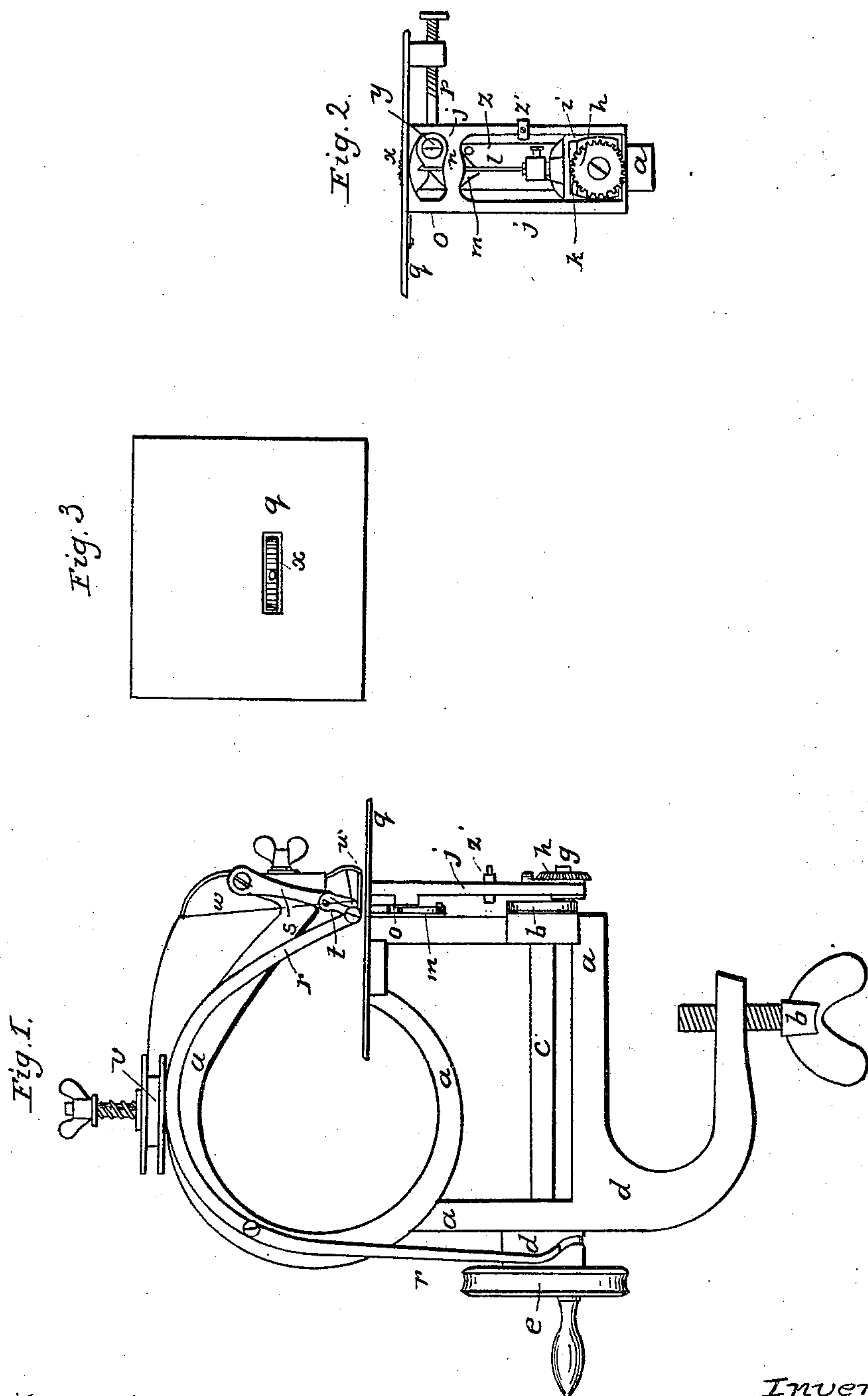


J. HARRISON, Jr.  
Sewing Machine.

No. 25,262.

Patented Aug. 30, 1859.



Witnesses.  
William Boies  
J. T. Everett.

Inventor.  
J. Harrison Jr.

# UNITED STATES PATENT OFFICE.

JAMES HARRISON, JR., OF NEW YORK, N. Y.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 25,262, dated August 30, 1859.

*To all whom it may concern:*

Be it known that I, JAMES HARRISON, JR., of the city of New York, in the county and State of New York, have invented certain new and useful Improvements on Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and marks thereon.

The improvements under this invention relate to that class of sewing-machines in which the barbed or bearded needle is used for making the chain-stitch, the thread of the loops being twisted, and these improvements have special reference to the feed and stitch.

In the drawings forming part of this specification, Figure 1 is a side view; Fig. 2, a front view of the needle and the feeding-lever, with the means for adjusting them; and Fig. 3 is a top view of the feeding-lever and table of the machine.

In each of these figures like parts are indicated by like letters or marks.

*a* refers to the frame of the machine; *b*, to the screw for clamping it to the table; *c*, to the power-shaft, which has a cam, *d*, and a crank-disk, *e*, at one end, and a disk, *f*, and crank-pin *g* at the other end; *h*, to a wheel on the crank-pin embraced by a box or frame, *i*, within feeding frame or lever *j*; *k*, to a pinion in the end of the needle-holder; *l*, to the needle; *m*, to a short bar, which has a movable fulcrum, *n*, for the feeding-lever; *o*, to a spring acting upon the bar *m*; *p*, to an adjusting-screw for the feeding-lever; *q*, to the table-plate of the machine; *r*, to the rod for operating the switching-lever *s*, and connected to that lever by a link, *t*; *u*, to the shoe or cloth-holder, and *v* to the spool from which the thread *w* passes to the needle. These brief references to the different parts of the machine shown by the drawings are sufficient in general to give a view of the construction and operation of the machine, for it will readily be seen that by the rotation of the main or power shaft the needle is elevated, rotated, and vibrated, while the feeding frame or lever is also elevated and oscillated, and by the action or movements of these two means the stitch is made and the feed given. I shall, therefore, dwell particularly only on the special features which constitute the novelty of the invention.

It will be perceived that by its attachments to the feeding-lever the vibrating movements of the needle are performed through and are in unison with the movements of the lever quite as much as they are by the movements of the crank-pin, as the frame at the base of the needle is embraced by the sides of the feeding frame or lever. The motions of the needle thus derived would be under most circumstances sufficient to feed the cloth; but where the fabric was stout or heavy the needle would be very liable to be broken. I have therefore so constructed the top curved part of the lever that it should perform part of the feeding duty. For this purpose the curved part of the lever, as is shown at *x*, Figs. 2 and 3, is toothed or serrated. The feeding is thus made by the conjoined action of the needle and the lever or frame.

For regulating the feed and the stitch I provide these sets of means. Bar *m*, it will be noticed, is connected to the frame of the machine by a screw, *y*, upon which it plays, and in its downward motion is limited by a pin, *z*, while in its upward movement it compresses spring *o*, which has an increasing resistance. The lever or frame *j* is pivoted to bar *m* at *n*. Upon one of the bars of the lever or frame *j* is an adjustable bar or band, *z'*, which may be placed at any desired point on the frame, and which, by a binding-screw, can be held at such point. Now, if screw *p* be so turned as to draw its point outward and away so far from the lever or frame *j* as not to come in contact with the lever in its movements, and bar or band *z'* be so far elevated as that the frame *i* will not hit it on its upward movement, the bar *m* will play between pin *z* and spring *o*, and the feed and the stitch will be due entirely to the motions of the crank on the power-shaft, controlled to a limited degree by spring *o*. Putting the band *z'* down to its lowest operative point will bring the frame *i* in its upward movement the soonest in contact with it, and frame or lever *j* will be carried to its highest point, making the longest stitch and greatest feed. Forcing screw *p* into its greatest operative point will bring the bar of lever *j* the soonest in contact with it and produce the shortest feed and stitch. By these sets of means, then, the feed and stitch may readily be regulated. The one set of means may be used without the other, or both may be used to-



gether. The band  $z'$  may be dispensed with and the feed and stitch be regulated by the bar  $m$ , spring  $o$ , and screw  $p$ ; or the band  $z'$  may be used alone. As this band can control the upward movement of the lever  $j$ , it affords a means of adjustment to different degrees of thickness of the cloth or fabric.

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

1. The combination of the frame or feeding lever  $j$ , the bar  $m$ , spring  $o$ , and regulating-screw  $p$ , all constructed and operated as described, with the needle and needle-frame  $i$ , for carrying the mechanism for rotating the needle, as described.

2. The adjustable bar or band  $z'$ , affixed to the lever or frame  $j$ , in combination with the frame  $i$ , or its equivalent, for controlling the upward movement of the feed-lever, as described.

3. The bar or band  $z'$ , in combination with the bar  $m$ , screw  $p$ , spring  $o$ , and lever  $j$ , as and for the purposes set forth.

This specification signed this 21st day of July, 1859.

JAS. HARRISON, JR.

Witnesses:

T. T. EVERETT,  
WILLIAM BOIES.