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D E C I S I O N  
of 21 October 1998

Case Number: T 1003/97 - 3.2.4

Application Number: 90105034.4

Publication Number: 0387905

IPC: A44B 19/10

Language of the proceedings: EN

Title of invention:  
Slide fastener and fastener elements therefor

Patentee:  
YKK Corporation

Opponent:  
Opti Patent-, Forschungs- und Fabrikations- AG

Headword:  
-

Relevant legal provisions:  
EPC Art. 56

Keyword:  
"Inventive step - yes"

Decisions cited:  
T 0002/83

Catchword:  
-



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Boards of Appeal

Chambres de recours

Case Number: T 1003/97 - 3.2.4

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.4  
of 21 October 1998

**Appellants:**  
(Opponents) Opti Patent-, Forschungs- und  
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**Representative:** Honke, Manfred, Dr.-Ing.  
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**Respondents:**  
(Proprietors of the patent) YKK Corporation  
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**Representative:** Patentanwälte  
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**Decision under appeal:** Interlocutory decision of the Opposition Division  
of the European Patent Office posted 29 July 1997  
concerning maintenance of European patent  
No. 0 387 905 in amended form.

**Composition of the Board:**

**Chairman:** C. A. J. Andries  
**Members:** M. G. Hatherly  
J. P. B. Seitz

## Summary of Facts and Submissions

- I. The interlocutory decision of the opposition division to maintain the European patent No. 0 387 905 in amended form was dispatched on 29 July 1997.

On 25 September 1997 the appellants (opponents) filed an appeal against this decision and paid the appeal fee. The statement of grounds of appeal was received on 22 November 1997.

- II. The following prior art documents were relied upon during the appeal proceedings:

D4: US-A-4 247 600

D5: DE-B-1 257 525

D7: Römpps Chemie-Lexikon, 7. Auflage, Franckh'sche Verlagshandlung Stuttgart (1973), page 1902

D8: US-A-3 768 125

- III. Oral proceedings were held on 21 October 1998.

- IV. In the appeal proceedings the appellants argued that the claimed invention was obvious in view of the cited prior art, whereas the respondents (proprietors) countered the appellants' arguments.

During the oral proceedings the respondents filed amended claims for a main request and an auxiliary request.

V. The independent claims of the main request are as follows:

Claim 1 of the main request is the same as claim 1 according to the opposition division's interlocutory decision, namely:

- "A slide fastener comprising a row of interlocking elements (2) formed of interlocking elements made of a synthetic resin and having a metallic coating layer with a thickness of 0.001 to 1.0  $\mu\text{m}$  formed on the surface thereof so as to give the surface of the interlocking elements a metallic luster, said row of interlocking elements (2) being a continuous coiled or zigzag row of interlocking elements being sewn by a sewing yarn (4) onto one side of a fastener tape (1), said continuous row of interlocking elements having a cord (3) inserted therethrough, and the cord having also a metallic coating layer with a thickness of 0.01  $\mu\text{m}$  or over formed thereon."

Claim 3 of the main request reads:

- "A slide fastener row of interlocking elements made of a synthetic resin and having a metallic coating layer with a thickness of 0.001 to 1.0  $\mu\text{m}$  formed on the surface thereof so as to give the surface of the interlocking elements a metallic luster, said row of interlocking elements (2) being a continuous coiled or zigzag row of interlocking elements, wherein said metallic coating layer (12) formed on the interlocking elements (2) has a translucent finishing coat layer (13) formed thereon."

VI. The appellants request that the decision under appeal be set aside and the patent revoked.

The respondents request that the decision under appeal be set aside and the patent be maintained on the basis of the main request or the auxiliary request:

**Main request:**

**Claims:** 1 to 5 of the main request filed during the oral proceedings on 21 October 1998

**Description:** pages 2 to 4 and 6 to 8 filed during the oral proceedings of 9 July 1997  
page 5 as granted

**Drawings:** Figures 1 to 8, 9A, 9B and 9C as granted  
Figures 12A and 12B filed during the oral proceedings of 9 July 1997

The **auxiliary request** is based on claims 1 to 5 of the auxiliary request filed during the oral proceedings on 21 October 1998.

**Reasons for the Decision**

1. The appeal is admissible.
2. *Amendments - main request*
  - 2.1 Independent claim 1 of the main request is the combination of the granted claims 1, 2 and 4 (the latter claim being appendant optionally to the granted claim 2).

Thus claim 1 of the main request neither extends the subject-matter of the originally filed application (Article 123(2) EPC) nor extends the protection conferred beyond that conferred by the patent as granted (Article 123(3) EPC).

- 2.2 Independent claim 3 of the main request defines not a complete slide fastener but merely a slide fastener row of interlocking elements. This claim is the combination of claim 5 as granted and those parts of claim 1 of the main request which define the row.

Thus claim 3 of the main request neither extends the subject-matter of the originally filed application (Article 123(2) EPC) nor extends the protection conferred beyond that conferred by the patent as granted (Article 123(3) EPC). Moreover claim 3 of the main request is not broader in scope than claim 3 maintained by the opposition division's interlocutory decision. The board notes in passing that, contrary to this decision, the then current claim 3, although it referred explicitly to claim 1, was not "appendant on subsisting claim 1" and did not "include all the features of claim 1".

- 2.3 Dependent claims 2, 4 and 5 correspond to claims 3, 6 and 7 respectively of the patent as granted.

- 2.4 The description has been adapted to acknowledge the prior art and to bring it into line with the current claims. Arrangements no longer covered by these claims have been deleted from the description and drawings.

- 2.5 Thus the patent specification according to the main request does not contravene Article 123 EPC.

3. *Interpretation of claim 1 of the main request*

This claim states that the row of interlocking elements made of a synthetic resin have a metallic coating layer with a thickness of 0.001 to 1.0  $\mu\text{m}$  formed on the surface thereof so as to give a metallic luster.

In line with column 6, lines 39 to 43 of the description, this metallic coating layer must be seen as the result of such methods as a wet process (chemical plating), a dry process (vacuum deposition, ion plating, sputtering) or a transfer process i.e. of a metallisation process rather than as the result of mixing a colouring agent into the synthetic resin of the interlocking elements (as is done in the prior art, see column 1, lines 20 to 23 of the description of the main request) or as the result of a simple dyeing process.

4. *Novelty - main request*

4.1 D4 discloses a plastic camera housing with an exterior decorative metallic coating. While column 5, lines 4 to 6 state that "other plastic substrates could advantageously receive the metallized coating of the present invention for use in other fields" there is no mention of slide fasteners.

4.2 D5 discloses nickel-plating metal or plastics slide fastener elements 3 attached to a fastener tape, see column 1, lines 2 to 4 and Figure 2. There is no disclosure of the interlocking elements being in a continuous coiled or zigzag row, instead they are individual fastener elements fastened to the tape with gaps therebetween, see column 1, lines 10 to 14 and 19 and 20. The thickness of the metallic coating is unspecified.

- 4.3 D7 teaches the metallization of plastic products in general to give shiny, wear resistant 0.1 - 1.0  $\mu\text{m}$  thick layers but does not mention slide fasteners.
- 4.4 D8 discloses a slide fastener comprising a row 1 of interlocking elements 6 formed of interlocking elements 6 made of a synthetic resin (see column 2, lines 62 and 63), said row of interlocking elements 6 being a continuous coiled row of interlocking elements 6 sewn by a sewing yarn 3, 4 onto one side of a fastener tape 2, said continuous row of interlocking elements having a cord 10 inserted therethrough.
- 4.5 Thus, to summarise, D4 and D7 do not mention slide fasteners, D5 does not disclose a slide fastener row of interlocking elements which is a continuous coiled or zigzag row of interlocking elements, and D8 does not disclose a metallic coating layer.
- 4.6 Accordingly the subject-matter of claims 1 and 3 of the main request is novel (Article 54 EPC), this moreover being undisputed by the parties.

5. *Inventive step - main request*

- 5.1 According to the parties and the opposition division the closest prior art is D5.

The appellants argue that the individual slide fastener elements of D5 are metallically coated to provide a metallic lustre. According to column 2, lines 29 and 30 a nickel coating of sufficient thickness is applied to the fastener elements, so the skilled person would use the normal metal thicknesses in the art of metallising plastics, such as the 0.1 - 1.0  $\mu\text{m}$  thickness disclosed by D7 (page 1902, right-hand column:



"Kunststoffmetallisierung"). He knows from D5 that he can apply such a metal coating to slide fastener elements to yield a metallic lustre and would naturally apply this teaching to all slide fastener rows, and in particular on continuous screw thread rows of fastener elements which are sewn to a fastener tape. Such rows are, after all, common place and it cannot be seen what would prevent the skilled person applying the D5 teaching and metallicly coating continuous rows and the cords passing therethrough.

5.2 However the skilled person knows not only of D5 but also of D8 (see the above section 4.4) and the board does not consider it likely and obvious that he would choose to start from the individual slide fastener construction of D5 but then modify it to arrive at the continuous slide fastener construction of D8. On the contrary, if he wanted to obtain such a continuous slide fastener construction, since this is the same construction as that of the invention, then he would start from D8 in the first place. Of course the skilled person can further develop the individual slide fastener construction of D5 in an obvious way but then he will remain within the framework of individual, separate slide fastener elements.

5.3 Starting from D8, the problem underlying the present invention would be to improve the appearance of the slide fastener, a problem that is already discussed in column 1 of D8 and solved there by dyeing the coils and the tapes, leaving the upper stitching transparent.

The appellants argue that plainly a variety of dyes can be used in the D8 process and that D8 itself contains no restriction as to dye type. Dyes can contain metallic colour pigments and so the skilled person would realise that he could metallicly coat the slide fastener. Since column 4, lines 5 to 7 of D8 state that

the completed stringer is dyed, this metallic coating will also cover the filler cord. The thickness of the coating will be that typical of that used in metallisation processes, e.g. the 0.1 - 1.0  $\mu\text{m}$  thick layers taught by D7.

The board must point out that the appellants are selecting from the total range of dyes those dyes containing metallic colour pigments whereas D8 itself makes no mention of metallic colour pigments. Moreover D8 (an American document) uses the term "dyeing", a term which the appellants translate as "Farbbeschichtung" and in so doing they move away from the primary meaning of dyeing of the colour **entering** the slide fastener components towards a secondary meaning of colour being applied onto said components. However even then, since the coating on the slide fastener would not be the result of **metallisation** (a term having a special meaning, see the above section 3), there would be no reason for the coating to have the thickness taught by D7.

The board considers that, while the skilled person could have dyed the D8 slide fastener using dyes containing metallic pigment, there is no real indication that he **would** have done so (see the decision T 0002/83, OJ EPO 1984, 265 "could-would approach") and still less an indication that he would have achieved the type of coating specified by claim 1 of the main request (bearing in mind the above section 3).

- 5.4 Whether the skilled person starts from D5 and then uses the teaching of D8 or whether he starts straight away from D8, one question remains the same, that of whether it is obvious to metallize the synthetic resin continuous coupling coil 1 of D8 which naturally is, and needs to remain, flexible.

D4 discloses metallically coating a plastic camera housing which is presumably rigid. Column 5, lines 4 to 6 add that "other plastic substrates could advantageously receive the metallized coating of the present invention for use in other fields" but there is no mention of flexible articles. Likewise D7 teaches the metallization of plastic products in general but gives no examples of flexible articles. Even "Drucktasten" and "Modeschmuck" cannot be assumed to be flexible.

The slide fastener elements of D5 which are nickel plated are either metal or plastics and plainly each individual element is rigid, with the elasticity being provided by the stringer tape to which they are attached.

While the appellants argue that variety of flexible or elastic articles can be metallically coated, they have failed to give a single specific example thereof.

The board considers that the skilled person would be reluctant to metallize a flexible synthetic resin continuous coupling coil which must then remain flexible in order to cooperate with another such coil and with a slider, without the coating peeling from the coil despite the stressing of the coil.

Accordingly the board finds that the metallisation of the synthetic resin continuous coupling coil 1 of D8 would not be obvious for the skilled person. It follows that, when the board adds to this finding the finding that to start from D5 would not be obvious (see the above section 5.2) and the finding that if the skilled person were to start from D8 then for other reasons (see the above section 5.3) he would not arrive at a metallically coated continuous row of interlocking synthetic resin elements, then the board concludes that

the slide fastener defined in claim 1 of the main request is not obvious. Surprisingly the metallically coated continuous row of interlocking synthetic resin elements apparently fulfills the flexibility, stress and wear requirements of a slide fastener (at least the contrary has not been alleged by the appellants).

- 5.5 The subject-matter of claim 1 of the main request is thus patentable as required by Article 52 EPC.
- 5.6 Claim 3 of the main request defines a slide fastener row of interlocking elements, the row being defined as the row is in claim 1. Since the patentability of claim 1 is given by the row, the row of claim 3 must also be patentable.
6. The patent may therefore be maintained amended, based on these independent claims 1 and 3, claims 2, 4 and 5 which are dependent thereon, the adapted description and drawings.
7. Consideration of the respondents' auxiliary request is therefore unnecessary.

**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 in the following version:

**Claims:** 1 to 5 of the main request filed during the oral proceedings on 21 October 1998

**Description:** pages 2 to 4 and 6 to 8 filed during the oral proceedings of 9 July 1997  
page 5 as granted

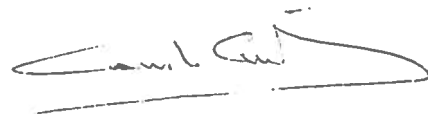
**Drawings:** Figures 1 to 8, 9A, 9B and 9C as granted  
Figures 12A and 12B filed during the oral proceedings of 9 July 1997

The Registrar:



S. Fabiani

The Chairman:



C. Andries