J. Ramsay's Improvement in Sewing Machine.

117459

PATENTED JUL 25 1871

Fig. 1.

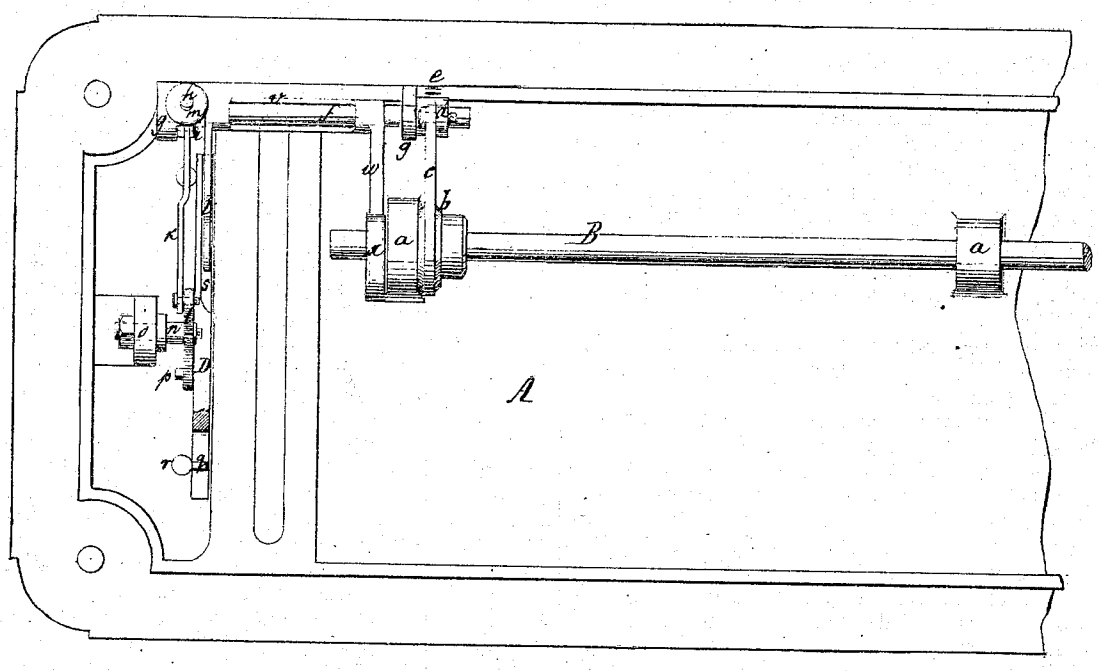
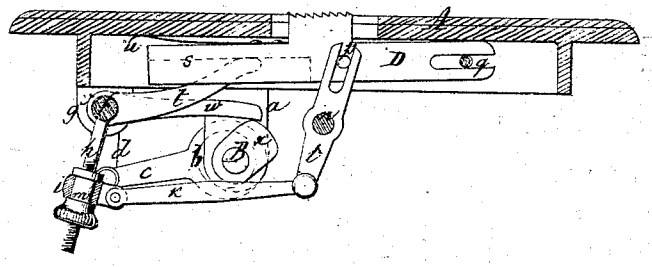


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

JONATHAN RAMSAY, JR., OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 117,459, dated July 25, 1871.

To all whom it may concern:

Be it known that I, JONATHAN RAMSAY, Jr., of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents an inverted plan of this invention. Fig. 2 is a transverse vertical section of the same.

Similar letters indicate corresponding parts.

This invention relates particularly to an improvement in mechanism for producing the four-motion feed; and it consists in the arrangement of two independent eccentrics or cams, in combination with two rock-shafts, each carrying two arms, one of the eccentrics and rock-shafts serving to impart to the feed-bar the backward-and-forward motion, while the other eccentric and rock-shaft imparts to the feed-bar the rising-and-falling motion in such a manner that, by adjusting the arms or levers on the rock-shafts, the backward-and-forward motion of the feed-bar can be readily brought in the proper relation to the rising-and-falling motion. One of the rock-shafts is made in the form of a tube or sleeve fitting on the other rock-shaft, so as to simplify the construction of the mechanism and to dispense with extra bearings for each of the rock-shafts.

In the drawing, A designates the cloth-plate of a sewing-machine, from the under surface of which extend two lugs, *a a*, which form the bearings for the driving-shaft B. On this shaft is mounted an eccentric, *b*, which connects, by a strap, *c*, with a lever, *d*, that is secured, by means of a set-screw, *e*, on a rock-shaft, *f*. This rock-shaft has its bearings in lugs *g g*, cast with or otherwise firmly secured to the cloth-plate A; and from said rock-shaft extends a rod, *h*, which connects, by means of a sleeve, *i*, and rod *k*, with a lever, *l*. The sleeve *i* embraces a nut, *m*, which screws on the rod *h*, (see Fig. 2,) so that by turning said nut the sleeve can be brought closer to or further from the center of the rock-shaft *f*, and by these means the throw of the lever *l* is regulated. The lever *l* has its fulcrum on a stud, *n*, which is secured in a lug, *o*, projecting from the bottom surface of the cloth-plate, and the inner end of said lever is bifurcated and made to straddle a pin, *p*, projecting from the feed-bar D. One end of this feed-bar is provided with a slot that catches over a pin, *q*, secured in a lug, *r*, which projects from the bottom surface of the cloth-plate, while the opposite end of said feed-bar is provided with a shoulder, *s*, that rests upon a lever, *t*, being depressed thereon by a spring, *u*. By the oscillating motion of the lever *l*, therefore, a reciprocating motion is imparted to the feed-bar; and the length of this reciprocating motion can be regulated by the nut *m* and sleeve *i*. The lever *t*, which supports one end of the feed-bar, extends from a tube, *v*, which embraces the rock-shaft *f*, and from which extends a second lever, *w*, which bears against a cam or eccentric, *x*, mounted on the main shaft B. The feed-bar spring *u* serves to keep the lever *w* in contact with the cam *x*, and, as the main shaft revolves, this cam imparts to the tube *v* an oscillating motion entirely independent of that of the rock-shaft *f*, and by this oscillating motion a rising-and-falling motion is imparted to the feed-bar.

In order to produce the proper feed-motion, the reciprocating motion of the feed-bar must be brought in such relation to its rising-and-falling motion that the feed-dog is raised above the surface of the cloth-plate before the forward motion of the feed-bar begins, and that the feed-dog is depressed below the surface of the cloth-plate before the retrograde motion of the feed-bar begins.

By my mechanism I am enabled to bring the several motions of the feed-bar in the proper relation toward each other, without loss of time, simply by changing the position of the lever *d* or that of the lever *w;* and by means of the nut *m* and sleeve *i* the length of the stitches can be regulated with the greatest nicety.

It will be noticed that the tube *v* forms a rock-shaft which has its bearings on the rock-shaft *f*.

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

The arrangement of the cam *b*, strap *c*, lever *d*, rock-shaft *f*, rod *h*, adjustable link *k*, oscillating lever *l*, sleeve *v*, levers *t w*, cam *x*, spring *u*, and the feed-bar and driving-shaft, as herein shown and described, for the purpose specified.

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Witnesses:

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