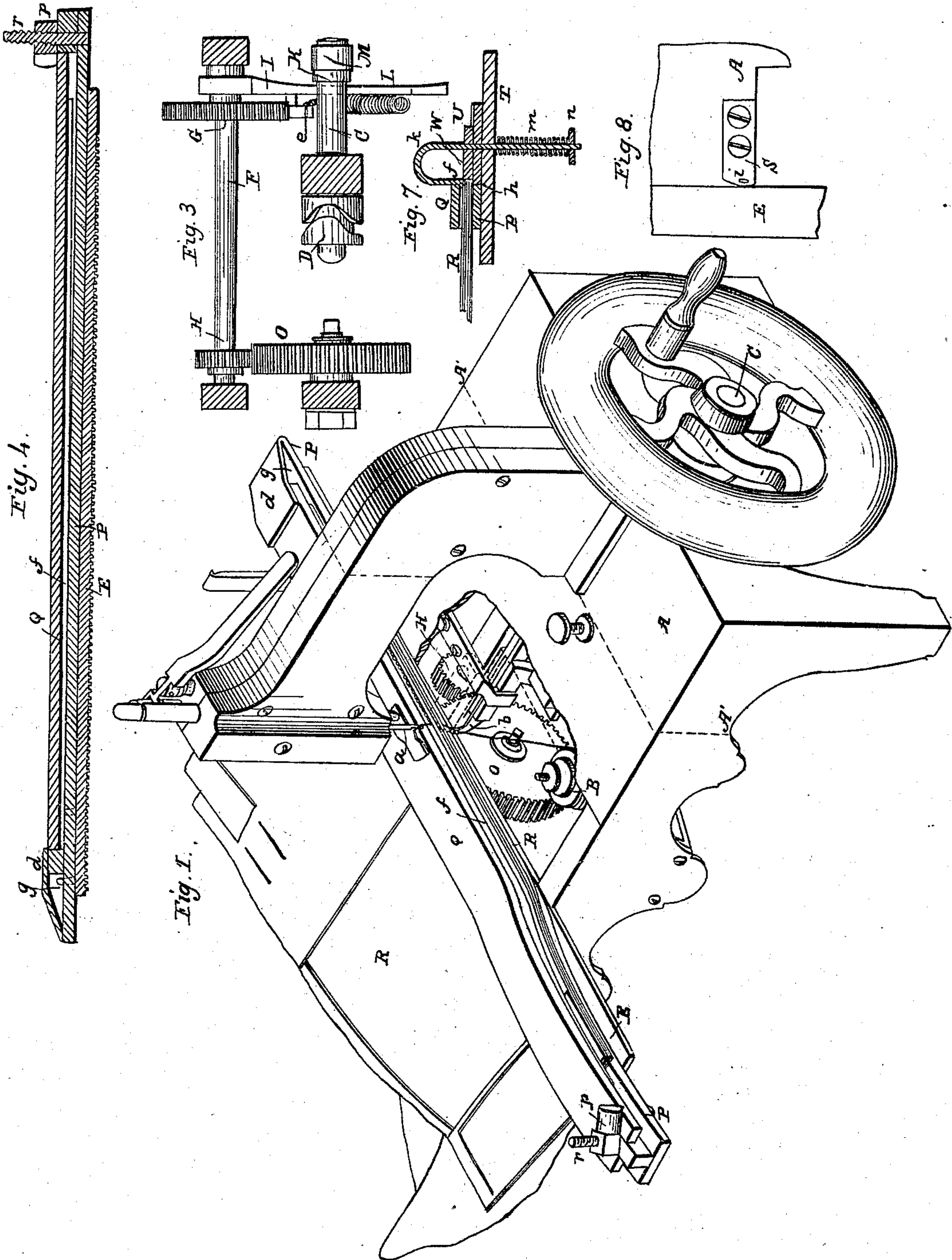


M. SHAW.
Sewing Machine.

No. 11,581.

Patented Aug. 22, 1854.

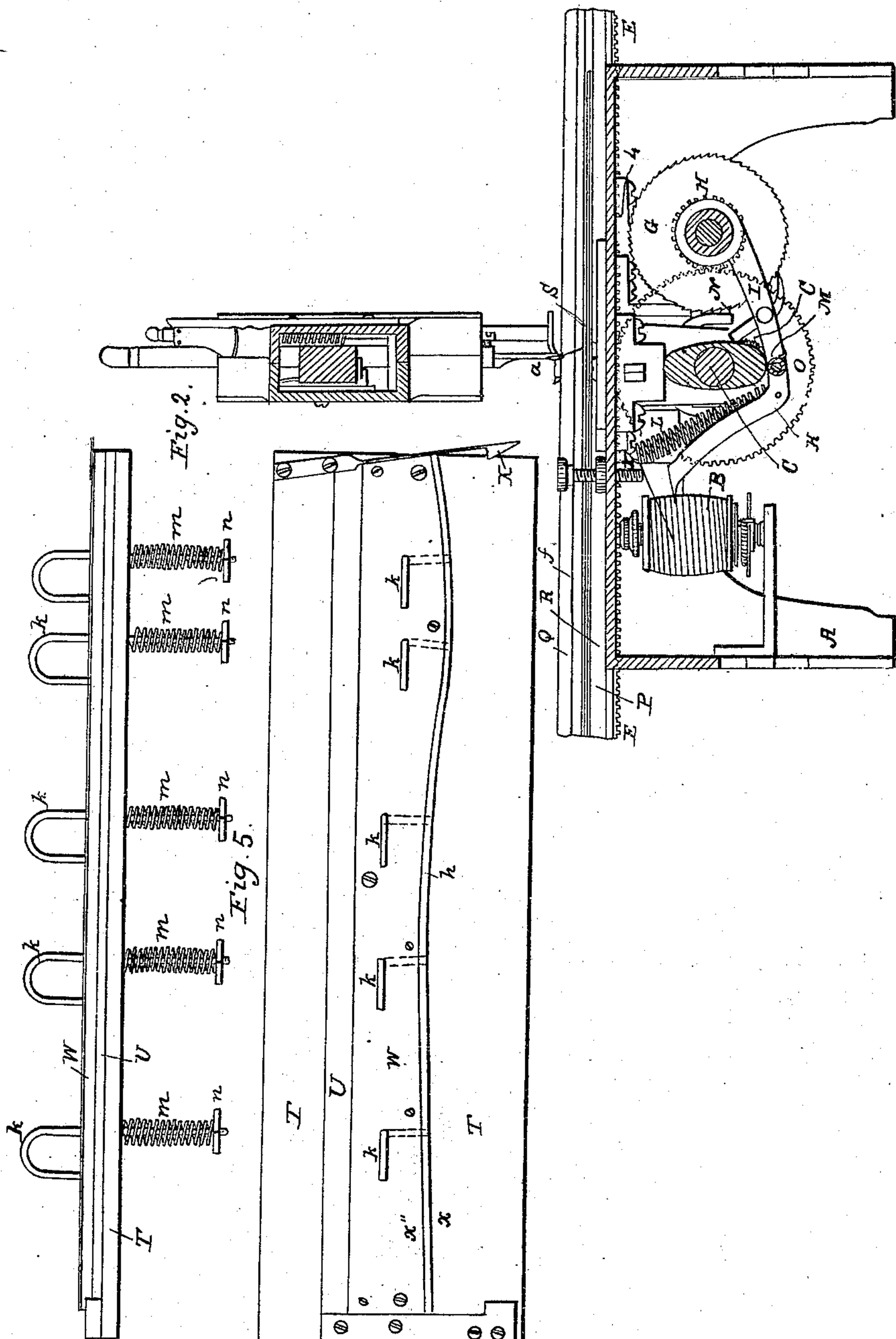


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Fig. 6.



UNITED STATES PATENT OFFICE.

MELVIN SHAW, OF EAST ABINGTON, MASSACHUSETTS, ASSIGNOR TO MELVIN SHAW AND DANIEL GAGE WHEELER.

IMPROVEMENT IN CLAMPS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **11,581**, dated August 22, 1854; antedated February 22, 1854.

To all whom it may concern:

Be it known that I, MELVIN SHAW, of East Abington, in the county of Plymouth and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Clamps for Sewing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an isometric view of a sewing-machine with my improvements attached. Fig. 2 is a transverse section upon the line A' A' of Fig. 1. Fig. 3 is a plan of the parts made use of to operate the feed. Fig. 4 is a longitudinal section through the clamp for holding the boot-leg to be sewed. Fig. 5 is a plan of the spring holder made use of to introduce the work into the clamp. Fig. 6 is a front view of the same; Fig. 7, a cross-section through the spring holder and clamp. Fig. 8 is a detached view of the stop against which the clamp is made to rest as it is fed through the machine.

My invention consists in a peculiarly-constructed clamp for holding the legs of boots or other articles while being sewed, and also in the method by which the same is attached to and fed through the machine.

To enable others skilled in the art to make and use my invention, I will proceed to describe the method in which I have carried it out.

In the accompanying drawings my improvements are shown attached to a sewing-machine invented by William Wickersham, and patented by him April 19, 1853, and I shall refer to the general features of this machine only so far as may be necessary to show their connection and relation with my improvements.

A is the frame of the machine; *a*, the needle; *b*, the thread-carrier; B, the bobbin; C, the main driving-shaft, which carries the cam D for the purpose of giving motion to the thread-carrier.

In sewing up the legs of boots, to which purpose my clamp is particularly adapted, it is necessary that the work be fed through the machine at the same time that the edges of the material to be sewed are kept at an unvarying distance from the needle, whether these

edges be in a straight line or not, and the accomplishment of this end is the object of this part of my invention.

E is a rack-bar which is fed transversely across the machine, the frame being cut away upon top for the purpose of accommodating it. Motion is given to this rack-bar in the following manner:

Parallel with the main shaft C is the shaft F, which carries the ratchet-wheel G and the pinion H.

I is a bent arm, which is allowed to play freely round the shaft F, and which is depressed by the cam K upon the main shaft C, the arm being kept constantly borne up against the cam by the spring L.

M is a roller upon the arm I, against which the cam K impinges for the purpose of reducing the friction.

N is an impelling-pawl, which is pivoted to the arm I, and which is kept in contact with the ratchet-wheel G by the spring *c*. The pinion H drives the cog-wheel O, which engages with the teeth of the rack-bar E, and thus as the main shaft revolves the rack-bar is moved intermittently through the operation of the cam K and impelling-pawl N and the parts immediately connected therewith.

P is the lower bar of the clamp, one end of which bends up, as seen at *d*, for the purpose of forming a spring-hold for the upper bar, Q, of the clamp. Various attempts have been made to construct a clamp that should grip the goods uniformly through its whole length; but it is found that whether they be made straight or curved the bars are liable to spring off from each other in the middle of their length, and the work is consequently left loose at this point. To obviate this I have made both upper and lower bars of my clamp straight and comparatively rigid, and have applied to the inner side of the upper one a lip, *f*. (Seen in section in Fig. 7 and in elevation in Fig. 4.) This lip is so formed as generally to conform to the shape of the material to be sewed, and is placed upon the front edge of the clamp, Fig. 7, so as to grip the material R along the whole line to be sewed.

g, Fig. 4, is a pin or pivot rising from the top surface of the rack-bar E, which enters a corresponding hole in the lower bar, P, of the

clamp, the latter being allowed to swivel thereon.

S is a rest or stop, against which the clamp is allowed to bear to keep it and the edge of the material to be sewed at an unvarying distance from the needle. This rest is seen detached in Fig. 8, and is secured to the machine immediately beneath the needle, the portion of the table to which it is attached being broken away in Fig. 1. Its position is indicated in this figure in red lines. *i* is a hole in the rest S, through which the needle passes. This end of the rest also serves as a support to the material while being sewed.

The operation of this portion of the mechanism is as follows: The rack-bar E being in place, as represented in Figs. 1 and 2, and the material being secured in the clamp, the latter is laid upon the rack-bar, the pin *g* being allowed to enter the hole in the end of the clamp. The latter is then borne up against the rest S, so that the material is brought directly beneath the needle, and as the sewing continues the clamp is fed stitch by stitch through the machine, the edge of the material, however curved it may be, being kept at all times directly beneath the needle by pressing the clamp by hand against the rest S. The contact of the clamp and rest may be effected by means of springs if found desirable.

Other methods may be adopted of connecting the clamp to the sliding bar; but the one above described is that which I prefer and have found, after a great variety of experiments, to answer the best purpose. The pin *g* may be placed at any point along the bar E. The preferable point, however, is near its end, as represented and described above.

In order to introduce the work into the clamps, I make use of the following device, which I call a "spring-holder," and which is represented in Figs. 5, 6, and 7. It is constructed and operated in the following manner: T is the bottom board of the holder. U a plate of the exact thickness of the lever-plate P of the clamp, Fig. 7. W is the upper plate of the holder, the edge of which is set so far back from the edge of the plate U as to leave a ledge,

h, of a width equal to the amount which the material is required to project from the clamp. *k* are hooks which pass through the holder, to which they are held by the springs *m* and nuts *w*. These hooks may be freely turned by slightly raising them against the action of the springs *m*. The operation of this holder is as follows: The edges *x x'* of the upper plates being formed exactly to correspond with those of the clamp and the material to be sewed, the lower plate, P, of the clamp is placed against the plate U, as seen in Fig. 7, where it is temporarily held by the spring-catch X. The material is then laid upon the surface of the bar P, its edge corresponding exactly to the outline of the plate W. The hooks *k* are then turned, as seen in red lines in Fig. 5, so that the points of the hooks shall bear upon the edge of the material and hold it temporarily in place. The upper bar, Q, of the clamp is then applied and secured to the lower one by the nut *p*, Figs. 1 and 4, which works upon a screw, *r*, which rises from the lower clamp-bar, P. It is evident that the material is thus made to project from the clamp a distance equal to the width of the ledge *h*, and that it will be more accurately and expeditiously secured in the clamp than could have been effected by the eye alone.

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

The combination of the sliding bar E with the curved clamp P Q and the rest S, constructed and operating together in the manner substantially as set forth, by which means as the work is fed through the machine it is kept constantly up to the needle and the stitches are placed at a uniform and unvarying distance from the edges of the material without dependence upon the care or skill of the workmen.

In testimony whereof I have hereunto set my signature.

MELVIN SHAW.

In presence of—

SAM COOPER,

H. B. SPINNEY.