

May 14, 1968

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3,382,823

SHUTTLE HOLDER FOR QUILTING MACHINES

Filed March 4, 1966

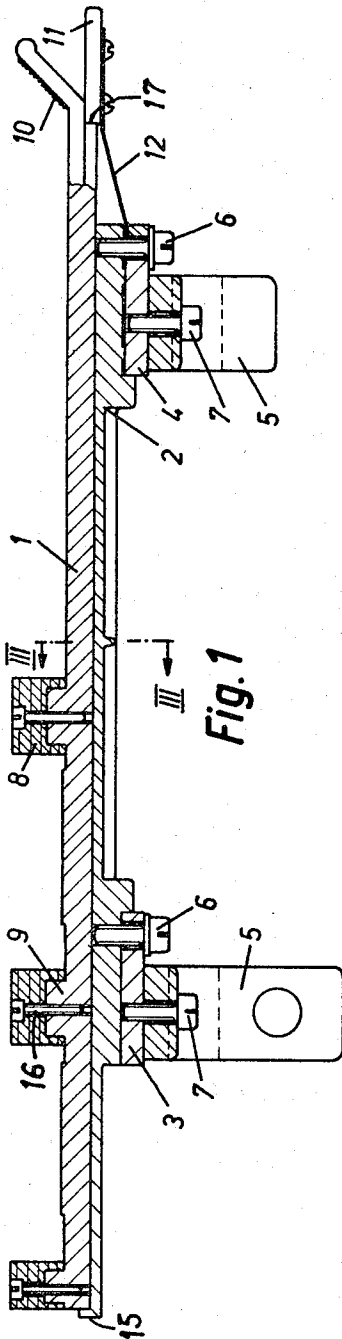


Fig. 1

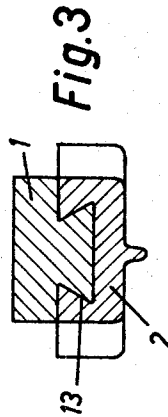


Fig. 3

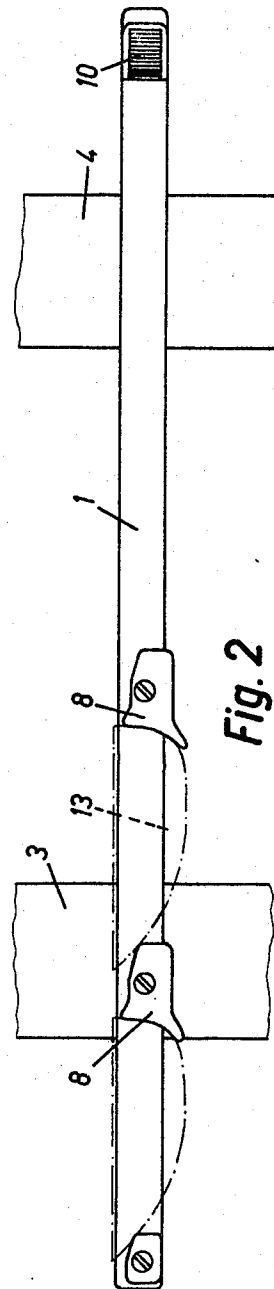


Fig. 2

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SHUTTLE HOLDER FOR QUILTING MACHINES
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Filed Mar. 4, 1966, Ser. No. 531,724

Claims priority, application Switzerland, Mar. 10, 1965,
3,374/65

4 Claims. (Cl. 112—95)

ABSTRACT OF THE DISCLOSURE

A shuttle holder for a multiple needle quilting machine which is adjustably supported on spaced driver arms transversely thereof, the holder having separable upper and lower portions slidably connected by a dovetail, the lower portion being mounted on the driver arms and the upper portion having a plurality of drive pins for mounting at least two shuttles thereon, the upper and lower portions being held against relative longitudinal movement by a spring tongue on one portion normally engaging a shoulder on the other to prevent longitudinal movement.

This invention relates to a shuttle holder for a multiple needle quilting machine.

In quilting machines of this type heretofore available it has been customary to make the shuttle holder lie on the driver arm and fasten it on the latter by means of bolts, pins or pushbutton-like parts. By reason of the very great acceleration and retardation forces and vibrations acting on these parts in high-speed machines, experience has shown that the fastening members get out of line relatively quickly, so that the shuttles no longer operate accurately and consequently faulty stitching develops. Furthermore, it can happen that the shuttle holder bends under the influence of the forces acting on it, thereby also resulting in stitch failures.

It is the principal object of the present invention to provide apparatus which overcomes these disadvantages.

The invention is characterized in that the holder has an upper part and a lower part separable therefrom, and the two parts are guided longitudinally on at least a portion of their length, and releasable stopping means are present which prevent a relative displacement of upper part and lower part in operation.

In this manner it is possible to achieve a substantially better fastening of the shuttle holder, it being possible to release the fastening and pull out the upper part for the convenient replacement of the shuttles.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which—

FIGURE 1 is a vertical sectional view through a shuttle holder in accordance with the invention;

FIG. 2 is a top view of the shuttle holder shown in FIG. 1; and

FIG. 3 is a sectional view, enlarged, taken on line III—III of FIG. 1.

The shuttle holder of the present invention is adapted for use in quilting machines of well known type having provisions for feeding the layers of materials to be quilted and removing the quilted fabric, the stitching being accomplished by tube driven twin row multiple needles and

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shuttles. The shuttle movement is driven from a main drive shaft with regulatable crankshaft having twin actuation for shuttle movement.

In accordance with the invention the shuttle holder has an upper part 1 and a lower part 2, which are held together by a dovetail joint or guide 13 in such a manner that these parts can be displaced relatively to one another lengthwise. The lower shuttle holder part 2 is fastened by screws 6 on front and rear driver arms 3 and 4 of the quilting machine (not shown). The driver arms 3 and 4 are in turn fastened by screws to front and rear supports 5 forming part of the frame (not shown) of the machine. The upper shuttle holder part 1 is provided with three cams 9 on which driver pins 8 made of plastic, preferably a polyamide, are mounted. These driver pins 8 are so constructed that they support and hold in their working position two shuttles 13 disposed in tandem.

In order to prevent an undesired relative displacement of the two shuttle holder parts 1 and 2 longitudinally in the operating state, resiliently mounted tongue 11 or catch is present underneath the upwardly projecting handle 10, the said tongue or catch 11 being held yieldingly by a leaf spring 12 and lying against a shoulder 17 of the upper part 1. The spring 12 is clamped fast between the driver arm 4 and the bottom part 2 by means of a screw 6. On the opposite side, the position of the upper part is limited by an upwardly directed stop 15 on the lower shuttle holder part 2.

The dovetail guide 13 extends approximately over the entire length of the upper and lower shuttle holder parts 1 and 2, and at least over the span between the driver arms 3 and 4 so that a good, play-free guidance is produced. The driver pins 8 are set tightly and firmly on cam 9 by means of screws 16, so that they cannot shift in operation. Any slight corrections of position for the shuttles are performed by means of the screws 6, since the hole in the driver arms 3 and 4 is somewhat larger than the outside diameter of the thread.

To remove the upper shuttle holder part 1, the catch 11 is pressed down, whereupon the upper shuttle holder part 1 can be drawn out together with the shuttles 13 by means of the handle 10.

I claim:

1. A shuttle holder for a multiple needle quilting machine comprising:

spaced driver arms,

separable upper and lower elongated shuttle holder members transversely disposed with respect to said arms and extending therebeyond,

members for securing said lower holder member to each of said arms,

said upper holder member having members for the mounting of a plurality of shuttles therealong, and said shuttle holder members having slidably engaging interfitting longitudinal portions restricting relative movement of said members to longitudinal slidable movement,

releasable holding means for retaining said upper and lower holder members against relative longitudinal movement.

2. A shuttle holder as defined in claim 1 in which said interfitting portions comprise a dovetail and said dovetail extends at least the distance between said driver arms.

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3. A shuttle holder as defined in claim 1 in which a plurality of longitudinally spaced driver pins are provided on said upper holder member for holding at least two shuttles.
4. A shuttle holder as defined in claim 1 in which said releasable holding means includes a resilient tongue carried by said lower holder member, and said upper holder member has a shoulder releasably engaged by said tongue whereby said upper holder member can be longitudinally displaced with respect to the lower holder member upon release of said tongue from said shoulder.

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