

R. W. SCOTT.  
LATCH NEEDLE FOR KNITTING MACHINES.  
APPLICATION FILED MAR. 8, 1909.

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Fig. 1.

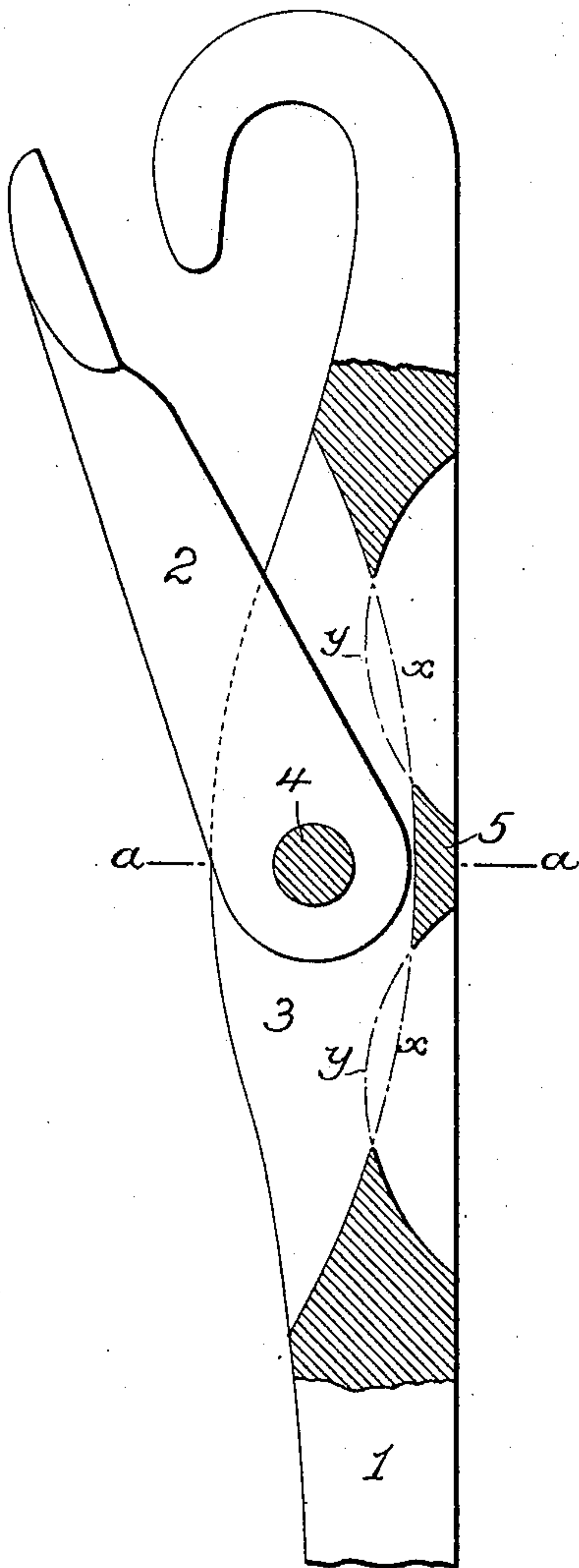


Fig. 3.

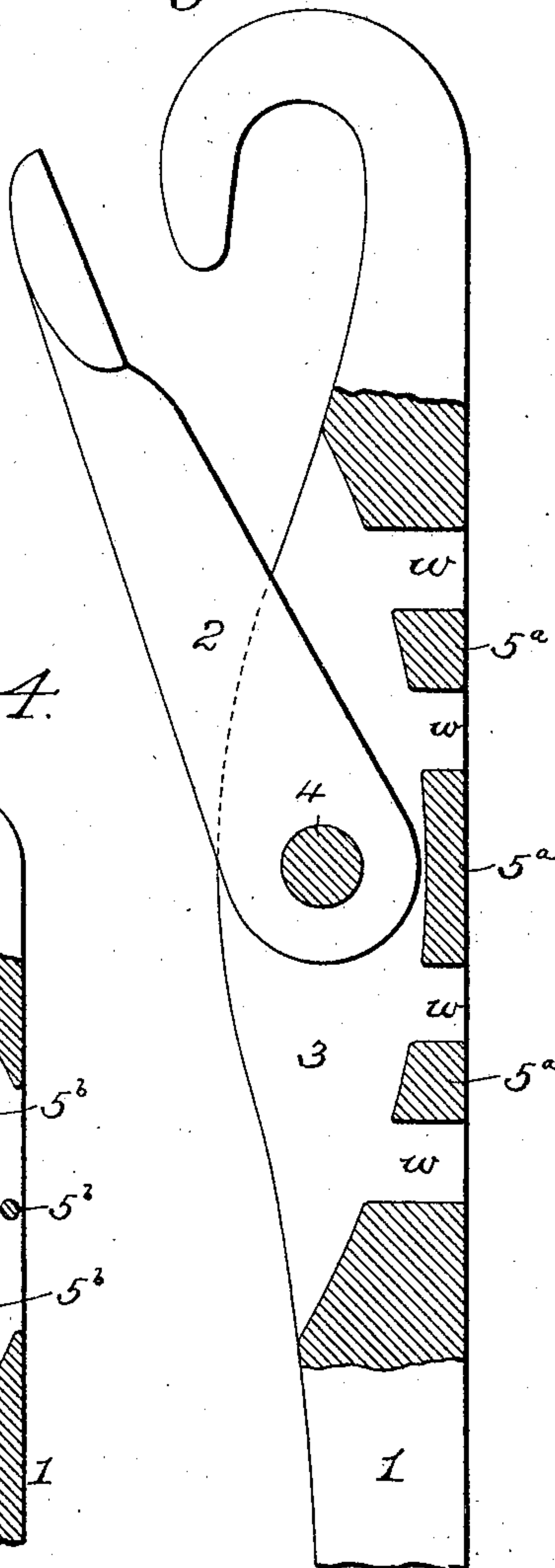


Fig. 4.

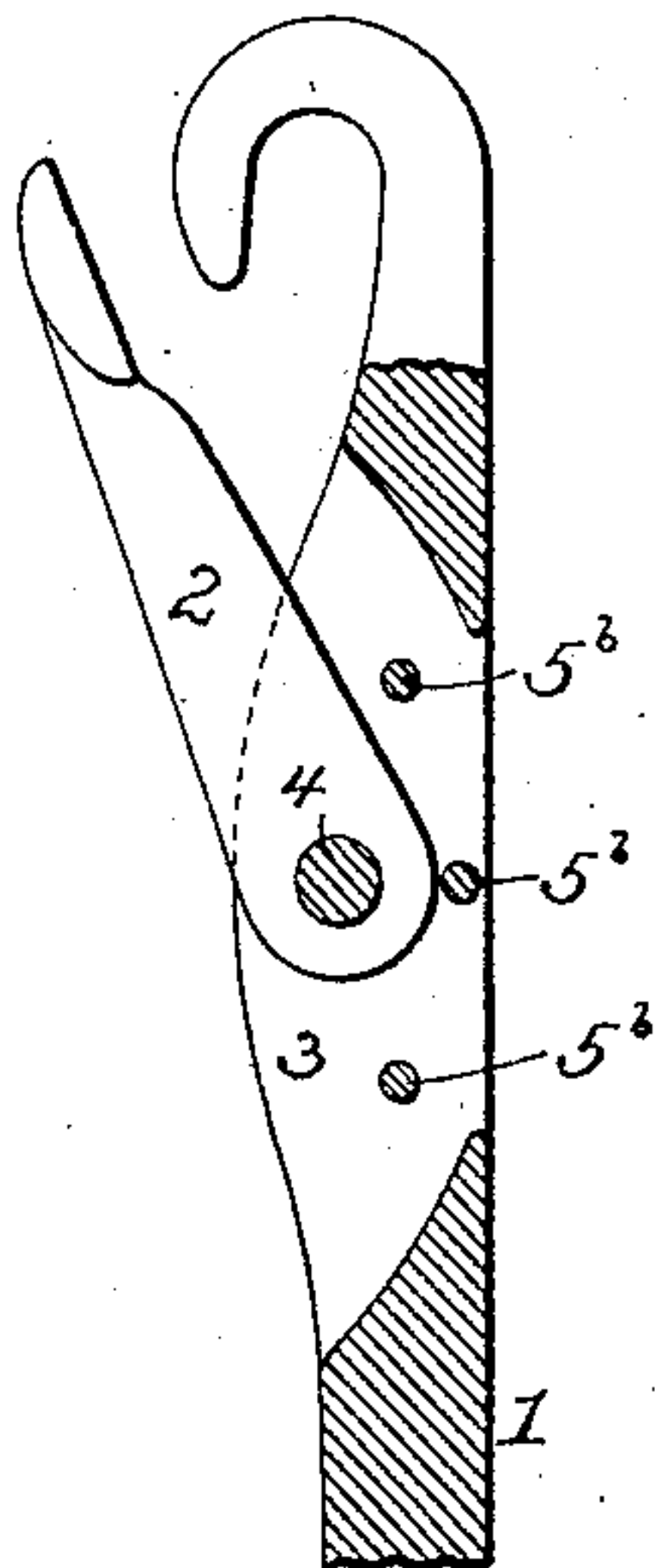
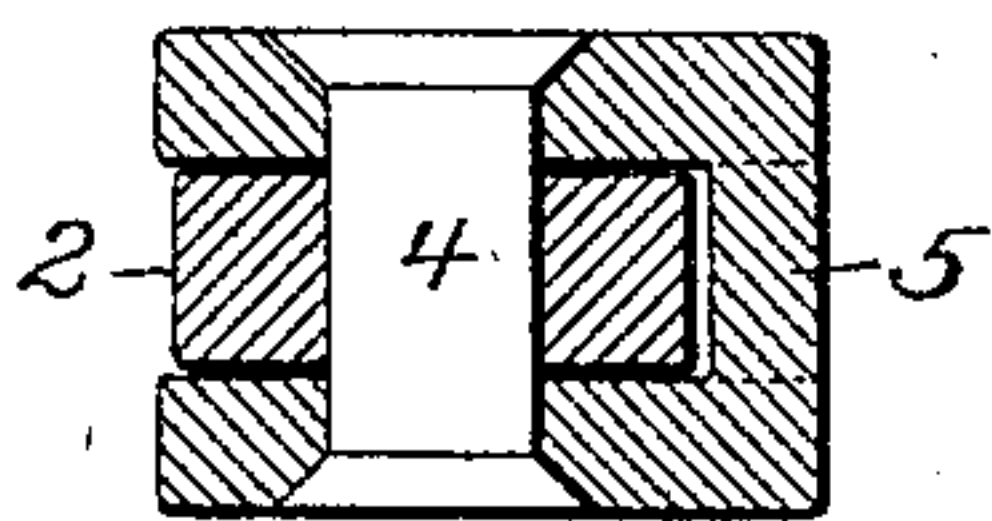


Fig. 2.



Witnesses  
Hamilton D. Turner  
Harry L. Smith

Inventor  
Robert W. Scott  
by his Attorneys  
Smith & Poyer



# UNITED STATES PATENT OFFICE.

ROBERT W. SCOTT, OF LEEDS POINT, NEW JERSEY, ASSIGNOR OF ONE-HALF TO LOUIS N. D. WILLIAMS, OF OGONTZ, PENNSYLVANIA.

LATCH-NEEDLE FOR KNITTING-MACHINES.

938,795.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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*To all whom it may concern:*

Be it known that I, ROBERT W. SCOTT, a citizen of the United States, residing in Leeds Point, Atlantic county, New Jersey, have invented certain Improvements in Latch-Needles for Knitting-Machines, of which the following is a specification.

The object of my invention is to so construct a latch needle for knitting machines as to prevent the loosening of the rivet whereby the latch is hung to the slotted shank of the needle and thereby prevent the cutting or tearing of the knitting yarn by the projecting end or ends of the rivet. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical sectional view, on an enlarged scale, of the upper portion of a latch needle constructed in accordance with my invention; Fig. 2 is a horizontal section on the line *a—a*, Fig. 1; and Figs. 3 and 4 are vertical sectional views illustrating other embodiments of the invention.

1 represents the shank of the needle and 2 the ordinary latch which is free to swing in a central slot 3 formed in the needle shank, the latch being pivoted to the needle by means of a rivet 4 passing through openings in the walls of the slot and through an opening at the butt end of the latch, the ends of this rivet being swaged or expanded so that it serves not only as a pivot for the latch, but also, under normal working conditions, to retain in place the walls of the slot. In the operation of the machine, however, lateral pressure is sometimes exerted upon the projecting portion of the latch, as by knots or enlargements upon the knitting yarn, which causes the walls of the slot to spread and thereby stretch or loosen the rivet, so that the latter projects at one or both ends beyond said walls when the latter assume their normal position and such projecting portion of the rivet has a cutting or tearing effect upon the knitting yarn.

The slot for the reception of the latch must extend completely through the shank of the needle in order to provide clearance for the particles of lint which enter the slot and which, in the absence of such clearance would accumulate in the slot and in time interfere with the proper operation of the latch. Or-

dinarily, therefore, the slot is formed in the needle shank by means of a saw or like cutting tool forming a kerf extending completely through the shank. In carrying out my invention, however, I form, in the front of the shank a kerf which does not extend completely through said shank as indicated by the dotted lines *x* in Fig. 1, and, in order to provide the proper clearance, I then form kerfs in the back of the shank as indicated by the dotted lines *y* in Fig. 1, these latter kerfs being of such size and so located as to leave a body of metal 5 located in the slot at the back of the same, and preferably immediately behind the pivot end of the latch. This body of metal constitutes a bridge integral with the side walls of the slot and serving to prevent lateral deflection of said side walls by any pressure thereupon such as may be caused by the strain exerted upon the outer projecting portion of the latch, the rivet being thereby relieved from any strain which would loosen the same or cause its ends to project beyond the sides of the needle.

Instead of forming in the back of the slotted portion of the needle shank upper and lower saw kerfs such as shown at *y* in Fig. 1, I may form a series of openings through the body of metal at the back of the slot, as indicated at *w* in Fig. 3, so as to provide a plurality of bridges 5<sup>a</sup> connecting the side walls of the slot, these openings being, by preference, so located that one of the bridges will be directly in the rear of the pivoted end of the latch.

Instead of providing a bridge or bridges integral with the side walls of the slot said bridge or bridges may be separate from said side walls but secured in place between the same by soldering, brazing, welding, or riveting, Fig. 4 illustrating a needle having three of such bridges 5<sup>b</sup>, one located directly in the rear of the pivot end of the latch, one above and one below the same, and if desired the bridges shown in Figs. 1 and 3 may be secured in like manner, although, as the constructions there shown lend themselves to the cheap and ready production of integral bridges, the latter are much to be preferred.

I claim:—

1. A knitting machine latch needle having a latch-receiving slot extending through the



same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a bridge located rearwardly of the latch also connecting the opposite side walls of the slot.

2. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a bridge connecting the opposite side walls of the slot and located directly in the rear of the pivot end of the latch.

3. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a bridge located rearwardly of the latch also connecting the opposite side walls of the slot and integral therewith.

4. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a bridge also connecting the opposite side walls of the slot and integral therewith, said bridge being located directly in the rear of the pivot end of the latch.

5. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a plurality of bridges also connecting the opposite side walls of the slot

and disposed at intervals throughout the length of the same.

6. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a plurality of bridges also connecting the opposite side walls of the slot, one of said bridges being directly behind the pivot end of the latch.

7. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a plurality of bridges also connecting the opposite side walls of the slot and integral therewith, said bridges being disposed at intervals throughout the length of the slot.

8. A knitting machine latch needle having a latch-receiving slot extending through the same, a latch, a rivet connecting the side walls of the slot and constituting a pivot for the latch, and a plurality of bridges also connecting the opposite side walls of the slot and integral therewith, one of said bridges being directly behind the pivot end of the latch.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ROBERT W. SCOTT.

Witnesses:

HAMILTON D. TURNER.

KATE A. BEADLE.