

Dec. 4, 1962

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3,066,369

DETACHABLE BUTTONS

Filed Aug. 1, 1961

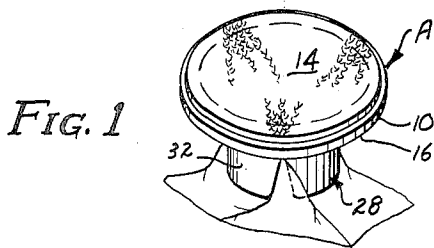


FIG. 1

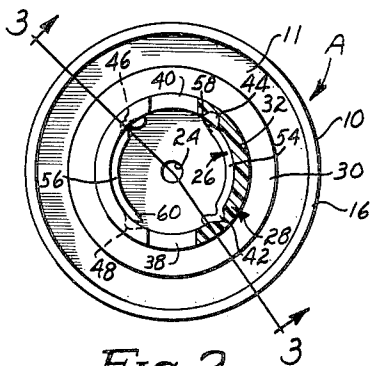


FIG. 2

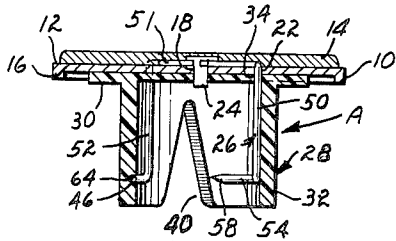


FIG. 3

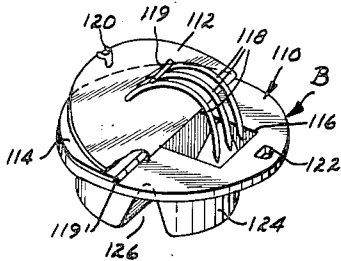


FIG. 4

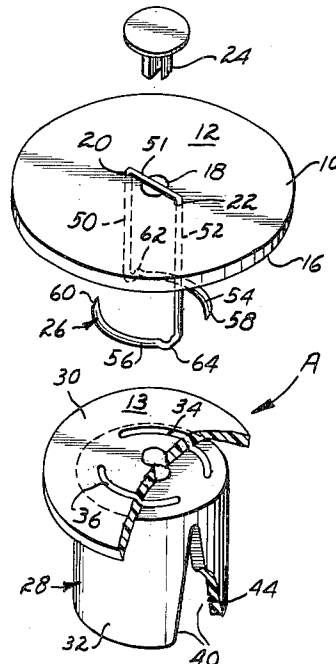


FIG. 5

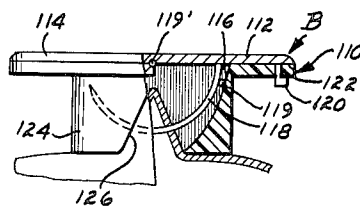


FIG. 6

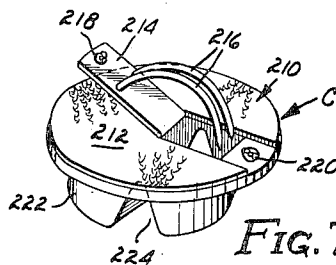


FIG. 7

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3,066,369

DETACHABLE BUTTONS

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Filed Aug. 1, 1961, Ser. No. 128,587

6 Claims. (Cl. 24-103)

This invention relates to clothing buttons; in particular, it concerns new and improved buttons that may be readily attached or removed from garments without damaging the cloth and, in addition, provide strong and attractive means for meeting the button requirements of a large variety of garments.

While there are many prior art removable buttons of one type or another, practically all of them are characterized by rather complex design and a large number of individual components which tends to take away from the original advantages of such devices. For example, some of the detachable buttons on the market feature separate anchoring devices that must be installed from the inner face of the material to which the button is attached, others are so constructed that it is impossible to make them from inexpensive readily available materials and just about all of the prior art buttons of this type require special effort to accurately place them upon a garment.

Accordingly, it is a primary object of this invention to provide detachable buttons that will overcome the disadvantages listed above.

Another important object of this invention is to provide an improved detachable button that relies upon simple, yet novel, principles of operation to effectively and securely hold itself in place upon garments of varying thickness and texture.

Yet another object of this invention is to provide a novel detachable button that is made of a minimum of components and adapted to present an attractive appearance when mounted in place.

Still another object of this invention is to provide in a detachable button novel means for releasably securing the button with an absolute minimum of effort and damage to the cloth.

Another object of this invention is to provide a detachable button having novel and improved structural and functional characteristics.

A further object of this invention is to provide a novel detachable button that can be made in a variety of sizes and shapes without departing from the basic functional advantages of the invention.

Another object of this invention is to provide new and improved detachable buttons that are relatively inexpensive to produce, easy to operate and designed to work under all foreseeable conditions of cloth and user demands.

Still another object of this invention is to provide a detachable button that is very quick and easy either to install or remove.

Another object of this invention is to provide detachable buttons that are completely self contained and require no separate anchoring devices in conjunction therewith.

Another object of this invention is to provide detachable buttons that are attractive in appearance, adaptable to many different kinds of cloth and other materials and possessed of novel and improved operating characteristics.

Yet another object of this invention is to provide new and improved buttons that are easily installed or removed without special tools and look like ordinary buttons that are sewed or otherwise permanently anchored to the garment.

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These and other objects and advantages of the invention will become more fully apparent from a consideration of the following detailed specification and accompanying drawing wherein the invention is shown by way of illustration and not by way of limitation.

In the drawing:

FIGURE 1 is a perspective view of the preferred form of the invention showing the manner in which the button is installed upon a garment;

FIGURE 2 is a bottom plan view, partially in section, of the preferred form of the invention;

FIGURE 3 is an elevational view, partially in section, taken along the line 3-3 of FIGURE 2;

FIGURE 4 is an exploded view of the preferred form of the invention;

FIGURE 5 is a perspective view of a second form of the invention;

FIGURE 6 is a side elevational view, partially in section, showing the button of FIGURE 5 in a closed cloth engaging position; and

FIGURE 7 is a view similar to FIGURE 5 showing an alternative form of the button illustrated in FIGURES 5 and 6.

Referring now to the drawing, and more particularly to FIGURES 1-4 thereof, the preferred form of the invention is designated by the reference character A. This detachable button is characterized by a flat generally circular outer button member 10 to the top 12 of which may be secured, as by sewing or other means, a decorative cap 14 of appropriate design. For the sake of appearance, outer button member 10 is preferably provided with a narrow depending outer lip 16, the purpose of which will become apparent. Suitable apertures 18, 20, and 22 are provided in outer button member 10 to receive a central fastener 24 and pinning member 26.

Rotatably fastened to the undersurface 11 of outer button member 10 and coaxial therewith is an inner cloth receiving member 28 having an upper circular flange or flat base portion 30 and a generally cylindrical hollow depending shoulder or shank 32. The diameter of base portion 30 is less than the diameter of lip 16 of member 10 so that the upper surface 13 of base 30 of inner member 28 fits within the periphery of outer member 10 in a face-to-face relation with the undersurface 11 thereof as shown in FIGURE 2. Carried circumferentially within base 30 of inner member 28 are a pair of radially aligned arcuate slots 34 and 36. Slots 34 and 36 are spaced inwardly from the intersection of shoulder 28 with base 30 and are coaxial with the central vertical axis passing through the assembly.

Shoulder 32 is formed generally in the shape of a shallow hollow cylinder having a pair of somewhat elongated tapered notches 38, 40 cut into the lower edge thereof. Notches 38 and 40, generally identical to each other in configuration, are diametrically opposed to each other in location. Along the internal wall of shoulder 32 near the lower edge thereof and adjacent each notch 38, 40 are recesses 42, 44, 46 and 48 as shown more clearly in FIGURE 2. The purpose of these recesses will become apparent as the description proceeds.

Further provided is a pinning member 26. Pinning member 26, preferably made of a single piece of suitable wire stock, is characterized by a central bridging member 51 which is held in place by fastener 24, a pair of depending legs 50, 52 that extend through slots 34, 36 of inner member 28 and a pair of generally circular cloth engaging legs 54, 56 that terminate in piercing ends 58 and 60, respectively. Legs 54 and 56 are each provided with outer projections 62, 64 near their junction with depending legs 50 and 52, as shown in FIGURE 4. Projections 62 and 64 may be formed as an upset in the wire stock when

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it is formed into pinning member 26, or they may be crimped at a later stage of assembly.

The button A may be assembled by passing the legs of pinning member 26 through holes 20, 22 in outer button member 10, then positioning inner member 28 against outer member 10 so that legs 50, 52 extend through slots 34 and 35. Fastener 24 is then firmly clamped in place so as to restrain the rotation of pinning member 26 yet allow relative rotation between outer member 10 and inner member 28. The legs 50, 52, and 54, 56 are then formed in the manner shown and described to make up pinning member 26. The ends 58, 60 of pinning member must be sharp enough to enable various types of cloth to be pierced as pinning member 26 is rotated.

Button A is attached to a garment by first making a mark or spot upon the cloth at the exact area selected for the button. The cloth is then creased through the mark and the crease is pushed up through the aligned notches 38, 40 while the inner member 28 is held against rotation. Rotating the outer member 10 in a clockwise direction causes the ends 58, 60 of pinning member 26 to pierce the cloth and engage the garment in a firm manner. Projections 62 and 64 of pinning member 26 are so positioned as to snap into the recesses adjacent notches 38 and 40 when the button is either open or closed. Recesses 42 and 46 are located to receive projections 62 and 64 when the button is open while recesses 44 and 48 receive projections 62 and 64 when the button is in a closed cloth engaging position. It is, of course, entirely possible for the invention to be made without this feature, no limitation in this regard being intended.

If desired, the bottom surface of inner member 32 may be provided with a floor having a transverse opening of suitable width to receive the cloth through notches 38 and 40. Such a floor (not shown primarily for the sake of illustrating more clearly the remainder of the invention, here again, no limitation is intended) would serve the purpose of bracing the lower elements 54, 56 of pinning member 26 and would also make it somewhat more difficult to catch a finger in the area of the piercing ends 58, 60 of pinning member 26.

The operating simplicity of button A is particularly desirable inasmuch as it may literally be "dialed" on or off.

FIGURES 5 and 6 illustrate another form of my invention, designated in its entirety by the reference character B. Button B consists of a generally flat circular upper member 110 having a hinged cover 112 overlying half of its upper surface. A mating fixed cover 114 overlies the half of upper member 110 not covered by the hinged cover 112. Centrally located in upper member 110 is an aperture 116 through which a plurality of arcuate pinning bars 118 extend. A transverse support 119 is provided for bars 118. Closure means consisting of fasteners 120, 122 keep the upper member closed when button B is attached or pinned to a garment. A split base 124 having a recessed notch 126 extending normal to aperture 116 provides support for and protects pinning bars 118.

Button B is attached to a garment by rotating pinning bars 118 about their common axis 119' through the cloth until cover 112 is in a flat position and snapped to upper member 110 by means of fasteners 120 and 122. FIGURE 5 shows button B with the components thereof in an open position ready to receive a crease of cloth, while FIGURE 6 illustrates button B in a closed cloth engaging position.

In FIGURE 7, an alternative form of the structure shown in FIGURES 5 and 6 is presented. This button, designated by reference character C, is characterized by a generally flat circular upper member 210, a fixed cover 212 overlying all but a portion of upper member 210, and a narrow hinged panel 214 carrying pinning bars 216 which operate in a manner similar to the bars 118 of button B. Fasteners 218 and 220 allow for the securing of button C in a closed cloth engaging position. Lower base

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222 having opening 224 also serve in a manner similar to their related components in button B.

All of the buttons, A, B and C may be made of readily available materials. If desired, the decorative top pieces 14, 114, 212 may be sewed on or, if made of plastic, formed by well known thermoplastic methods.

My invention has been sufficiently tested and found to be entirely satisfactory. It will be obvious to those skilled in the art that my invention may be modified by many substitutions and equivalents and that this disclosure is intended to be illustrative only. Therefore, I intend to be limited solely by the scope of the appended claims.

I claim:

1. A detachable button comprising a generally flat circular outer member, an inner member of lesser diameter than said outer member rotatably secured thereto and coaxial therewith, said inner member including a generally fiat closed base portion in face-to-face rotatable engagement with the undersurface of said outer member and a generally cylindrical depending shank, said shank having diametrically opposed tapered notches extending inwardly from the bottom thereof and having internal recesses adjacent said notches, said base portion having a pair of radially aligned arcuate slots positioned inwardly from said shank, a pinning member attached to said outer member and rotatable therewith, said pinning member including a pair of slender elongated legs each extending perpendicular to said base portion through one of said slots, said pinning member further including a pair of slender elongated arcuate cloth piercing and holding members each integral with one of said legs and extending generally parallel to said base portion in closely spaced relation with the internal surface of said shank, the ends of each of said piercing members being generally radially spaced and diametrically opposed so as to leave a central diametral cloth receiving opening in said shank when said ends are rotated into register with the said notches, and a rib on each of said piercing members engageable with the internal recesses of said shoulder, whereby to releasably bias said pinning member into engagement with said shank.

2. In a detachable button, a rotatable outer dial member having a flat inner surface, a hollow cylindrical cloth engaging inner member having a closed end and an open end, the closed end of said inner member being in rotatable abutting engagement with the inner face of said outer dial member, the closed end of said inner member having slender arcuate slots therein, said inner member having opposed cloth receiving notches extending from the open end thereof towards the closed end thereof, and pinning bar means carried by said outer dial member and rotatable therewith, said pinning bar means including a pair of legs extending through the slots of said inner member and formed at their ends into arcuate cloth piercing members disposed generally parallel to the ends of said inner member, said pinning bar means being rotatable past the said notches in said inner member whereby to pierce and hold cloth that is inserted into the said notches when said pinning bar means is rotatably retracted from the area defined by the said notches.

3. The structure set forth in claim 2 wherein means are provided on said pinning bar means and said inner member to releasably lock said pinning bar means into a cloth holding position within said inner member.

4. In a detachable button, an outer rotatable dial member having a flat inner face, a hollow cylindrical shank having a flat generally closed end in abutting rotative engagement with the face of said outer dial member and having an open end, said shank having a pair of slender arcuate slots in the closed end thereof and having a pair of cloth receiving tapered notches axially extending from the open end thereof and terminating adjacent the closed end thereof, the notches in said shank extending generally between the slots in the closed end thereof, and cloth pinning bar means carried by said dial member

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and rotatable therewith, said pinning bar means including a pair of legs each extending axially through one of the said slots in said shank, each of the said legs terminating in a slender elongated cloth piercing and engaging end portion normal thereto and generally parallel to ends of said shank, said pinning bar means being rotatable into piercing engagement with a fold of cloth inserted into the notches of said shank and being adapted to hold said button to said cloth by virtue of its piercing engagement with the said fold of cloth when said dial member is rotated relative to said shank.

5. The button as described in claim 4 wherein said cloth piercing and engaging end portions are generally circular in cross section and substantially uniform in thickness.

6. The button as described in claim 4 wherein said

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cloth piercing and engaging end portions of said pinning bar means are provided with radially outwardly extending projections, and wherein said shank is equipped with internal recesses adapted to receive said projections whereby to releasably lock said shank and said pinning bar means against rotation relative to each other.

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