure of this feature because of the pink colour of the mixture. They argue that this abrasive mixture must therefore contain what is referred to as pink aluminium oxide, which typically has an iron oxide content of less than 0.1% and therefore is substantially iron-free. Alternatively, they argue that the skilled person would appreciate that white aluminium oxide, which has very small iron oxide content and so is substantially iron-free, could be used for applications requiring reduced iron content.

49 In his witness statement, Mr Berry states that he believes the photograph of the "EX" blend clearly shows a pink aluminium oxide. I note Mr Ashworth, the co-author of E1, does not specify that the "EX" blend shown in the photograph contains pink aluminium oxide, but does state that it is made from iron-free aluminium oxide. He goes on to say that variances of the "EX" blend include colour and that this is application dependent. The defendant has not provided any argument in relation to this feature.

50 Despite the evidence of Mr Berry and Mr Ashworth, it is my view that E1 does not implicitly disclose iron-free aluminium particles. I am not convinced that the skilled person would conclude that the pink colour of the "EX" blend meant it *necessarily* contained pink aluminium oxide, rather than an additive being present in the blend for instance (which is mentioned as a possibility on page 35 of E1). I note also that E1 mentions that rust inhibitors may be added to the blend; it is entirely plausible that this could be as a result of using an aluminium oxide that was not iron-free. Again, this points away from the abrasive mix necessarily requiring the use of an iron-free aluminium oxide. Feature i) is not anticipated by E1.

51 With respect to feature j), the claimant argues that particle sizes for aluminium oxide and glass beads in the range claimed were readily available at the priority date and that selection of particle size is a routine matter and depends on the finish required. They argue this feature is therefore implicitly shown. I disagree. E1 does not mention particle sizes whatsoever and there is certainly nothing implicitly teaching that a specific particle size should be used. When implementing the teachings of E1, the skilled person could well select a particle size in the given range, but on the other hand they could also just as well select a particle outside the given range. This feature cannot therefore be considered implicit. E1 does not disclose feature j).

52 E1 discloses features b), c), d), e), f), g) and h), but does not disclose features a), i)

and j). As a consequence, the proposed claim 1 is not anticipated by E1.

Inventive step

53 I note that the defendant has framed their arguments in relation to inventive step using the EPO's problem-solution approach. However, it is well established under UK law that I am bound to follow the guidance of the Court of Appeal in *Windsurfing*[3], where a four-step approach for assessing inventive step was formulated. This approach was restated and elaborated upon by the Court of Appeal in *Pozzoli*[4]. Here, Jacob LJ reformulated the *Windsurfing* approach as follows:

> (1)(a) Identify the notional "person skilled in the art";
>
> (1)(b) Identify the common general knowledge of that person;
>
> (2) Identify the inventive concept of the claim in question or if that cannot be readily done, construe it;
>
> (3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or claim as construed;
>
> (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

54 The defendant makes reference in their arguments to the question of whether the skilled person "could" or "would" have made the step from the prior art. It is therefore relevant for me to quote the consideration of this topic by Birss J in *Hospira v Genentech*[5] (paragraph 229 to 231):

> *"Second, the law of obviousness cannot be accurately summarised simply by stating that the question is whether the skilled person would have arrived at the claimed invention, not whether they could have. The issue is multifactorial and based closely on the particular circumstances.*
>
> *Third, the word "would" is not always straightforward. Sometimes asking simply if a skilled person "would" do something risks placing too much weight on what are really minor or irrelevant factors like cost, instead of focussing on the technical issues. Moreover, the well known 9 ½ inch plate is not something a skilled person would make. It is more accurate to say that it is not patentable because the skilled person could make it without any inventive step.*
>
> *In other cases the difference between could and would is important. If the outcome rides on the result of a single experiment, the fact the skilled person could carry it out does not usually mean the invention is obvious. One often needs to ask if they would carry out the test in the expectation of a positive result."*

55 I also think it is relevant for me to emphasise that I am in agreement with the defendant that the use of hindsight must be avoided in the assessment of inventive step. This is especially the case where an allegation of obviousness is based on common general knowledge, as made clear by Kitchin J in *Ratiopharm v Alza Corporation*[6] (paragraph 105):

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[3] *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd,* [1985] RPC 49
[4] *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588
[5] *Hospira UK Ltd. v Genentech Inc.* [2014] EWHC 3857 (Pat)
[6] *Ratiopharm v Alza Corporation* [2009] EWHC 213 (Pat)

“I must also avoid hindsight. This is particularly important where, as here, there is an allegation of obviousness based upon the common general knowledge. I put it this way in Abbott v Evysio [2008] EWHC 800 (Pat) at [180]:

> *"It is also particularly important to be wary of hindsight when considering an obviousness attack based upon the common general knowledge. The reason is straightforward. In attacking a patent, attention is focussed upon the particular development which is said to constitute the inventive step. With this development in mind it may be possible to mount an attack which is unencumbered by any detail which might point to non obviousness [...]. It is all too easy after the event to identify aspects of the common general knowledge which can be combined together in such a way as to lead to the claimed invention. But once again this has the potential to lead the court astray. The question is whether it would have been obvious to the skilled but uninventive person to take those features, extract them from the context in which they appear and combine them together to produce the invention.”*

56 The claimant argues that the proposed amended claim 1 is obvious in light of document E1 and the skilled person’s common general knowledge. Alternatively, they argue that the proposed amended claim 1 is obvious in light of document E1 in combination with E4 or E7 along with E8a or E8b. I will consider this argument following the structured approach set out in *Pozzoli*, with the above authorities in mind.

Steps 1(a) and 1(b)

57 The first steps of identifying the person skilled in the art and the common general knowledge have been addressed above.

Steps 2 and 3

58 The inventive concept is that set out in proposed claim 1, as construed above. The relevant differences are evident from the assessment of novelty above, namely features a), i) and j) – that is, stainless steel being the processed surface, the fused alumina particles being substantially iron-free, and the abrasive particles of the mixture of at least two different products having an average particle size of between 0.9 µm and 110 µm.

Step 4

59 In relation to feature a), the disclosure of E1 is silent as to the material of the surface of the extrusion dies being processed. Both parties agree that it is most likely that the extrusion dies are made of hardened steel. The claimant argues that it was common general knowledge at the time of the invention that extrusion dies could be composed of metals and ceramics, and that E1 is essentially a suggestion to the skilled person that wet-blasting using a blend of abrasive materials may be beneficial to processes that currently use dry-blasting (see pages 33 and 34 of E1).

60 The defendant argues that it may be implicitly derived from the disclosure of E1 that the surface material of the dies is not stainless steel. This is because E1 mentions the use of rust inhibitors (at page 35), which are useful for types of steel sensitive to corrosion rather than stainless steel. They argue that the skilled person may even be discouraged from using the medium on stainless steel because cleaning dies is an intensive process which may result in an extremely reactive surface (which is

undesirable for stainless steel).

61 Having considered the arguments from both sides, I consider that on balance, although the extrusion dies referenced are likely to be hardened steel, the skilled person would appreciate the disclosure of E1 is not limited to such. The skilled person would understand that the use of rust inhibitors in E1 is optional depending on the application and would not take this to imply the processing is limited to carbon steel. Mention of reactive surfaces is in the context of an optional nitriding process of newly cleaned extrusion dies and I do not consider that the skilled person would consider this limited their choice of surface being processed by the method. In my view, the skilled person would readily appreciate, using their common general knowledge, that the method of wet-blasting disclosed in E1 can be applied to any suitable material, including stainless steel.

62 In relation to feature i), I have already discussed above that E1 discloses a slurry comprising aluminium oxide particles and glass bead particles, but it does not specify what kind of aluminium oxide should be used. The choice of which aluminium oxide to use to work the system of E1 would therefore be up to the skilled person.

63 The claimant argues that the pink colour of the “EX” blend shown in the photograph in E1 is likely to be understood by the skilled person as a blend containing pink aluminium oxide, which is typically substantially iron-free. It is also argued that because the processed surfaces in E1 are described as being left with reactive surfaces, the skilled person would look to choose an aluminium oxide variant that is suited to such a surface, i.e. one that does not cause contamination of the surface. This is further highlighted by the mention in E1 of the use of rust inhibitors, which shows that the risk of contamination of the surface would be in the mind of the skilled person. This would appear to be consistent with the views of the claimant’s expert witness. In his witness statement, Mr Berry suggests that the photograph of the “EX” blend in E1 clearly shows the use of a pink aluminium oxide (paragraph 15). He also asserts that upon reading E1 he would use an aluminium oxide with purity over 99.0% (paragraph 14).

64 The defendant presents no arguments in relation to this feature. I agree with the claimant, for the reasons they have put forward, that feature i) would be obvious to a person skilled in the art in light of E1 and their common general knowledge.

65 With respect to feature j), document E1 is silent on what size of particles or range of particle sizes are used in the abrasive mixture. There is nothing suggesting what particular size of particles are suitable for the abrasive mixture.

66 The claimant argues that particle sizes for aluminium oxide and glass beads in the range claimed were readily available at the priority date and that selection of particle size would be a routine matter for the skilled person and depends on the finish required. In support of this, the claimant provides prior art documents E4, E7, E8a, and E8b. E4 and E7 are technical data sheets for a pink and a white aluminium oxide respectively, provided by a company called Graystar prior to the invention. E4 shows the pink aluminium oxide is available in FEPA F sizes F14-F400, i.e. particles having mean diameters in the range 17.3-1470 µm. E7 shows the white aluminium oxide is available in micron sizes 1-50 µm. E8a and E8b are disclosures relating to glass bead abrasives. E8a discloses glass bead sizes, one of which has 95-100% passing statistics for a US mesh size of 140 and one of which has 95-100% passing statistics

for a US mesh size of 170. These mesh sizes correspond to 88-105 µm. E8b states that glass beads are available in sizes from 1 to 1000 µm.

67 The defendant admits that there is no doubt that particles of different sizes is part of the common general knowledge of the skilled person, and agrees the documents E4, E7, E8a, and E8b show that particles having the specified size exist. However, they disagree that it would be obvious for the skilled person to make the specific particle size selection.

68 The defendant argues that it is irrelevant that the process disclosed by E1 may be done with different particle sizes. They admit that it is possible that different particle sizes could have been used by the skilled person, but there is no evidence to suggest that the skilled person would have selected particles in the given size range. They argue that the skilled person would not select these particular particle sizes because E1 is directed to cleaning the surface of a hardened steel, rather than to a one-time topographical treatment of stainless steel. They further argue that E1 does not contain any pointer towards selecting the specific particle sizes in order to make the suspension suitable for a one-time topographical treatment technique.

69 However, I am not persuaded by the defendant's arguments. As already established, E1 is silent on the particle sizes of the abrasive mixture. The skilled person would therefore have to select a suitable particle size using their common general knowledge in order to implement the process disclosed. It is agreed by both parties that E1 is directed to cleaning extrusion dies that are likely to be made of hardened steel. The skilled person would therefore have to make the selection with this application in mind. It appears irrelevant that E1 is not directed to a one-time topographical treatment because neither is the claim in question – the claim merely requires the processing to be done in a single step, which E1 shows.

70 I am not convinced that the particular application of E1 would require a particle size outside of the claimed range. The defendant implies that E1 points away from using particles of the specified range because it mentions that after cleaning, the obtained surface is extremely reactive, very adhesive, and substances can easily diffuse into it (page 35 of E1). However, I do not believe the skilled person would understand that this places any limitation on the choice of particle size.

71 I consider that a selection of an average particle size between 0.9 µm and 110 µm would be an arbitrary choice that requires no inventive thought on the part of the skilled person. This size range is clearly part of the common general knowledge, and I am unable to find any reason why the skilled person would be directed away from such a size range for the particular application disclosed in E1. I therefore conclude that it would be obvious to the skilled person that an average particle size between 0.9 µm and 110 µm would be appropriate for the mixture of aluminium oxide particles and glass bead particles taught in E1. Feature j) thus lacks an inventive step.

72 Proposed claim 1 therefore lacks an inventive step over E1 and skilled person's common general knowledge.

73 For completeness, I also agree with the claimant's argument that, should the common general knowledge of the skilled person not extend to particle size, then proposed claim 1 lacks an inventive step in light of E1 in combination with either E4 or E7 and either E8a or E8b. Given that E1 explicitly recommends an abrasive

mixture of aluminium oxide and glass beads but does not specify any value for a suitable size of these particles, I consider that it would be reasonable and obvious for the skilled person to seek information about suitable particle sizes in other places. It is reasonable to conclude that E1, E4/E7 and E8a/E8b are documents that the skilled person would naturally come across and consider together. Proposed claim 1 therefore lacks an inventive step over a combination of E1 with either E4 or E7 and with either E8a or E8b.

Added matter and clarity

74 Having found that the proposed amended claim 1 lacks an inventive step, it is unnecessary for me to consider the matter of whether the amendment is unclear and adds matter. I note for completeness that it was the examiner's *prima facie* view that the proposed amendments were allowable with respect to added matter and clarity.

Conclusion and order

75 Claim 1 of the patent as proposed to be unconditionally amended is obvious in light of E1. The proposed amendment therefore fails to overcome the deficiency which led to the amendment request. By virtue of the proposed amendments being unconditional, the defendant concedes that the unamended patent is invalid. I therefore:

- refuse the defendant's application to amend the patent under section 75(1);
- order that EP(UK)2801443 be revoked.

Costs

76 The claimant asks for an award of costs in their favour. Even though the claimant has not asked that I depart from the standard scale of costs set out in Annex A of the Tribunal Practice Notice4 2/2016[7], they state that the defendant's withdrawal of the previously filed main, first auxiliary and second auxiliary requests for amendment and put forward a new main request based on the previous third auxiliary request, and in defending the validity of the granted claims despite submitting no defence to the facts in their counterstatement, has served to add cost and time to the claimant. While they do not go so far as to say that this represents unreasonable behaviour on the part of the defendant, which might necessitate an award of costs off the standard scale, there is an implication that I should account for the additional time and/or costs in any scale award I make.

77 I agree that it has been necessary for the claimant to revise their submissions because of the withdrawal of initial requests for proposed amendment and also the late indication that the final proposed amendment was as unconditional. However, the claimant had addressed the substance of its objections to the final proposed amendment in its initial submissions and so I do not consider the additional expense amounted to much, or at least not a double of the award I would make for this particular task. Although proceedings have not run as smoothly as I would expect for this type of case, the case itself was relatively straightforward such that it justifies an award towards the bottom of the scale. I determine the amount of the award in favour of Vapormatt Limited as follows:

[7] https://www.gov.uk/government/publications/tribunal-practice-notice-22016/tribunal-practice-notice-22016-costs-in-proceedings-before-the-comptroller

• Preparing a statement and considering the other side's statement: £400
• Preparing evidence and considering and commenting on the other side's evidence: £700
• Preparing final submissions: £500
• Total: £1600

78 I hereby order Phibo Industries BVBA to pay Vapormatt Limited the sum of £1600 as a contribution towards their costs in these proceedings, this sum to be paid within seven days of the expiry of the appeal period specified below.

Appeal

79 Any appeal must be lodged within 28 days after the date of this decision.

Huw Jones
Deputy Director, acting for the Comptroller