

J. H. BROWN.

Sewing Machine for Sewing Boots and Shoes.

No. 94,389.

Patented Aug. 31, 1869.

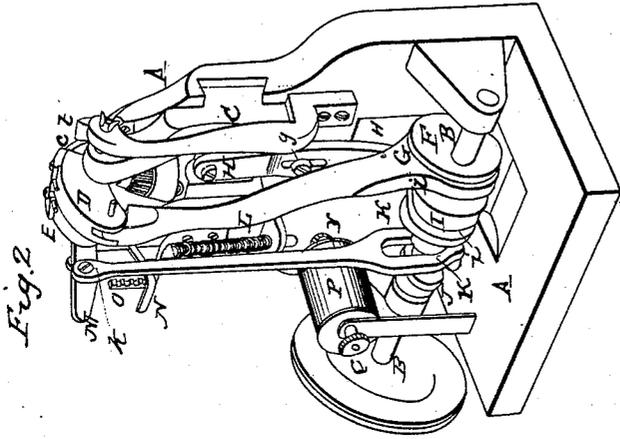


Fig. 2

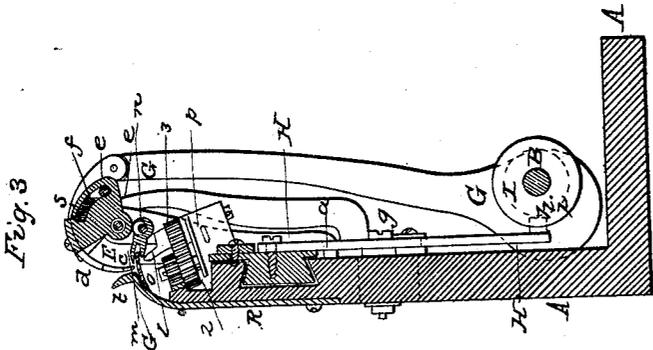


Fig. 3

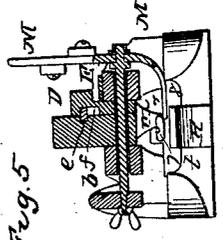


Fig. 5

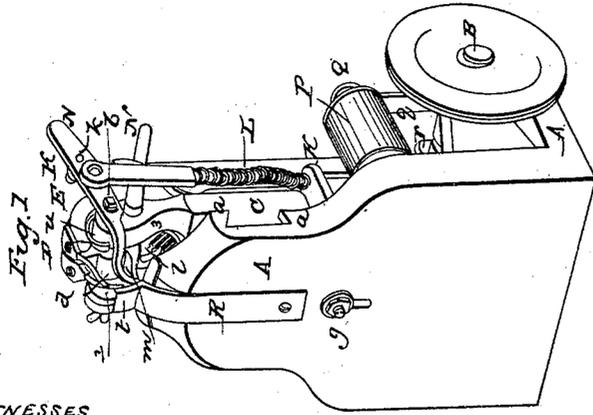


Fig. 1

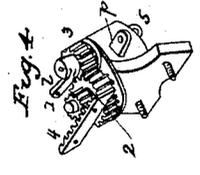


Fig. 4

WITNESSES
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEWING-MACHINES FOR SEWING BOOTS AND SHOES.

Specification forming part of Letters Patent No. 94,389, dated August 31, 1869.

To all whom it may concern:

Be it known that I, JOHN H. BROWN, of Watertown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Sewing on the Soles of Boots and Shoes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view from the front of the machine. Fig. 2 represents a perspective view from the rear thereof. Fig. 3 represents a vertical section through the machine. Fig. 4 represents in perspective and detached from the machine the gearing for operating the looper. Fig. 5 represents a horizontal section through the upper portion of the machine.

Similar letters of reference, where they occur in the several separate figures, denote like parts of the machine in all of the drawings.

My invention consists, first, in the mechanism for operating the looper.

My invention further consists in combining with a traversing and rocking head and a needle-feed a holding mechanism which vibrates but does not traverse with the head; and my invention further consists in combining with the traversing and rocking head a gage for adjusting the sewing-line.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents a stand, upon which the mechanism is arranged. This stand may be made of any suitable material, and of such convenient form, shape, and size as may be found most advantageous for the different kind of work to be done by it. In suitable bearings on this stand or frame is supported a cam-shaft, B, by which the varied movements of the several parts are imparted and timed in relation to each other, said shafts being rotated in any of the usual well-known ways.

In ways *a a*, near the top of the stand A, there is arranged a traversing head, C, which is moved back and forth therein; and upon a shaft or bearing, *b*, upon which the upper

portion of the head C moves, there are arranged two rocking heads, D E, one carrying the needle *c* and the other carrying the clearer *d*, which works in connection with the needle. These two heads D E are rocked from the same cam, F, through one and the same connecting-rod, G, and though at times they move together, yet by means of a pin or stud, *e*, in the head D, which works through a curved slot or groove, *f*, in the head E, the latter can remain at rest, while the former rocks or moves the length of the cam slot or groove *f*; but when the stud or pin comes to the end of the slot in moving in either direction, then it carries the head E and the clearer with it. The head C is traversed in its ways by a bar, H, which vibrates on an adjustable center, *g*, so as to regulate and change its extent of movement laterally, as may be required, its movement defining, to an extent, the length of the stitch or the feeding along of the shoe. On the lower end of the bar H there is a friction-roll, *h*, which runs in the groove *i* of the cam I, and by which means the motion to operate the traversing head C is attained, said cam I being on the main driving cam-shaft B. On the cam-shaft B there is a third cam, J, which in its rotation strikes against a friction-roll, *j*, on the lower end of a bar, K, and which draws down said bar against the action of a coiled spring, L, so that after the cam J has passed the friction-roll *j* the recoil of the spring will return the bar K to its normal position. The upper end of the bar K is pivoted to the holding arm or lever M at the point *k* thereon, said holding-lever being itself fastened on or to the shaft *b*, Fig. 5, so that as the lever is vibrated by its cam in one direction and the spring in the other direction it shall correspondingly vibrate or rock the shaft *b*, to which it is so attached. The vibrating lever C carries the looper-arm *l*, (see Fig. 4,) through which the thread passes, and this looper-arm is operated through the pinions 1 2 3 on said head and the rack 4 on the stand or frame, as follows: The pinion 1, as the head C is traversed, runs in the station-rack 4, and is thus rotated. This pinion carries with it the pinion 2, and the pinion 2, gearing into the pinion 3, drives said latter pinion, and with it its shaft 5 upon the up-

per end of which the looper-arm is fixed, and with the shaft 5 the looper is carried around in its path.

The gage *m*, (see Fig. 3,) which defines the distance that the seam to be sewed shall be from the edge of the sole, is hung upon an eccentric-shaft, *n*, and on one end of this shaft there is a lever or arm, *N*, which moves against a notched arc, *O*, and into any one of which a tooth on the lever *N* may take and there hold it. By turning this eccentric-shaft *n*, this "gage," as I have termed it, may be moved to or from the sewing-line, as may be required, and there held. This piece *m* rests upon the throat-bridge *o* through an opening or throat in which the needle works, and it has upon it, besides its shoulder 6, points or projections 7 7, which bear against the sole and aid in giving it its defined movement. The "needle," "looper," and "gage," as I have termed them, all move with the traversing head *C*, and the feeding is done by the needle before it is withdrawn from the shoe to make the next stitch; and that the shoe should not move while the needle is moving for the next stitch, the point 8 of the holder is so timed as to take into or against the work being sewed, and hold it while the needle, looper, and head are so moving preparatory to taking the next stitch. The thread from the bobbin *P* passes up through guide *p*, Fig. 4, thence through the eye of the looper *l*. The needle *c* is a hooked needle, and sews in connection with the looper and a single thread, in a manner common to such machines. The tension of the thread is regulated by the springs *q r* and the thumb-nut *Q*.

I have mentioned the stud *e*, Fig. 3, as traversing to the ends of the slot *f*. It may do so at one of its ends; but at one of the ends there is a coiled spring, *s*, against which the stud acts, and which spring controls the motion of the head *E*, which carries the loop or thread clearer *d*, which throws the loop off from the

hooked needle at the proper time, or as the needle rises and moves past it, while the clearer stands at rest.

On the front of the machine there is a guide or holder, *R*, having an inclined rest, the purpose of which is to support the sole while being punched with holes for the needle preparatory to sewing. When the shoe is to be sewed, the rest is removed, so as to bring the work properly under the sewing-line.

I propose to use in this machine a hooked needle, and it may be quite a blunt needle, and work through holes previously punched or pierced through the work to be sewed. The sole is punched with holes preparatory to sewing by substituting an awl for the needle and removing or merely throwing out of action the looper or unthreading the sewing devices. The machine can be used for piercing the sole or other work to be afterward sewed in it.

A spring, *u*, is arranged under the rocking head *E*, that carries the thread-clearer *d*, to cause friction enough to hold it steady while the stud *e* is moving through the slot *f*.

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

1. The combination of the stationary rack and revolving gears for operating the looper, substantially as described.
2. In combination with the traversing and rocking head and a needle-feed, a releasing and holding mechanism constructed and operated, as described, to hold the shoe while the needle is traversed.
3. The gage or holder *m*, hung on an eccentric, in combination with an operating lever and catch for adjusting said gage in relation to the sewing-line, substantially as described.

JOHN H. BROWN.

Witnesses:

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EDWARD KAUFMAN.