

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [] To Chairmen
(D) [X] No distribution

D E C I S I O N
of 2 September 2004

Case Number: T 0152/02 - 3.2.6

Application Number: 94203040.4

Publication Number: 0707841

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:

Process to provide material connections for absorbent articles
by soldering

Patentee:

THE PROCTER & GAMBLE COMPANY

Opponents:

SCA Hygiene Products AB
Paul Hartmann AG

Headword:

-

Relevant legal provisions:

EPC Art. 83, 54(2), 111(1), 114(2)

Keyword:

"Disclosure - sufficiency - (yes)"
"Novelty (yes)"
"Remittal (yes)"

Decisions cited:

-

Catchword:

-

Case Number: T 0152/02 - 3.2.6

DECISION
of the Technical Board of Appeal 3.2.6
of 2 September 2004

Appellant: THE PROCTER & GAMBLE COMPANY
(Proprietor of the patent) One Procter & Gamble Plaza
Cincinnati
Ohio 45202 (US)

Representative: Engisch, Gautier
Procter & Gamble
European Technical Center N.V.
Temselaan 100
B-1853 Strombeek-Bever (BE)

Respondent I: SCA Hygiene Products AB
(Opponent I) S-405 03 Göteborg (SE)

Representative: Hyltner, Jan-Olof
Albihns Stockholm AB
Box 5581
S-114 85 Stockholm (SE)

Respondent II: Paul Hartmann AG
(Opponent II) Paul-Hartmann-Strasse 12
D-89522 Heidenheim (DE)

Representative: Dreiss, Fuhlendorf, Steimle & Becker
Patentanwälte
Postfach 10 37 62
D-70032 Stuttgart (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 18 January 2002
revoking European patent No. 0707841 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. Pricolo
J. H. Van Moer

Summary of Facts and Submissions

- I. The appeal is from the decision of the Opposition Division posted on 18 January 2002 to revoke European patent No. 0 707 841, granted in respect of European patent application No. 94 203 040.4.
- II. In the decision under appeal the Opposition Division considered that although the disclosure of the invention in the patent in suit was sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC) and the wording of claim 1 in accordance with the main and only request of the patent proprietor filed with letter of 6 November 2001 was clear (Article 84 EPC), its subject-matter lacked novelty (Article 52(1) and 54(2) EPC) over the prior art disclosed by document
- D1: US-A-5 064 492,
- or by document
- D6: US-A-4 184 902.
- As regards the other available documents, the Opposition Division stated that they reflected "a more remote state of the art".
- III. The appellant (patentee) lodged an appeal, received at the EPO on 9 February 2002, against this decision and simultaneously paid the appeal. The statement setting out the grounds of appeal was received at the EPO on 23 May 2002.

IV. In a communication accompanying the summons for oral proceedings pursuant to Article 11(1) Rules of Procedure of the Boards of Appeal the Board expressed the preliminary opinion that it would appear that the term "solder" in claim 1 did not have the usual meaning known from the field of metal joining but should be interpreted on the basis of the description of the patent in suit in a more general manner as referring in particular also to adhesives and that, having regard to this interpretation, there was no difficulty for the skilled person to carry out the invention. Furthermore, the Board noted that in respect of novelty not only D1 and D6 were to be discussed, but also document

D3: US-A-4 973 326,

which was referred to by respondent I in its letter of reply to the written statement setting out the grounds of appeal.

V. With letter dated 13 July 2004, respondent I filed the following new documents:

D12: EP-A-293 065;

D13: US-A-4 778 458;

D14: US-A-4 156 398;

D15: EP-A-196 654;

and submitted that the subject-matter of claim 1 lacked novelty over D12 and D13.

VI. Oral proceedings, at the end of which the decision of the Board was announced, took place on 2 September 2004.

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the claims 1 to 5 filed during the oral proceedings together with amended columns 3, 4 and 9 to 14 of the description, or on the basis of the amended documents in accordance with the first auxiliary request filed with fax of 26 July 2004, or in the alternative, as a second auxiliary request, to remit the case to the first instance in case the Board decided that the subject-matter of the main or auxiliary requests was novel over both D1 and D6.

The respondent I (opponent I) requested that the appeal be dismissed.

As previously announced by letter dated 25 August 2004, the respondent II (opponent II) did not attend the oral proceedings. The proceedings continued without him (Rule 71(2) EPC). The respondent II had requested in writing that the appeal be dismissed.

VII. Claim 1 of the main request reads as follows:

"1. Process to manufacture disposable absorbent articles, said articles comprising an absorbent structure, said absorbent structure comprising a first and second outermost surface located on opposite sides of said absorbent structure, said process comprising the steps of

- Providing a first and a second material, and a solder, said solder being non-sticky at 40 °C

- Conveying said first and said second material in a machine direction at a surface speed of at least 0.4m/s;
- Joining said first and said second material by
 - Heating the solder to a temperature above the solidifying temperature of said solder
 - Applying said solder to one or both materials before said solder cools below its solidifying temperature
 - Bringing said first and second material into contact before said solder cools below its solidifying temperature to provide a permanent connection, and
- said first material is a liquid permeable topsheet and said second material is a backsheet, preferably a liquid impermeable backsheet, or
- said first material is a liquid permeable topsheet and said second material is said absorbent structure and said topsheet and said absorbent structure are joined across said first outermost surface, or
- said first material is a first layer of a multi-layer, liquid permeable topsheet and said second material is a second layer of a multi-layer, liquid permeable topsheet, or
- said first material is a breathable backsheet and said second material is said absorbent structure and said backsheet and said absorbent structure are joined across said second outermost surface, or
- said first material is a first layer of a multi-layer backsheet and said second material is a second layer of a multi-layer backsheet, preferably said backsheet is liquid impermeable, or
- said absorbent structure comprises multiple layers and said first material is a first layer of said

absorbent structure and said second material is a second layer of said absorbent structure."

VIII. In support of its requests the appellant relied essentially on the following submissions:

The term "solder" in claim 1 generally referred to a material which was able to contact the surfaces of first and second materials intimately at a temperature above its solidifying temperature and to create a permanent connection between them after cooling below the solidifying temperature, in analogy with the conventional soldering process known for joining metals. Such a solder was distinguished from adhesives by being non-sticky as determined by means of the stickiness test described in the patent in suit. The stickiness test required the use of a substrate material consisting of either a woven cotton surface or a polyethylene film of 25 micrometer thickness. The identification of these substrate materials by means of their commercial names in the patent in suit was sufficient for the skilled person to obtain such materials and thus reproduce the invention without difficulties.

In contrast to the processes of D1 and D6, the process according to claim 1 of the patent in suit required that the solder was heated before it was applied to one or both materials, and only then were the two materials brought into contact. In fact, D1 disclosed a process in which a roll of a first material already prepared with an adhesive on its surface was unwound, the adhesive was heated and the first material was brought into contact with a second material to provide a

permanent connection between the first and second materials. Thus, since the adhesive had already been applied in a preparation step, the adhesive was not applied to either material before both materials were brought into contact. Furthermore, it could not be said whether the adhesive used in the process of D1 would pass the stickiness test and therefore such an adhesive could not be defined as a solder in accordance with the patent in suit. As regards D6, it disclosed a process in which a polyethylene film was first applied to one of the materials to be joined, then the second material was provided and only then was the solder heated so as to create a permanent connection. Moreover, polyethylene was not a suitable solder in the process of the invention because it was too viscous to be used in a high-speed process with surface speeds above 0.4 m/s. Therefore, the claimed subject-matter was novel.

IX. The arguments of respondent I can be summarized as follows.

Considering that the two materials critical for the stickiness test were defined in the patent in suit by their trade name and that the properties of such materials often varied with time, the stickiness test was not defined in a manner sufficiently clear and complete for it to be performed by the skilled man. Therefore the process of claim 1 was not disclosed in a manner sufficiently clear and complete as requested by Article 100(b) EPC.

D1 disclosed a process for manufacturing disposable absorbent articles in which a backing sheet preprinted

with an adhesive and a topsheet having absorbent pads disposed thereon were conveyed in a machine direction at high speed. Since the adhesive was non-blocking up to a temperature of about 43°C, it corresponded to a non-sticky solder in accordance with the patent in suit. The joining step of the process disclosed in D1 included heating the adhesive disposed on the backing sheet above its solidifying temperature, applying it to the adhesive pads and/or the topsheet in a melted condition and pressing the topsheet and the backing sheet together. Thus, having regard to the fact that claim 1 did not define a specific succession of the steps at the time of joining the first and second materials whereby in particular it did not require that the solder be applied before bringing said materials into contact, the subject-matter of claim 1 was known from D1. For analogous reasons, also D6 destroyed the novelty of the claimed subject-matter. D6 did not disclose that the solder, a polyethylene sheet, was heated to a liquid state. However, claim 1 of the patent in suit did not require that the solder be heated to a liquid state but merely that it be heated above its solidifying temperature. As concerns D12-D14 respondent I submitted that these documents were cited in view of the, now deleted, paragraph "selective solder materials". If the Board considered that the solder material of claim 1 no longer comprised such selective solder materials these new documents were not relevant for deciding on novelty.

- X. In its written submissions the respondent II essentially argued as follows in respect of the claims in accordance with the request on which the decision of the Opposition Division was based:

D1 disclosed a process in which solder carried by a web was heated to a temperature above its solidifying temperature and then the web was joined to a topsheet and an absorbent material by means of compression rollers. During such joining of the web and the topsheet, the solder material was applied to one of the first and second materials and these materials were also brought into contact, in accordance with the definition of claim 1 of the patent in suit.

Also D6 disclosed the subject-matter of claim 1 of the patent in suit. In particular, in the process of D6 a non-sticky film of polyethylene was melted to join first and second materials together and thus effectively acted as a solder material.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

The claims in accordance with the appellant's main request are identical to the claims on which the decision under appeal is based.

The basis for the amended claim 1 is found in claims 1, 2, 11 and 3, 5 to 9 and on page 12, lines 19 to 24 of the application as filed.

Moreover, claim 1 includes all the features of claim 1 of the patent as granted. Since it also includes further limiting features, it restricts the extent of protection conferred by the European patent.

Dependent claims to 2 to 5 are based upon claims 2, 4, 10 and 12 of the application as filed.

The description of the patent in suit is adapted to be consistent with the claims as amended. In particular, paragraphs [0076] to [0078] of the patent in suit are deleted from the description to avoid any interpretation of "solder material" as encompassing "selective solder materials" which are non-sticky in conjunction with particular surfaces but sticky on other surfaces.

Hence, the amendments neither introduce subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC) nor result in an extension of the protection conferred (Article 123(3) EPC).

3. *Sufficiency of disclosure*

3.1 During oral proceedings the respondent I confined its objection of insufficient disclosure to the question of whether the skilled person could carry out the stickiness test.

3.2 In the communication annexed to the summons to oral proceedings the Board already stated that the term "solder" used in the context of the patent in suit for the manufacture of disposable absorbent articles does not have the conventional meaning as known from the

field of metal joining techniques, and that it is necessary to refer to the description to interpret this term. For instance, the patent in suit (see column 10, par. [0054]) discloses that suitable solder materials can be adhesive materials or wax type materials which are not usable for soldering of metals. In analogy with conventional solders for metal joining techniques, however, the solder must have a solidifying temperature below the melting temperature of the parts to be joined (see paragraphs [0004], [0049], [0051] and [0052] of the patent in suit) so that it can be applied to the parts in a molten state without melting of the parts taking place. Furthermore, the patent in suit discloses that the solder must pass the stickiness test in order to be distinguished from adhesives (paragraph [0059]). The patent further discloses that the test can be carried out at either 20 or 40°C. Since claim 1 requires that the solder be non-sticky at 40°C, the reference temperature for the stickiness test is 40°C. From the above it follows that the stickiness test is essential for determining whether a given material can be considered to represent a solder in accordance with the patent in suit. Therefore, it is necessary to be capable of carrying out the stickiness test in order to perform the invention. Since the patent in suit gives detailed instructions on how to carry out the stickiness test (see columns 12 to 14 of the patent specification) and these instructions fall within the scope of the normal skill and knowledge of a practitioner in the technical field of the manufacture of disposable absorbent articles, the Board takes the view that the invention is sufficiently disclosed (Article 83 EPC).

3.3 The respondent I submitted that, since the two materials considered critical for the test were defined by their trade name and the properties of such materials often varied with time, the stickiness test was not defined in a manner sufficiently clear and complete for it to be performed by the skilled person.

It is indeed critical for the stickiness test (see column 13, lines 40 to 49) to use as substrate material either a woven cotton surface obtained from Loeffler Sitter Technic GmbH, Nettersheim, Germany under the designation "white, 100% cotton weave, style # 429-W", or, in the alternative, a polyethylene film of 25 micrometer thickness available under the designation "Tacolin Polyethylene Film Code ST 400" from Taco Plastics, Manchester, Great Britain. However, there is no reason to believe, nor has evidence been submitted in this respect, that these designations refer to materials that do not have well defined and unchangeable properties. Therefore the submission that the properties of these materials might vary with time must be regarded as an unsubstantiated allegation which cannot be used to the prejudice of the appellant. Furthermore, the indication "polyethylene film of 25 micrometer thickness" is as such already sufficient for identifying one of said critical substrates in a manner sufficiently precise for allowing reproducibility of the stickiness test.

4. *Novelty*

4.1 Using the wording of claim 1 of the patent in suit, document D1 discloses a process to manufacture disposable absorbent articles, said articles comprising

an absorbent structure, said absorbent structure comprising a first and second outermost surface located on opposite sides of said absorbent structure (column 1, lines 15 to 19), said process comprising (see Fig. 5) the steps of providing a first (221,226) and a second material (222), and a joining material (adhesive, see column 1, lines 10 to 12), conveying said first and said second material in a machine direction at a surface speed of at least 0.4 m/s (the speed is not explicitly disclosed in D1, but, as admitted by the patentee during the proceedings before the first instance - see page 6 of the decision under appeal - lower speeds apply to manual processes whilst D1 clearly discloses an automatic process and thus inherently conveying speeds above 0.4 m/s); joining said first and said second material by heating the joining material to a temperature above the solidifying temperature of said joining material and bringing said first and second material into contact before said joining material cools below its solidifying temperature to provide a permanent connection (column 4, lines 28 to 33), whereby said first material (221) is a liquid permeable topsheet and said second material is a backsheet (222; see column 4, lines 22 and 32, 33).

D1 does not disclose that the joining material is a "solder" and that the solder is non-sticky at 40°C. It is true that the adhesive of D1 is chosen so as to be non-blocking up to a temperature of 43°C (see column 4, lines 14 to 16), whereby non-blocking means that unwinding of a roll of film coated with adhesive is not adversely affected by adhesion of adjoining surfaces (see column 2, lines 53 to 59). However, there are no clear and unambiguous indications pointing towards, nor

is there any evidence on file in support of, the conclusion that the adhesive of D1 would pass the stickiness test described in the patent in suit (see point 3.2 above) so as to be identified as a solder within the meaning of the patent in suit. In fact, considering that the adhesive of D1 includes a tackifying agent (see column 5, lines 18 to 20) whilst according to the patent in suit solder materials can be e.g. adhesive materials without the tackifier additives usually used (column 10, lines 53, 54), the disclosure of D1 rather points towards an adhesive that would not pass the stickiness test.

In the process of D1 the adhesive is applied at elevated temperatures to a film 222 (second material), then it is cooled (see column 3, lines 52 to 59 and column 4, lines 21, 22) and the film is wound on a roll 210. In a subsequent stage (see Fig. 5) the thus obtained roll with the adhesive is unwound, the adhesive is heated so that it melts and the film is brought into contact with a web 221, 226 (first material) before the adhesive cools below its solidifying temperature to provide a permanent connection (column 4, lines 20 to 36 and 56 to 61). Accordingly, during the joining stage the application of the adhesive to the first material (221, 226) takes place simultaneously with the bringing into contact of the first (221, 226) and second (222) materials. In contrast thereto, claim 1 of the patent in suit requires that during the joining stage the application of the joining material (solder) to one or both materials takes place before the first and second material are brought into contact.

4.2 Respondent I submitted that claim 1 did not define a specific succession of the steps at the time of joining the first and second materials and that in particular it did not require that the solder be applied before bringing said materials into contact but encompassed application of the solder substantially simultaneously with the bringing into contact of the first and second materials.

This view cannot be followed because it is clear from the wording of claim 1 that the steps of heating, applying and bringing into contact the first and second materials must be carried out in a timely spaced succession. In fact, the whole wording of claim 1 relates to a succession of steps that are carried out one after the other: providing the first and second material and the solder, conveying the first and second material, joining them ... Furthermore, at the joining stage, the heating step must clearly take place before the application step since during the latter the solder must be at a temperature above its solidifying temperature. Finally, there is no basis for an interpretation of claim 1 in which the solder is applied to the first and second materials in two separate steps, namely to one material before the conveying step and to the other material when both are conveyed, as in D1.

4.3 Compared to claim 1 of the patent in suit, D6 discloses a process to manufacture disposable absorbent articles, said articles comprising an absorbent structure, said absorbent structure comprising a first and second outermost surface located on opposite sides of said absorbent structure (see column 1, lines 14 and 56 to

60), said process comprising (see Fig. 1) the steps of providing a first and a second material (web 39, pads 24) and a joining material (thermoplastic web 32; see claim 1), conveying said first and said second material in a machine direction at a surface speed of at least 0.4 m/s (since the method of D6 is an automatic method, see the above comment in respect of the conveying speed in the process of D1); joining said first and said second material (39, 24) by heating the joining material (32) to a temperature above its solidifying temperature (see column 6, lines 29 to 31; note that the disclosure that the film is fused implies that it is heated above its solidifying temperature), wherein said first material is a liquid permeable topsheet (39) and said second material is said absorbent structure (pads 24) and said topsheet and said absorbent structure are joined across said first outermost surface (see column 5, lines 20 to 28).

In this known process, a film (32) of joining material (thermoplastic material, for instance polyethylene, see column 6, line 29) is applied to the first material (topsheet 39) at a location beneath a guiding roller (38 in Fig. 1). The first material and the joining material are then conveyed together to a location in the processing line where they are placed over the second material (absorbent pads 24) conveyed by a belt (28; see column 3, lines 47 to 50). The assembly of these materials thereafter passes beneath a heated roll (58) which contacts the first material (topsheet 39) and heats the joining material (thermoplastic web 32) which fuses and joins the first and second materials (topsheet 39 and pads 24; see column 3, lines 50 to 63).

Therefore, the joining material is applied to the first and second materials (topsheet 39 and pads 24) at locations (roller 38; between roller 54 and heated roll 58) in the processing line upwards of the heated roll (58). The first and second material are contacted at a location (between roller 54 and heated roll 58) upwards of the heated roll. At all these locations the joining material is therefore at a temperature below its solidifying temperature. It follows that D6, irrespective of whether the joining material used in the process of D6 corresponds to a solder material within the meaning of the patent in suit, does not disclose the features of claim 1 consisting in applying the solder to one or both materials before said solder cools below its solidifying temperature and in bringing said first and second material into contact before said solder cools below its solidifying temperature to provide a permanent connection, and is therefore not prejudicial to the novelty of the subject-matter of claim 1 of the patent in suit.

5. Dependent claims 2 to 5 define further embodiments of the process of claim 1. Their subject-matter is likewise novel over the disclosure of D1 and D6.
6. During the oral proceedings the respondent I no longer relied on documents other than D1 and D6 to support the objection of lack of novelty.

In the written proceedings respondent I also relied upon D3. However, the process disclosed by D3 (see Fig. 5) is similar to that of D1 in that a roll of preformed laminate (40; corresponding to the second

material of claim 1 of the patent in suit) already provided with a bonding layer (46) is unwound, the bonding layer is heated (see column 7, lines 11 to 17) and the laminate (40) is brought into contact with a film (60; first material) to provide a permanent connection (column 4, lines 20 to 36 and 56 to 61). Accordingly, the application of the adhesive to the first material (film 60) takes place simultaneously with the bringing into contact of the first and second materials (40, 60), as in the process of D1. Therefore, also D3 cannot deprive the subject-matter of claim 1 of novelty.

Since the Board's investigations in the present appeal proceedings are limited to the question of novelty and during the oral proceedings the respondent I no longer submitted arguments of lack of novelty based on any of the documents D12 to D15 filed during the appeal proceedings, these late filed documents are, by the respondent's I own admission, not relevant for the decision to be taken. They are therefore disregarded in accordance with Article 114(2) EPC.

7. Having regard to the facts that the decision of the Opposition Division did not deal with inventive step, that the appellant requests remittal to first instance in case the Boards finds that the claimed subject-matter is novel over both D1 and D6, and in order not to deprive the parties of their right to a second instance, the Board considers it appropriate to remit the case to the Opposition Division under Article 111(1) EPC 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 first instance for further prosecution.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau