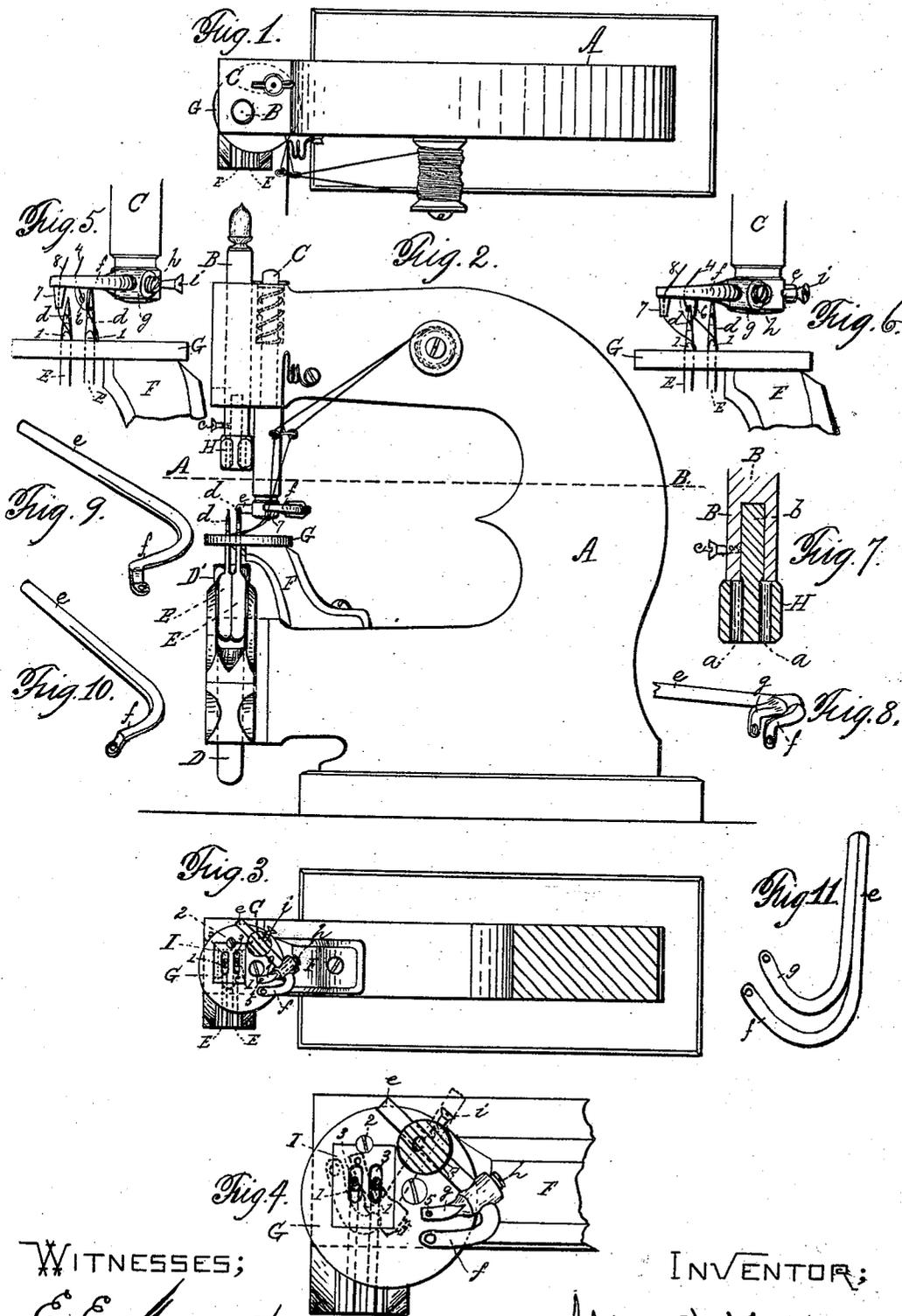


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SEWING-MACHINES FOR BOOTS AND SHOES.

No. 173,123.

Patented Feb. 8, 1876.



WITNESSES;

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## IMPROVEMENT IN SEWING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **173,123**, dated February 8, 1876; application filed December 13, 1875.

*To all whom it may concern :*

Be it known that I, CLIFTON D. HUNTER, of Marlborough, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines for Making Boots and Shoes, and for other purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a top or plan view of so much of a sewing-machine as is necessary to illustrate my said improvements. Fig. 2 represents a side view of the parts shown in Fig. 1. Fig. 3 represents a section on line A B, Fig. 2. Fig. 4 represents, upon an enlarged scale, a portion of the same parts shown in Fig. 3. Fig. 5 represents, also upon an enlarged scale, a portion of the parts shown in Fig. 2 before the thread carrier or guide has been carried past the needles. Fig. 6 represents, also upon an enlarged scale, the same parts shown in Fig. 5 after the thread carrier or guide has been swung so as to carry the threads under the barbs of the needles, as will be hereafter explained. Fig. 7 represents a vertical central section of the detachable awl-head and the lower end of the awl-bar, as will be hereafter explained. Figs. 8, 9, 10, and 11 represent different forms of thread-guides, as will be hereafter explained.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists, first, in a detachable awl or needle head, as will be hereafter explained; second, the combination, with the carrier or guide bar in a sewing-machine having two or more needles for sewing parallel rows of stitches, of a separate and independently-adjustable guide or thread-carrier, as will be hereafter explained; third, the combination, with the thread-carriers, of a tube and lip, as will be hereafter explained; fourth, the combination, with the needle-plate of a sewing-machine, of a detachable throat-piece, as will be hereafter explained.

In the drawings, the part marked A repre-

sents the frame of a sewing-machine, in the front upper part of which are arranged the awl-bar B and thread guide or bar C, while to the lower front part of the machine are attached the needle-bar D, cast-off fingers E E, and the arm or post F, to the top of which is secured the needle-plate G.

The mechanism for operating the working parts of this machine may be constructed substantially as shown and described in the Letters Patent granted John M. Nichols, October 5, 1875, and, therefore, a detailed description of the general construction and operation of the machine is unnecessary, and only such portions will be described as are necessary to explain and illustrate my particular improvements.

It will be understood that in the operation of the machine the heads of the awls are inserted in holes *a a* in the detachable head H, the stem *b* of which is inserted in a hole formed in the lower end of the awl-bar B, where it is held in place by a set-screw, *c*. It will also be understood that the heads of needles *d d* are inserted in similar formed holes *a* in a detachable head, D', inserted and secured in the upper end of the needle-bar D, the same as the awl detachable head H is secured in the lower end of awl-bar B. By combining detachable heads H and D' with the awl and needle bars B and D, such heads can be quickly removed and others substituted in lieu thereof, with holes for the needles and awls formed at different distances apart, thereby enabling the operator to change the machine very quickly for sewing seams of different width, the cast-off fingers E E being adjusted as shown in said Nichols' patent, or in any other convenient way, to correspond with the readjusted positions of the needles and awls.

In the drawings, the lower parts of the cast-off fingers E E are made to project upon their outsides to a greater distance than upon their inner sides, whereby, by reversing the positions of said fingers, their points 1 1 will stand at a greater distance apart than when they are in the positions shown in Fig. 2, and by making them in this way they can be easily adjusted for sewing double rows of stitches, to form two different widths of lap-seams.

The detachable throat-piece I is provided with a lip, (shown in dotted lines, Fig. 3), which slips into a hole or recess in the needle-plate G, when the throat-piece is dropped into the opening formed for it in the needle-plate, so that by inserting screw 2 in the position shown in the drawings, the throat-piece I is securely locked and held in position in the needle-plate, while at the same time the construction is such that the operator can quickly detach it and substitute another in its place, having slots 3 3 made at different distances apart to be used with needles and awls, also set at different distances apart. The thread-guide bar C has a horizontal hole made through it to receive the shank or stem *e* of the thread guide or finger *f*, while between thread guide or finger *f* and the lower end of guide-bar C is arranged an adjustable thread finger or guide, *g*, and which is slipped upon the shank or stem *e* before the latter is passed through the hole in bar C. Thread-finger *g* is held in place by a set-screw, *h*, and shank or stem *e* is held in place by a set-screw, *i*.

It will be seen that the operator can quickly adjust thread-finger *g* upon stem *e*, so as to cause it to carry the thread 4, which passes through hole 5 in its outer end, in the proper position to be caught by the barb of the inner needle *d*; and for the purpose of enabling the operator to sew double seams with two or more needles arranged in line at right angles to the line of feed when they are set quite close together, I combine with the inner finger *g* a thin downwardly-projecting lip, 6, which passes close to the point of the inner needle *d*, and between the needle and the thread, thus serving as a shield or guide to prevent the thread from drawing over the point of the needle, and, if preferred, a hole may be made in the lower end of the lip, through which the thread can be passed, as more clearly shown in Figs. 5 and 6; but I prefer to make the lip thin and wide, but without the hole, since, when the thread is passed through the hole, extra friction is occasioned, and I have found that a thin downwardly-projecting lip will answer the purpose. By this arrangement the thread-guide fingers proper can be set so as to swing above the points of the needles, thus enabling the operator to set the needles close together, and still obviate all liability of skipping

stitches or of striking the points of the needles with the thread guides or fingers.

With the outer finger *f* I combine a small tubular projection, 7, through which the thread 8 is passed, said tubular projection carrying the thread so low down upon the outside of the outer needle *d* that it will be sure to be caught by the barb of the needle when it descends.

Figs. 9 and 10 represent modified forms of making finger *f*, and Fig. 8 represents still another modified form of making both fingers *f* and *g*. In this figure thin downward projections 9 and 10 are combined with said fingers, the threads passing through holes in the lower ends of projections 9 and 10. In Fig. 11 is shown a mode of making the fingers separately; but with shanks passing through the same hole in the lower end of thread-guide bar C, the shanks of the fingers are made half-round, their flat sides fitting together, as indicated in the drawings. In Fig. 4 the fingers *f* and *g* are shown in dotted lines swung round to carry their respective threads under the barbs of needles *d*, as indicated in Fig. 6.

Having described my improvement in sewing-machines for making boots and shoes, and for other purposes, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination of detachable heads H and D', provided with two or more holes, *a a*, with the awl and needle bars B D, substantially as and for the purposes set forth.
2. The combination, with the shank or stem *e* of finger *f*, of the independently-adjustable thread-guide finger or carrier *g*, substantially as and for the purposes set forth.
3. The independently-adjustable guide-finger or carrier *g*, having a thin downwardly-projecting lip, 6, or its equivalent, in combination with the thread-carrier or guide-finger *f*, substantially as set forth.
4. The combination, with the thread-carrier or guide-finger *f*, of the downwardly-projecting throat-tube 7, or equivalent device, substantially as and for the purposes set forth.

CLIFTON D. HUNTER.

Witnesses:

E. E. MOORE,  
THOS. H. DODGE.