

T. Fowler,

Polishing Eyes of Sewing Machine Needles.
No. 107,896. Patented Oct. 4, 1870.

Fig. 1.

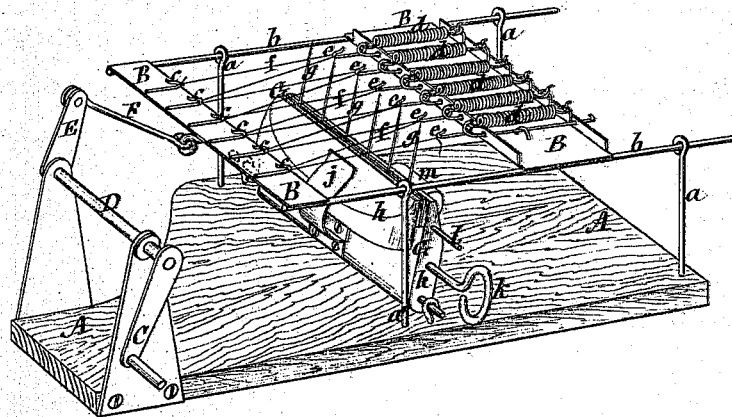
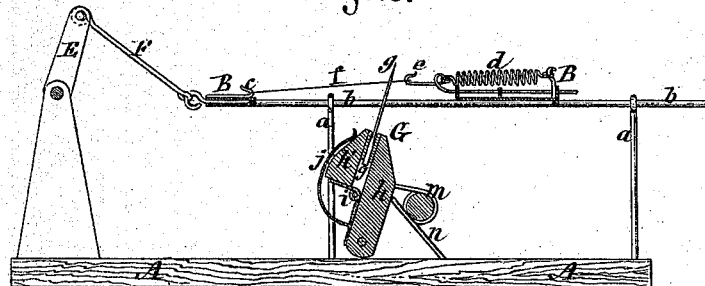


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

THADDEUS FOWLER, OF TOTTENVILLE, NEW YORK, ASSIGNOR TO EXCELSIOR NEEDLE COMPANY, OF WOLCOTTVILLE, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR POLISHING THE EYES OF SEWING-MACHINE NEEDLES.

Specification forming part of Letters Patent No. **107,896**, dated October 4, 1870.

To all whom it may concern:

Be it known that I, THADDEUS FOWLER, of Tottenville, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Machines for Polishing the Eyes of Sewing-Machine Needles; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents, in perspective, a machine which embodies the principle of my invention; and Fig. 2 represents a vertical longitudinal section through the machine.

Ordinary hand-sewing needles are strung upon a wire or thread upon which oil and emery are placed, and their eyes are polished by twirling or moving them on such wire or thread. This answers very well for needles that draw their thread through the cloth or other material, as the strain on the thread is on or through its most highly-polished part; but sewing-machine needles, or needles having their eye at or near the point, and which push their thread through the cloth, if so strung on a wire or thread and twirled, would have the wrong end of the eye polished, while that which is most trying on the sewing-thread would not be polished at all.

My invention having for its object the polishing of sewing-machine needles, such needles cannot be suspended from the polishing wire or thread with their lower ends uncontrolled, as that arrangement would polish the wrong end of the eye, and leave unpolished the one most important and necessary to be polished, because that end does all the work of pushing the thread through the material to be sewed.

I string the needles on polishing-threads, which are made to traverse through the eyes thereof; but at the same time the needles are clamped or controlled at their points, and have or may have a rocking or vibrating or rising and falling motion that will bring such polishing-threads through every part and corner of the eye, the top as well as the bottom, and the sides and corners as well as the ends thereof; and my invention consists in devices for polishing the eyes of sewing-machine needles by

clamping the needles in a bed or clamp, and causing the polishing-threads to traverse through the eyes thereof, by which means the whole surface of the eye is reached and polished; and my invention further consists in the combination, with the aforesaid mechanism, of a series of springs for keeping the polishing-threads taut while they traverse the eyes of the needles, the threads being connected at one end to the springs and at the other to the vibrating frame, and so that a change of position of the needles will not carry with them their polishing-threads, but cause them to work against different portions of the eyes.

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.

On a frame or bed, A, are mounted posts or guides *a a*, on or through which the rails *b* of a frame, B, work or reciprocate, said frame being moved by a crank, C, shaft D, crank-arm E, and connecting-rod F. On the front of this frame B there is a series of hooks, *c*, and at the rear of the frame another series of hooks, *e*; but these latter are attached to spiral or other springs *d*, so that they may yield to such strain as comes upon them.

A thread or a series of threads, *f*, having been passed through the eyes of the needles *g*, at or near their points, are fastened to the hooks *c e*, so that the needles would hang, if not otherwise controlled, with their points up and their butts down, and if twirled or moved on the polishing-threads in this position would polish the end of the eye not so necessary to be polished, and would entirely fail to polish that end of the eye which must be perfectly smooth, or else it would chafe off or cut the thread in sewing.

Underneath the frame B there is a clamp, G, composed of one pivoted jaw, *h*, to which another jaw, *h'*, is hinged, as at *i*, said hinged jaw being held up tight against its fellow by a spring, *j*, and said jaws being faced with leather, wood, or other slightly-yielding material, between which the butts of the needles *g* are clamped.

On the clamp G there is a handle, *k*, and a stop-rod, *l*, which are at its end; and on the

back of the clamp there is an arm, *m*, weighted, if found necessary, and under it a stop-rod, *n*, secured in the base or bed *A*.

When the clamp is moved in one direction the rod *l*, coming against the post *a'*, stops it in that direction. When moved in the other direction the arm *m* comes against the rod and stops it in that direction.

It will be noticed in Fig. 2 that the threads *f* have a little inclination, so that if the needles were stationary this alone would cause the threads to move up and down the whole length of the eye; but when, in addition to this, the clamp is moved first against one stop and then against the other, it gives the threads the opportunity of touching top, bottom, sides, and corners, so as to effect a perfect polish to the whole eye, which, in sewing-machine needles, is very important, as such needles not only push the thread through the cloth, but

then draw the slack back or the thread back again.

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

1. In combination with the clamp *G*, for clamping and holding the butts of a series of needles, the vibrating frame *B*, carrying a series of threads to pass through and polish the eyes of said needles, substantially as described.

2. In combination with the clamp, vibrating frame, and series of threads, the series of springs *d*, for keeping said threads taut, and at the same time allow them to yield, without breaking to any undue strain, substantially as described.

THADDEUS FOWLER.

Witnesses:

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