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(54) **A bottom end stop for a slide fastener, and a slide fastener comprising such a bottom end stop**

Unterer Anschlag für einen Reißverschluss und Reißverschluss mit einem solchen unteren Anschlag

Butée inférieure pour fermeture à glissière et fermeture à glissière dotée de celle-ci

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Description

[0001] The present invention relates to a bottom end stop for a slide fastener including a pair of left and right stringer tapes with a gap defined therebetween and provided on their respective inner edges with respective longitudinal rows of coupling elements, as defined in the preamble of claim 1.

[0002] A bottom end stop of this kind is disclosed in JP - 49 105307 U. A similar bottom end stop is disclosed in DE 71 37 952 U.

[0003] One object of the present invention is to provide an improved bottom end stop for a slide fastener.

[0004] This and other objects are achieved according to the invention by a bottom end stop of the initially defined kind, having the features defined in claim 1.

[0005] When a bottom end stop according to the present invention is attached to a slide fastener, pressure can be applied evenly to deform the pin or pins of the rivet member and there is no need to bend any portions of the fastening plate members thereof.

[0006] Further features and advantages of the invention will become apparent form the detailed description which follows by way of non-limiting example, with reference to the annexed drawings, wherein:

Figure 1 is a partial perspective view of a slide fastener comprising a bottom end stop according to the present invention.

Figure 2 is a plan view of the portion of a slide fastener shown in Figure 1.

Figure 3 is a partial, cross-sectional view taken along line III-III of Figure 2.

Figure 4 is a side elevational view of the slide fastener as seen in the direction of arrow IV of Figure 2.

Figure 5 is a partial, enlarged cross-section view taken along line V-V of Figure 2.

Figure 6 is a side view as seen in the direction of arrow VI of Figure 2.

Figure 7 is a rear view of the slide fastener portion shown in Figures 1 and 2.

Figure 8 is an exploded perspective view of a bottom end stop according to the present invention.

Figures 9 and 10 are a front view and a rear view, respectively, of an end portion of another slide fastener provided with a bottom end stop according to the present invention. In the drawings, reference numeral 1 indicates a slide fastener including a pair of left and right stringer tapes 2 having their respective opposed inner longitudinal edges. Between the opposed inner edges there is defined a gap 3.

[0007] In the embodiment shown, on and along their respective inner edges the tapes 2 are provided with respective longitudinal reinforcing cords 4.

[0008] The inner edges of the tapes 2 are in a per se known manner provided with respective longitudinal rows of coupling elements 5, such as metal teeth or injection-moulded teeth.

[0009] A bottom end stop according to the present invention, generally indicated 10, is fastened to the stringer tapes 2 of the zipper, adjacent the bottom end of said rows of coupling elements 5.

[0010] The bottom end stop 10 comprises two originally separate and distinct members, i.e. a rivet member 11 and a corresponding backplate 12 (see in particular Figure 8).

[0011] In the embodiment shown in the drawings, the rivet member 11 comprises a plate portion 11a, having a longitudinally elongated, substantially rectangular shape. The plate portion 11a is provided on its inner surface with two integral protruding pins 11b. These pins 11b are arranged at a predetermined interval longitudinally of the plate portion 11a. On the other hand, the back plate 12 has an elongated, substantially rectangular shape, as the plate portion 11a of the rivet member 11. The back plate 12 has two through apertures 12a formed perpendicularly therethrough, and these through apertures 12a are arranged at a predetermined interval longitudinally of the back plate 12. The pins 11b of the rivet member 11 is inserted through the corresponding apertures 12a of the backplate 12 and engaged therewith so that the pins may not be pulled off the backplate 12. (See in particular Figures 3 and 8). Referring to Figure 8, in the embodiment shown the pins 11b have a substantially cylindrical proximal shank, ending with a substantially conical distal tip portion.

[0012] After passing through the through aperture 12a of backplate 12, the parts of the pins 11b of the rivet member 11 projecting beyond the backplate 12 are pressed against the backplate 12 for instance by beating and are thus plastically deformed. As an alternative, the pins 11b might be heat-deformable, so that the pins 11b have been deformed in such a manner that they will not be restored into the original shape permanently. With such deformation, the distal end of each pin 11b is enlarged radially thereof to provide a bulged outline or shape which is greater than the corresponding through aperture 12a, so that pins 11b are prevented from coming off the through apertures 12a.

[0013] Still referring to Figure 8, the plate portion 11a of the rivet member 11 has, in its face intended to be applied to the stringer tapes 2, a pair of longitudinal grooves 11c. The pair of grooves 11c are disposed on the right and left opposed sides of the plate portion 11a with the two pins 11b interposed therebetween in such a way that the grooves 11c extend longitudinally in parallel with the plate portion 11a. The grooves 11c are adapted to receive and firmly grip the reinforcement cords 4 of the stringer tapes.

[0014] Advantageously, the plate portion 1 la of the rivet member 11 is also provided on its four corners with rows of sawteeth 13, which extend along the longitudinal grooves 11c longitudinally of the plate portion 11a. (See Figure 8.) These rows of sawteeth 13 are adapted for gripping the corresponding stringer tapes 2. However, it

is not necessarily needed to provide sawteeth rows.

[0015] Conveniently, the grooves 11c each have a plurality of protruding ridges 11d extending transversely of the plate portion 11 a in such a way to cross the rectangular groove 11c. Said plurality of protruding ridges 11d are provided at predetermined intervals longitudinally of the plate portion 11a. These protruding ridges 11d are adapted to bite the reinforcing cords 4 of the corresponding stringer tapes 2.

[0016] In the embodiment shown in Figures 1 to 7, the rivet member 11 and the backplate 12 of the bottom stop 10 are fastened to stringer tapes 2 in such a way that the pins 11b of the rivet member 11 do not extend through the tapes 2. Instead, said pins extend through the gap 3 defined between the inner edges of the stringer tapes 2. Namely, the pins 11b extend perpendicularly of the stringer tapes 2 and are inserted through the gap 3. The stringer tapes 2, and particularly the reinforcing cords 4 thereof, are firmly clasped between the plate portion 11a of the rivet member 11 and the associated backplate 12. At this instant, since the longitudinal reinforcing cord 4 of each stringer tape 2 is received in the corresponding longitudinal groove 11c provided in the plate portion 11a of the rivet member 11; even if stresses are exerted tending to pull stringer tapes 2 apart from each other, the longitudinal reinforcing cord 4 is firmly retained by the outer side edge of the longitudinal groove 11c, so that the stringer tapes 2 are well prevented from being pulled out from between the plate portion 11a and the backplate 12. Furthermore, since the rows of sawteeth 13 provided on the plate portion 11a firmly grip stringer tapes 2 and the protruding ridges 11d provided on the longitudinal grooves 11c bite the reinforcing cords 4; even if the stringer tapes 2 are subjected to forces tending to pull the stringer tapes 2 longitudinally thereof, the stringer tapes 2 are prevented from being pulled out from between the plate portion 11a and the backplate 12.

[0017] In the embodiment shown in Figures 9 and 10, the stringer tapes 2 at their bottom ends are provided with (at least one) respective through aperture (not visible in said Figures) and the rivet member 11 has its pins 11b engaged through these apertures of the tapes 2, as well as through the corresponding apertures 12a of the backplate 12, in such a way that the bottom stop 10 as a whole transversely crosslinks the tapes.

[0018] The outer surface of the rivet member 11 and/or that of the backplate 12 may be used to apply thereto a trade name or a trade mark or the like. The general shape of the member 11 and/or the backplate 12 may be varied in order to best accommodate a customer's desires for a particular logo.

[0019] Though in the embodiments illustrated in the drawings and described above the rivet member 11 is provided with grooves, sawteeth and protruding ridges at the same time, in general the rivet member might be provided with or without sawteeth. Furthermore, the sawteeth, if at all present, might extend in any direction parallel to the plate portion of the rivet member.

[0020] With the construction as mentioned above, when a bottom end stop according to the present invention is attached to a slide fastener, pressure can be applied evenly to deform the pin or pins of the rivet member, and there is no need to bend any portions of the fastening plate members thereof. Therefore, the bottom end stop is very firm and will never be easily broken.

[0021] Although the description above contains many specificities, there should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention.

[0022] Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.

Claims

1. A bottom end stop (10) for a slide fastener (1) comprising a pair of stringer tapes (2) defining a gap (3) therebetween and provided on their respective inner edges with respective longitudinal rows of coupling elements (5); the bottom end stop (10) comprising first and second fastening plate members (11a, 12) adapted to be fastened to the stringer tapes (2), one on each side of the slide fastener (1), adjacent the bottom end of said rows of coupling elements (5), astride the gap (3) between the tapes (2); said first and second fastening plate members (11a, 12) being connected with each other by at least one transverse connecting member (11b); wherein said first and second fastening plate members (11a, 12) are a plate portion (11a) of a rivet member (11) and a backplate (12), respectively; the backplate (12) being provided with at least one through aperture (12a), the transverse connecting member (11b) being one integral protruding pin (11b) provided on the rivet member (11) and adapted to be engaged through said at least one aperture (12a) of the backplate (12) and to be permanently deformed beyond and against the backplate (12);
   wherein the inner edges of the stringer tapes (2) are provided with respective longitudinal reinforcing cords (4), the plate portion (11a) of the rivet member (11) in its face intended to be applied to the tapes (2) being provided with a pair of parallel grooves (11c) adapted to receive and grip the reinforcing cords (4) of the stringer tapes (2);
   characterized in that said rivet member (11) is provided with a plurality of protruding ridges (11d) adapted to bite the reinforcing cord(s) (4) of the stringer tape(s) (2), said ridges (11d) extending transversely of said plate portion (11a) in such a way to cross the grooves (11c) and being provided at predetermined intervals longitudinally of the plate portion (11a).

2. A bottom end stop according to claim 1, wherein the

rivet member (11) has a plurality of integral protruding pins (11b) and the backplate (12) has a corresponding plurality of through apertures (12a).

3. A bottom end stop according to one of the preceding claims, wherein the plate portion (11a) of the rivet member (11) is provided with rows of sawteeth (13) for gripping the stringer tapes (2).

4. A slide fastener (1) provided with a bottom end stop (10) according to any of the preceding claims.

5. A slide fastener according to claim 4, wherein the backplate (12) and the rivet member (11) are fastened to the stringer tapes (2) in such a way that the pin or pins (11b) of the rivet member (11) extend through the gap (3) between the stringer tapes (2).

6. A slide fastener according to claim 4, wherein the stringer tapes (2) at their bottom ends are provided with at least one respective through aperture, and the rivet member (11) has at least two integral pins (11b) engaged through said apertures of the tapes (2) and the corresponding apertures (12a) of the backplate (12).

Patentansprüche

1. Stopper (10) eines unteren Endes für einen Reißverschluss (1) mit einem Paar Tragbänder (2), die einen Spalt (3) dazwischen definieren und an deren jeweiligen Innenrändern mit jeweiligen Längsreihen von Kupplungsteilen (5) vorgesehen sind; wobei der Stopper (10) eines unteren Endes ein erstes und zweites Befestigungsplattenelement (11a, 12) aufweist, die angepasst sind, um an die Tragbänder (2) befestigt zu werden, eines an jeder Seite des Reißverschlusses (1), nahe dem unteren Ende der Reihen von Kupplungsteilen (5), rittlings des Spalts (3) zwischen den Bändern (2); wobei das erste und zweite Befestigungsplattenelement (11a, 12) mittels mindestens eines Querverbindungselements (11b) miteinander verbunden sind; wobei das erste und zweite Befestigungsplattenelement (11a, 12) jeweils ein Plattenabschnitt (11a) eines Nietelements (11) und eine Rückenplatte (12) sind; wobei die Rückenplatte (12) mit mindestens einer Durchgangsöffnung (12a) vorgesehen ist, wobei das Querverbindungselement (11b) ein einstückig vorstehender Stift (11b) ist, der an dem Nietelement (11) vorgesehen und angepasst ist, über die mindestens eine Öffnung (12a) der Rückenplatte (12) im Eingriff sowie permanent über und gegen die Rückenplatte (12) verformt zu sein;
wobei die Innenränder der Tragbänder (2) mit jeweiligen Längsverstärkungsschnüren (4) vorgesehen sind, wobei der Plattenabschnitt (11a) des Nietelements (11), an dessen Seite, die beabsichtigt ist, an den Bändern (2) aufgebracht zu werden, mit einem Paar paralleler Nuten (11c) vorgesehen ist, die angepasst sind, die Verstärkungsschnüre (4) der Tragbänder (2) zu empfangen und zu greifen;
dadurch gekennzeichnet, dass das Nietelement (11) mit einer Vielzahl von vorstehenden Erhöhungen (11d) vorgesehen ist, die angepasst sind, die Verstärkungsschnur/-schnüre (4) des/der Tragbands/- bänder (2) zu beißen, wobei die Erhöhungen (11d) quer über den Plattenabschnitt (11a) auf eine solche Weise verlaufen, um die Nuten (11c) zu kreuzen, und an vorherbestimmten Intervallen längsseitig des Plattenabschnitts (11a) vorgesehen sind.

2. Stopper (10) eines unteren Endes nach Anspruch 1, wobei das Nietelement (11) eine Vielzahl von einstückigen vorstehenden Stiften (11b) hat und die Rückenplatte (12) eine entsprechende Vielzahl von Durchgangsöffnungen (12a) hat.

3. Stopper (10) eines unteren Endes nach einem der vorhergehenden Ansprüche, wobei der Plattenabschnitt (11a) des Nietelements (11) mit Reihen von Sägezähnen (13) zum Greifen der Tragbänder (2) vorgesehen ist.

4. Reißverschluss (1), der mit einem Stopper (10) eines unteren Endes nach einem der vorhergehenden Ansprüche vorgesehen ist.

5. Reißverschluss nach Anspruch 4, wobei die Rückenplatte (12) und das Nietelement (11) an den Tragbändern (2) auf eine solche Weise befestigt sind, dass sich der Stift oder die Stifte (11b) des Nietelements (11) durch den Spalt (3) zwischen den Tragbändern (2) erstreckt/-en.

6. Reißverschluss nach Anspruch 4, wobei die Tragbänder (2) an deren unteren Enden mit mindestens einer jeweiligen Durchgangsöffnung vorgesehen sind und das Nietelement (11) mindestens zwei einstückige Stifte (11b) hat, die durch die Öffnungen der Bänder (2) und der entsprechenden Öffnungen (12a) der Rückenplatte (12) im Eingriff sind.

Revendications

1. Butée d'extrémité inférieure (10) pour fermeture à glissière (1) comprenant une paire de rubans de fermeture (2) définissant un espace (3) entre eux et pourvus sur leurs bords intérieurs respectifs de rangées longitudinales respectives d'éléments d'accouplement (5) ; la butée d'extrémité inférieure (10) comprenant des premier et deuxième éléments de fermeture plats (11a, 12) adaptés pour être fixés aux rubans de fermeture (2), un de chaque côté de la

fermeture à glissière (1), en position adjacente à l'extrémité inférieure desdites rangées d'éléments d'accouplement (5), à cheval sur l'espace (3) situé entre les rubans (2) ; lesdits premier et deuxième éléments de fermeture plats (11a, 12) étant reliés l'un à l'autre par au moins un élément de connexion transversal (11b) ; dans laquelle lesdits premier et deuxième éléments de fermeture plats (11a, 12) sont respectivement une partie plate (11a) d'un élément formant rivet (11) et une plaque arrière (12) ; la plaque arrière (12) étant pourvue d'au moins une ouverture traversante (12a), l'élément de connexion transversal (11b) étant un axe saillant intégré (11b) prévu sur l'élément formant rivet (11) et adapté pour être engagé dans ladite au moins une ouverture (12a) de la plaque arrière (12) et pour être déformé de façon permanente au-delà de et contre la plaque arrière (12) ;

dans laquelle les bords intérieurs des rubans de fermeture (2) sont pourvus de câbles de renforcement longitudinaux respectifs (4), la partie plate (11a) de l'élément formant rivet (11) dans sa face destinée à être appliquée aux rubans (2) étant pourvue d'une paire de rainures parallèles (11c) adaptées pour recevoir et retenir les câbles de renforcement (4) des rubans de fermeture (2) ;

caractérisée en ce que ledit élément formant rivet (11) est pourvu d'une pluralité d'arêtes saillantes (11d) adaptées pour mordre le(s) câble(s) de renforcement (4) du ou des ruban(s) de fermeture (2), lesdites arêtes (11d) s'étendant en travers de ladite partie plate (11a) de manière à croiser les rainures (11c) et étant placées à intervalles prédéterminés dans le sens longitudinal de la partie plate (11a).

2. Butée d'extrémité inférieure selon la revendication 1, dans laquelle l'élément formant rivet (11) comporte une pluralité d'axes saillants intégrés (11b) et la plaque arrière (12) comporte une pluralité d'ouvertures traversantes correspondantes (12a).

3. Butée d'extrémité inférieure selon l'une des revendications précédentes, dans laquelle la partie plate (11a) de l'élément formant rivet (11) est pourvue de rangées de dents de scie (13) pour saisir les rubans de fermeture (2).

4. Fermeture à glissière (1) munie d'une butée d'extrémité inférieure (10) selon l'une quelconque des revendications précédentes.

5. Fermeture à glissière selon la revendication 4, dans laquelle la plaque arrière (12) et l'élément formant rivet (11) sont fixés aux rubans de fermeture (2) de telle manière que le ou les axes (11b) de l'élément formant rivet (11) s'étendent à travers l'espace (3) situé entre les rubans de fermeture (2).

6. Fermeture à glissière selon la revendication 4, dans laquelle les rubans de fermeture (2) sont pourvus en leurs extrémités inférieures d'au moins une ouverture traversante respective, et l'élément formant rivet (11) a au moins deux axes intégrés (11b) engagés dans lesdites ouvertures des rubans (2) et les ouvertures correspondantes (12a) de la plaque arrière (12).

FIG.1

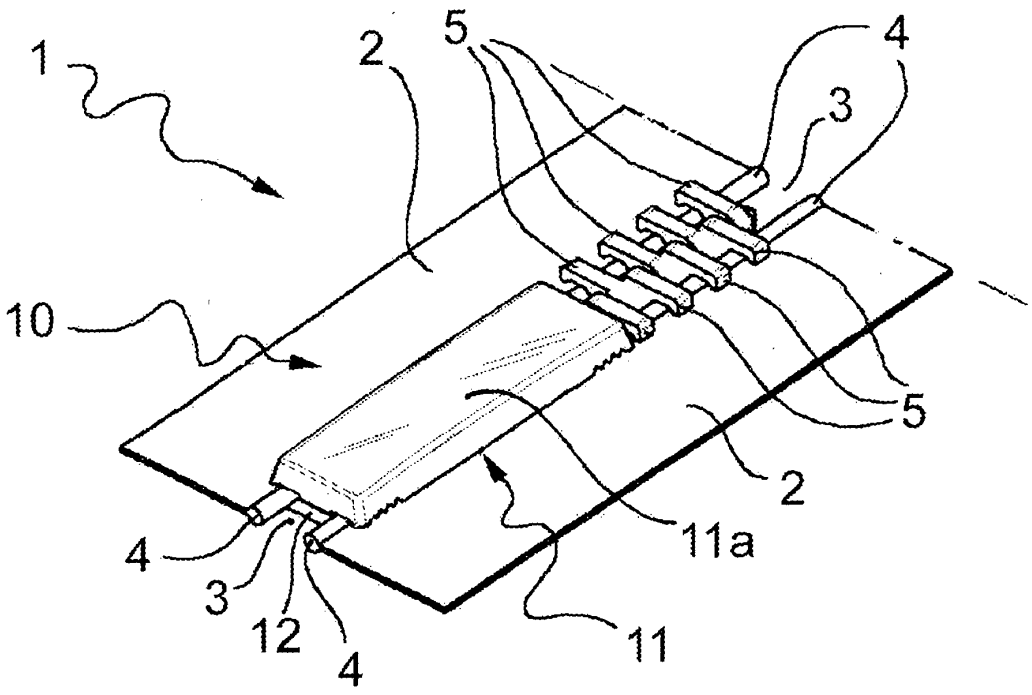


FIG.2

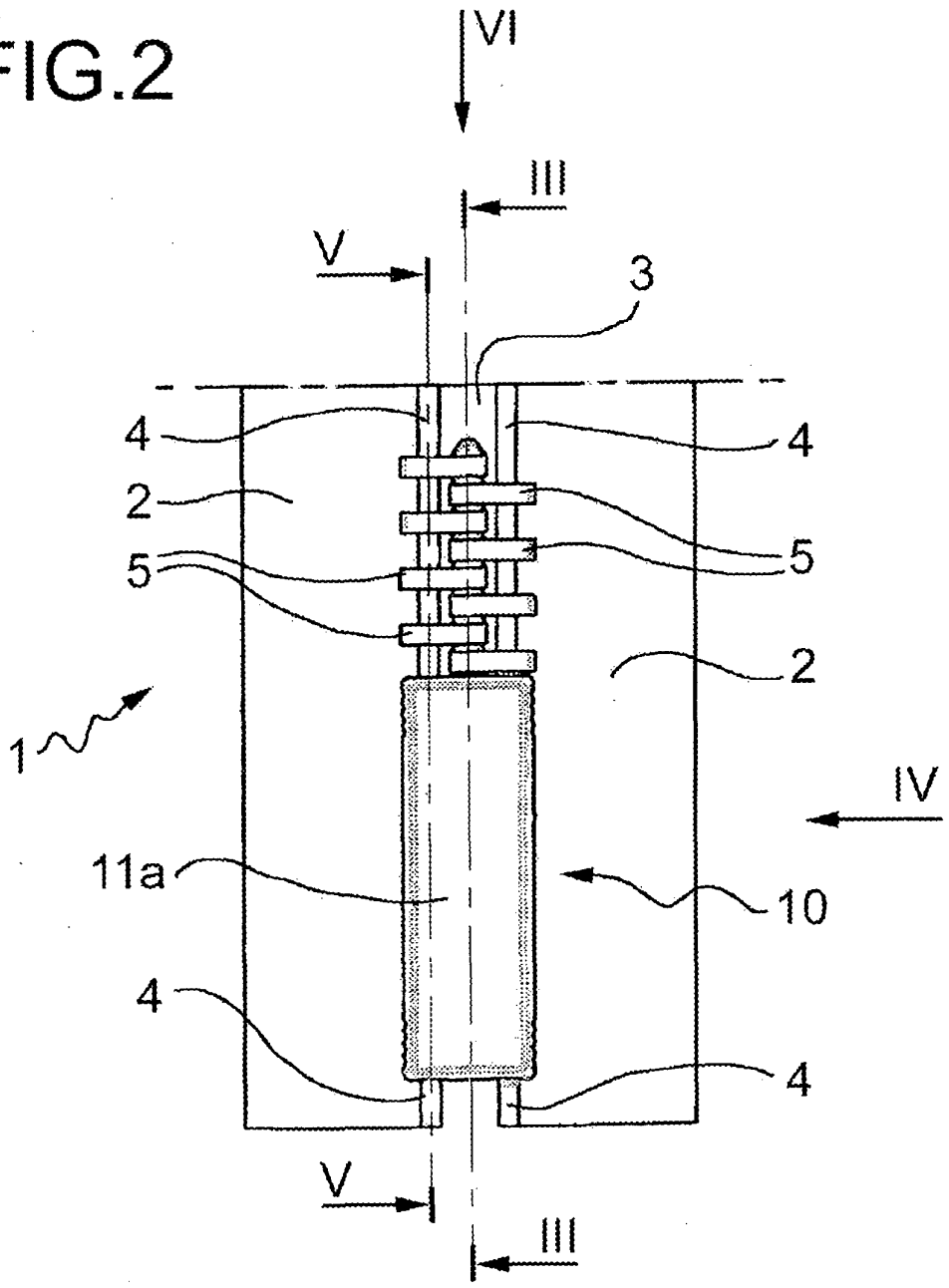


FIG.3

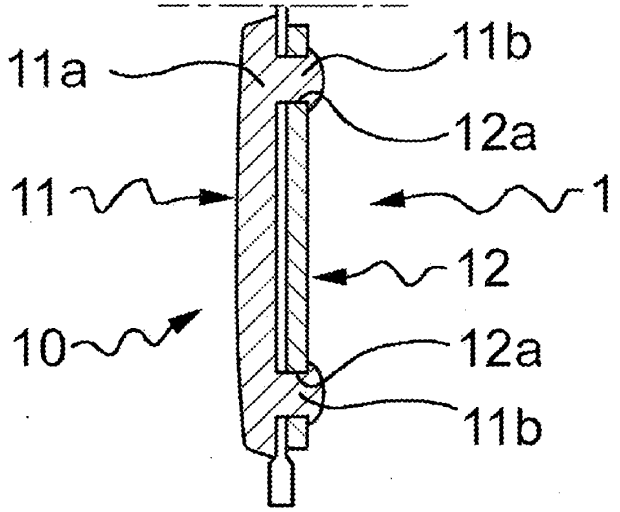


FIG.4

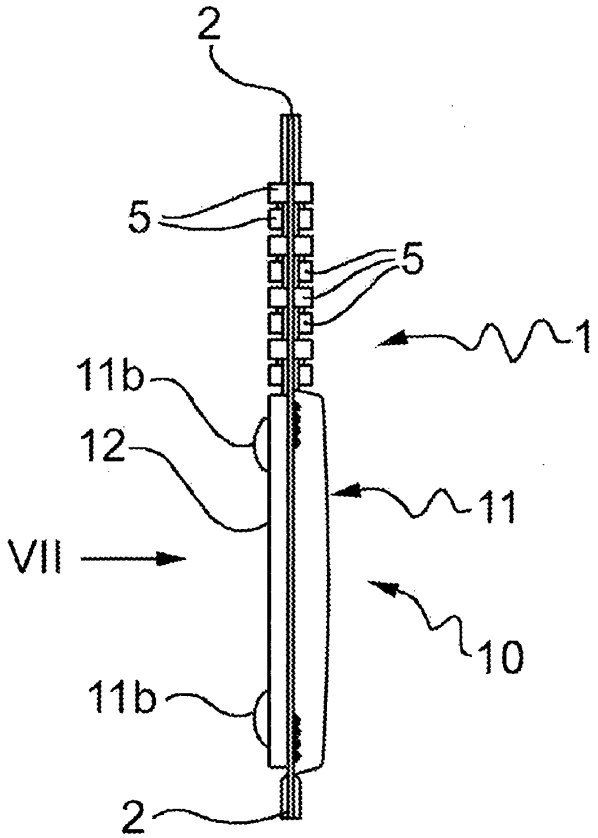


FIG.5

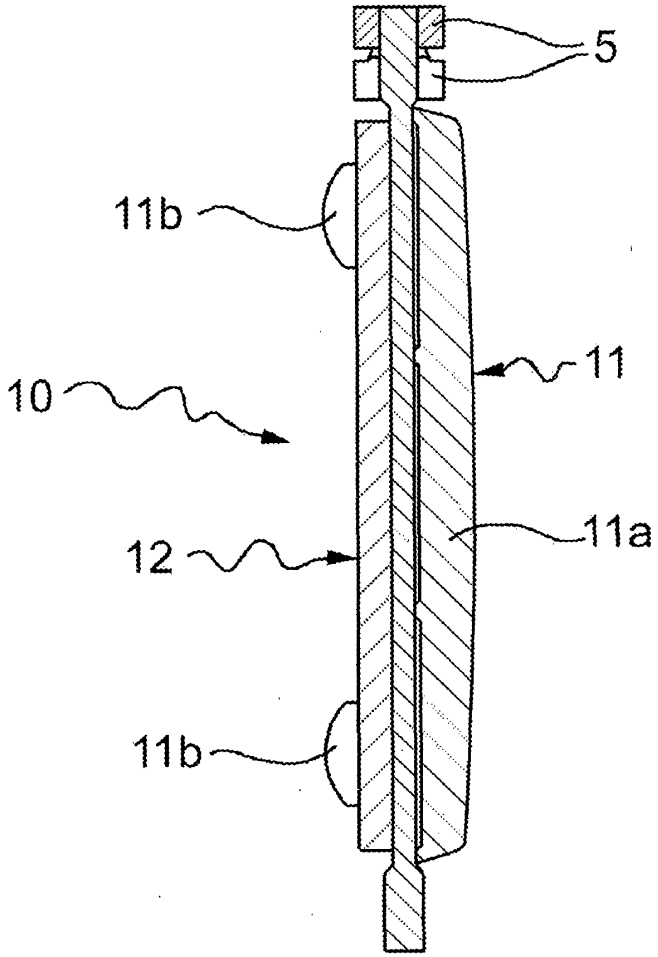


FIG.6

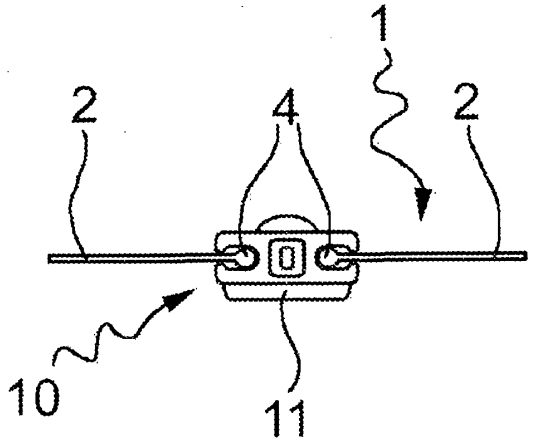


FIG.7

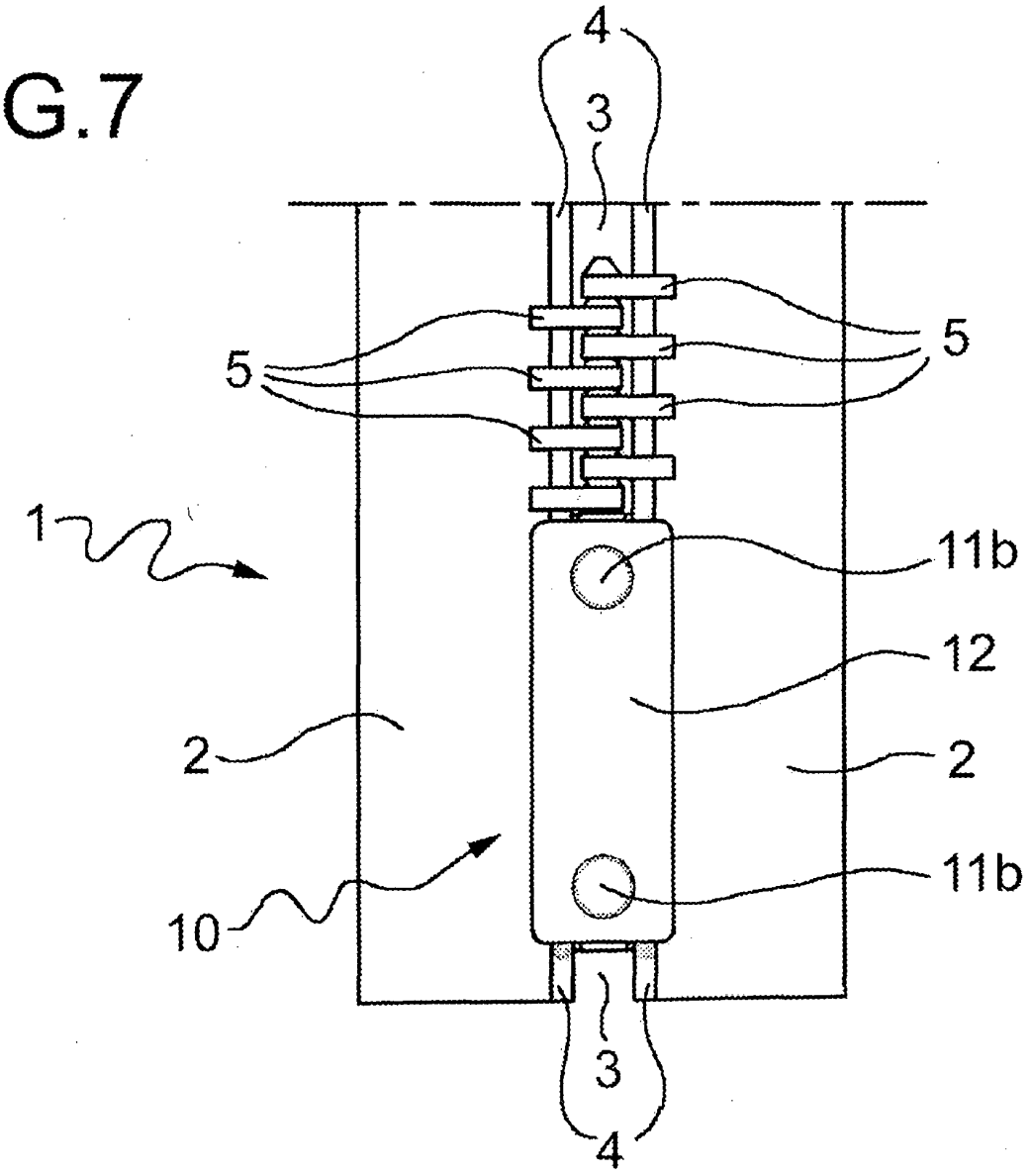


FIG.8

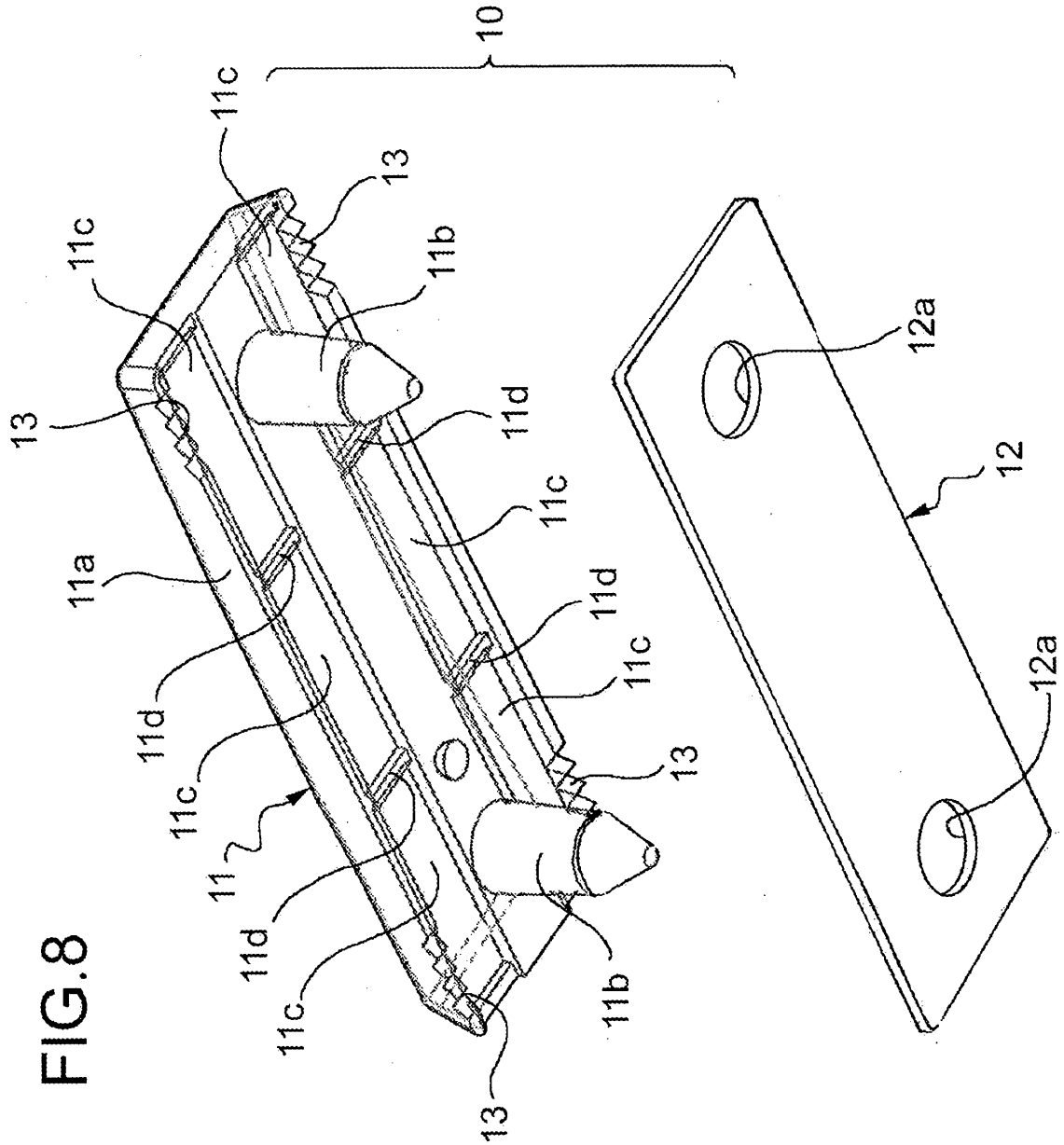

10
11c
13
11c
11b
13
11d
11c
11a
11d
11d
11c
11c
11
13
11d
11c
11b
13
12a
12
12a

FIG.9

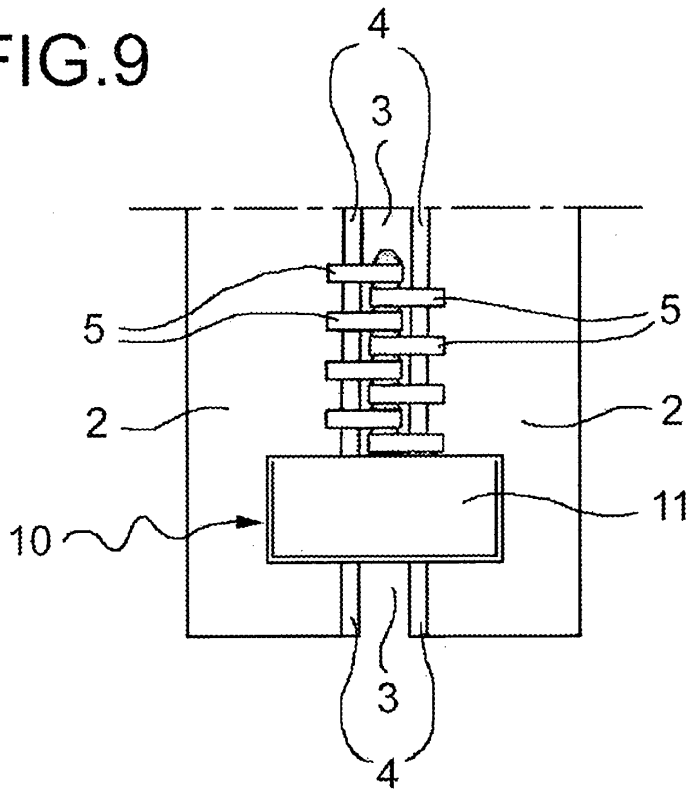
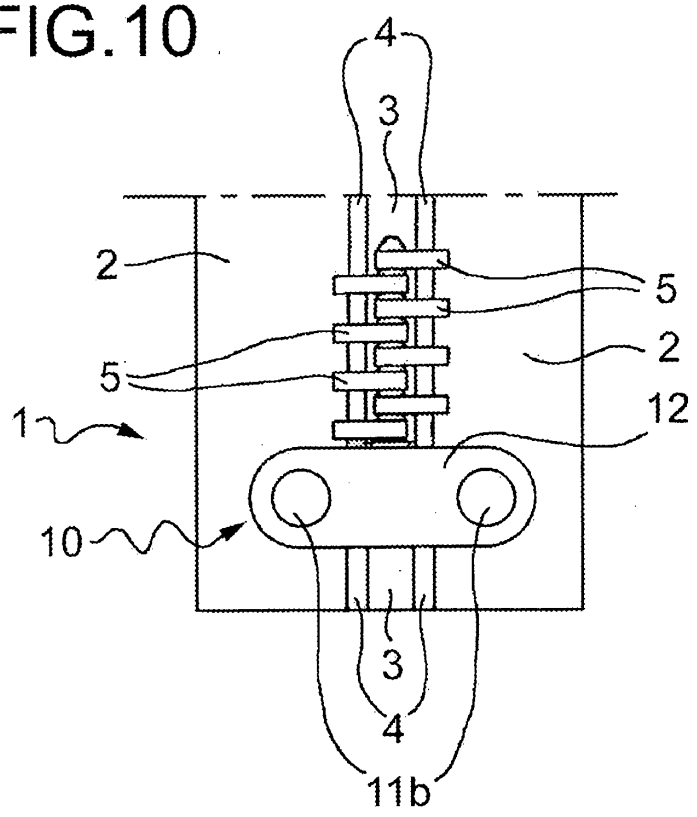


FIG.10



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- DE 7137952 U **[0002]**