Internal distribution code:

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

Datasheet for the decision of 2 February 2021

Case Number: T 0314/17 - 3.2.06

Application Number: 09158588.5

Publication Number: 2077100

IPC: A61F13/32, A61F13/26

Language of the proceedings: EN

Title of invention:
Applicator for tampons

Patent Proprietor:
Unicharm Corporation

Opponent:
Kimberly-Clark Worldwide, Inc.

Headword:

Relevant legal provisions:
EPC Art. 100(a), 56, 123(2), 101(3)(b)

This datasheet is not part of the Decision
It can be changed at any time and without notice

Keyword:
Inventive step - main request (no) - auxiliary requests 1 to 4 (no)
Amendments - auxiliary requests 5, 6, 7 and 8 - added subject-matter (yes)

Decisions cited:

Catchword:

This datasheet is not part of the Decisior
It can be changed at any time and without notic

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0314/17 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 2 February 2021

Appellant: (Opponent)	Kimberly-Clark Worldwide, Inc. 2300 Winchester Road Neenah WI 54956 (US)
Representative:	Dehns St. Bride's House 10 Salisbury Square London EC4Y 8JD (GB)
Respondent: (Patent Proprietor)	Unicharm Corporation 182 Shimobun Kinsei-cho Shikokuchuo-shi Ehime 799-0111 (JP)
Representative:	Dolleymores 9 Rickmansworth Road Watford, Hertfordshire WD18 0JU (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 22 December 2016 rejecting the opposition filed against European patent No. 2077100 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	M. Harrison
Members:	P. Cipriano
	E. Kossonakou

Summary of Facts and Submissions

I. An appeal was filed by the appellant (opponent) against the decision of the opposition division rejecting the opposition to European patent No. 2 077 100. It requested that the decision under appeal be set aside and the patent be revoked.

II. With its response, the respondent (patent proprietor) requested that the appeal be dismissed or, in the alternative, that the patent be maintained according to one of auxiliary requests 1 to 8 filed therewith.

III. The following documents, referred to by the appellant in its grounds of appeal, are relevant to the present decision:
E1 US 3 895 634
E6 US 5 385 542
"Attachment 3" filed by the respondent with letter dated 1 September 2014

IV. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated *inter alia* that the subject-matter of claim 1 of the main request and of auxiliary requests 1 and 2 lacked inventive step, adding that the features of the claims of auxiliary requests 3 and 4 were also known from at least E6, and that the subject-matter of claim 1 of auxiliary requests 5, 6, 7 and 8 did not seem to fulfil the requirement of Article 123(2) EPC.

V. With letter dated 7 December 2020, the respondent withdrew its request for oral proceedings and stated that is was acceptable to them that a decision of the

merits of the case be issued in writing without holding oral proceedings.

VI. The oral proceedings were duly cancelled.

VII. Claim 1 of the main request and of auxiliary requests 1 and 2 reads as follows:

"1. An applicator for a tampon, comprising: an outer cylinder (1) including a large diameter portion (7) for fitting a tampon (3) therein, a small diameter portion (8) provided on the side of a rear end of said outer cylinder and having a smaller diameter than that of said large diameter portion (7) and a plurality of valves (17) provided on the side of a leading end of said outer cylinder (1), said valves (17) being converged to have a curved face portion (7a) to be diametrically gradually reduced toward the leading end of said outer cylinder (7); and a push-out member (2) movably inserted into said small diameter portion of said outer cylinder (7),

wherein a ratio A/B is at most 0.8, when an inflection point for the boundary between the maximum diameter portion of said large diameter portion (7) and said curved face portion (7a) is designated by Z, a radius of the outer face at said inflection point Z is designated by A, and the axial length from said inflection point Z to the leading end (7b) of said curved face portion (7a) is designated by B, and

wherein a ratio L/W is within a range of 1.0 to 2.0, when the width size of root ends of said valves (17) is designated by W and the length of said valves (17) is designated by L."

Claim 1 of auxiliary request 3 differs from claim 1 of the main request and of auxiliary request 2 in that it further defines:
"wherein said curved face portion (7a) has two curvatures, and the curvature at the leading end portions (7b) extending over an axial length Y of said valves (17) is larger than that at the root ends of said valves (17), extending over an axial length X."

Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 in that it further defines that "wherein the axial length Y of the valve portions (17) having the larger curvature is one half or less than the axial length B from said inflection point Z to the leading end (7b) of said curved face portion (7a)."

Claim 1 of auxiliary request 5 differs from claim 1 of auxiliary request 4 in that it further defines that "wherein the valves are injection-moulded."

Claim 1 of auxiliary request 6 differs from claim 1 of auxiliary request 5 in that
the ratio A/B is limited to "at most 0.6".

Claim 1 of auxiliary request 7 differs from claim 1 of auxiliary request 6 in that it further defines that "wherein in the leading end of the large diameter portion (7), there is opened a protruding mouth (16), around which there are formed four valves (17) in a petal shape, and
wherein the valves are converged to have their width sizes reducing gradually toward the leading end of the outer cylinder (1) so that they have a generally conical shape at their leading ends."

Claim 1 of auxiliary request 8 differs from claim 1 of auxiliary request 7 in that it further defines that "wherein said root ends of said valves (17) are located substantially at the same position of said inflection point Z. "

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

Main request and auxiliary requests 1 and 2 - Article 56 EPC

The subject-matter of claim 1 of the main request did not involve inventive step.

E1, which was considered the closest prior art, disclosed all the features of claim 1 except the feature that the ratio A/B was at most 0.8.

In deriving the objective problem, the ratio L/W was irrelevant and the only effect that could be taken into account was the one caused by ratio A/B being at most 0.8. This ratio provided for an easier insertion into the vaginal cavity.

E1 already stated in column 9, lines 12 and 13 that more pointed, steeple-shaped, frusto-conical or parabolic tips might be used. This passage gave a hint to the skilled person that these alternative tips could be used and be more elongated unlike the shapes suggested in Attachment 3.

The skilled person would therefore contemplate the elongated tip shape of E6 which it would recognize as providing the required effect.

Dependent claims 3 and 4 (which form the basis of claim 1 of auxiliary requests 3 and 4) - Article 56 EPC

Any tip that comprised curved segments that converged inwardly towards a point (such as the dome shaped curve of E6, Figure 7) had a curvature, in the circumferential direction, that increased towards that point. The additional features of claim 1 defined in dependent claim 3 (now claim 1 of auxiliary request 3) were thus disclosed in E6, such that no inventive step was involved over E1 in combination with E6.
Claim 4 was dependent on claim 3 and any parabolic shape, such as the one disclosed in E6, necessarily had the features defined in claim 4, such that starting from E1 in combination with E6, this subject-matter also lacked an inventive step.

IX. The arguments of the respondent may be summarised as follows:

Main request and auxiliary requests 1 and 2 - Article 56 EPC

The subject-matter of claim 1 of the main request and of auxiliary requests 1 and 2 involved an inventive step.

E1 disclosed all the features of claim 1 with the exception of the ratio A/B being at most 0.8.

E1 clearly taught against the provision of valves that had a length greater than the diameter of the front barrel member of the inserter as could be deduced from column 9, lines 31 to 46. E1 also taught that the shape of the tip was not critical and that a hemispherical tip was preferred (E1, column 9, lines 9 to 13).

The ratios A/B and L/W were inextricably linked. Increasing the length B also resulted in an increase of L such that when A/B decreased L/W increased. The purpose of the invention was to find a balance between the two ratios and thus between the ease of insertion (A/B) and having stabilized valves (L/W) and not simply related to the ease of insertion as an incorrect oversimplification of the problem-solution would suggest.

E1, column 9, line 20 onwards, also taught against reducing the number of petals from six to four as this would increase the tampon ejection pressure of the petals. E1, column 6, lines 4 to 7, taught the skilled person that the thinness of the petals would not allow the forming of a smooth and stable closure.

There was very limited discussion of the tip shape in E6. It was not permissible to obtain measurements from drawings to provide a disclosure and thus E6, in Figure 7 or any other passage, did not disclose the ratio A/B being at most 0.8.

Auxiliary requests 3 and 4 - Article 56 EPC

The feature of the curved faced portion having two curvatures provided a unique tip shape that was not disclosed in any document of the prior art. The smaller curvature at the root ends allowed a gentle inward taper as the tip extended forward axially, which lead to an improved ease of insertion.

Auxiliary requests 5, 6, 7 and 8 - Article 123(2) EPC

The basis for the feature "wherein the valves are injection-molded" in claim 1 of auxiliary requests 5, 6, 7 and 8 could be found on page 17, second full paragraph of the application as filed (paragraph [0042] of the published application).

Reasons for the Decision

1. Main request and auxiliary requests 1 and 2 - Article 56 EPC

1.1 The Board stated in item 4 of its preliminary opinion that the subject-matter of claim 1 of the main request was considered to be obvious to a skilled person when starting from E1 and, given the technical problem to be solved, when considering the teaching of E6, such that inventive step was lacking.

No arguments were made by the parties in reply thereto, such that the Board sees no reason to alter its provisional opinion in this regard, and thus confirms same herewith.

1.2 It is not disputed that E1 discloses all the features of claim 1 with the exception of the ratio A/B being at most 0.8.

1.3 The only effect recognisable to the skilled person over the closest prior art is that the ratio A/B, being at

most 0.8, reduces the resistance to the insertion into the vaginal cavity, as described also in paragraph [0015] of the patent and mentioned by the appellant (see page 6, first complete paragraph of the grounds, albeit qualified as being a "proposition" without support). The objective problem is thus to provide ease the insertion into a vaginal cavity.

1.4 Contrary to the argument of the respondent that the ratios L/W and A/B are inextricably linked and thus that the problem-solution approach is not fully appropriate in this case, the Board finds that the problem-solution approach can indeed be applied and the problem formulated in a specific way regarding only the effect of the differing feature (ratio A/B) and not of the ratio L/W. Whilst both the axial length B and the valve length L describe magnitudes related to the axial length, their relationship is not direct (i.e. an increase in one does not necessarily lead to an increase in the other) since the valve length L depends also on the petal shape. The ratios A/B and L/W therefore do lead to different independent effects.

Whilst both ratios concern the shape of the curved face portion, paragraph [0016] of the patent gives a completely different effect to the ratio L/W (i.e. to restrain the valves in their deformed position after being thermally deformed) that is related to the manufacturing of the applicator.

1.5 The Board then finds that the skilled person would indeed be taught to modify E1 such that the axial length B would be increased and the ratio A/B be at most 0.8 in an obvious way, not least in view of E1 itself in column 9, lines 9 to 13, where it is stated

that the tip can be "*more pointed*, steeple-shaped, frusto-conical or *parabolic*".

1.6 Whilst E1, column 9, lines 32 to 46, puts some limits on the length of the petals, this is only the case when the petals extend more than the diameter of the barrel, i.e. for a ratio A/B below 0.5, since A is defined in the claim as being the radius at the inflection point and not the diameter as in E1. Contrary to the argument of the respondent, there is thus no teaching in E1 against making the petals longer than the radius, only longer than the diameter. Quite on the contrary, E1, column 9, line 12, states explicitly that the tip can be made "more pointed" which constitutes, at the very least, a strong hint to the skilled person that the petals can, without altering the base, be made longer.

1.7 The further argument from the respondent that E1, column 6, lines 4 to 7, taught the skilled person that the thickness of the petals would not allow forming of a smooth and stable closure, is also not found convincing by the Board. This passage merely teaches the skilled person that the rate of taper of the wall thickness does not need to be constant and that the wall thickness can be more constant at the beginning and just decrease further towards the end. This does not teach away from the claimed invention.

1.8 The respondent also argued that E1 taught against reducing the number of petals or increasing their length and cited column 9, line 20 onwards as support. However, claim 1 of the main request only defines "a plurality" (i.e. an unspecific number) of petals/ valves.

1.9 When looking for a solution to the objective problem and indeed to finding a suitable more pointed or parabolic shape (as indicated in E1), the skilled person would turn to tampon applicators known in the prior art with such a more pointed/parabolic shape, for example E6, as also argued by the appellant, since E6, column 3, lines 5 to 8, discloses that a segmented domed end facilitates insertion of the member into the vagina. It may also be noted at this juncture, in regard to the number of petals (see above) that E6 does not disclose any specific number of petals nor does it discuss any importance of this number, such that the skilled person would also not be motivated to change the number of petals when considering the teaching of E6.

1.10 E6 discloses in column 7, lines 23 to 25 and depicts in corresponding Figure 7 that the outer member 22 has a segmented essentially parabolic domed front end 35 to facilitate insertion of the outer member 22 into the vaginal cavity. Therefore, when searching for a more pointed shape at skilled person is taught to adapt the curvature of the petals in E1 to e.g. the parabolic shape of the petals in e.g. Figure 7 of E6, thus arriving at a ratio of A/B below 1.

1.11 Although E6 does not disclose any specific ratio below 1, as indeed argued by the respondent, when changing to the parabolic/domed shape, the Board finds that a skilled person would not arrive at a shape as seen in Attachment 3 submitted by the respondent. Instead, given its purpose of insertion into the vaginal cavity, the skilled person would wish to keep the inflection point Z as smooth as possible without a steep angle as can be seen in the Figures of E1 and Figure 7 of E6 and thus arrive at a ratio of A/B clearly below 1. The

specific value of 0.8 is in this context simply arbitrary, and it is noted that there is no specific effect attached to this particular limit in the patent.

1.12 For the above reasons, the subject-matter of claim 1 of the main request is obvious to a skilled person when starting from E1 and, given the technical problem to be solved, when considering the teaching of E6. The opposition ground under Article 100(a) in combination with 56 EPC therefore prejudices maintenance of the patent as granted such that the main request is not allowable.

1.13 Since claim 1 of auxiliary requests 1 and 2 is the same as claim 1 of the main request, auxiliary requests 1 and 2 are also not allowable for the same reasons as the main request.

2. Auxiliary requests 3 and 4 - Article 56 EPC

2.1 The Board would first note that although the auxiliary requests were filed with the reply to the appeal, the appellant made no specific objections to them, also not in reply to the Board's preliminary opinion, where this fact was brought to the parties' attention. The appellant had however presented arguments with respect to the subject-matter of the dependent claims present in the main request, upon which claim 1 of auxiliary requests 3, 4 and 8 are based.

2.2 The Board, having considered the auxiliary requests *ex officio*, stated in item 5.4 of its preliminary opinion that E6 seemed to disclose the features regarding the two curvatures added to claim 1 of auxiliary requests 3 and 4, effectively depriving the claim of an inventive step. This corresponds to the attacks regarding

dependent claims 3 and 4 made by the appellant on page 7 of its grounds of appeal, where it objected to these claims on the basis of a lack of inventive step.

2.3 The respondent did not present any counter-arguments to the preliminary opinion of the Board and specifically asked for a decision of the merits of the case to be issued in writing without holding oral proceedings. The Board thus sees no reason to alter that preliminary conclusion, which is herewith confirmed on the more detailed reasoning following hereafter. Since the Board already indicated that the subject-matter of claim 1 of the main request lacked inventive step, specifically mentioning E6 among other prior art with a ratio A/B smaller than 1, and given that the Board noted that E6 was considered to indeed disclose the additional features of auxiliary requests 3 and 4, this conclusion could not come as a surprise but should rather be expected.

2.4 As explained in paragraphs [0018]-[0020] and [0035] of the patent, the added feature to claim 1 of auxiliary request 3 suppresses the leading ends from opening and, since it is applied to all valves, prevents their leading ends from abutting against the human body upon insertion, which further reduces resistance to the insertion into the vaginal cavity.

2.5 E6 discloses in column 7, lines 23-25, that the outer member 22 has a segmented domed front end 35 to facilitate insertion of the outer member 22 in the vagina. When adapting the tip of E1 to the domed parabolic shape of E6 shown in Fig. 7, as explained for the main request, the skilled person would necessarily take on the curvature of E6 and automatically arrive at a shape having two curvatures as defined in claim 1 of

auxiliary request 3 without the exercise of inventive step.

2.6 The respondent argued on page 31, paragraph 8, of its reply to the grounds that none of the documents in the prior art discloses a curved face portion having two curvatures.

2.6.1 However, and as already stated in the Board's preliminary opinion, the Board instead concurs with the appellant and finds that the domed shape in E6 has curvature that increases towards the tip and that this can be seen as having (at least) two curvatures.

2.6.2 In addition, the more pointed domed shape of E6 also has the advantages from paragraph 19 of the patent mentioned by the respondent in its arguments (more curvature at the tip leads to ease of insertion and suppresses the opening of the leading ends thus avoiding contact of the pointed tip against the human body).

2.7 As regards the feature added to claim 1 of auxiliary request 4, this feature further reduces resistance to the insertion into the vaginal cavity, as can be also deduced from paragraphs [0018] to [0020], [0035] and [0036] of the patent.

2.8 As the appellant pointed out in its grounds of appeal regarding dependent claim 4, any parabolic shape has its largest curvature at the tip such that the larger curvature is less than one half than the axial length B. This feature is therefore disclosed in Figure 7 of E6 since the domed shape disclosed in Figure 7 has an increasing curvature towards the tip.

2.9 When adapting the tip of E1 to the domed shape of E6 this feature would necessarily be adopted too, because since the curvature increases towards the tip, the axial length Y in the resulting domed shape having a bigger curvature is necessarily half or less than the total axial length to the inflection.

2.10 For the above reasons, the subject-matter of claim 1 of auxiliary requests 3 and 4 is obvious to a skilled person when starting from E1 and considering the teaching of E6. Auxiliary requests 3 and 4 are therefore not allowable due to lack of inventive step in their claimed subject-matter.

3. Auxiliary requests 5 to 8 - Article 123(2) EPC

3.1 Claim 1 of auxiliary requests 5 to 8 has been amended by the introduction of the feature "wherein the valves are injection-molded".

3.2 As the Board stated in its preliminary opinion (see item 5.5), the application as originally filed discloses instead that the whole outer cylinder is injection-molded (see e.g. paragraphs [0004], [0023], [0026], [0038] or [0039]) and not only the valves, which are then deformed afterwards (paragraphs [0019], [0027], [0030] or [0039]).

3.3 The respondent argued that the second paragraph on page 17 of the patent application (corresponding to paragraph [0042] of the published application) provided a basis for this amendment. However, the Board finds that a skilled person would read this paragraph like an explanation of the advantages of injection-moulding in the invention rather than as a disclosure of the

injection-moulding step of the applicator according to the invention.

3.4 Further, an amendment from “injection-molded” into “molded“ as the respondent asked that it be allowed to make if necessary (see its reply to the grounds of appeal, page 3, third paragraph) albeit never filed formally as a request, would anyway not overcome this objection, since there is no disclosure in the application as filed of a specific applicator with the features of claim 1 wherein only the valves are molded.

3.5 The Board also stated in its preliminary opinion (item 5.6) that none of the amendments to claim 1 of auxiliary requests 6, 7 and 8 overcomes the objection regarding claim 1 of auxiliary request 5.

No arguments were made by the respondent in reply to the Board's preliminary opinion on this matter, such that the Board sees no reason to alter its provisional opinion in this regard, and thus confirms same herewith.

None of the amendments made in claim 1 of these requests overcomes the objection under Article 123(2) EPC mentioned above regarding the feature "the valves are injection-moulded". Claim 1 of auxiliary request 6 is based on claim 1 of auxiliary request 5 wherein the ratio A/B is amended to being at most 0.6. Claim 1 of auxiliary request 7 is based on claim 1 of auxiliary request 6 with further features regarding the shape of the large diameter portion. Claim 1 of auxiliary request 8 is a combination of claim 1 of auxiliary request 7 with dependent claim 2 as granted, which relates to location of the root ends of the valves and of the inflection point Z.

3.6 The subject-matter of claim 1 of auxiliary requests 5, 6, 7 and 8 therefore does not to fulfil the requirement of Article 123(2) EPC at least for the reasons given above. Auxiliary requests 5, 6, 7 and 8 are therefore not allowable.

3.7 In the absence of any request which meets the requirements of the EPC, the patent has to be revoked (Article 101(3)(b) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Grundner M. Harrison

Decision electronically authenticated