July 7, 1931. J. M. CLARK 1,813,339

BUTTON

Filed March 12, 1930

Fig. 1.

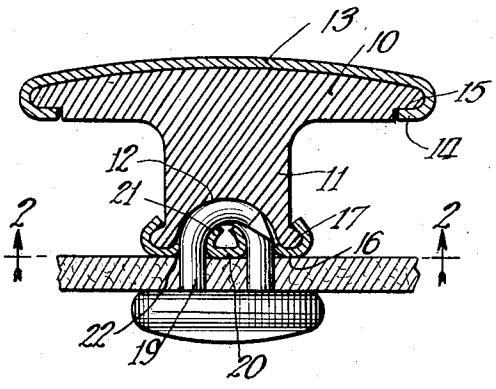



Fig. 3.

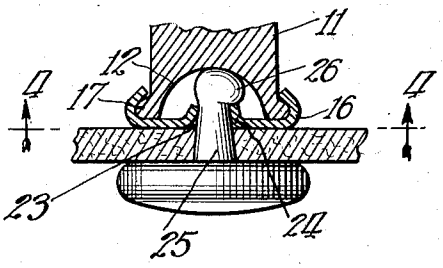



Fig. 2.

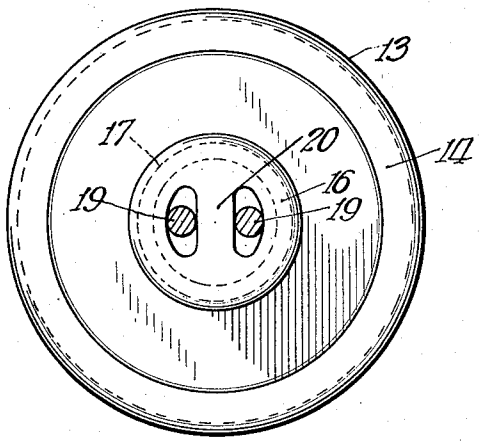



Fig. 4.

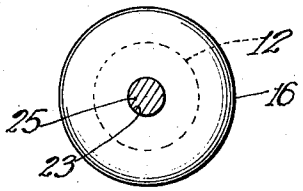
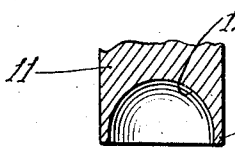



Fig. 5.




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Patented July 7, 1931 1,813,339

# UNITED STATES PATENT OFFICE

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## BUTTON

Application filed March 12, 1930. Serial No. 435,084.

This invention relates to buttons for workingmen's clothing and the like and, among other objects, aims to provide a durable and inexpensive but neat button which may be made at low labor and other manufacturing costs.

The invention may be readily understood by reference to one form of button embodying the invention and illustrated in the accompanying drawings.

In said drawings:

Fig. 1 is a section of the button shown attached to a piece of fabric or the like by means of a double pronged fastener.

Fig. 2 is a bottom plan view of the button taken along the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary sectional view similar to that of Fig. 1 showing the button attached to a piece of fabric or the like by means of a single prong fastener.

Fig. 4 is a bottom plan view of the button taken along the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary sectional view of the button shank in an intermediate stage of formation.

The illustrative button has a solid metal body comprising a head 10 and shank or neck 11, the latter being provided with fastener engaging means by which the button may be firmly attached. This button body may be efficiently and cheaply made of soft steel in the form of rod or similar stock. Such stock is not only much cheaper and can be more economically fabricated than sheet metal stock customarily used in the manufacture of metal buttons, but forms a button of exceptional strength even though of reduced shank dimension. The button body is formed of the rod stock by upsetting a blank or slug (i. e. a short section of rod stock) to provide the head 10, and in the same or succeeding operation forming a recess with a concave surface 12 in the end of the shank 11. The intermediate portion of the blank remains unchanged and becomes the neck or shank of the button. The appearance of the button head may advantageously be improved by a decorative surfacing of enamel, plating or the like, or, as shown, by a separate metal covering in the form of a shell 13 which may be decorative as well as protective in character and which is crimped over the head as indicated at 14. In the present instance the under surface of the head is rabbeted as at 15 to receive the crimped over portion 14 and to provide a flush under surface for the head.

The shank 11 of the button being solid and being in this case an integral part of the button head, is made of a much smaller diameter or thickness (yet possesses greater strength) than would be possible with a hollow shank button made of the more expensive sheet metal. Its smaller diameter permits it to be buttoned through button holes without buckling the cloth as frequently happens with buttons whose necks or collets are larger than the button holes provided for their reception.

The fastener engaging element is in this instance represented by a cup-shaped cap 16 perforated to receive the fastener prong and crimped over the rim 17 of the button shank. The rim 17 is advantageously formed by flaring out or upsetting the edge 18 of the shank as it is initially formed (see Fig. 5). This operation is a relatively simple die operation which may advantageously be performed by an operation following the formation of the recess in the end of the shank. For attachment with a double pronged fastener as shown, for example, at 19 in Fig. 1, the cap 16 is formed with a pair of openings and an intervening bar 20 over which the fastener prongs are curled by the action of the die surface 12. The relation between the die surface 12 and the bar is such as to result in clamping the fastener prongs tightly around the bar. In the present case the openings in the cap are formed by a piercing operation which curls up the metal at 21 to reinforce or stiffen the bar and also curls it inwardly somewhat as at 22 to provide additional stiffening for the cap. If the button be designed for attachment by a single pronged fastener, the cap is provided with a single opening 23, in the present case pierced rather than punched to provide an inwardly curled metal stiffening margin 24 for the opening. This opening is preferably made slightly smaller

than the shank of the fastener 25 so as to be enlarged thereby and fit tightly around the same. The curved die surface 12 in this instance serves to upset the fastener prong, somewhat as indicated at 26, tightly against the cap. Whether attached by the single or double pronged fastener the button is clamped tightly against the cloth. The cap provides an enlarged cloth engaging surface which when tightly clamped against the cloth largely avoids any direct pull of the cloth against the fastener prongs.

The illustrative button is not only inexpensive because it is made from relatively inexpensive materials but because of the reduction of waste. In the manufacture of metal buttons from sheet metal there is a waste of from 10 to 33% of this more expensive material. Moreover, the design of the button, being made largely from rod stock, permits of simple and efficient machine operations which require little or no intermediate handling of the button parts.

Obviously the invention is not limited to the precise details of the illustrative button since these may be variously modified.

Having described my invention, I claim:

1. The method of forming a cheap button which is characterized by upsetting at one end a short section of soft steel rod of a diameter corresponding to the diameter of the button shank, to form a button head; indenting the other end of the rod to form a concave upsetting die; and then enlarging the rim surrounding the concavity to form a laterally extending bead, the intermediate portion of the rod being left unchanged to form the shank of the button.

2. A solid metal button for working garments and the like comprising in combination, a die-formed body having an integral head and solid shank of relatively small diameter, said shank beng provided with a concave recess in its end to act as a fastener upsetting die and having its extremity formed with a laterally extending bead, a fastener engaging cap crimped over said bead, a thin metal shell covering said head and having its margins crimped under said head, the under surface of said head being recessed so that said margins lie flush with the button surface.

3. A solid metal button for wokring garments and the like comprising in combination, a die-formed body having an integral closed top head and solid shank of relatively small diameter, said shank being provided with a concave recess in its end to act as a fastener upsetting die and having its extremity formed with a laterally extending solid bead, and a fastener engaging cap firmly attached to said bead.

In witness of the foregoing I affix my signature.

JOHN M. CLARK.