Oct. 29, 1940. F. J. POTTER 2,219,600

SPRING JACK FOR KNITTING MACHINES

Filed March 8, 1940

Fig. 1.

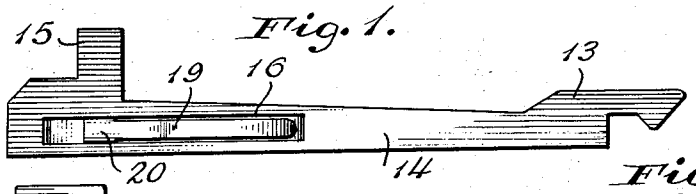


Fig. 2.

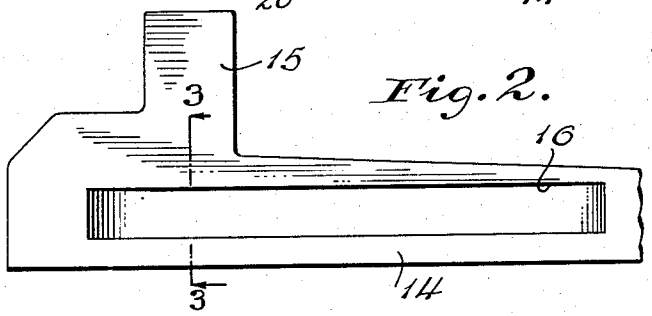


Fig. 3.

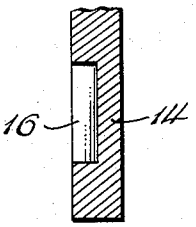


Fig. 4.

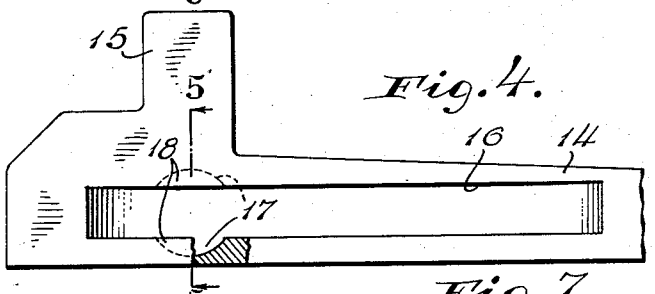


Fig. 5. Fig. 6.

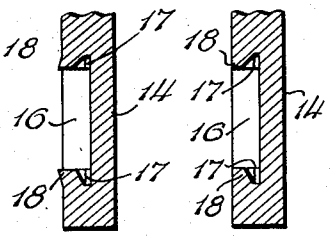


Fig. 7.

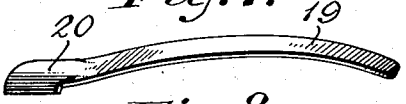


Fig. 8.

Fig. 9. Fig. 11.

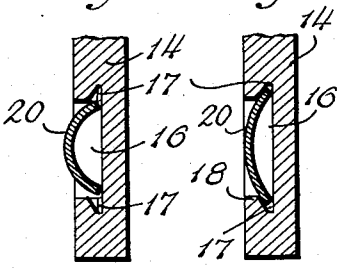


Fig. 10.

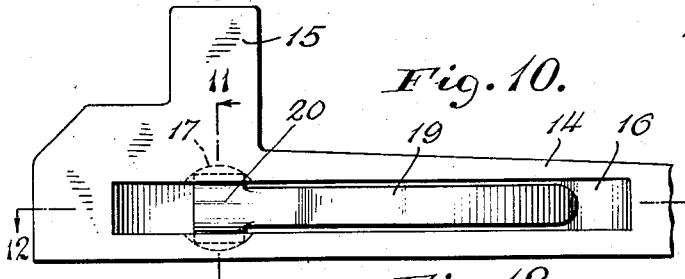


Fig. 12.



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Patented Oct. 29, 1940 2,219,600

UNITED STATES PATENT OFFICE

2,219,600

SPRING JACK FOR KNITTING MACHINES

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Application March 8, 1940, Serial No. 322,871

7 Claims. (Cl. 66—124)

This invention relates to improvements in knitting machines and has particular reference to a needle jack therefor.

An object of the invention is to simplify the mounting of a spring on a jack in such manner that the spring will be effectively held in position for contact with a wall of a groove in the needle bed of a knitting machine.

An important feature of the invention resides in the formation of undercut recesses in the opposed walls of a groove in the shank of a jack, and the provision of an anchoring portion on a spring, which portion is capable of insertion into said recesses to firmly attach the spring to the jack.

The inventive idea involved is capable of receiving a variety of expressions, one of which, for purposes of illustration, is shown in the accompanying drawing wherein:

Figure 1 is a side elevation of a completed jack constructed in accordance with the invention.

Figure 2 is an enlarged fragmentary side elevation of the jack illustrating the first step in the method of mounting a spring on the jack, which involves the formation of a groove in one face of said jack.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 2, partly broken away and shown in section, illustrating the next step in the method which comprises undercutting the walls of the groove to form opposed recesses therein.

Figure 5 is a section on the line 5—5 of Figure 4 showing the result of the undercutting operation.

Figure 6 is a similar section through the jack after the outstruck portions at the edges of the groove, formed by the operation of Figure 4, have been restored or flattened.

Figure 7 is a perspective view of the spring employed, prior to being secured to the jack.

Figure 8 is a fragmentary side view, showing the spring placed in the groove preparatory to being anchored therein.

Figure 9 is a section on the line 9—9 of Figure 8.

Figure 10 is a view similar to Figure 8, with the spring anchored in position.

Figure 11 is a section on the line 11—11 of Figure 10, and

Figure 12 is a longitudinal section on the line 12—12 of Figure 10.

Referring more particularly to the accompanying drawing, the numeral 13 indicates a needle jack of standard construction including the usual shank 14 and butt 15 formed adjacent one end of said shank and on its upper edge. In accordance with the usual practice when mounting a spring on a jack, one face of the shank is formed with an elongated longitudinally extending groove 16. In the present instance, this groove is milled and of uniform width, extending rearwardly beneath the butt 15 and slightly beyond the same. At a position preferably beneath said butt, the longitudinal side walls of said groove 16 are undercut to form opposed recesses 17 the innermost surfaces of which are in a plane with the bottom of said groove. This operation may be accomplished by milling with a rotary cutter and, when completed, there are formed the overhanging flanges 18 that are slightly outstruck (Figure 5) as a result of said operation. The jack is then swaged under pressure to restore said flanges 18 so that their outer surfaces will lie in the same plane with the remainder of the face from which they are formed, as in Figure 6. When thus restored, the recesses 17 are reduced in width to the extent that they will receive and retain therein the anchoring means of the spring to be mounted on the jack.

The spring 19 is blanked and shaped from annealed steel and bowed longitudinally so that its intermediate portion will project slightly beyond the face of the jack, when mounted as viewed in Figure 12, for contact with a wall of a needle groove. In shaping the spring, there is formed at one end thereof an anchoring portion 20 which may be substantially rectangular in outline to provide laterally extending flanges that are adapted to enter the recesses 17 to retain the spring 19 in position within the groove 16. Preparatory to mounting the spring in position, the anchoring portion 20 thereof is transversely curved to temporarily reduce the effective width thereof so that it may be inserted into the groove 16, as shown in Figures 8 and 9. After so curving the portion 20, the spring is tempered and is then ready for use. Upon insertion of the spring into the groove with the anchoring portion 20 disposed directly between the recesses 17, a slight blow or pressure upon the center of said portion will tend to straighten or flatten out the same, causing the side edges or flanges of the portion to enter said recesses, as illustrated in Figures 10 and 11, with the center point of said portion disposed within the groove 16 so that it will not project outwardly beyond the adjacent face of the jack. When so mounted, the spring

permanently assumes this position and is firmly held in place within the groove of the jack.

What is claimed is:

1. A jack for use in knitting machines, comprising a shank having a groove therein, opposed recesses formed in the walls of said groove, and a spring having an anchoring portion at one end engaging in said recesses.

2. A knitting machine jack comprising a shank and a butt, said shank having a groove extending longitudinally of one face thereof and beneath said butt, undercut recesses formed in opposed walls of said groove in proximity to said butt, and a spring in said groove having an anchoring portion the edges of which extend into said recesses.

3. A knitting machine jack comprising a shank and a butt, said shank having a groove extending longitudinally of one face thereof and beneath said butt, undercut recesses formed in opposed walls of said groove in proximity to said butt, and a spring in said groove having an anchoring portion consisting of laterally extending flanges engaging in said recesses.

4. A knitting machine jack comprising a shank having a longitudinal groove therein of uniform width throughout its length, undercut recesses formed in the opposed walls of said groove in the plane of the bottom thereof, and a leaf spring in said groove having an anchoring portion consisting of laterally extending flanges which project into said recesses.

5. A leaf spring for use on a knitting machine jack, comprising a main portion, and an anchoring portion of greater width than said main portion and forming opposed flanges adapted for insertion into recesses formed in said jack.

6. A leaf spring for use on a knitting machine jack, comprising a main portion, and a transversely curved anchoring portion at one end of said main portion capable of being flattened, said anchoring portion being of greater width than said main portion when the curvature thereof is reduced.

7. A knitting machine jack comprising a shank having a groove therein, undercut recesses formed in walls of said groove, and a spring in said groove having a curved anchoring portion provided with edges which engage in said recesses when the curvature of said portion is flattened.

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