April 26, 1960 W. A. TROLL 2,934,032

METHODS FOR HOLDING BUTTONS FOR SEWING AND HOLDING MEANS THEREFOR

Filed Aug. 15, 1956

Fig. 1.

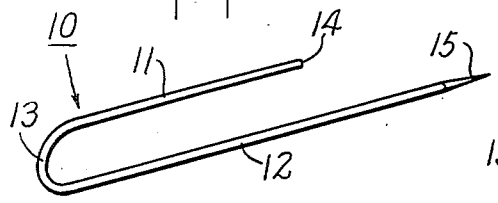


Fig. 2.

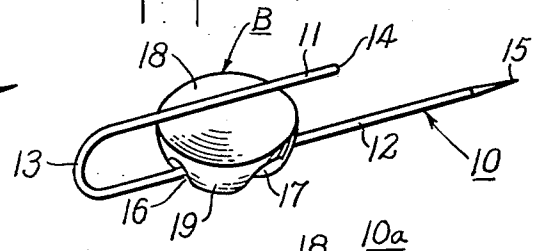


Fig. 3.

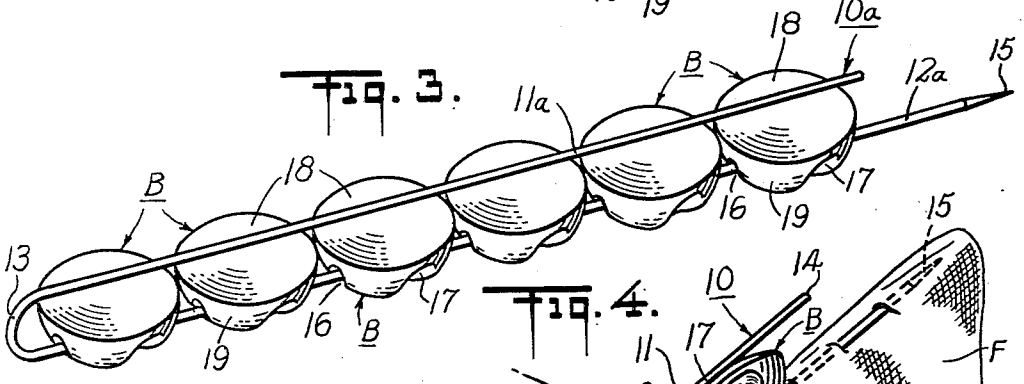


Fig. 4.

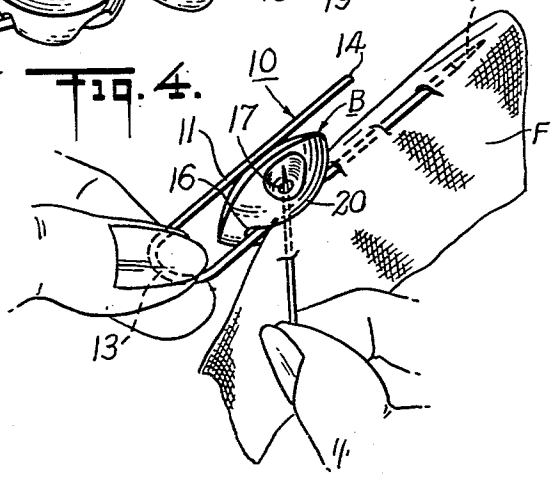


Fig. 5.

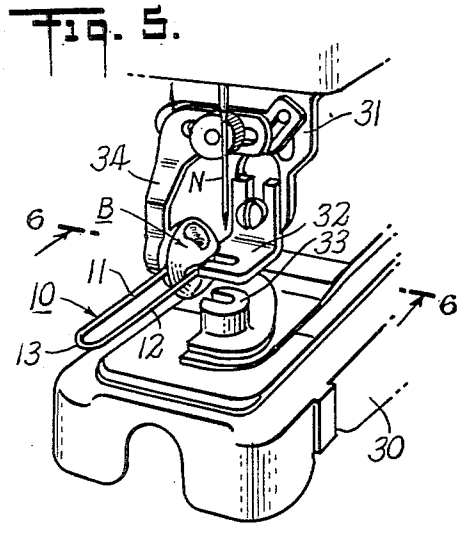
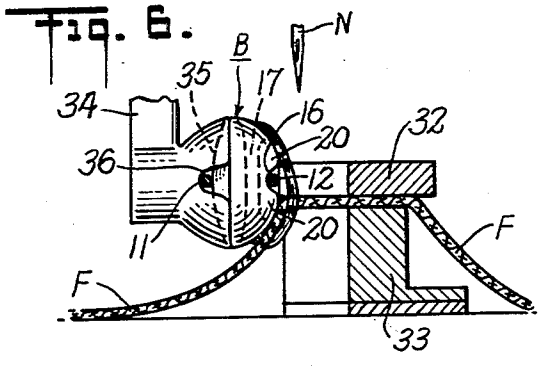


Fig. 6.



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METHODS FOR HOLDING BUTTONS FOR SEWING AND HOLDING MEANS THEREFOR

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Application August 15, 1956, Serial No. 604,236

6 Claims. (Cl. 112—262)

This invention relates to button holding and feeding means, and more particularly to self-shank button holding means, and still more particularly to methods for holding buttons for sewing the same.

This invention particularly deals with button holding means for self-shank or shankless buttons described and claimed in an application entitled Self-Shank Buttons, Serial No. 584,025, filed May 20, 1956.

In the application aforesaid, there is described and illustrated a self-shank button generally of lenticular body, having a transverse aperture open to each side edge of the button substantially in parallelism with and between the front and rear faces of the buttons, to provide a thread opening and an open groove on the rear face to one side of the thread aperture having utility for purposes here dehere described. The contour, shape and semi-spheroidal faces introduce a problem in handling these buttons for effective sewing in commercial button sewing operations.

Accordingly, it is an object of my invention to provide a button holding device securely to clamp the button whereby effective stitching operations may be performed quickly and facilely, and to accomplish, in a most effective manner, a relationship between the rear face of the button and the fabric to which the button is sewn, which relationship pre-determinedly integrates the button to the fabric from which it is supported by the threads.

Still more particularly, it is an object of my invention to provide a button holding and clamping and button feeding device whereby stitching operations may be carried out quickly, including the feeding of buttons seriatim to known clamps of button sewing machines, whereby the benefits of a self-shank button of parti-spheroidal or lenticular body may be achieved economically without the awkwardness incident to the handling of such buttons.

Still more particularly it is an object of my invention to provide a mitten for sewing shankless buttons with economy, making the use of such buttons commercially practicable.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, I make reference to the accompanying drawing, forming a part hereof, in which.

Figure 1 is a perspective view of the holder;

Figure 2 shows the holder supporting a button in position;

Figure 3 is another embodiment whereby a series of buttons may be held in position;

Figure 4 is a perspective view illustrating the method of sewing a button in position in accordance with the device illustrated in the preceding figures;

Figure 5 is a perspective view showing my device for feeding a button to the clamp of a button sewing machine;

Figure 6 is a magnified section taken on the line 6—6 of Figure 5.

Making reference to the drawing, I contemplate providing a device especially useful with a self-shank button, particularly one having a lenticular body or one in which

the shank protrudes from the rear face in the form of a semi- or parti-spheroidal contour of such magnitude as may be considered a shankless button. In this latter type of button construction, a transverse thread aperture extends in a plane substantially in parallelism to the primary plane of the front and rear faces. A specific embodiment of such button is more clearly illustrated in the application of Sidney Emsig aforesaid.

The self-shank button in accordance with said application particularly includes an open groove on the rear face, exposing a pair of ridges to one side of the thread aperture and preferably at right angles to the axis of the aperture.

I have found that this button, with all its desirable attributes, may be handled economically despite its awkwardness, due to its general spheroidal contour, by a button clamp and holder in accordance with my invention, to provide novel and economical sewing methods. For this purpose reference is made to Figure 1 wherein the button holder **10** comprises spaced branches **11** and **12**, resiliently joined by a loop **13**. The branches **11** and **12** are substantially in parallelism and are constituted of spring wire resiliently to urge the branches **11** and **12** in relation to each other, thereby forming spaced clamping members. The branch **11** may terminate in a dull edge **14**. The branch **12** is preferably extended beyond the end **14** and terminates at **15** in a fabric piercing end or needle point.

With a construction as shown, a lenticular button B may be held between the branches **11** and **12**. Employing the shankless button in accordance with the Emsig patent application aforesaid, it will be observed that I may extend the button to have the branch **12** guided within the open groove **16** transverse to the thread apertures **17**. The branch **11** clampingly retains the button oriented with the thread aperture at right angles to the branch **12**, which acts as a guide slidingly to hold the button along the length of the branch **12** under the biasing influence of the branch **11** on the front face **18**. The rear face **19** of the button is thereby exposed and spans the branch **12**, which acts as a rear face contacting clamp member.

With such asembly, the button B may be facilely and quickly handled without awkwardness, extending the thread apertures to one side of the loop **13** at a sufficient distance so that the assembly may be manipulated by the loop **13**. In this form, the holder may be used to locate the button on any fabric F, as shown in Figure 4, piercing the point **15** and locating the rear face **19** adjacent the portion of the fabric at which the button is to be sewn, with the thread aperture **17** oriented transversely to the holding clamp **12**.

Stitching may then be effected through the aperture **17** and about the rear clamp member **12**. When an adequate number of needle and thread passes has been extended through the thread aperture of the button and fabric, the holder **10** may be removed without relaxing the effectiveness of the thread passing through the button.

The form of construction described provides the means for handling of these awkwardly shaped buttons, particularly small sizes of shankless or self-shank buttons without hazard and with speed making their use economically possible commercially. Likewise, the clamp may be used temporarily to tack a number of buttons to a garment, thereby assuring a predetermined location of buttons on a garment.

The employment of the button holder having a clamp member of a dimension interfitting the groove on the rear face of the button, particularly fitting within the confines of the groove, permits stitching about the rear face contacting clamp member without relaxing the thread which holds the button in position when the clamp member is removed, thus permitting an effective section

or quantity of fabric to be engaged by the stitch and thereby positioning the button uprightly on the fabric, as well as in a close contacting relationship not previously experienced with self-shank buttons.

While I have shown and described a button holder for self-shank buttons which provides the novel means for handling one button at a time, I may provide a holder in which a series of buttons to be affixed to a garment are grouped and handled simultaneously. A construction for this purpose is illustrated in Figure 3 wherein the holder **10***a* has a front face clamp member **11***a* joined to a rear face wire clamp member **12***a*, by an intermediate loop **13**, the members are of a length to hold a plurality of the self-shank buttons, as previously described. In the illustration, six buttons are shown guided along the wire clamp member **12***a*. As in the prior embodiment, the rear face clamp member **12***a* is provided with a needle point **15** where temporary location and contact on a fabric is found desirable. The assembly of a plurality of buttons may be used as in the prior embodiment, locating the thin-wire rear-face clamp member in the open groove on the rear face of the buttons. The buttons may be slid progressively along the wire **12***a* after each sewing operation, the thread aperture being oriented thereby and, in this specific form, transversely to the clamp member **12***a*, while permitting access alternatively to the thread aperture and piercing the fabric as each stitch is made about the exposed ridges **20** to each side of the groove **16**, previously described.

As each button is sewn in position, the holder with the remainder of the buttons thereon may be removed without relaxing the tension of the thread, holding the button on the fabric in the manner previously described. Thus, a series of buttons may be progressively slid along and from the rear face clamp member **12***a*, while holding the button in contact with the fabric by the stitches.

While I have described and illustrated a button holder for carrying out a stitching operation by hand, the holder may be employed with existing button sewing machines to facilitate a speedy feeding of the shankless button in existing button sewing machines.

In the illustration, the base **30** will be recognized as the base of a Singer No. 175 button sewing machine wherein the usual work clamp arm **31**, under the influence of the sewing machine treadle, has mounted thereon a machine button holder **32**, capable of moving toward and from the work supporting anvil **33**. In opposed position to the button holder **32** there is shown a button finger **34** which terminates in a seat or socket **35** of generally concave outline to receive, centrally seated thereon, the front face **18** of a self-shank button.

With a holder such as described in Figures 1 and 3, buttons B, particularly those arranged in series in edge-to-edge contact as shown in the embodiment in Figure 3, may be used to feed a single button in oriented position with respect to the needle N between the button holder **32** and the finger **34**, to hold the same between the holder and finger in executing the cycle of movement in the sewing of the button sewing machine.

The usual button sewing machine work and button holding clamp **31**, where it is released upon the work supporting anvil **33**, may retain the manual button holder **10** or **10***a* in position without hazard to the operator, as the branches **11** and **12**, or **11***a* and **12***a* of the holder in no way interfere with the clamping engagement of the machine button holder **32** and the opposed finger **34**.

By the construction described, the ridges **20** are brought into intermediate clamping engagement with the fabric F over the anvil, to provide an effective sewing operation as described in connection with the manual sewing method.

While I have shown and described a button seat **35** in the form of a concave surface which is arranged to seat the front face of the button, with the branch **11** or **11***a* of the holder removed, I may retain the holder **10** or **10***a* in position during button sewing operations and for this purpose the seat **35** may be formed with a clearance slot **36**, extending diametrically across the seat **35**, thereby further guilding the branch **11** or **11***a* in an oriented position transverse to the direction of movement of the needle N, and thereby accurately orienting the sewing hole aperture **16**.

The construction not only permits a rigid holding of the button in accurate oriented position of the thread aperture to the needle but provides an intimate clamping of the rear face of the button on the fabric in relation to the work supporting anvil **33**, to locate the button in an erect position, whether the stitch is effected over an edge of the fabric or by a blind stitching penetration.

A method of sewing buttons is thereby provided in which close contacting engagement of the button and fabric is made possible by the use of a shankless button by positioning one or both ridges of the button against the fabric and an anvil portion while orienting the sewing holes quickly to carry out the stitching operations.

The device and the method of operation therefore lend themselves to sewing shankless or self-shank buttons without hazard and without requiring unusual skill and highly dexterous operators to carry out the operations.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is—

1. The method of sewing upon fabric, shelf-shank buttons having a transverse thread aperture between the front face and to one side of spaced ridges extending therefrom defining a groove on the rear face, which includes the steps of positioning one of the ridges adjacent the fabric which extending thread aperture orienting means between the button and the fabric to engage the groove between the ridges, successively passing stitches through the thread aperture and fabric to envelop the said means therebetween with each stitch, and to trap the said means in the stitch, and then withdrawing the orienting means from between the button and fabric including the stitch uniting the same, whereby the stitch holds the button ridges in contact with the fabric.

2. The method of sewing upon fabric, self-shank buttons having a transverse thread aperture between the front face and to one side of spaced ridges extending therefrom defining a groove on the rear face, which includes the steps of positioning one of the ridges adjacent the fabric to contact and clamp the same while extending means for orienting said thread aperture substantially parallel to the plane of said fabric between the button and fabric to engage the groove between the ridges successively passing stitches through the thread aperture and fabric to envelop the said means between the fabric and the ridges with each stitch, and then withdrawing the orienting means from between the button and fabric whereby the stitch holds the button ridges in contact with the fabric.

3. A method for sewing a shelf-shank button comprising a body having a transverse thread aperture open to each side edge substantially in parallelism with and between the front and rear faces to provide spaced entrance and exit needle openings, and an open groove on the rear face to one side of said thread aperture which includes the steps of clampingly engaging the button between the front face and the groove by extending a thread aperture aligning clamp wholly within the groove to expose ridges to each side of the groove, contacting the ridges with the work, stitching through the thread aperture and work about the clamp within the groove to envelope the clamp between the work and the button and then removing the clamp from the groove whereby the stitch holds the button ridges in contact with the fabric.

4. A button holder and feeder in combination with self-shank buttons, each of which has an imperforate front face and an imperforate rear face, with an open groove on said rear face, including a thread aperture

lying in a plane substantially transversely of the axis of the button between the front and rear faces of said buttons comprising a pair of spaced, longitudinally extended clamping members biased toward each other, one of said clamping members being adapted to hold a plurality of said buttons by engaging the front faces thereof, and said other clamping member adapted to hold said buttons against said first clamping member by extending entirely within the button groove outline to orient said buttons and apertures and along which latter member the buttons may slide to and from sewing position while holding said buttons oriented, one of said clamping members terminating in a piercing point for holding the entire assembly of feeder and button in sewing position.

5. A button holder in combination with a self shank button having an imperforate front face and an opposed, imperforate rear face, with a sewing thread aperture extending in a plane between the front face and the rear face, to run transverse to the axis normal to the front face and having groove means formed on the button for orienting the sewing thread aperture, which groove means are positioned in a plane spaced from a plane common to the sewing thread aperture, thereby to provide ridges

to each side of said groove means, said holder having spaced clamping members, one of which is arranged to engage the front face and the other the rear face of said button, the latter clamping member interfitting the groove means, thereby exposing the ridges to each side of said latter clamping member for direct contact with the fabric to which the button is to be sewn.

6. A holder in accordance with claim 5 wherein said clamping members are extended so that a plurality of said buttons may be simultaneously held in edge to edge contact, the removal of one button leaving another in the next adjacent position and held by said members.

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