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(54) Joining element

(57) Joining element (10) to be fixed preferably on garments and/or shoes and comprising a buckle (12) and a hook (14) to block in a wished position a strap through which the hook (14) passes. The hook (14) comprises a tip (44, 46) from which a first arm (40) and a second arm

(42) extend and open wide. Each arm is provided with grasping means (48) which embrace the ends of a portion of the buckle so as to constrain the hook to the buckle with the possibility for the hook to rotate and to have the hook tip beat on a portion of the buckle itself.

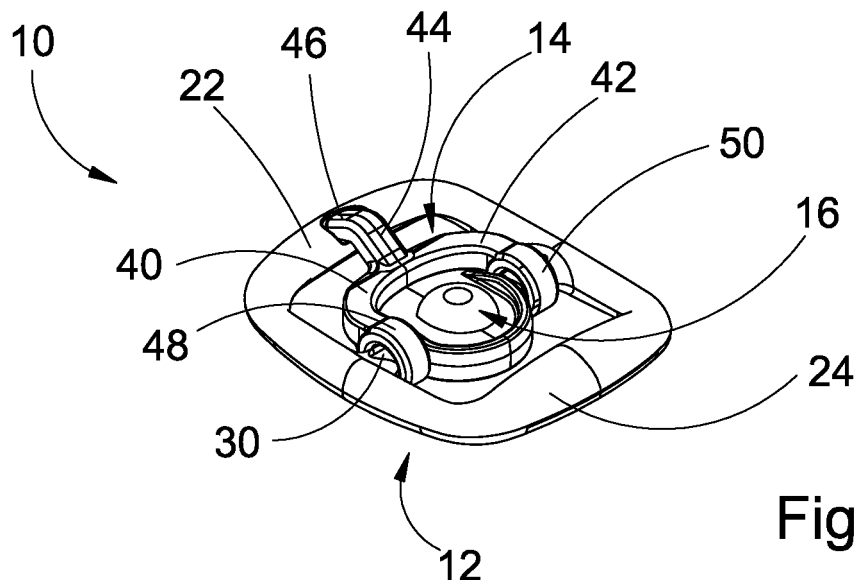


Fig. 7

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Description

[0001] The present invention refers, in general, to a joining element to join portions of an article of clothing. More particularly, it is a joining element for garments and comprises a buckle and its hook, both being fixed on portions of fabric or leather of an article of clothing such as a scarf or a garment.

[0002] As is known, there are buckles to which one or more hooks are constrained to fix in position a belt or a strap provided with holes and passing through the buckle.

[0003] Said buckles usually are fixed on an article of clothing through a further element coupled with the buckle and fixed on the same article of clothing by means of a rivet. Alternatively, the buckles are connected with the article of clothing by means of a second strap fixed on the same article and connected with the middle body of the buckle.

[0004] Usually, the buckles of the known art, regardless of the type of fixing on the garment, are made of metal or metal alloys, for instance Zn+Al+Mg alloy, brass or other alloys in order to guarantee stoutness and solidity in the coupling with the garment on which the buckles are fixed and with the strap crossed by the hook.

[0005] However, although said buckles are rather strong, problems are caused by the material utilized for their production. Said buckles are made of a metal or a metal alloy and these materials are subject to corrosion and rust even if they are subjected to suitable anticorrosive treatments.

[0006] In case buckles are made of corrosion proofing metals such as stainless steel, titanium or noble metals, the costs of the buckles become high. Besides, in case of buckles for accident prevention shoes or safety shoes, the presence of metal elements is not advisable owing to the conductive properties of the metals.

[0007] In order to solve the aforesaid problems, plastic buckles have been introduced on the market. The plastic buckles have no conductive property and therefore, these buckles are not subject to corrosions or alterations. However, plastic buckles of the same dimensions as the metal buckles do not have the same properties of strength and resistance to wear and tear as the metal buckles and therefore, the plastic buckles must be dimensioned in a suitable way. Consequently, the dimensions of the buckles of a plastic material are rather big and are not suited to those cases in which a small buckle is needed. Besides, in case of a small plastic buckle, the hook must guarantee a certain resistance and therefore, the hook must be produced in a metal or a metal alloy.

[0008] Likewise, in order to guarantee a good fixing of the buckle on the garment, the buckle is fixed by means of rivets of metal or metal alloy on the garment, which causes the aforesaid problems.

[0009] The aim of the present invention is to carry out a joining element for garments or shoes, which overcomes the disadvantages of the prior art and is strong and resistant to wear and tear notwithstanding the small

dimensions.

[0010] Said aim is achieved through a joining element to be fixed preferably on garments and/or shoes and comprising a buckle and a hook to block in a wished position a strap through which the hook passes. The joining element is **characterized in that** the buckle comprises a body showing a rectilinear portion and a lying portion which is essentially parallel to the rectilinear position, and that the hook comprises a tip from which a first arm and a second arm open wide, the first arm being provided with first grasping means and the second arm being provided with second grasping means. In addition, the joining element is **characterized in that** said first grasping means and said second grasping means embrace the opposite ends of the rectilinear portion of the buckle so as to constrain the hook to the buckle and to have the hook tip beat on the lying portion.

[0011] Since the hook is fixed on the buckle by means of two arms that open wide, the thickness of the arms may be reduced. In addition, the connection of the hook with two different points of the buckle allows a stabler rotation of the hook. In this way, the insertion of the hook tip in the wished pole of the strap to be coupled with the buckle becomes simpler.

[0012] Advantageously, the rectilinear portion with which the hook is connected comprises a first cylindrical body, a planar body to an edge of which an end of the first cylindrical body is fixed and in which a through-hole is obtained, and a second cylindrical body an end of which is fixed to the planar body on an edge opposed to that of the first cylindrical body; the ends of the first cylindrical body and second cylindrical body, opposed to those of union with the planar body, being fixed on the body of the buckle. In addition, the first grasping means embrace the first cylindrical body and second grasping means embrace the second cylindrical body. In this way, a buckle portion corresponding to the planar body is obtained. In said portion of the buckle, a hole is obtained to receive fixing means such as rivets or the like, to couple the buckle and its hook with a garment or a shoe.

[0013] Advantageously, the buckle body may comprise a first profile, a second profile and a third profile so that said first profile, said second profile and said third profile form a closed profile including the rectilinear portion and the third profile comprises the lying portion and the first cylindrical body is fixed on said first profile and the second cylindrical body is fixed on said second profile. Thus, it is possible to obtain an essentially rectangular buckle on a portion of which the hook with its two arms is constrained so as to rotate. Advantageously, the buckle body may comprise a fourth profile which is connected with the ends of two profiles so that the four profiles form an only closed rectangular profile in the inside of which there is provided the rectilinear portion with its cylindrical bodies with which the two arms of the hook are coupled, respectively.

[0014] A seat is obtained in the lying portion of the second profile, the tip of the hook beating on said seat. In

this way, it is possible to obtain a suitable support for the tip of the hook on a profile of the hook.

[0015] Advantageously, the tip of the hook is inclined in respect to the plane on which the two arms of the hook lie so that it is possible to limit a rise of the strap that passes through the buckle. In this way, when the tip of the hook beats on the laying portion, the two arms lie on the same plane as the body of the buckle.

[0016] Advantageously, the first grasping means may comprise a first annular part with a hole through which the first cylindrical body passes and the second grasping means may comprise a second annular part with a hole through which the second cylindrical body passes.

[0017] In addition, the first and second annular parts may be open on their lower sectors so that said annular parts are allowed to couple with the cylindrical bodies of the buckle.

[0018] Advantageously, a rivet passes through a hole of the planar body to fix the joining element on the garment or shoe. In this way, the fixing of the buckle on the article of clothing is simple and rapid.

[0019] Besides, according to this invention, at least one of the following components: buckle, hook and rivet, may be made of a composite material in order to avoid the utilization of metal materials or metal alloys.

[0020] Further features and details of the invention will be better understood from the following specification which is given as a non-limiting example of embodiment as well as from the accompanying drawings wherein:

Figure 1 is an axonometric view of a buckle which is a part of the joining element according to the invention;

Figures 2, 3 are a side view and a top view of the buckle in Figure 1, respectively;

Figure 4 is an axonometric view of a hook which is a part of the joining element according to the invention;

Figures 5, 6 are a side view and a top view of the hook in Figure 4, respectively;

Figure 7 is an axonometric view of a joining element according to the invention;

Figures 8, 9 are a side view and a top view of the joining element in Figure 7, respectively.

[0021] With reference to the accompanying drawings, in particular Figures 7, 8, 9, number 10 denotes a joining element according to the invention. The joining element 10 comprises a buckle 12, a fixing element 16 and a hook 14 which is connected with the buckle so as to rotate and beat on a laying portion of the buckle.

[0022] The buckle 12, represented in Figures 1, 2, 3, comprises a first cylindrical profile 18 and a second cylindrical profile 20 which are parallel to each other. The ends of said profiles are connected with a third cylindrical profile 22 and a fourth cylindrical profile 24.

[0023] Thus, it is obtained a body showing a closed contour, an essentially cylindrical section and an essen-

tially rectangular plan, the junctions of the four profiles being rounded off.

[0024] A supporting seat 26 is obtained in the middle of the third profile in the lying portion for the hood. The free end of the hook 14 lays on said supporting seat 26.

[0025] A first cylindrical body 30 is coupled with the inner edge of the first cylindrical profile 18 and a second cylindrical body 32 is coupled with the inner edge of the second cylindrical profile 20. A planar body 28 is coupled in the middle with the two cylindrical bodies 30, 32 as it appears from Figure 3.

[0026] A through-hole 34 is obtained in the middle of the planar body which shows an essentially circular plan. A body 29 in relief protrudes from a part of the perimetric border of the planar body.

[0027] The hook 14, represented alone in Figures 4, 5, 6, comprises an oblong body 44 from which a first arm 40 and a second arm 42 open wide. A first annular part 48 with a through-hole 52 and a second annular part 50 with a through-hole 54 are coupled with the free ends of said arms, respectively.

[0028] The first annular part 48 is not completely closed since an opening 56 is obtained in said annular part.

[0029] Likewise, the second annular part 50 is not completely closed since an opening 58 is obtained.

[0030] The oblong body 44 develops along a plane which is slightly inclined in respect to the plane on which the first arm 40 and the second arm 42 lie.

[0031] A tip 46 extends from the free end of the oblong body 44 and is slightly inclined in respect to the oblong body 44.

[0032] The joining element 10 is represented in Figures 7, 8, 9. It is obtained from the coupling of the hook 14 with the buckle 12. In turn, the buckle 12 is fixed on the garment (not represented in the Figures) by means of a rivet 16.

[0033] The first annular part 48 embraces the first cylindrical body 30 while the second annular part 50 embraces the second cylindrical body 32 so that the hook 14 is constrained to the buckle 12 so as to rotate.

[0034] The tip 46 of the hook 14 is positioned on the seat 26 of the buckle 12. Since the hook is pivoted in the cylindrical bodies 30, 32, the tip can move away from the lying portion in the seat 26 or beat against it.

[0035] The coupling of hook and buckle takes place by inserting the cylindrical bodies 30, 32 in the openings 56, 58 of the respective annular parts 48, 50. In this way, a release coupling is obtained through an elastic deformation of the annular parts embracing the cylindrical bodies.

[0036] The inclination of the oblong body 44 relative to the arms 40, 42 allows that when the tip beats against the seat 26, the arms 40, 42 lie basically on the same plane as the four profiles 18, 20, 22, 24 of the buckle 12 in order to better arrange the strap passing through the buckle.

[0037] Apart from beating against the seat 26 with its

tip 46, the hook 14 beats with the union portion of the arms 40, 42 against the surface of the planar body 28. In this way, the supporting capacity of buckle and hook is further guaranteed when buckle and hook are connected with the strap.

[0038] According to the invention, the components of the joining element, namely, buckle, hook and rivet, are made of a composite material including polyamide, fiber glass, molding substances and pigments.

[0039] The presence of fiber glass makes the components stronger and more resistant. In this way, it is possible to carry out a joining element having analogous dimensions as those of the known buckles without the problems caused by the utilization of metal materials or metal alloys.

[0040] The invention has been described according to an embodiment but it is evident that the scope of the invention includes variants of said embodiment, for instance the hook in question is provided with two curvilinear arms but the arms could be triangular or squared according to the variants of the invention. The inclinations of the several components of the hook may vary according to the constructive and functional requirements.

[0041] The four profiles forming the buckle may have a cylindrical, squared, oval or irregular shape. Besides, the buckle according to constructive variants may have not only a rectangular shape but a squared, circular, oval shape or other shapes.

[0042] Finally, the joining element may be produced in different materials from the plastic or composite materials.

Claims

1. Joining element (10) to be fixed preferably on garments and/or shoes and comprising a buckle (12) and a hook (14) to block in a wished position a strap through which the hook (14) passes, **characterized in that** the buckle (12) comprises a body (18, 20, 22, 24) showing a rectilinear portion (30, 32) and a lying portion which is essentially parallel to the rectilinear portion (30, 32), that the hook (14) comprises a tip (44, 46) from which a first arm (40) and a second arm (42) open wide, the first arm being provided with first grasping means (48) and the second arm being provided with second grasping means (50), and that said first grasping means (48) and said second grasping means (50) embrace the opposite ends of the rectilinear portion (30, 32), respectively so as to constrain the hook to the buckle with the possibility for the hook to rotate and to have the hook tip beat on the lying portion.
2. Joining element (10) according to claim 1, wherein the rectilinear portion comprises a first cylindrical body (30), a planar body (28) to an edge of which an end of the first cylindrical body is fixed and in which

a through-hole (34) is obtained, and a second cylindrical body (32) an end of which is fixed to the planar body (28) on an edge opposed to that of the first cylindrical body; the ends of the first cylindrical body (30) and second cylindrical body (32), opposed to those of union with the planar body (28), being fixed on the body (18, 20, 22, 24) of the buckle (12); the first grasping means (48) embracing the first cylindrical body (30) and the second grasping means (50) embracing the second cylindrical body (32).

3. Joining element (10) according to claim 2, wherein the body of the buckle (12) comprises a first profile (18), a second profile (20), a third profile (22) so that said first profile (18), said second profile (20) and said third profile (22) form a closed profile including the rectilinear portion; said second profile (22) comprising the lying portion; the first cylindrical body (30) being fixed on said first profile (18) and the second cylindrical body (32) being fixed on said second profile (20).
4. Joining element (10) according to claim 3, wherein the body of the buckle (12) comprises a fourth profile (24), said first profile (18), said second profile (20), said third profile (22) and said fourth profile (24) being united each other at their ends so as to form a closed profile shaped substantially like a rectangular.
5. Joining element (10) according to claim 3 or 4, wherein a seat (26) is obtained in the lying portion of the second profile (22), the tip (44, 46) of the hook (14) beating on said seat.
6. Joining element (10) according to any of the preceding claims, wherein the hook tip is inclined to the plane on which the first arm (40) and the second arm (42) lie.
7. Joining element (10) according to any of claims 2 to 6, wherein the first grasping means comprise a first annular part (48) with a hole (52) through which the first cylindrical body (30) passes and the second grasping means comprise a second annular part (50) with a hole (54) through which the second cylindrical body (32) passes.
8. Joining element (10) according to claim 7, wherein the first annular part (48) has an opening (56) and the second annular part (50) has an opening (58).
9. Joining element (10) according to any of claims 2 to 8, wherein a rivet (16) passes through the hole (34) of the planar body (28) to fix the joining element (10) on the garment or shoe.
10. Joining element (10) according to any of the preceding claims, wherein at least one of the following com-

ponents: buckle, hook and rivet is made of a composite material.

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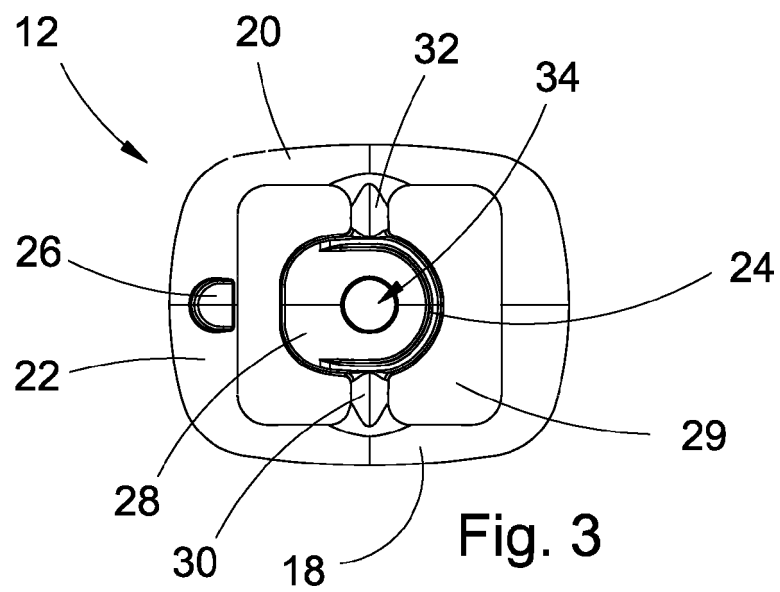
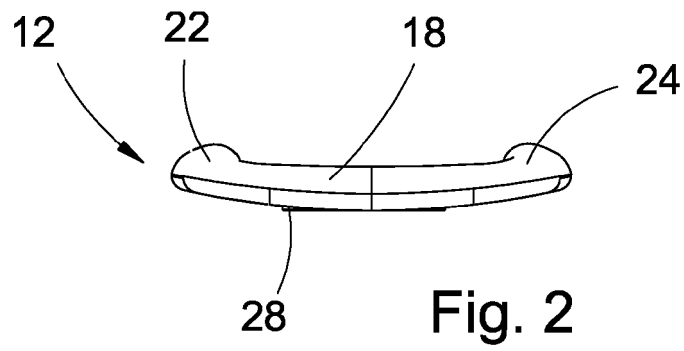
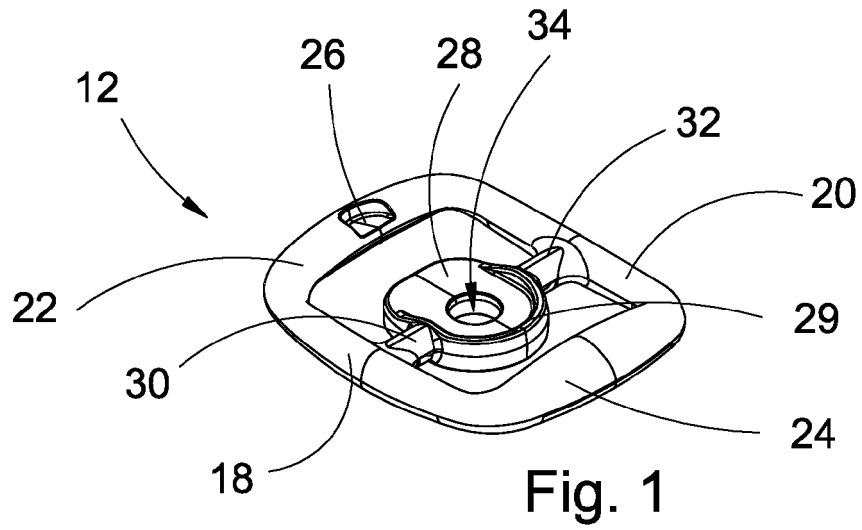
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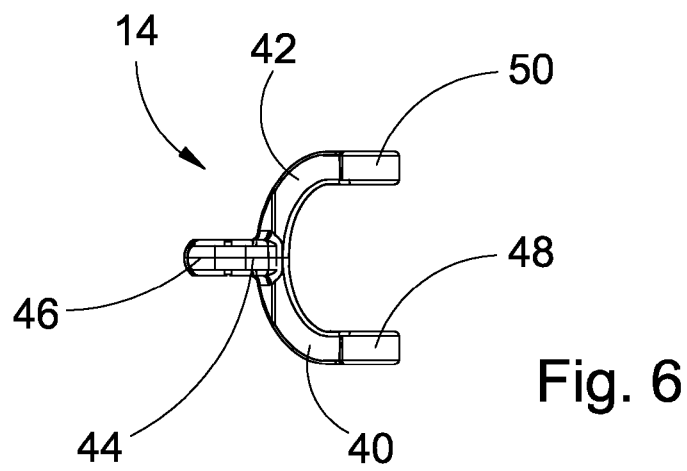
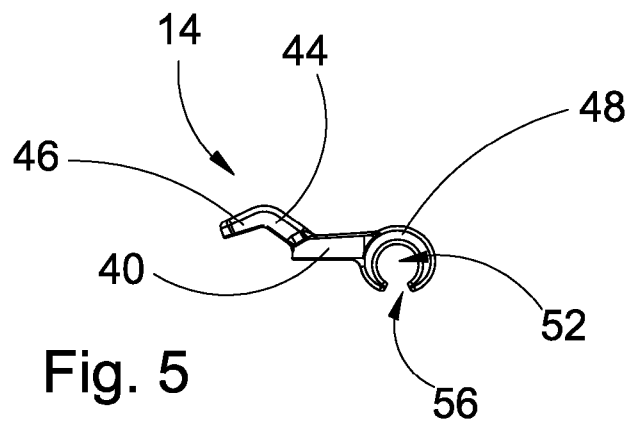
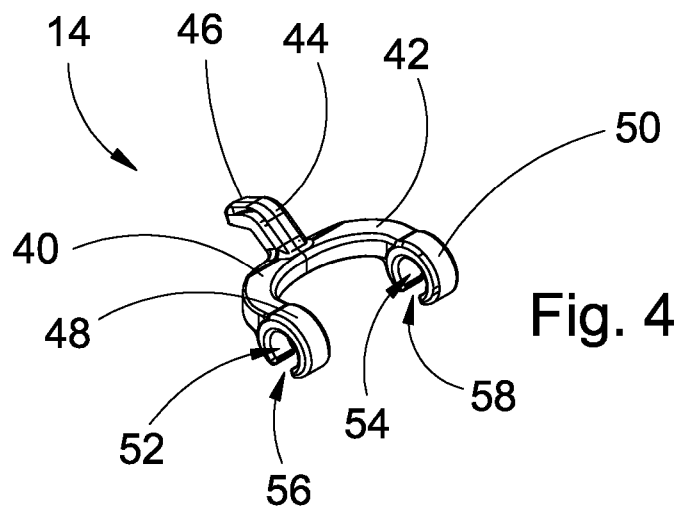
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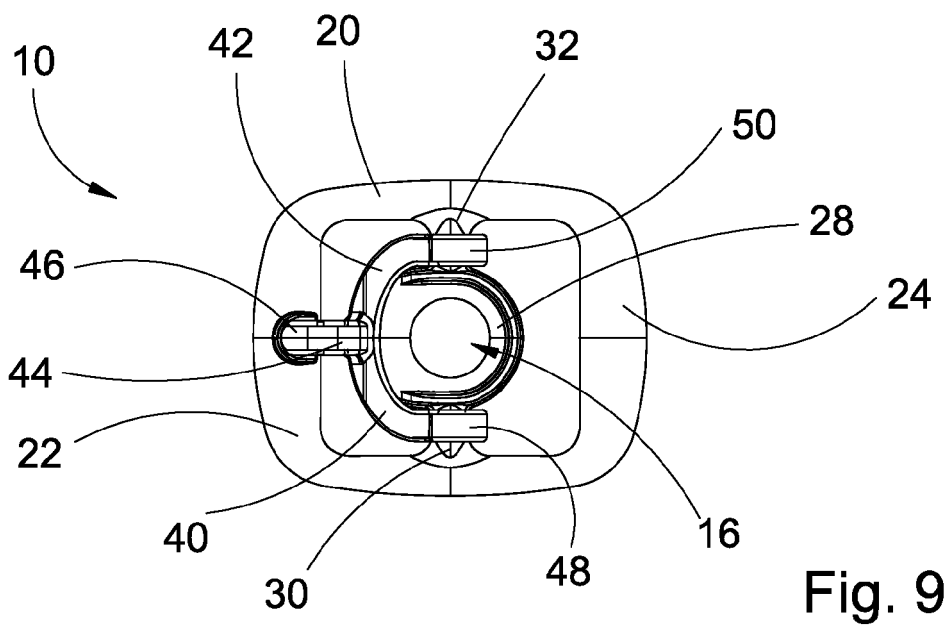
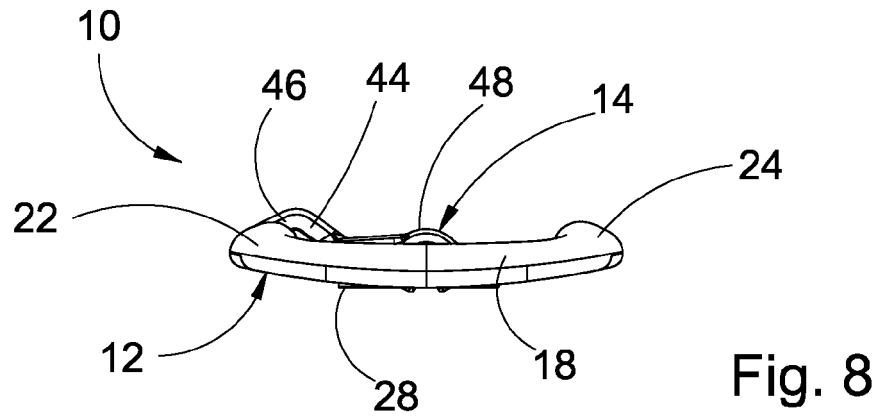
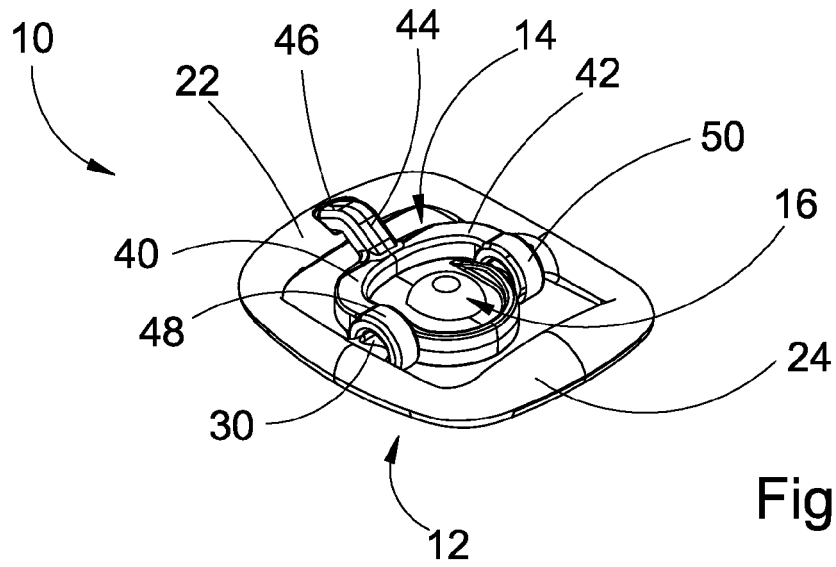
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EUROPEAN SEARCH REPORT

Application Number
EP 10 17 7937

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	DE 20 2007 016593 U1 (LINDEMANN ROCCO [DE]) 20 March 2008 (2008-03-20) * paragraphs [0002], [0009] - [0011]; figure 1 *	1,10	INV. A44B11/24 A43C11/24 A43C11/14
A	CH 481 595 A (BAUMGARTNER S A F [CH]) 30 November 1969 (1969-11-30) * column 1, lines 32-37; figure 1 *	1	
A	FR 1 102 538 A (WEIL) 24 October 1955 (1955-10-24) * claim 1; figures 1,3 *	1-5,9	
A	FR 1 208 154 A (COMPTOIR DE NOUVEAUTES MONDIAL) 22 February 1960 (1960-02-22) * claim 1; figure 1 *	1,2,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			A44B A43C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 November 2010	Examiner Monné, Eric
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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17-11-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202007016593 U1	20-03-2008	NONE	
CH 481595 A	30-11-1969	NONE	
FR 1102538 A	24-10-1955	NONE	
FR 1208154 A	22-02-1960	NONE	