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K. P. SCHORY ET AL

3,202,270

QUICK ATTACHING BUTTON

Filed Nov. 23, 1962

FIG. 1

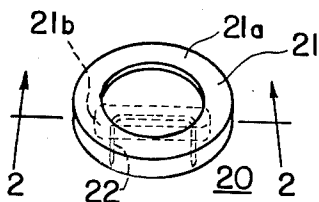


FIG. 2

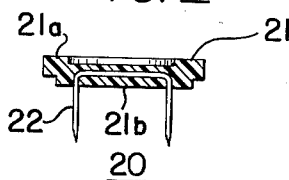


FIG. 4

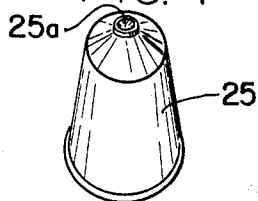


FIG. 3

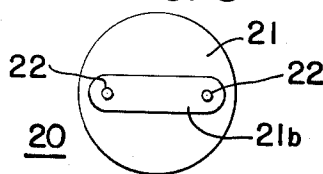


FIG. 5

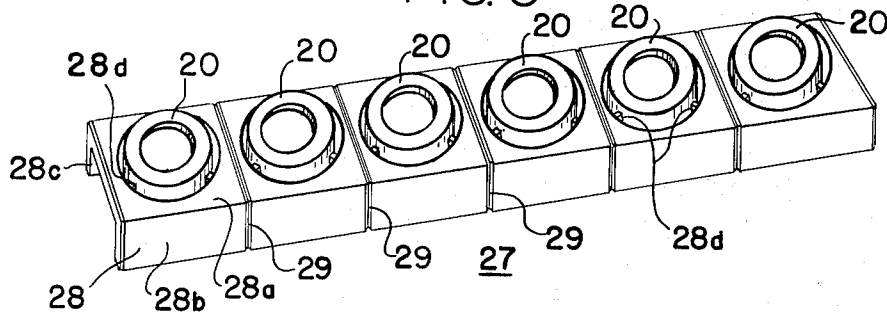


FIG. 6

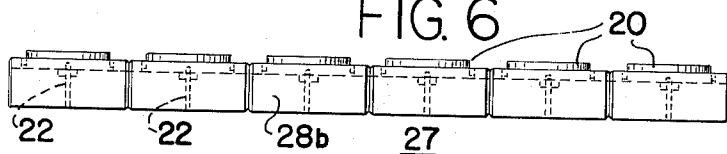


FIG. 7

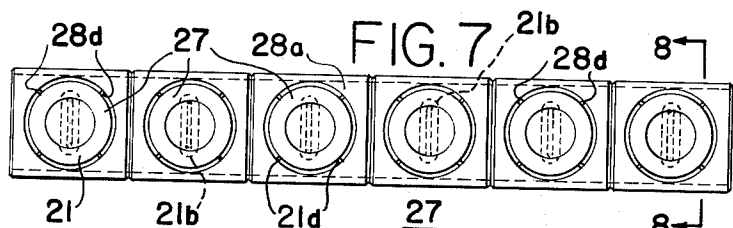
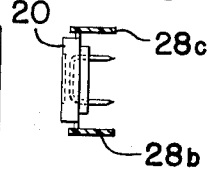


FIG. 8



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## QUICK ATTACHING BUTTON

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5 Claims. (Cl. 206—56)

The present invention relates to the quick attaching of buttons for garments or the like and to a method and apparatus for rapidly and easily applying such buttons to the garments. The invention is particularly well adapted for replacing buttons which have become detached from the garment with which they were associated.

The conventional method of attaching buttons to garments is by means of needle and thread and when such a button becomes detached, as is commonly the case, the conventional method of replacement is to sew a new button onto the garment in place of the missing button. In the first place, this is time consuming and it requires needle and thread and equipment which may not be available.

It would be desirable to provide an improved button or fastening means which would lend itself to almost instant replacement of a button without the requirement of needle and thread, which could be attached without damaging the garment with which it is to be associated, and yet which would have the same appearance and would be as satisfactory as a button sewed on by needle and thread.

It will be appreciated that, for example, laundries or dry cleaning establishments must constantly replace missing buttons which may even have been missing when the garment was brought to them or which may have become detached during the cleaning or laundering process. It would be desirable for such establishments to have means for almost instantly replacing any missing button and which would require the expenditure of almost no time of personnel of such establishments to accomplish the replacement.

Accordingly, it is an object of the present invention to provide a new and improved button or fastening means for use in connection with garments or the like.

It is another object of the present invention to provide an improved button for a garment which can be almost instantly applied without the necessity of needle, thread or other equipment.

It is another object of the present invention to provide a cartridge of multiple buttons which can be applied either for replacement purposes or for original application in a very fast and efficient manner.

It is another object of the present invention to provide a new and improved method of applying buttons to garments in a very fast and efficient manner.

Further objects and advantages of the present invention will become apparent as the following description proceeds and the features of novelty which characterize the invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of the present invention, reference may be had to the accompanying drawings in which:

FIG. 1 is a perspective view of a new and improved button or fastening means embodying the present invention;

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1;

FIG. 3 is a bottom plan view of the button of FIG. 2, assuming that FIG. 2 shows the complete structure;

FIG. 4 is a perspective view of a device useful in

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applying the buttons of the present invention to a garment in accordance with the method of the present invention;

FIG. 5 is a perspective view of a cartridge comprising a multiple button assembly including a plurality of buttons as shown in FIGS. 1 to 3 for use in automatic equipment for applying the same to a garment in a very rapid manner;

FIG. 6 is a side elevational view of the cartridge of FIG. 5;

FIG. 7 is a top plan view of the button cartridge of FIG. 5, and

FIG. 8 is a sectional view taken on line 8—8 of FIG. 7.

Briefly, the present invention is concerned with a button which may be almost a replica, at least in appearance, of any standard buttons. It is molded of a suitable material so as to have an external appearance of conventional buttons. During the molding of the button a U-shaped wire, in the form of a U-shaped staple, is molded into the button so that it becomes an integral part of the button with the two legs thereof projecting from the button. The wire is of such gauge and dimension and the ends thereof are so designed that they can readily pierce the fabric, after which these ends are clinched or bent over thereby providing a secure attachment to the garment. The wire is preferably formed of a non-corrosive material such as stainless steel or the like.

Another feature of the present invention resides in mounting a plurality of these buttons in a molded strip or cartridge with the buttons secured to such strip or cartridge by narrow bridging portions which properly orientate the button and which can readily be sheared when the button attaching operation is performed. The invention also contemplates a button attaching mechanism somewhat similar to a conventional stapler of the desk type wherein the cartridges are inserted, the staple is driven through the garment, the button is sheared from the multiple button strip, and securely fastened to the garment. The button attaching mechanism includes means whereby the next button to be attached is moved into position for a successive attaching operation automatically following a preceding button attaching operation. The invention also contemplates other simple means for quickly attaching the buttons of the present invention to a garment.

Referring now to the drawings, and particularly FIGS. 1, 2 and 3 thereof, there is disclosed a button embodying the present invention, generally designated by the reference numeral 20. Essentially the button 20 is a two-part device comprising a somewhat disk-shaped portion 21 preferably molded from suitable material, such as a plastic, glass or the like, and an attaching or staple element 22. The disk portion 21 may be a replica of any standard or even special button, and the particular configuration thereof forms no part of the present invention. As illustrated in the drawings, the circular disk portion 21 includes at the top thereof a raised annular rim 21a and at the bottom an elongated spacer projection 21b, all of these parts being molded as an integral unit. The disk portion 21 may even be molded so as to give the appearance of having a plurality of openings and crossed threads or the like commonly employed in connection with buttons fastened to the garment by needle and thread. The attaching or staple element 22, as is clearly indicated in the drawings, is a U-shaped member having the bight of the U molded into the disk portion 21 so that the legs of the staple 22 project from the bottom through spacer projection 21b, as best shown in FIG. 2 of the drawings. During the molding operation of the button the staple element 22 is inserted into the die in such a manner that the wire becomes an integral part of the button when the molding operation is completed with the two piercing ends of the wire project-

ing out from the underside of the button 20. The wire from which the U-shaped staple portion 22 is formed should be of such gauge and dimension that the ends will readily pierce the fabric to which the button 20 is to be attached and can readily be bent over to provide a secure attachment to the garment or fabric. Preferably the wire is formed of a non-corrosive material, such as stainless steel or the like, or is otherwise coated so that it will neither stain nor otherwise deleteriously affect the garment to which it is attached even though subjected to repeated washing operations. The buttons 20 may be molded in any suitable manner, either by injection or compression molding, although compression molding is preferable since the heat resistant characteristics of thermosetting plastics which would be employed are more desirable. The material from which the button is molded could be a white glass having a finish so that it would be essentially a perfect match with other buttons with which it is to be associated.

It will be understood that the button 20 can readily be manually applied to a garment, such as a shirt, for example, by forcing the prongs of the staple 22 through the fabric and then deforming or clinching the projecting legs of the staple element 22 which have been forced through the garment so as to clamp the garment material therebetween in a manner well understood by those skilled in the art. It will be appreciated that this can be accomplished by a simple tool, such as a thimble or the like, and in FIG. 4 of the drawings there is illustrated a thimble 25 which can be applied to the finger of the user. This thimble at the closed end is provided with a small hollow cylindrical projection 25a which can be used to engage the legs forced through the fabric to bend or clinch them in a manner to secure the button to a garment or the like.

Although the present invention lends itself very well for use in replacing buttons, particularly by bachelors or others who do not have the facilities to sew such buttons in place, it also has application for applying the original buttons to a garment during manufacture thereof. Also, in accordance with the present invention, it is adapted for automatic application to a garment by simple automatic machinery whereby it may be used both for rapid replacement in such establishments as laundries, dry cleaners, etc., as well as in factories that manufacture garments requiring buttons.

In FIGS. 5, 6, 7 and 8 of the drawings, there is illustrated a feature of the present invention wherein a plurality of buttons 20 are mounted in strips or cartridges so they may be adapted for use in automatic machinery. As shown in these figures, there is illustrated a button strip or cartridge, generally designated by the reference numeral 27, comprising a plurality of buttons 20 identical with those described above, arranged in side-by-side relationship so that the strip or cartridge 27 may be loaded into or fed into a mechanical device used to apply buttons to garments. As illustrated, the strip or cartridge 27 comprises a molded channel-shaped member 23, the buttons 20 being uniformly spaced and integrally formed with the bight portion 28a of the channel member 23. As illustrated, this channel member in addition to the bight portion 28a includes channel legs 28b and 28c, respectively. The buttons 20 are actually isolated or spaced from the bight portion 28a of the channel 23 except for narrow minimal bridging portions designated as 28d which bridging portions are, of course, integrally formed with the channel 23 and the buttons 20. An important feature of the present invention resides in the fact that the bridging portions 28d also orientate the associated button so that the staple element 22 thereof is correctly positioned with respect to clinching or deforming the legs thereof through use of automatic button applying equipment. The channel legs 28b and 28c between which the staple elements 22 are disposed protect these elements from damage.

So that used sections of cartridges 27 can be removed from the remainder of the cartridge, the channel 23 between each button is preferably provided with thin wall

portions designated as 29. With this arrangement, the individual sections of the channel 23, each containing one button 20, can be successively broken off after the button 20 supported thereby is applied to a garment and, hence, removed from its supported position by the frangible minimal bridging members 28d. In other words the channel 23 is segmented by the thin wall portions 29 separating the segments, each segment supporting a button 20. It will be understood that the button cartridges are molded in lengths which can be accommodated in suitable stapling tools and the entire cartridge 27 is molded with, of course, the staple portions 22 embedded therein as described above.

In accordance with an important feature of the present invention, the button portions 20 of each cartridge 27 project above the bight portion 28a, as clearly indicated in FIGS. 5 and 6 of the drawings, thus providing a stop means properly to position the cartridge in an automatic button attaching tool as will be described hereinafter. In a cartridge manufactured in accordance with the present invention, the material forming the buttons 20 and the channel 23 was identical and comprised a rigid material. It should be understood, however, that the material comprising the channel 23 might be substantially more resilient than the material comprising the buttons 20, whereby the strip may be bent into a roll form and contained within a suitable magazine associated with a stapling tool. The corresponding parts of FIGS. 5, 6, 7 and 8 are designated by the same reference numeral as in FIGS. 1, 2 and 3 of the drawings.

It will be appreciated that the projection 21b on the back of each button provides a spacing means for spacing the main part of the button from the fabric to permit the user to more easily pass the button through the conventional buttonhole in the garment associated with that particular button.

It should be understood that for applying the buttons described above a button applying tool could be employed generally similar to the conventional desk stapler whereby cartridges or strips of buttons may be mounted therein and by manipulating the tool successive buttons may be applied to a particular garment either as a replacement as in laundries or dry cleaning establishments, where many buttons must be replaced all the time, or in factories for the original application of the buttons to the garments during the manufacture of such garments.

While there have been illustrated and described particular embodiments of an improved button and multiple button cartridge as well as methods and apparatus for applying the same to a garment, it will be understood that numerous changes and modifications will occur to those skilled in the art and it is intended in the appended claims to cover all those changes and modifications that fall within the true spirit and scope of the present invention.

What is claimed as new and desired to be secured by Letters patent of the United States is:

1. A cartridge of quick attaching buttons comprising a channel-shaped member provided with a plurality of button openings in the bight portion thereof, a quick attaching button in each of said openings, each button comprising a button portion having the edges thereof spaced from the bight portion of said member by integrally formed bridging means, an attaching element having a portion thereof molded into said button portion, and another portion projecting from the underside of said button portion and extending into the channel of said channel-shaped member.

2. The cartridge of claim 1 wherein the channel-shaped members and buttons are molded as a unitary structure.

3. A cartridge of quick attaching buttons comprising a segmented molded channel-shaped member provided with a button opening in the bight portion of each segment, a button in each of said openings molded to have the external appearance of a conventional button, each

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button being supported within its associated opening by narrow minimal frangible bridging portions integrally formed with said buttons and channel-shaped member, each button extending a predetermined distance above said bight portion, an attaching element molded into each of said buttons with a portion thereof projecting from the underside of the associated button into the channel of said channel-shaped member, each button being held by said bridging portions so that the attaching element of each button is orientated in the same predetermined manner.

4. The cartridge of claim 3 wherein the attaching element comprises a U-shaped staple having the bight portion molded into the associated button and the leg portions projecting from the underside of said buttons.

5. The cartridge of claim 3 wherein said bridging portions extend between the periphery of each button and the walls defining the associated button opening.

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