

C. S. CUSHMAN.
Sewing-Machines.

No. 141,332.

Patented July 29, 1873.

FIG. 1

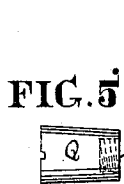
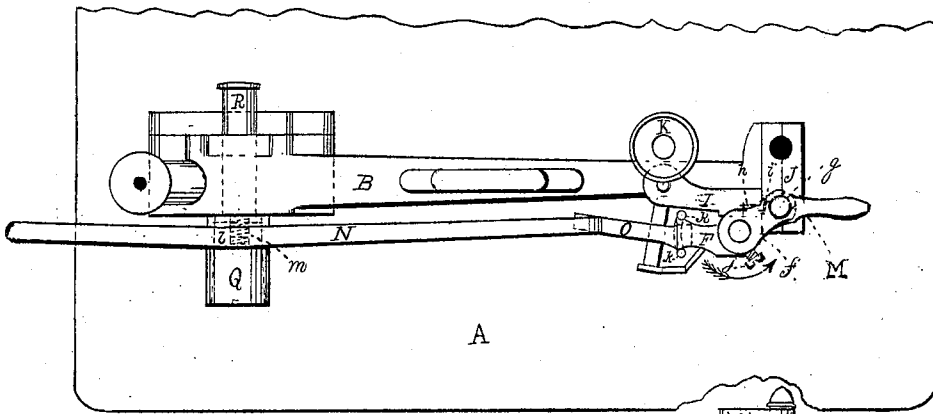


FIG. 2

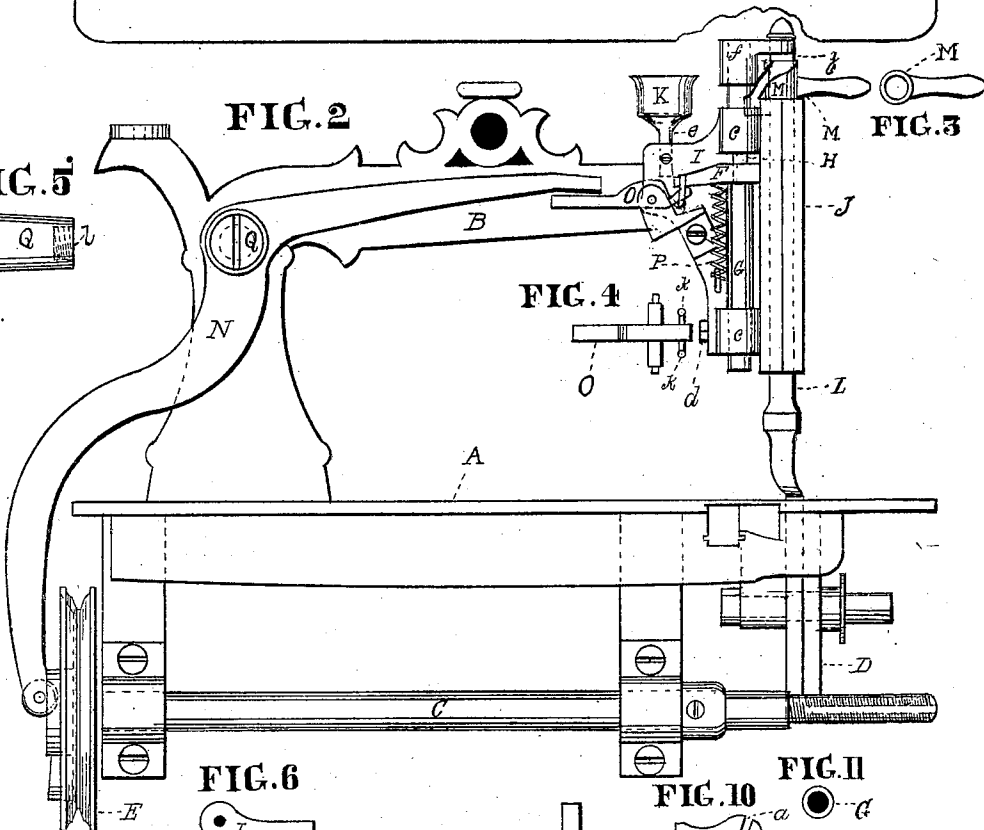


FIG. 3

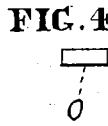


FIG. 4

FIG. 6

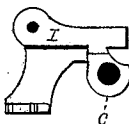


FIG. 9

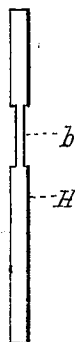


FIG. 11

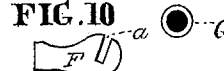


FIG. 7

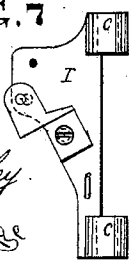


FIG. 8

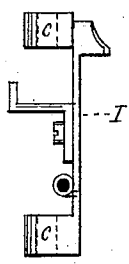


FIG. 12



Witnesses
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UNITED STATES PATENT OFFICE.

CYRUS S. CUSHMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
NESBIT D. STOOPS, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **141,332**, dated July 29, 1873; application filed
June 4, 1873.

To all whom it may concern:

Be it known that I, CYRUS S. CUSHMAN, of the city of Philadelphia and State of Pennsylvania, have invented certain Improvements in Sewing-Machines, of which the following is a specification:

My invention consists of a combination of devices, hereinafter named, for elevating the presser-foot.

Figure 1 is a plan view of the improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a top view of the partially-rotating incline lever M. Fig. 4 is a top view of the intermediate lever O. Fig. 5 is a side view of the pin Q. Fig. 6 is a top view of the bearing attachment I. Figs. 7 and 8 are elevations of the same at right angles to each other. Fig. 9 is a side view of the vertical intermediate lifting-bar H. Fig. 10 is a top view of the clutch or grasping lever F. Figs. 11 and 12 are end and side views of the stop G.

Like letters in all the figures indicate the same parts.

A is the bed-plate, and B the arm, of an ordinary sewing-machine. C is the driving-shaft, provided at its rear end with a face cam-wheel, E, to operate the lever. D is the feed-wheel. So far the devices mentioned are essentially the same as exist on other machines. F is a clutch or grasping-lever, whose front end rests on the stop G, which surrounds the lifting-bar H, there being a vertical slot, *a*, in the clutch, (seen in Fig. 10,) in which the flattened part *b* of the lifting-rod H is situated, said part being somewhat smaller, and, being freed from the grasp of the clutch in the descent of the rod, admits of the latter falling upon the material to be sewed independent of the downward motion of the clutch, so as to automatically adapt its descent to any thickness of cloth; and hence the operating device of the clutch, by elevating the rear end of the same, gives a grasping action of the slot *a* of the clutch upon the flattened part *b* of the lifting-bar, causing the elevation of the same a definite distance above the material to be sewed, irrespective of its thickness; and, as the presser-foot is only required to move from the cloth just far enough to allow the latter to

pass freely under it, the vertical movements of the presser-foot are necessarily so slight as to make very little jar or noise instead of the unpleasant thumping incidental to other modes of vibrating the presser-foot. The lifting-bar H is supported by means of the bearings *c c* of the attachment I, which is confined to the arm B at its lower end by means of the screw *d*, by which the stock J is fastened to the front of the arm B, and at its upper end by the stem *e* of the oil-cup K, thus dispensing with the use of any extra device for fastening it. I provide for swinging the presser-foot to one side by means of the slotted arm *f* of the lifting-bar H, connecting with the neck *g* on the upper end of the presser-foot bar L, the bar L having an arm, *h*, which is held in the vertical groove *i* in the upper end of the stock J, as seen in Fig. 1, and being elevated out of the same by means of the partially-rotating inclined lever M, (seen in detail in Figs. 1 and 3,) as the lever is turned in the direction of the arrow, the presser-foot being swung around in the same direction, the arm *h* is caused to rest upon the upper end of the stock. The said arm *f* is adjustable on the bar by means of the set-screw *j*. By lifting the presser-foot at the completion of each stitch the material being sewed is swung around on the needle to make any form of figure stitched, and thus accomplish the great desideratum of making the stitches of uniform length. The clutch F is actuated by means of the combination therewith of the main lever N, operated by the cam-wheel E and short intermediate lever O, which has its fulcrum-bearings in the attachment I, as seen in Figs. 1 and 2, the rear end of the clutch resting between the steadying upturned prongs *k k* of the front end of the lever O. The clutch F is held down by the tension-spring P, which bears its front end hard upon the stop G, upon which it turns, as its rear end is thrown upward by the action of the levers N O, so as to cause opposite corners of the slot *a* to grasp the flattened part *b* of the lifting-bar H, and thus secure a positive upward movement of the presser-foot, as before stated; and as a reverse movement is given to the levers N O by the cam-wheel E

receding from the friction-wheel on the lower end of the lever N, and the tension-spring P being thus permitted to pull the rear end of the clutch downward, the flattened part *b* of the lifting-bar H is released from the grasp of the clutch, and the bar continues to descend until the presser-foot rests upon the material to be sewed, irrespective of the thickness of the latter, as before stated. The pin Q, which serves as a fulcrum for the lever N, is provided with a screw-thread, *l*, at its inner end to fit the screw-stem *m* of the pin R, which serves as a fulcrum for the needle-operating lever. These two fulcrum-pins are thus secured to the arm B by means of the single nut *l*. I make the pin slightly tapering, as seen more clearly in Fig. 5, for setting it upon the screw-stem *m* to compensate for the wear.

I am aware that it is not new to elevate a presser-foot in a variable manner, as in Patent No. 134,509.

I claim as my invention—

1. The clutch F, in combination with the presser lifting-bar H, stop G, and tension-spring P, for elevating the presser-foot, substantially as described.

2. The pin Q having screw-thread *l*, in combination with the fulcrum-pin R having screw-stem *m*, substantially as and for the purpose set forth.

3. The combination of the lifting-bar H, having a slotted arm, *f*, the presser-foot bar L, having a neck, *g*, and arm *h*, and the stock J, having in its upper end a vertical groove, *i*, for securing the presser-foot in its lower, and allowing it to be turned laterally when in its upward, position, substantially as set forth.

CYRUS S. CUSHMAN.

Witnesses:

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