

12

EUROPEAN PATENT APPLICATION

21 Application number: **85111216.9**

51 Int. Cl.⁴: **A 44 B 1/44**

22 Date of filing: **05.09.85**

30 Priority: **13.09.84 JP 139242/84 U**

43 Date of publication of application:
19.03.86 Bulletin 86/12

64 Designated Contracting States:
BE CH DE FR IT LI NL SE

71 Applicant: **NIPPON NOTION KOGYO CO., LTD.**
13, 2-chome, Kanda-Sakuma-cho Chiyoda-ku
Tokyo(JP)

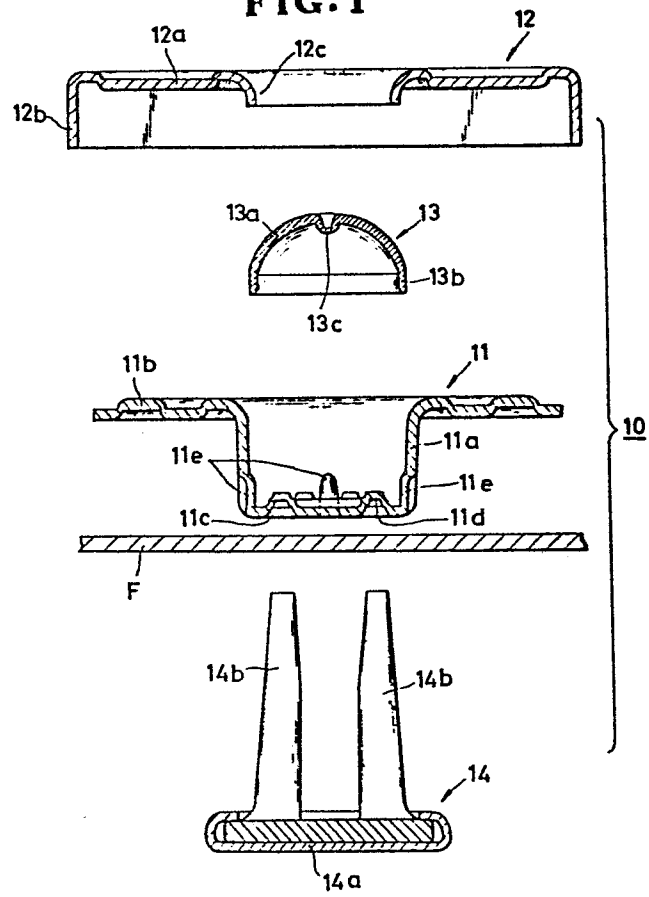
72 Inventor: **Watanabe, Hirokazu**
700-1, Yoshida
Kurobe-shi Toyama-ken(JP)

74 Representative: **Patentanwälte Leinweber &**
Zimmermann
Rosental 7/II Aufg.
D-8000 München 2(DE)

54 **A button assembly for attachment to a garment fabric.**

57 A button assembly (10) comprises a button body (11), a cap (12), an insert (13) and a tack (14), these parts being assembled for attachment to a garment fabric (F) without the aid of stitching. The button body (11) includes a plurality of retainers (11e) projecting radially inwardly from a hollow cylindrical hub (11a) of the button body (11) for firmly retaining the insert (13) within the hub (11a). The insert (13) has a dome-like structure and includes a central guide projection (13c) which is provided for deflecting the tack prongs (14b) in opposite directions.

FIG. 1



- 1 -

A BUTTON ASSEMBLY FOR ATTACHMENT
TO A GARMENT FABRIC

This invention relates to a button assembly for attachment to a garment fabric.

A variety of buttons are known which are capable of being secured to the fabric without the aid of stitching. The basic form of such buttons comprises a female part or button body and a male part or tack member, both parts being coupled together with the male part penetrating through the fabric into the female part. When penetrating the fabric the tack is bent around within the female part. To facilitate this bending it has been proposed to use an intermediate member or insert in the female part which is disposed for impinging contact with the tack to allow the latter to bend or deflect thereby securing the button assembly firmly in place on the fabric.

Two typical forms of such inserts known in the art are illustrated in Figures 6 and 7 of the accompanying drawings, one of which is a disk-like insert (Figure 6) and the other is a hat-like insert

- 2 -

(Figure 7). Both inserts are simply loosely inserted, not secured in place, the result being that the insert would drift around and strike at the interior wall of the button body, creating unpleasant metallic noise and sometimes loosening up the union of the tack with the
5 button body.

With the foregoing difficulties in view, the present invention has for its object to provide an improved button assembly which can be secured firmly in
10 place on a garment fabric and which is free from unpleasant metallic noise which would otherwise result from impinging contact of loosely connected parts of the button.

According to the invention, there is provided a
15 button assembly for attachment to a garment, comprising: a button body having a hollow cylindrical hub; a dome-like insert disposed in said hollow cylindrical hub; a tack having a base and a pair of prongs extending substantially perpendicularly from
20 said base for piercing through the garment fabric and then being inserted into the interior of the dome-like insert to thereby join said tack with said button body; and a cap mounted on said button body at an obverse side thereof, characterized in that said button body
25 has a plurality of retainers projecting radially inwardly from said hollow cylindrical hub for firmly retaining said insert within said hub, and that said

- 3 -

dome-like insert has a central guide projection extending inwardly of said insert for deflecting said prongs in opposite directions to bend along an inner wall of said insert.

5 The invention will be better understood from the following description taken with reference to the accompanying drawings in which like numerals refer to like parts throughout the several views.

 Figure 1 is an exploded sectioned view of the
10 various parts which form the button assembly of the present invention;

 Figure 2 is a sectioned view of the parts shown assembled;

 Figure 3 is an elevational view of a tack part
15 of the button assembly with a base cover removed;

 Figure 4 is a plan view of a dome-like insert part of the button assembly;

 Figure 5 is a view similar to Figure 2 but showing a modified form of a cap part of the button
20 assembly; and

 Figures 6 and 7 are each exploded sectional views of prior art button assemblies.

 As shown in Figure 1, a button assembly 10 according to the invention comprises a button body 11, a cap 12, an insert 13 and a tack 14, all the
25 components 11 - 14 being made of metal. The button body 11 is a hat-like structure having a hollow

- 4 -

cylindrical hub 11a and a horizontally directed peripheral flange 11b integral therewith. At the bottom of the hub 11a are provided a plurality of guide recesses 11c defining the path of registry with prongs or nails of the tack 14 and a corresponding number of stepped-in recesses 11d communicating with the respective guide recesses 11c for receiving the tack prongs therethrough into the interior of the button body 11. There are provided a plurality of retainers 11e integral with and projecting radially inwardly from the hub 11a for purposes to be hereafter described. The retainers 11e may be of different configurations, round, square or linear as the case may be, and the number of these retainers may vary with the size of the button and the extent of securing strength desired.

• The insert 13 is a dome-like structure having a domed head 13a and a substantially vertical annular body 13b. The domed head 13a is centrally recessed and thereby has a central circular guide projection 13c extending inwardly from the apex of the dome for purposes to be hereafter described.

The tack 14 has a covered base 14a to be pressed normally by a punch and a plurality of prongs or nails 14b, two in number being presently illustrated, which extend vertically from the base 14a for engaging the tack 14 with the button body 11.

The cap 12 is a generally circular plate 12a

- 5 -

having a vertically directed peripheral flange 12b and a central aperture 12c.

When assembling the above parts of the button assembly 10, the insert 13 is first forcibly fitted into the hub 11a of the button body 11. In this instant, importantly, the annular body 13b of the insert 13 has an outside diameter slightly larger than the inside diameter of a circle commonly defined by the retainers 11e of the hub 11a whereby the insert 13 is forcibly fitted in place within the hub 11a as its annular body 13b undergoes elastic deformation on pressure contact with the retainers 11e of the hub 11a as illustrated in Figure 2. The cap 12 is then placed over the button body 11 and clamped thereto by folding the vertical peripheral flange 12b around and over the horizontal flange 11b of the hub 11a, as shown in Figure 2. The tack 14 is now joined with the button body 11 by forcing the prongs 14b through a garment fabric F into the guide recesses 11c and further into the stepped-in recesses 11d. The prongs 14b pierce through the material in the button of the recesses 11d and come into impinging contact with the inner wall of the domed head 13a, whereupon the prongs 14b are deflected in opposite directions and bent along the inner contour of the insert 13 without interference with each other. This is facilitated by the provision of the circular guide projection 13c in the insert 13

- 6 -

which serves to move the tip ends of the prongs 14b away from each other and allow the same to bend in opposite directions along the interior wall of the insert 13 until the tack 14 is fully inserted and
5 clamped firmly in place, gripping the fabric F against the bottom of the button body 11 as shown in Figure 2.

Figure 3 illustrates a modified form of tack 14 in which the prongs 14b extend out of alignment with their respective tip ends separated with respect to the
10 axis of the tack 14. This prong structure serves to facilitate the proper orientation of the prongs in opposite directions across the guide projection 13c of the insert 13.

Figure 5 illustrates a modification of the cap
15 12 which is made of a plastic material extending over and masking the entire area of an obverse side of the button body 11, the cap 12 being conveniently decorated for aesthetic reasons or for proper registration of the button with respect to the fabric F.

20 However, the provision of the dome-like insert 13 according to the invention obviates such aesthetic consideration, as the insert 13 itself presents an attractive appearance through the aperture 12c in the center of the cap 12 shown in Figures 1 and 2.

25 Obviously, many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that

- 7 -

within the scope of the appended claims, the invention
may be practiced otherwise than as specifically
described.

5

10

15

20

25

- 8 -

CLAIMS:

1. A button assembly (10) for attachment to a garment (F), comprising: a button body (11) having a hollow cylindrical hub (11a); a dome-like insert (13) disposed in said hollow cylindrical hub (11a); a tack (14) having a base (14a) and a pair of prongs (14b) extending substantially perpendicularly from said base (14a) for piercing through the garment fabric (F) and then being inserted into the interior of the dome-like insert (13) to thereby join said tack (14) with said button body (11); and a cap (12) mounted on said button body (11) at an obverse side thereof, characterized in that said button body (11) has a plurality of retainers (11e) projecting radially inwardly from said hollow cylindrical hub (11a) for firmly retaining said insert within said hub (11a), and that said dome-like insert (13) has a central guide projection (13c) extending inwardly of said insert (13) for deflecting said prongs (14b) in opposite directions to bend along an inner wall of said insert (13).

2. A button assembly (10) according to claim 1, said insert including an annular body (13b) having an outside diameter slightly larger than the inside diameter of a circle defined commonly by said retainers (11e).

3. A button assembly (10) according to claim 1 or 2, said prongs (14b) having their respective tip ends

- 9 -

extending out of alignment with respect to the axis of
said tack (14).

4. A button assembly (10) according to claim 1, 2 or 3,
said cap (12) having a central aperture (12c).

5 5. A button assembly (10) according to claim 1, 2, 3 or 4,
said cap (12) comprising a plastic material covering
said button body (11) on its obverse side.

10

15

20

25

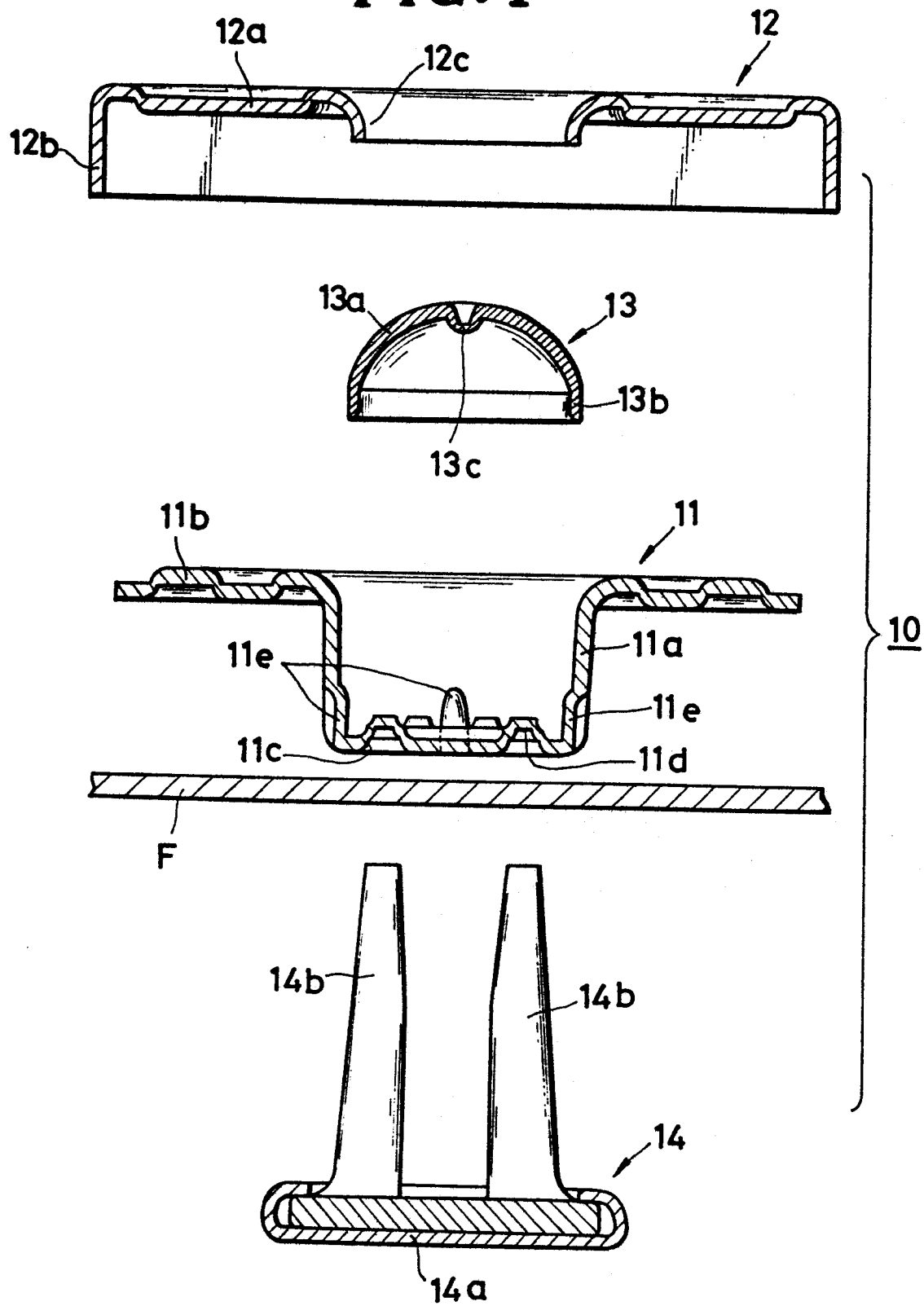
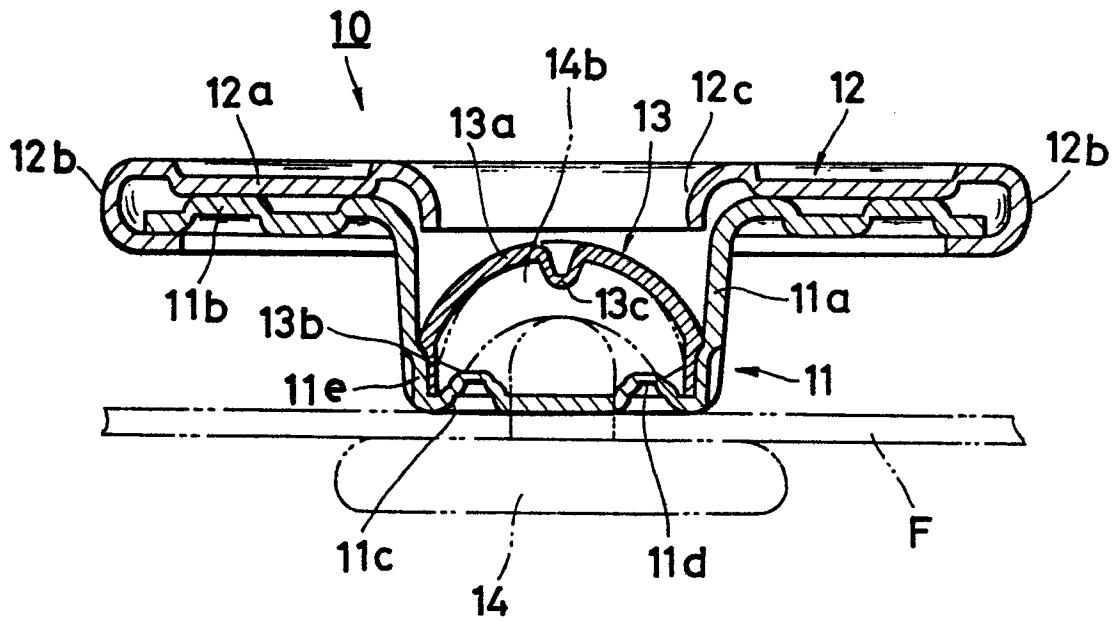
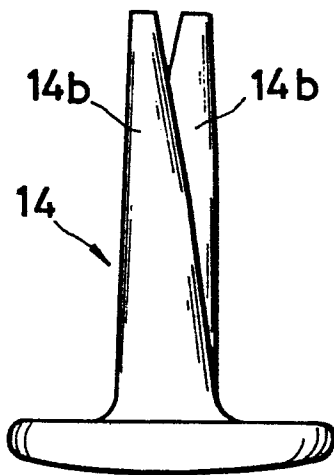
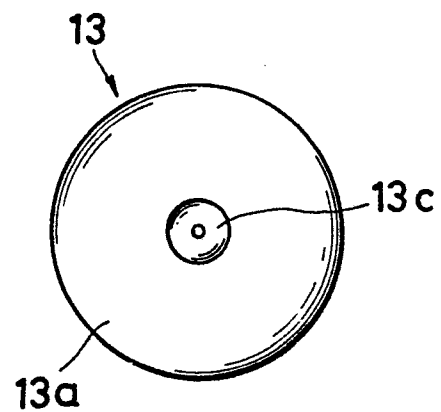
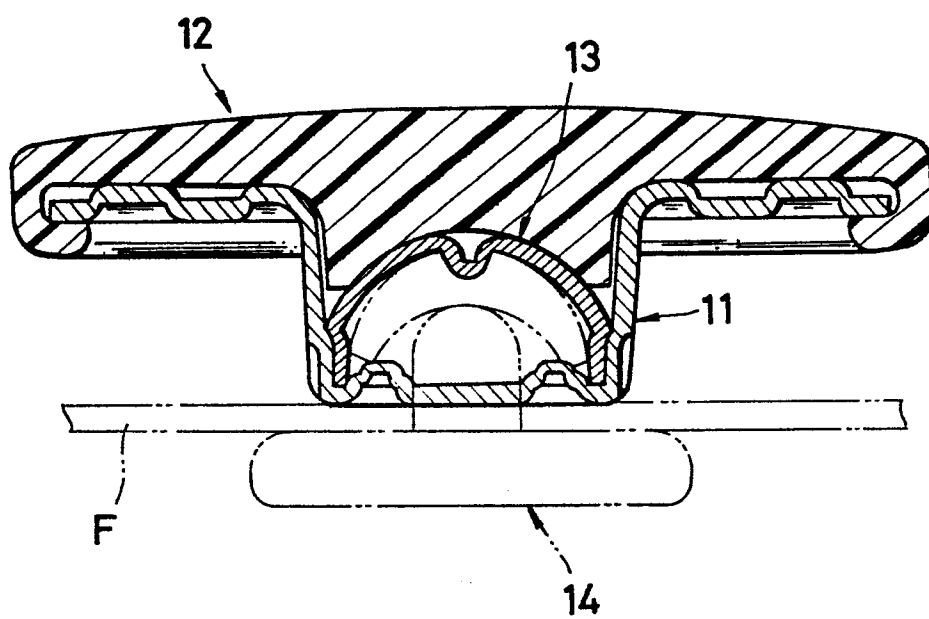
FIG. 1

FIG. 2**FIG. 3****FIG. 4**

3/4

FIG. 5



4/4

FIG. 6

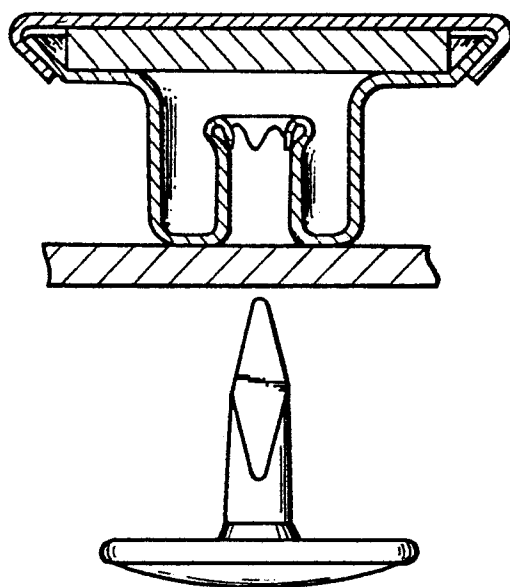


FIG. 7

