



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**19.01.2011 Bulletin 2011/03**

(51) Int Cl.:  
**A44B 1/34 (2006.01) A44B 1/30 (2006.01)**

(21) Application number: **10163872.4**

(22) Date of filing: **26.05.2010**

(84) Designated Contracting States:  
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR**  
Designated Extension States:  
**BA ME RS**

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(30) Priority: **15.07.2009 IT MI20091258**

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(54) **Removable button construction**

(57) A removable button or snap-fastener construction (1) **characterized in that** it has a small height and comprises a fixed body (2,4) which may be associated with a fabric material flap (3,17) and being adapted to support a removable portion including a button element associated with a decorated portion (5), the fixed body (2,4) comprising a stem (6,9) including a nail element (14,15); the fixed body being clamped to the fabric flap (3) or portion by said nail element passing through said flap and being swaged or clamped in any other suitable

manner in a counter-portion (10) arranged on the opposite face of the fabric (3). The counter-portion (10) comprises a disc element including a hole having a tapering section (11) and which is engaged by the tip of said nail element, said tip being swaged or counter-riveted inside said hole. The stem (6,9) comprises a threaded seat adapted to be engaged by a threaded endpiece of said button element, thereby allowing said button element, together with its decorated portion (5), to be removably associated with said fixed body.

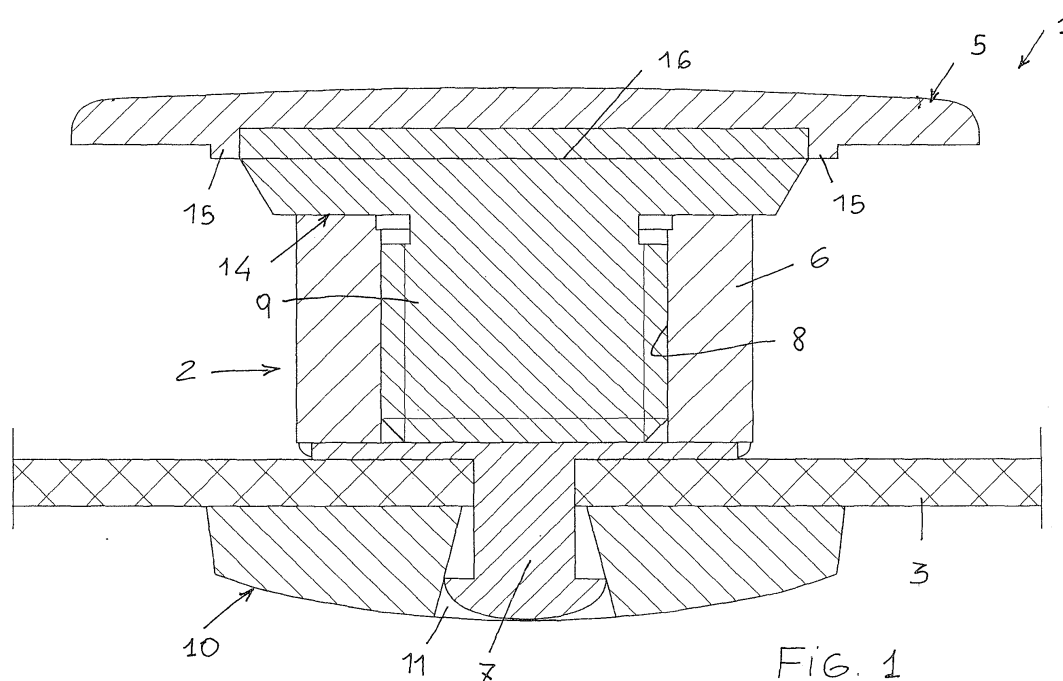


Fig. 1

## Description

### BACKGROUND OF THE INVENTION

[0001] The present invention relates to a removable button or snap-fastener construction.

[0002] As is known, in a garment article comprising high quality button or snap-fastener assemblies, the latter must be removed before washing the garment article, to prevent them from being damaged by cleansing and solvent substances and mechanical washing and ironing operations.

[0003] After having washed and ironed the garment article, said buttons or snap fasteners must be obviously relocated on the garment article.

[0004] The removal and, mainly, the re-application of the snap fasteners are fatiguing operations which require a comparatively long time.

### SUMMARY OF THE INVENTION

[0005] The aim of the present invention is to provide such a button construction which may be quickly and easily removed and reassembled again on the garment or cloth article.

[0006] Within the scope of the above aim, a main object of the invention is to provide such a removable button construction which has good aesthetical features.

[0007] Another object of the present invention is to provide such a button construction which, owing to its specifically designed structural features, is very reliable and safe in operation.

[0008] According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a removable button construction, **characterized in that** said construction comprises a fixed body which may be associated with a fabric material flap and being adapted to support a removable portion including a button element associated with a decorated portion; said fixed body comprising a stem including a nail element; said fixed body being clamped to the fabric flap or portion by said nail element passing through said flap and being swaged or clamped in any other suitable manner in a counter-portion arranged on the opposite face of the fabric.

[0009] The counter-portion comprises preferably a disc element including a hole having a tapering section and which is engaged by a tip of said nail element, said tip being swaged or counter-riveted in said hole.

[0010] The stem comprises a threaded seat adapted to be engaged by a threaded end piece of said button element, thereby allowing said button element, together with its decorated portion, to be removably associated with said fixed body.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following disclosure of a preferred, though not exclusive, embodiment of the invention, which is illustrated, by way of an indicative, but not limitative, example in the accompanying drawings, where:

Figure 1 is a longitudinally cross-sectioned view of the removable button construction associated with a fabric flap;

Figure 2 is a further longitudinally cross-sectioned elevation view of the button element associated with the decorated portion;

Figure 3 is yet another longitudinally cross-section elevation view of the nail stem;

Figure 4 is yet another longitudinally cross-section elevation view of a cap counter-part;

Figure 5 yet another longitudinally cross-section elevation view of a simple counter-portion;

Figure 6 is yet another longitudinally cross-section elevation view of a swaged counter-portion;

Figure 7 is yet another longitudinally cross-section elevation view of a further embodiment of the removable button construction according to the invention associated with a fabric flap;

and

Figure 8 is yet another longitudinally cross-section view of the nail stem associated with the construction shown in figure 7.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] With reference to the number references of the above mentioned figures, the removable button or snap-fastener construction according to the present invention, which has been generally indicated by the reference number 1, comprises a fixed body 2 which may be coupled to a fabric flap 3 and being adapted to support a removable portion including a button element 4, associated with a decorated portion 5.

[0013] Said fixed body 2 comprises a stem 6 including a nail element 7.

[0014] Said stem 6 comprises a threaded seat 8 which may be engaged by a threaded end-piece 9 of the button element 4.

[0015] Thus, the button element 4, together with its decorated portion 5, may be removably associated with said fixed body 2.

[0016] The fixed body 2, in turn, is clamped to the fabric flap 3 by the nail 7 passing through said flap and being swaged or clamped in any other desired manner, in a counter-portion 10 including a disc element having a tapering cross-section hole 11.

[0017] Said counter-portion 10 may also comprise a cap element 12, as shown in figure 4.

[0018] According to a further embodiment of the invention, the counter-portion, which in figure 6 has been indicated by the reference number 11, is swaged.

[0019] Figure 7 shows yet another embodiment of the removable button or snap-fastener construction 1 according to the present invention, in which the fixed body, generally indicated by the reference number 22, comprises a stem 6 including a nail element 7 and a flange or base 13.

[0020] The base 13 comprises, on a side thereof facing the fabric flap 3, a annular ridge or projection 14.

[0021] The decorated portion 5, in turn, comprises a central opening having a bottom edge 15 and adapted to engage the head portion 16 of the button element 4.

[0022] Said decorated portion 5 is locked on the head 16 of the button element 4, but swaging the bottom edge 15 on said head or by a glue layer applied between the perimetrical outer edge of the button element head 16 and the inner portion of the bottom edge 15 of the decorated portion 5 opening.

[0023] Alternately, said decorated portion 5 may be connected to the head 16 of the button element 4 by a welding operation.

[0024] According to the present invention, the button element 4 and decorated portion 5 integral therewith may be removed from the fixed body 2 while leaving the latter associated with the fabric 3, by simply screwing off the button element.

[0025] Then, the button element 4 may be re-screwed again on the fixed body 2.

[0026] It has been found that the invention fully achieves the intended aim and objects.

[0027] In fact, the invention has provided a removable button or snap-fastener construction allowing to easily and quickly remove and reassembling again the decorated portion while leaving its base or bottom firmly anchored to the garment or cloth article.

[0028] The removable button construction according to the present invention provides moreover the advantage of having a thin thickness owing to the fact that the nail element 7 is swaged or clamped to the opposite side of the stem 6, thereby the stem threaded seat 8 may be fully engaged by the threaded end-piece 9 of the button element 4.

[0029] Thus, the axial dimension of the construction, that is the distance x between the surface of the fabric 3 and the decorated portion 5 laying plane, will be very small.

[0030] Yet another advantage is that the tip end of the nail element 7 is swaged at the opposite side of the stem 6 and that the swaging operation must not be performed within the threaded seat 8 of the stem, thereby preventing said seat or stem from being damaged.

[0031] The height dimension of the button construction is very small, since the swaged tip end of the nail element 7 and counter-portions 9, 11 and 13 have a small or thin thickness.

[0032] In practicing the invention, the used material,

as well as the contingent size and shapes, can be any, depending on requirements.

## 5 Claims

1. A removable button construction, **characterized in that** said construction has a small height and comprises a fixed body which may be associated with a fabric material flap and being adapted to support a removable portion including a button element associated with a decorated portion; said fixed body comprising a stem including a nail element; said fixed body being clamped to the fabric flap or portion by said nail element passing through said flap and being swaged or clamped in any other suitable manner in a counter-portion arranged on the opposite face of the fabric.
2. A removable button construction, according to claim 1, **characterized in that** said stem comprises a threaded seat adapted to be engaged by a threaded endpiece of said button element, thereby allowing said button element, together with its decorated portion, to be removably associated with said fixed body.
3. A removable button construction, according to claim 1, **characterized in that** said counter-portion comprises a disc element including a hole having a tapering section and which is engaged by a tip of said nail element, said tip being swaged or counter-riveted inside said hole.
4. A removable button construction, according to one or more of the preceding claims, **characterized in that** said counter-portion comprises a cup.
5. A removable button construction, according to one or more of the preceding claims, **characterized in that** said counter-portion is counter-riveted or swaged.
6. A removable button construction, according to one or more of the preceding claims, **characterized in that** said fixed body comprises a stem including a nail element and a flange or base.
7. A removable button construction, according to claim 6, **characterized in that** said flange or base of said fixed body comprises an annular ridge on a side thereof facing the fabric flap.
8. A removable button construction, according to one or more of the preceding claims, **characterized in that** said decorated portion comprises a central opening including a bottom edge and adapted to receive a head portion of said button element; said decorated portion being locked on said head of said

button element by swaging the bottom edge on said head or by a layer of glue material applied between the perimetrical outer edge of said button element head and the inner portion of the bottom edge of the opening of the decorated portion.

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9. A removable button construction, according to claim 1, **characterized in that** said decorated portion (5) is coupled to said head (16) of said button element (4) by welding.

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10. A removable button construction, according to one or more of the preceding claims, **characterized in that** said button element, integral with said decorated portion, may be removed by said fixed body while leaving said fixed body associated to the fabric flap by simply unscrewing the button element; said button element being then adapted to be screwed again to the fixed body.

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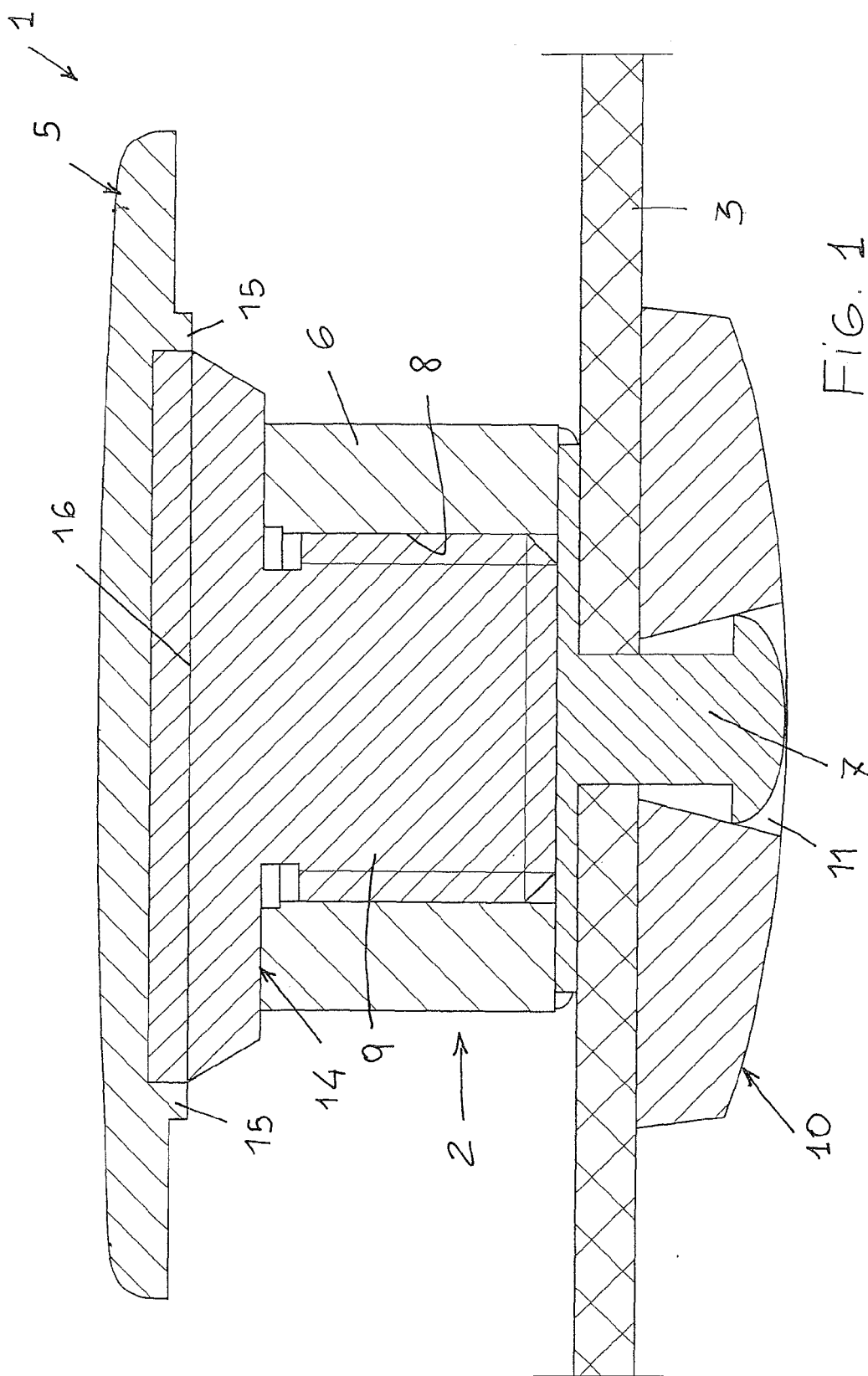
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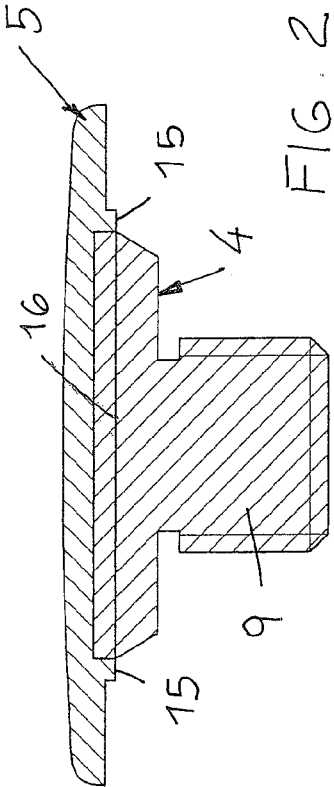


FIG. 2

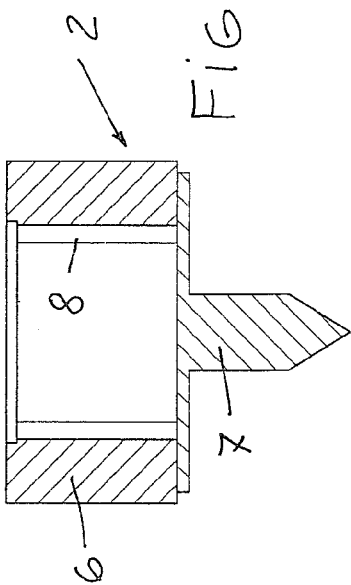


FIG. 3

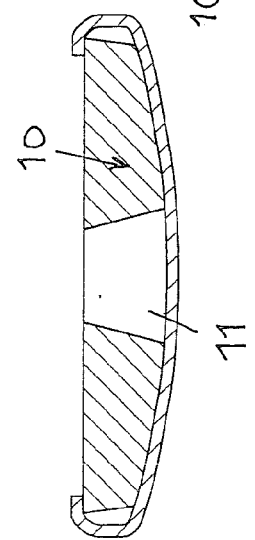


FIG. 4

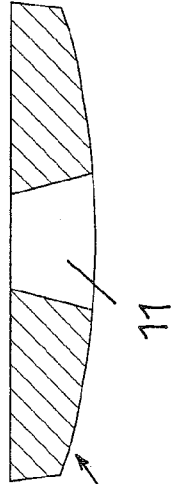


FIG. 5

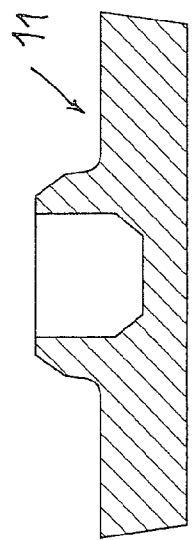


FIG. 6

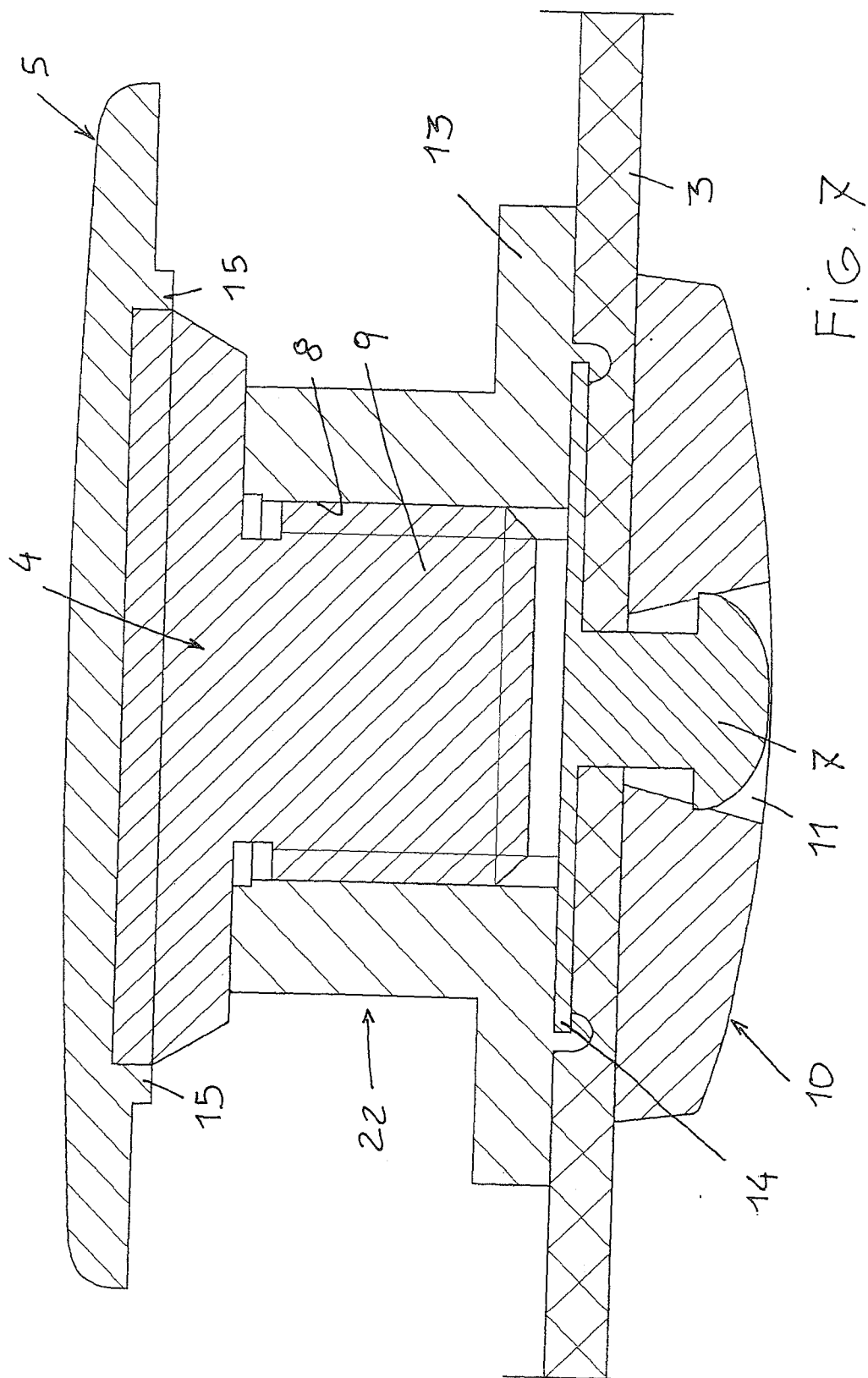
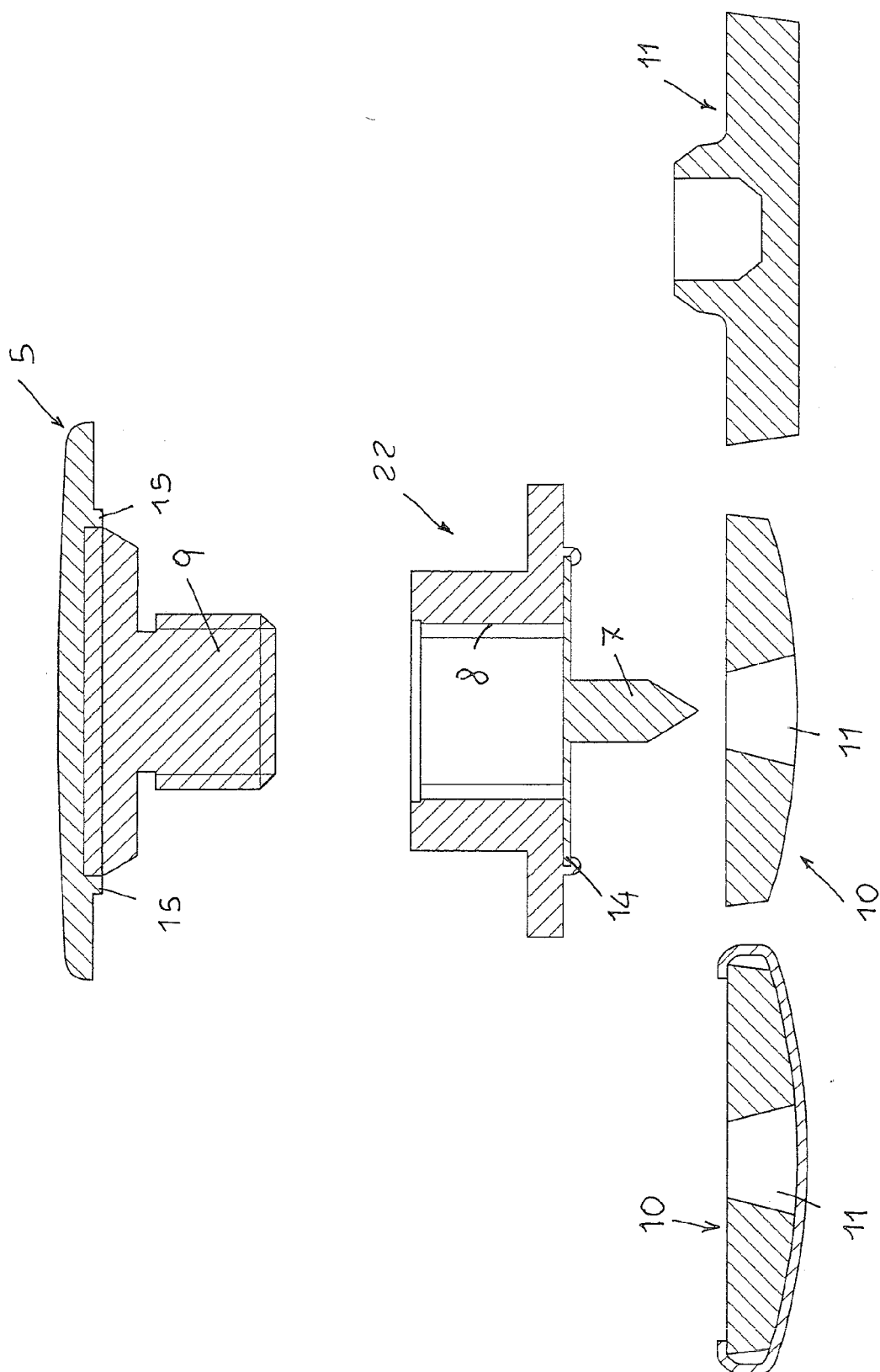


FIG. 7





## EUROPEAN SEARCH REPORT

Application Number  
EP 10 16 3872

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                             |                                                       |                                         |
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| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                             | Date of completion of the search<br>20 September 2010 | Examiner<br>Fonseca Fernandez, H        |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                                                                                             |                                                       |                                         |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 10 16 3872

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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