

(Model.)

T. C. ROBINSON.

OSCILLATING LOOPER FOR SEWING MACHINES.

No. 316,065.

Patented Apr. 21, 1885.

Fig. 1

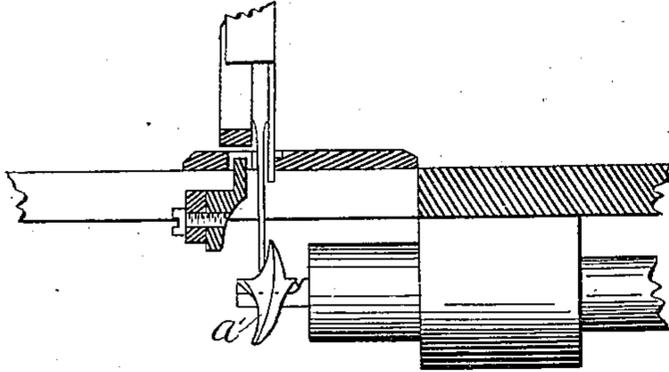


Fig. 2

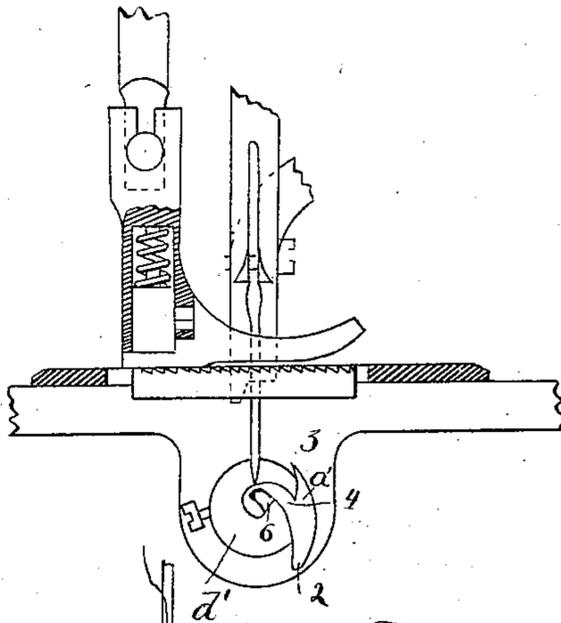


Fig. 3.

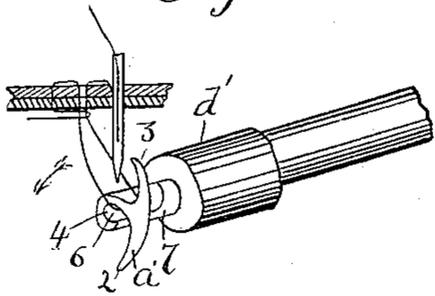


Fig. 4.

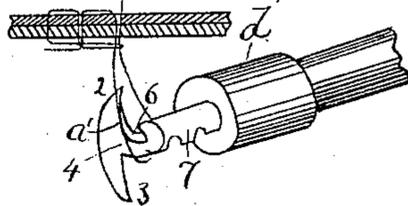


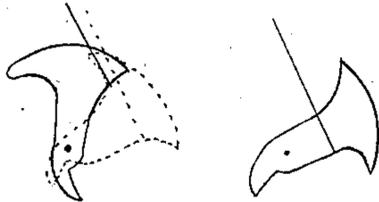
Fig. 4<sup>a</sup>



Fig. 4<sup>b</sup>



Fig. 5.



Witnesses.

W. Brown.  
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# UNITED STATES PATENT OFFICE.

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OF CAMBRIDGE, MASSACHUSETTS.

## OSCILLATING LOOPER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 316,065, dated April 21, 1885.

Application filed March 27, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, THOMAS C. ROBINSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Oscillating Loopers or Hooks for Sewing-Machines, of which the following is a specification.

The invention has for its object to provide certain improvements in the form of the hook of a chain-stitch sewing-machine, whereby said hook when opening the loop for the succeeding stitch is prevented from pulling said loop or increasing the tension of the thread.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of part of a sewing-machine having my improvements. Fig. 2 represents an end view of the same. Figs. 3 and 4 represent perspective views of the improved hook, showing it in different positions. Figs. 4<sup>a</sup> and 4<sup>b</sup> represent modifications. Fig. 5 represents an end view of a hook of old form.

The same letters of reference indicate the same parts in all the figures.

*a'* represents the hook of a chain-stitch sewing-machine, said hook operating in the usual manner in catching the needle-thread and opening it while the succeeding stitch is made through the loop thus afforded. The hook, as usual, has two prongs, 2 3, connected by a neck, 4, with the shank 7, which is secured to the oscillating arbor *d'*, whereby the hook is operated as usual.

Heretofore the side of the neck 4 on which the loop slips while it is being thus opened—viz., the side nearest the prong 2—has been so formed that it will exert a constant strain or pull on the thread while opening the loop, this effect being due to the fact that the side of the neck 4 on which the thread bears and slips during the loop-opening movement as heretofore formed is receding during said movement from the material with which the loop is engaged, and therefore constantly tightens the loop, as shown in Fig. 5. The result is that the tension of the thread is widely varied, being at times slack and at other times excessively tight; hence imperfect stitching is produced, and breakage of thread is liable to occur. In making my improved

hook I form the side of the neck 4 adjacent to the prong 2 so that it will open the loop without materially increasing its tension. To this end, instead of forming the neck with its loop-opening side beyond the center of rotation of the hook with relation to the point from which the loop is drawn, as shown in Fig. 5, I cut away said side, as shown in Figs. 2, 3, and 4, and form the leading side *a'* of the hook proper in a single curve continuous from the point 2 to the end of the hook at 4, so that as the hook moves to open the loop the distance between the point in the work from which the loop passes, and any part of the side of the neck along which it slips while being opened will not be greater to any considerable extent than the original length of the loop when the prong 2 first enters it. This form enables the loop to remain in a substantially loose condition while it is being opened. It will be seen that the form of the side of the neck to produce this result, or an approximation thereto, may be considerably modified. I prefer the form shown in Figs. 2, 3, and 4, in which the loop-opening side of the neck has a gradual curve or recess, 6, extending from the point of the prong 2 to a point at the opposite side of the center of rotation (viz., the center of the shank 7) from said prong. When the hook is at the extreme of its loop-opening movement, as shown in Fig. 2, the loop is contained in the inner part of the recess 6. While this form is the best of any I have devised, I do not limit myself to the depth of the recess 6 shown, nor to the extension of the said recess beyond the center of the shank. Figs. 4<sup>a</sup> and 4<sup>b</sup> show the recess 6 made of lesser depth than in the figures above described, the recess being carried about to the center of the shank but not beyond in a continuous curve. The hook thus improved moves from one position to the other without causing strain on the loops by either of its movements, the hook slipping easily through the loops but not tightening them.

It will be understood that the leading prong of the hook is offset from the plane of the body, as usual in looper-hooks, and shown clearly in Fig. 1.

I claim—

The improved double-pointed looper or oscillating hook for chain-stitch sewing-machines, having one point deflected from the plane of the other and having its side  $a'$  formed in a single continuous curve from the point 2 to the recess which terminates the hook properly, substantially as shown and described.

In testimony whereof I have signed my name

to this specification, in the presence of two subscribing witnesses, this 21st day of March, 1884.

THOMAS C. ROBINSON.

Witnesses:

C. F. BROWN,  
A. L. WHITE.