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D E C I S I O N
of 22 November 2004

Case Number: T 0241/03 - 3.2.1

Application Number: 97121738.5

Publication Number: 0848187

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Language of the proceedings: EN

Title of invention:
Cord end stopper

Patentee:
YKK CORPORATION

Opponent:
DUE EMME S.r.l

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty - public prior use (yes)"
"Inventive step (no) - main request"
"Inventive step (yes) - auxiliary request"

Decisions cited:
T 0021/81, T 0331/87

Catchword:
-



Case Number: T 0241/03 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 22 November 2004

Appellant:
(Opponent)

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Respondent:
(Proprietor of the patent)

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Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
30 December 2002 concerning maintenance of
European patent No. 0848187 in amended form.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
G. E. Weiss

Summary of Facts and Submissions

I. The opponent's appeal is directed against the decision posted 30 December 2002 in which it was found that, account being taken of the amendments made by the patent proprietor according to its first auxiliary request during the opposition proceedings, European patent No. 0 848 187 and the invention to which it relates meet the requirements of the EPC.

II. The following evidence introduced during the opposition procedure played a role during the appeal:

In respect of alleged prior use of a cord end stopper designated "TA5":

D1: Technical drawing "Puntalino per Corda TA5"

D1a: Declaration in lieu of an oath by Giulio Vitali, translation into English

D1d: Declaration in lieu of an oath by Paolo Mezzogori, translation into English

D1g: Catalogue "Due Emme" 1996

Patent literature:

D2: IT-U-00222086

D9: US-A-4 715 094

D10: EP-A-0 719 958.

III. The Opposition Division considered that a cord end stopper TA5 had been made publicly available before the priority date but that the subject-matter of claim 1 according to the then auxiliary request would not be obvious in the light of the TA5 stopper and the cited evidence, particularly D9 and D10.

IV. At oral proceedings held 22 November 2004 the appellant requested that the decision under appeal be set aside and that the patent be revoked. The respondent requested that the appeal be dismissed (main request) or in the alternative that the patent be maintained on the basis of claims 1 to 4 filed during the oral proceedings (auxiliary request).

V. Claim 1 according to the respondent's main request reads:

"A cord end stopper (10) comprising a first member (16) having an engaging member (36) and a second member (12) having an engaging portion (38) for interlocking engagement with the engaging member (36) for joining the first and second members (16), (12), the first member (16) and the second member (12) having respective grooves (44, 14), so that, when joined, the first member (16) and the second member (12) define therebetween grooves (44, 14) for accommodating a cord (58), the first member (16) and the second member (12) each having a plurality of cord locking means (50, 52, 28, 30) provided in its inner surfaces within the respective groove (44, 14) across the cord (58) and disposed in staggered relation to the other member's locking means (50, 52, 28, 30), so as to provide, within the grooves (44, 14) of the first and second

members (16, 12), when joined, a sinuous path for retaining the cord (58) therein, characterized in that the first member and the second member are male and female members (16, 12) hinged together, respectively adapted to one another such that when joined with each other, the male member (16) having the cord (58) nested in its groove (44) is in turn housed within the groove (14) of the female member (12), each of the cord locking means (28, 30, 50, 52) comprising a blade having a serrated edge (32) formed at its distal end."

VI. Claim 1 according to the respondent's auxiliary request essentially differs from that above by the addition of the following wording:

"a hinge portion (18) joining the male member (16) and the female member (12) at their respective one ends; the male member (16) and the female member (12) each having a notch (20) formed at its respective other end, so that, when the male member (16) and the female member (12) are folded back on the hinge portion (18) into confronting relation to each other, the notches (20, 20) are joined so as to provide a cord inserting aperture".

The claims according to the auxiliary request also contain claims 2 to 4 which define details additional to those of claim 1.

VII. The appellant essentially argued:

As evidenced by D1d a cord end stopper TA5 was made publicly available before the priority date by being distributed by Mr Mezzogori to interested parties at a

trade fair. D1a is evidence that TA5 stoppers were produced in conformity with D1. As a salesman needing to persuade potential customers of the benefits of a new cord end stopper Mr Mezzogori would have been aware of its technical details.

The public availability of the end stopper TA5 destroys novelty of the subject-matter of claim 1 according to the main request. The size and pitch of the serrations on the blade are not specified in claim 1 and a reduced spacing of the spikes in the TA5 stopper would cause them to merge and result in a blade having a serrated edge.

D2 also destroys novelty of the subject-matter of claim 1 according to the main request. In particular, the moulded locking means would exhibit surface irregularities which would result in serrated edges. The claim does not exclude that the interlocking engagement of the first and second members may be by means of a third member. Furthermore, the male hinged member, having locking means which enter into the other member, exhibits a transverse groove into which the cord enters. Anyway, the feature of the groove in the male member is an inessential feature which, in accordance with decision T 331/87 (OJ EPO 1991, 22) may be deleted or neglected.

Even if the subject-matter of claim 1 according to the main request were novel it would not involve an inventive step in the light of the TA5 stopper together with the technical knowledge of the skilled person. A locking means in the form of a blade having a serrated edge is a technical equivalent of the spikes of the TA5

stopper. Moreover, both D9 and D10 disclose the claimed locking means, the former also in conjunction with a sinuous path.

The subject-matter of claim 1 according to the auxiliary request is also rendered obvious by the prior art. The features added to the claim are merely an inversion of the arrangement known from the TA5 stopper. These features solve the problem of easing insertion of the cord which is a separate one from that of better retention solved by the subject-matter of claim 1 according to the main request. D2 already discloses that the cord be inserted through an opening opposite the hinged end.

VIII. The respondent's submissions may be summarised as follows:

The only aspect of the alleged public availability of the TA5 stopper which has been satisfactorily proven is in respect of the catalogue D1g which, however, lacks some details of the stopper. The statement by Mr Mezzogori that the TA5 stoppers which he supplied to interested parties were in conformity with D1 is not convincing since he is a commercial person who would be unable to make such an assessment. The presence of the designation "TA5" on D1 is also not convincing since it has been added by hand.

Even if the TA5 stopper were found to have been made available to the public it would not anticipate the subject-matter of claim 1 according to the main request; it does not exhibit a sinuous path because all of the ends of the spikes are in the same plane, there are no

blades and the cord cannot be nested in the male member because the latter exhibits no groove in the sense of the patent.

Also D2 fails to anticipate the subject-matter of claim 1 according to the main request. The locking means according to D2 have no serrated edges and the male and female hinged members are not joined by interlocking engagement.

The subject-matter of claim 1 according to the main request also is not rendered obvious by the cited prior art. The claim relates to a device which is for use on the end of a cord and so belongs to a particular technical field. The feature of the blades having serrated edges serves to retain the cord primarily by friction, thereby rendering the stopper suitable for use with cords of varying thickness and stiffness. D9, on the other hand, belongs to a quite different technical field, that of retaining a knot on a shoe, so that the skilled person would not consider D9 together with a cord end stopper. Moreover, D9 fails to disclose a sinuous path and there is no mention of a frictional effect. Also D10 belongs to a different technical field, that of a cord stopper which may be moved along a cord. The stopper has only a single serrated edge and no sinuous path and D10 is more remote from the present subject-matter than D9.

The additional features of the subject-matter of claim 1 according to the auxiliary request solve the problem of improving the ease of insertion of the cord. D2 is not of relevance because it has no hinge linking the male and female members.

Reasons for the Decision

Public prior use of the cord end stopper TA5

1. In support of its allegation of public prior use the appellant filed a series of pieces of evidence. D1 is a technical drawing of the cord end stopper which is said to have been made available to the public and was filed in order to enable correspondence to be determined between claimed features and details of the end stopper. In D1a Mr Vitali, who drew D1, states firstly that D1 served as the basis for creating the moulds used for manufacturing the end stopper TA5 and secondly that he determined that samples of the moulded part were in conformity with the drawing D1. In D1d Mr Mezzogori states that he was contracted by Duo Emme, manufacturer of the end stopper TA5, to publicise their products at trade fairs and that interested parties at two particular fairs received copies of the catalogue D1g and samples of the end stopper TA5 which were in accordance with the drawing D1.

1.1 The respondent does not challenge the availability to the public of the catalogue D1g which shows on page 42 an illustration of the TA5 stopper. As far as comparison is possible, no differences can be seen between the device illustrated in D1g and the drawing D1. However, there is insufficient detail visible to determine either the presence of some of the features present in the claims or exact conformity with D1. There is no evidence that D1 itself was made available to the public and the matter at issue is whether the

appellant has discharged its burden of proving that a cord end stopper in conformity with D1 was made available to the public.

1.2 The appellant has provided evidence that a drawing was prepared in early 1996 of a new end stopper, the drawing was used as the basis for mould manufacture, moulded samples of the end stopper were checked against that drawing in the middle of 1996 and examples of the end stopper, which is illustrated in a catalogue dated 1996, were made available to interested parties at a trade fair. The chain of evidence is consistent and the Board finds the allegation that examples were made available to the public credible.

1.3 The respondent challenges the matter of correspondence between TA5 end stoppers which Mr Mezzogori supplied to interested parties and D1. It argues that Mr Mezzogori's role was a commercial one and so he would not have been able to determine such conformity. However, the Board finds the appellant's counter argument convincing, that a sales representative dealing with a new product, particularly such a simple one as a cord end stopper, would acquaint himself with the important technical features in order to sell the product on the basis of those features. Furthermore, D1g contains only nine products under the heading "Cord Ends" and the one designated "TA5" is clearly quite different from all of the others, thereby adding credibility to Mr Mezzogori's ability to recall supplying to interested parties examples of an apparently new end stopper which was unique in the product range.

1.4 The respondent further argues that the designation "TA5" on D1 has been added by hand, thereby putting into question whether the drawing is of a TA5 end stopper. In the Board's view also the possibility that the designation "TA5" may have been added to D1 after the drawing itself was completed does not put into question the appellant's case in respect of the alleged prior use. D1 was prepared by Mr Vitali who states in D1a that he prepared the drawing for Duo Emme under contract; it is credible that Duo Emme might add their own product designation at a later stage.

1.5 On the basis of the foregoing the Board concludes that the cord end stopper TA5 in accordance with the drawing D1 does belong to the state of the art within the meaning of Article 54(2) EPC.

Main request

Novelty

2. It is undisputed between the parties that D1 shows a cord end stopper comprising a first, male member and a second, female member having a groove for receiving the male member and the cord. The male and female members are mutually hinged and are adapted for being moved into interlocking engagement to close the stopper (in claim 1 "joining the first and second members"), each member having a plurality of locking means on its inner surface which are oriented across the cord and disposed in mutually staggered relation. The male and female members each comprise a surface generally surrounding the respective areas in which the cord is accommodated and which mutually abut when the male member is folded

around the hinge and engaged with the female member. The male member furthermore comprises two opposed walls projecting from the abutment surfaces adjacent the locking means and the male member enters into a groove in the female member when they are joined.

- 2.1 The locking means in D1 are in the form of a series of projections which on both members extend to the common level of the abutment surfaces. The respondent argues that as a consequence there is no sinuous path present in the TA5 stopper. However, according to claim 1 the locking means are "disposed in staggered relation ... so as to provide ... a sinuous path for retaining the cord". A path for retaining the cord cannot be considered as a straight line passing the tips of the projections and must pass around the obstructions caused by them. Such a line in the TA5 stopper would necessarily be sinuous.
- 2.2 The respondent argues also that the male member of the TA5 stopper does not have a groove for nesting the cord, such a groove being in the sense of the patent of such a length as to guide the cord. However, it can be seen from D1 that the walls adjacent the locking projections extend to a certain height above their ends and so a cord simply placed on them would be nested within a groove. No length of the groove is apparent from the wording of the claim and the description of the contested patent contains no statement in support of the respondent's argument.
- 2.3 Contrary to the submission of the appellant, on the other hand, the locking means according to D1 do not "comprise a blade having a serrated edge formed at its distal end". It is clear from D1 that the locking means

are in the form of mutually spaced projections of circular cross-section which extend from the flat bases of the respective grooves. The fact that the claim does not specify the spacing of the serrations is not relevant to the content of D1; D1 does not show anything other than mutually spaced projections.

3. D2 relates to a cord end stopper comprising two box-like members, one of which slides into the other. The inner member comprises a base having a bottom wall, three side walls and an open end and a lid which is hingedly connected to the base and which forms the top wall. The base and lid each have locking means in the form of a series of transversely extending ribs. The outer member has one open end for accommodating the inner member and an opening in the opposed end for receiving a cord. In use the cord would be passed into the receiving opening, through the outer member and placed on the locking means of the base of the inner member, the hinged lid closed on the cord and the inner member slid into the outer member to hold the former closed.

- 3.1 The locking means of D2 have no serrated edges. Contrary to the appellant's argument, the claimed feature of "serrated edges" cannot be considered as merely microscopic irregularities on the surface of a plastic moulding; that would be a matter of the roughness of the surface. By comparison the term "serrated" implies a macroscopic form which in the context of the present patent acts to increase the gripping force on the cord.

3.2 The hinged lid of D2 may possibly be considered as a male member in as far as its locking means enter into the female base member. However, these two members do not have an engaging member and an engaging portion for interlocking engagement as defined in present claim 1; the lid is held closed against the base by sliding the inner member into the outer member. Moreover, the lid (male member) does not have a groove either within which the cord could be nested or in which a sinuous path is provided when the lid is closed against the base to retain the cord. Contrary to the appellant's view, the groove is an essential feature of the claim. Decision T 331/87 (*supra*), to which the appellant refers in this respect, relates to assessing amendments for compliance with the provisions of Article 123(2) EPC and is not relevant to determining novelty of the subject-matter of a claim with respect to prior art.

4. On the basis of the foregoing the Board concludes that the subject-matter of claim 1 is novel (Article 54 EPC).

Inventive step

5. As determined above, the subject-matter of claim 1 differs from that of D1 by the feature that each of the cord locking means comprises a blade having a serrated edge at its distal end. According to the respondent this feature solves the problem of enabling the end stopper to be used with cords of varying stiffness and irregular diameter and results in retention of the cord by friction rather than cutting into the cord. In the Board's view, however, these advantages which the respondent asserts to be achieved would result from details of the serrations such as pitch, included angle

of the point and height, none of which is specified in the claim. Moreover, according to the description column 6, lines 34 to 37 the serrated edges are brought into "biting engagement" with the cord. Also, the part of the description to which the respondent refers in support of its arguments regarding the advantages of the claimed arrangement relates to a prior art arrangement having projections which are somewhat different from that of D1.

- 5.1 Locking means intended to engage a device on a cord and comprising a blade having a serrated distal edge are known in the art. D9 relates to a knot retaining device for use on a shoe lace and comprises pairs of blades having adjacently arranged and oppositely directed, slightly overlapping serrated distal edges which "grip the shoelace tightly" (column 2, lines 64 to 66). D10 relates to a cord stopper which is intended to be placed at any desired position along a cord and comprises a locking means in the form of a blade which clamps the cord against a smooth surface. The distal edge of the blade may be smooth, rough or in the form of "sawteeth" (column 2, lines 51 to 53). D10 moreover refers to an earlier application of serrated edges to hold cords (column 1, lines 23 to 25). The Board does not accept the respondent's argument that a cord end stopper belongs to a particular technical field separate from those of D9 and D10. The relevant skilled person would be competent in the design of cord locking means in general and would not restrict himself to involvement with particular applications of them.

5.2 The Board also cannot agree with the respondent's argument that the prior art does not disclose a locking means to create a sinuous path. In D9 the drawing figure 2 illustrates a gap between the serrated ribs 66, 68 and the respective end walls 54, 56 into which the posts 44 and coplanar serrated edges 16 and 18 enter. Also claim 1 states that the "ribs lie laterally adjacent and parallel to but not engaged with said two side walls". It is clear from the overall disclosure of D9 that the two locking means each in the form of a blade having a serrated distal edge are in a staggered arrangement suitable for use in creating a sinuous path.

5.3 In the light of the above the Board takes the view that a blade having a serrated distal edge is a generally known locking means for use when locking devices onto cords which would be at the ready disposal of the skilled person who would regard it as a technical equivalent of the projections of D1. Any benefit which might be achievable by adopting a form of serration which is less aggressive than the projections of D1 would be a mere bonus effect, see T 21/81 (OJ EPO 1983, 15).

5.4 The Board concludes that claim 1 according to the main request does not involve an inventive step (Article 56 EPC).

Auxiliary request

6. It is not disputed by the appellants that the subject-matter of claim 1 according to this request is novel and so it remains only to consider inventive step.

7. The subject-matter of claim 1 according to this request essentially differs from that of the main request by the following additional features:

- the hinge joins the male and female members at their one ends;
- the male and female members at their respective other ends each have a notch which join to form a cord insertion aperture when the male and female members are folded around the hinge.

The effect of these additional features is to substantially change the layout from that of the TA5 end stopper shown in D1. In D1 the cord insertion aperture is in the hinge portion but according to the present claim it is at the opposite end where in D1 the hook on the male member engages the female member. The presently claimed arrangement would allow a person inserting the cord to see it whilst folding the two members into engagement, thereby facilitating application of the end stopper to the cord; this is mentioned in the specification column 2, lines 2 and 21 as a benefit to be achieved. Moreover, whereas according to D1 the portion of the cord extending from the end stopper is adjacent the hinge, according to present claim 1 it is adjacent the interlocking ends of the members. This would enable tensile forces in the cord to be useful in aiding release it from the end stopper in a dangerous situation (see the specification column 2, lines 23 to 25 and column 7, lines 28 to 34).

8. In the light of the foregoing considerations the Board cannot agree with the appellants' argument that the additional features are merely an inversion of the arrangement of the TA5 stopper with no technical effect. Moreover, the Board finds the appellant's argument unconvincing that the additional features are known from D2 and that only two arrangements, those of D1 and D2, are possible, thereby rendering the additional features obvious. D2 is a fundamentally different arrangement which employs the outer member to hold the lid and base of the inner member in closed engagement. There is no equivalent of the engaging hook which in D1 occupies a position through which the cord passes in the end stopper according to the present claim.

8.1 The Board therefore finds that the subject-matter of claim 1 according to the auxiliary request involves an inventive step. The same conclusion applies to claims 2 to 4 since they contain all features of claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent on the basis of the following documents:
 - claims 1 to 4 submitted at the oral proceedings;
 - description columns 1 to 7 submitted at the oral proceedings;
 - drawings as granted.

The Registrar:

The Chairman:

A. Vottner

S. Crane