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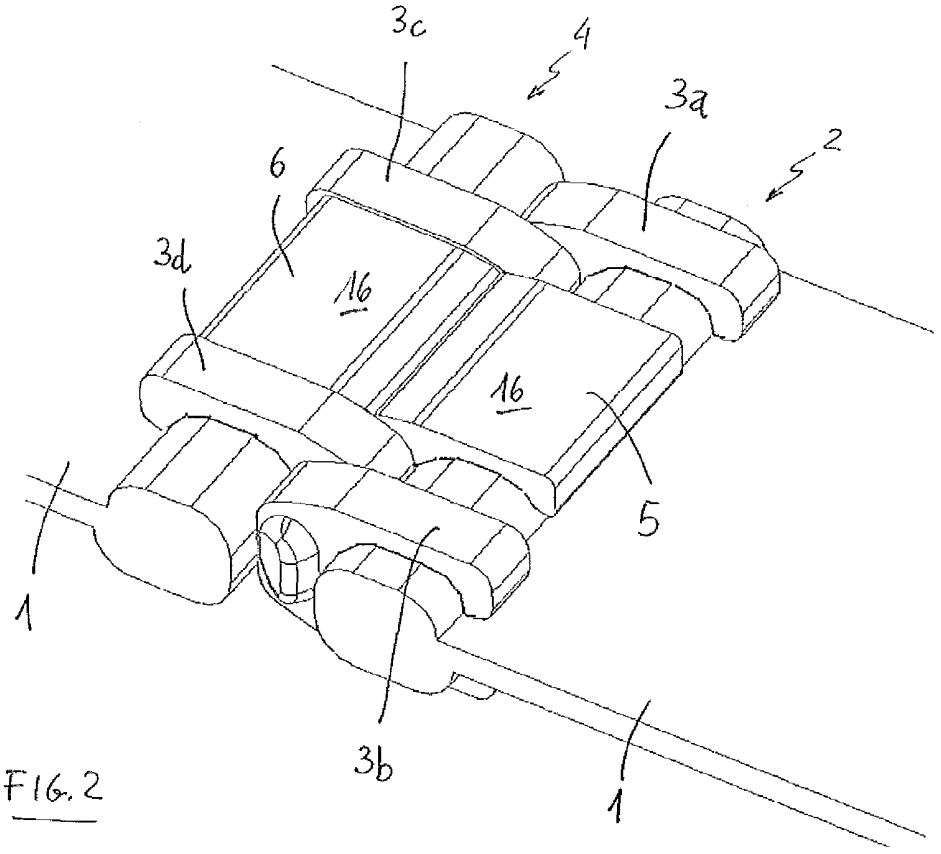
(54) **Slide fastener**

(57) A slide fastener comprising a pair of tapes (1), a top stop, a bottom stop and rows (2, 4) of fastening teeth (3) arranged on the edge of said tapes, comprising at least one pair of dummy teeth (5, 6) located in a gap of the rows of fastening teeth, restoring a continuity of the rows of fastening teeth, so to allow free passage of the slider, and at the same time providing a distinctive feature in the row of fastening teeth.



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Description

Field of application

[0001] The invention relates to slide fasteners. The invention discloses a technique for personalizing or labeling a slide fastener.

Prior Art

[0002] A slide fastener basically comprises: a pair of tapes, a row of teeth arranged on the edge of each tape, a top stop, a bottom stop, a slider with a pull-tab. The tapes are made of a fabric or plastic material; the teeth, top and bottom stop and slider are usually made of metal or plastics. The teeth have conjugate end parts that are able to engage and disengage each other, upon the action of the slider.

[0003] The slide fastener is often required to bear decorative elements, a logo, a trademark or the like, for aesthetic purposes and/or for individualization of the product. This is especially required by the fashion industry for high-end slide fasteners.

[0004] The tapes are not a convenient support for any decorative element or logo. Currently, the parts of a slide fastener that are suitable to bear such elements are the top and bottom stops, the slider and the pull-tab. For example a symbol, a trademark or logo can be printed or engraved in a metal stop, slider or pull-tab. No other part suitable to this purpose is available. The teeth in particular are too small and hence the engaged rows of teeth in a closed slide fasteners have always substantially the same appearance.

[0005] It should also be noted that in a closed slide fastener the stops and the slider are not so visible, being at the ends of the slide fastener. Hence, when e.g. a garment is worn, there is little possibility in the prior art to give a recognizable appearance to the slide fastener.

Summary of the invention

[0006] The invention is aimed to improve the ability to individualize a slide fastener. The invention provides a visually distinctive element in an intermediate position of the row formed by the fastening teeth. This is accomplished by the provision of dummy teeth between two of the fastening teeth of each row of the slide fastener, in at least one intermediate position of the slide fastener.

[0007] Hence, the above problem is solved with a slide fastener comprising a pair of tapes, a top stop, a bottom stop, a first row of fastening teeth arranged on the edge of one of said tapes and a second row of fastening teeth arranged on the edge of the other one of said tapes, the fastening teeth of the first row being able to engage and disengage the fastening teeth of the second row to close and open the slide fastener, characterized in that:

a) in at least one position of the slide fastener between the top stop and the bottom stop, two consecutive fastening teeth of the first row and two consecutive fastening teeth of the second row are spaced away, thus forming a gap in the first row of teeth, and a gap in the second row of teeth, the gap of the first row facing the gap of the second row,

b) a first dummy tooth and a second dummy tooth are associated to the tapes and respectively fitted into said gaps of the first and second row, the first dummy tooth and second dummy tooth being suitable to restore a continuity of the rows of fastening teeth, so to allow a free passage of the slider.

[0008] One or more intermediate gaps according to point a) above can be provided. Preferably the intermediate gap may be located substantially in the middle of the slide fastener, but any position is possible. In a garment, for example, the position of a couple of said dummy teeth is preferably in the upper half, which means closer to the upper stop, so to be more visible when the garment is worn.

[0009] The dummy teeth as disclosed at point b) above are meant as replacement elements that fill a gap in the respective row of fastening teeth, associated to a fastener tape. Said elements that do not need to engage each other with conjugate parts in a gear-like manner, as conventional teeth of slide fasteners do, although in some embodiments the dummy teeth may have mutually engaging parts to strengthen the slide fastener.

[0010] The dummy teeth may preferably provide an engagement which is adapted to maintain alignment of the tapes, and to avoid the opening of the slide fastener. Said engagement is preferably substantially rigid at least in a transversal direction, i.e. perpendicular to the direction of the slider. In a preferred embodiment, the first and second dummy tooth arranged in one gap of the slide fastener have coupling means in the form of at least a male part and a female part providing an engagement which is substantially rigid in said transversal direction.

[0011] Preferably, the dummy teeth are larger than the teeth of the slide fastener, in the longitudinal direction of the slide fastener. Being larger than the conventional teeth, the dummy teeth are recognizable and able to individualize the fastener.

[0012] In a preferred embodiment, a dummy tooth according to the invention is configured with a core portion, an upper arm portion and a lower arm portion. The upper arm portion, in use, is outside a garment or item carrying the slide fastener, while the lower arm portion is inside. The upper arm portion and/or the lower arm portion may have a flat surface adapted to carry a distinctive element. For example, a logo, trademark or the like can be printed or engraved onto the upper and/or the lower arm portion. More preferably, said arm portions have end flanges to securely hold the edges of the fastener tapes.

[0013] The distinctive feature of said dummy teeth may be achieved in any way. For example by means of shape,

color, material or any combination thereof. For example the dummy teeth may be configured to show a certain letter, number or logo when the slide fastener is closed and the two dummy teeth are facing each other. Hence, a distinctive element is formed in an intermediate position of the chain of the teeth, for example in the middle, which is readily visible and greatly improves the individual appearance of the slide fastener. For example, a certain logo or mark can be written or formed half on one dummy tooth and half on the other, so that the logo is composed when the slide fastener closes. In some embodiments the left/right dummy teeth are shaped to form themselves a trademark or logo, e.g. a symbol or letter, when they are close together.

[0014] The dummy teeth may be of a material and/or color other than the material of other parts of the slide fastener, namely of the engaging teeth and stops, to enhance distinctiveness.

[0015] The left and right dummy teeth of each pair need not to be identical. In some embodiments of the invention, the two dummy teeth are different. In a preferred embodiment, the lower arm portion is made larger than the upper arm portion, in order to completely fill the gap between the fastening teeth.

[0016] A slide fastener according to the invention, for example, can be manufactured by the steps of: making fastener tapes with rows of fastening teeth, removing a selected number of fastening teeth in at least one selected position of the fastener tapes, thus forming gaps in the rows of fastening teeth, and fixing the dummy teeth to the fastener tapes, so to fill the aforesaid gaps.

[0017] A further aspect of the invention is that the above dummy teeth are able to support additional functions. According to exemplificative embodiments, they may have magnetic parts to provide a tactile feeling in the operation of a metal slider, such as a variation in the force required to move the slider; they may have one or more holes to provide transpiration; they may host electrical contacts to detect certain actions such as opening of the slide fastener; they may support a light-emitting or light-reflecting element, so to provide a further distinctive effect or night visibility. For example a slide fastener according to the invention with a couple of dummy teeth with an electrical contact can be positioned close to the upper stop and used to detect opening of the slide fastener.

[0018] The main advantage of the invention is that a novel option for individualizing or labeling a slide fastener is allowed. A visually distinctive effect is obtained by a singularity in the rows of fastening teeth, although the provision of the dummy teeth allow the normal operation of the slider.

[0019] Moreover, the provision of one or more couple (s) of the above dummy teeth makes possible a number of additional optional features, compared to conventional fastener. Another advantage is that the invention needs no significant modification of the slider, because the dummy teeth substantially restore the chain of the engaging teeth and allow a free passage of the slider. Hence, a conventional slider can be used. Another advantage is that the chain of teeth is not significantly weakened, in particular when the dummy teeth have engagement against opening of the slide fastener in the transversal direction. These and further advantages of the invention will be more evident from the detailed description provided here below, given as indicative and not limiting example.

Brief description of the drawings

[0020]

Fig. 1 is plan view of a slide fastener according to an embodiment of the invention, comprising a pair of dummy teeth filling a gap in the rows of the fastening elements.

Fig. 2 is a detail of the slide fastener of Fig. 1.

Fig. 3 is a cross sectional view of the slide fastener of Fig. 1 and 2.

Fig. 4 is a perspective view of a pair of dummy teeth of the slide fastener of Figs. 1 to 3.

Figs. 5 to 8 are views of the right and left dummy tooth of Fig. 4, according to one of the embodiments of the invention.

Fig. 9 is a lateral view of a detail of the slide fastener.

Fig. 10 is a top view of a slide fastener according to one of the preferred embodiment with the dummy replacement teeth showing a letter.

Detailed description of preferred embodiments

[0021] A slide fastener as in Fig. 1 comprises a pair of tapes 1, a top stop, a bottom stop, a first row 2 of fastening teeth 3 arranged on the edge of one of tapes 1, and a second row 4 of fastening teeth 3 arranged on the edge of the other tape 1. The teeth of the first row 2 being able to engage and disengage the teeth of the second row 4 to close and open the slide fastener upon action of a slider 7.

[0022] Two consecutive fastening teeth of the rows 2 and 4 are suitably spaced away, forming gaps that are filled with a first dummy tooth 5 and a second dummy tooth 6, respectively associated to tapes 1.

[0023] Referring to Fig. 2, the fastening teeth 3a, 3b are spaced forming a first gap in the row 2, where the dummy tooth 5 is inserted, and the fastening teeth 3c, 3d of the other row 4 are spaced forming a second gap, where the dummy tooth 6 is inserted.

[0024] Said dummy teeth 5 and 6 are elements adapted to restore a continuity of the rows 2 and 4, in particular

to allow sliding of the slider 7.

[0025] In the example (Fig. 2), the gap between fastening teeth 3a, 3b corresponds to removal of two fastening teeth in the row 2, between the aforesaid fastening teeth 3a and 3b. The gap between fastening teeth 3c, 3d of the other row 4 corresponds to removal of one tooth. More generally, as fastening teeth 3 are alternated, gaps for the elements 5, 6 correspond to ***n*** fastening teeth 3 missing on one row such as row 2, and (***n+1***) fastening teeth 3 missing on the other row such as row 4.

[0026] As seen in the figures, the dummy teeth 5, 6 are larger than fastening teeth 3 in the longitudinal direction of the slide fastener.

[0027] Figs. 3 and 4 show a preferred embodiment of the dummy teeth 5 and 6. Each is configured with a core portion 10, 11, an upper arm portion 12, 13 and a lower arm portion 14, 15. The upper arm portions 12 and 13, in use, are outside a garment or item carrying the slide fastener, while the lower arm portions 14, 15 are inside.

[0028] The upper arm portion and/or the lower arm portion have preferably flat surfaces 16 adapted to carry a distinctive element. For example, a logo, trademark or the like can be printed or engraved onto a surface 16 of the upper and/or the lower arm portion.

[0029] More preferably, said arm portions have end flanges 17 to securely hold the edges 18 of the fastener tapes 1, as depicted in the sectional view of Fig. 3. The side edges 18 are clamped by arm portions 12, 13 and 14, 15, preferably by deformation of lower arm portions 14, 15, which are bent to hold the side egdes 18 of fastener tapes, as shown in said Fig. 3.

[0030] The inner face of the core portions 10, 11 of the dummy teeth 5, 6 has preferably a coupling means to prevent opening of the slide fastener in the zone of said dummy teeth, when the fastener elements 3 are missing. In the figures, said coupling means is in the form of projecting portions 19 and 20 and recesses 21, 22. In a preferred embodiment, the core portion has also a projection 23 on the outer face, to improve the strength of connection to the fastener tapes 1, by pressing against the edges 18.

[0031] The left and right dummy teeth 5, 6 of each couple need not to be identical in shape. In a preferred embodiment, the lower arm portion of one dummy tooth is larger than the lower arm portion of the other. Figs. 5 to 8 show that the dummy tooth 6 has a lower arm portion 15 which is larger than lower arm portion 14 of the dummy tooth 5. Said lower arm portion 15 has end parts 15A extending beyond the core portion 11, to suitably cover the space S (Fig. 9) which is left between two fastening teeth 3.

[0032] Fig. 10 shows an exemplificative embodiment where the dummy teeth 5, 6 are shaped to form a letter "H" when the slide fastener is closed.

Claims

1. A slide fastener comprising a pair of tapes (1), a top stop, a bottom stop, a first row (2) of fastening teeth (3) arranged on the edge of one of said tapes and a second row (4) of fastening teeth (3) arranged on the edge of the other one of said tapes, the fastening teeth of the first row being able to engage and disengage the fastening teeth of the second row to close and open the slide fastener, **characterized in that**:

   a) in at least one position of the slide fastener between the top stop and the bottom stop, two consecutive fastening teeth (3a, 3b) of the first row (2) and two consecutive fastening teeth (3c, 3d) of the second row (4) are spaced away, thus forming a gap in the first row (2) of teeth, and a gap in the second row (4) of teeth, the gap of the first row facing the gap of the second row,
   b) a first dummy tooth (5) and a second dummy tooth (6) are associated to the tapes (1) and respectively fitted into said gaps of the first and second row, the first dummy tooth (5) and second dummy tooth (6) being suitable to restore a continuity of the rows (2, 4) of fastening teeth (3), so to allow a free passage of the slider.

2. A slide fastener according to claim 1, said dummy teeth (5, 6) having at least one surface (16) adapted to support a distinctive element of the slide fastener.

3. A slide fastener according to claim 1, said dummy teeth having a dimension, shape, color, material or any combination thereof which is different from those of the fastening teeth, so that the dummy teeth provide a distinctive element of the slide fastener.

4. A slide fastener according to any of the preceding claims, said first and second dummy tooth (5, 6) being larger than the fastening teeth (3) of the slide fastener, in the longitudinal direction of the slide fastener.

5. A slide fastener according to any of the preceding claims, said first and second dummy tooth providing an engagement (19, 20, 21, 22) which is substantially rigid in a transversal direction perpendicular to the direction of the slider (7).

6. A slide fastener according to any of the preceding claims, each dummy tooth being configured with a core portion, an upper arm portion and a lower arm portion.

7. A slide fastener according to claim 6, the upper arm portion and/or the lower arm portion of the dummy teeth having a flat surface (16) adapted to carry a distinctive element.

8. A slide fastener according to claim 6, the lower arm portion of one of said first and second dummy teeth being larger than the lower arm portion of the other, having end parts (15A) extending beyond the core portion (11).

9. A slide fastener according to any of preceding claims, said dummy teeth having magnetic parts to provide a tactile feeling during the use.

10. A slide fastener according to any of preceding claims, at least one of said dummy teeth having one or more holes to provide transpiration of the slide fastener.

11. A slide fastener according to any of preceding claims, said dummy teeth hosting electrical contacts to provide additional functions of the slide fastener.

12. A slide fastener according to any of preceding claims, said dummy teeth carrying a light-emitting or light-reflecting part, so to provide a distinctive effect or night visibility.

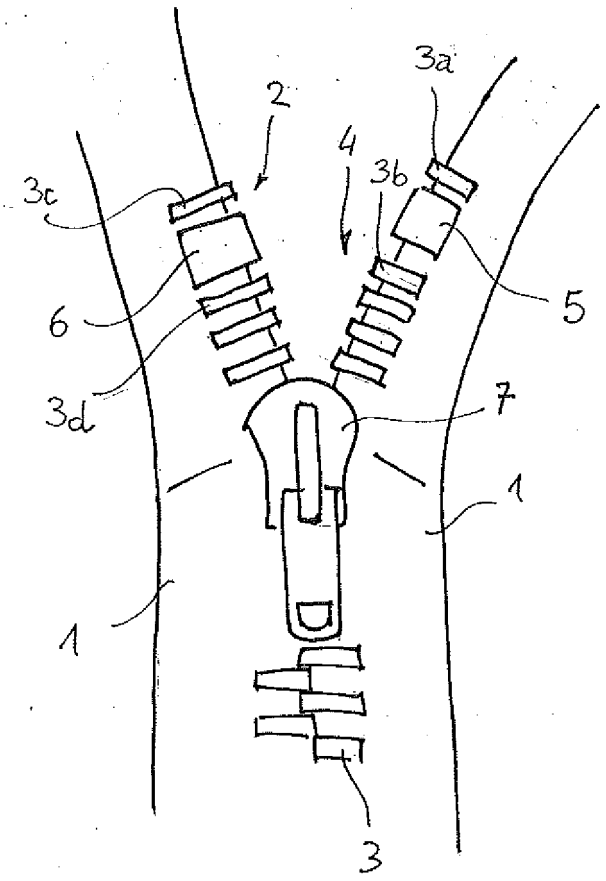

FIG. 1

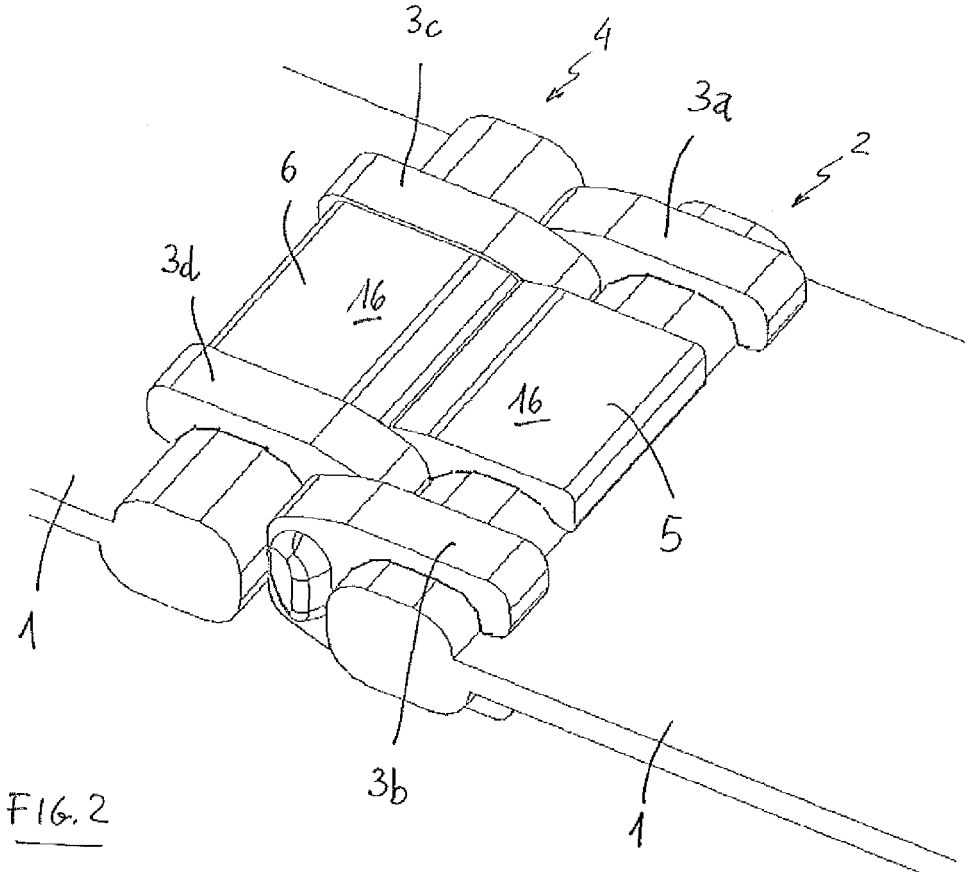

FIG. 2

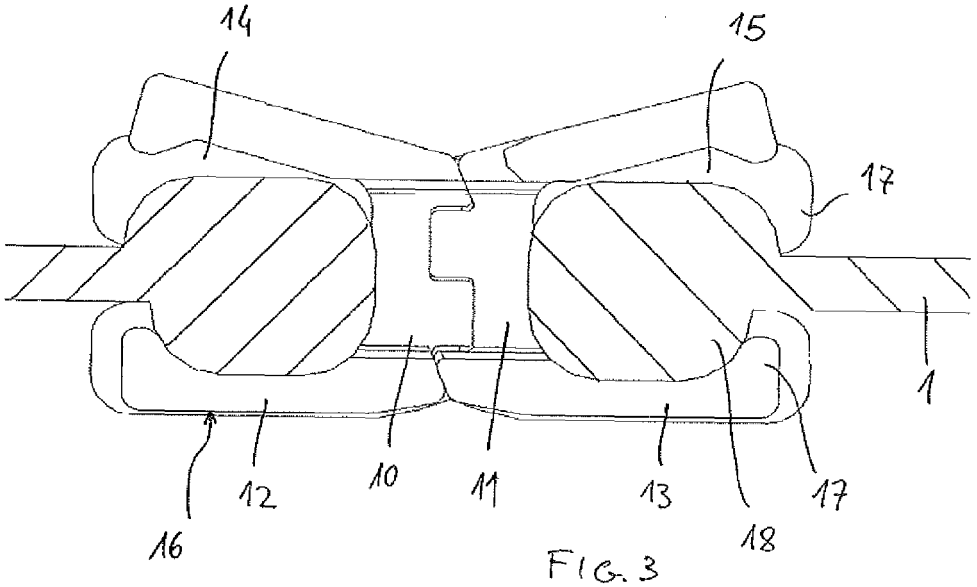

FIG. 3

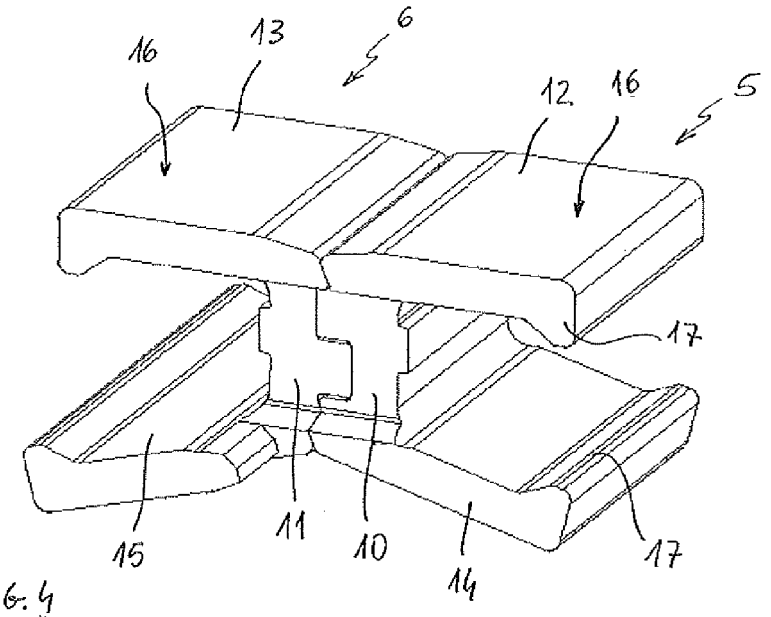

FIG. 4

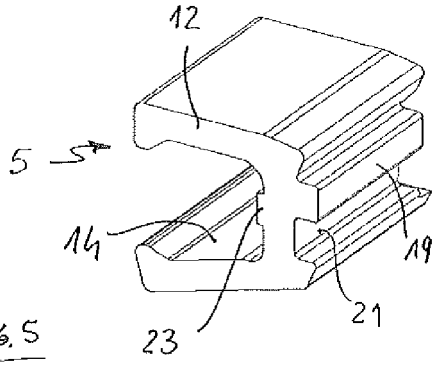

FIG. 5

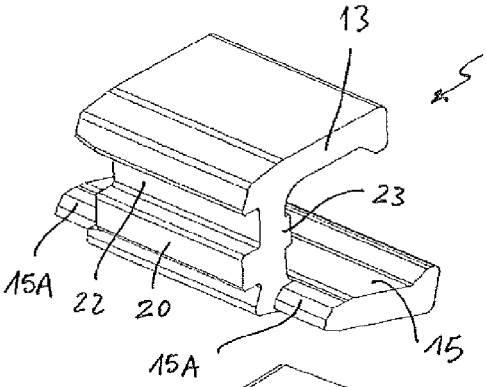

FIG. 7

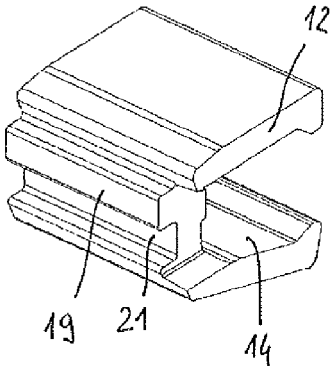

FIG. 6

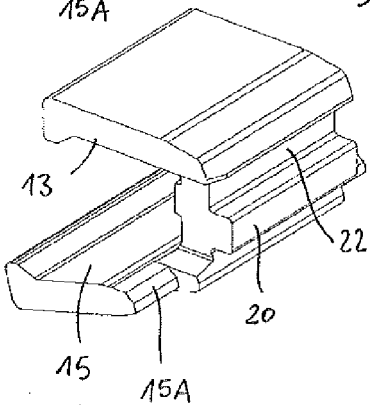

FIG. 8

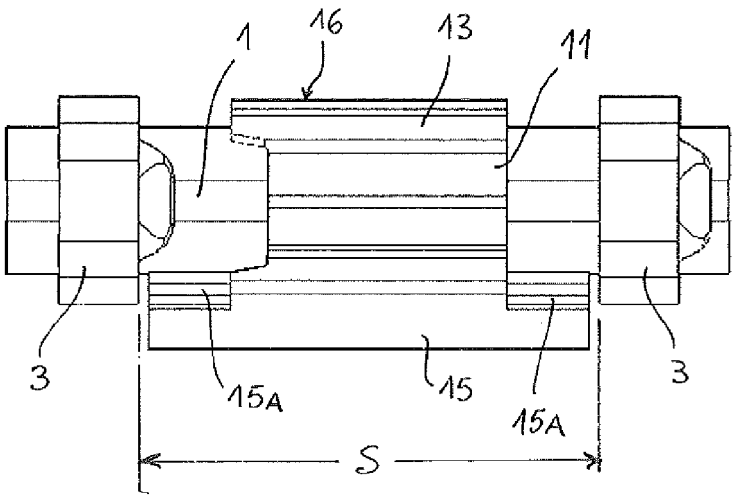

FIG. 9

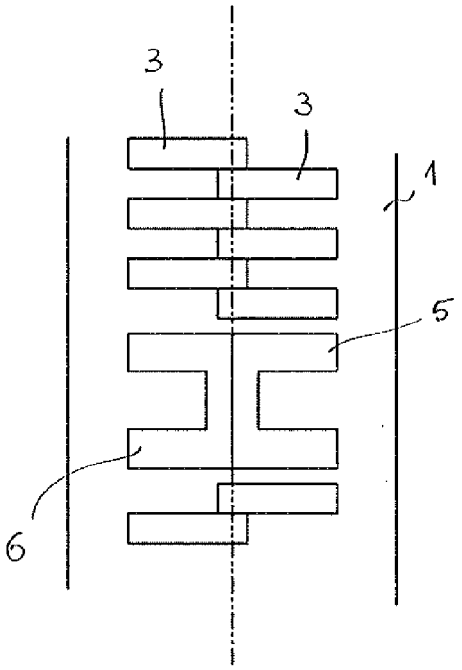

FIG. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 10 16 3380

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2009/049658 A1 (TAKASAWA SHIGEYOSHI [GB] ET AL) 26 February 2009 (2009-02-26) * paragraphs [0029], [0030], [0039], [0040], [0043] - [0044], [0048], [0049], [0051] - [0053], [0069], [0072]; figures 2,4a,19 *	1-7 9-12	INV. A44B19/04 A44B19/24
Y A	KR 2009 0082525 A (SEO DONG SU [KR]) 31 July 2009 (2009-07-31) * abstract *	9 1	
Y A	US 2009/113676 A1 (CHUNG ROGER C Y [TW]) 7 May 2009 (2009-05-07) * sentence 11, paragraph 38 - sentence 14; figure 1 * * sentence 13, paragraph 39 - sentence 17 *	10 1	
Y A	US 2009/195400 A1 (ORESHKIN VIKTOR [US]) 6 August 2009 (2009-08-06) * paragraphs [0004], [0008], [0009]; figure 1 *	11 1	TECHNICAL FIELDS SEARCHED (IPC) A44B
Y A	EP 0 299 500 A1 (YOSHIDA KOGYO KK [JP]) 18 January 1989 (1989-01-18) * column 2, line 31 - line 51; figures 1,3-5 * * column 3, line 55 - column 4, line 15 *	12 1	
A	US 6 453 521 B1 (DISCHLER LOUIS [US]) 24 September 2002 (2002-09-24) * column 1, line 20 - line 25; figure 1 * * column 1, line 58 - column 2, line 22 * * column 2, line 47 - column 3, line 3 *	1-7	
A	CN 2 353 200 Y (KAISHENG CO LTD [CN]) 15 December 1999 (1999-12-15) * abstract; figures 1-3 *	1,2	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	25 October 2010	da Silva, José

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application Number
EP 10 16 3380

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	CH 200 046 A (HANS DITTMAYER & CO [CZ]) 30 September 1938 (1938-09-30) * page 1, column 1; figures 1-4 * -----	1,2	
			TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	25 October 2010	da Silva, José

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25-10-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009049658 A1	26-02-2009	CN 101203154 A	18-06-2008
		CN 101422287 A	06-05-2009
		EP 2095734 A2	02-09-2009
		HK 1118425 A1	04-12-2009
		JP 2008534239 T	28-08-2008
KR 20090082525 A	31-07-2009	NONE	
US 2009113676 A1	07-05-2009	NONE	
US 2009195400 A1	06-08-2009	NONE	
EP 0299500 A1	18-01-1989	AU 586956 B2	27-07-1989
		BR 8803915 A	28-02-1989
		CA 1309844 C	10-11-1992
		DE 3879302 D1	22-04-1993
		DE 3879302 T2	01-07-1993
		ES 2039012 T3	16-08-1993
		HK 191695 A	29-12-1995
		JP 1020805 A	24-01-1989
		JP 1791566 C	14-10-1993
		JP 4079242 B	15-12-1992
		US 4922585 A	08-05-1990
US 6453521 B1	24-09-2002	US 6681456 B1	27-01-2004
		US 6604263 B1	12-08-2003
CN 2353200 Y	15-12-1999	NONE	
CH 200046 A	30-09-1938	NONE	

EPO FORM P0459

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