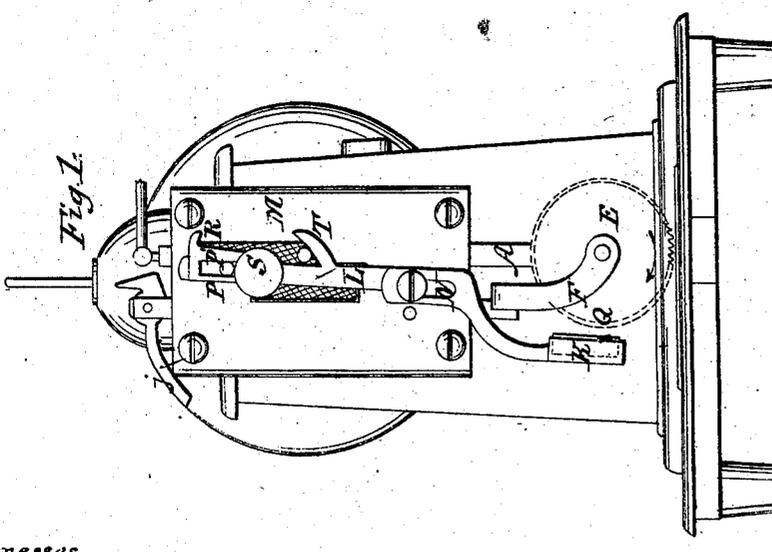
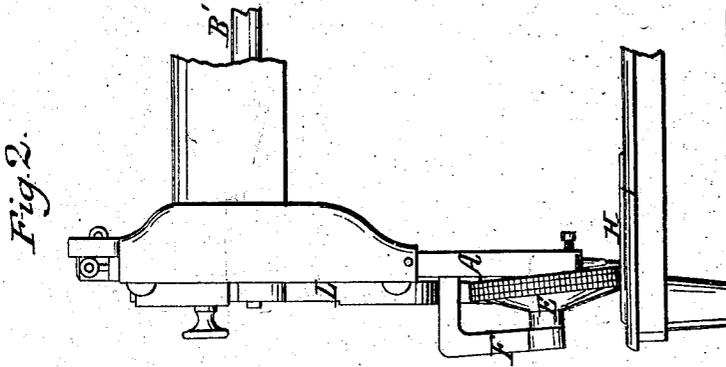
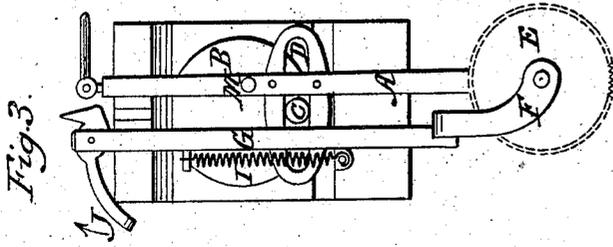


E. HOWELL.  
Sewing Machine Feed.

No. 32,517.

Patented June 11, 1861.



Witnesses.  
J. Brainerd.  
A. D. Sullivan

Inventor.  
Edw. Howell.

# UNITED STATES PATENT OFFICE.

EDWARD HOWELL, OF ASHTABULA, OHIO.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 32,517, dated June 11, 1861.

*To all whom it may concern:*

Be it known that I, EDWARD HOWELL, of Ashtabula, in the county of Ashtabula and State of Ohio, have invented new and useful Improvements in Feeding Apparatus for Sewing-Machines; and I do hereby declare that the following is a full and complete description of the construction of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view. Fig. 2 is a side view; and Fig. 3 is a front view, showing the interior arrangement of the parts.

The nature of my invention relates to a top revolving feed and cloth-holder combined, by means of which the cloth is not only moved forward the length of a stitch at every stroke of the needle, but the feed-wheel at the same time presses the cloth firmly to the bed-plate of the machine, and, being adjustable to any thickness of cloth, by means of a pressure-spring will rise from the thinnest fabric to several folds of thick cloth without difficulty or obstruction.

The needle-bar A is moved up and down in the usual mode in the form of machine here shown, by means of the revolution of the wheel B (upon the shaft B') and the wrist C, which works in the cam D, said cam being secured to the needle-bar A.

The feed-wheel and cloth-holder E are mounted upon an axle, F, at the lower end of the rod G, which has a vertical movement in the plane of the needle-bar. This rod G is constantly pressed downward upon the face-plate H of the machine by a spring, I. This rod G, with its attached wheel E, can be elevated and sustained at pleasure for introducing or changing the work by means of the lever J moved in the direction of the arrow.

The face of the feed-wheel and cloth-holder E is about one-fourth of an inch in thickness, and is toothed or corrugated upon the surface, so that it will take hold of the fabric upon which it rests for the purpose of both holding it in place and moving it forward upon the bed-plate H. At every stroke of the needle this wheel E moves the cloth forward the length of a stitch by means of motion communicated by the pad K in the following-described manner: The pad K is attached to an arm, L, which is moved up and down by a stud or pin, M, upon the needle-bar A. This arm L has a slot at N,

through which a screw passes into the frame of the machine, as seen at o, Fig. 1. This screw o forms the fulcrum of the lever L.

Upon the upper end of the arm L is a slider, P. That side toward the needle-bar forms an inclined plane, P', against which the pin M presses as the needle-bar ascends, and this movement brings the pad K firmly against the face of the wheel E at Q. When the pin M in the needle-bar A reaches the projection R the pad K is suddenly elevated while being closely pressed against the face of the wheel at Q. The pad K has a depression in its face, which, being filled with india-rubber or other elastic material, insures the movement of the wheel E in the direction of the arrow and moves the cloth the length of a stitch. The slider P can be placed higher or lower on the arm L by means of the set-screw S, and thus the length of the stitch can be regulated. When the needle-bar descends the pin M strikes against the inclined plane T and throws the pad K away from the face of the wheel E. Whenever it is desired to change the work the lever J is to be elevated, as before indicated, and this raises the wheel E from the cloth or face plate by compressing the spring I. The pad K may have a substitute in pawls, but I prefer the prepared india-rubber, as it is not liable to slip, but is certain and noiseless in its action.

This improvement can be attached to any form of machine at an expense not exceeding any other kind of feed, while this performs the double office of feeder and cloth-holder.

Some of the advantages of this feed and holder are as follows: The bed-plate may be smooth and level, with an opening only large enough to admit of the passage of the needle. It is self-adjusting to various thicknesses of goods by means of the spring I. The roller E is therefore enabled to pass over a seam or rise to admit a greater thickness of cloth without difficulty or danger of losing a stitch. It never becomes entangled in the basting-thread. It is easily lifted from the cloth to change the work; it is easily adjusted to different lengths of stitch; it makes but little noise, and is not liable to get out of repair.

It will be thus seen that the wheel E performs two functions—that of feeding and that of holding the cloth—and that it is operated by means of the elastic pad K pressing against the roughened surface of the wheel E, and

which, by its upward movement while thus pressed against the wheel, insures a noiseless and exceedingly-accurate movement of the cloth; and, further, by means of the slider P upon the needle-bar L the most minute adjustment can be made as regards the length of the stitch.

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

The operating of the wheel E, when constructed and arranged as described, by means of the elastic pad K, substantially as and for the purpose specified.

EDWD. HOWELL.

Witnesses:

J. BRAINERD,  
A. D. LUFKIN.