L. LYON.

Sewing-Machine.

No. 168,757.

Patented Oct. 11, 1875.

Fig:1.

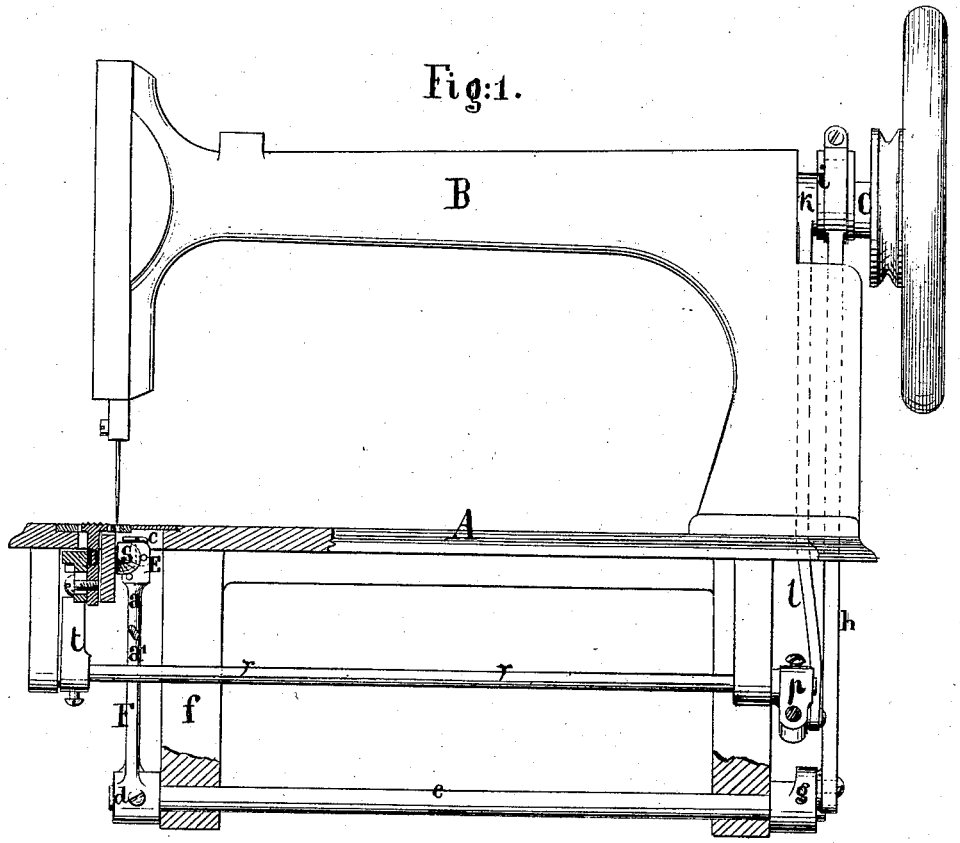
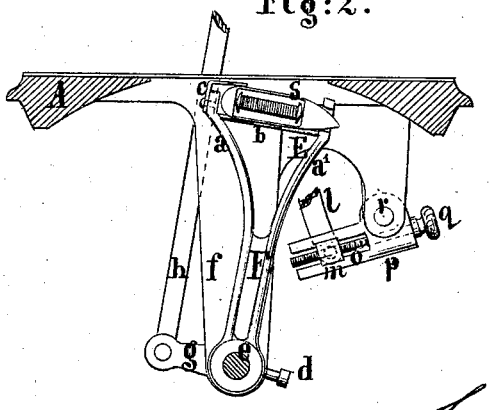


Fig:2.



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UNITED STATES PATENT OFFICE

LUCIUS LYON, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **168,757**, dated October 11, 1875; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, LUCIUS LYON, of the city, county, and State of New York, have invented certain Improvements in Sewing-Machines, of which the following is a specification:

This invention relates to a certain combination of devices for regulating the throw of the feed-dog of sewing-machines for the purpose of regulating the length of the stitches; and it consists in the combination, with the rock-shaft which carries the arm which operates the feed-dog, of a slotted lever carrying an adjustable slide, which may be shifted as desired by means of a set-screw, said slide being pivoted to the lower end of a rod connected to an eccentric on the main shaft of the machine, by means of which the proper motion is imparted to the rock-shaft. By setting the slide away from or toward the rock-shaft it will be moved a greater or less extent at each rotation of the main shaft, thus increasing or diminishing the throw of the feed-dog and regulating the length of the stitches. The slide is adjusted by simply turning the set-screw in either direction, as may be desired.

In machines as hitherto constructed the slide has been made adjustable in the slotted crank by means of a binding-nut at one side. By such construction the use of a wrench is necessitated, and, in order to shift the slide, the nut has to be loosened and the slide shifted to proper position by hand, after which the nut is again tightened. The present invention is designed to obviate the inconvenience attendant upon this method of shifting the slide, and provide a device by means of which the slide may be shifted and fastened at one operation.

In the accompanying drawing, Figure 1 represents a sectional side view of this invention, and Fig. 2 is a longitudinal vertical section of the shuttle-race, showing the shuttle-driving mechanism.

In the drawing, the letter A designates the cloth-plate of the sewing-machine, from which rises the standard B, that forms the bearing for the driving-shaft C, and to the face of which are secured the needle-slide and the presser-slide in the ordinary manner. To the under surface of this cloth-plate is cast, or otherwise attached, a flange, D, which forms the breast of the shuttle-race. The shuttle S is supported in a cradle, E, formed between two arms, *a a'*, of a bifurcated lever, F, by two wires, *b b*, which are secured in the ends of said arms in the proper position to form a support for the shuttle. The arm *a'* is hollowed out to admit the point of the shuttle, and on the arm *a* is pivoted a button, *c*, which can be turned back, so as to allow of introducing or removing the shuttle. The lever F is secured by a set-screw, *d*, to the end of a rock-shaft, *e*, which has its bearings in lugs *f* projecting from the under surface of the cloth-plate, and which connects by a crank, *g*, and rod *h* with an eccentric, *i*, mounted on the driving-shaft. By adjusting the lever F the motion of the shuttle can be brought in the proper relation toward the motion of the needle, and by the action of the eccentric and crank the mechanism for driving the shuttle is rendered noiseless, and my machine can be driven with great speed without danger of dropping stitches or of producing a disagreeable noise.

On the driving-shaft C is mounted an eccentric, *k*, which connects by a rod, *l*, with a slide, *m*, which is fitted in a slot, *o*, constructed in a crank, *p*, (see Fig. 2,) the said slide being adjustable in said slot by a thumb-screw, *q*, which passes through the crank and the slide, as clearly represented. The crank *p* is mounted on one end of a rock-shaft, *r*, from the opposite end of which extends an arm, *t*, (Fig. 1,) which imparts motion to the feed-dog. By moving the slide *m* in the slotted crank *p*, which is easily and conveniently accomplished by the set-screw without other manipulation, the throw of the feed-dog is increased or diminished and the length of the stitch is regulated. The stitch-regulator is simple in construction and easy in its operation, merely requiring a turn of the set-screw to move the slide.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with the rock-shaft *r*, pro-

vided at one end with an arm, *t*, for operating the feed-dog of a sewing-machine, of the adjustable rod *l*, eccentric *k*, slotted crank *p*, adjustable slide *m*, the set-screw *q*, passing through the crank *p*, and slide *m*, for moving the latter back and forth, as and for the purpose described.

This specification signed by me this 31st day of March, 1874.

LUCIUS LYON.

Witnesses:
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