Sept. 17, 1935.

L. REITER

2,014,814

TACK BUTTON

Filed April 26, 1934

Fig. 1.

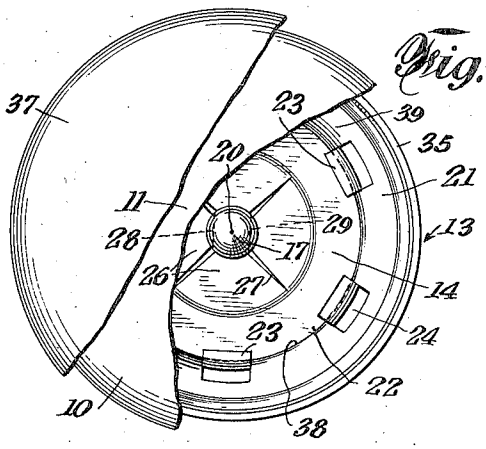


Fig. 2.

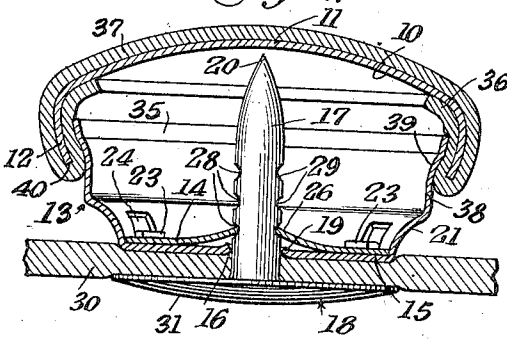


Fig. 4.

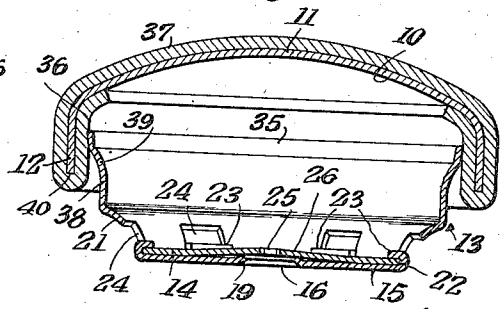


Fig. 3.

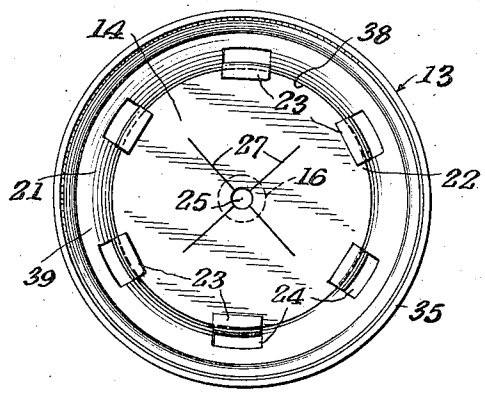


Fig. 5.

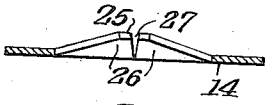
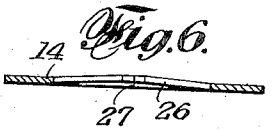


Fig. 6.



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UNITED STATES PATENT OFFICE

2,014,814

TACK BUTTON

Lues Reiter, Providence, R. I.

Application April 26, 1934, Serial No. 722,410

13 Claims. (Cl. 24—108)

This invention relates to tack buttons and particularly, to the type adapted to have the head thereof covered with cloth for use in caps and other articles of wearing apparel.

Such buttons consist of various parts adapted to be assembled by the user and sold separately, usually in sets. Each set may consist of a head designed to be covered with cloth or the like by the user, a cup to hold the head, and means to secure the button to a sheet of material, which means may include a slitted washer and a cooperating tack.

My invention contemplates the provision of simple and adequate means for firmly and permanently connecting the cup portion of the button to the fabric or other material to which the button is secured, which means may be quickly and easily assembled, and once assembled, cannot be separated without destruction of the parts.

My invention further contemplates the provision of a grooved tack adapted to cooperate with a slitted washer provided with a perforated offset portion, part of the washer entering the grooves of the tack in such a manner as to permit the forcible passage of the tack in one direction, but preventing retraction of the tack in the other direction.

My invention further contemplates the provision of a simple method of making the slitted washer.

My invention further contemplates the provision of simple and effective means for securing the button head to the button cup against accidental separation and against separation under the usual stresses.

The various objects of my invention will be clear from the description which follows, and from the drawing, in which,

Fig. 1 is a top plan view of my improved button in the assembled positions of the parts, certain of the parts being broken away to show the underlying structure.

Fig. 2 is a vertical section of the same, showing the parts in assembled position and secured to a piece of material.

Fig. 3 is a top plan view of the cup portion of the button showing the slitted washer and the means for securing said washer in place in the cup.

Fig. 4 is a vertical section of my improved button as it appears prior to the bending of the rim of the button head into its secured position.

Fig. 5 is a vertical section of the slitted washer as it appears in the first operation of making the same.

Fig. 6 is a similar view of the same as it appears after the next operation.

In the practical embodiment of my invention which I have shown by way of example, the button comprises four parts. The parts, as has been hereinbefore indicated, are sold disassembled to the user, who covers one of the parts and then assembles and secures said parts to an article of apparel to form the complete button. One of the parts, the button head 10, is made of suitable material, preferably thin non-rusting metal, and is provided with a preferably convex top as 11 and a depending bendable cylindrical flange or rim 12, being completely open at its bottom to receive the cup portion 13 of the button.

Said cup portion serves a double function. First, it serves as retaining means for the slitted washer 14, and second, it serves as a means for firmly holding the button head 10 in place. The cup is therefore provided with a bottom portion 15 which is provided with a central opening as 16 for the passage of the shank 17 of the securing tack 18.

The material 19 surrounding the opening 16 is preferably bent slightly upwardly in order that the point 20 of the tack and part of the shank 17 may be readily passed through the opening without material resistance, said opening being also made preferably somewhat larger than the diameter of the shank 17 for that purpose.

Upstanding from the bottom 15 and integral therewith is the outwardly flared wall portion 21 of the cup. At circumferentially spaced intervals, part of the material of the wall 21 is bent inwardly and downwardly away from the wall and on to the upper surface of the peripheral portion 22 of the washer 14, thereby securely clamping said washer against the bottom 15. Clamping lugs as 23 are thereby provided and openings 24 are thereby formed in the wall 21.

The central opening 25 in the washer is of less diameter than that of the shank 17 of the tack, whereby the material 26 of the washer surrounding the opening 25, inwardly overhangs the material 19 surrounding the opening 16 in the bottom of the button cup. Furthermore, said material 26 of the washer is offset from the peripheral portion 22 of the washer, as will be seen from Figs. 4 and 6. To form the offset portion 26, and at the same time to form the opening 25 and the spaced slits 27, the washer 14 is cut from sheet material while the slits 27

and the opening 25 are simultaneously cut, the cutting dies being suitably shaped to offset the slitted portion 26 laterally in a manner which will be clear from Fig. 5.

In the above described operation of forming the washer, it will be noted that the slits 27 are opened or spread, and that the portion 26 is offset a greater distance than is desired in the finished washer. To close the slits 27, the material 26 is then pushed back toward the plane of the periphery 22 into the position shown in Fig. 6 whereby the slits are closed and the desired lateral offset is attained.

The shank 17 of the tack is provided with a series of opposed circumferential grooves therein as 28 and 29, each of the grooves being adapted to receive the inner peripheral portion of the material 26 of the washer. To assemble the parts, the point 20 of the tack is pushed through the material 30 to which the button is to be secured and through the opening 16 of the bottom of the cup portion until the point 20 passes into the washer opening 25. Further pressure exerted upon the tack causes the shank 17 to enlarge the washer opening 25, the slitted portions of the washer being additionally offset at the same time into the position shown in Fig. 2. When the head 31 of the tack and the bottom 15 of the button cup have been brought as closely together as is possible, they cooperate to clamp the material 30 between them, the portions 26 of the washer at this time slipping into the grooves 28 and 29.

Since the washer is of substantially the same diameter as the cup bottom 15, it will be evident that the tack 18 cannot be retracted without destruction of the parts, whereby the parts are firmly and permanently secured together and the button secured to the material 30.

At its upper end, the cup portion 13 is provided with a rim 35 which is slightly flared outwardly and which is of greater diameter than any other part of the cup. Said rim 35, however, is of slightly less diameter than the rim 12 of the button head whereby the cup rim may be easily inserted within the rim of the head with an infolded part 36 of the button cover 37 therebetween, as will be clear from Fig. 4. The height of the rim 35 is comparatively small as compared to the total height of the button and is further of less height than the connecting wall portion 38 which connects said rim 35 with the wall 21 of the cup portion and which is integral with the rim and said wall 21.

The lower portion of the connecting wall 38 is preferably cylindrical in shape while the upper portion 39 is curved outwardly to join the bottom of the rim 35 and to provide a re-entrant concave recess for the reception of the lower portion of the button head rim 12 when said rim is bent to secure the head of the button in place.

As will be seen from Fig. 2, the button head is covered with the cover 37 which is usually of flexible material matching the material 30, such as fabric, leather or the like, the cover being infolded about the lower edge of the rim 12. The parts having been assembled into the position shown in Fig. 4, the rim 12 is then bent inwardly toward the re-entrant recess provided by the curved portion 39 of the connecting wall 38 to lock the rim in place, the rim being, if desired, confined in suitable dies to prevent excessive crimping thereof. The extreme peripheral edge 40 of the button head rim 12 is thereby carried inwardly a sufficient distance to prevent separation of the cup portion 13 from the button head 10. As shown in Fig. 2, which indicates the final or assembled position of the parts, the extreme upper edge of the cup rim 35 is preferably arranged outwardly beyond the extreme lower edge 40 of the button head rim 12 when the button has been completely assembled, whereby the button head cannot be separated from the cup accidentally or under the stresses normally or accidentally put upon the button when in use.

It will be seen that I have provided a simple, inexpensive but efficient structure adequate to permanently secure the button to an article of wearing apparel and practically inseparable therefrom without destruction or distortion of the parts, that I have further provided a button wherein the head is securely attached to the button cup without danger of separation of the parts, and that I have provided a structure which while simple, is well adapted to meet the severe requirements of practical use.

While I have shown and described certain specific embodiments of my invention, I do not wish to be understood as limiting myself thereto since I desire to claim my invention as broadly as may be permitted by the state of the prior art and the scope of the appended claims.

I claim:

1. In a tack button, a cup portion having a centrally perforated bottom, a slitted washer provided with an opening aligned with the perforation of the bottom, lugs bent from the material of the cup portion on the washer for holding the washer in place against the bottom, and a headed tack provided with a shank having oppositely disposed spaced grooves, said shank being of greater diameter than the opening of the washer and adapted to be passed through said perforation and said opening, the material of the washer surrounding said opening being adapted to enter said grooves to secure the tack to the washer.

2. In a tack button, a tack having a head adapted to engage one side of a piece of material, a straight shank on the tack provided with oppositely disposed circumferential grooves, each of less length than half the circumference of the shank, and each of substantially semi-circular cross-section and a slitted washer having a central opening therein of less diameter than the shank of the tack, the central portion of the washer surrounding the opening being initially offset laterally out of the plane of the remainder of the washer, and the slits of said washer being straight and closed throughout the lengths thereof.

3. In a tack button, a washer provided with a central opening, and with straight, substantially closed radial slits, the material of the washer surrounding the opening being initially offset laterally out of the plane of the remainder of the washer, means for securing the washer to the button, and means adapted to cooperate with the washer for securing the button to a piece of material including a headed tack provided with a shank having circumferential grooves therein of arcuate cross-section.

4. In a tack button, a cup portion provided with a perforated bottom adapted to be arranged on one side of a piece of material, a slitted washer having an opening therein in alignment with and of less diameter than the perforation of the bottom, part of the material of the cup portion being bent inwardly toward the bottom and on to the washer to clamp the washer to the bottom, and a headed tack adapted to be arranged on the

other side of the piece of material and provided with a grooved shank adapted to pass through said perforation and said opening to clamp the material between the bottom and the head of the tack.

5. In a tack button, a sheet metal washer having a central portion initially offset laterally from the remainder of the washer and centrally perforated and slitted, a cup portion having a recess therein, lugs bent from the material of the cup portion for securing the washer to said cup portion, a head portion provided with a depending rim adapted to be bent toward the cup portion and into said recess to secure said portions together, and a headed tack provided with a shank circumferentially grooved and of greater diameter than the opening in the washer and adapted to be passed through the perforation of the washer and said opening and to additionally offset the central portion of the washer.

6. In a tack button, a cup portion provided with a perforated bottom, a slitted washer within the cup portion, integral lugs bent from the cup portion on to the washer to clamp said washer against said bottom, said bottom being adapted to be arranged on one side of a piece of material, and a tack provided with a head adapted to be arranged on the other side of a piece of material and with a straight undistorted shank adapted to be passed through the perforation of the bottom and through the washer to secure said cup portion to the tack against retraction.

7. In a tack button, a button head adapted to be covered with flexible material, a button cup cooperating with the head to hold the head and its cover against removal from the cup and adapted to be arranged on one side of a sheet of material and means for securing the cup to the sheet of material comprising a slitted washer having an initially offset central part, and a tack having a head adapted to be arranged on the other side of the sheet and provided with a straight undistorted shank pointed at its end and having a circumferential groove therein for the reception of the washer, said tack being of sufficient diameter to additionally offset the initially offset part of the washer when passed therethrough.

8. In a tack button, a head having a depending bendable rim and adapted to hold a flexible cover folded thereabout, and an attaching member to hold the head and the cover, said member being provided with a circumferential recess to receive and lock the rim and part of the cover on the bending of the rim toward the recess.

9. In a tack button, a head open at one end and having a bendable rim, a cup member adapted to enter the head through the open end and of less diameter than the inner diameter of the rim, said member having an annular recess therein, and means for securing the button to a sheet including a slitted washer, and a tack cooperating with the washer and the cup member and having a grooved shank.

10. In a tack button, a head adapted to be covered with flexible material and provided with an annular rim, a cup member open at one end and having a centrally perforated bottom at the other end, an integral outwardly flared rim at the open end, a wall on the cup member of less diameter throughout the greater part of its height than that of the cup rim, said wall joining the rim of the cup member to the bottom and having a reentrant circumferential recess inwardly adjacent the annular rim of the head in the assembled positions of the head and the cup member, and means including a slitted washer within the cup member and a cooperating tack adapted to be passed through the perforation of the bottom for securing the button to an article of apparel.

11. In a tack button, a convex head provided with a depending bendable rim, and adapted to be covered with a cover of flexible material, a one-piece cup member having a bottom at one end provided with a central opening, said member terminating at its other end in an upstanding rim of greater diameter than any other part of said member but of lesser diameter than that of the rim of the head, said member having a wall integral with and joining the upstanding rim and the bottom, one part of said wall adjacent the upstanding rim being curved inwardly to form a recess and the remaining part being also curved inwardly, said one part being adapted to receive part of the upstanding rim of the head and part of the cover in the recess thereof when said rim is bent inwardly, a slitted washer in the member and resting on the bottom, lugs bent inwardly from said remaining part of the wall on to the surface of the washer to clamp the washer against the bottom, and a tack having a shank provided with spaced circumferential grooves adapted to be passed through the opening of the bottom and through the washer to spring said washer toward the head and to receive part of the washer in the grooves.

12. In a tack button, a one-piece head having a convex upper surface and a depending rim, a fabric cover for said head folded about the lower edge of the rim, a one-piece cup member having a bottom provided with an opening and having an uppermost rim of less diameter than the rim of the head, said member having an inwardly recessed wall portion below its rim, the rim of the head and the cover therefor being bent inwardly toward the recess of the wall portion and inwardly of the rim of the member, and means for securing the button to a piece of material comprising a slitted washer and a headed tack having a straight shank.

13. In a tack button, a cup portion having a bottom provided with a central opening and having a wall integral with the bottom, said wall being circumferentially recessed, a slitted washer on the bottom having a central opening therein, and lugs bent from the material of the wall on to the washer to clamp the washer to the bottom, the opening in the washer being smaller than the opening in the bottom.

LUES REITER.