Aug. 30, 1966 R. E. FORSYTH 3,268,964

TRIM BUTTON

Filed May 18, 1964

FIG. 1

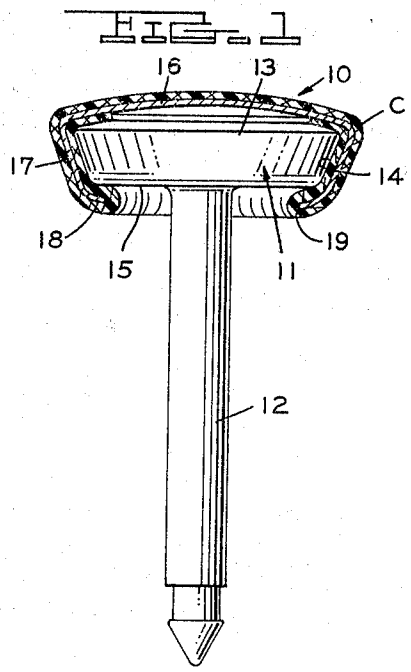


FIG. 2

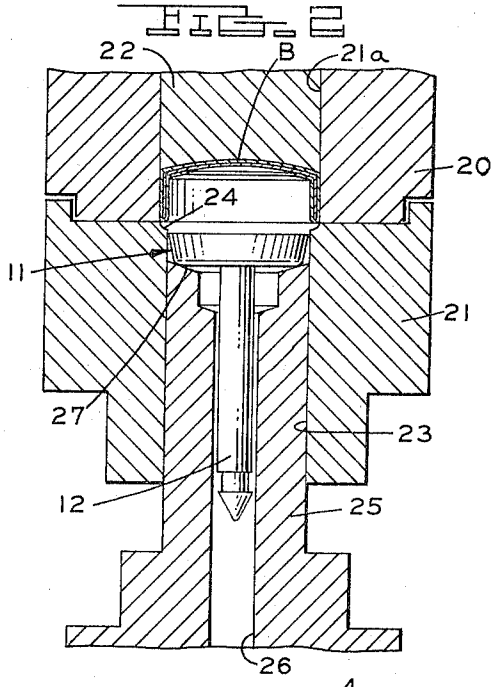


FIG. 3

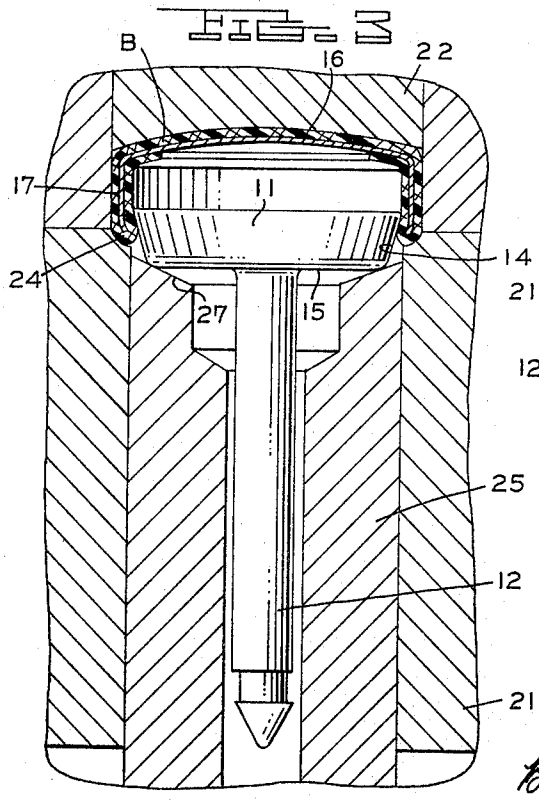
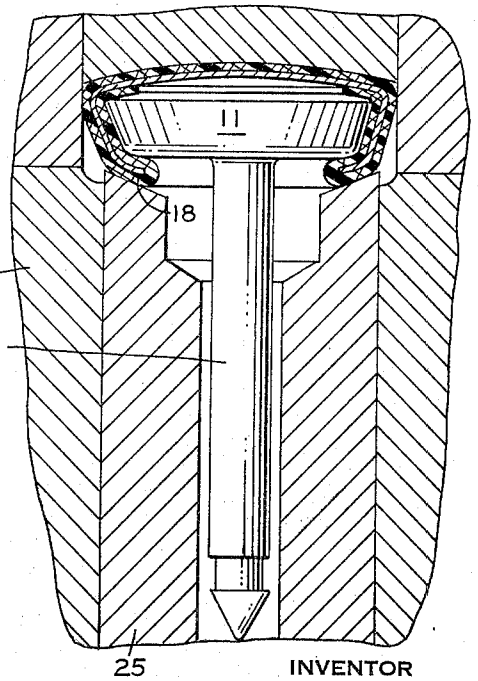


FIG. 4



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TRIM BUTTON

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This invention relates to trim buttons and particularly to trim buttons that are used in upholstering automobiles and the like.

A major problem with respect to trim buttons such as are used in automobiles and the like is that the cap, which is often covered with a cloth or plastic covering, tends to easily become disconnected from the collet.

It is therefore an object of this invention to provide a trim button which obviates this difficulty by having the free edge of the side wall of the cap deformed radially inwardly beyond the normal inclined peripheral surface of the collet.

It is a further object of the invention to provide such a trim button which is neat in appearance and can be used in the same manner as prior art buttons.

It is a further object of the invention to provide a method and apparatus for making such trim buttons.

In the drawings:

FIG. 1 is a part sectional view of a trim button embodying the invention.

FIGS. 2, 3 and 4 are sectional views of an apparatus for making the trim button shown in FIG. 1, the parts being shown in successive operating positions.

Referring to FIG. 1, the trim button embodying the invention comprises a cap **10** which is attached to a collet **11** having a laterally extending stem **12**, whereby the button is attached to the upholstery. Collet **11** includes a top surface **13**, an inclined peripheral surface **14** which extends axially and radially inwardly toward the stem **12**, and a bottom surface **15** that extends generally transversely toward the stem **12**.

Cap **10** includes a top wall **16** which may be concave, flat or convex and an annular side wall **17** that is deformed inwardly, the free edge **18** of the bottom wall extending radially inwardly below the bottom surface **15** of the collet **11**. A covering C is provided over the outer surface of the bottom wall **16**, over the outer surface of the side wall **17**, around the free edge **18** of the side wall **17**, over the inner surface of the side wall **17** and radially inwardly along a portion of the periphery of the inner surface of the top wall **16** into overlying relationship with the top surface **13** of the collet **11**.

As shown in FIG. 1, the covering is thickened in the area **19** adjacent the free edge **18** of the side wall **17** of the cap **10**.

By this construction, the cap **10** is fixed to the collet **11** in such a manner that there is little possibility of the cap coming off of the collet when the trim button is in use. The covering material C may comprise plastic, cloth or plastic impregnated cloth. Such materials have the tendency to return to their original dimensions when tensioned, as for example when they are placed in tight contact with the cap surfaces. However, the provision of the free edge **18** extending radially inwardly beyond the inclined surface **14** and the provision of the covering material on the inner surfaces of the wall **17** and top wall **16** insures that the cap will not tend to pop off, as may occur with prior art trim buttons.

In accordance with the invention, the trim button is made in an apparatus such as shown in FIGS. 2, 3 and 4 which comprises an upper die **20** and a lower die **21** which are moved into registry. The upper die **20** has an opening **21***a* therein in which a movable member **22** is adapted to be moved upwardly and downwardly. The cross section and size of the opening **21***a* correspond to the peripheral dimensions of a blank B that is positioned in the opening **21***a*. The blank B corresponds to the cap with the covering material C thereon shown in FIG. 1 except that the side wall **17** including the peripheral edges **18** extends axially and has not been deformed.

The lower die **21** includes an opening **23** aligned with the opening **21***a* but having slightly less cross sectional dimensions to provide an annular shoulder **24** aligned with the free edge of the blank B. Lower die **21** also includes a movable member **25** in the opening **23** having an opening **26** therein into which the stem **12**, which is attached to the collet **11**, extends. The upper end of the member **25** is provided with an upwardly and outwardly inclined shoulder **27** on which the collet **11** rests when the collet is in position on the lower movable member **25**.

In operation, when the blank B has been placed in position in opening **21***a* and the collet **11** has been inserted in position as shown in FIG. 2, the movable member **22** is first moved downwardly to bring the free edge of the blank B into contact with the shoulder **24** while the side wall and bottom wall of the blank are confined by the sides of the opening **21***a* and member **22**, respectively. The lower member **25** is then moved upwardly to bring the collet **11** within the cup-shaped blank B. As this is done, the upper member **22** is moved downwardly to cause shoulder **24** to deform the free edge of the blank B radially inwardly into overlying relation with the shoulder **27** on the lower member **25**. The movement of the upper member **22** is then interrupted and the lower member **25** is moved upwardly to cause inclined shoulder **27** to deform the free edge **18** including the covering thereon axially upwardly and radially inwardly into contact with the lower surface **15** of the collet **11**. The excess material present at the area of the periphery is thereby thickened as shown in FIGS. 1 and 4. This is accomplished without crimping or splitting the edge **18** of the cap.

Satisfactory results have been achieved by using a cap made of 0.010 cold rolled steel or 0.012 hot rolled low carbon open hearth steel, the latter being zinc-nickel plated. Satisfactory coating materials which have been used are vinyl, or vinyl impregnated drill, knit back and paper fabrics.

It can thus be seen that there have been provided a trim button and method and apparatus for manufacturing such a trim button wherein the cap is firmly fixed to the collet so that it cannot be removed in normal use.

I claim:

1. A trim button comprising
a collet,
said collet having an annular peripheral surface extending generally axially and a base surface extending generally radially inwardly from said surface,
a cap,
said cap being generally cup-shaped and having a top wall and an annular side wall terminating in a free edge,
a covering on said cap,
said covering extending over the outer surface of said top wall and the outer surface of said side wall around the free edge of said side wall and along the inner surface of said side wall and a portion of the inner surface of said top wall,
said side wall of said cap being deformed inwardly to hold the covering in contact with the peripheral surface of said collet with the portion adjacent the free edge of said side wall being deformed radially inwardly to hold the covering in contact with said base surface of said collet,
said covering being substantially thicker in the portions of the free edge of said side wall of said cap.

2. The combination set forth in claim 1 wherein said annular peripheral surface is inclined and extends generally radially inwardly.

3. The combination set forth in claim 1 including a stem extending laterally from the base surface of said collet.

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