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D E C I S I O N
of 7 July 2003

Case Number: T 1261/01 - 3.2.4

Application Number: 94113959.4

Publication Number: 0641528

IPC: A44B 18/00

Language of the proceedings: EN

Title of invention:
Molded surface fastener

Patentee:
YKK CORPORATION

Opponent:
Gottlieb Binder GmbH & Co.

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 54, 56

Keyword:
"Novelty - yes"
"Inventive step - yes"

Decisions cited:
T 0305/87, T 0332/87

Catchword:
-

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Case Number: T 1261/01 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 7 July 2003

Appellant: (Opponent)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 5 October 2001 rejecting the opposition filed against European patent No. 0641528 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C. A. J. Andries
Members: M. G. Hatherly
H. Preglau

Summary of Facts and Submissions

I. The opposition division's decision rejecting the opposition against European patent No. 0 641 528 was posted on 5 October 2001.

On 4 December 2001 the appellant (opponent) filed an appeal with the statement of grounds and paid the appeal fee.

II. Claim 1 as granted reads:

"A surface fastener molded of synthetic resin, comprising: a plate-like substrate (1); and a multiplicity of hooks (2) formed on one surface of said substrate (1) integrally, each of said hooks (2) being composed of a rising portion (21) having a front surface (24) rising from said substrate (1), a rear surface (23) rising obliquely from said substrate (1) along a smooth curved line and a reinforcing rib (2a) located on at least one side surface, and a hook-shape engaging portion (22) extending forwardly from a distal end of said rising portion (21); characterized in that said plate-like substrate (1) has been biaxially stretched after being molded."

III. The following documents were considered in the appeal proceedings:

D1: EP-A-0 464 753

D2: US-A-4 056 593

D3: DE-A-2 042 746

D5: US-A-4 001 366

IV. Both parties attended oral proceedings on 7 July 2003.

During the appeal proceedings the appellant argued that the claimed surface fastener lacked novelty over the disclosure of D5 and lacked inventive step over this and the other three cited prior art documents in various combinations.

During the appeal proceedings the respondent (patentee) objected to the introduction into the proceedings of D5 which had been filed only at the appeal stage. He countered the appellant's arguments on this and the other documents.

V. 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 and that therefore the patent be maintained as granted (main request) or that the decision under appeal be set aside and the patent be maintained on the basis of either the first auxiliary request, filed with letter dated 6 June 2003, or the second auxiliary request, also filed with letter dated 6 June 2003 or the third auxiliary request filed during the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty - claim 1 of the main request*

2.1 The board cannot agree with the respondent that D5 should not be introduced into the proceedings. This document is alleged to be novelty-destroying and if this is really the case then it cannot be disregarded. It was cited at the earliest stage of the appeal proceedings and so the respondent has had sufficient time to read, consider and comment on it. Because the document is complicated, determining whether it is novelty-destroying can only be done by examining and discussing it, not by ruling it out right from the start.

2.2 The appellant maintains that D5 discloses a surface fastener in accordance with claim 1 of the main request (i.e. claim 1 as set out in column 8, lines 8 to 20 of the patent as granted).

2.3 In short, using the words of claim 1 as granted, the argument for lack of novelty is that D5 discloses a surface fastener (column 1, lines 23 to 26) moulded (column 4, line 60) of synthetic resin (column 9, lines 26 to 39), comprising: a plate-like substrate (20 on Figure 2); and a multiplicity of hooks (10 on Figure 1a) formed on one surface of said substrate (20 on Figure 2) integrally, each of said hooks (10 on Figure 1a) being composed of a rising portion (12) having a front surface rising from said substrate (20 on Figure 2), a rear surface rising obliquely from said

substrate (20 on Figure 2) along a smooth curved line and a reinforcing rib (the side triangular areas on the cross section of the rising portion 12 on Figure 7c) located on at least one side surface, and a hook-shape engaging portion (14 on Figure 1a) extending forwardly from a distal end of said rising portion (12 on Figure 1a); said plate-like substrate (20 on Figure 2) being biaxially stretched (e.g. column 8, lines 63 to 67) after being moulded.

2.4 Although lines 26 to 28 of column 5 of D5 state that "FIG. 1 *a* also illustrates the embodiment where the base of stem 12 is thickened where it joins a base" and although the Figure indeed shows the bottom portion of the rear surface of the stem 12 as a curved line, the Figure does not show the interface of stem and base. Therefore there is no unambiguous disclosure of the rear surface rising obliquely from said substrate (1) along a **smooth** curved line.

Moreover, while there are triangular side areas on the cross section of the rising portion 12 on Figure 7c, these are not located on respective side surfaces of the stem 12 because they in fact **constitute** the side surfaces of the stem. Therefore the board cannot see that these can be termed ribs. Figure 12 shows hooks with side ribs but these hooks are as in Figure 2, not as in Figure 1a.

The above reasons alone place doubt on the validity of the objection of lack of novelty since there must be a clear and unambiguous disclosure in the prior art of all features of the claim for the objection to succeed.

2.5 However the reasons given in the above section 2.4 are not decisive since in any case the lack-of-novelty objection fails because it relies on combining features taken from various parts of D5 in a combination which is neither clearly and unmistakably disclosed nor suggested.

2.6 It is impermissible when assessing novelty to combine separate items belonging to different embodiments described in one document merely because they are described in that one document. It would be permissible to combine the items if the document specifically suggested the combination or, in certain cases, if said features and statements were compatible with each other and with the general teaching of the document. This view is in line with the decisions T 305/87 (OJ EPO 1991, 429) and T 332/87 (not published in the OJ), both of which are reported in section I.C.2.2 of the "Case Law of the Boards of Appeal of the European Patent Office (page 56 of the Fourth Edition in English of 2001).

2.7 Figure 2 of D5 shows a base 20 carrying seven ribs 22. These ribs 22 however differ greatly from what is defined by claim 1 as granted. To move closer to the subject-matter of claim 1 as granted the skilled person would have to make several selections from the many possibilities set out in D5. He would need to choose to mould the surface fastener, to choose synthetic resin from the long list of materials in column 9, lines 25 to 39, and to choose the hook of Figure 1a instead of one of the other hooks shown in Figures 1b to 1l. Even if he provided the hook of Figure 1a with the cross

section of Figure 7c, there would remain the doubt about the ribs (see the above section 2.4).

According to column 3, lines 46 to 48 "The ribs 22 are cut into spaced apart gripping elements 10 by removing portions of the rib as shown in FIG. 3". Thus it seems that the structure would be finished after these portions have been removed. As such, this structure, arrived at after making several choices from the possibilities in D5, would be no more relevant than the surface fastener of D1.

2.8 Moving now to consider the characterising portion of claim 1 as granted, various passages in D5 refer to stretching but it remains to be seen whether what is stretched is the structure of Figures 2 and 3 or whether it is something else.

2.9 Lines 22 to 30 of column 2 of D5 state that spaced apart gripping elements result from "cutting the rib above or only part of the rib or both the rib and the base and stretching or expanding the structure or by actually removing the portions of the rib."

Since column 3 of D5 explains in lines 46 to 48 that Figure 3 employs the alternative of "removing the portions of the rib", the alternative of "stretching or expanding the structure" cannot apply to Figure 3.

2.10 According to lines 59 to 62 of column 2, Figures 6a and 6b of D5 show "a further embodiment wherein the ribs and base are cut and the structure stretched or expanded to form spaced apart gripping elements." This embodiment is described in lines 24 to 27 of column 4.

The resulting base 20 shown in Figure 6b is net-like and not a "plate-like substrate" as required by claim 1 as granted.

The structure of Figure 6c has been stretched only in the direction of the rib, see column 4, lines 27 to 31, i.e. not biaxially as required by claim 1 as granted.

2.11 According to lines 32 to 48 of column 4 of D5, the "lace-like cutting patterns as shown in FIGS. 13 a and b ... make it possible to stretch or expand the structure after being cut in both directions that is parallel and perpendicular to the ribs. Thus, it is possible by employing the techniques illustrated in FIGS. 6 and 13 to form self-gripping open net-like structures having crossing members wherein the rows of gripping elements and integral with the crossing members and can be angled or oriented in any predetermined uniform or irregular pattern."

Lines 1 to 3 of column 5 also refer to "the net-like openings formed by stretching the self-gripping device as shown in FIG. 6 b."

Thus it is clear that the resulting base of Figures 13a and 13b, as with Figure 6b, will be net-like and not a "plate-like substrate" as required by claim 1 as granted.

2.12 Lines 48 to 55 of column 7 of D5 state that Figure 18 shows a sheet which is folded and "can be oriented in one or both directions prior to folding to obtain special properties for the gripping elements and/or base." However during the oral proceedings neither the

appellant nor the respondent nor the board was able to satisfactorily explain this passage and Figure. Therefore they cannot form part of an objection of lack of novelty which should involve a clear and unequivocal disclosure.

In any case this embodiment with its folding is incompatible with the structure shown in Figure 2 on which the appellant is basing his novelty attack.

Moreover, even if one can accept that orienting means stretching, then this takes place **before** folding to obtain the gripping elements whereas in the granted claim 1 the biaxial stretching occurs **after** the hooks have been formed.

Thus under no circumstances could this embodiment be novelty destroying.

2.13 Lines 63 to 67 of column 8 of D5 state that "It is also within the scope of the present method to post-treat or form the integral structure of the invention using known techniques such as ... stretching transversely and/or longitudinally."

However stretching is just one of a long list of alternative or additional methods extending from line 63 of column 8 to line 24 of column 9 and there is no mention of stretching being a post-treatment for the embodiment of Figures 2 and 3.

Moreover line 63 of column 8 of D5 refers to "the scope of the present method" which must be the method as set out in the sole claim of D5, including in particular

(in lines 61 to 67 of column 10) the steps of "slitting said ribs ... and stretching and expanding said base and said ribs thereby forming an **open, net-like structure** of crossing members from said base with spaced apart gripping elements from said ribs integrally extending from said crossing members."

The post-treatments involved therefore relate to the "open, net-like structure".

Furthermore, the sole claim of D5 refers to a base which is open and net-like and therefore not the same as the "plate-like substrate" required by claim 1 as granted.

2.14 It will have been realised by now that D5 is in fact a very vague and inconsistent document. Its device of Figures 2 and 3 apparently does not lie within the scope of the sole claim of D5. Many possibilities are set out but with no further detail as to which embodiments might be affected. It seems however that, with the exception of the vague description of Figure 18 (see the above section 2.12), stretching always produces an open, net-like base and therefore does not result in the subject-matter of claim 1 of the present patent as granted.

2.15 Thus, bearing in mind the above section 2.4, even if it could be accepted that all features of claim 1 as granted could be found somewhere or other in D5, the lack-of-novelty objection would still fail because it relies on combining features taken from various parts of D5 in a combination which is neither clearly and unmistakably disclosed nor suggested.

2.16 In the appeal proceedings the appellant only cited D5 when arguing lack of novelty of the subject-matter of claim 1 as granted. The board does not see that novelty would be destroyed by any of the other documents on file.

2.17 The board thus finds the subject-matter of claim 1 as granted to be novel (Articles 52(1) and 54 EPC).

3. *Closest prior art, problem and solution - claim 1 of the main request*

3.1 D1 discloses a surface fastener which has all the features of the pre-characterising portion of claim 1 of the main request (i.e. claim 1 as granted). The board considers that the surface fastener of D1 is the closest to that of the present invention and forms the starting point for the determination of inventive step.

3.2 As explained in columns 1 and 2 of the present patent, the manufacture of surface fasteners of the type disclosed by D1 involves pulling the substrate to pull the hooks from the cavities in which the hooks have been formed. Thus the substrate must be sufficiently thick which has the disadvantage that the surface fastener is too rigid.

3.3 The typical woven fasteners are more flexible but are more costly to manufacture. The board sees the object of the invention as being to provide a moulded surface fastener which has the same flexibility as the woven-type surface fastener, see column 3, lines 1 to 3 of the present patent.

3.4 This object is achieved by biaxially stretching the plate-like substrate after moulding, making it thinner and therefore more flexible and moreover, because of the resulting biaxial orientation of the molecules and crystals of the substrate, tougher. The invention therefore keeps the advantages of moulding a thicker plate-like substrate but is nevertheless able to provide a flexible fastener.

4. *Inventive step - claim 1 of the main request*

4.1 The appellant argues in lines 1 to 12 on page 2 of the combined notice of appeal and statement of grounds:

(a) that the claimed surface fastener is basically known from D1,

(b) that it is known from D2 to uniaxially stretch a surface fastener,

(c) that the skilled person posing the problem of separating surface fastener hooks not only in one direction by the known stretching but also in a second, in particular perpendicular, direction, knows from D3 that biaxial stretching is known for any type of film material,

(d) so that it is not inventive to provide biaxial stretching for known surface fasteners.

4.2 It must be noted that the appellant's formulation of the problem (see the above section 4.1(c)) wholly anticipates the solution and is therefore even more

unacceptable than a formulation which merely partially anticipates the solution, see section I.D.4.2 entitled "Ex-post facto analysis - no pointers to the solution" in the "Case Law of the Boards of Appeal of the European Patent Office" (page 107 of the Fourth Edition in English of 2001).

4.3 Further, the hooks of D1 are already separate so that the skilled person would not need to separate them by stretching as is done in D2 (and this stretching is merely uniaxial not biaxial as required by claim 1 as granted).

D3 discloses biaxial stretching to achieve a high strength (see the second paragraph of page 1 of the description) but what is stretched is a plastic film i.e. a plane and uniform substrate. On the other hand, the substrate of D1 carries integral hooks i.e. is discontinuous. The board considers that the skilled person would not attempt to biaxially stretch such a discontinuous substrate because he would fear that it would be torn (after all, he knows from D5 that stretching produces holes - see e.g. Figure 6b).

4.4 The appellant also argues that it would be obvious for the skilled person to modify the surface fastener of D1 using the normal post-treatment taught by D5.

However, if the skilled person did examine D5 and did manage to extract anything from its confusing and inconsistent content, then it would not be that stretching produces greater toughness (because D5 is silent on this topic) but that D5 uses cutting and subsequent stretching to produce an open, net-like

structure (see the sole claim of D5 in lines 63 and 64 of column 10) i.e. not the plate-like substrate specified by claim 1 as granted.

Even if the skilled person were to combine the teachings of D1 and D5 there would be various possibilities which would move the resulting surface fastener even further away from the presently claimed surface fastener e.g. by choosing the hook profile shown in Figure 2 of D5 instead of that of D1.

4.5 The board thus cannot see that any of the prior art documents cited in the appeal proceedings (taken singly or in any combination of any number) would lead the skilled person in an obvious manner to the subject-matter of claim 1 as granted.

4.6 The board thus finds that the subject-matter of claim 1 as granted is not obvious (Articles 52(1) and 56 EPC).

5. Thus claim 1 as granted of the main request is patentable as are claim 2 which is dependent thereon. Accordingly the patent can be maintained unamended i.e. as granted.

6. It follows that the three auxiliary requests of the respondent need not be considered.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Magouliotis C. Andries