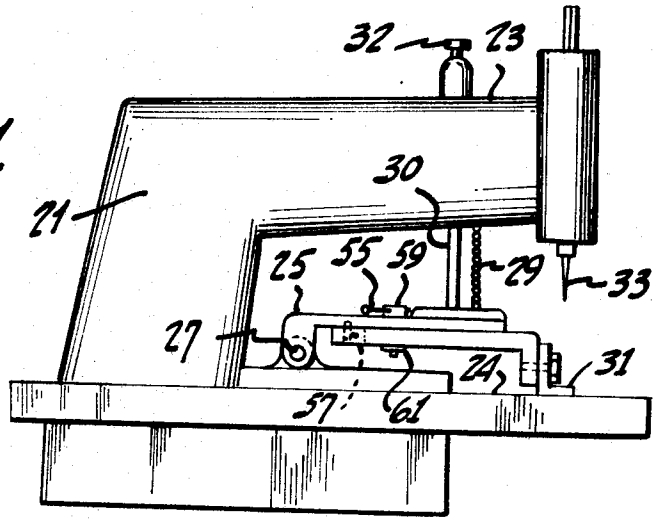
July 23, 1968 A. GLASSMAN 3,393,886

ATTACHMENT FOR SEWING MACHINE

Filed April 25, 1967

Fig. 1.



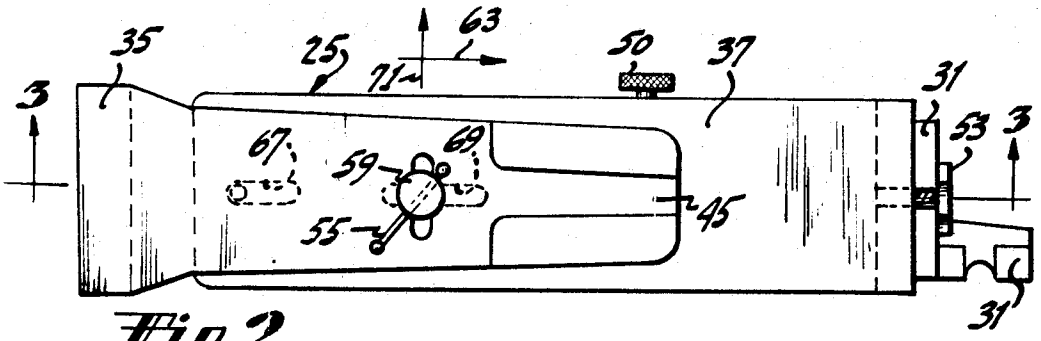


Fig. 2.

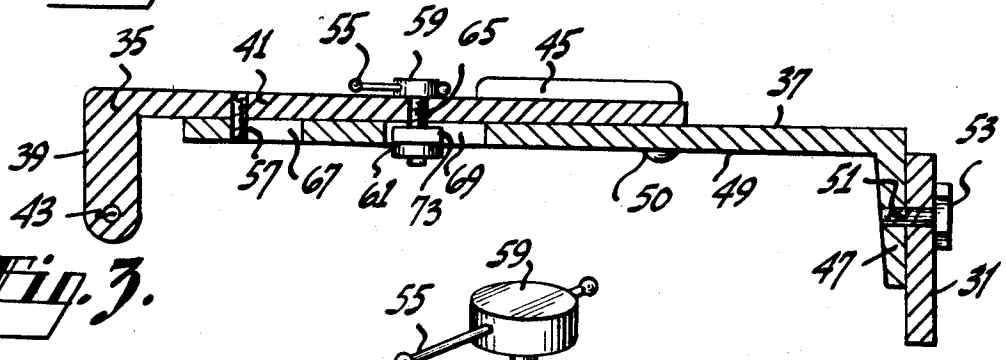


Fig. 3.

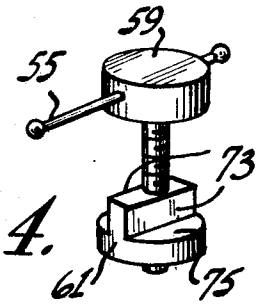


Fig. 4.

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ATTACHMENT FOR SEWING MACHINE

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ABSTRACT OF THE DISCLOSURE

An attachment for mounting a button holder or other workholder on a sewing machine. The attachment requires the positioning of only one part and the tightening of only one bolt in order to be set up for the sewing machine operator. Nevertheless, the attachment holds its setting faithfully and permits simple resetting when desired.

Background of the invention

Attachments for mounting a button holder on a sewing machine are commercially available. Such prior attachments are comprised of two members. One member has, at the end thereof, means for pivotally mounting the attachment on the sewing machine; and the other member has means for mounting the workholder. The two members are held together with at least two bolts which pass through holes in the members and which are spaced from each other in the direction which is transverse to the length of the attachment. The holes in the members permit the bolts an amount of play such that the members may be positioned at different angles (within a limited range) with respect to each other prior to tightening the bolts. With this play, the mechanic may adjust the position of the workholder to the desired position with respect to the needle.

With such prior attachments, it is difficult to tighten the workholder at precisely the desired position. Also, it is difficult to maintain that position faithfully through a large number of operating cycles. One reason for this is that the bolts are relatively closely spaced from each other in a direction transverse to the length of the attachment. Another reason for this is that the holes through which the bolts pass are enlarged to permit substantial movement of each of the bolts in both the length and transverse directions of the attachment.

The prior attachments were raised and lowered by a chain or rod connecting the attachment to a crank within the arm of the sewing machine. The attachment is pushed downward by a spring-loaded presser bar extending from the sewing machine arm, which presses on a separate presser bar seat that is bolted to the one member of the attachment. Each time the attachment position is changed, the seat position also needs to be changed in order to center the seat under the spring-loaded rod. This is accomplished by loosening two bolts, centering the seat under the rod, and then tightening the bolts.

Summary of the invention

The novel attachment is comprised of an inner and an outer member, both L shaped. The inner member has, at one end of one leg thereof, means for pivotally mounting the inner member on a sewing machine. The outer member has, on one leg thereof, means for mounting a workholder thereon. The inner and outer members are clamped together and held in position with a stud, and a bolt and nut along the other legs of the members. The stud and the bolt are spaced from each other in the direction of the length of the attachment.

The stud is mounted nearer to the mounting means in one of the members and extends into a nearer elongated hole in the other of the members. The nearer hole in the

other of the members permits the stud substantial movement in the length direction of the attachment but substantially no movement in the direction transverse to the length direction.

The bolt and nut are located farther from the mounting means. The bolt extends through a farther elongated hole in each of the members. The farther hole in one of the members is elongated in the length direction of the attachment and permits the bolt substantial movement in the length direction of the attachment. The farther hole in the other of the members is elongated in the transverse direction of the attachment and permits the farther bolt substantial movement in the transverse direction of the attachment, but substantially no movement in the length direction of the attachment.

The novel attachment is easier to adjust and it is easier to maintain the adjustment than in previous attachments of this type at least because of the following features. The bolt and stud are spaced apart a greater distance, thereby providing a greater lever arm to resist any torque that would tend to alter the adjustment after the bolt is tightened. The bolt and stud, spaced in the length direction of the attachment, in combination with the holes described above provide additional constraints which maintain the members in their positions during adjustment and after the bolt has been tightened. Only one bolt need be tightened to set the workholder in position.

The inner member, on the upper part of the clamped leg thereof, has a slot therein adapted to be engaged by a spring-loaded presser bar. By making the slot in the inner member (instead of a separate presser bar seat bolted to what corresponds to the outer member, as in prior attachments), the seat remains under the presser bar regardless of the position of the workholder. Hence a separate presser bar seat and two bolts are eliminated and no adjustment is necessary when the outer member is positioned.

Brief description of the drawings

FIGURE 1 is an elevational view of a sewing machine including a novel attachment mounted thereon,

FIGURE 2 is a plan view of a novel attachment, and

FIGURE 3 is a sectional elevational view along section lines 3—3 of FIGURE 2.

FIGURE 4 is a perspective view illustrating the bolt and special nut included in the attachment illustrated in FIGURE 2.

FIGURE 1 shows a button sewing machine **21** having an overhanging arm **23** and a table portion **24**. A novel attachment **25** is mounted on the table portion **24** with a pivot **27** at one end thereof. The attachment **25** may be moved up about the pivot pin **27** with a lifting chain **29** mounted between a crank (not shown) in the arm **23** and the attachment **25**. The attachment **25** is pressed down by a spring-loaded presser bar **30**. The pressure applied by the presser bar **30** may be adjusted by turning the screw **32**. A workholder **31**, such as a shank button holder, is mounted at the other end of the attachment **25** adjacent the needle **33** of the machine **21**.

FIGURES 2 and 3 illustrate in more detail the attachment **25** shown in FIGURE 1, removed from the machine **21**. The attachment **25** is comprised of an inner L shaped member **35** and an outer L shaped member **37**. The inner member **35** has a shorter leg **39** and a longer leg **41**. Near the end of the shorter leg **39** is a hole **43** through which a pivot pin (not shown) may pass. Near the end of the longer leg **41** on a major surface thereof is a slot **45** for engaging a presser bar **30**. The outer member **37** has a shorter leg **47** and a longer leg **49**. Near the end of the shorter leg **47**, is a threaded hole **51** for receiving a screw **53** for holding the workholder **31** against the surface of the outer shorter leg **47**. On the side of the longer leg

49 is a screw 50 adapted to receive the end of the lifting chain 29.

The inner longer leg 41 and the outer longer leg 49 are held in position with respect to one another upon the major faces thereof by a stud 57, and a bolt 59 and nut 61. The stud 57 and the bolt 59 are spaced from one another in the direction of the length of the attachment (shown by the arrow 63). The stud 57 (which is closest to the pivot hole 43) is screwed into the inner longer leg 41 and extends into a longitudinally elongated hole 67 in the outer longer leg 49. The bolt 57 (which is furthest from the pivot hole 43) passes through one hole in each of the members 35 and 37, one hole being longitudinally elongated and the other hole being transversely elongated.

The inner hole 67 in the outer member 37 is a longitudinal slot which permits substantial movement of the stud 57 in the length direction (shown by the arrow 63) of the attachment, but substantially no movement in the transverse direction (shown by the arrow 71). The outer hole 69 in the outer member 37 is a longitudinal slot which permits substantial movement of the bolt 59 in the length direction 63 but substantially no movement in the transverse direction 71. The outer hole 65 in the inner member 35 is a transverse slot which permits substantial movement of the bolt 59 in the transverse direction 71 but substantially no movement in the longitudinal direction 69. It is noteworthy that the relative location of these two latter slots can be reversed.

FIGURE 4 shows the nut and bolt assembly separate from the attachment. The bolt head has a lever arm 55 extending therethrough to aid in tightening and loosening the bolt 59. The nut 61 has a pair of recesses 73 which fit the bolt into slot 69 preventing bolt rotation during tightening and loosening and also give a better fit to prevent transverse movement in the slot 69. When the bolt is tightened, the land 75 on the nut 61 contacts the surface of the outer member 37.

In setting up the attachment 25, the workholder 31 is mounted on the outer member 37 with the screw 53. Then, the attachment is mounted on the table portion 24 with the pivot pin 27. Next, the bolt 59 is loosened and the outer member 37 is shifted into the desired position so that the workholder 31 is precisely located with respect to the needle 33. Finally, the bolt 59 is tightened.

Because of the shape and positions of the three holes 65, 67 and 69, the members of the attachment are easier to adjust than those of previous attachments. Also, the adjustment is maintained more faithfully in operating the machine. The three holes 65, 67 and 69 may be arranged in any combination in the members.

Another advantage is that the slot 45 is integral with the inner member 35 which is not shifted in a horizontal direction when the outer member 37 is positioned. Thus, no adjustment need be made with respect to the presser bar 30 when the outer member 37 is adjusted.

What is claimed is:

1. An attachment for mounting a workholder on a sewing machine comprising:

(1) an L shaped inner member, said inner member having, at the end of one leg thereof, means for pivotally mounting said inner member upon said sewing machine,

(2) an L shaped outer member, said outer member having, upon one leg thereof, means for mounting said workholder, and

(3) a stud and a bolt and nut for positioning with respect to one another and for clamping together said inner and outer members along the other legs of said members, said stud and bolt being spaced from each other along the length of said other legs of said member, the stud being mounted nearer to said mounting means in one of said members and extending into a nearer hole in the other of said members, said nearer hole being elongated in the longitudinal direction of said other legs to permit said stud substantial movement in the length direction of said other legs but substantially no movement in the transverse direction of said other legs, and said bolt being located farther from said mounting means and extending through a farther elongated hole in each of said members, the farther elongated hole in one of said members being elongated in the transverse direction of said other legs to permit said bolt substantial movement in the transverse direction of said other leg and substantially no movement in the longitudinal direction of said other leg, and the farther elongated hole in the other of said members being elongated in the longitudinal direction of said other leg to permit said bolt substantial movement in the longitudinal direction of said other leg and substantially no movement in the transverse direction of said other leg.

2. The attachment defined in claim 1 wherein the bolt includes a lever arm through the bolt head thereof for aiding in tightening and loosening said bolt and nut.

3. The attachment defined in claim 1 wherein the nut has two recessed portions therein for adapting said nut to fit into the slot in said outer member.

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