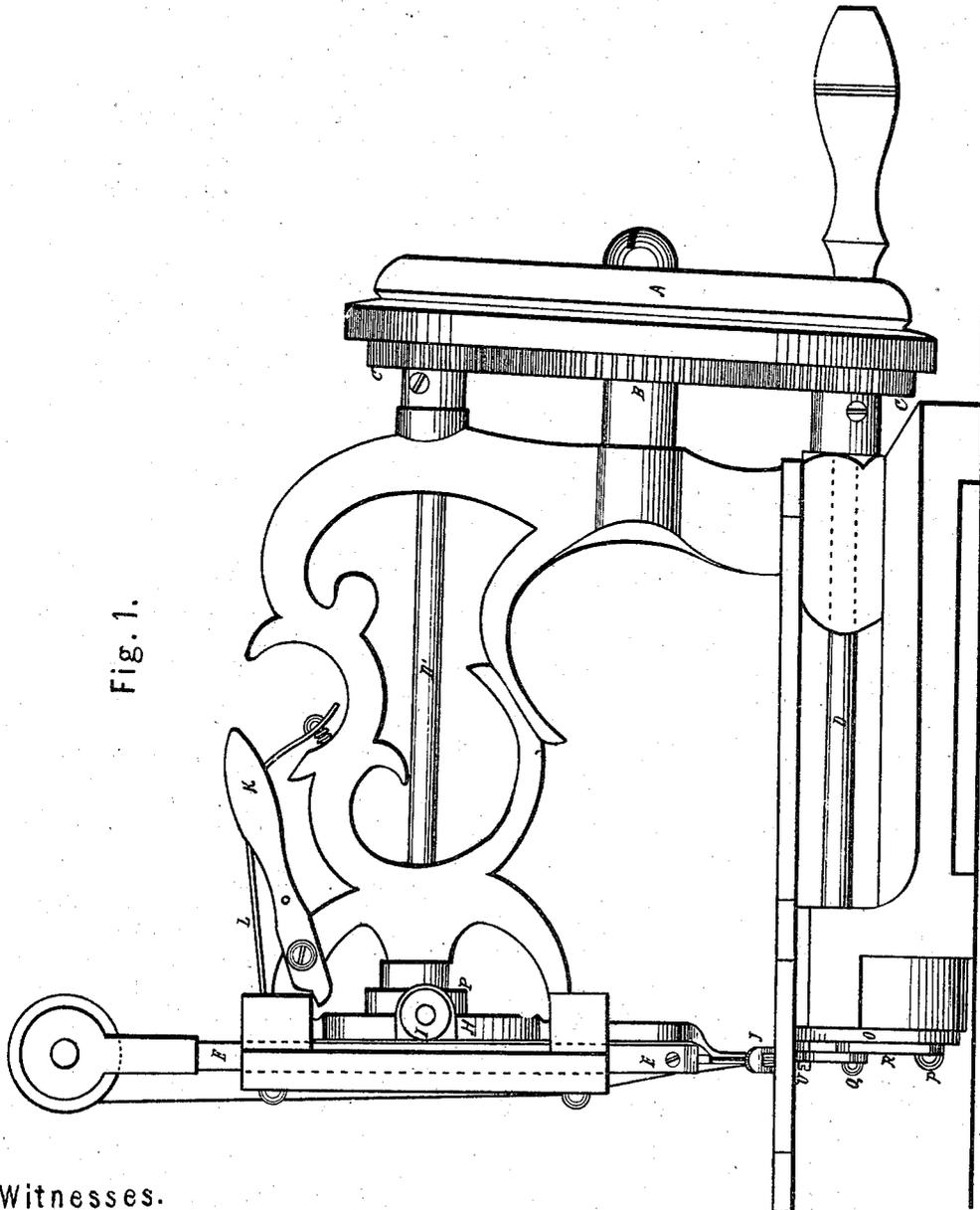


J. W. STOAKES.
SEWING MACHINE.

No. 32,456.

Patented May 28, 1861.

Fig. 1.



Witnesses.

J. P. Carter
A. C. Jarvis

Inventor.

James W. Strokes

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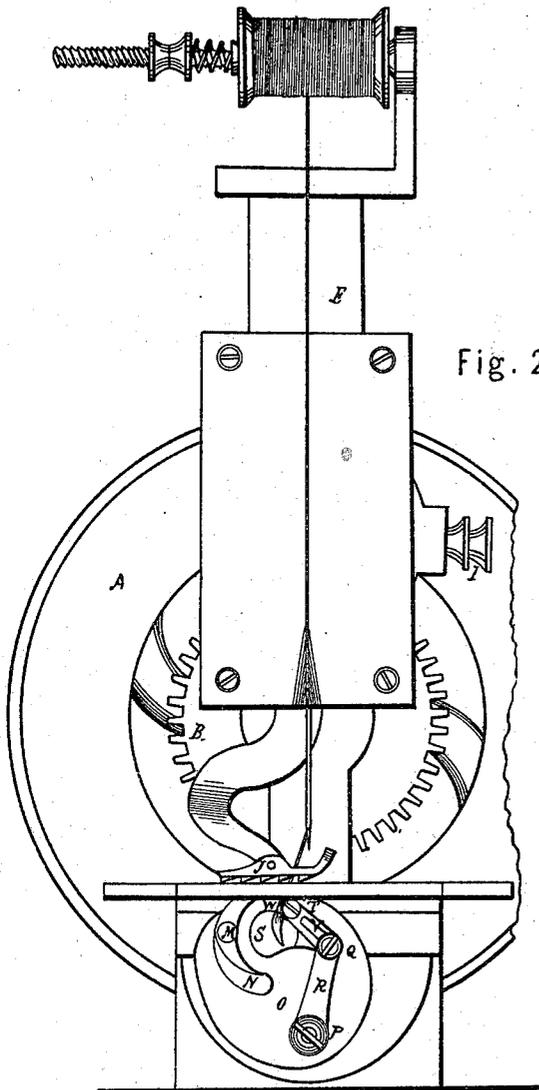


Fig. 2.

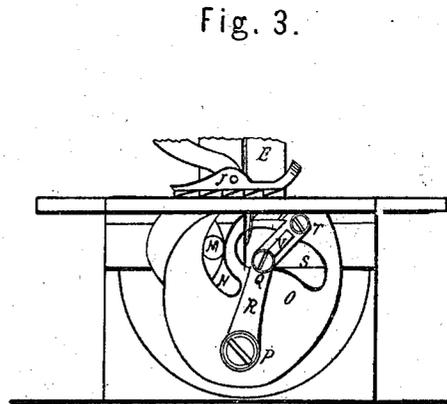


Fig. 3.

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Fig. 4.

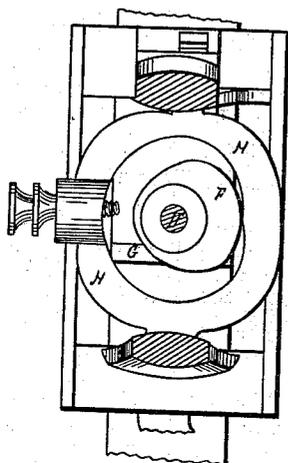


Fig. 5.

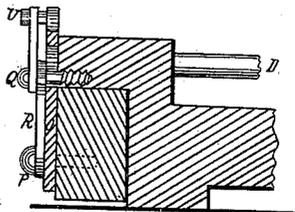


Fig. 6.

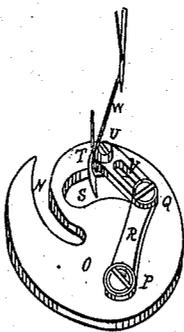


Fig. 7.

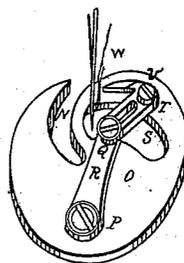
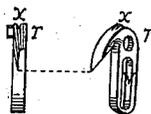


Fig. 8.



Witnesses.

J. P. Carter
A. C. Jarvis.

Inventor.

James W. Stoakes

UNITED STATES PATENT OFFICE.

JAMES W. STOAKES, OF MILAN, OHIO, ASSIGNOR TO HIMSELF AND J. N. BOYLAND, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 32,456, dated May 28, 1861.

To all whom it may concern:

Be it known that I, J. W. STOAKES, of Milan, in the county of Erie and State of Ohio, have invented new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full and complete description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, a front end view. The other views are detached sections which will be referred to in the description.

Like letters denote like parts in the several views.

The nature of my improvement relates to the means employed for forming the loop, so as to secure the looping of the thread at every stroke of the needle, and to prevent the slipping of the stitch—the serious difficulty usually attending sewing-machines, particularly the cheapest or low-priced machines. When the shuttle is not used there is a liability to drop stitches, which difficulty is removed by the use of my improved device for looping. The general form of the machine is represented in Figs. 1 and 2, but which may be changed according to taste and convenience.

The driving-wheel A may be operated by hand, or by a belt and treadle. This wheel is connected to the machine by a wrist upon which it turns, and to the wheel is attached the gear B, which meshes into the pinions C C', Figs. 1 and 2. C is hung upon the shaft D, by which the movement for operating the loop-hook is transmitted, as hereinafter described. The upper pinion, C', is connected to the shaft D' for working the needle-bar E by means of a pin or wrist in the cam F, which pin works in the transverse slot G, Fig. 4, in the needle-bar, as the cam F revolves. The cam F works inside of the yoke H, which causes the yoke to vibrate, thereby giving the feed to the cloth, which feed may be gaged by the screw I.

To the lower end of the yoke is pivoted the shoe J for moving along the cloth as it is fed. The yoke and shoe may be raised up, so as to allow the cloth to pass under the shoe on the table preparatory to sewing, by means of the lever K, which, on raising it up, raises up the spring L by a pin in the lever extending under the spring, this spring being connected with the upper part of the yoke for this and

also for the purpose of pressing the shoe J down upon the cloth when at work.

On the end of the shaft D is keyed a crank, to which crank is attached the wrist N, Figs. 2 and 3. This wrist as the crank turns plays in the curved slot N in the cam or disk O, which disk moves upon the pivot P, which screws into the stand or bed of the machine. The arm R is secured in place by the same pivot and by the screw Q, which passes through the slot S and screws into the stand, as seen in Fig. 5.

The loop-hook T, Figs. 6, 7, and 8, is connected to the cam O by the screw U, so as to allow the loop-hook to move in accordance with the action of the cam. In this hook is an elongated slot, V, through which passes the screw Q. This slot, in connection with its jointed attachment with the cam O, allows the hook to assume the position for looping and disconnecting itself from the loop.

It will be noticed that the arm R fits close to the cam, as seen in Figs. 1 and 5, but so as to allow the cam to turn backward and forward, and as the arm is secured in place at both ends, it follows that the cam will at all times move in its vertical plane and with an exact and uniform precision. This exact movement of the cam is communicated to the hook, as it is directly connected with it, as before described. The shank of the hook in which the slot is formed is paralleled upon all its sides, so as to allow the shank to work freely upon the screw Q.

The cam O vibrates upon the screw-pivot P backward and forward by the action of the wrist in slot N. In Figs. 2 and 6 the hook and cam are thrown forward for the purpose of making the loop, the thread N being caught around the beak of the hook, and the needle raised for the purpose of making another stitch. As the needle descends the cam and hook are thrown back to the position seen in Figs. 3 and 7, thereby withdrawing the hook from the loop, which allows the needle to make another stitch, which stitch is the same as the ordinary single-thread stitch.

In the upper portion of the beak of the looper is formed a groove, X, which partakes of the same curve as that described by the hook in taking up and throwing off the loop. By

means of this curved groove the needle will pass into the loop, as the needle, in descending to the loop, first enters this groove, and as the thread forming the loop is on the outside of the hook, it follows that the needle, in passing through the groove X, will enter the loop as the hook is withdrawn. The hook being tapering from the neck to the point allows it to be readily withdrawn, and at the same time keeps hook open until the stitches are formed by the needle.

By attaching the looper with the cam at U, so as to form a pointed connection, and by allowing the shank to work by the slot V upon the pivot or screw Q, a cycloidal movement is given to the forward and backward throw of the hook, which, in connection with the form of the hook, surely takes up the loop and holds it open for the reception of the hook, while at the same time it is leaving it. The cam will at all times move in the same vertical and uniform plane by its being pivoted at P and held in place by the arm R, which is secured to the bed by the pivot P and the screw Q, which passes through a slot in the cam, allowing it to vibrate with a sure and uniform action, which is communicated to the looper, and which in practice is found to insure all the desired accuracy in forming the stitch.

I am aware that C. Raymond has constructed a sewing-machine in which the cam-plate O carries forward the beak of the looper, the long arm of the looper being jointed to a connecting-rod that is attached to the frame of the machine at a distance from the plate O, which gives to the looper an unchanging fulcrum, and consequently the motion of the looper is gradual and continuous, or coincides with the motion of the cam-plate. My invention differs essen-

tially from this, both in construction and operation. The looper is slotted, as seen at V, and has no connecting-rod securing the long arm, as in Raymond's. In my improvement the fulcrum Q passes through a curved slot, S, in the cam-plate O, and is secured to the frame of the machine, the fulcrum Q passing through the slot V. It consequently follows that when the plate is caused to move upon its axis P the point U, at which the looper T is connected to the cam-plate O, approaches to and recedes from the fulcrum Q, which fulcrum must of necessity act upon the long arm of the looper T through the slot V, which slides upon the fulcrum-pin Q, thus practically shortening and lengthening the long arm of the looper T, and thereby causing it to have a period of rest when in its position seen in Fig. 7, then a quick and accelerated motion forward to its position seen in Fig. 6, in which position it (the looper) remains again at rest during the last part of the downward stroke of the needle, and then by a sudden movement backward resumes the position seen in Fig. 7, and in consequence of this pulsating or intermittent motion of the looper its action is much more certain and accurate than it could be if the motion of the looper were continuous and coincident with the movement of the cam-plate O.

What I claim, and desire to secure by Letters Patent, is—

The slot V of the looper, the slot S of the cam, and the stationary arm R, when arranged and operating conjointly in the manner and for the purpose set forth.

JAMES W. STOAKES.

Witnesses:

J. P. CARTER,
THOMAS S. PAGE.