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**Datasheet for the decision
of 13 February 2013**

Case Number: T 0836/10 - 3.2.06

Application Number: 01985613.7

Publication Number: 1357874

IPC: A61F13/15

Language of the proceedings: EN

Title of invention:
FORMING RECEPTACLE

Patent Proprietor:
KIMBERLY-CLARK WORLDWIDE, INC.

Opponent:
Procter & Gamble, Inc.

Relevant legal provisions:
EPC Art. 54, 56, 123(2), 83

Keyword:
Novelty - (yes)
Inventive step - (yes)
Amendments - extension beyond the content of the application
as filed (no)
Sufficiency of disclosure - enabling disclosure (yes)



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Chambres de recours**

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Case Number: T 0836/10 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 13 February 2013

Appellant: Procter & Gamble, Inc.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
9 February 2010 concerning maintenance of the
European Patent No. 1357874 in amended form.**

Composition of the Board:

Chairman: G. Kadner
Members: G. de Crignis
W. Sekretaruk

Summary of Facts and Submissions

- I. By way of its interlocutory decision, the opposition division held that European patent No. 1 357 874 as amended according to auxiliary request 1 met the requirements of the European Patent Convention (EPC).
- II. The appellant/opponent filed an appeal against this decision and referred to documents:
- | | |
|-----|--|
| D1 | US-A-4 761 258 |
| D2 | US-A-4 610 678 |
| D7 | extract from The Chambers Dictionary, 9th edition: definition of "sheet" |
| D8a | Khimicheskoe i Neftyanoe Mashinostroenie 1, pp 34/35, January 1965 |
| D8b | Translation of D8a into English
"Photo-electrochemical method of fabricating nonwoven screens for filter centrifuges" |
| D9: | WO-A-96/31267 |
| D10 | drawings sheet. |
- III. In a communication annexed to the summons to oral proceedings, the Board indicated its preliminary view concerning the objections raised.
- IV. In reply the respondent/proprietor resubmitted a main request corresponding, with regard to the claims, to the request maintained by the opposition division but including an amended page 3 of the description and filed amended auxiliary requests 1 to 6, further relying on decision T 0327/92 concerning the extension of the doctrine of *reformatio in peius*.
- V. Oral proceedings were held before the Board on 13 February 2013.

The appellant/opponent requested that the decision under appeal be set aside and that the patent be revoked.

The respondent/patent proprietor requested that the patent be maintained with the following documents: claims 1 - 15, filed 13 February 2013; description pages 2, 3, 4, 5, 9, filed 13 February 2013, description pages 6, 7, 8, 10, as granted; drawings Figures 1 - 6, 7, as granted (drawing Figure 6A is deleted).

VI. Claim 1 reads as follows:

"A forming receptacle (10) adapted and configured to receive particulate material thereon, including super-absorbent particles, for thereby fabricating particulate congregates (42) for use as absorbent cores in personal care absorbent articles, said forming receptacle (10) comprising a substrate which defines a particulate-receiving cavity (20) in said receptacle (10), said substrate comprising elements (12, 14) defining a first major side (16) disposed toward the cavity (20), an opposite second major side (18) disposed away from the cavity (20), and a thickness (T) between the first (16) and second (18) major sides, and an array of apertures (22) extending through at least a portion of said substrate, and connecting said first (16) and second (18) major sides, aperture walls (24) defining cross-sectional areas of such apertures (22) along the thickness (T) of said substrate including a locus (25) defining a smallest cross-sectional area, and a locus defining a relatively larger cross-sectional area displaced from the smallest cross-sectional area and disposed toward the second major

(18) side of said substrate, wherein said substrate is sheet material and said first and second major sides are first and second major surfaces respectively, said receptacle (10) further comprising a matrix of said sheet material between respective ones of the apertures (22) and defining outer perimeters of respective ones of the apertures (22)."

VII. Independent claim 4 reads as follows:

"A method for forming a congregate of particulate material (42) for use as an absorbent core in an absorbent article, wherein the particulate material (48) comprises particles of super-absorbent material, the method comprising:

(a) conveying the particulate material (48) in a gaseous carrier toward a forming receptacle (10), the forming receptacle (10) comprising sheet material defining a particulate-receiving cavity (20) in the receptacle (10), the sheet material having a first major surface (16) disposed toward the cavity (20), an opposing second major surface (18) disposed away from the cavity (20), a thickness (T) between the first (16) and second (18) major surfaces, and an array of apertures (22) extending through at least a portion of the sheet material and defining passage ways between the first (16) and second (18) major surfaces, the passage ways being defined by aperture walls (24) which taper generally outwardly from central axes (26) of the respective passage ways, and from proximate the first major surface (16) toward the second major surface (18), whereby the passage ways tend to generally progressively expand in cross-sectional area as one progresses toward the second major surface (28), and wherein projected areas of the particles of the super-

absorbent material are generally larger than projected areas of the apertures (22); and
(b) receiving and collecting particles of the particulate material (48) in the cavity (20) and thereby forming the congregate (42) while generally not conveying particles of the super-absorbent material into the passage ways, and whereby undersize particles of super-absorbent material which do enter respective ones of the passage ways tend to pass entirely through the passage ways and not become lodged in such passage ways because of being released to pass through such passage ways, by the generally progressively expanding cross-sections of such passage ways along the direction of travel of such particles."

VIII. The appellant/opponent argued:

Neither claim 1 nor claim 4 of the main request was allowable.

The subject-matter of claim 1 was not novel. D1 disclosed in Figure 5 a forming receptacle which was suitable for the fabrication of particulate congregates for use as absorbent cores in personal care articles. A wire mesh was disclosed in D1 as the web-forming structure which corresponded to a substrate which was a sheet material. Such wire mesh was provided with an array of apertures which extended through it and thus necessarily included cross-sectional areas such as those claimed, which was additionally evidenced by the sketches shown in D10.

Concerning inventive step, the embodiment shown in Figure 5 of D1 represented the closest prior art, as it was directed to a receptacle forming an absorbent fibrous pad.

No technical effect or benefit was provided by the claimed forming receptacle, since prevention of plugging of the apertures was relevant for any such receptacle. Therefore, the problem to be solved was to find an alternative receptacle while avoiding plugging of the apertures.

The claimed solution was an obvious and arbitrary selection since at the priority date the common general knowledge included the fact that either woven screens or apertured sheets could be used in forming structures such as those set out in the description of the patent in suit (paragraphs [0002] and [0003]).

Hence, when starting from the embodiment shown in Figure 5 of D1 and faced with the problem of finding an alternative web-forming receptacle and taking into account the prevention of plugging of the apertures, the skilled person knew such alternatives. Such knowledge was even manifest in D1 wherein the skilled person could turn to the solution set out in col. 17, lines 24 to 54 (illustrated in Figures 10) of D1 which was the use of a sheet material having tapered holes. Alternatively, the skilled person could apply the technology known from D8 or D9. The filtration processes disclosed therein represented the relevant technology. No inventive step was necessary.

Claim 3 combined subject-matter for the combination of which there was no basis in the application as filed.

Concerning the subject-matter claimed in claim 4, it was not apparent how to determine whether or not the relationship specified in the claim could be satisfied in respect of differently-sized apertures. It was not

clear whether the projected areas of the particles had to be larger than the projected area of the smallest aperture, larger than the median/mean projected area of all the differently-sized apertures, or larger than some other representative area derived from the apertures.

The patent in suit did not disclose how the areas of the particles should be projected. In particular for oblong-shaped particles this was not disclosed. The claim language with respect to the projected areas of the particles and apertures and the passage of the undersize particles was so vague that the skilled person was not given enough information on how to carry out such a determination. In view of that lack of guidance there was an undue burden and the requirement of Article 83 EPC was not met.

Moreover, the subject-matter of claim 4 lacked an inventive step when starting from D1. Starting from the method disclosed in D1 - filed in 1985 it was obvious to use a sheet material when conveying a mixture of particulate and fibrous material in a forming receptacle, bearing in mind that in the year 2000, when the patent in suit was filed, the use of particulate superabsorbent material represented usual practice. When a mixture including superabsorbent particles is used in D1, the remaining features did not involve an inventive step such as set out for claim 1.

IX. The arguments of the appellant/proprietor may be summarised as follows:

The subject-matter of claim 1 was novel. D1 did not disclose a sheet material but a single-wire construction of the forming receptacle. Wires were

circular and accordingly did not represent a sheet material having apertures and aperture walls such as defined in claim 1.

The reference in the description on paragraphs [0002] and [0003] of the patent in suit to the alternative use of woven screens and perforated plates could not be considered as prior art. As no document disclosing such subject-matter was presented, it could also represent unpublished in-house knowledge. Therefore, this disclosure should not be taken into account.

Concerning inventive step, the features distinguishing the claimed subject-matter from the disclosure in D1 were the different substrate and the form of the apertures and aperture walls. D1 did not disclose the use of superabsorbent particles. The problem to be solved, however, was related to preventing superabsorbent particles from blocking the holes. D1 did not provide a planar surface and accordingly did not represent a suitable starting point. There was a technical effect related to reduced plugging of the apertures. A completely different concept had been found, for differing reasons and different functions. No suggestion of that concept was present in any cited prior-art document.

There was no motivation for the skilled person starting from D1 to change the material for the receptacle for receiving the fibrous material. The sheet-like member illustrated in Figure 10 of D1 was not disclosed as forming part of the fibre-receiving cavity - even when replacing the spacing member 120 and the flow-regulating layer 135. Thus, no suggestion to replace the web-forming layer by such sheet materials was present in D1 itself.

D8 represented a remote technology concerning the filtering of liquid material with the aim of using a screw for dislodging the filter cake. Similarly, D9 related to filter technology for centrifuges. The skilled person would not combine the disclosure of these documents with the conveying technology of D1.

The description on page 6, lines 17 to 21 of the originally filed application provided a clear basis for the combination of features claimed in claim 3.

The method specified in claim 4 could be carried out. The functional wording was sufficient to enable the skilled person to choose the relative relationship. The method also involved an inventive step. The same arguments applied as set out with respect to claim 1.

Reasons for the Decision

1. *Claim 1 - novelty (Article 54 EPC 1973) over D1*
- 1.1 Claim 1 refers to a forming receptacle comprising a substrate which forms a particulate-receiving cavity in said receptacle. The substrate is specified as being a sheet material, and such that a matrix of said sheet material is comprised between the surfaces. The apertures therein are not straight along the thickness of the substrate but have an expanding cross-section.
- 1.2 D1 discloses a method and apparatus for forming air-laid fibrous webs. The method and apparatus is adapted to form absorbent batts that have tailored absorbency zones (col. 1, l. 5 - 12). In the embodiment shown in

Figures 5 and 6A, the spacing means 121 has a contoured spacer pocket 124 which is configured and sized such as to form the cavity, which accommodates the placement of the web-forming layer 122 which also has the forming pocket 22 therein. The web-forming assembly is connected to a forming drum. In a particular embodiment, the web-forming layer 122 can be comprised of a metallic wire screen mesh formed with a substantially square or rectangular grid pattern (col. 10, l. 54 - 57). Also the spacing means 121 is illustrated in Figure 5 as a coarse wire mesh formed with a generally square or rectangular grid pattern.

- 1.3 For the forming receptacle of D1, the apertures are not defined further. Although wire meshes generally include apertures for the passage of air, the cross-sectional area provided by such meshes does not necessarily extend along the thickness of the substrate, as such extension is dependent on the manner of connecting such wires, the manufacturing method and the material.
- 1.4 The appellant provided D10 as evidence for apertures in a mesh which have the claimed characteristics. However, the sketches shown in D10 illustrate that a wire mesh does not necessarily have aperture walls extending through the whole aperture. On the contrary, they show that the cross-sectional areas of the apertures at specific sectional planes are indefinite in that there are no aperture walls completely surrounding the apertures' axes.
- 1.5 The term "sheet" in general is understood by the skilled person as a large wide expanding thin plate or film having an even and plane surface. When considered in combination with the feature of claim 1 "an array of apertures (22) extending through at least a portion of

said substrate, and connecting said first (16) and second (18) major sides, aperture walls (24) defining cross-sectional areas of such apertures (22) along the thickness (T) of said substrate", the Board concludes that the walls at every position of the edges of the holes extend from upper surface to lower surface of the sheet material. Accordingly, the wire meshes of the web-forming layer 122 and the foraminous wire layer 121 in D1 do not represent a "sheet material" in the technical meaning of the patent in suit.

1.6 In summary, as D1 discloses neither the web-forming layer as a "sheet material" nor aperture walls defining cross-sectional areas of the apertures along the thickness of the substrate, the claimed forming receptacle is novel with respect to D1.

2. *Claim 1 - inventive step (Article 56 EPC 1973)*

2.1 Although paragraphs [0002] and [0003] of the patent in suit disclose that at the priority date woven screens or apertured sheets were the standard materials used for forming receptacles, there is no evidence on file which confirms that and consequently the possibility put forward by the respondent that this reference in the description represented unpublished in-house knowledge is not refuted. Therefore, this reference in the description of the patent in suit cannot be taken into account for the discussion of inventive step.

2.2 Accordingly - and contrary to the view of the respondent - the embodiment shown in Figure 5 of D1 represents the closest state of the art, because there is no other cited prior art on file which discloses a forming receptacle having more features in common with the claimed subject-matter.

- 2.3 The subject-matter of claim 1 differs from the disclosure in D1 in the above-specified features (see point 1.6 above) which relate to:
- (a) no disclosure of the web-forming layer being a sheet material; and
 - (b) no disclosure of the sheet material having apertures with defined cross-sectional areas along the thickness of the substrate and thus aperture walls throughout the thickness of the substrate.
- 2.4 The aim of the invention disclosed in D1 is the provision of a method and apparatus for forming an absorbent batt having tailored absorbency zones (col. 1, lines 6 - 10).
- 2.5 The objective technical problem underlying the invention of the patent in suit, when identified in relation to the distinguishing features, is to provide an alternative forming receptacle.
- 2.6 Starting from the forming receptacle disclosed in Figure 5 of D1, the skilled person would not have considered the use of the filtration media disclosed in D8 and D9. These filtration media may disclose sheets having tapered holes (D8: Figures 1 and 4; D9: page 3, lines 14 - 17). However, the filtration technology disclosed therein concerns the filtering of liquid material with the aim of using a screw for dislodging the cake (D9) or filtering centrifuges (D8). Since the claimed subject-matter refers to conveying of superabsorbent particles and fibres by a gaseous carrier with the aid of a vacuum source, these liquid-based technologies are not sufficiently related for the skilled person to have considered them. Accordingly,

with respect to these documents the subject-matter of claim 1 involves an inventive step as required under Article 56 EPC 1973.

2.7 The appellant additionally referred to D1, col. 17, lines 24 to 54 (related to Figures 10A-C) which concerns another embodiment and indicates that a sheet member (148) can perform the function of the spacing member 120 and the flow regulating layer 135. There is no evidence that the skilled person would have followed this suggestion, in which case the sheet member 148 would replace both the spacing member 120 and the flow regulating layer 135, which support the cavity-forming layers 122 and 121 in that they provide a recess for receiving the receptacle. This arrangement is disclosed with the aim of reducing plugging of the holes in areas which are adjacent to the cavity for the web-forming layer. D1 suggests for such regions the use of a sheet layer having tapered openings in order to control the flow of gas such as to obtain different areas having tailored absorbency (= basis weight of material) in different zones of the absorbent batt. Thus the suggestion to provide sheet material having tapered openings in regions where a higher or lower basis weight of material is desired does not concern the forming receptacle in the area of the web-forming cavity and is not related to the assembling of particulate material. Accordingly, the skilled person starting from such disclosure in D1 had no indication to provide the forming receptacle itself with an alternative material or design.

2.8 Thus, in the absence of any disclosure also in D1 about how to alter the material and the gas permeability of the material-receiving cavity, an inventive step has to

be attributed to the combination of features defined in claim 1.

3. *Claim 3 - Article 123(2) EPC*

3.1 Claim 3 combines the subject-matter of claims 39 and 40 as filed - corresponding to claims 13 and 14 as granted. Claim 39 was dependent on claim 27 as filed (corresponding to claim 2 as granted which has been deleted) and claim 40 as filed was dependent on claim 26 as filed (claim 1 as granted). Furthermore, the features of claim 3 had been originally disclosed in claims 20 and 21, both dependent on originally filed claim 1 which, however, does not reflect the combination of features of presently valid claim 1. Thus there is no basis in the claims of the application as filed for the now claimed combination of features.

3.2 On the other hand, the description of the originally filed application, page 6, lines 17 to 21, includes all subject-matter of claim 3. In this paragraph the ranges for the thickness and for the length are specified as preferred features, and the structure of the apertures is disclosed such that it "can reflect photochemical machining", i.e. these features are disclosed as a combination in one paragraph relating to a particular embodiment. Hence, claim 3 including that combination of features meets the requirement of Article 123(2) EPC.

4. *Claim 4 - Article 83 EPC 1973*

4.1 In claim 4 the method step a) concerns the conveying of the particulate material towards a forming receptacle. The passage ways for the gaseous carrier are defined as having a tapering geometry including a generally

progressively expanding cross-sectional area from "proximate the first major surface toward the second major surface". Accordingly, a forming receptacle used for the claimed method has to have the smaller opening proximate the first major surface, irrespective of whether other forming receptacles are possibly to be considered as being included in the receptacle according to claim 1.

4.2 The claimed relationship concerning the projected areas of the particles of the super-absorbent material being generally larger than projected areas of the apertures can only be interpreted such that the term "generally" is used in the sense of "most of". This interpretation was agreed to by the parties.

4.3 Concerning the projected area of the apertures, the appellant argued that it would not be clear whether the projected areas of the particles must be larger than the projected area of the smallest, the median or any other projected area of the differently-sized apertures. However, no differently-sized apertures are claimed and no reference to differently-sized apertures is present in the patent in suit either, consistently, Figures 3 to 5 all show identical apertures on the first major surface within a sheet material for a forming receptacle. Therefore, only the projected area of the apertures on the first major surface has to be taken into account, since only such area is relevant with respect to plugging of the apertures. The determination of such projected area has not been put into doubt.

4.4 The determination of the projected area of the superabsorbent particles can be carried out by performing size distribution per sieving such as set

out in Table 1 of the patent in suit, and the conversion of the mesh sieves into nominal opening diameter is possible (see paragraph [0075] of the patent in suit). The projected area of the particles thus can be determined.

- 4.5 Accordingly, the determination of the projected area of the apertures and of the particles is possible and the skilled person certainly can select the suitability of the (projected areas of) particulate material with regard to the projected area of the apertures.
- 4.6 This also applies where the projected area of the particulate material has oblong, spherical, ovoid or other forms, in which case the suitability can be tested, in terms of whether the particulate material is generally retained in the cavity to form the absorbent congregate while taking into account the projected area of the apertures on the first major surface.
- 4.7 Thus, the relation of the projected areas of the particles and the apertures can be identified and implemented by the skilled person and no insufficiency of disclosure exists in this respect.
- 4.8 The method of claim 4 includes also feature b) which defines that "undersize particles of super-absorbent material which do not enter respective ones of the passage ways tend to pass entirely through the passage ways and not become lodged in such passage ways because of being released...". The fact that only clearly undersize particles pass through the passage ways is a mere logical consequence of the tapering passage ways. No lack of clarity arises due to such logical statement.

4.9 For these reasons, the skilled person is in a position to establish with sufficient certainty, and for any given method, whether the method lies within the ambit of the claim, and therefore the disclosure of the patent in suit is to be regarded as sufficient within the meaning of Article 83 EPC.

5. *Claim 4 - inventive step (Article 56 EPC 1973)*

5.1 Step a) of claim 4 defines the claimed method. Step b) of claim 4 is an inevitable consequence of the characteristics of the passage ways as defined in step a) and accordingly can be disregarded for the issue of inventive step. Therefore, the features of step a) are the relevant ones in this respect.

5.2 D1 discloses a method for forming a congregate of material for use as an absorbent core (see point 1.2 above) and, in line with the approach set out for claim 1, represents the closest prior art. As set out under point 2.1 above, the distinguishing features are related to the structure of the web-forming layer and concern the features of the web-forming cavity, in that there is in D1

- (a) no clear and unambiguous disclosure of the web-forming layer being a sheet material; and
- (b) no disclosure of the sheet material having aperture walls defining cross-sectional areas of the apertures along the thickness of the substrate.

5.3 Starting from the embodiment shown in Figure 5 of D1, the objective technical problem is related to the provision of an alternative method under due consideration of the general objective of avoiding plugging of the apertures.

- 5.4 The solution of considering the relationship of the cross-sectional areas of the particulate material and of the apertures in combination with a tapered structure of the apertures in a sheet material has not been suggested in any cited disclosure.
- 5.5 Although D1 shows in its Figure 5 a method including a forming receptacle, neither a particular design or size of the apertures formed by the wire mesh nor a relationship to the size of superabsorbent particles used in the disclosed method is specified. Even acknowledging that the use of superabsorbent particles of any size is possible for the method disclosed in D1, a replacing of the wire mesh in the forming receptacle is neither disclosed nor suggested therein.
- 5.6 Concerning the replacement of the wire mesh layer in D1 by a sheet layer having tapered apertures in the surrounding portions of the web-forming receptacle, such as set out in col. 17, lines 24 to 54 of D1, such replacement would not concern the structure of the web-forming receptacle itself.
- 5.7 Starting from the forming method disclosed in D1, the skilled person has various options to use alternative method steps and to avoid plugging of the apertures when additionally applying superabsorbent particles. Such options include the provision of alternative diameters and material for the wire structure, the provision of subsequent conveying steps with regard to fibrous and superabsorbent material, or to pre-sieve the superabsorbent particles to select only suitably large superabsorbent particles.

5.8 No suggestion or hint for the skilled person to provide another layer or material in the cavity of the receptacle could be derived from the further cited documents. D8 discloses a method of fabricating nonwoven screens for filter centrifuges and D9 discloses a method concerning filtering liquid polymers. The arguments set out above in relation to the forming receptacle - see point 3 above - apply as well, referring to the skilled person not considering such technologies for the vacuum technology applied in the claimed forming method.

5.9 Accordingly, the Board concludes that when starting from D1 and trying to solve the above-cited problem, the teaching of D1, whether in combination with common knowledge or with the embodiments disclosed therein or in D8 or D9, would not lead the skilled person to the subject-matter of claim 4 without an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division, with the order to maintain the European patent with the following documents:
 - claims: 1 - 15, filed 13 February 2013,
 - description: pages 2, 3, 4, 5, 9, filed 13 February 2013,
 - description: pages 6, 7, 8, 10, as granted;
 - drawings: Figures 1 - 6, 8, as granted.

The Registrar:

The Chairman:



M. H. A. Patin

G. Kadner

Decision electronically authenticated