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D E C I S I O N
of 3 May 2001

Case Number: T 0047/98 - 3.2.6

Application Number: 91118538.7

Publication Number: 0487921

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:
Disposable diaper

Patentee:
KAO Corporation

Opponents:
UNI-CHARM Corporation
SCA MOLNLYCKE AB

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 112

Keyword:
"Novelty (yes)"
"Inventive step (no)"
"Main request filed at oral proceedings - admitted"
"Second auxiliary request filed at oral proceedings - not
admitted because not clearly allowable"
"Referral of two questions to the Enlarged Board of Appeal
(no)"

Decisions cited:
T 0153/85, T 0406/86, T 0833/90

Catchword:

-



Case Number: T 0047/98 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 3 May 2001

Appellant: KAO Corporation
(Proprietor of the patent) 14-10, Nihonbashi Kayaba-cho, 1-chome
Chuo-ku
Tokyo (JP)

Representative: Grünecker, Kinkeldey,
Stockmair & Schwanhäusser
Anwaltssozietät
Maximilianstrasse 58
D-80538 München (DE)

Respondent I: UNI-CHARM Corporation
(Opponent 01) 182 Shimobun Kinsei-cho
Kawanoe-shi Ehime-ken (JP)

Representative: Lindner, Manfred Klaus
Patentanwalt Staeger & Partner
Müllerstrasse 31
D-80469 München (DE)

Respondent II: SCA MOLNLYCKE AB
(Opponent 02) 405 03 Goteborg (SE)

Representative: Allard, Susan Joyce
BOULT WADE TENNANT
Verulam Gardens
70 Gray's Inn Road
London WC1X 8BT (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 3 November 1997
revoking European patent No. 0 487 921 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau

Members: G. Pricolo
M. Tardo-Dino

Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 487 921 in respect of European patent application No. 91 118 538.7 filed on 30 October 1991 was published on 20 September 1995.

II. Notices of opposition were filed against the patent as a whole by the respondents (opponents I and II), based on Article 100(a) EPC in conjunction with Articles 52(1), 54 and 56 EPC. The respondents relied mainly on the prior art disclosed in

D11: EP-A-0 187 727

D12: US-A-2 733 715

D15: US-A-4 205 679

E1: US-A-4 936 840

E2: US-A-4 586 199

III. By decision posted on 3 November 1997 the Opposition Division revoked the patent. The Opposition Division held that the combination of the teachings of documents D11 and E1 resulted in the subject-matter of claim 1 and that therefore no inventive step could be acknowledged therein.

IV. The appellant (patent proprietor) lodged an appeal, received at the EPO on 9 January 1998, against that 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 10 March

1998.

V. Oral proceedings took place on 3 May 2001.

The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the claims according to

- the main request filed during oral proceedings, or
- the first auxiliary request, filed as second auxiliary request together with the statement of grounds of appeal, or
- the second auxiliary request filed during oral proceedings.

The respondents requested that the appeal be dismissed. Both respondents requested rejection of the main and the second auxiliary request for reasons of their late submission.

Respondent I requested referral of the following two questions, submitted in written form at the oral proceedings, to the Enlarged Board of appeal, in case the late filed requests were not rejected:

1. "Are amendments of the claims of a contested patent made during the oral proceedings before the Board of Appeal inadmissible?"
2. "If not, under which circumstances are these amendments during the oral proceedings admissible?"

VI. Claim 1 according to the main request reads as follows:

"A disposable diaper (15, 18) of a shorts type having a liquid permeable top sheet (2), a liquid impermeable backsheet (3), and an absorbent member (4) interposed therebetween, said top sheet (2), said back sheet (3) and said absorbent member (4) forming an integrated body unit (5), said body unit (5) being divided into a stomach portion (5a) which, when in wear, is located on a wearer's stomach side and a back portion (5b) which, when in wear, is located on his back side, said stomach portion (5a) and said back portion (5b) being connected and fixed together at both side edge portions, respectively, of said stomach and back portions (5a, 5b) to form a pair of leg opening portions (14a, 14b), a unitary waist opening portion (13), and a waist portion located between said waist opening portion (13) and said leg opening portions (14a, 14b), said waist opening portion (13) and a pair of leg opening portions (14a, 14b) being provided around entire peripheral edges thereof with elastic members (8a, 8b, 11a, 11b) forming substantially continuous gathers, characterised by a further elastic member (16, 16a, 16b) attached to said integrated body unit (5) between said waist opening elastic members (8a, 8b) and said leg opening elastic members (11a, 11b) located over at least both side portions of the waist portion for forming gathers in the surrounding direction of said waist portion".

Claim 1 according to the first and second auxiliary request has the same preamble as claim 1 of the main request.

The characterising portion of claim 1 according to the first auxiliary request reads as follows:

"a plurality of further elastic members (16, 16a, 16b)

attached to said integrated body unit (5) arranged in juxtaposed relation at spaces between said waist opening elastic members (8a, 8b) and said leg opening elastic members (11a, 11b) for continuously forming gathers in the surrounding direction of said waist portion."

The characterising portion of claim 1 according to the second auxiliary request reads as follows:

"a further elastic member (16, 16a, 16b) attached to said integrated body unit (5) between said waist opening elastic members (8a, 8b) and said leg opening elastic members (11a, 11b) for forming gathers at least at both side portions of the waist portion in the surrounding direction of said waist portion, wherein expanding stresses in the surrounding direction of the surrounding portions of said waist opening portion (13), said leg opening portions (14a, 14b) and said waist portion are different, and wherein the stresses in a 50% stretched state of the surrounding portion of said waist opening portion (13), the surrounding portion of said leg opening portions (14a, 14b) and the surrounding portion of said waist portion are in relation that the stress of the surrounding portion of said waist opening portion (13) is the biggest of all, and the stress of the surrounding portion of said leg opening portions (14a, 14b) is bigger than that of the surrounding portion of said waist portion".

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

The principal object underlying the claimed disposable diaper of a shorts type was to improve the ability

thereof to prevent leakage. This object was solved essentially by the provision of further elastic means over both side portions of the waist portion. These further elastic means provided a lateral tensioning of the absorbent member bringing it into more intimate contact with the body and thereby avoiding free flow of liquid and allowing quicker absorbency of fluids.

Although the lateral tensioning was more effective in the embodiments of Figures 3 and 4 of the granted patent, where the further elastic means were provided at the side portions of the waist portion only, it was also present, but to a minor extent, in the embodiment of Figure 2, where the further elastic means completely surrounded the diaper. Because the diaper was constructed as an integrated body unit, this meaning that the absorbent member was firmly attached over a large area to at least one of the sheets and the two sheets were also firmly connected to each other, it was necessary but also sufficient for achieving the lateral tensioning of the absorbent member that the further elastic member was provided at least over the side portions of the diaper.

The new main request was filed during oral proceedings, in order to restrict claim 1 to those embodiments where such lateral tensioning was achieved, namely where the further elastic member was provided at least over the side portions of the diaper. Claim 1 of the main request was to be interpreted as defining a diaper in which either the further elastic member surrounded completely the waist portion as in the embodiment of Figures 1 and 2, or it extended over the side portions only as in the embodiment of Figures 3 and 4.

The manner of improving leakage prevention achieved with the diaper claimed was fundamentally different from all other prior art concepts, which were restricted to the use of barrier seals on the waist and/or leg openings. In contrast thereto, the diaper claimed achieved leakage prevention in a new manner, i.e. by means of better fit of the absorbent member avoiding free flow of liquid between the diaper and the wearer's body.

D11, which was considered to represent the closest prior art, clearly stated that all the elastic means had only the function of elasticizing the waist and leg openings. Although such elastic means had a certain width or comprised a plurality of elastic members, still they were associated with an opening and their function was not comparable to that of the further elastic members claimed.

E1 related to a flat type diaper and did not disclose a diaper of a shorts type. The skilled person, being the same for both kind of diapers, would not have considered a combination of D11 and E1, because E1 did not address the problem of leakage prevention. The abdominal support band (65) shown in Figures 5 and 7 of E1 could not provide a lateral tensioning (stretching) of the absorbent member (32), because the diaper was not constructed as an integrated body unit. The abdominal support band served only to improve the fit and had nothing to do with leakage prevention.

Therefore, the subject-matter of claim 1 according to the main request was both novel and inventive.

The diaper according to claim 1 of the first auxiliary

request additionally defined a plurality of further elastic members, and thus a further step was required for the skilled person to arrive at the subject-matter of claim 1 when starting from D11 as closest prior art.

The second auxiliary request, with claim 1 combining granted claims 1, 6 and 7, was filed as a reaction to the opinion given by the Board during oral proceedings, that the independent claim of the main and auxiliary requests appeared to lack an inventive step.

In the appellant's view, nobody could have been taken by surprise by such a new request, because claim 1 was the result of a combination of claims already present in the patent as granted. Since the prior art did not disclose that the further elastic member had to be weaker than the other elastic members, the subject-matter of claim 1 involved an inventive step.

VIII. Respondent I disputed the views of the appellant. His arguments can be summarized as follows.

Since they were filed during oral proceedings, the main and second auxiliary request had to be rejected as late filed. If the Board intended to allow their introduction into the appeal proceedings, then the two questions concerning admissibility of amendments during oral proceedings before the Boards of Appeal had to be referred to the Enlarged Board of Appeal. These questions arose from the fact that there was no uniform application of the law in this question, some decisions allowing amendments at such late stage (e.g. T 543/89, T 482/89) and others rejecting them (e.g. T 51/90, T 270/90).

D11 disclosed a diaper wherein the absorbent body was integrated with the back sheet and the top sheet. Since a plurality of spaced elastic members were provided in the surrounding direction of the waist opening, some of these elastic members were to be regarded as elasticizing the waist opening and others as providing the same function of the further elastic member claimed. Therefore, the subject-matter of claim 1 according to the main request was anticipated by the disclosure of document D11.

Even if lack of novelty over D11 could not be concluded, the subject-matter of claim 1 was obvious either in view of D11 alone, since its teaching contemplated the use of a spacing between the elastic members outside the range explicitly disclosed, or in view of the combination of D11 with either E1, E2 or D12, each of these documents disclosing the use of a further elastic member between the waist opening and the leg openings.

Moreover, the effect of laterally tensioning the absorbent member described by the appellant was not obtained in all the embodiments of the patent in suit: if the further elastic member continuously surrounded the waist portion of the diaper, as in Figure 2 of the granted patent, then no tensioning effect was obtained. Thus, the effect obtained in the embodiment of Figure 2 by means of the further elastic member was the same as that obtainable with the prior art diapers having such further elastic member.

The subject-matter of claim 1 according to the first auxiliary request was not inventive, because the additionally claimed plurality of spaced elastic

members was a trivial feature. An example thereof was shown for instance in D11.

Since it was generally known that a skilled person had to adjust the tensile stresses of the elastic members of any new diaper to obtain a good fit, claim 1 of the second auxiliary request did not add anything inventive to the subject-matter of claim 1 of first auxiliary request.

IX. Respondent II essentially argued as follows.

Starting from document D11, it was obvious for a skilled person to arrive at the subject-matter of claim 1 of the main request in view of the teaching of E1, which disclosed the use of an elastic abdominal band (65) for improving leakage prevention. E1 indeed taught the use of the abdominal band to improve the fit of the diaper, yet the skilled person knew that good fit and leakage prevention went hand in hand. E1 disclosed also that the elastic band could be located both in the front and rear panels; therefore E1 taught to provide a further elastic member located over at least both side portions of the waist portions.

The abdominal band disclosed in E1 provided the same technical effects of the further elastic member of claim 1 of the main request. Indeed, in the embodiment of Figure 2 of the granted patent, no lateral tensioning of the absorbent member by the further elastic member could be obtained, because the further elastic member surrounded the diaper's waist portion. Such lateral tensioning was achieved only in the embodiments of Figures 3 and 4 where the further elastic member was located only over the side portions.

Therefore, the effect of the further elastic means (16) in the embodiment of Figure 2 of the granted patent could only be seen in improving the fit of the diaper.

It would be immediately apparent to a skilled person that, if the elastic bands of the flat type diaper according to E1 were included in a diaper of the shorts type according to D11, then one continuous elastic band surrounding the waist portion could be used.

With respect to the second auxiliary request, it was obvious that the further elastic member had to be weaker than the other elastic members, since it did not have a gasket function, and therefore the subject-matter of claim 1 of the second auxiliary request did not involve an inventive step.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of the main and second auxiliary requests*
 - 2.1 It is a matter of general principle that a patentee ought to file amendments at the earliest opportunity and that the Board, exercising its discretionary power, may disregard late filed requests for amendment. The criteria for exercising the discretionary power have been the subject of several decisions of the Boards of appeal (reference is made, for instance, to decisions T 153/85, OJ 1988, 1, reasons 2.1; T 406/86, OJ 1989, 302; T 833/90, unpublished, point 2 of the reasons). In accordance therewith, amended claims filed during oral

proceedings may be disregarded in order to avoid unacceptable delays in the appeal proceedings, that would affect the rights of third parties. However, they may be taken into consideration when they are bona fide attempts to overcome objections raised and their examination does not present difficulties that would slow down the proceedings.

- 2.2 The main request was filed during the oral proceedings but in response to discussions held during the oral proceedings concerning the lateral tensioning of the absorbent member and in a bona fide attempt to restrict the subject-matter of the claims to exclude embodiments not leading to such a technical effect. Moreover, the amendments do not substantially modify the subject-matter claimed and could have been expected in view of the objections raised. For these reasons the Board considers the late filing of the main request acceptable.

2.3 The claims of the second auxiliary request were filed at a very late stage during the oral proceedings without any particular justifications. In the Board's view, the argument submitted by Respondent II, that it was obvious to provide a further elastic member exerting a lower tensioning force when it did not have a sealing function (gasket), appears to seriously put into question the inventiveness of the subject-matter of claim 1. Consequently, although claim 1 results from the combination of claims already present in the patent as granted, allowing the second auxiliary request would entail examining the claims in the light of Article 56 EPC, which would delay the proceedings further. In application of the above mentioned criteria, the Board exercises its discretionary power and does not allow the introduction of the second auxiliary request into the appeal proceedings.

3. *Request for referral of two questions to the Enlarged Board of Appeal*

3.1 Since the Board, in principle, accepted introduction of the amended claims in accordance with the main request, respondent I's request for referral of two questions to the Enlarged Board of Appeal has to be considered.

3.2 In accordance with Article 112(1)(a) EPC a case shall be referred to the Enlarged Board of Appeal if the Board of Appeal considers that a decision is required in order to ensure uniform application of the law or if an important point of law arises.

According to the case law of the Boards of Appeal, introduction into the proceedings of late filed claims is sometimes accepted and sometimes not. This does not

mean that there is no uniform application of the law, as submitted by respondent I, since the different conclusions on the admissibility of late-filed claims are reached by the Boards of Appeal while exercising due discretion having regard to the specific circumstances of each individual case and in application of specific criteria developed by the Boards of Appeal (see point 2.1 above). Moreover, those criteria are now established in the case law so that no important point of law arises.

3.3 In view of these considerations the Board comes to the conclusion that none of the prerequisites for referral of a question to the Enlarged Board of Appeal according to Article 112 (1) EPC is met. Consequently, the request for referral to the Enlarged Board of appeal is refused.

4. *Amendments*

4.1 The subject-matter of claim 1 of the main request has been limited to the embodiments in which the further elastic member is located over at least both side portions of the waist portion whilst claim 1 as granted left open where the further elastic member was located in the surrounding direction of the waist portion; and the subject-matter of claim 1 of the first auxiliary request has been limited to the combination of features of granted claims 1, 2 and 4.

4.2 The combination of features defined in claim 1 of the main and first auxiliary request can be directly derived from claims 1, 3 and claims 1 to 4, respectively, and from Figures 3 to 6 of the originally filed application.

4.3 Therefore, no objection arises under the requirements of Article 123(2) or (3) EPC.

5. *Novelty*

5.1 Document D11, which alone has been brought forward for attacking novelty, discloses a disposable diaper according to the preamble of claim 1, namely a disposable diaper of a shorts type having a liquid permeable top sheet (21), a liquid impermeable backsheet (22), and an absorbent member (23) interposed therebetween, said top sheet (21), said back sheet (22) and said absorbent member (23) forming an integrated body unit, said body unit being divided into a stomach portion (24) which, when in wear, is located on a wearer's stomach side and a back portion (25) which, when in wear, is located on his back side, said stomach portion (24) and said back portion (25) being connected and fixed together at both side edge portions, respectively, of said stomach and back portions to form a pair of leg opening portions (13), a unitary waist opening portion (12), and a waist portion located between said waist opening portion (12) and said leg opening portions (13), said waist opening portion (12) and a pair of leg opening portions (13) being provided around entire peripheral edges thereof with elastic members (30, 70) forming substantially continuous gathers.

5.2 The subject-matter of claim 1 of the main request is distinguished from the diaper known from D11 by the features defined in the characterizing portion, namely by a further elastic member attached to said integrated body unit between said waist opening elastic members and said leg opening elastic members located over at

least both side portions of the waist portion for forming gathers in the surrounding direction of said waist portion.

- 5.3 Respondent I argued that, since in D11 a plurality of spaced elastic members were provided in the surrounding direction of the waist opening, some of these elastic members were to be regarded as elasticizing the waist opening and others as providing the same function of the further elastic member of claim 1.

Although document D11 shows a plurality of spaced elastic members in the surrounding direction of the waist opening (see e.g. page 10, lines 1 to 3), this document only discloses that the elastic members have the function of elasticizing the waist opening.

The Board therefore comes to the conclusion that the interpretation given to D11 by respondent I is artificial, and that the plurality of spaced elastic members according to D11 can only be construed as constituting waist opening elastic members.

- 5.4 Since also the other documents cited do not disclose the combination of features of claim 1 of the main request, its subject-matter is novel.

- 5.5 The subject-matter of claim 1 of the first auxiliary request, additionally requiring a plurality of such further elastic members, is also novel.

6. *Inventive step - main request*

- 6.1 Starting from the closest prior art disclosed by document D11, it is an objective of the patent in suit

to provide a disposable diaper capable of surely preventing the leakage of waste material, reducing the costs, and allowing the diaper to be smoothly put on or taken off (see page 2, lines 4 and 46, 47 of the granted patent).

- 6.2 This objective is achieved by the features of the characterising portion of claim 1.

The Board is satisfied that leakage prevention is indeed achieved because the further elastic member provides a closer fit of the diaper, since it acts on the waist portion so that no gap is formed between the diaper and its wearer (see page 3, lines 6 to 9 of the granted patent).

The definition of claim 1 covers both the embodiment of Figures 1, 2 and that of Figures 3, 4. In the first embodiment (Figures 1 and 2), the further elastic members 16a, 16b are arranged to continuously surround the waist portion, whilst in the second embodiment (Figures 1 and 2) they are arranged only over both side portions.

If the further elastic members are arranged to surround the waist portion as in the first embodiment, then, in use, they press the diaper against the body of the wearer, since they are in a stretched state (see page 5, lines 49 to 55 of the granted patent). That is, the further elastic members act in the same manner as the waist and leg opening elastic members. Under these circumstances, the further elastic members in the first embodiment will apply lateral compressive stresses to the absorbent member. Thus, the Board cannot follow the appellant's argument that the further elastic members

provide a lateral tensioning of the absorbent member in the first embodiment, although such lateral tensioning is indeed achieved in the second embodiment. However, in the first embodiment the further elastic members still provide a closer fit of the diaper over the waist portion, by pressing it against the body and thus reducing the gap therebetween.

- 6.3 Document E1 discloses the use of a support band in the front and rear panel of a flat type disposable diaper (see column 8, lines 45 to 47; column 10, lines 27 to 29 and 43 to 48) for holding the diaper in position better with less front panel drop, i.e. for obtaining a closer fit of the diaper.

Although E1 does not explicitly disclose that the purpose of the support band is to improve leakage prevention, as pointed out by the appellant, the skilled person is aware that a diaper closely fitting the body will have a better performance, in terms of leakage prevention, than one which does not fit well to the body of the wearer.

Furthermore, the skilled person would recognize that the support band provides the same effect if used on a diaper of a shorts type. Also there, the support band presses the diaper, and hence the absorbent member, against the body of the wearer for better fit.

Therefore, the Board comes to the conclusion that document E1 teaches the person skilled in the art to improve the fit and thus also the closely related leakage prevention of a disposable diaper by providing such support bands.

6.4 When applying this teaching of E1 to the shorts type diaper of D11, the skilled person would directly attach the support bands (constituting further elastic members) to the integrated body unit between the waist opening elastic members and the leg opening elastic members in both the front and rear waist portions of the diaper. By doing so the support bands would inevitably be located over at least both side portions of the waist portion in the surrounding direction of said waist portion, because the length of the support bands is such that they will at least partially extend over the side portions, as shown in Figure 4 of E1 for the support band of the front panel.

Therefore, applying the teaching of E1 to the diaper of D11 inevitably leads to the subject-matter of claim 1.

6.5 The appellant argued that claim 1 was to be interpreted as defining a diaper in which either the further elastic member surrounded completely the waist portion as in the embodiment of Figures 1 and 2, or it was extending over the side portions only as in the embodiment of Figures 3 and 4.

In the present case claim 1 is not clearly limited only to the embodiments of Figures 1 to 4 of the granted patent, but includes also an embodiment where the further elastic means extend over the side portions only partially, i.e. with a gap between a further elastic member located on the front waist portion and a further elastic member located on the rear waist portion, which embodiment is the direct result of the combination of D11 and E1 outlined above.

Anyway, the embodiment of Figures 1 and 2 of the

granted patent is also obvious in view of this combination. Indeed, the use of one continuous elastic band surrounding the waist portion would be immediately apparent to the skilled person putting into practice the teaching of E1, in particular because the diaper of D11 already has continuous elastic bands (70) surrounding the waist opening (see D11, Figures 1 and 7).

6.6 In these circumstances, the appellant's main request is not allowable as the subject-matter of claim 1 lacks inventive step pursuant to Article 56 EPC.

7. *Inventive step - first auxiliary request*

7.1 The subject-matter of claim 1 is distinguished from the disposable diaper of the closest prior art D11 by the features defined in the characterizing portion.

7.2 As explained in connection with claim 1 of the main request (see points 5.3 to 5.5 above), the skilled person would regard it as obvious, in order to solve the problem of improving leakage prevention, to include the following features in the diaper of D11:

a further elastic member attached to said integrated body unit between said waist opening elastic members and said leg opening elastic members for continuously forming a gather in the surrounding direction of said waist portion.

7.3 In order to assess whether the subject-matter of claim 1 involves an inventive step, it remains thus to consider whether the skilled person would have been led by the prior art to provide a plurality of such further

elastic members, arranged in juxtaposed relation at spaces.

Document D11 discloses that the waist opening can be elasticized with either a single elastic member (flat tape-like elastic member) or with a plurality of spaced elastic members (page 9, lines 6 to 8 and page 10, lines 1 to 5). When applying the teaching of E1 to the diaper of D11, following the obvious route described above (see points 6.3 to 6.5 above), the skilled person is therefore directly led by the teaching of D11 to consider the possibility of using a plurality of further spaced elastic members rather than one single further elastic member.

- 7.4 Therefore, also the appellant's first auxiliary request is not allowable as the subject-matter of claim 1 lacks inventive step pursuant to Article 56 EPC.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The request for referral of two questions to the Enlarged Board of Appeal is refused.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau