A. H. SMITH.

Machine for Polishing the Eyes of Needles.

No. 208,341. Patented Sept. 24, 1878.

Fig. 1

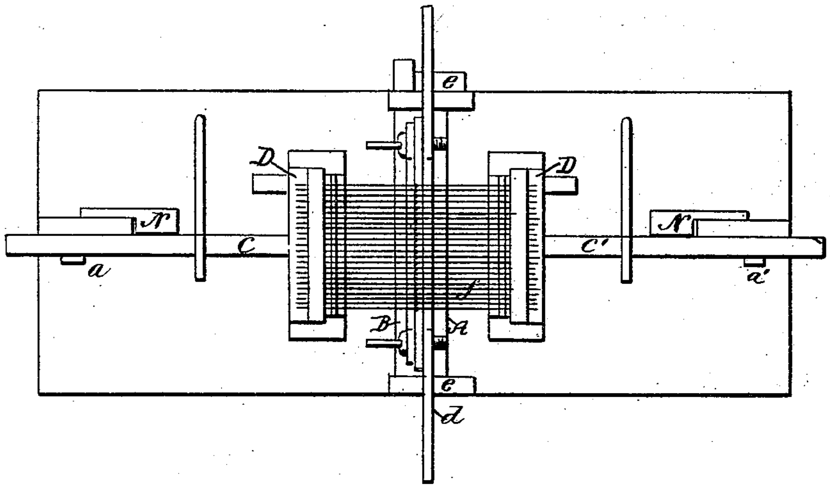


Fig. 2

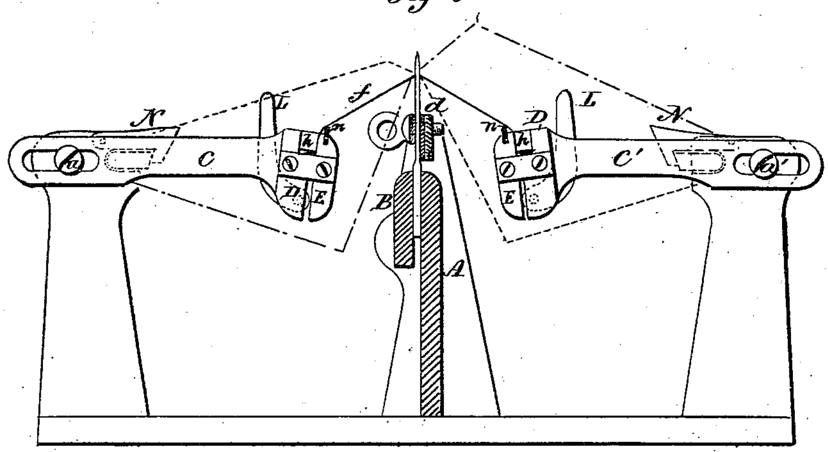
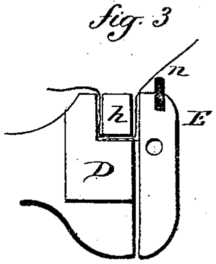


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

ANDREW H. SMITH, OF MOUNT CARMEL, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR POLISHING THE EYES OF NEEDLES.

Specification forming part of Letters Patent No. **208,341**, dated September 24, 1878; application filed April 19, 1878.

To all whom it may concern:

Be it known that I, ANDREW H. SMITH, of Mount Carmel, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machines for Polishing the Eyes of Needles; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top or plan view; in Fig. 2, a sectional side view, and in Fig. 3 a detached view.

This invention relates to an improvement in apparatus for polishing the eyes of needles; and it consists in the construction, as hereinafter described, and more particularly recited in the claims.

A is a stationary plate, forming one jaw, and B a movable plate, forming the other jaw, of a clamp by which the heads of the needles are held. C C′ are two arms, hinged, respectively, at *a a′*, but slotted, so as to have more or less longitudinal play. Each of these arms C C′ is constructed with a cross-head, D, parallel to the jaws A B, one of the said cross-heads being at each side of the said jaws. The needles are first arranged parallel to each other in a clamping-bar, *d*, and this clamping-bar is so arranged above the jaws A B that the heads of the needles may be clamped between the said jaws, the bar *d* being held in supports *e*, so that the needles are supported side by side in a vertical plane above the jaws A B. The needles are each arranged so that the eye is transverse to the said clamping-bar and jaws. A thread, *f*, is passed through the eye of each needle, and one end secured in each of the cross-heads D of the arms C C′.

The manner of securing the threads is shown in Fig. 3. To each cross-head a clamp, E, is hinged, which forms one side of a groove in the cross-head, and through this groove a bar, *h*, is fitted, and in the upper edge of the clamp E an elastic material, such as a strip of india-rubber, *n*, is fitted, and the threads are drawn over this rubber and over the groove, and then the bar *h* is forced into the groove, and the clamp E forced up against the bar *h* by means of the cam-lever L, to clamp the threads. Each thread is passed through its respective needle and then carried to the opposite cross-head, and there all are secured in like manner as in the first.

The polishing material, such as oil and emery, is applied to the threads, and then the operator, with one arm, C, in one hand, and the other arm, C′, in the other hand, raises first the one and then the other arm, keeping the threads taut, and so as to draw them back and forth through the eyes, changing the positions of the two arms relatively to each other—as, for instance, sometimes having one above and the other below the eyes, at other times both above, and again both below, and continues the drawing movement of the threads until the eyes are completely and perfectly finished. These threads work through the eyes in substantially the same manner as does the thread in the actual working of the needle.

In securing the threads it is desirable to hold the cross-heads stationary, and this is done by locking them in their extreme rear positions by latches N.

The elastic material *n* forms a spring, over which the threads are drawn, so as to take up the slight variations in the lengths of the said threads and hold them all sufficiently taut. This may be a strip of rubber or a separate tension device for each thread.

In the usual method of polishing needles the needles are arranged in a clamping-bar, and the threads held stationary, while the operator, taking hold of the bar, moves it back and forth to pass the needles over the threads, depending entirely upon the skill of the operator to hold the needles in the proper relative positions to the threads; whereas in this construction the needles are held firm, and the threads guided so that the proper relative position is always maintained.

No claim is here intended to be broadly made for a clamp to hold a series of needles combined with thread-holders, arranged to draw the threads through the eyes of the needles, or so that the needles may be moved on the threads, as such devices are well known, as seen, for instance, by Patents Nos. 107,896, 163,384, and 165,532; neither is it intended to broadly claim an elastic tension on the respective threads.

I claim--

1. The combination of the stationary clamp for holding stationary a series of needles, a pair of cross-heads, one on each side of the said clamp, each independent of the other, and so as to be operated independently by the respective hands of the operator, whereby the relative positions may be changed at the pleasure of the said operator, with a series of threads passed one through the eye of each needle, and the ends of the said threads secured in the said cross-heads, so that the movement of the said cross-heads to and from the needles or up and down will correspondingly move the threads through the eyes of the needles, substantially as described.

2. In combination with the cross-heads carrying the threads for polishing the eyes of needles, the elastic tension *n* for each independent thread, arranged on the said cross-heads beneath the threads, substantially as and for the purpose described.

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Witnesses:

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