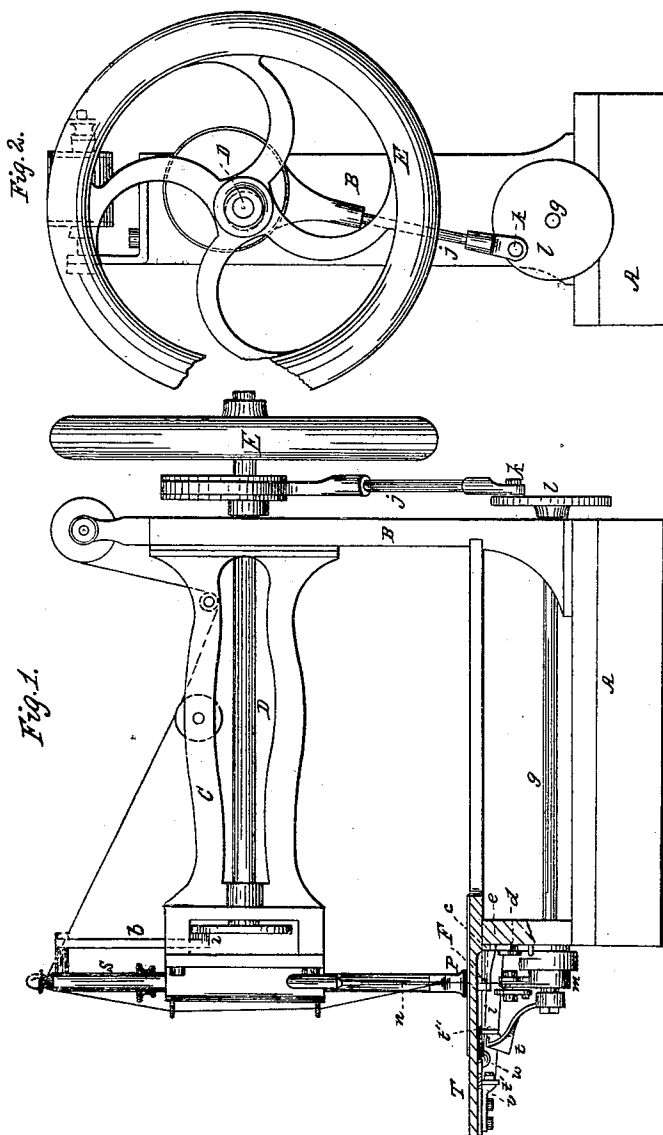


J. ZUCKERMAN.

Sewing Machine.

No. 49,023.

Patented July 25, 1865.



Witnesses:  
*M. M. Simpson*  
*Theo. Tully*

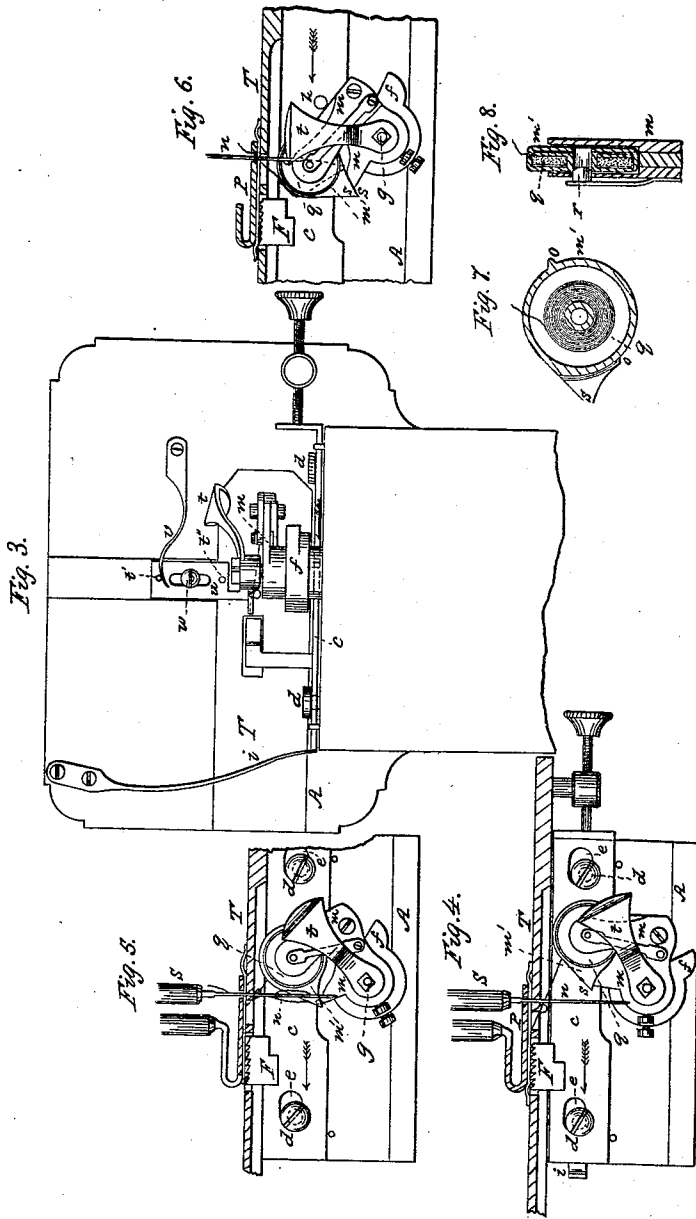
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Witnesses:

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# UNITED STATES PATENT OFFICE.

JACOB ZUCKERMAN, OF NEW YORK, N. Y.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 49,023, dated July 25, 1865.

*To all whom it may concern:*

Be it known that I, JACOB ZUCKERMAN, of the city, county, and State of New York, have invented a new and Improved Sewing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional side elevation of this invention. Fig. 2 is an end view of the same. Fig. 3 is an inverted plan of the same. Fig. 4 is a sectional front elevation, showing the needle in its lowest position. Fig. 5 is a similar section with the beak of the bobbin-holder having entered the loop of the needle-thread. Fig. 6 is a similar view, showing the loop of the needle-thread in the act of slipping over the bobbin-holder. Fig. 7 is a sectional elevation of the bobbin-holder and bobbin. Fig. 8 is a transverse vertical section of the same.

Similar letters of reference indicate like parts.

This invention relates to certain improvements in that class of sewing-machines which produce what is termed a "lock-stitch." The loop of the needle-thread is caught by the beak of an oscillating bobbin-holder, which rests loosely between the jaws of an oscillating shoe, being retained in its position by a hemispherical spring-bearing which drops into a socket in the center of the bobbin, and which is so arranged that the loop of the needle-thread will slip through between the same and its socket. After the loop of the needle-thread has passed over the bobbin carrying the lower thread and the needle has ascended, said loop is turned up and held under the table by a slide actuated by a vibrating arm in such a manner that the needle, on its subsequent descent, will not pass through it, and each stitch is drawn tight by the subsequent action of the beak of the bobbin-holder on the next succeeding loop of the needle-thread. The feeder is secured to a plate which has a reciprocating and a rising-and-falling motion, being subjected to the action of a cam and to that of a spring, the former to raise it up against the action of the presser-foot and force it out against the spring, and the latter to cause the feeder to recede, and while retreating it (the feeder) is depressed

by the action of the presser-foot, so that its teeth will be clear of the material to be sewed.

A represents a frame, made of cast-iron or any other suitable material, and provided with a standard, B, from which an arm, C, extends, as clearly shown in Fig. 1. The standard B and the outer end of the arm C form the bearings for the shaft D, to which the fly-wheel E is attached, and which connects by a crank or eccentric wrist-pin, *a*, and connecting-rod *b* with the needle-slide S. This slide moves between suitable guides on the front end of the arm C, and the needle *n* is straight and eye-pointed, like that of a majority of sewing-machines now in use.

The cloth or material to be sewed is placed on the table T, and it is held down by the presser-foot P, which is arranged in the usual manner, and a feeder, F, feeds the material forward after every stitch.

This feeder consists of a serrated piece, which is secured to a bar, *c*, under the table T, said bar being retained in position by two screws, *d*, which pass through oblong slots *e*, as shown in the drawings. These slots are somewhat larger than the shanks of the screws, so that the bar, with the feeder, can rise and fall and also move in a longitudinal direction. Motion is imparted to the feeder by a cam, *f*, which is mounted on a rock-shaft, *g*, and which strikes a pin, *h*, projecting from the bar *c*. By the action of the cam on this pin the feeder is first raised, causing the teeth to project above the surface of the table, and then it is pushed forward in the direction of the arrows marked on it in Figs. 3, 4, 5, and 6. A spring, *i*, carries said bar back as soon as the cam recedes, and by the action of the presser-foot P on the top of the material to be sewed the teeth of the feeder are depressed below the surface of the table, so that said feeder retreats without taking any action on the material.

The rock-shaft *g* has its bearings in the end pieces of the frame A, and an oscillating motion is imparted to it by a rod, *j*, which connects at one end with a strap encircling an eccentric on the shaft D, and its other end with an eccentric wrist-pin, *k*, projecting from the face of a disk, *l*, that is mounted on the end of the shaft *g*, as clearly shown in Figs. 1 and 2.

Close to the cam *f*, and firmly mounted on the rock-shaft *g*, is the shoe *m*, which supports the bobbin-holder *m'*. A detached sectional

view of this bobbin-holder is shown in Fig. 7, and a transverse section of the shoe, with the bobbin-holder, in Fig. 8. Said bobbin-holder is placed loosely between the two jaws of the shoe, and it is provided with two shoulders or projections, *o*, which rest against corresponding shoulders or lips of the shoe, so that the oscillating motion of the latter is communicated to the former, and at the same time the passage of the loop of the needle-thread through between the shoe and the bobbin-holder is not obstructed. The bobbin *q* is placed within the bobbin-holder, and both together are steadied and held in position by a hemispherical spring-bearing, *r*, which drops through a hole in an arm on the shoe *m* into a socket in the bobbin, as shown in Fig. 8. The loop of the needle-thread, on arriving at this spring-bearing, forces the same back and passes through between the same and the bobbin without obstruction.

From the bobbin-holder projects a beak, *s*, which enters the loop of the needle-thread, as shown in Fig. 5, and causes said loop to slip over the bobbin-holder, as shown in Fig. 6, and by this operation the lower thread is passed through the loop of the needle-thread and the stitch is formed; but it is not yet drawn tight, leaving at this stage a loop under the table, as shown in Figs. 3, 4, and 5.

In order to prevent the needle, on its second descent, from passing through the loop first made, said loop is turned back by the action of a slide, *u*, to which an intermittent reciprocating motion is imparted by the combined action of a vibrating arm, *t*, and spring *v*. This slide *u* is fitted into a dovetailed recess in the under surface of the table, and it is held in position by a screw, *w*, passing through an

oblong slot and allowing it to move back and forth the required distance. The spring *v* presses on a stud, *t'*, which projects from the under surface of the slide, and the vibrating arm *t* acts on another similar stud, *t''*, as shown in Figs. 1 and 3. The arm *t* is mounted on the end of the shaft *g*, and it is secured in such a position that it acts on the slide and forces the old loop back before the point of the needle descends below the lower surface of the table, and that portion of the arm which acts on the stud *t''* is so shaped that the old loop is held back until the needle has descended far enough to prevent its point from passing into said loop. The stitch is drawn tight when the beak of the bobbin-holder passes into the new loop and opens the same far enough to allow it to pass over the bobbin-holder and bobbin.

I claim as new and desire to secure by Letters Patent—

1. The oscillating shoe *m*, applied in combination with the bobbin-holder *m'*, bobbin *q*, and an eye-pointed needle, *n*, substantially as and for the purpose set forth.

2. The use of a spring-bearing, *r*, in combination with the oscillating shoe *m*, bobbin-holder *m'*, and bobbin *q*, constructed and operating substantially as and for the purpose described.

3. The reciprocating slide *u*, in combination with the cam *t* and spring *v*, substantially as herein described, for the purpose of switching off the old loop before the next succeeding descent of the needle.

JACOB ZUCKERMAN.

Witnesses:

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C. L. TOPLIFF.