Datasheet for the decision of 8 May 2014

Case Number: T 2164/10 - 3.2.06
Application Number: 02009095.7
Publication Number: 1356797
IPC: A61F13/15

Language of the proceedings: EN

Title of invention:
A disposable absorbent article with unitary absorbent structure

Patent Proprietor:
THE PROCTER & GAMBLE COMPANY

Opponent:
Buckeye Technologies Inc.

Relevant legal provisions:
EPC Art. 56
RPBA Art. 13(1)

Keyword:
Inventive step - (no)
Third auxiliary request - not admitted
Case Number: T2164/10 - 3.2.06

DECISION
of Technical Board of Appeal 3.2.06
of 8 May 2014

Appellant: Buckeye Technologies Inc.
(Opponent)
1001 Tillman Street (38112), P.O.Box 80407
Memphis, TN 38108-0407 (US)

Representative: HOFFMANN EITLE
Patent- und Rechtsanwälte
Arabellastraße 4
81925 München (DE)

Respondent: THE PROCTER & GAMBLE COMPANY
(Patent Proprietor)
One Procter & Gamble Plaza
Cincinnati, OH 45202 (US)

Representative: Anderson, James Edward George
Elkington and Fife LLP
Prospect House
8 Pembroke Road
Sevenoaks, Kent TN13 1XR (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted on 6 August 2010
rejecting the opposition filed against European
patent No. 1356797 pursuant to Article 101(2)
EPC.

Composition of the Board:
Chairman: M. Harrison
Members: G. de Crignis
K. Garnett
Summary of Facts and Submissions

I. The opposition filed against European patent No. 1 356 797 was rejected by the opposition division by way of its decision posted on 6 August 2010.

II. Claim 1 of the patent as granted reads as follows:

"Disposable absorbent article having a liquid deposition region, said article comprising
- a liquid pervious topsheet (30) forming the outermost surface and wearer facing surface of said article and consisting of a single layer at least in said liquid deposition region,
- a backsheet (50) forming the liquid barrier surface and garment facing surface of said article
- an absorbent core (40) intermediate said topsheet and said backsheet, said core (40) being unitary and having a wearer facing and a garment facing surface, said garment facing surface being immediately adjacent said backsheet (50) and said wearer facing surface being immediately adjacent said topsheet (30);
- said unitary core (40) being a fibrous, stratified, layered structure of at least 3 layers in which all layers are unified into said unitary core by a single thermal combining step or a single felting step or both steps combined, but without the use of adhesive between layers, said core (40) comprising
- a first outermost layer (41) forming said wearer facing surface of said core (40), said first layer (41) is provided from a mixture of bi-component fibers and cellulose or viscose fibers, preferably non-softened cellulose fibers, and said first layer (41) has a weight fraction of the overall core construction of 10% - 30%,
- a second outermost layer (44) forming said garment facing surface of said core (40), said second layer (44) is provided by softener treated cellulose fibers having a weight fraction of the overall core of 30%-50%, and a surface binder, preferably a latex, on said garment facing surface of said core (40) in an amount of 0% -2% by weight of said core, and
- at least one inner layer (43), sandwiched between said first (41) and said second layer (44), said inner layer (43) comprising non-softened cellulose fibers, optionally bi-component fibers and further comprising super absorbent material, said inner layer (43) having a weight fraction of the overall core of 30% - 50%, and
- wherein said unitary core (40) is free of binder material except for the bi-component fibers in said core layers and said surface binder on said garment facing surface of said core (40)."

III. The appellant (opponent) filed an appeal against this decision and paid the appeal fee. In the statement setting out the grounds of appeal, lack of inventive step was argued with reference to the following documents:

D1 WO-A-00/74620
D3 EP-B-0729735
D5 US-A-5653702

These documents had already been cited during the opposition proceedings.

Additionally, the appellant reiterated its objection that the invention was not disclosed in a manner sufficiently clear and complete for it to be carried out by a skilled person.
IV. With its communication of 4 March 2014, the Board mentioned, in regard to inventive step, that example 4 of D1 was considered as a suitable starting point for the assessment of inventive step, that no evidence of a particular effectiveness concerning acquiring, distributing or absorbing liquids appeared to be disclosed, and accordingly that the objective technical problem could not be linked to any such characteristics.

V. Oral proceedings were held on 8 May 2014.

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

The respondent requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained on the basis of either the second or the third auxiliary requests both as filed with its letter dated 17 April 2014.

Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the following features are added:

"wherein said first layer (41) of said core (40) comprises 60% -95% by weight of bi-component fibers and 5% -40% by weight of cellulose or viscose fibers, and wherein said bi-component fibers are curled by having said central portion and said outer coating non-symmetrically placed in respect to the center point of the cross section."

Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request in that:
(a) the first outermost layer is limited to be
"provided from a mixture of bi-component fibers and
non-softened cellulose fibers", and said first layer
(41) has a weight fraction of the overall core
construction of 10%-30%;

(b) the second outermost layer is limited to be
"provided exclusively by softener treated cellulose
fibers having a weight fraction of the overall core of
30%-50%, and a surface binder, preferably a latex, on
said garment facing surface of said core (40) in an
amount of 0%-2% by weight of said core".

VI. The arguments of the appellant were essentially as
follows:

There was an overlap of the issues concerning inventive
step and sufficiency of disclosure due to the fact
that, inter alia, it was not clear what actually
constituted an adhesive. Claim 1 defined a unitary core
having at least three layers, whereas paragraphs [0033]
to [0035] referred to an embodiment having a further
layer (42). This further layer - which could consist of
polyethylene - led to a lack of sufficient information
as to what should be considered as an adhesive as there
was no definition which would allow adhesives to be
distinguished from binder materials. In fact, such
differentiation was impossible in that binder was a
general term whereas adhesive was a more specific term.
In such a context, the definition in claim 1 that the
unitary core should be free of binder material
disclaimed subject-matter without indicating
sufficiently clearly what was being disclaimed. In the
absence of a clear distinction of a binder material
compared to an adhesive material, the skilled person
did not know how to identify whether a unitary core was or was not free of binder material. Therefore, claim 1 was not merely inconsistent with respect to the use of the term "free of binder material" and "without the use of adhesive between layers" but the patent specification lacked sufficient information as to what should be an adhesive.

An additional point, not mentioned in the written proceedings, concerned the objection of insufficient disclosure based on the consideration that when using only the thermobonding of claim 1, without bi-component fibres in the inner and second outermost layers (these being optional), it was not sufficiently disclosed how a unitary core could be achieved. The objection was highly relevant, had been a result of the Board's comments in its written opinion and should thus be admitted into the proceedings.

Example 4 of D1 represented a starting point for the assessment of inventive step. The only relevant feature of claim 1 of the opposed patent which the proprietor relied on when considering inventive step and which was not disclosed in Example 4 was the use of bi-component fibres instead of latex in the first outermost (acquisition) layer. No technical advantage was associated with the use of bi-component fibres instead of latex and, accordingly, the problem to be solved was merely to provide a suitable alternative binder material for the first outermost layer. The solution to that problem was already given in D1 in e.g. claim 8 and page 4, lines 12/13, and page 7, lines 3 to 15. Consistently therewith, D2, D3 and D5 each disclosed bi-component fibres as binding fibres in absorbent structures and hence these fibres were well-known for
such use. Therefore the subject-matter of claim 1 did not involve an inventive step.

Concerning the second auxiliary request, there was a lack of clarity, even though granted claims were being combined. Even disregarding the clarity issue (Art. 84 EPC), and interpreting the claim in the way in which the respondent stated it should be interpreted, the additional features of originally filed and granted claims 3 and 5 inserted into claim 1 did not add anything inventive, as there was no particular technical effect or advantage that was disclosed with regard to the particular ranges for the claimed composition of materials making up the first outermost layer or with regard to the kind of bi-component fibres. The effects or advantages of such fibres were well-known, as for example disclosed in D2 (paragraph [0093]) or D3 (paragraph [0018] and Figures 2a to 2c).

The third auxiliary request should not be admitted into the proceedings. The addition of the term "exclusively" with regard to the softener-treated cellulose fibres of the second outermost layer needed discussion in view of the ambiguity of the term in the paragraph of the originally filed description on page 13, lines 17 to 19 which had been used as the basis for this addition. Accordingly, the claim was prima facie not clear. Moreover, the considerations concerning the second outermost layer with regard to the porosity gradient would shift the discussion in a completely new direction. No arguments had been submitted in writing which would have allowed the appellant to have prepared for a discussion of this issue.

VII. The arguments of the respondent were essentially as follows:
The invention was sufficiently disclosed. There was no difference between "adhesive" and "binder" as these terms were standard terms in the art. In the context of the patent in suit the skilled person was aware that "adhesive" would be for example hot melt adhesive or latex but that the term "binder" included a broader meaning as it referred generally to binding and thus also covered bi-component fibres which were known as having an integrating function. Claim 1 required bi-component fibres to be present in the final product.

The reference to bi-component fibres not necessarily being present in the inner and second outermost layer together with the objection that no integration of the unitary core would then be within the scope of the claim represented a change of case (Article 13(1) RPBA) which had not been raised earlier even though the meaning of the terms adhesive and bonding had never changed. Therefore, the objection should not be admitted. However, inventive step could be discussed without taking this objection into account.

Example 4 in D1 was disclosed to demonstrate the superiority of a latex bonded PET fibre acquisition stratum over a latex bonded cellulose fibre stratum and represented a comparative example. Nevertheless, it could be accepted as representing a starting point for the evaluation of inventive step. The only differentiating feature which should be considered in regard to inventive step was related to the kind of binder to be applied in the first outermost layer of the unitary core, namely bi-component fibres instead of the latex used in the acquisition stratum of D1.
D1 provided no motivation for the skilled person to substitute the latex binder in the first layer of the unitary core with bi-component fibres. The problem to be solved was to provide a more resilient structure that provided better fluid acquisition. The problem to be solved was not merely to provide an alternative binder because the bi-component fibres provided the additional effect of improved resiliency. When starting from D1, Example 4, the skilled person was instead taught to replace the cellulosic fibres in that core layer by synthetic fibres, since all the other examples had such a structure. That solution was hinted at by the information in Table A3 in D1, which compared fluid retention and acquisition rates of such absorbent structures.

Concerning the second auxiliary request, claim 1 was a combination of the features of granted claims 1, 3 and 5. Thus, clarity of the claim should not be open to attack as clarity was not a ground of opposition. No reason to stay proceedings (having regard to the pending reference in G3/14) existed since the claim was anyway entirely clear. The word "said" in relation to the central portion and the outer coating of the bi-component fibres from granted claim 5 could only be understood to have been used instead of the indefinite article "a" and, accordingly, it was not necessary to include the features of granted claim 4 in claim 1 as had been argued by the appellant in order that clarity should be restored. The "said central portion" was evidently one portion of the bi-component fibre, namely the centre portion, which fibres had been defined in granted claim 1 already, whereas the "said outer coating" was the second portion, being simply the coating on the central portion of those same fibres.
Claim 1 required the first layer of the core to comprise 60% to 95% of particularly defined bi-component fibres and 5% to 40% of cellulose or viscose fibres. The binding properties of the bi-component fibres provided resiliency within this layer and contributed to a pore size gradient of the unitary core while maintaining the bi-component fibres as recognizable within the structure due to the point-bonding when thermobonding was applied as the unifying step.

When starting from Example 4 of D1, the objective problem to be solved was not merely to provide an alternative structure but was to provide a wear-facing layer having a more resilient, and thereby less dense, fibrous structure, so as to improve the fluid acquisition and retention properties of the core. The skilled person would turn to Example 5 of D1 and use synthetic fibres in the acquisition layer. The teaching of D3 would not be considered, in that no acquisition layer was shown there but instead merely a coverstock layer. The coverstock disclosed in D3 was equivalent to the topsheet in claim 1 and not the first outermost layer. The skilled person was also not given any hint in D1 to use the bi-component Kosa fibres T 255® which were used in the distribution and storage strata in the acquisition layer. Accordingly, the skilled person had no suggestion to solve the objective problem by the claimed features.

The third auxiliary request should be admitted into the proceedings. It was submitted in order to emphasize that the second outermost layer was exclusively made up of cellulose fibres. Due to such additional feature, the function and interaction of the unitary core was based on the sequence of layers with regard to the
desired porosity gradient. Concerning the percentage of the strata in the unitary core, the possible transition zone(s) were very small and anyway of minor influence and thus did not significantly alter the claimed percentages, which could be readily calculated by the skilled person. The second outermost layer was limited to being provided exclusively by softener-treated cellulose fibres, which was originally disclosed in such a manner on page 13, lines 17 to 19. The filing of this claim reflected a reaction to the communication of the Board and the features did not take the claimed subject matter in a different direction.

**Reasons for the Decision**

1. **Sufficiency of disclosure**

   No decision on sufficiency of disclosure with respect to Article 100(b) EPC is necessary since, as explained *infra*, the Board's conclusion concerning lack of inventive step means that the request is in any event not allowable.

2. **Main Request - claim 1 - Inventive step**

   2.1 D1 discloses a fibrous composite absorbent structure having a unitary structure including a fluid acquisition stratum, a fluid distribution stratum and a fluid storage stratum between the acquisition and the distribution stratum (page 2, line 31 to page 3, line 1). It discloses in its Example 4 such a structure having an acquisition stratum consisting of 38.4 g/m² standard fluff pulp and 6.8 g/m² latex binder. It is
true this example is only disclosed for the purpose of comparing latex bonded fluff cellulose fibres with latex bonded synthetic fibres in the acquisition stratum of the composite absorbent structure with respect to fluid retention and acquisition rates (Table A3). Nevertheless, it represents a unitary absorbent structure for use in absorbent products such as those claimed and hence this example represents a suitable starting point for the assessment of inventive step.

2.2 The unitary structure of Example 4 in D1 differs from the unitary core structure defined in claim 1 in that it includes a latex binder in the first outermost layer whereas claim 1 requires the inclusion of bi-component fibres in the first outermost layer. The further distinguishing features are not related to any particular effect which could be regarded as relevant for the consideration of inventive step, as acknowledged by the respondent.

2.3 Starting from Example 4 of D1 as representing the closest prior art, the objective technical problem has to be related to the distinguishing feature specified above and must also be solved by that feature in the context of claim 1. The objective technical problem to be considered thus can only be the provision of an alternative for the binder material applied in the first layer. The solution according to claim 1 is the use of bi-component fibres. The problems referred to in the patent in suit (paragraphs [0001] - [0006]) are seemingly not related thereto.

2.4 When trying to solve this problem, it was already known from D1 (see claim 8 and page 4, lines 7/8) that the acquisition stratum - which corresponds to the claimed first outermost layer - could, as a binder material,
contain either an aqueous latex binder resin, bi-component fibres or a mixture thereof. Additionally, in D1, on page 7, lines 3 to 15, it is stated that the fibres of the different layers may be bonded together by heat softening a thermoplastic binder present with the web fibres, and reference is made to thermoplastic binder which could be melted at temperatures which would not extensively damage the cellulosic fibres. As an example of such suitable thermoplastic materials, reference is made to bi-component staple fibres. Hence, this part of the disclosure reflects the relevant teaching given to the skilled person.

2.5 Accordingly, the skilled person would immediately recognize that the latex binder in D1 could be replaced by bi-component fibres and thus arrive at the subject-matter of claim 1 without the exercise of inventive skill.

Consequently, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC).

2.6 Although the respondent argued that the objective problem concerned the provision of a more resilient structure, and an optimized open pore structure and also better fluid acquisition, these problems are not seen as being objective at least for the reason that none of the features of claim 1 clearly results in such effects being obtained when compared to the structure disclosed in D1. Also, no evidence was filed from which such altered characteristics could be established. For example, whilst it was argued by the respondent that resiliency would be improved by replacing latex by bi-component fibres, it would be evident to a skilled person (as also argued by the appellant) that this would be dependent on the relative amount of the
respective components which might be used. Thus, it is nothing more than an unsupported allegation that a more resilient structure would result in the acquisition layer of D1 if bi-component fibres were employed instead of latex.

2.7 In any event, even if it were the case that improved resiliency and/or better acquisition properties would result, it still remains obvious from the disclosure in D1 that latex binder can be replaced by bi-component fibres. Any further effects resulting, expected or not, would merely be a bonus, but the presence of a bonus effect as a result of making an obvious replacement does not alter the conclusion that the replacement itself was obvious.

3. Second auxiliary request

3.1 Amendments - Question of staying the proceedings

3.1.1 Claim 1 combines originally filed (and granted) claims 1, 3 and 5, wherein claim 5 of the granted patent is dependent on claim 3, even though a central portion and an outer coating are only defined as such in granted claim 4, upon which granted claim 5 does not depend.

3.1.2 Although the appellant simply argued that claim 1 of this request lacked clarity and the request should not be allowed on that basis, the appellant's objection in fact gave rise to the question of whether the claim was clear in the sense of it being dependent on claim 1 instead of claim 4 and whether, due to the lack of an antecedent for the terminology preceded by the word "said", the claim indeed lacked clarity and whether or not this could be examined given the questions pending before the Enlarged Board of Appeal in case G3/14.
3.1.3 A further objection concerned the issue of whether the reference in claim 1 to the content of the different layers within the unitary core was ambiguous in that the first layer is referred to as having a "weight fraction of the overall core construction of 10%-30%", the second outermost layer is referred to as having a "weight fraction of the overall core of 30%-50%", and the inner layer is referred to as having a "weight fraction of the overall core of 30%-50%". It is thus not clear (so it was argued) whether and if so what difference(s) exists between the "overall core construction" and the "overall core".

3.1.4 However, the question whether to stay proceedings in order to consider the alleged lack of clarity did not need to be addressed immediately, since the Board concluded that if the interpretation of the claim argued for by the respondent was taken to be correct but an inventive step was nevertheless found still not to be present, there would be no need to stay proceedings to await the outcome of G3/14. The parties also agreed that such an approach was appropriate. In the event, a lack of inventive step was found to be present for the reasons infra.

3.2 Inventive step - Claim 1

3.2.1 When starting the assessment of inventive step again from Example 4 of D1, the subject-matter of claim 1 is further distinguished therefrom by the features added from granted claims 3 and 5. These features are the following:
(i) the first layer of the core comprises 60% to 95% by weight of bi-component fibres and 5% to 40% by weight of cellulose or viscose fibres, and
(ii) the bi-component fibres are curled by having the central portion and said outer coating non-symmetrically placed in respect to the centre-point of the cross section.

3.2.2 The further objective technical problem to be solved is merely the choice of an appropriate amount and kind of binder fibres in the first layer, since no technical effect has been demonstrated in the patent in relation to these features.

3.2.3 Concerning feature (i), the only citation in the patent in suit which refers to such a relationship of the ranges for the amount of bi-component fibres and cellulose fibres in the first layer of the core is in paragraph [0029]. However, no technical effect is described which can be linked to the claimed relationship.

3.2.4 In this respect, it has also to be taken into account that unification of the layers by a thermal combining step is one of three claimed alternatives, the other alternatives relating to either a single felting step or a combination of thermal combining step and felting step. For a single felting step, no effect or advantage whatsoever can be objectively assigned to the amount and content of bi-component fibres, as there is no immediate evidence that these features have any particular technical effect. Such understanding is consistent with the respondent's view that the bi-component fibres in the unitary core of the claimed article are still recognizable as bi-component fibres,
independent of the unifying step which is applied (i.e. even if thermo-bonding were employed).

3.2.5 Concerning feature (ii), relating to the kind of bi-component fibres, paragraph [0030] of the patent in suit refers to general knowledge concerning bi-component fibres and emphasizes that, in particular, the non-symmetrical forms of the bi-component fibres which cause the fibres to curl provide a beneficial effect on resiliency and strength of the fibre. However, no effect with regard to the first layer or the unitary core structure is disclosed. In this respect, the skilled person has to rely on general knowledge.

3.2.6 Such knowledge could be based on the disclosure in D3, paragraph [0018]. In this paragraph it is disclosed that an eccentric design of the bi-component fibres has the effect of "forming a great number of binding points, whereby the result is an extremely porous and elastic fibre layer". Accordingly, eccentric bi-component fibres and their purpose of increasing resiliency and pore size in a thermo-bonded layer are known.

3.2.7 Hence, when starting from Example 4 of D1, wherein the acquisition layer includes a mixture of cellulose and latex binder, and desiring to have an alternative binder, the use of bi-component fibres is already suggested in D1 (claim 8, and on page 7, lines 3 to 15 see point 2.5 above). Following this suggestion, the skilled person would have to choose the kind of bi-component fibres. In this respect, D1 itself already refers to the use of crimped sheath/core conjugate (bi-component) fibres in the distribution and storage strata of its unitary absorbent structures (see
3.2.8 Accordingly, the skilled person would immediately recognize that the latex binder in the outermost layer of D1 could be replaced by non-symmetric bi-component fibres thereby at least gaining the benefit, albeit known, of improved resiliency of the unitary core structure. Furthermore, such a choice opens the possibility of tailoring the degree of resiliency and open pore structure by exploiting their characteristics to the desired degree. Accordingly, a high percentage of such binder fibres results in a soft, resilient and open-pore structure and the combination with cellulose could maintain the mainly cellulosic structure of the unitary core having cellulose fluff in all layers. Therefore, the skilled person would consider these advantages and replace the latex in the first layer of D1 by the eccentric bi-component fibres of D3 in the desired amount and thus arrive at the subject-matter of claim 1 without the exercise of inventive skill.

Consequently, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC).
3.2.9 The respondent's view is not accepted, namely that according to the teaching of D3 the bi-component fibres are used exclusively as the surface layer of the absorbent composite which is a coverstock (paragraph [0020] of D3) and which could only be considered as being equivalent to a topsheet, and accordingly such fibres would not be used in an upper layer of a unitary absorbent core mixed with cellulosic fibres. Instead, D3 relates to a method for manufacturing an absorbent composite in a sanitary product, whereby the coverstock is designed to quickly let liquids pass through to lower layers and accordingly corresponds to the claimed first layer of an absorbent core and the absorbent composite when inserted into a sanitary product normally would be enveloped between a topsheet and a backsheet.

4. Third auxiliary request - Admittance

4.1 According to Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA), it lies within the discretion of the Board to admit any amendment to a party's case after it has filed its grounds of appeal or reply. The current request was filed in reply to the Board's communication after expiry of the periods specified in Article 12 RPBA. In order to be admitted at such a late stage of proceedings, such a request, if it is to meet the need for procedural economy referred to in Article 13(1) RPBA, should normally be clearly allowable at least in the sense that it overcomes the raised objections and does not give rise to any new objections. However, no arguments concerning this aspect were submitted when filing this request.

4.2 The respondent was of the view - as submitted during the oral proceedings - that the amended request was
filed in order to further emphasize that the function of the unitary core was based on the sequence of layers with regard to the corresponding porosity gradient. It was said that the filing of this claim reflected a reaction to the communication of the Board and the additional features did not shift the discussion in a different direction.

4.3 However, the Board observes that no porosity gradient is claimed nor is it implicit and, accordingly, such an effect is not immediately evident. Also, no arguments to that effect were made and thus, if the request were to be have been admitted, the Board and the appellant would have been faced with entirely new issues at a very late stage of proceedings. Moreover, the indicated disclosure of the amended feature concerning the addition of the term "exclusively" with regard to the softener-treated cellulose fibres of the second outermost layer to claim 1 on page 13, lines 17 to 19, is not unambiguous in that it states "this layer ... should be provided exclusively by softener treated cellulose fibers or viscose fibers or a combination thereof". Such wording complicates the issue of whether the presence of a transition zone or of a surface binder would still be an option and whether (and how) their presence would influence the calculation of the percentage of the different layers.

4.4 Accordingly, in addition to the fact that no arguments were provided in writing when filing the request, the wording of the claim introduces a potential lack of clarity, and any considerations concerning the porosity gradient would shift the discussion in a completely new direction. Thus, at least for these reasons, the Board exercised its discretion under Article 13(1) RPBA not to admit the request into the proceedings.
Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

M. H. A. Patin M. Harrison

Decision electronically authenticated