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D E C I S I O N
of 21 November 2000

Case Number: T 0929/98 - 3.2.6

Application Number: 90915220.9

Publication Number: 0494941

IPC: A61F 13/56

Language of the proceedings: EN

Title of invention:

A method of securing an elastic band

Patentee:

SCA Hygiene Products AB

Opponent:

The Procter & Gamble Company

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56, 83, 84, 111(1)

Keyword:

"Sufficiency of disclosure - yes"

"Incorporation by reference - yes"

"Clarity and support in the description - yes"

"Novelty in view of the patent documents (amended claims) -
yes"

"Remittal - yes"

Decisions cited:

T 0153/85

Catchword:

-



Case Number: T 0929/98 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 21 November 2000

Appellant: SCA Hygiene Products AB
(Proprietor of the patent) 405 03 Göteborg (SE)

Representative: O'Reilly, Peter Andrew
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Respondent: The Procter & Gamble Company
(Opponent) One Procter & Gamble Plaza
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Representative: Boon, Graham Anthony
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 July 1998
revoking European patent No. 0 494 941 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: H. Meinders
J. C. M. De Preter

Summary of Facts and Submissions

I. European Patent No. 0 494 941, granted on application No. 90 915 220.9, was revoked by the Opposition Division by decision announced on 18 June 1998 and posted on 17 July 1998. It based the revocation on the finding that the patent according to the main and first auxiliary request did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the skilled person (Article 83 EPC) and was not clear. Further the subject-matter of claim 1 as amended according to the first auxiliary request contained added subject-matter (Article 123(2) EPC) and the subject-matter of claim 1 according to the main and the second auxiliary request did not fulfil the requirement of novelty (Article 54 EPC) in view of documents:

D1: EP-A-0 274 752 and

D2: EP-A-0 217 032.

II. Of the other documents filed in the opposition proceedings the following are relevant for the present decision:

D3: EP-A-0 119 827

D4: EP-B-0 112 655

D8: EP-A-0 219 969.

In the notice of opposition the Respondent (Opponent) had further relied upon an alleged prior use of LUVS VG Super Baby Pants in 1986-1987 in the United States,

subsequently supported by two affidavits of Ms Margaret H. Hasse dated 13 June 1997 and 13 May 1998, and a sample thereof, with pack code 0477 DC-B relating to the 47th production day in 1987.

- III. On 12 September 1998 the Appellant (Patentee) simultaneously filed an appeal and paid the appeal fee. Together with the statement of grounds of appeal the Appellant filed new requests by facsimile dated 26 November 1998.
- IV. In an annex to the summons to oral proceedings pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal the Board expressed the opinion that the patent appeared to fulfil the requirements as to sufficiency of disclosure. However, the subject-matter of claim 1 of the main and the second auxiliary request filed with the appeal was considered to lack novelty over D1. The other three of the four auxiliary requests filed with the appeal appeared not to fulfil the requirements of Article 123(2) and (3) EPC.
- V. In response to the Board's communication the Appellant filed on 23 October 2000 amended claims according to a main and two auxiliary requests. In the auxiliary requests the principal amendment consisted in the incorporation of the feature that the elastic band consisted of one or more separate bands of elastic foam material having open or closed cells, as claimed in dependent granted claim 8. The Respondent did not comment on these requests.
- VI. Oral proceedings were held on 21 November 2000 in the absence of the Respondent (Rule 71(2) EPC) who had notified the Board with fax of 30 March 2000 that it

did not intend to attend the oral proceedings and that the request for oral proceedings was withdrawn.

The Appellant requested setting aside the decision of the Opposition Division and maintenance of the patent in amended form on the basis of the set of claims 1 to 16 filed during the oral proceedings.

The request of the Respondent was the dismissal of the appeal and revocation of the patent.

VII. The wording of the independent claims 1, 3 and 8 according to the request of the Appellant is as follows:

"1. A method of securing an elastic band (13) between two material layers (14) which at least partially consist of meltable material, wherein perforations in the form of holes and/or slots are formed in the elastic band (13); in that the band is placed between the two material layers; the material layers opposite said perforations are mutually bonded by melt fusion through said perforations so that the elastic band is held mechanically between the material layers; the perforations are formed in the elastic band in the same operation as the material layers are fused together; and the elastic band (13) is placed between the two material layers (14) while in a stretched state, characterised in that

the elastic band consists of one or more separate bands of elastic foam material having open or closed cells."

"3. An elastic band (13) secured between two material layers (14) for use in articles which are intended for

one-time use only, such as disposable diapers, sanitary napkins, surgical dressings, protective clothing or the like, wherein the material layers (14) at least partially consist of meltable material, wherein the elastic band (13) is secured in a stretched state between the two material layers (14) and presents perforations in the form of holes and/or slots through which the material layers located on both sides of the band (13) are mutually joined together by melt fusion in a punctiform and/or linear bonding pattern so that the elastic band is held mechanically between the material layers, characterised in that the elastic band consists of one or more separate bands of elastic foam material having open or closed cells."

"8. A diaper comprising a liquid-permeable casing layer (1), which is intended to face the wearer in use, a liquid-impermeable casing layer (2), which is intended to lie remote from the wearer in use, and an absorbent pad (3) located between said two layers (1, 2), and which diaper has a front part (4) which is intended to be located forwardly on the wearer in use, a rear part (5) which is intended to be located rearwardly on the wearer in use and a crotch part (6) which is located between the front part (4) and the rear part (5) and which is intended to be placed between the thighs of the wearer in use, so that the diaper, when worn, embraces the lower abdomen of the wearer in a trouser like fashion and therewith presents a waist line (7, 8) around the waist of the wearer and a leg line around each of the user's thighs, the diaper further including at least one elastic band (13) which is secured in a stretched state between two material layers (14) and which presents perforations in the form of holes and/or slots (15), wherein the material layers

(14) located on opposite sides of the band are at least partially comprised of a meltable material and are mutually bonded by melt fusion in a punctiform and/or linear bonding pattern through said holes and/or slots (15), so that the elastic band (13) is held mechanically between the material layers (14); and the elastic band (13) is affixed along the whole of at least one of the diaper lines or at least along a part of at least one of the diaper lines and at least one of the material layers (14) is joined to one of the casing layers in at least one of the diaper line parts, characterised in that

the elastic band consists of one or more separate bands of elastic foam material having open or closed cells."

VIII. In support of its request the Appellant argued that the patent (see column 9, line 36 to column 10, line 37) disclosed the claimed method sufficiently clear to be carried out by the skilled person, the method being described in the patent as performed by melt fusing material layers of non-woven fabric casing comprising heat-bonded polypropylene fibers through perforations simultaneously made by ultrasound in an elastic band of polyurethane foam based on polyester enclosed in a stretched state between the material layers. The skilled person could easily find out with what amount of power the fusing of these material layers should take place so that the elastic band was held mechanically, i.e. by physical forces as opposed to chemical forces, between these layers. In its view the patent (see mainly column 3, lines 19 to 42) unambiguously disclosed the elastic band as **not** participating in the melt fusion of the material layers. This could be achieved by the skilled person

without inventive skills or undue experimentation, by an appropriate choice of materials for the elastic band and the material layers.

As regards clarity: the wording used in the claims "so that the elastic band is held mechanically between the material layers" quite clearly excluded the participation of the elastic band in the melt fusion of these layers, as was also evident from the description.

As regards novelty, the distinguishing feature of the independent claims 1, 3 and 8 was at least the elastic band consisting of one or more separate bands of elastic foam material having open or closed cells. This feature made the subject-matter of the method claim novel over D1 or D2, in which the elastic band was a non-adhesive elastomeric film (D1), an elastomeric film (D2) or a non-woven web of elastomeric fibers (D2). In respect of D3 the distinguishing feature of these claims at least consisted in the perforations in the elastic band, through which the material layers were melt fused together.

In respect of the alleged prior use: this did not disclose the elastic band as an elastic foam material, but as an elastic film.

- IX. The Respondent argued in his written response to the appeal that in the patent there was no sufficiently clear disclosure for the skilled person on how to achieve the bonding of the material layers through the perforations and at the same time assuring that the elastic band did not participate in the bond.

Regarding the claims of the present request it did not

argue, not being present in the oral proceedings in which they were filed.

Reasons for the Decision

1. The appeal is admissible
2. *Amendments (Article 123(2) EPC)*
 - 2.1 The amendments of independent claim 1 consist of:
 - the inclusion of the subject-matter of claims 2 and 8 as granted, which were claims 3 and 9 as originally filed,
 - the specification of the heat bonding of the material layers as being melt fusion,
 - the inclusion of the feature that the elastic band is held mechanically between the material layers,both latter features having been disclosed in combination in originally filed claim 12.

These amendments find a basis in the application as originally filed as indicated above; they further limit the subject-matter of this claim.

- 2.2 The amendments in renumbered independent claim 3 consist of the inclusion of the features of claim 8 as granted, which was claim 9 as originally filed, and of the feature that the elastic band is secured in a stretched state between the two material layers, which finds its basis in claim 12 as originally filed.

The amendments in renumbered independent claim 8 consist of the inclusion of the features of claim 8 as granted, which was claim 9 as originally filed.

The added features find a basis in the application as originally filed as indicated above; they further limit the subject-matter of these claims.

2.3 The amended claims 1, 3 and 8 therefore comply with the requirements of Article 123(2) and (3) EPC.

3. *Clarity and support in the description (Article 84 EPC)*

3.1 The Opposition Division argued in its decision revoking the patent that the feature added to claim 1, of the elastic band being held mechanically between the material layers, had the result that the claim did not fulfil the requirements of Article 84 EPC as it was a very broad and imprecise expression. In the decision the Opposition Division further referred to claim 1 as having an unclear scope in this respect.

3.2 According to Article 84 EPC the claims shall define the matter for which protection is sought. They shall be clear and concise and be supported by the description. From the wording of Article 84 EPC it is evident that the broadness of a claim is not as such objectionable under the Convention.

3.3 The functional feature "so that the elastic band is held mechanically between the material layers" is as such not unclear, nor does it render the subject-matter of the independent claims 1 and 3 unclear, because when an entity is described as "held between two layers" for the skilled person this means that physical forces are

exerted between the layers and that entity.

Where such forces are exerted between two entities this can be by means of a positive fit, a non-positive fit and a material connection. Examples of such a fit are a hexagonal bolt and a socket wrench; the disks in a coupling; a welded, glued or brazed connection, respectively.

3.3.1 By the qualification "held **mechanically** between two layers" a chemical connection using an additional material, e.g. by glue or by brazing, is excluded. This is also apparent from the description of the patent in suit, where the bonding of the material layers to the elastic band by melt fusing the material layers is given as the alternative the patent presents to the known fastening of the elastic band to an article by glue.

3.3.2 In connection with the further reference in claims 1 and 3 to the melt fusion of the material layers taking place through the perforations it is further clear to the skilled person that a non-positive fit is also not envisaged, leaving the positive fit of the melt fused material layers in the perforations of the elastic band and the material connection between the material layers and the elastic band.

The first fit implies that the elastic band does not participate in the melt fusion of the material layers, the second connection necessarily includes the material of the elastic band in the bond between the material layers. **However, neither of these excludes the other.**

3.4 The Board assumes that the Opposition Division by

objecting to the "broadness" of the claim intended to object to the claim as not being supported by the description.

- 3.4.1 In the passages of the description of the patent in suit referring to the method of securing the elastic band between the two material layers the kind of connection between the material layers and the elastic band is left open. There is mention of the elastic band being secured **to** the material layers or bonded **to** the layers (column 3, line 40, column 4, line 54, column 5, line 4, column 6, line 33 of the patent as granted), of the elastic band as secured **between** the material layers or held **between** the layers (column 3, lines 20 and 26, column 8, lines 4 and 57) and of the elastic band being secured **within** or bonded **within** the casing (column 9, line 37, column 10, line 8).

In column 3, lines 24 to 27 it is mentioned that no glue is used to fasten the elastication to the material layers. Column 3, lines 14 to 16 describes the heat fusion bonds of the material layers being through the perforations. This means that also according to the description a non-positive fit and a chemical connection between the material layers and the elastic band are not envisaged.

Therefore, also according to the description both a positive fit and a material connection are possible, but neither of them is implicitly or explicitly disclosed in the description as being the **only** way of connecting the elastic band and the material layers together.

- 3.4.2 The present wording of claims 1 and 3, allowing both

above mentioned ways of connection to the same extent, therefore corresponds to the description of the patent in suit and therefore there is no lack of support for the subject-matter of the amended claims.

4. *Sufficiency of disclosure (Article 83 EPC).*

4.1 The Opposition Division had held in its decision that the patent did not disclose the invention sufficiently clear and complete for it to be carried out by the skilled person because it did not describe how the melt fusion of the material layers through the holes created in the elastic band was effected which results in the elastic band being held mechanically between the material layers. It considered the latter feature as not excluding the elastic band participating in the melt fusion of the material layers, at least at the edges of the fused material.

4.2 With the amendment of the independent claims 1, 3 and 8 the invention is now further specified in that it involves the use of an elastic band consisting of one or more separate bands of elastic foam material having open or closed cells, and that the band is placed between the material layers while in a stretched state (claim 1) or is secured between the material layers in such a state (claims 3 and 8).

4.3 For performing this method of securing the elastic band between two material layers (claim 1) and for the production of the elastic band secured between the material layers (claim 3) or of the diaper with such an elastic band secured between two material layers affixed to it (claim 8) the patent contains (see column 5, line 42 to column 8, line 29 and column 9,

line 36 to column 10, line 37) the information that the bonding can be performed by ultrasound, on a bonding roller, using non-woven fabric material layers comprising heat-bonded polypropylene fibers, and using an elastic band of polyurethane foam based on polyester sold under the designation 2 130 170 by CIRRUS A/S, Denmark. The elastic band should be maintained in a stretched state up to 70% before it is bonded within the heat-meltable material layers.

- 4.4 Under these circumstances the skilled person needs to try out different power settings for the ultrasonic horn to achieve a perforation of the elastic polyurethane foam band and at the same time a melt fusion of the material layers through these perforations.

However, this kind of routine experimentation is not beyond what can normally be expected of a person skilled in the art. Because of the fact that the elastic band is an open or closed celled polyurethane material, the perforation will occur easily, the ultrasonic energy only having to melt down or degrade a few cell walls to achieve a perforation. The latter is furthermore assisted by the stretching of the elastic band during melt fusion, which creates a tension in the cell walls.

The patent therefore discloses the invention in a manner sufficiently clear and complete for it to be carried out by the skilled person. The requirements of Article 83 EPC are therefore fulfilled.

- 4.5 The position taken by the Appellant in the opposition as well as the appeal proceedings was that the patent

described the method for connecting the material layers and the elastic band as **only** involving the material layers in the melt fusion and **not** the elastic band, in a manner sufficiently clear and complete for it to be carried out by the skilled person. It based this primarily on the definition "held mechanically between the material layers" in the description, which in its opinion could only mean that **only** the material layers were bonded together by melt fusion and that the elastic band **did not** participate in this bond. It referred in particular to column 3, lines 19 to 42 and those parts of the patent in suit which referred to the band being "secured" or "bonded" between the material layers (see point 3.4.1 above).

- 4.6 The Board agrees in this respect with the Opposition Division in that it is not directly and unambiguously derivable from the patent that the melt fused bonds between the material layers, through the perforations in the elastic band, are **only** between the material layers and do not involve the elastic band.
- 4.6.1 As already explained in point 3.4.1 above, the description nor the claims contain an explicit or implicit disclosure of such an exclusive feature. Whether the connection involves the elastic band or not is left open.
- 4.6.2 The Appellant, in his letter of 15 October 1997 submitted in the opposition proceedings, contended that the perforation would propagate away from the melt fused bond of the material layers, because of the elastic band being held in a stretched state during ultrasonic bonding. However, the Board fails to see how this information would be directly derivable from the

only available information in the patent on the material chosen for the elastic band (polyurethane foam No. 2 130 170 of CIRRUS A/S) or from the fact that the elastic band is stretched up to 70%.

The same applies to the Appellant's argument that the skilled person had a choice of material for the material layers and the elastic band, which could be such that the elastic band did not fuse with the material layers or withdrew when heat was applied. The patent only mentions the polyurethane foam mentioned above for the elastic band and a non-woven fabric comprising heat-bonded polypropylene fibers for the material layers. There is no mention at all of which functional requirements should be fulfilled by the elastic band or the material layers.

4.6.3 For the invention to actually have been directed at such an explicit exclusion of the elastic band in the melt fusion of the material layers more information suggesting this, further explanation of this phenomenon or discussion of the functional requirements for the materials used should have been present in the patent. Moreover, none of the claims has ever been directed to this feature.

4.6.4 The reference in the description, column 3, lines 29 to 32, to the limited movement possible between the elastic band and the material layers surrounding said band does not directly and unambiguously lead to the conclusion that the elastic band does not participate in the melt fusion of the material layers. In point 2.3 of his grounds of appeal the Appellant argues that even relative rotation would be possible at the location of the bonds.

Firstly, relative rotation of the elastic band appears to be impossible in view of the close proximity of the other perforations and melt fusions of the material layers, which do not allow for such rotation. The mention of limited relative movement being possible is further qualified in the description of the patent in that the material layers can pleat or fold independently from each other when the elastic band relaxes, i.e. not in the form that the elastic band can move longitudinally between the material layers. The latter would require the perforations to be larger than the columns of melt fused material going through them. Such pleating or folding is however possible, irrespective of whether the elastic band is involved in the melt fusion or not.

4.6.5 Therefore the patent does not unambiguously disclose a method of securing an elastic band between two material layers (claim 1), the elastic band secured between two material layers (claim 3), nor a diaper with an elastic band secured between two material layers (claim 8), wherein the elastic band presents perforations and **only** the material layers opposite said perforations are mutually bonded by melt fusion through the perforations.

However, as already explained above this exclusion is not a feature of the invention as claimed in independent claims or as described in the patent. Therefore the conclusion reached above does not affect the assessment made in point 4.4.

5. *Novelty in view of the patent documents (Article 54 EPC)*

5.1 The closest prior art for the discussion of novelty is considered to be D1, which discloses an elastic band secured between two material layers, having perforations in the elastic band through which the material layers are melt fused together so that the elastic band is held mechanically between the material layers, the method of producing such an elastic band and a diaper fitted with such an elastic band.

5.2 The subject-matter of claims 1, 3 and 8 distinguishes itself from D1 in that the elastic band consists of one or more separate bands of elastic foam material having open or closed cells.

The elastic band disclosed in D1 is not an elastic foam material, but a non-adhesive elastomeric film, a microporous elastic film or a meltblown elastic web (see column 14, lines 4 to 11).

5.3 In respect of the other documents brought forward for attacking novelty, D2, D3 and D4, the following applies:

5.3.1 D2 concerns an elastic band consisting of an elastic film or a non-fibrous elastic web (see column 6, lines 23 to 26), which is not an elastic foam material.

5.3.2 D3 and D4 both concern an elastic band secured between two material layers. For the material of the elastic band these documents refer specifically (see page 14, lines 19 to 24 of D3 or column 9, lines 21 and 22 of D4) to US-A-3 912 565 and US-A-3 819 401).

It is consistent practice in the case law of the Boards of Appeal (see e.g. T 153/85, OJ 1988, 1, point 4.2 of

the reasons) that where there is a specific reference in one prior document to a second prior document, when determining what the first document discloses to the skilled person, the presence of such a specific reference may necessitate part or all of the disclosure of the second document to be considered part of the disclosure of the first document ("incorporation by reference").

- 5.3.3 In the present case the Board considers the reference for the material of the elastic band to the two above mentioned US-patents sufficiently specific in respect of the material used for the elastic band.

According to US-A-3 912 565 (see Example II) the elastic band consists of an elastic heat-shrinkable polyurethane foam, according to US-A-3 819 401 (see column 5, line 66 to column 6, line 5) the elastic band consists of an elastic heat-shrinkable vinyl chloride polymer material having a foamed or cellular structure.

- 5.3.4 The difference between the subject-matter of claims 1, 3 and 8 and the disclosures D3 or D4 is then at least the fact that no perforations are formed in the elastic band through which the material layers are melt fused together. According to D3 and D4 the material layers are melt fused onto the elastic band in a punctiform or linear bonding pattern, without forming perforations.

- 5.3.5 In the opposition proceedings (by letter of 18 May 1998) the Respondent brought forward document D8, in respect of the use of elastic foam material for the elastic band.

Considering that this document only discloses the

fixing by glueing or thermowelding of an elastic band consisting of foam material between the support sheet 1 and the top sheet 3, the Board finds that it does not disclose the feature of the support sheet and the top sheet as having been mutually bonded by melt fusion through perforations in the elastic band.

5.3.6 The other patent documents available in the file neither disclose all features of the claims 1, 3 and 8.

5.4 The decision under appeal has only gone into the question of novelty of the subject-matter of claim 1 in respect of the documents D1 and D2. In a preliminary communication to the parties of 15 April 1997, however, it has also discussed the other patent documents available in the file. The Board therefore has deemed it expedient to at least decide on the question of novelty of the subject-matter of claim 1 in respect of the patent documents available in the file, by virtue of Article 111(1) EPC, second sentence.

5.5 The subject-matter of claims 1, 3 and 8 therefore is novel over the prior art available in the file in the form of patent documents.

5.6 The subject-matter of the dependent claims 2, 4 to 7, 9 to 16 being for preferred embodiments of the subject-matter of independent claims 1, 3 and 8 respectively, these also fulfil the requirement of novelty in respect of the available patent documents.

6. *Novelty in respect of the alleged prior use (Article 54 EPC) and inventive step (Article 56 EPC)*

6.1 The Board considers that it would be inappropriate to

deal itself with the alleged prior use of a LUVS VG Super Baby Pants in respect of novelty of the subject-matter of claim 1, as in the decision under appeal no reasons are included concerning this prior use, nor has the Opposition Division expressed in its communications to the parties its opinion on the substantive merits of it.

In this respect the Board wishes to remark that the Respondent, with its letter of 17 June 1997, submitted to the EPO only one sample of the LUVS VG Super Baby Pants, the subject of the alleged prior use. This was then forwarded by the EPO to the Appellant, without the Opposition Division requiring the necessary further sample for the file, in analogous application of Rule 59 EPC.

6.2 In the decision under appeal also the question of inventive step has not been addressed by the Opposition Division and the claims have been further amended in the oral proceedings before the Board.

6.3 Therefore the Board decides to make use of its powers pursuant to Article 111(1) EPC, second sentence, to remit the case to the Opposition Division for further prosecution.

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 for further prosecution.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau