Jan. 19, 1926. 1,570,398

F. G. PURINTON

BUTTON

Filed Dec. 9, 1924 2 Sheets-Sheet 1

Fig. 1.

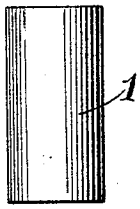


Fig. 2.

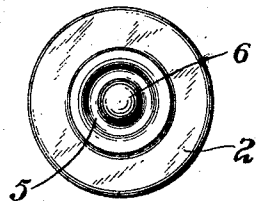


Fig. 7.

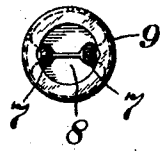


Fig. 3.

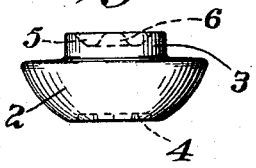


Fig. 8.

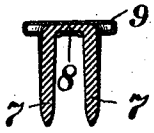


Fig. 5.

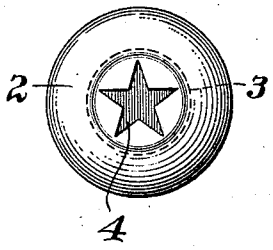


Fig. 4.

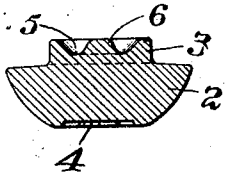


Fig. 9.

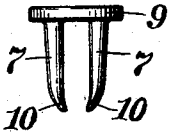


Fig. 6.

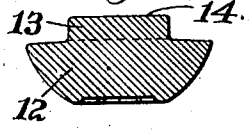
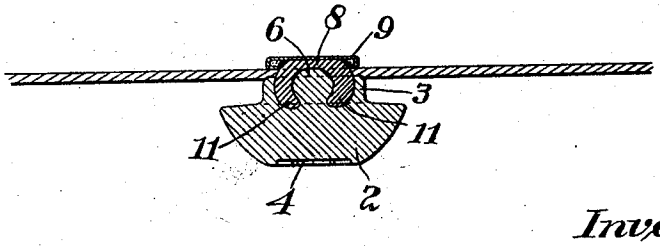


Fig. 10.



Inventor:
Forrest G. Purinton,
by Parker Cook Atty.

Jan. 19, 1926. 1,570,398

F. G. PURINTON

BUTTON

Filed Dec. 9, 1924 2 Sheets-Sheet 2

Fig.11.

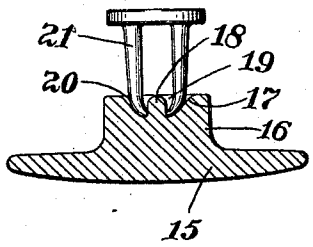


Fig.12.

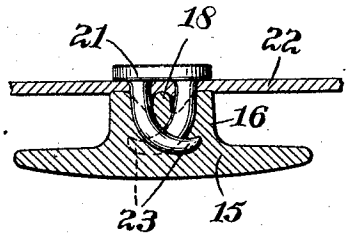


Fig.13.

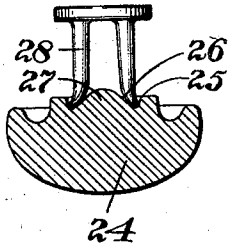


Fig.14.

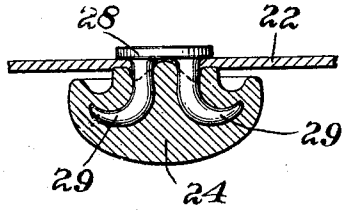


Fig.15.

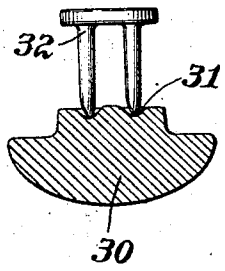
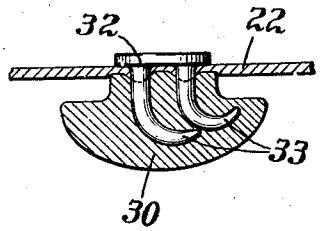


Fig.16.



Inventor:
Forrest G. Purinton,
by Parker & Cook.
Atty.

Patented Jan. 19, 1926. 1,570,398

UNITED STATES PATENT OFFICE.

FORREST G. PURINTON, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE PATENT BUTTON COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

BUTTON.

Application filed December 9, 1924. Serial No. 754,772.

To all whom it may concern:

Be it known that I, FORREST G. PURINTON, a citizen of the United States of America, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Buttons, of which the following is a specification.

My invention relates to new and useful improvements in buttons and to the manner they are to be attached to the material on which they are used, and has for an object to provide a button which is stamped from a blank, these buttons then being capable of being fed in an automatic machine to a plunger which in turn will force a staple or prong into the button head and securely anchor the button to the cloth.

Heretofore, as far as I am aware, it has been the practice to drive a tack into a thin perforate or imperforate shell which has to be placed or formed in the button head, and in many instances, it was necessary to place a hard metal plate within the button head in the form of an anvil or baffle plate to turn the point of the tack or staple either in the desired direction or to prevent it from passing through the head of the button.

One of the objects, therefore, of the present invention is to construct a button head of relatively soft material and to provide a fastener which I have shown as a double prong tack or staple, which is to be forced bodily into the rear of the head of the button and due to the softness of the material of the button head, the hardness of the staple, and the beveling of the prongs of the staples, the same will pierce the cloth and pierce the rear of the button and bend or curl bodily within the button head in a predetermined direction and thus tightly secure the button head to the fabric or other material.

Still another object of the invention is to provide a button formed from a blank of relatively soft material, to provide a hub for the button and to provide means on the hub for locating the staple concentrically with the hub of the button in the attaching operation as will be mentioned hereafter.

Still another object of the invention is to so bevel the prongs of a staple and to so form a depression in the surface of the hub of the head of the button that the prongs when driven into the hub will either curl or bend towards each other, bend or curl in the opposite direction, or bend or curl in parallel relation, with each other depending on the grooves and on the form of beveled staple used.

It will be understood that at times a button is not desired to function as a button, but as an ornament, and not used with a buttonhole, and when this form of button is used, it may have the prongs or staple curled either inwardly or outwardly as the head is a thick one, whereas, with the ordinary form of buttons that have shanks about $\frac{3}{16}''$ long and heads about $\frac{3}{32}''$ in thickness, the fastener used will have prongs beveled on the outside to insure their curling towards each other in the shank of the button.

With these and other objects in view, the invention consists in certain new and novel constructions and combination of parts as will be hereinafter more fully described and pointed out in the claims.

Referring now to the accompanying drawings showing a preferred embodiment and modified forms of the invention.

Fig. 1 is a view of a blank of relatively soft material.

Fig. 2 is a bottom plan, or rear face view of the button after the same has been stamped to shape,

Fig. 3 is a side elevation of the button,

Fig. 4 is a sectional view of the same,

Fig. 5 is a front or face view of the button head,

Fig. 6 is a sectional view of a slightly modified form of button head,

Fig. 7 is a bottom plan view of the staple,

Fig. 8 is a sectional view of the same,

Fig. 9 is a side elevation of a staple showing the beveling of the prong points on their one side,

Fig. 10 is a sectional view of a button and staple as attached to the fabric,

Fig. 11 is a sectional view of a common form of button showing the prongs in position to be driven into the hub, the fabric not being shown,

Fig. 12 is a similar view with a fastener driven through the fabric and the prongs curled inwardly and locked in the metal head,

Fig. 13 is a sectional view showing an ornamental form of button with the prongs in position,

Fig. 14 is a view of the staple driven into the head, the prongs being shown curled outwardly,

Fig. 15 is a sectional view of a button head, the ends of the prongs beveled but slightly, and

Fig. 16 shows the staple driven within the button head and the prongs curving parallel with relation to each other.

Referring now more particularly to the several views, there is shown in Fig. 1 a blank 1 of relatively soft material, such as pure aluminum, which blank is cut from a long rod or wire of this metal, after which the blank is subjected to proper dies, not shown, to form the button head 2, which is preferably provided with the hub 3 while the face of the button may have stamped therein any desired ornamental configuration as at 4, and, in the present instance, the configuration shown in Figs. 1 to 10 is one that forms the subject matter of a design patent filed by Leonard R. Carley, October 22, 1924, bearing Serial Number 11,141. It will be understood, however, that the shape of the button head, as well as the configuration on the face thereof, may be of any desired shape, or form, the ones shown being simply for the purpose of illustration.

Referring now to Figs. 3 and 4, there is shown formed in the hub 3 a slight annular depression 5 which in turn forms the frustoconical projection 6 centrally of the hub, and it is here also to be understood that the sloping side walls of the depression 5 might be more pronounced, or nearer the vertical.

After reference has been made to the staples and the manner in which they are forced into the hub, further reference will be made to the annular depression 5 as the shape of this depression, together with the beveling of the staples is what makes it possible to predetermine the way in which the prongs should be curled.

Referring now to the several views showing the metallic fastener, it will be seen that it may be a staple having two prongs 7 having the integral portion 8, similar to the staple, as shown in the patent to F. R. White, No. 1,110,091, patented September 8, 1914, over which is placed the ornamental cover 9, or it may be formed in any desired way, providing, however, it is a double prong fastener of relatively hard material. These prongs 7, as will be noticed in Fig. 9, may be slightly beveled as at 10, so that when these prongs are forced into the metal as will be shortly described, they will tend to curl inwardly as shown at 11 in Fig. 10.

To fasten the button head 2 to the cloth, the button will be placed in a button attaching machine (not shown) the button heads in one magazine and the staples in the other, and after the staple and head have been automatically fed in position, the plunger (not shown) will force the staple into the button head, the walls of the central projection 6 in the hub initially centering the prongs. As the staple is forced to its final position, the prongs will be stunted and curl within the head as clearly shown in Fig. 10, thereby tightly anchoring the head to the fabric and to the staple.

Referring more specifically to the depression or groove 5 it is primarily designed to locate the staple concentrically to the hub of the button in the attaching operation.

In the attaching, if the prongs of the staple approach the hub of the button a little to one side or the other, the beveled sides of the annular groove cause the points of the staple to skid back into alignment with the hub so that the points actually break through the surfaces of the hub in the bottom of the depression and on opposite sides of the center.

There is still another function of this annular groove nearly as important as that stated above, as I have found that the most dependable results in attaching can be only obtained by first giving this annular depression in the base of the hub a particular shape, that is, V-shape in cross section which may vary slightly toward U-shape in cross section; second by making the diameter measure from the bottom of the V on one side, to the bottom of the V on the other side, a little less than the distance between the points of the staple; and third, making the angle of the V correspond with the angle of the bevel on the points of the staples.

This may be more readily understood by referring to Figs. 11 to 16 inclusive, and now, taking up first Figs. 11 and 12, there is shown a common form of button head 15 having the hub 16 which is provided with the annular depression 17 leaving the small central projection 18, and in this instance the depression is substantially V shape, and it will be noticed that the sloping wall 19 corresponds in angularity to the several beveled points 20 of the prongs 21.

When this staple is forced into the material 22 and into the hub 16, the prongs will curl towards each other as shown at 23, the curling action in this instance, therefore, being similar to Fig. 10, but it will be noticed that the depression in the hub is slightly different in shape than that shown in Fig. 10, the central projection 18 being smaller in diameter than the projection 6, as shown in Figs. 3, 4 and 10. It is also to be remembered that in one instance the button is of the common form and in the other it is the ornamental form.

Referring now to the form shown in Figs. 13 and 14, a thick headed button 24 is shown

with an annular depression 25, the walls being beveled as at 26, leaving the more rounded projection 27 and in this instance the prongs of the staple 28 are beveled on their inside, the sloping inner walls of the depression corresponding with the bevel, thus causing the prongs to curl outwardly as at 29, as shown in Fig. 14.

Still another form is shown in Figs. 15 and 16, and in this instance the prongs of the staple are not further beveled, inasmuch as there is a slight bevel to the prongs when they are initially made.

The button head 30 is shown having the depression 31 and the staple 32, and due to the initial beveling of the prong in its manufacture, when the staple is forced into the head, both bevels being on the like sides of the prongs, the prongs will curl in parallel, as shown at 33.

In Fig. 6 I have shown a button head 12, a hub 13 and a plane surface 14, in which it is possible to force a metal staple but it is to be understood that by far the preferred form is to form a substantially V-shaped depression in the hub so that the prongs of the staple will be centered and also guided in their initial piercing of the metal.

Thus, it will be seen that when it is desired to fasten an ordinary form of button with a staple, prongs beveled in a certain way and the hub provided with a V-shaped groove, will cause the arms to lock within the metal in a restricted area. Again, where a special form of thick headed button is used, the prongs may be made to curl outwardly, this providing the strongest form of connection, and once more, inasmuch as the staples may be initially made with a slight bevel on their like side, they may be driven into a button head and will bend in parallel relation.

From the foregoing it will be seen that I have produced buttons that are neat in appearance, may be made at a maximum speed from soft metal blanks, and may be readily attached by the use of hard metal staples, and after once being fastened, cannot be pulled apart. At the same time, it is not necessary to provide the button heads with internal hubs of hard material, perforate or imperforate plates, nor anvils or baffle plates.

The button head might be made of other soft composite metals or alloys, rather than aluminum, but I have found that a button head of pure aluminum will not tarnish, takes a clean cut impression from the dies, and is soft enough to permit the prongs of the staple to plunge thereinto, but at the same time stunt and curl the beveled prongs during their passage through the metal.

Many slight changes might be made without in any way departing from the spirit and scope of the invention.

Having thus described the same, what I claim as new and desire to secure by Letters Patent is:—

1. A one piece button head formed of relatively soft metal, a staple adapted to be forced bodily within the rear of the button head, and the prongs of said staple anchored and distorted throughout their length within the head of said button to thereby lock the head with respect to the staple.

2. A button formed of relatively soft metal, a metallic fastener having prongs of relatively hard metal, the said prongs adapted to be driven within the button head and curling throughout their length therein to thereby anchor the buttons with respect to the fastener.

3. A solid button head formed of relatively soft metal provided with an integral hub, the hub having a central projection, a staple of relatively hard metal adapted to pierce the said hub, the projection centering the prongs of the staple, and said prongs being distorted throughout their length in their final position to thereby anchor the staple within the head.

4. A solid button head formed of relatively soft metal provided with a hub, said hub having a depression formed on its upper surface, a metallic fastener having two prongs, the ends of the prongs being beveled, and said prongs adapted to be driven into the soft metal hub at the base of the depression and deflect throughout their length during their passageway into the hub to thereby tightly lock the metallic fastener to the hub.

5. A solid button head formed of relatively soft metal having a hub, the said hub having a depression formed in its face, a metallic fastener having two prongs, the ends of the prongs being beveled on their opposite sides, the said prongs adapted to be driven into the soft metal hub at the base of the depression and deflect during their piercing of the hub to thereby tightly lock the metallic fastener within the head.

6. A solid button head formed of relatively soft metal and provided with a hub, an annular depression in said hub, said depression having synclinal walls, a metallic fastener having two prongs, the points of the prongs being beveled at their opposite sides, and said prongs adapted to be driven into the soft metal hub and guided by the walls of the depression, the said prongs adapted to deform and distort when piercing the hub to thereby tightly lock the prongs with said button head.

7. A one piece button head formed of relatively soft metal provided with an integral hub, the hub having an annular groove there in substantially V-shape in cross section thus forming a central projec-

tion, one wall of the V-shaped projection being slightly beveled, a metallic fastener having two prongs the ends of the prongs being beveled to correspond with the bevel of the V-shaped depression, said prongs adapted to be driven into the soft metal hub at the base of the depression straddling the projection in the hub, and the said prongs deformed throughout their length within the head to thereby tightly lock the fastener with respect to the head.

8. A solid button head formed of relatively soft metal having a central hub, the said hub having depressed side walls formed in its face and a central projection within the depressed side walls, the said depression being substantially V-shaped and one of the walls being slightly beveled, a metallic fastener having two prongs, the distance between the two prongs being slightly greater than the width of the central projection within the hub, the ends of the prongs being beveled to correspond with the aforementioned beveled depression, said prongs adapted to be driven bodily within the hub and deflect throughout their length in a direction predetermined by the position of the bevel of the ends of the prongs and the bevel of the depression in the hub of the button.

9. A solid button head formed of relatively soft metal provided with a hub, a depression in the form of an annular groove, a metallic fastener having two prongs, the distance between said prongs being slightly greater than the width of the metal between the opposite sides of the annular ring and less than the distance across to the opposite points of the ring, to thereby center the prongs during their insertion, the annular ring having one of its side walls beveled, the points of the prongs being correspondingly beveled, so that the prongs will bodily deflect when driven into the metal head in a predetermined direction and tightly lock the staple within the button.

In testimony whereof I affix my signature.

FORREST G. PURINTON.