

F. H. BRADLEY.

Machines for Polishing the Eyes of Needles.

No. 146,747.

Patented Jan. 27, 1874.

Fig. 1.

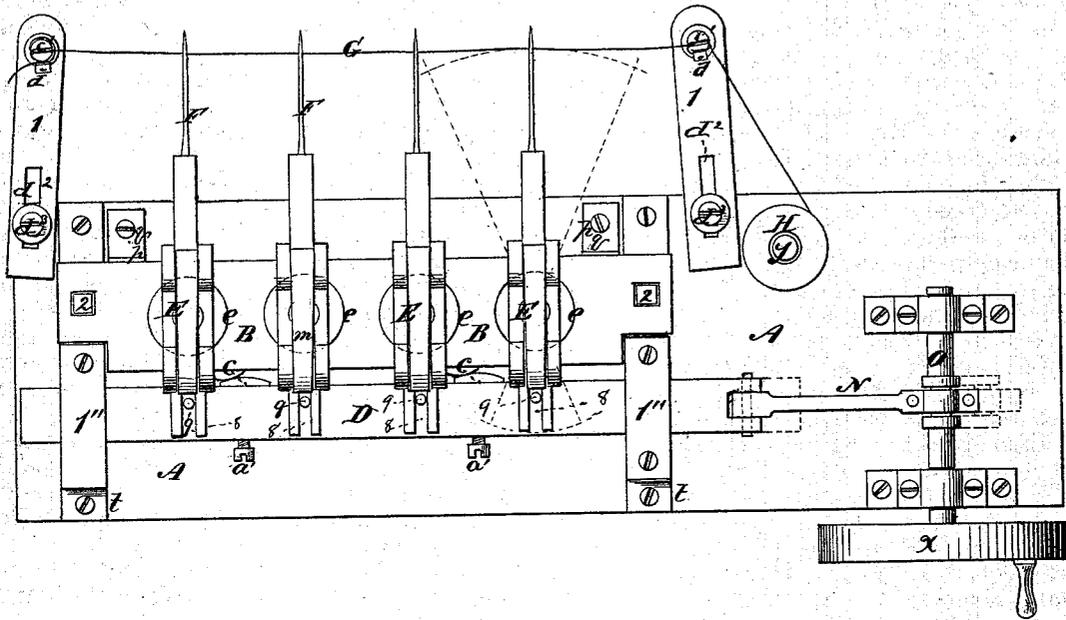


Fig. 2.

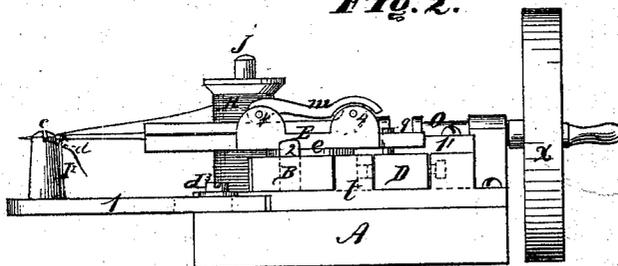
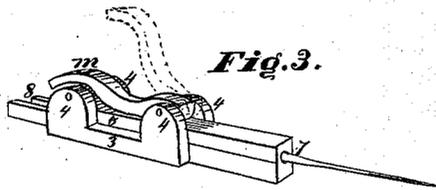


Fig. 3.



Witnesses.

Wm. P. Blodgett
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Inventor.

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UNITED STATES PATENT OFFICE.

FREDERICK H. BRADLEY, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR POLISHING THE EYES OF NEEDLES.

Specification forming part of Letters Patent No. **146,747**, dated January 27, 1874; application filed January 9, 1874.

To all whom it may concern:

Be it known that I, FREDERICK H. BRADLEY, of Bridgeport, county of Fairfield, State of Connecticut, have invented certain new and useful Improvements in Machines for Polishing the Eyes of Needles, of which the following is a specification:

This invention relates to a new and improved method of securing an indefinite number of needles in proper position, and, by mechanical appliances, giving them an oscillating reciprocating motion on the polishing material, for the purpose of removing irregularities, and giving a finish to the eye.

This invention is more particularly adapted to polishing the eyes of sewing-machine needles, but can be used for other varieties.

Figure 1 is a longitudinal plan. Fig. 2 is an end view. Fig. 3 is a detail of clamp.

A A, Fig. 1, is the bed-plate; B, pivot-bed; c, reciprocating cams; D, motor-slide; E E, clamps; F F, needles; G, polishing-thread; H, spool; 1 1, thread-holders; *t t*, boxes; *m*, clamp-levers; N, connecting-rod; O, crank-shaft; *p p*, stop-springs; *q q*, adjusting-screws.

The manner of construction is as follows: The bed-plate A A is of cast-iron. To this are cast the boxes *t t*. Through these boxes the motor-slide D works, secured in position by caps 1". Parallel with this, and secured in position by standards 2 2, is the pivot-bed B. On the upper face of this bed the circular platforms *e* are provided by being cast with it, or secured by any other mechanical arrangement suitable. On these platforms the clamps E E are secured by a bolt or pin, on which they oscillate. These clamps are constructed of three parts, the bed 3 having the ears 4 4 4 4 arranged to receive the tongue of the clamp, the back ears with the pin 5 forming a hinge. The front ears act as guides for it sidewise, and provide for securing the cam-lever *m*, which forces the tongue down to the bed. In the front end of clamp the recess 7 is made to receive the shank of needle. At the back end I provide the slot 8 to match

pin 9, which is secured to the motor-slide D, by which the clamp receives its oscillating motion.

To provide for the action of the polishing-thread on ends of the eye, the same being oblong, I arrange the crescent-shaped cams *c* rigidly on the pivot-bed, and those on the motor-slide D are adjustable by the assistance of the screws *a' a'*. To allow for the reciprocating motion of clamp-bed, an allowance is made in the openings, into which the standards 2 2 project. To keep this bed in position against the cams, the springs *p p* are secured to the main bed. The polishing-thread is kept in place by the thread-holders 1² 1², the thread passing through the slots *c' c'*, and between springs *d d* and stand. To provide for the different lengths of needles, the slot *d²* in foot of thread-holder 1, through which the screw *d³* passes, allows said holder to be secured at any desired length. The spool for thread revolves on pin *y*.

To give the motion to motor-bed D, I arrange the connecting-rod N and crank-shaft O with pulley X.

The manner of operation is as follows: The pivot-bed B is taken from its position in main bed. The needles are then strung on a thread prepared with oil and emery, and put in position in the clamps E E. The thread is drawn taut, and secured in the slots *c' c'*, and secured by springs *d d*. The machine is then put in motion, and the oscillating reciprocating motion imparted by the cams *c* and pins 9 causes the needles to operate on the prepared thread, and the eyes are thus polished perfectly.

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

1. The combination of the bed B, provided with cams *c*, the holders E, the springs *p*, with the reciprocating motor-slide D, provided with cams, substantially as shown and described.

2. The combination of the pivot-bed B, provided with cams *c*, the pivoted holder E,

spring *p*, with the motor-slide *D*, provided with cams, and the pins *9*, substantially as shown and described.

3. The arrangement of the polishing-thread *G*, thread-holders 1^2 1^2 , with groove *c' c'*, springs *d d*, slots d^2 d^2 , screws *d^3*, for the purpose shown.

4. The combination of bed *A*, motor-slide *D*, pivot-bed *B*, clamps *E E*, standards 2 2 , thread-holders 1 1 , boxes *t t*, connecting-rod

N, crank-shaft *O*, and pulley *X*, for the purpose shown.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

FREDERICK H. BRADLEY.

Witnesses:

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LAURA A. HUBBELL.