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(54) **CLASP**

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(73) Proprietor: **Lundh, Jöran**

Kowloon

Hong Kong SAR (CN)

(72) Inventor: **Lundh, Jöran**

Kowloon

Hong Kong SAR (CN)

(74) Representative: **Jörgensson, Leif Sixten**

Ström & Gulliksson AB

P.O. Box 4188

203 13 Malmö (SE)

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Description

[0001] The present invention relates to a clasp for connecting together of at least two parts, for example the shackle of a harness with a front piece; background art being reflected by US-A-6,000,109 which discloses a known clasp or buckle assembly.

[0002] The clasp is of the type that the invention intends to be used for releasable connection of belts, straps and other parts in many different contexts. In the first instance the clasp is intended for straps, belts or their equivalent, that have extension at different levels such as harnesses for infants and backpacks of various kinds.

[0003] The purpose of the present invention is to demonstrate an improved clasp that can be secured and loosened with one hand. It is a further purpose of the invention to demonstrate a clasp in respect of which the locking mechanism is not at all, or only marginally, affected by forces from the secured belts or their equivalent. The purposes are achieved by a clasp assembly having the features as defined in appended claim 1.

[0004] A further advantage of a clasp in accordance with the invention is that its parts upon being secured display self-centring properties and show it to be clearly locked. The locking is also secure so that the clasp cannot be opened other than through intentional intervention, when the forces that affect the clasping of the secured arrangement operate in the locking direction, the securing is arranged so that the force that is exercised upon the clasp via the fastening, has a component whereby it has a unifying effect upon the clasp.

[0005] The advantageous properties of the clasp assembly according to the invention are also achieved through the control of the parts, upon the bringing together of these to a locked position, being separate from the locking function of two separate but fixed conjoining parts. Furthermore the locking function is placed in the parts that form a sleeve.

[0006] The clasp assembly according to the invention may be employed for many different purposes, for example with belts in harnesses, rucksacks and the like, for securing of belts and straps.

[0007] Either one or both parts of the clasp assembly can thereupon constitute integrated parts of the components together with which they are employed.

[0008] An arrangement in accordance with the invention and the forms of execution of this possess the characteristic properties that are shown in the patent application.

[0009] In the following the invention shall be described in greater detail in connection with the example of a preferred form of execution as shown in the attached drawings whereby the stated directions relate to components as they are depicted in the figures.

Figure 1 shows a clasp in accordance with an embodiment of the invention, in perspective.

Figure 2 shows another view of a clasp of Fig.1 in perspective.

Figure 3 shows the clasp seen from the side.

Figure 4 shows the clasp's other part in perspective.

Figure 5 shows the clasp's first part in perspective.

Figure 6 shows another view of the clasp's first part in perspective.

Figures 7 A and B show an alternative form of execution of the clasp.

Figure 8 shows another form of execution of the clasp.

Figures 9 and 10 show the parts of the clasp according to figure 8.

[0010] The clasp comprises two main parts, a first or lower part 1 that is subsequently referred to as the anchor 1, as well as a second upper part 2 that is subsequently referred to as the side clasp. The anchor 1 comprises, in turn, a bottom plate 23 and a fixing plate 21. The two plates 21, 23 are parallel or nearly parallel to each other and are united by a low connection wall 22. On the fixing plates 21 upper side there are two slide rails figures 19, 20. The bottom plate 23 also has two tooth-like hooks 7, 8 with connecting outlets 26, 27. The anchor's bottom plate 23 also has means for fixing the anchor 1 to a belt or equivalent, in the execution example shown in the figures this means is comprised of two fixing holes figures 3, 4 In the forms of execution that are shown in the figures the bottom plate 23 comprises a whole, unbroken disk but it may, in other execution forms, be comprised of grille-like parts with a corresponding function, for example.

[0011] The side clasp 2 has a cover plate 24 with a partial surrounding downward directed border with sides 17, 18 and leading edge 25, the connection between the border's sides and the leading edge 25 is not straight but softly rounded. At the rear end of the upper side there is an obliquely upward directed fastening 5 in the form of a grille in order to enable a connecting belt, strap or similar to be sewn fast to the side clasp. The fitting is directed so that the force that is placed on the clasp via the fixture 5 has a component at the cover plate's 24 plane that is directed so that the force has a connecting effect on the clasp. Also by the fixture 5 there is a support edge 6 for the element that is fastened onto the fixture 5, and the fixture 5 is arranged so that the force that is exerted upon the clasp via the fixture 5 has a component whereby it has a connecting effect on the clasp.

[0012] A cushioning plate 11 is fitted by the border's leading edge 25. The cushioning plate 11 has a limited pressure area 12 to facilitate the use of the clasp. On the

plate's sides there are outlets 15, 16 that are limited by pins 9, 10 which are intended to work together with the anchor's hooks 7, 8 and outlets 26, 27 for the fixing of the side clasp in the clasp's locked position. The side clasp 2 also has on the underside, in connection with the cushioning plate 11, two tilted edges that are intended to facilitate the bringing together of the anchor 1 and the side clasp 2 to the clasp's locked position.

[0013] When the clasp is to be locked and its parts in the initial position are fully separated from each other, the side clasp 2 is led over the anchor 1 so that the anchor's fixing plate 21 is led in between the border's side edges 17, 18 directed towards the border's leading edge 25 and between the side clasp's cover plate 24 and the cushioning plate 11. The hooks 7, 8 will thereupon affect the pins 9, 10 in the cushioning plate 11 so that this is pushed upwards towards the side clasp's cover plate 24 until the hooks 7, 8 have come to a position where they engage with the outlets 15, 16 and lock the clasp.

[0014] An alternative execution form of the clasp is shown in the figures 7A and 7B that show the clasp's upper part and under part respectively in accordance with the preceding description. When the clasp is in its connected position the hooks 28, 29 are engaged with lip 30 that is fitted to a downwards directed arm from a pressure plate 31 that is arranged on the clasp part's opposite side.

[0015] A preferred alternative execution form is shown in the figures, 8, 9, 10. Hereupon the locking takes place between the parts with a rib 32 in the clasp part 2 and the hooks 33A and 33B that work together with the rib 32 and that are fixed to the cushioning plate 11 as is seen from the figures. The outer hook 33A has, in the first instance, a function as a safety catch if the inner hook 33B is unintentionally released from its engagement with the rib for any reason. In further alternative execution forms the rib can be extended to a plate with one or more holes for the hooks 33A and 33B.

[0016] Over and above what is described above there are different execution forms possible within the framework of the invention concept. One such execution form can be that the border's sides and leading edge or their equivalents do not extend at a right angle towards each other but that the two parallel sides form an angle with the leading edge that departs from 90 degrees. Other parts of the clasp are adjusted to this whereby upon locking of the clasp the side clasp is led onto the anchor in a direction that is not at right angles to the anchor's bottom plate 23. Upon certain applications this execution can significantly facilitate the employment of the clasp. In this case also the previously described force component has a connecting effect on the clasp and in a direction that primarily coincides with the two clasp parts' direction of movement in relation to each other when the clasp is locked. Other variations in the forming of the various components in the clasp's mechanism are naturally possible for adjustment to different uses and materials.

Claims

1. A clasp assembly for releasable interconnection of two components of a harness or rucksack, said assembly comprising an anchor clasp part (1) fastened to one of said components, and a side clasp part (2) fastened to the other of said two components, said anchor clasp part (1) comprising a bottom plate (23) with means (3, 4) for fixing the anchor clasp part (1) to its associated harness/rucksack component, and a fixing plate (21) for connection to the side clasp part (2); said side clasp part (2) comprising a cover plate (24) and a cushioning plate (11) as well as means (5) for fixing the side clasp part (2) to its associated harness/rucksack component; wherein first locking means (7-8, 26-27; 28-29; 32) are arranged on the fixing plate (21) or the bottom plate (23) and second locking means (9, 10, 15-16; 30; 33A, 33B) are arranged on the cushioning plate (11) and wherein said first and second locking means are configured to engage each other to removably secure the clasp parts (1, 2) together in a locked position of the clasp assembly; **characterized in that** the cover plate (24) and the cushioning plate (11) of the side clasp part (2) define a space for receiving the fixing plate (21) of the anchor clasp part (1); wherein the bottom plate (23) and the fixing plate (21) of the anchor clasp part (1) are spaced and parallel or nearly parallel to each other and joined by a connection wall (22); and wherein the side clasp part (2) is arranged to - in said locked position - partly surround the fixing plate (21) of the anchor clasp part (1) by means of the cover plate (24) and the cushioning plate (11) of the side clasp part (2).
2. A clasp assembly as claimed in claim 1, wherein the side clasp part (2) comprises two side edge portions (17, 18) and a leading edge portion (25), said edge portions (17, 18, 25) surrounding the fixing plate (21) of the anchor clasp part (1) in said locked position in which the fixing plate (21) is positioned between the cover plate (24) and the cushioning plate (11).
3. A clasp assembly as claimed in claim 1 or 2, wherein the side clasp part (2) comprises - on its lower side in connection with the cushioning plate (11) - two tilted edges which are intended to facilitate the bringing together of the anchor clasp part (1) and the side clasp part (2) to said locked position of the clasp assembly.
4. A clasp assembly as claimed in any one of the preceding claims, wherein said first locking means comprise a rib (32) on the anchor clasp part (1) configured to engage with hooks (33A, 33B) provided on the cushioning plate (11) of the side clasp part (2).
5. A harness/rucksack, **characterized in that** it com-

prises a clasp assembly as claimed in any one of the preceding claims.

Patentansprüche

1. Schließenbaugruppe zur lösbaren Verbindung von zwei Komponenten eines Gurts oder eines Rucksacks, wobei die Baugruppe umfasst ein Ankerschließenteil (1), das an der einen der Komponenten befestigt ist, und ein seitliches Schließenteil (2), das an der zweiten der beiden Komponenten befestigt ist, wobei das Ankerschließenteil (1) eine Bodenplatte (23) mit Mittel (3, 4) zum Befestigen des Ankerschließenteils (1) an der zugehörigen Gurt/Rucksackkomponente umfasst, und eine Fixierplatte (21) zum Verbinden mit dem seitlichen Schließenteils (2); wobei das seitliche Schließenteil (2) eine Abdeckplatte (24) und eine Ziehkissenplatte (11) wie auch Mittel (5) zum Befestigen des seitlichen Schließenteils (2) an der zugehörigen Gurt/Rucksackkomponente umfasst; wobei erste Sperrmittel (7-8, 26-27; 28-29; 32) auf der Fixierplatte (21) oder der Bodenplatte (23) angeordnet sind und zweite Sperrmittel (9, 10, 15-16; 30; 33A, 33B) auf der Ziehkissenplatte (11) angeordnet sind, und wobei die ersten und zweiten Sperrmittel gestaltet sind, um ineinander einzugreifen, um die Schließenteile (1, 2) lösbar miteinander in einer verschlossenen Position der Schließenbaugruppe fest zu verbinden; **dadurch gekennzeichnet, dass** die Abdeckplatte (24) und die Ziehkissenplatte (11) des seitlichen Schließenteils (2) einen Raum zur Aufnahme der Fixierplatte (21) des Ankerschließenteils (1) definieren; wobei die Bodenplatte (23) und die Fixierplatte (21) des Ankerschließenteils (1) beabstandet und parallel oder nahezu parallel zueinander sind und durch eine Verbindungswand (22) verbunden sind; und wobei das seitliche Schließenteil (2) angeordnet ist, um in der Verriegelungsposition die Fixierplatte (21) des Ankerschließenteils (1) mittels der Abdeckplatte (24) und der Ziehkissenplatte (11) des seitlichen Schließenteils (2) teilweise zu umgeben.
2. Schließenbaugruppe gemäß Anspruch 1, wobei das seitliche Schließenteil (2) zwei Seitenkantenabschnitte (17, 18) und einen Führungskantenabschnitt (25) aufweist, wobei die Kantenabschnitte (17, 18, 25) die Fixierplatte (21) des Ankerschließenteils (1) in der Verriegelungsposition umgeben, in der die Fixierplatte (21) zwischen der Abdeckplatte (24) und der Ziehkissenplatte (11) angeordnet ist.
3. Schließenbaugruppe gemäß Anspruch 1 oder 2, wobei das seitliche Schließenteil (2) auf der unteren Seite in Verbindung mit der Ziehkissenplatte (11) zwei geneigte Kanten aufweist, die dazu dienen sol-

len, das Zusammenfügen von Ankerschließenteil (1) und seitlichem Schließenteil (2) in der Verriegelungsposition der Schließenbaugruppe zu vereinfachen.

4. Schließenbaugruppe gemäß einem der vorhergehenden Ansprüche, wobei das erste Sperrmittel eine Rippe (32) auf dem Ankerschließenteil (1) aufweist, die gestaltet ist, um mit Haken (33A, 33B) einzugreifen, die auf der Ziehkissenplatte (11) des seitlichen Schließenteils (2) vorgesehen sind.
5. Gurt/Rucksack, **dadurch gekennzeichnet, dass** er eine Schließenbaugruppe gemäß einem der vorhergehenden Ansprüche aufweist.

Revendications

1. Ensemble de fermoir pour l'interconnexion amovible de deux composants d'un harnais ou sac à dos, ledit ensemble comprenant une partie de fermoir d'ancrage (1) fixée sur l'un desdits composants, et une partie de fermoir latérale (2) fixée sur l'autre desdits deux composants, ladite partie de fermoir d'ancrage (1) comprenant une plaque inférieure (23) avec des moyens (3, 4) pour fixer la partie de fermoir d'ancrage (1) sur son composant de harnais/sac à dos associé, et une plaque de fixation (21) pour le raccordement à la partie de fermoir latérale (2) ; ladite partie de fermoir latérale (2) comprenant une plaque de couvercle (24) et une plaque d'amortissement (11) ainsi que des moyens (5) pour fixer la partie de fermoir latérale (2) à son composant de harnais/sac à dos associé ; dans lequel des premiers moyens de blocage (7-8, 26-27 ; 28-29 ; 32) sont agencés sur la plaque de fixation (21) ou la plaque inférieure (23) et des seconds moyens de blocage (9, 10, 15-16 ; 30 ; 33A, 33B) sont agencés sur la plaque d'amortissement (11) et dans lequel lesdits premier et second moyens de blocage sont configurés pour se mettre en prise entre eux afin de fixer de manière amovible les parties de fermoir (1, 2) ensemble dans une position bloquée dans l'ensemble de fermoir ; **caractérisé en ce que** la plaque de couvercle (24) et la plaque d'amortissement (11) de la partie de fermoir latérale (2) définissent un espace pour recevoir la plaque de fixation (21) de la partie de fermoir d'ancrage (1) ; dans lequel la plaque inférieure (23) et la plaque de fixation (21) de la partie de fermoir d'ancrage (1) sont espacées et parallèles ou presque parallèles entre elles et assemblées par une paroi de raccordement (22) ; et dans lequel la partie de fermoir latérale (2) est agencée - dans ladite position bloquée - pour entourer partiellement la plaque de fixation (21) de la partie de fermoir d'ancrage (1) au moyen de la plaque de couvercle (24) et la plaque

d'amortissement (11) de la partie de fermoir latérale (2).

2. Ensemble de fermoir selon la revendication 1, dans lequel la partie de fermoir latérale (2) comprend deux parties de bord latéral (17, 18) et une partie de bord d'attaque (25), lesdites parties de bord (17, 18, 25) entourant la plaque de fixation (21) de la partie de fermoir d'ancrage (1) dans ladite position bloquée dans laquelle la plaque de fixation (21) est positionnée entre la plaque de couvercle (24) et la plaque d'amortissement (11). 5 10
3. Ensemble de fermoir selon la revendication 1 ou 2, dans lequel la partie de fermoir latérale (2) comprend - sur son côté inférieur en connexion avec la plaque d'amortissement (11) - deux bords inclinés qui sont prévus pour faciliter la réunion de la partie de fermoir d'ancrage (1) et de la partie de fermoir latérale (2) dans ladite position bloquée de l'ensemble de fermoir. 15 20
4. Ensemble de fermoir selon l'une quelconque des revendications précédentes, dans lequel lesdits premiers moyens de blocage comprennent une nervure (32) sur la partie de fermoir d'ancrage (1) configurée pour se mettre en prise avec des crochets (33A, 33B) prévus sur la plaque d'amortissement (11) de la partie de fermoir latérale (2). 25 30
5. Harnais/sac à dos, **caractérisé en ce qu'il** comprend un ensemble de fermoir selon l'une quelconque des revendications précédentes. 35

35

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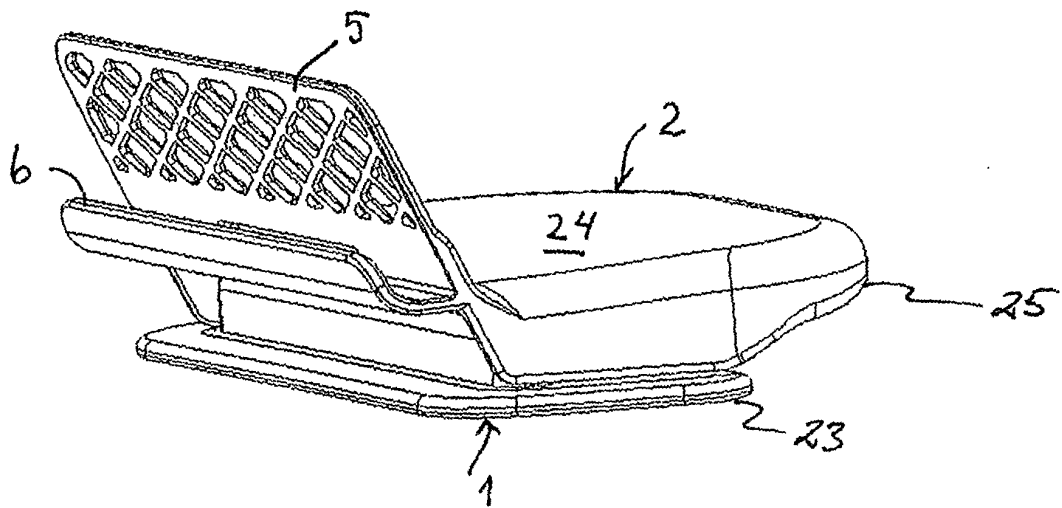


FIG 1

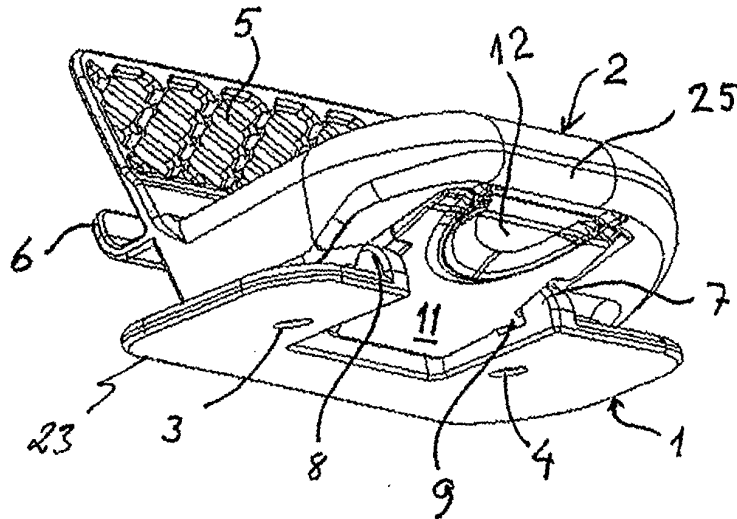


FIG 2

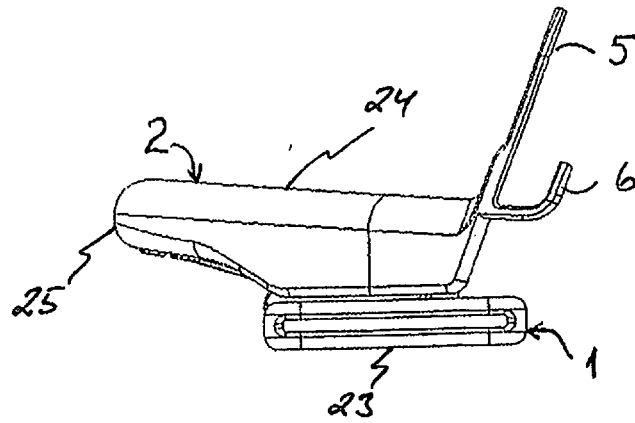


FIG 3

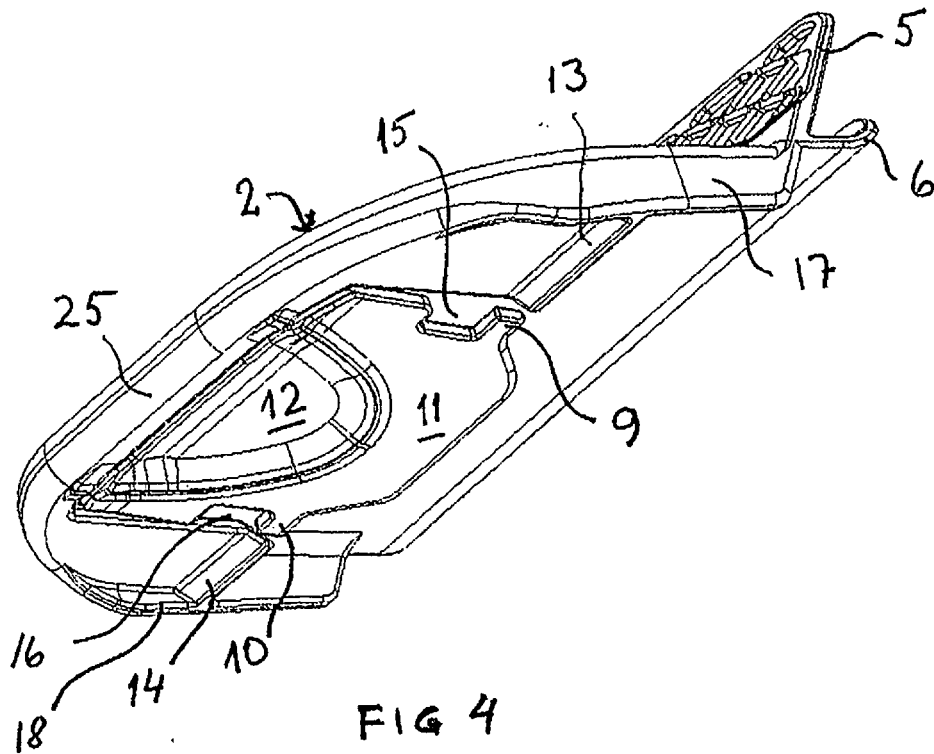


FIG 4

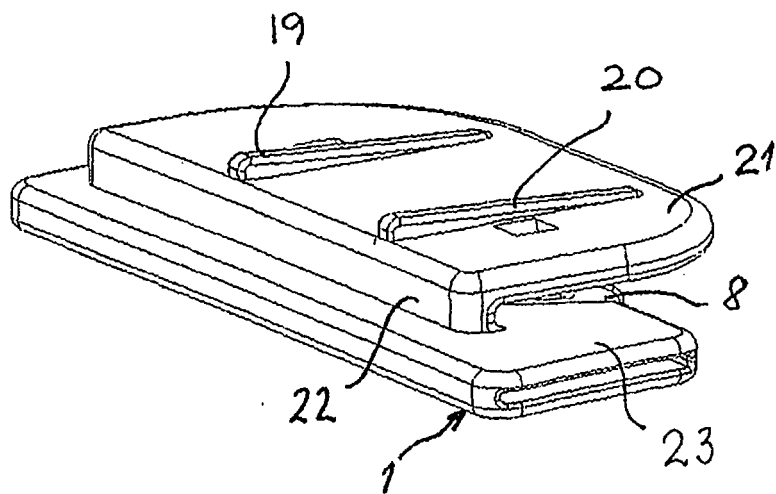


FIG 5

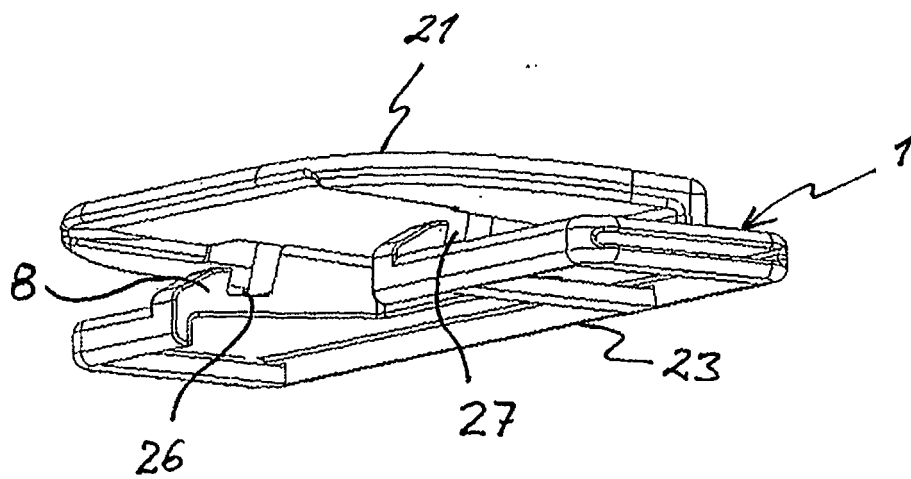


FIG 6

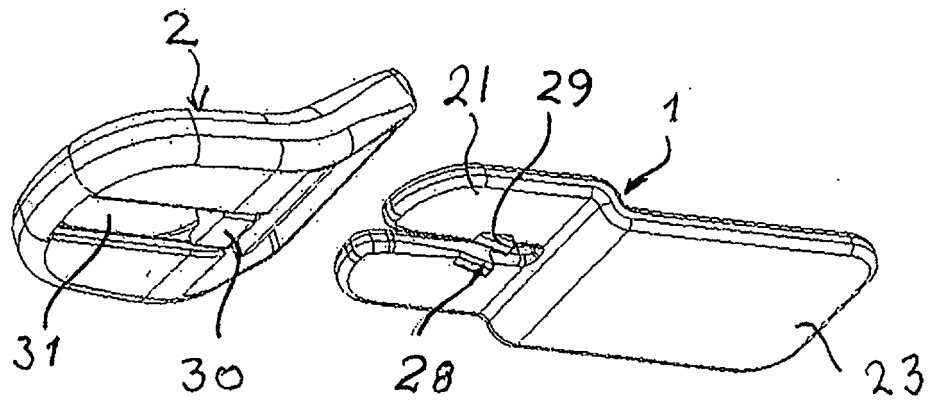


Fig 7A

Fig 7B

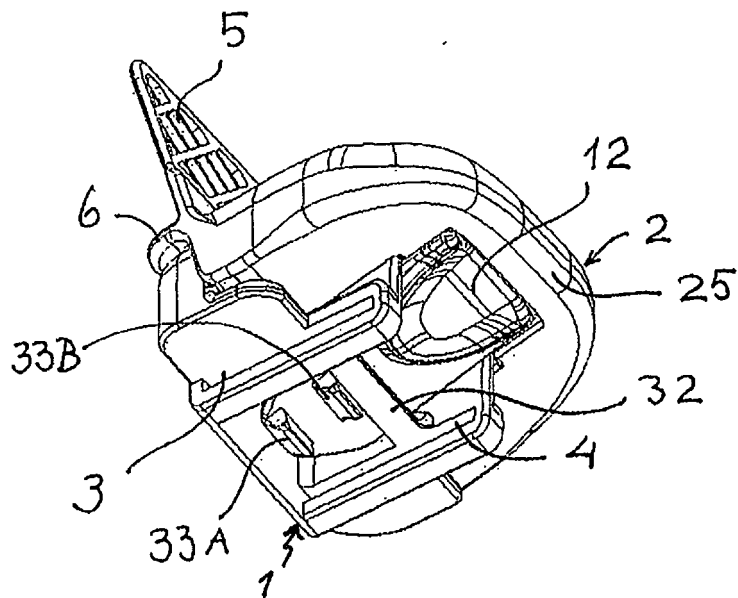
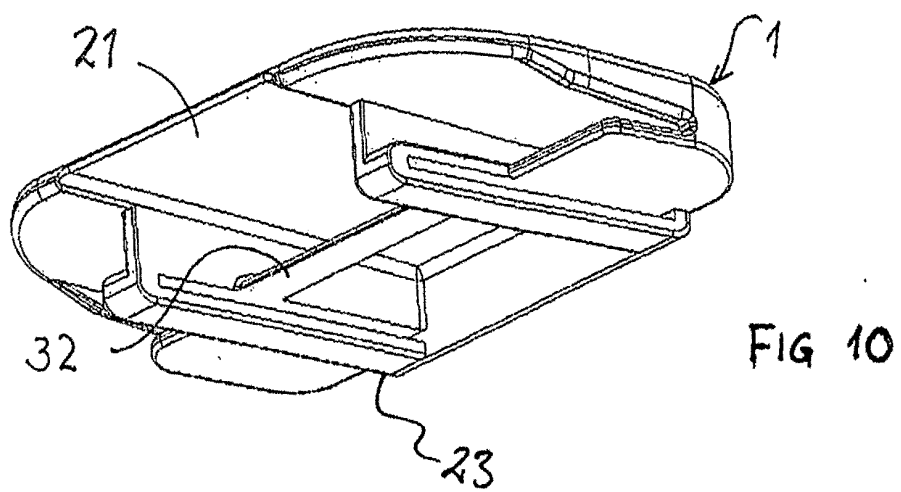
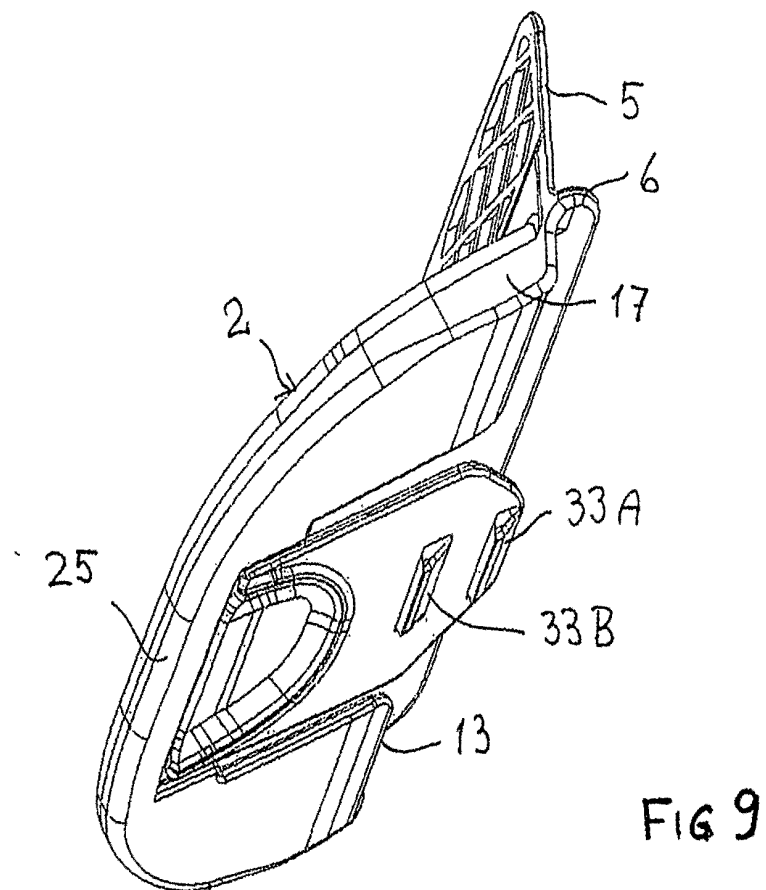


FIG 8



REFERENCES CITED IN THE DESCRIPTION

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