April 15, 1952 H. A. BLICKLE 2,592,787

SPRING JACK FOR KNITTING MACHINE NEEDLES

Filed June 18, 1951

Fig. 1.

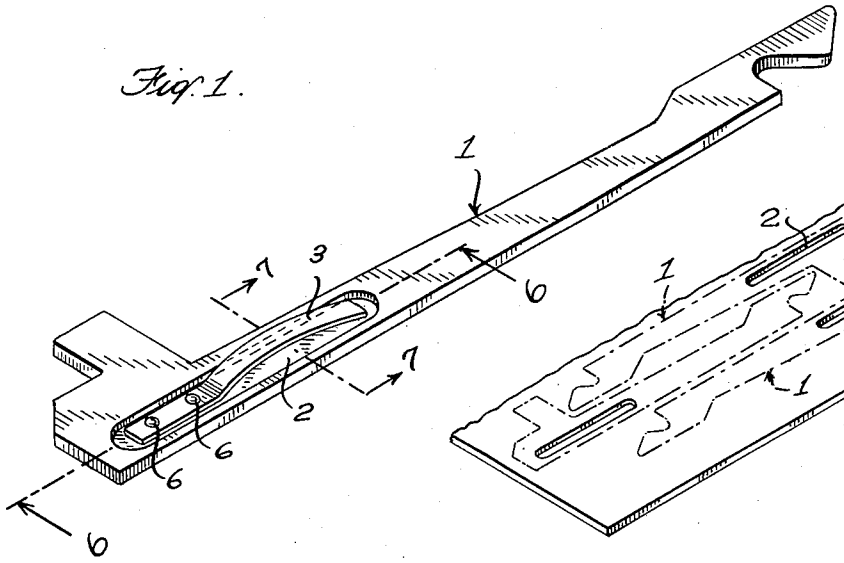


Fig. 2.

Fig. 3.

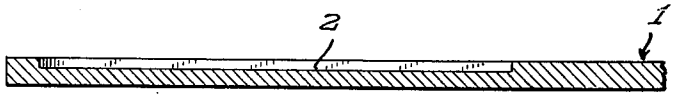


Fig. 4.

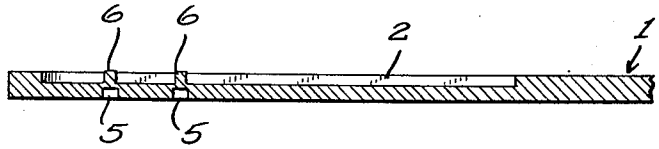


Fig. 5.

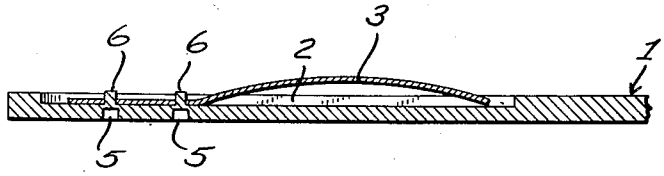
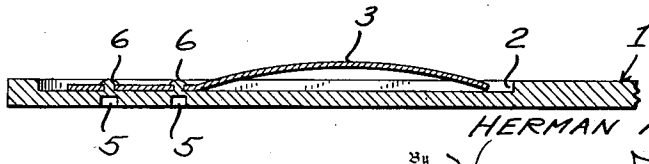


Fig. 6.



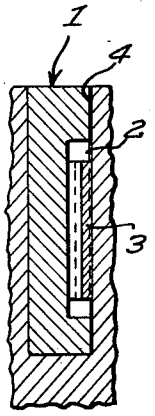


Fig. 7.

Inventor

HERMAN A. BLICKLE.

By Victor A. Bonet

Attorney

Patented Apr. 15, 1952

2,592,787

UNITED STATES PATENT OFFICE

2,592,787

SPRING JACK FOR KNITTING MACHINE NEEDLES

Herman A. Blickle, Highland Park, N. J.

Application June 18, 1951, Serial No. 232,192

2 Claims. (Cl. 66—124)

1

This invention relates to improvements in the jacks such as are used in flat plate or cylindrical type knitting machines to control the movement of the needles.

The novel aspect of the invention resides particularly in the simple and effective means by which a flat spring is mounted and anchored to the jack so that it will make frictional engagement with the inner surface or wall of the groove in which the jack and needle operate and thereby prevent any undesired displacement of the jack and its needle during the operation of the knitting machine.

Jacks of this character commonly comprise an elongated body of flat metallic stock having a recess formed in one face in which is secured a flat spring having a bowed portion protruding beyond the plane of the face so as to engage the side wall of the guide groove in which the jack moves. The securing of this spring in the recess presents a problem to which this invention particularly relates.

Customarily the spring has been secured in the recess by engagement of the side walls of the groove, for example, by upsetting the side walls at spaced points over the flat portion of the spring in the bottom of the recess. Also it has been proposed to leave an upstanding rivet in the formation of the recess by which the spring is riveted in the recess. These expedients have not proved satisfactory, either because of insecurity of the attachment or because of the difficulty involved in the formation of the article.

The present invention contemplates the attachment of the spring in its recess by means of rivets the formation of which does not alter the simple stamping operation by which the spring recess is formed in the jack. In accordance with the invention, the recess of uniform depth is formed in the usual way and thereafter the metal of the thin wall portion forming the bottom of the recess is displaced upwardly at at least two places, the displaced metal forming two upstanding rivets the bottom ends of which are in the plane of the bottom of the entire recess. Corresponding rivet holes in the spring engage over the rivets which are headed over at a level below the top of the recess. Thus there is provided a recess of a single depth with simple, effective and easily formed means for securing the spring.

An embodiment of the invention is illustrated in the drawings in which

Fig. 1 is an isometric view on an enlarged scale of a jack embodying the invention.

2

Fig. 2 is an isometric view of a portion of a sheet of flat stock from which the jacks are formed, with the outlines of jacks indicated by broken lines.

Fig. 3 is a longitudinal central section on a larger scale of the recessed end of the jack body before the formation of the rivets, the plane of section being indicated by the line 6—6 in Fig. 1.

Fig. 4 is a view similar to Fig. 3 but with the rivets formed.

Fig. 5 is a similar view showing the spring applied to the unheaded rivets.

Fig. 6 is a view similar to Fig. 5 but showing the rivets headed over.

Fig. 7 is a transverse section through the jack and adjacent portion of the knitting machine on the plane of line 7—7 of Fig. 1 and on a still larger scale.

Except for the spring securing means the illustrated jack is of standard construction and needs no particular description. The jack bodies are stamped out of flat sheet stock in which they are laid out in reverse order, as indicated in Fig. 2, for economy of metal. The recesses are customarily stamped in the stock in the proper locations prior to or coincident with the stamping out of the jacks.

A completed jack is shown in Fig. 1 and includes the shank or main body portion 1 having its forward end shaped to engage the needle and an elongated recess 2 in one face or side at its butt end. This recess is of a uniform depth throughout which is equal to about half the thickness of the stock. As is usual with jacks of this character, a flat or leaf spring 3 is secured at one end in the bottom of the recess and is bowed outwardly for the rest of its length sufficiently to bear against the wall of the groove and press the jack against the opposite groove wall as a guide in the reciprocation of the jack.

This is illustrated in Fig. 7 in which the spring 3 bears against the wall 4 of the guide groove and forces the jack 1 to maintain contact with the opposite wall of the groove.

When the jack body is stamped out from the stock having the recess 2 formed therein, it appears as shown in Fig. 3. Next it is placed on a punch press and subjected to the action of two punches which engage the side of the jack opposite the recess and enter the metal sufficiently to form the cavities 5 and displace the metal into the recess 2 in the form of two cylindrical rivets 6 the length of which is about equal to the depth of the recess. The two rivets are preferably in the longitudinal axis of the jack.

The flat end of the spring 3 has two holes punched therein of a size and disposition to fit upon the rivets 6 as shown in Fig. 5. The rivets are then headed over as shown in Fig. 6, thereby securing the spring firmly in the recess. Thus by very simple and easily formed means the spring is securely mounted and restrained against rotational movement.

It will be apparent that the construction illustrated and above particularly described is susceptible of modification within the scope of the invention as defined in the following claims.

What is claimed is:

1. A jack for use in knitting machines comprising a flat body portion having an elongated recess of uniform depth in one side thereof, the bottom wall of the recess having a plurality of spaced portions displaced into the recess from the other side of the jack and constituting rivets upstanding from the bottom of the recess and opposed by cavities in the said other side resulting from the displacement of said wall portions, and a flat spring in the recess having holes registering with and entered by said rivets, the rivets being headed over so as to secure the spring against the recess bottom.

2. A jack as defined in claim 1 in which there are two rivets disposed in the central longitudinal axis of the recess.

HERMAN A. BLICKLE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,940,520	Zimic	Dec. 19, 1933
2,004,617	Roy	June 11, 1935
2,024,911	Crawford	Dec. 17, 1935
2,219,600	Potter	Oct. 29, 1940