April 29, 1958 M. V. DUELL 2,832,117

COVERED BUTTON

Filed March 8, 1954

Fig. 1

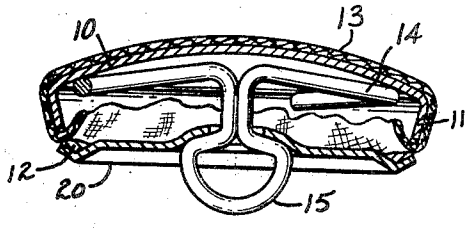


Fig. 2

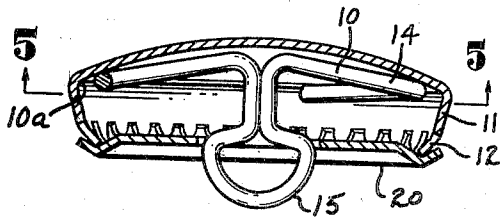


Fig. 3

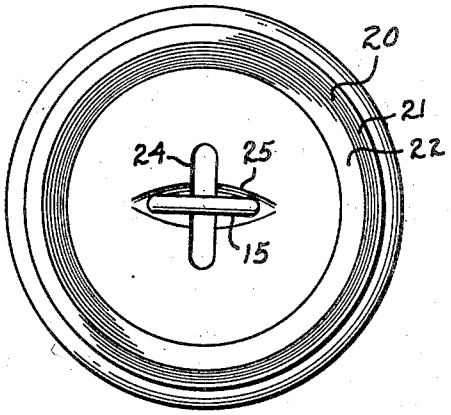


Fig. 4

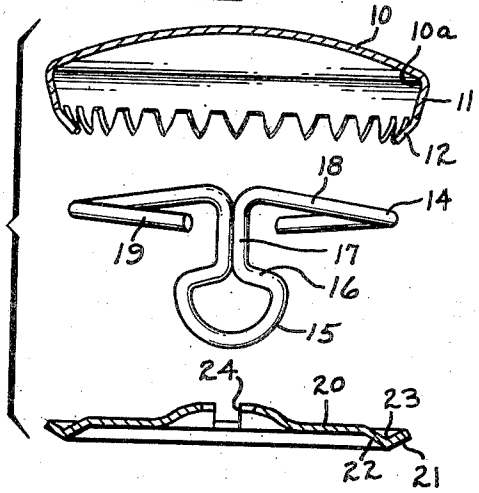


Fig. 5

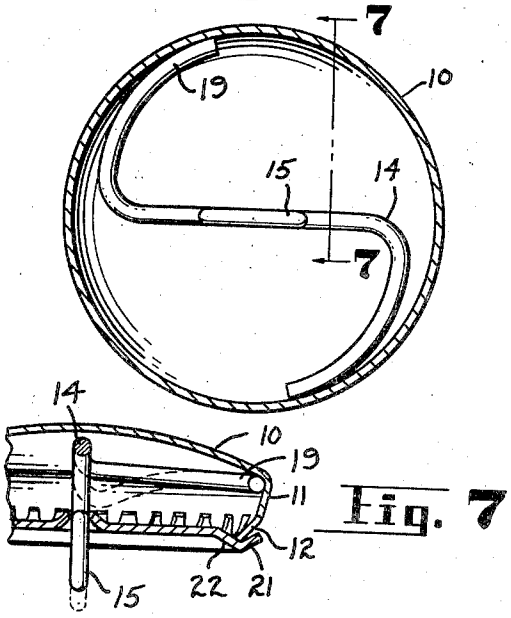


Fig. 6

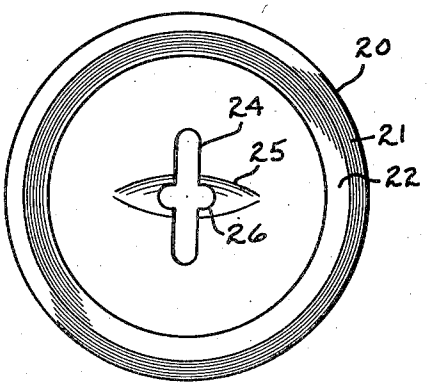


Fig. 7

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2,832,117

Patented Apr. 29, 1958

2,832,117

COVERED BUTTON

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Application March 8, 1954, Serial No. 414,766

4 Claims. (Cl. 24—113)

This invention relates to button assemblies for making covered buttons.

One object of this invention is to provide a simple button assembly to which a cloth covering may be more easily attached and preferably also attached so that it can be easily removed for an exchange of coverings.

Another object is to provide a button assembly for making covered buttons in which the thickness of the covering material is not a limiting factor as in the case of some button assemblies now on the market.

In accordance with one aspect of the invention, a domed cap shell is provided having a series of teeth biased inwardly and backwardly from its edge upon which the cloth material may be impaled or staked for holding purposes. The term "backwardly" means that the teeth extend in a direction away from the front face of the button. Also a back plate is provided having an annular recess which serves to receive the pointed ends of the teeth and assure that the cloth impaled on the teeth cannot be released or loosened. Also provision is made for a turnable eye mounted in the cap shell and having interlocking releasable engagement with the back member.

The mounting of the eye is flexible to permit outward yielding movement so that it can resiliently engage with the back plate whether the cover material is thick or thin.

The invention, both as to its construction and method of operation, together with further objects and advantages thereof will best be understood from the following description and accompanying drawing.

In the drawing:

Fig. 1 is a cross-sectional view of the button assembly embodying my invention and showing it as it appears with the cloth covering attached thereto.

Fig. 2 is a similar view minus the cloth covering and showing the eye turned to removal position.

Fig. 3 is a bottom plan view of Fig. 1.

Fig. 4 is an exploded view of the three parts comprising the button assembly.

Fig. 5 is a cross-sectional view of the button taken along line 5—5 of Fig. 2 looking in the direction of the arrows.

Fig. 6 is a bottom plan view of the back plate, per se, and

Fig. 7 is a fragmentary cross-sectional view of the bottom taken along line 7—7 of Fig. 5.

Referring to the accompanying drawing, the improved button consists of a concavo-convex support shell or cap 10 having a circumferential inwardly biased edge flange 11, the flange and cap defining an interior groove 10*a*. The edge flange 11 terminates in a series of backwardly and inwardly biased teeth 12. The cap is preferably formed of sheet metal and provides a suitable support for a fabric covering 13 laid over the front surface of said cap, formed about the edge flange, tucked or forced into the hollow interior of the cap and impaled upon the pointed teeth 12.

In order to attach the button to an article of clothing, a retainer eye member 14 is preferably made of spring wire. The specific details of the eye member 14 are best shown in Figs. 4 and 5 and consist of a central eye loop 15 having inwardly and upwardly formed cam portions 16 joined to a shank comprising two leg portions 17 that lie substantially in parallel contiguous relationship. The ends of the legs 17 opposite the eye loop 15 are joined to radial arms 18 biased downwardly toward the eye loop 15 so as to lie relatively close to but not touching the inner convex surface of the button shell 10 when assembled. The outer ends of the arms 18 are connected to opposed arcuate sections 19 that engage in the interior groove 10*a* of the cap shell 10 and are adapted to slide therein. As shown in Fig. 5, the arcuate sections 19 are so formed that when the eye member 14 is assembled into the cap only the extreme ends of the arcuate sections 19 lie in contact with the groove 10*a*, while the remaining portions of said sections are relieved from or progressively extend away from the groove 10*a*. Also it is to be noted from Fig. 4 that the arcuate sections 19 are slightly biased upwardly toward the eye loop 15 from the horizontal so that when the sections 19 are confined within the cap groove 10*a* they will normally hug or lie adjacent to the inside of the cap surface.

In conjunction with the parts above described, there is a disc-shaped back plate 20 having a circumferential biased flange 21 offset from the body of the back plate 20 by a connecting beveled shoulder 22 and thus providing an annular V-shaped groove 23 into which the pointed ends of the teeth 12 are adapted to engage. The center portion of the back plate is provided with a slot 24 of a size to permit the insertion of the eye loop 15 therethrough. On diametrically opposite sides of the slot 24, depressions 25 are formed in the back plate 20 that are adapted to receive the cam portions 16 of the eye member 14 when all the parts are in assembled position. Cut-outs 26 are provided in the opposite edge of the slot 24 in line with the recesses 24 to allow room for the leg portions to twist about therewithin.

The three parts as shown in Fig. 4, the support shell 10, the retainer eye 14 and the back plate 20 are supplied to the user who desires to equip a garment with covered buttons. In preparing a covered button employing these parts, a patch of fabric or cloth 13 of adequate size and shape to more than cover the convex face and flange of the support shell 10 is laid over the convex face of said shell 10 and wrapped around the edge flange 11. The edge of the covering may be forced or tucked into the hollow interior of the support shell 10, and at the same time by the use of a thumb nail or any convenient instrument, the operator may force the fabric material against the pointed teeth to pierce the teeth through said material. After the fabric is assembled as above described, the back plate 20 is assembled in place as shown in Fig. 1, in which position it will be noted that the pointed ends of the teeth 12 are received into the V-shaped groove 23 with the biased flange of the back plate abutted against the pointed ends and thus assure that the fabric material under no circumstances can be pulled off from the teeth while the back plate is in assembled position. It will be appreciated that in view of the fact that the teeth on my button shell are directed backwardly and inwardly, the covering material 13 can be impaled upon and attached to said teeth more readily as compared to constructions having the teeth directed inwardly toward the hollow of a button shell.

In assembling the back plate to the button, it is first

necessary to align the slot 24 with the eye loop 15 and insert the latter therethrough, and then by giving the eye loop a 90° twist or turn the cam portion 16 of the eye loop will cam over the opposite longitudinal edges of said slot 24 and snap into the depressions 25 for locked engagement. If it is desired to remove the fabric at any time for a change of material, it is only necessary to resort to the reverse of the above described operations.

It will be apparent that when the eye loop 15 is camming into and out of engagement with the depressions 25, the leg portions 17 are forced to move in an axial direction carrying the arms 18 with them. This movement of the arms causes the relieved portions of the arcuate sections 19 to bias backwardly relative to the groove 10*a* as shown in dotted outline in Fig. 7.

From the above described construction, it will be appreciated that the support shell 10 and the back plate 20 can be easily produced from sheet metal stampings, and the wire retainer eye member can be readily made in a wire forming machine. In this manner the improved button can be economically manufactured. The parts may be easily and quickly assembled together, and when the covering has been properly applied it will be found to be very effectively retained in a smooth taut condition over the convex face of the support shell 10.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

What I claim is:

1. A button assembly for making covered buttons comprising a hollow shell over which a covering material is adapted to be positioned, said shell having a flanged edge terminating in a series of teeth biased radially inwardly and backwardly away from the front face of the button and upon which teeth the covering material is adapted to be impaled, a back plate having a portion fitted against the pointed ends of said teeth, and a turnable member fitted into the hollow of said shell and having releasable interlocking engagement with said back plate, yielding means for retaining said member in the shell while permitting limited outward yielding movement thereof, said turnable member and said back plate having means cooperating with each other to hold said back plate in tensioned engagement with the pointed ends of said teeth.

2. A button assembly comprising a hollow formed piece or shell having its edge turned backwardly away from the front face of the button and radially inwardly so as to form an internal groove around the shell and providing a large opening at the back lined with teeth which are pointed radially inwardly, a wire eye member having an eye which projects backwardly away from the front face of the button at the central part of said opening, a double shank extending from said eye into said shell, the wire at the ends of said shank being bent to provide radial arms which extend outwardly toward said internal groove in the shell and thence into arcuate sections which extend in opposite directions around the shell so that the opposite ends of the wire are confined in said groove to hold the eye member in the shell, and a back plate for closing said opening having a slot through which said eye projects, said eye member being turnable to a position crosswise of the slot where it is tensioned against the back plate for retaining said back plate tightly against said shell, said radial arms and said arcuate sections being flexible to permit a limited outward yielding movement of said eye.

3. A button assembly as defined in claim 2 wherein said teeth point backwardly away from the front face of the button as well as radially inwardly.

4. A button assembly as defined in claim 2 wherein the slot in said back plate is enlarged at its center portion to permit the double-leg shank to turn about in said slot.

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