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D E C I S I O N
of 23 January 2003

Case Number: T 0547/00 - 3.2.6

Application Number: 90121057.5

Publication Number: 0426197

IPC: A61F 13/46

Language of the proceedings: EN

Title of invention:
Absorbent products having flexible, hydrophilic wick means

Patentee:
McNEIL-PPC. INC.

Opponent:
SCA Hygiene Products AB

Headword:
-

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

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0547/00 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 23 January 2003

Appellant: (Opponent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 3 April 2000 rejecting the opposition filed against European patent No. 0 426 197 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. Pricolo
M. J. Vogel

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 3 April 2000 to reject the opposition against European patent No. 0 426 197 granted in respect of European patent application No. 90 121 057.5.

Granted claim 1 reads as follows:

"1. A sanitary napkin comprising: (a) an absorbent element (10) having longitudinally extending sides, transverse ends, a body-facing side (20) and an undergarment-facing side (60); and (b) resilient wick means (30, 35) disposed on said body-facing side (20); said wick means having absorbent material for absorbing body fluid and thereafter drawing said body fluid into said absorbent element (10); said wick means (30, 35) being attached to said body-facing side (20) at at least two spaced apart anchoring locations interior of the transverse ends, said wick (39, 35) being arched and biased away from said body-facing side (20) to provide a body-contacting portion at a position intermediate of said anchoring locations, and said absorbent element having a greater capillary pressure than said wick (30, 35) so as to draw body fluid therefrom."

II. The Opposition Division held that the subject-matter of claim 1 was novel and involved an inventive step having regard to the disclosures of documents on file, in particular

D1: EP-A-0 335 252;

D2: GB-A-2 135 892;

D6: EP-A-0 158 914.

III. The appellant (opponent) lodged an appeal, received at the EPO on 30 May 2000, against this decision. The appeal fee was paid simultaneously with the filing of the appeal. The statement setting out the grounds of appeal was received at the EPO on 8 August 2000.

IV. Oral proceedings took place on 23 January 2003.

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

The respondent (patentee) requested that the appeal be dismissed and that the patent be maintained as granted.

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

Having regard in particular to the embodiment shown in Figures 21 and 22, D1 disclosed a sanitary napkin having a deformation element 20 disposed on the body-facing side of an absorbent core. The element 20, which was held between the top sheet and the underlying absorbent core, functioned as a wick means because it absorbed fluid by wicking. Since the top sheet was

tightly attached around the core, the element 20 was thereby pushed into the absorbent core and thus became attached and anchored at its four contacting outer edges. The element 20 consisted of wood pulp fibers compressed into a semi-rigid paper-board-like sheet and comprised a longitudinal flexure hinge which caused the element 20 to assume an inverted "V" shaped cross-section. Thus, the element 20 was resilient and arched, and also biased away from the absorbent core by means of the flexure hinge. Finally, it was clear for a skilled person that the absorbent core had a greater capillary pressure than the element 20, otherwise the latter would act to form a barrier against any liquids reaching the absorbent core and this was technically absurd and not in accordance with D1. Therefore, the subject-matter of claim 1 was not novel over the disclosure of D1.

It also lacked novelty in the light of the disclosure of D2. This document disclosed a sanitary napkin having a top absorbent layer L1 acting as a wick means, attached to underlying absorbent layers L2a and L2b by means of fused fluid barrier lines. The top absorbent layer was resilient because the material from which it was made deformed under the effect of pressure and then returned to its original configuration when the pressure was removed. Said top layer was arched and biased away from the absorbent element consisting of absorbent layers L2a, L2b and 12, by the maintained folded configuration of the napkin and also as a result of the presence of absorbent portion 12 beneath the top layer. Since fluid was drawn from top layer L1 into the absorbent element 12, it was clear that the absorbent element L2a, L2b and 12 had a greater capillary pressure than the top layer L1.

In any case, the claimed subject-matter did not involve an inventive step. In order to solve the problem of avoiding undesired displacements of the deformation element 20 in the sanitary napkin of D1, thereby obtaining maintained body contact in use by transfer of forces from the sides of the napkin to the wick means, the skilled person would only think of attaching the deformation element 20 to the absorbent core. Furthermore, the use of a wicking layer where the underlying absorbent had a higher capillary pressure was well known in the art as evidenced by D2 or D6. As it related to an entirely different problem to that of attachment, the latter feature should be considered separately therefrom.

VI. The respondent argued essentially as follows:

As regards the deformation element 20 of the napkin disclosed by D1, since no wicking characteristics in the sense of absorbing and readily transferring fluids to the absorbent element were disclosed, it was not equivalent to the wick means defined in claim 1 of the patent in suit. Furthermore, the arched configuration of the deformation element 20 was achieved in D1 by the provision of a longitudinal fold and not, as in the patent in suit, by virtue of the resiliency of the wick means in combination with its attachment at at least two spaced apart anchoring locations. In this respect, it was to be noted that the deformation element 20 of D1 was flexure-resistant, but this did not imply that it was resilient. Moreover, lateral compressive forces applied to the side edges of the deformation element 20 would force the deformation element 20 to fold up along the longitudinal fold, and the edges of the element 20 would slide and move towards each other.

In contrast thereto, the application of lateral forces to the wick of the sanitary napkin in accordance with the patent in suit would lead to a deformation of the complete sanitary napkin due to its attachment to the absorbent element. Finally, there was no disclosure in D1 of the absorbent core having a greater capillary pressure than the deformation element 20, since fluid transfer from the deformation element to the underlying absorbent core clearly took place by gravity.

As regards D2, the appellant's submission that the layers L2a, L2b and 12 together constituted an absorbent element and the layer L1 a wicking means, was an *ex-post facto* conclusion, since the layers L2a, L2b and L1 formed part of a same absorbent layer which was folded to provide a plurality of layers. The top layer L1 was resting onto and was not biased away from the absorbent layer 12. The fact that the fibres constituting the top layer L1 were resilient did not imply that the top layer itself was a resilient means. Moreover, there was no difference in capillary pressure between the top layer L1 and the underlying layers L2a and L2b because they were made of the same material.

With respect to the question of inventive step, the problem underlying the invention in accordance with claim 1 of the patent in suit was to maintain body contact to assure fluid uptake and thus reduce the possibility of failure. The features relating to the attachment of the wick means and to the difference in capillary pressure between the wick means and the absorbent element were, together, contributing to the solution of this problem and thus could not be considered separately. The teaching of D1 taught away from attaching the deformation element 20 to the

absorbent core because it required the deformation element 20 to remain unattached so that it could freely fold up under the effect of lateral compressive forces.

Finally, there was neither a reason for a skilled person to take into consideration a problem related to the difference in the capillary pressure between the deformation element 20 and the absorbent core of D1, nor a suggestion in the prior art to relate said difference in the capillary pressure to the particular form of the wick means as defined in claim 1 of the patent in suit.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*

2.1 Document D1 discloses (see Figures 21 and 22) a sanitary napkin comprising: an absorbent element (40) having longitudinally extending sides, transverse ends, a body-facing side and an undergarment-facing side; and a deformation element (20; see column 30, lines 19 to 25) disposed on said body-facing side.

The deformation element (20) consists of a semi-rigid paper-board-like sheet which possesses a certain flexure-resistance (see column 30, lines 14 to 25). Since the means is semi-rigid and flexure resistant it is able to deform under the effect of a force and recovers to its original shape when the force is no longer applied. It is therefore resilient. Furthermore, deformation element (20) comprises wood pulp fibers

which have been suitably bonded so as to be moisture stable (see column 30, lines 14 to 17) and is able to acquire menses (see column 30, line 56). When a sheet of wood pulp fibers acquires liquids, these pass through the capillaries within the sheet, whereby wicking takes place. Therefore, the deformation element (20) is a wick means which has absorbent material for absorbing body fluid and thereafter drawing said body fluid into the absorbent element (40).

Since it has a "V" shaped cross-section, the deformation element (20) is arched (see column 30, lines 33). Moreover, since it comprises a longitudinal flexure hinge consisting eg of a longitudinal fold "which tends to pitch the deformation element (20) upwardly along the fold" (see column 30, lines 25 to 34), the deformation element (20) is biased away from the body-facing side of the absorbent element to provide a body-contacting portion at a position intermediate of the locations where it contacts the absorbent element.

However, document D1 does not disclose that the wick means is attached to the body-facing side of the absorbent element at at least two spaced-apart anchoring locations interior of the transverse ends, and that said absorbent element has a greater capillary pressure than said wick so as to draw body fluid therefrom.

2.2 The Board accepts, as submitted by the appellant, that the deformation element (20) is pushed into the absorbent core (40) by the top sheet. However, D1 does

not disclose that the deformation element is attached to the absorbent core, this definition implying that the deformation element is secured, fastened or joined to the absorbent core such that no relative movement is possible there between at the anchoring locations.

In this respect the Board observes that the text of the patent in suit on page 5, lines 39 to 43, according to which "wicks could be affixed or preformed in an arch shape and merely rested on the core as opposed to being attached to the core" is inconsistent with the claimed subject-matter which is limited to wicks attached to the core. Embodiments in which wicks merely rest on the core clearly do not fall within the scope of the claims and in so far the claimed subject-matter takes precedence over the description of the patent in suit.

2.3 Furthermore, D1 is silent about the relative degree of capillary pressure between the deformation element 20 and the absorbent core 40. In the Board's view, fluid transfer between the deformation element and the absorbent core may well take place by means of the mechanism depicted by the Opposition Division in its decision (page 5, end of first paragraph), ie by gravity when the deformation element is saturated.

The appellant argued that it was clear for a skilled person that the absorbent core had a greater capillary pressure than the deformation element, otherwise the latter would act to form a barrier against any liquids reaching the absorbent core. However the appellant, who has the burden of proof, has not submitted any evidence that this difference in capillary pressure was actually necessary in order to achieve transfer of liquid and that the mechanism described by the Opposition Division

in the decision under appeal was not plausible.

2.4 D2 (see in particular Figure 3) discloses a sanitary napkin comprising an absorbent element (11) folded back along itself to form a top layer L1 and folded layers L2a, L2b, which abut each other near the central portion of the napkin.

The appellant argued that the upper layer L1 constituted the resilient wick means, the absorbent element being constituted by elements L2a, L2b and 12.

The Board cannot follow this view, because the layers L1, L2a and L2b form part of a same absorbent element 11 which has been folded to form these layers. The layer L1 does not constitute, therefore, a wick means separate from the absorbent element as in the napkin according to claim 1 of the patent in suit.

According to D2, fused areas 13 are provided to maintain the configuration of the napkin (see page 1, lines 44 to 47) and to maintain a thin extra absorbent layer 12 in position within upper layer L1 and lower layers L2a and L2b (see page 2, lines 14, 15; 21, 22 and 31 to 38). Thus, upper layer L1 is pushed against the extra absorbent layer 12, and is not biased away therefrom, as the wick means constituting the upper layer of the napkin according to claim 1 of the patent in suit which is biased away from the absorbent element.

2.5 D6 discloses (see Figure 2) the provision, in an absorbent structure such as a diaper, of a liquid absorbing material comprising first and second layers (5, 6), the second layer (6) having a higher

density or a finer pore structure than the first layer (5) which is closer to the body-facing side (2) of the napkin, in order to draw fluid from the latter (see page 5, lines 25 to 31 and page 6, lines 30 to 34).

However, D6 does not disclose a resilient wick means which is arched and biased away from the body-facing side of the absorbent element.

2.6 Neither is such wick means disclosed by the other documents available.

Hence, the subject-matter of claim 1 is found to be novel.

3. *Inventive step*

3.1 The objective underlying the patent in suit consists in providing a napkin capable of maintaining good body contact without sacrificing comfort and which is more leakproof and adaptable to the user's activities (see column 2, lines 31 to 38 and column 3, lines 15 to 21).

3.2 Document D1 represents the closest prior art because it discloses a napkin which aims at the same objective (see D1, column 3, lines 17 to 32) and has the most technical features in common with the claimed invention.

3.3 The above-mentioned technical problem is solved, in accordance with the definition of claim 1, by the following features:

the wick means is attached to the body-facing side of

the absorbent element at at least two spaced-apart anchoring locations interior of the transverse ends, and said absorbent element has a greater capillary pressure than said wick so as to draw body fluid therefrom.

The Board observes that the distinguishing features cannot be considered to solve two separate independent technical problems, as argued by the appellant, because their functions are interrelated. The function of the attachment of the wick means to the absorbent element is to maintain the arch for maintaining body contact, whereby fluid uptake is assured and the possibility of failure is reduced (see column 4, lines 36 to 40 of the patent in suit). The feature that the absorbent element has a greater capillary pressure than the wick also contributes to assure fluid uptake and thus reduce the risk of leakage, since it allows the absorbent element to draw body fluid from the wick so that the latter is readily available to uptake further liquids.

3.4 The disclosure of document D1 does not include any indications that would lead the skilled person to consider that the manner in which the deformation element 20 is maintained within the napkin is unsatisfactory because it would allow undesired displacements thereof. In the absence of any such indications in the prior art, the skilled person would have no reason to consider the problem of how to avoid undesired displacements of the deformation element. On the contrary, the skilled person would consider that in the napkin of D1 the deformation element is sufficiently maintained in the correct position by means of the top sheet pushing it into the absorbent core (see D1, column 30, lines 1 to 13).

Furthermore, there is no indication in D1 that would suggest to the skilled person to attach the deformation element to the absorbent core in order to provide a better transfer of forces from the sides of the napkin to the wick means. As a matter of fact, D1 discloses (see column 30, lines 39 to 45) that lateral compressive forces of the wearer's thighs may be applied to the deformation element side edges directly or indirectly by transmission of the forces from the longitudinal side edges of the napkin through other members of the napkin. Thus, the indirect transmission of forces from the sides of the napkin to the wick means is already contemplated by D1, and there is no reason for the skilled person to consider that the manner in which this is achieved is unsatisfactory and/or that improvements thereof should be sought in the expectation of advantages.

3.5 Neither is the provision of wick means attached to the body-facing side of the absorbent element at at least two spaced-apart anchoring locations interior of the transverse ends disclosed or suggested by the remaining prior art.

3.6 It follows that the subject-matter of claim 1, and of dependent claims 2 to 8, is found to involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Patin P. Alting van Geusau