April 4, 1961 M. ADINOLFI 2,977,653

AUTOMATIC LOCK FOR CLOTH COVERED BUTTONS

Filed Oct. 27, 1958

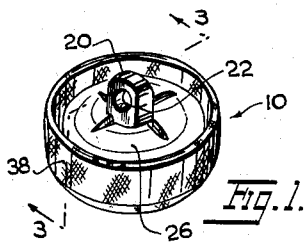


Fig. 1.

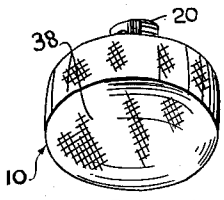


Fig. 2.

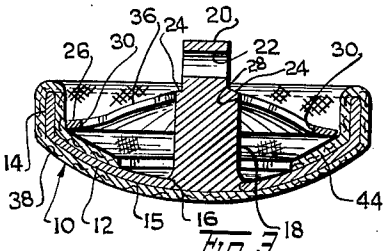


Fig. 3.

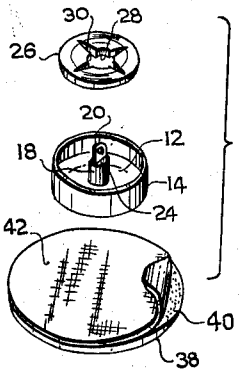


Fig. 4.

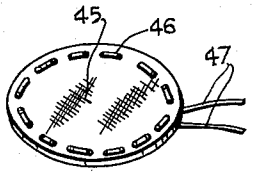


Fig. 6.

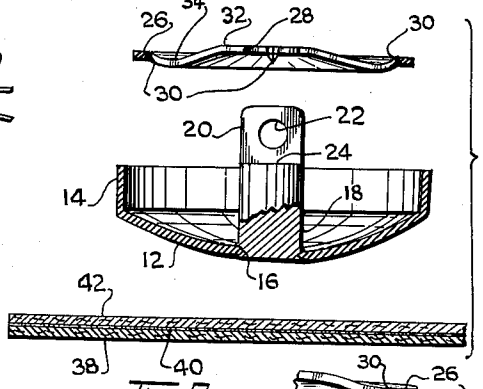


Fig. 5.

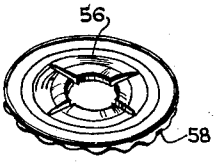


Fig. 12.

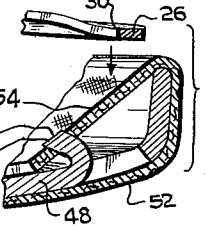


Fig. 11.

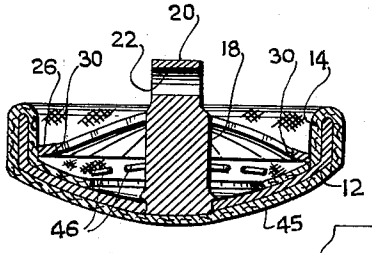


Fig. 7.

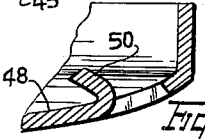


Fig. 10.

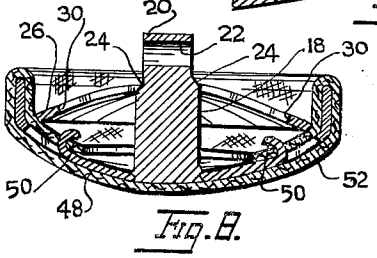


Fig. 8.

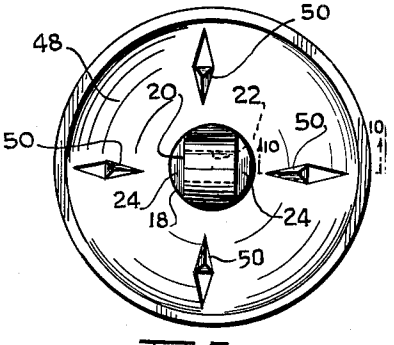


Fig. 9.

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2,977,653

Patented Apr. 4, 1961

2,977,653

AUTOMATIC LOCK FOR CLOTH COVERED BUTTONS

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Filed Oct. 27, 1958, Ser. No. 769,883

1 Claim. (Cl. 24—113)

This invention relates to a garment button in general, and more particularly has reference to an improved button of the cloth-covered type.

Buttons of the kind described are quite popular, in view of the fact that they permit one to match a fabric of a garment to which the button is secured. Further, one can choose a harmonizing fabric for the buttons, designed to produce a pleasing effect to the eye when the buttons are secured to the garment.

However, a difficulty exists in connection with buttons of the type described, in that they are comparatively expensive, and often need to be specially made. This is particularly true when one or more cloth buttons may be lost, under circumstances in which it is difficult to match the fabric of the garment.

Still further, one making a dress at home may desire to provide cloth-covered buttons thereon, and unless such individual goes to the expense of having the buttons specially made at a button shop or similar establishment, it is difficult for the user to have the desired, cloth-faced buttons.

In view of the above, it has been heretofore proposed to provide kits whereby one may make cloth-covered buttons at home. These have found considerable favor, but most of them produce certain difficulties. Notable among these difficulties is the fact that the kits require the use of pounding tools, in some instances, or other types of special tools.

The present invention aims to provide a generally improved button of the character described which will be designed to facilitate the swift assembly of the button without the requirement of any tools, and without requirement of special skills on the part of the user. To this end, the device comprising the present invention includes a shell having a novelly shaped stem. The stem is designed to receive a thread for connecting the completed button to the garment. At the same time, the stem has the function of a spreader device, designed to produce a spreading action upon a clamping washer, which washer is applied within the shell after the shell has been covered by the selected fabric.

The shell, clamping piece and stem thus cooperate in tensioning the fabric over the face of the shell, and in holding the fabric permanently assembled with the shell. The stem and the clamping piece, however, are completely concealed so as not to detract from the appearance of the completed button.

Another object of importance is to provide a garment button of the character stated which will be capable of manufacture at very low cost, considering the highly desirable characteristics thereof.

Another object is to provide a garment button which will have the desirable characteristic of being designed, in at least one form of the invention, to temporarily hold the fabric in a tensioned condition during the assembly process.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various

novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a completed garment button according to the present invention, showing the inner face thereof.

Fig. 2 is a perspective view of a completed button showing the outer or display face.

Fig. 3 is an enlarged sectional view taken diametrically through the completed button, on line 3—3 of Fig. 1.

Fig. 4 is a spread perspective view on a reduced scale of the button, before assembly of the component parts thereof.

Fig. 5 is a vertical sectional view, on the same scale as Fig. 3, taken through the center of the parts of Fig. 4.

Fig. 6 is a perspective view of a modified cover piece or facing of the button.

Fig. 7 is a sectional view like Fig. 3 showing a button made with the facing of Fig. 6.

Fig. 8 is a view like Fig. 3 showing another modification.

Fig. 9 is a top plan view, on the same scale as Fig. 8, of the shell of the button shown in Fig. 8, per se.

Fig. 10 is a fragmentary sectional view, still further enlarged, of the shell shown in Fig. 9, taken on line 10—10 of Fig. 9.

Fig. 11 is a sectional view on the same cutting plane as Fig. 10, with the facing applied, during an intermediate stage of assembly of the button.

Fig. 12 is a perspective view of a modified retainer or clamping piece.

Referring to the drawings in detail, in Figs. 1–5 the button has been generally designated 10. It includes a cup-shaped shell 12, having a peripheral, cylindrical side wall or flange 14 and a concavo-convex body part 15, the convex surface of which faces forwardly. A center opening 16 of the body part 15 receives one end of an axial stem 18 of circular cross section at its base. Stem 18 at its distal end projects beyond flange 14, and is flattened at diametrically opposite locations to produce a flat-sided tongue 20 having a transverse, through opening 22 and having at its base diametrically opposed shoulders 24.

A clamping piece 26 is formed as a thin metal washer of circular configuration, which is readily deformable from its initial shape shown in Fig. 5 to its operative position or shape shown in Fig. 3.

Thus, washer 26 initially is flattened to a substantial degree, and has a comparatively large center opening 28 the diameter of which initially is slightly smaller than that of the circular base portion of stem 18, although the opening 28 is proportioned, initially, to freely receive the flat-sided tongue 20. Communicating with opening 28 at locations angularly spaced ninety degrees apart about the edge of the opening are radial slits 30 which terminate at their outer ends inwardly from the periphery of the washer or clamping piece, said slits being gradually increased in width in a direction toward their inner open ends. The slits thus define tapered radial fingers extending inwardly to opening 28.

Also as seen in Fig. 5, the washer is provided with a shallowly concavo-convex center portion bowed in one direction out of the general plane of the washer, which general plane is denoted by the comparatively flat periphery or marginal portion of the washer. Central portion 32 at its margin merges into an annular portion 34, which in cross section is concavo-convex also, though bowed oppositely to the convexity of the center portion 32. In other words, portion 32 is bowed out of the general plane of the washer in one direction, while portion 34 is bowed outwardly from said plane in the opposite direction.

Referring to Fig. 3, when the clamping piece is applied, its slits are spread, due to the fact that the opening **28** must enlarge to receive the circular base portion of the stem **18**. The marginal part of the clamping piece, however, is free to move downwardly, initially, so that the washer now is provided with a more pronounced concavo-convex center portion **36**, with the portion **34** being in effect eliminated. Thereafter, by pressing downwardly upon the portion **36**, the disc is expanded in a radial direction to cause the periphery thereof to bind firmly against the marginal part of a fabric covering or facing **38** which is in overlying relation to the shell **12**.

The facing, of course, can be any material desired, and can be made out of material matching that of the garment to which the button is applied. In other words, one can make cloth buttons at home, without special tools, using remnants of fabric identical to that of the garment to which the button is to be applied or, alternatively, harmonizing with the material of the garment.

A circular piece of fabric **38**, in a typical arrangement, may be covered with a gummed protector piece **42**, which transfers some of its adhesive **40** to the fabric. In other words, one may take gummed paper having a tacky side, and apply it to the fabric, after which the selective fabric is cut out in a circular outline to a diameter substantially greater than that of the shell. Then, the gummed paper is removed, leaving some of its adhesive on the fabric. The fabric is now applied to the shell, adhering thereto and completely covering the body part, continuing over the outer and inner surfaces of the flange and along a substantial part of the inner surface of the body part **15** of the shell as shown in Fig. 3. The tackiness on the face of the fabric causes it to adhere to the shell at this time, with the fabric being at least partially tensioned across the face of the shell.

Now, the clamping piece **26** is applied. It initially fits loosely over the stem, but then is pressed down with the thumb and index finger firmly into the shell, until, after assuming the concavo-convex shape of Fig. 3, it becomes substantially flat, causing its periphery to bite firmly into the material of the fabric, while the fingers defined by slits **30** engage the cylindrical portion of the stem. The fabric is thus tensioned over the exposed portions of the shell, and is permanently held in place. At the same time, the tongue **20** is exposed, so that one can attach the button to the garment by thread passing through the opening **22**.

In practice, it has been found that without tools, without special dies, and without any of the various other objects that have heretofore been generally required, one can swiftly make cloth-covered buttons that have a very professional and attractive appearance, without any special training and with maximum ease and speed.

In some instances, it may be desired to initially tension the facing over the shell through the use of a drawstring **46** applied to the facing **45** (see Fig. 6). In this instance, one merely loosely stitches the thread **46** through the marginal part of the facing **45**, after which the facing is applied to the shell and the thread is drawn tight with the loose ends **47** thereof tied to hold the fabric tensioned over the shell. Then, as shown in Fig. 7, the clamping piece is applied in the manner previously described.

Referring to Figs. 8–11, there is here shown a modified construction which is identical in every respect to the forms already described, except for the fact that the shell has a means integrally formed thereon designed to engage the marginal part of the facing after the facing has been tensioned over the body part and flange of the shell. Otherwise the construction is identical to that of the first form. One does not, in this form of the invention, however, have to use a facing provided with a drawstring as in Fig. 6 or provided with a tacky surface as in Fig. 4. Instead, the shell itself is formed to engage the fabric in its proper, tensioned condition.

To this end, the shell **48** has a shape generally like

that of the first form. However, the shell is provided at its margin, at uniformly, angularly spaced locations about said margin, with upwardly inwardly struck, sharply pointed teeth **50**. As will be noted, teeth **50** project toward the stem, and extend upwardly in a direction from their bases to their sharp tips. Further, the side edges of the teeth are beveled, thus producing a beveled end surface **51** on each tooth (Fig. 11). The bevel is so directed as to insure that the fabric will be penetrated and firmly engaged by the teeth.

In this form, one simply cuts out a piece of fabric to the proper size and shape. Then, the fabric is tensioned over the shell as in Fig. 11, and the marginal part of the fabric is engaged with the several teeth **50**. This holds the fabric partially tensioned and properly positioned on the shell. As will be noted, the fabric facing **52** when so held has an inwardly directed portion **54** which inclines in a direction from the periphery of the shell toward the center thereof. Now, the clamping piece **26** is applied in the manner perviously described.

The periphery of the clamping piece engages the sloped, inwardly directed portion **54**, forcing the same downwardly within the shell and effectively and completely tensioning the facing over the shell. It is thus seen that the button can be made swiftly and easily.

In Fig. 12 there is shown a modified clamping piece **56** identical in all respects to the piece **26**, except for having a scalloped edge **58** to form thereon corrugations or teeth that will improve the biting engagement of the clamping piece with the fabric facing of the button. This clamping piece can be used in any of the various forms of the invention shown in Figs. 1–11.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A garment button, comprising a shell, a flexible facing tensioned thereover, a stem connected to the shell centrally thereof, and a circular washer mounted over the facing, said washer having a central aperture receiving said stem, said washer peripherally engaging the facing and holding the same assembled with the shell, said washer being internally slitted to define radial fingers extending toward said central aperture, said radial fingers gripping the stem, said shell being of cup-like shape and having a concavo-convex body part and a cylindrical peripheral flange, the facing completely covering the outside surface of the body part and being disposed in embracing relation to the flange, the body part having radially inwardly projecting teeth struck out of the material thereof spaced from the periphery of the body part and engaging the periphery of the facing to hold the facing under tension assembled with the body part, said teeth being angularly and uniformly spaced about the marginal portion of the shell, each of said teeth having a beveled end surface to facilitate penetration of the facing by the teeth.

References Cited in the file of this patent

UNITED STATES PATENTS

2,513,182	Koehl et al.	June 27, 1950
2,654,927	Tansman	Oct. 13, 1953
2,685,722	Danco	Aug. 10, 1954
2,717,434	Duell	Sept. 13, 1955

FOREIGN PATENTS

5,387	Great Britain	1893
177,925	Great Britain	Apr. 13, 1922
1,018,203	France	Oct. 8, 1952
1,044,477	France	June 17, 1953