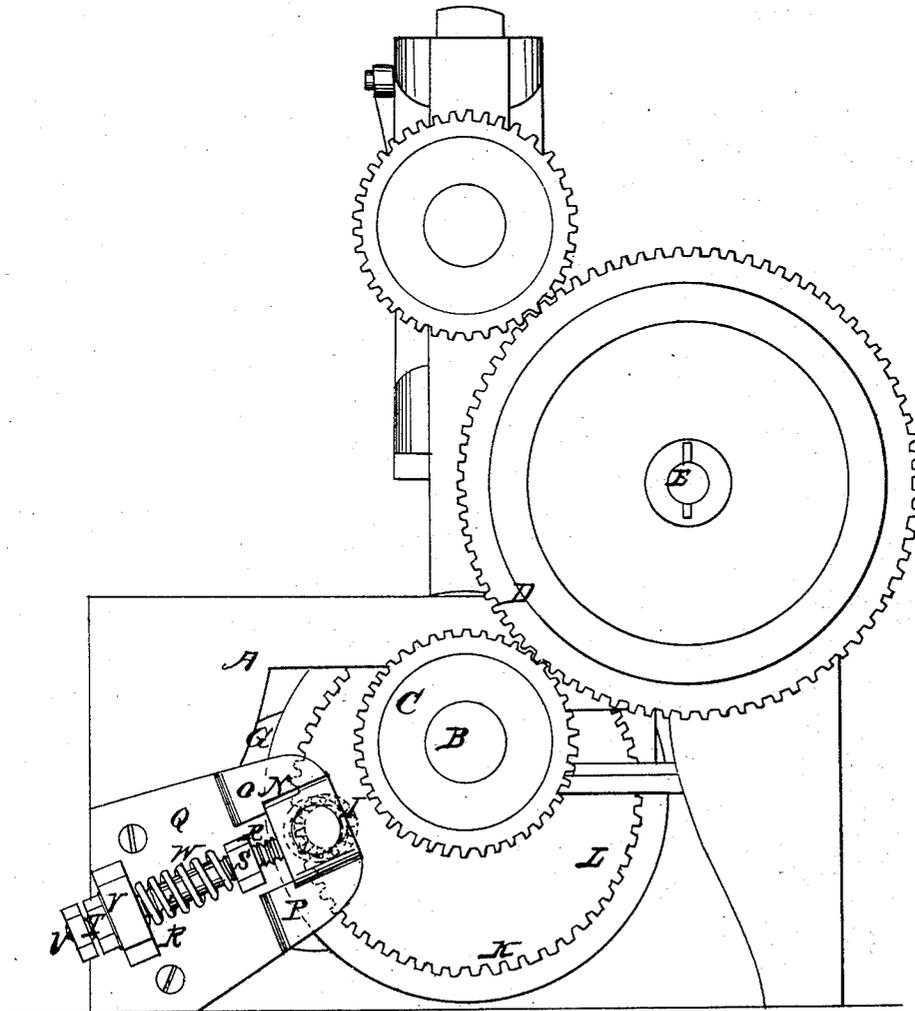


P. Shaw.
Sewing Machine.

N^o 11680

Patented Sep. 12, 1854.

Fig. 1.



P. Shaw.
Sewing Machine.
No 11680 Patented Sep. 12, 1854.

Fig. 4.

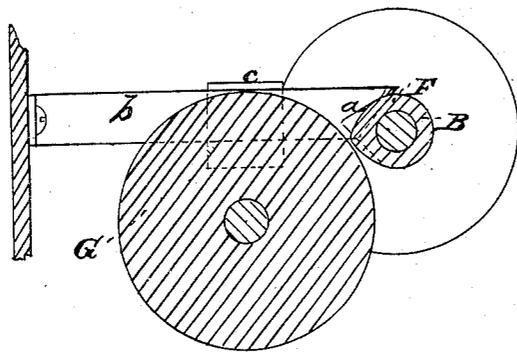
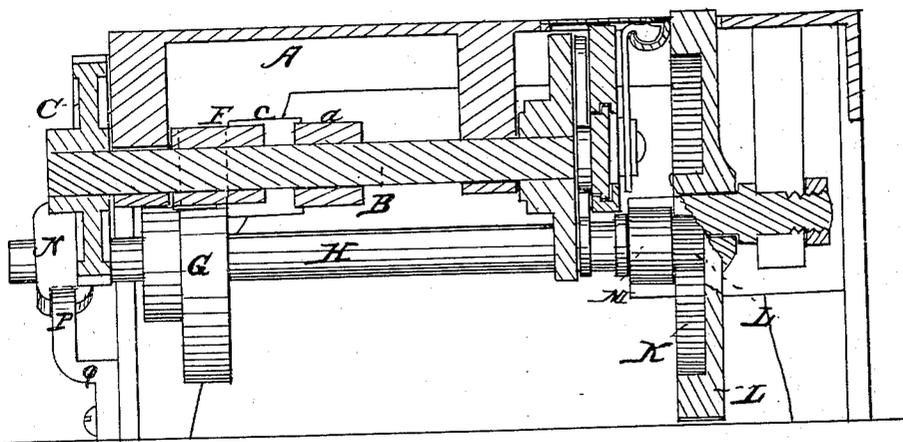


Fig. 3.



UNITED STATES PATENT OFFICE.

PHILANDER SHAW, OF ABINGTON, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 11,680, dated September 12, 1851.

To all whom it may concern:

Be it known that I, PHILANDER SHAW, of Abington, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Operating the Feeding-Roller of a Sewing-Machine; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a rear end view of a sewing-machine having my improvement applied to it. Fig. 2 is an under side view of it. Fig. 3 is a vertical and longitudinal section taken through the middle of the table, without representing the machinery above it, and which forms no part of my invention. Fig. 4 will be hereinafter described. Fig. 5 is a top view of my improved rack leather-holder of the feeding apparatus. Fig. 6 is an under side view of the same. Fig. 7 is a front edge view of it. Fig. 8 is a longitudinal section of it. Fig. 9 is a transverse section of it, taken through one of its spring studs or points.

In the said drawings, A exhibits the table or frame, and B one of the shafts of the machine, such shaft being set in rotation by two gears, C D, respectively applied to it, and the fly-wheel shaft or arbor E.

On the shaft B, I affix a cam, F, (see Fig. 4, which denotes a section of it, and the wheel G, against which it operates,) which is made to act against the periphery of the wheel G, that is fixed on a horizontal shaft, H. On the inner end of this shaft H there is a pinion-gear, I, which works into an internal gear, K, cut or formed on the feed-wheel L. This feed-wheel operates through the bench and against the cloth in a manner well known. Its periphery is made rough or provided with teeth or scorings, and such wheel has an intermittent rotary motion imparted to it.

The method of feeding the cloth or moving it under the operation of the needle and shuttle when the cloth is moved by the feed-wheel in direct contact with it will be found in the patent granted to Issac M. Singer on the 12th day of August, A. D. 1851. My invention is a new combination, or an improved method for obtaining and regulating the said motion of the said feed-wheel. I do not, however, limit the application of the feeding apparatus

of my invention to a feed-wheel to act directly against the cloth, as the feed-wheel may be made and is often used to move a cloth-holder, in which case it acts in the toothed rack thereof, as will be hereinafter described.

The shaft H is supported near the pinion I in a suitable bearing, M, such as will allow the wheel G to play toward and away from the shaft B. The opposite end of the shaft H is sustained and turns in a box, N, which is supported by and slides freely between jaws O P of a plate, Q, that is affixed to the frame of the machine, as seen in the drawings. This box or bearing N is attached to the upper end of a rod, R, on which there are screwed three nuts, S T U. Between the nut S and a projection, V, from the plate Q there is a spring, W, which is made to envelop the rod, and by bearing against the projection and the nut S it causes the wheel G to be pressed close up against the cam F during a portion of the rotation of the said cam, or while said cam is rotating in contact with the wheel. The nut T, by acting against the opposite side of the projection V, serves as a stop to regulate the distance of the periphery of the wheel G from the axis of the shaft B. By turning up said nut on its screw we draw the wheel G away from the shaft B, whereby we decrease the arc of rotary movement of it, as produced by the action of the cam F. By unscrewing the said nut we increase the said arc. By means of the nut S we regulate the amount of friction between the cam F and the periphery of the wheel G. During the rotation of the cam F its most projecting part is brought into contact with the periphery of the wheel, and while so remaining in contact it will turn the wheel, the spring W allowing the wheel and its shaft to give or move back under the pressure of the cam. The nut U serves as a binding-nut, its office being only to hold the nut V in place on its screw, and this it does when screwed up against it.

On the shaft B, I place another cam, a, which, during the revolution of the shaft and while the cam F is in action on the wheel G, is made to act against one end of a spring, b, and move and keep it away from the wheel G, so as to move a rubber or friction-brake, c, (that is attached to the spring,) from off the side of the wheel. The cam a should be so formed as to permit the return of the friction-brake

against the side of the wheel the moment the action of the cam F against it ceases. I do not always deem it essential to the correct operation of the feed-wheel that the said friction apparatus should be used; but as it insures such correct action I prefer to employ it.

The improved holder used by me is represented in Figs. 5, 6, 7, 8, and 9. It is formed in part of two plates, *g h*, which may be confined together at their two ends in any suitable way. This cloth-holder is intended to be used for holding the leathers of a boot-leg, and properly directing or presenting the same under the needle during the sewing operation. The leathers are placed between the two clamp-plates *g h*, and are made to project beyond their edges far enough. They are held in place by points *i i i*, &c., each of which projects from the under surface of the plate *g*, and is supported on a spring, *k*, by which it is allowed to fall back and adapt it to the thickness of the leather, as boot-leathers are of variable thicknesses, and in order to secure them by the clamps it becomes necessary to have each of the points placed on a spring. This clamp, so made, has a round stud, *l*, extended down from its lower surface, and made to enter into a groove, *m*, cut transversely in a metallic plate, *n*, that extends back from a toothed rack, *o*. This rack, when used, is placed on the top of the table of the sewing-machine, and so that its teeth shall engage with those of the feed-wheel L. While the

feed-wheel moves the rack and the holder forward in a longitudinal direction the holder can be guided or moved transversely, and turned horizontally on the pin *l*, so as to properly present the curved edge of the boot-leg to the needle, whereby the needle may be made to sew in any irregular curved line.

I am aware that a cam or wiper operating against a friction-roller in one arm of a bent lever made to work or depress a pawl to a ratchet is an old invention; also, that the length of longitudinal movement of such pawl has been regulated by setting its joint-pin nearer to or farther from the fulcrum of the lever. I therefore do not claim any such contrivance; but

I claim—

The above-described combination applied to the shaft H for imparting to it an intermittent rotary motion, so as to obtain the length of stitch, as specified, such combination consisting of the cam F, the wheel G, the movable or sliding box M, (or its mechanical equivalent,) and the spring W, applied together and to the shafts B and H, and made to operate substantially as above explained.

In testimony whereof I have hereto set my signature this 12th day of October, A. D. 1853.

PHILANDER SHAW.

Witnesses:

R. H. EDDY,
B. F. DUM.