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D E C I S I O N
of 20 June 2006

Case Number: T 1449/04 - 3.2.06

Application Number: 96307532.0

Publication Number: 0769284

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:
Sanitary napkin

Patentee:
UNI-CHARM CORPORATION

Opponent:
KAO Corporation

Headword:
-

Relevant legal provisions:
EPC Art. 123(2), 84, 83, 56

Keyword:
"Amendments main request: generalisation of specific embodiment; auxiliary request: added subject-matter (no)"
"Claims - clarity (yes)"
"Disclosure - enabling"
"Inventive step - (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1449/04 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 20 June 2006

Appellant: (Opponent)	KAO Corporation 14-10 Nihonbashi-Kayabacho 1-chome Chuo-ku, Tokyo (JP)
Representative:	Vossius & Partner Siebertstrasse 4 D-81675 München (DE)
Respondent: (Patent Proprietor)	UNI-CHARM CORPORATION 182 Shimobun, Kinsei-cho Kawanoe-shi Ehime-ken (JP)
Representative:	Murgatroyd, Susan Elizabeth Baron & Warren 19 South End Kensington, London W8 5BU (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted 2 November 2004 concerning maintenance of European patent No. 0769284 in amended form.**

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. L. De Crignis
R. Menapace

Summary of Facts and Submissions

I. European patent No. 0 769 284 granted on application No. 96 307 532.0 claiming a priority of 19 October 1995 from JP 27125395 was maintained in amended form by decision of the opposition division posted on 2 November 2004.

II. The opposition division was of the opinion that the subject-matter of claim 1 in accordance with the patent proprietor's first auxiliary request complied with the requirements of the EPC. In particular, it considered that the patent in suit was disclosed in a manner sufficiently clear and complete for it to be carried out by a skilled person (Article 83 EPC). The test reports submitted by the opponent with letter dated 14 September 2004 (Experiment, table) and by the patent proprietor with fax of 8 October 2004 (Experiments 1 and 2, tables 1 and 2) were proof that at least one embodiment of a sanitary napkin according to the invention could be obtained. Furthermore, the subject-matter of claim 1 fulfilled the requirements of Article 84 and Article 123(2) EPC, was novel (Article 54 EPC) and involved an inventive step (Article 56 EPC) over the prior art disclosed by the documents:

D1 WO-A-93/12747
D2 US-A-4 655 759
D3 JP-A-06/245951 (with English translation)
D4 EP-A-0 291 316
D5 US-A-3 908 659.

III. On 20 December 2004 a notice of appeal was received at the EPO against this decision filed by the appellant (opponent) together with payment of the appeal fee. The statement setting out the grounds of appeal was received on 11 March 2005. Objections in respect of added subject-matter (Article 123(2) EPC), lack of clarity (Article 84 EPC), insufficiency of disclosure (Article 83 EPC) and lack of inventive step (Article 100(a) EPC) were made against claim 1 as maintained by the opposition division. The appellant additionally filed with letter dated 16 August 2005 results listed in Tables 1 and 2 as obtained by further experiments comprising three samples.

IV. With letter of 16 September 2005, the respondent submitted further evidence in the form of the results of experiments 3 and 4, tables 3 and 4 and re-submitted the results of experiments 1 and 2, tables 1 and 2.

V. In an annex to the summons for oral proceedings pursuant to Article 11(1) Rules of Procedure of the Boards of Appeal dated 22 February 2006 the Board raised the question whether there was support in the application as originally filed with respect to the subject-matter of claim 1 concerning the feature relating to the absorbent article having "a non-compressed region" (Article 123(2) EPC) and whether the patent in suit contained sufficient information for enabling the skilled person to obtain the suppression of rapid spread longitudinally within the grooves of the article within the whole scope claimed (Article 83 EPC, Article 56 EPC).

VI. With letter of 19 May 2006 the appellant filed comments on the newly filed auxiliary requests and a comparison of the experimental data submitted by the respondent in form of annex 1 and annex 2.
The respondent filed with letter of 19 May 2006 a declaration of Mr Takayuki Hisanaka and a declaration of Mr Satoshi Mizutani;
Furthermore, with letter of 16 June 2006 the respondent submitted Figures 1 to 3 corresponding to its experiments 2 to 4.

VII. Oral proceedings were held on 20 June 2006.
The appellant requested that the decision under appeal be set aside and that the European patent be revoked.
The respondent (patentee) requested that the appeal be dismissed and that the patent be maintained on the basis of the claim(s) according to the main or the (sole) auxiliary request and with the amended description (columns 1-5), both as submitted during the oral proceedings, and with Figures 1-3 as granted.

Claim 1 of the main request reads:

"A sanitary napkin (1) comprising a liquid-permeable topsheet (2), a liquid-impermeable backsheet (3) and a liquid-absorbent core (4) disposed therebetween and having a pair of grooves (5) formed by compression-molding in a top surface of an absorbing region defined by the presence of said core (4), wherein said grooves (5) longitudinally extend along transversely opposite sides of said absorbing region and said grooves (5) are spaced apart from each other by a distance gradually increasing from the minimum at longitudinally middle points thereof to the maximum at longitudinally

opposite ends thereof, said sanitary napkin being characterized in that:
each of said grooves (5) has higher and lower density compressed zones (9,8) on the bottom (5A) thereof alternately arranged in a longitudinal direction thereof and extending transversely across the bottom (5A),
and said lower density compressed zone (8) has a vertical dimension (B) larger than the corresponding dimension (C) of said higher density compressed zone (9) as measured from said bottom (5A),
wherein said vertical dimension (B) of said lower density compressed zone (8) is 0.7 to 0.2 times a thickness (A) of the non-compressed region of said sanitary napkin (1) and said corresponding dimension (C) of said higher density compressed zone (9) is 0.5 to 0.05 times said thickness (A)."

The sole claim 1 of the auxiliary request reads:

"A sanitary napkin (1) comprising a liquid-permeable topsheet (2), a liquid-impermeable backsheet (3) and a liquid-absorbent core (4) disposed therebetween and having a pair of grooves (5) formed by compression-molding in a top surface of an absorbing region defined by the presence of said core (4), wherein said grooves (5) longitudinally extend along transversely opposite sides of said absorbing region and said grooves (5) are spaced apart from each other by a distance gradually increasing from the minimum at longitudinally middle points thereof to the maximum at longitudinally opposite ends thereof, said sanitary napkin being characterized in that:

each of said grooves (5) is defined by inner and outer side walls ($5D_1$, $5D_2$) and has higher and lower density compressed zones (9,8) on the bottom (5A) thereof alternately arranged in a longitudinal direction thereof, each of said higher and lower density compressed zones (9,8) extending transversely across the bottom (5A) continuously from said inner side wall ($5D_1$) to said outer side wall ($5D_2$), said higher and lower density compressed zones also extending parallel to each other and obliquely to a longitudinal axis (x) of said napkin, and said lower density compressed zone (8) has a vertical dimension (B) larger than the corresponding dimension (C) of said higher compressed zone (9) as measured from said bottom (5A), wherein said groove (5) has a width at an upper opening (5B) thereof larger than a width at the bottom (5A) thereof and an edge (5C) of said upper opening (5B) describes a circular arc in cross-section,
wherein said vertical dimension (B) of said lower density compressed zone (8) is 0.7 to 0.2 times a thickness (A) of the non-compressed region of the sanitary napkin (1) in a location where said edge (5C) continuous with said inner side wall ($5D_1$) terminates inward along the transverse direction in the middle of said sanitary napkin (1) and said corresponding dimension (C) of said higher density compressed zone (9) is 0.5 to 0.05 times said thickness (A) and a portion of said core (4) lying along said inner side wall ($5D_1$) has a density higher than the density in a portion of said core (4) lying along said outer side wall ($5D_2$) and a portion of said upper opening edge (5C) continuous with the inner side wall ($5D_1$) describes a circular arc more gentle than a circular arc described by a portion

of the upper opening edge continuous with the outer side wall ($5D_2$)."

VIII. The arguments of the appellant can be summarised as follows:

With respect to the main request, the feature in claim 1 concerning the relation of the thickness (A) to the lower and higher density compressed zones (8, 9) was supported by the description as originally filed only to the extent of the particular embodiment shown in Figures 1 to 3. In the absence of the other features of this embodiment the subject-matter of claim 1 did not meet the requirement of Article 123(2) EPC.

With respect to the auxiliary request, there was no literal basis in the description for the higher and lower density compressed zones extending "parallel to each other" as now claimed (Article 123(2) EPC). The thickness (A) was not defined as to its location and thus its determination method (Article 84 EPC). This was of particular relevance for sanitary napkins which are not completely flat and whose thickness of a non-compressed region is not necessarily constant.

With respect to the provision of Article 83 EPC, the patent in suit contained no information concerning the parameters which allowed to obtain the object of the invention (suppression of spread of liquid in the grooves) such as thickness of the napkin, dimensions of the groove, composition of the core, test conditions as for example supplying speed of the blood, time scales, etc..

The single embodiment disclosed did not contain sufficient information to perform the invention over the whole range claimed. Obviously, with sanitary napkins having a smaller thickness of the absorbent member, the claimed effect of suppressing spread of liquid could not be achieved.

Either D1 or D2 could be considered as representing the closest prior art. Both documents disclosed sanitary napkins with arcuate grooves and all combinations of the features specified in the preamble of claim 1. Additionally, D1 disclosed a portion of the upper opening edge continuous with the inner side wall describing a circular arc more gentle than a circular arc described by a portion of the upper opening edge continuous with the outer side wall in its Figures 2 and 6.

D1 (and D2) referred to the problem of leakage and soiling. The claimed solution was not inventive when taking into account D4 which addressed the specific problem of improved liquid distribution and retention characteristics with regard to channels. The mechanism and function of the differently compressed zones in the grooves of the opposed patent was the same as the one of the channels of D4 which was apparent when comparing the cross-sectional view of the groove as claimed and the cross-sectional view in the middle of Figure 3 of D4. Furthermore, the same concept of fluid transport by differently compressed regions was already disclosed in D5.

Furthermore, also D3 could be considered as representing the closest prior art as done by the

opposition division in its decision. When starting from this prior art and taking into account the disclosure of D4, no inventive step was present.

IX. The respondent essentially submitted the following arguments:

The additional wording of claim 1 of the main request was based on page 4 of the application as originally filed. If the sanitary napkin was of general even thickness, the determination of the thickness (A) always resulted in an unambiguous result. If the sanitary napkin was of a profiled thickness, the skilled person knew that it would make sense only to determine the thickness prior to compression of the groove just outside of the compressed region as shown in Figure 3. Therefore, in any case the skilled person knew where to determine the thickness A according to the originally filed application.

With respect to the auxiliary request, Figures 1 to 3 disclosed all the features of claim 1. Hence, claim 1 fulfilled the requirement of Article 123(2) EPC. As regards the objection under Article 84 EPC, Figure 3 showed clearly how to determine the thickness (A).

Considering the provisions of Article 83 EPC, the experiments 1 to 4 submitted with letter of 16 September 2005 were clear evidence that the patent in suit contained an enabling disclosure. Improved suppression of liquid flow was achieved for all experimental napkins made according to the invention.

The available prior art neither disclosed nor suggested an absorbent article having arcuate grooves and the claimed combination of features leading to the effects explained in the description of the patent. D1 and D2 disclosed the provision of arcuate grooves for liquid distribution. The beneficial effect of the design of the grooves in order to suppress liquid flow at the ends of the grooves in combination with prevention of transverse side leakage of the sanitary napkin was nowhere mentioned or suggested. D4 referred to a different densification pattern, so that no asymmetric opening of the grooves was disclosed therein. The aim of D4 was not to suppress the spread of liquid but the opposite namely to wick away quickly the fluid to unsaturated regions.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. Amendments - Article 123(2) EPC

Claim 1 includes the combination of features of claims 1 and 4 as originally filed. In addition, it defines the following features:
- the grooves extending transversely across the bottom (5A);
- the vertical dimension (B) of said lower density compressed zone (8) being 0.7 to 0.2 times a thickness (A) of the non-compressed region of said sanitary napkin (1) and said corresponding dimension (C) of said

higher density compressed zone (9) being 0.5 to 0.05 times said thickness (A).

The respondent argued that the basis for this amendment was to be found in the application as originally filed in the description on page 4, lines 5 - 18. That paragraph on page 4 specifies the embodiment of the sanitary napkin shown in Figures 2 and 3, which figures represent a fragmentary plan view and a sectional view of the sanitary napkin shown in Figure 1. This embodiment is disclosed as comprising in addition to the features now inserted into claim 1 further features as for example:
- lower and higher density compressed zones which extend transversely across the bottom 5A in such a design that they extend obliquely of a longitudinal axis x of the napkin;
- compression concerning the side walls of the grooves;
- asymmetric design of the opening edge of the grooves;
- the location of the reference thickness A.
These further features not being present in claim 1 of the main request, a generalisation of the embodiment disclosed in Figures 1 to 3 has been made. Since no basis for such a generalised subject-matter is present elsewhere in the application as filed, the requirement of Article 123(2) is not complied with.

Accordingly, the main request is not allowable.

Auxiliary request

3. Amendments - Article 123(2) EPC

Claim 1 has been amended with respect to claim 1 of the main request by addition of the features of the embodiment according to Figures 1 to 3(see point 2, above). The wording of claim 1 is based on a combination of originally filed claims 1 to 5 with originally filed page 3, line 7 to page 5, line 21 of the description and on Figures 1 to 3.

The appellant was of the opinion that there was no literal basis in the description for the higher and lower density compressed zones extending "parallel to each other" as now claimed. However, Figure 2 illustrates parallel extending zones, particularly obliquely parallel extending zones. The features disclosed in combination with the embodiment shown in Figures 1 to 3 therefore include parallel extending compressed zones. Accordingly, the combination disclosed by this claim 1 does not contain subject-matter extending beyond the content of the application as filed, so that the requirements of Article 123(2) EPC are met.

3.1 Article 84 EPC

With respect to the feature relating to the thickness (A), the appellant maintained the objection that it would not be clear where the thickness (A) should be measured.

Claim 1 specifies the thickness (A) of the non-compressed region of the sanitary napkin "in a location where said edge (5C) continuous with said inner side wall (5D1) terminates inward along the transverse direction in the middle of said sanitary napkin (1)". This specification is consistent with the illustration of Figure 3 which shows how to determine the thickness (A). Figure 3 represents a sectional view taken in the middle along the transverse direction of the sanitary napkin of Figure 1. The wording of claim 1 thus defines exactly the point where the thickness (A) has to be determined. Hence, the skilled person knows where to determine the thickness (A). Furthermore, the opening edge of the grooves is specified as being asymmetric. It follows that claim 1 clearly defines the matter for which protection is sought. Accordingly, the amendments do not give rise to objections under Article 84 EPC.

4. Article 83 EPC

It was undisputed that it is possible to manufacture sanitary napkins as claimed. The appellant submitted that it was not easy to manufacture a napkin according to the invention since there was no guidance on how all the parameters should be combined in order to arrive at the suppression of the spread of the liquid along the grooves and thus the claimed effect of suppressing spread of liquid could not be achieved with all sanitary napkins covered by the claim. It was necessary to know, *inter alia*, the thickness of the absorbent material, the initial density and further it would be necessary to define the amount of liquid to be absorbed.

However, the experimental napkins tested by the opponent are not specified as to an asymmetric opening of the grooves. Hence, they cannot be relied upon for demonstration of any effect or non-effect of the now claimed embodiment, and, therefore they do not support the appellant's position.
The patent proprietor provided evidence (experiments 1 to 4) that the claimed effect could be achieved for sanitary napkins having a thickness (A) of the absorbent core of 3.6 mm, 6.3 mm, 7.2 mm and 7.7 mm. The experiments were carried out with napkins having all the claimed features and resulted in a smaller spread distance in relation to napkins having a flat bottom groove.

Considering that claim 1 requires the grooves to be of a particular design with respect to the compression in the grooves and next to the grooves as well as with respect to the asymmetric curvature of the opening of the grooves, and that there is no reason to assume that the skilled person was not in a position to make sanitary napkins having those and all other features according to claim 1, the disclosure of the patent in suit is to be regarded as sufficient within the meaning of Article 83 EPC.

5. Article 56 EPC

5.1 D1 and D2 disclose sanitary napkins with a pair of arcuate embossed channels according to the preamble of claim 1 and thus each one of these documents represents the closest prior art.

5.2 Starting from D1 (or D2), the object of the patent in suit is to suppress rapid spread longitudinally in the grooves and to prevent the transversely opposite side edges of the napkin from being stained (paragraphs [0005] and [0014]). The problem is solved according to the patent in suit by the features of claim 1, particularly by the differently compressed regions and their arrangement in and directly besides the grooves and by the design of the upper opening of the grooves.

The appellant interpreted Figure 2 of D1 such as disclosing besides the features of the preamble also a more gentle curvature at the inner side of the groove 34 and thus an asymmetric design of the grooves. However, no teaching of such a design or any functional link to the resulting differences in absorbency or absorbency speed is present in D1. In agreement with the jurisprudence of the Boards of appeal features may be taken from the drawings provided the structure and the function of such features are clearly, unmistakably and fully derivable from the drawings by the skilled person. In the absence of both a clear disclosure in the drawing and any suggestion to a possible function of the alleged asymmetrical shape of the groove in D1 this requirement is not fulfilled. Therefore, the feature is correctly placed in the characterising part of claim 1.

5.3 In the view of the appellant, D4 which refers to alternately compressed channels would lead the skilled person to apply differently compressed regions within the grooves. The calliper of the regions with different density of D4 (col. 10, line 59 to col. 11, line 20 of

D4) was calculated to lie within the ratio of the densities as claimed in claim 1 of the patent in suit.

5.4 However, even taking account of this teaching of D4, none of the cited documents discloses or suggests
- an asymmetric groove shape
- compressions next to the grooves different than in or outside of the grooves
- the densification pattern of the storage regions being alternately parallel arranged in the grooves with regard to the transport regions.

5.5 D4 refers to channels which comprise transport regions which separate and surround storage regions (col. 12, l. 9 - 11). It also discusses the velocity of liquid flow by stating that "liquids are wicked relatively quickly through the transport regions 39, stored and relatively slowly wicked in the storage regions 37... It is the combination of high density transport regions and intermediate storage regions 37 and how they are configured relative to each other in the channels 30 which provides the channels 30 with the capability of being able to wick relatively large volumes of liquid quickly." (column 12, l. 56 - col. 13, l. 2). The configuration referred to is consistently disclosed as lying "in the combination of the tuft regions 28 which are separated and surrounded by channels 30, wherein the channels comprise storage regions 37 and transport regions 39" (col. 11, l. 59 - 65).
Therefore, the configuration of the channels and within the channels is different to the one claimed and cannot lead to asymmetric openings of the grooves.

5.6 Hence, these features of the characterising part of claim 1 of the patent in suit cannot be identified in D4. Thus a combination of the arcuate grooved sanitary napkin of D1 (or D2) with the channels of D4 would not result in the claimed structure.

5.7 As to D5, the appellant contended that it referred to an absorbent pad structure comprising high and low density regions which would lead the skilled person to apply differently compressed regions within the grooves.

However, D5 does not disclose the specific design of the groove/channel openings, the compression in their direct surroundings or a densification pattern of the storage regions being alternately parallelly arranged in the grooves with regard to the transport regions. Hence, the features of the characterising part of claim 1 of the patent in suit cannot be identified in D5, either. Thus, also a combination of the arcuate grooved sanitary napkin of D1 (or D2) with the channels of D5 would not result in the claimed structure.

5.8 As to the appellant's further contention, that D3 could be used in the alternative as a starting point for the evaluation of inventive step, it is pointed out that D3 discloses only straight grooves. Therefore, D3 does not represent an appropriate starting point for the evaluation of inventive step and the combination with the channels of D4 (or D5) would not result in the claimed structure for the same reasons as given above for the combinations of D1 (or D2) with D4 or D5.

5.9 Thus, the interrelationship of the compression of the side parts of the grooves with the compression pattern

along the length of the grooves and the asymmetric opening of the grooves is neither known nor suggested in the prior art. It follows that the subject-matter of claim 1 of the auxiliary request involves an inventive step (Article 56 EPC). The patent specification amended in accordance with the respondent's auxiliary request forms a suitable basis for maintenance of the patent in such amended form.

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 with the order to maintain the patent as follows:
   - Claim 1 and description, columns 1 - 5 as filed during the oral proceedings before the Board as sole auxiliary request;
   - Figures 1 - 3 as granted.

The Registrar: The Chairman:

A. Counillon P. Alting van Geusau