

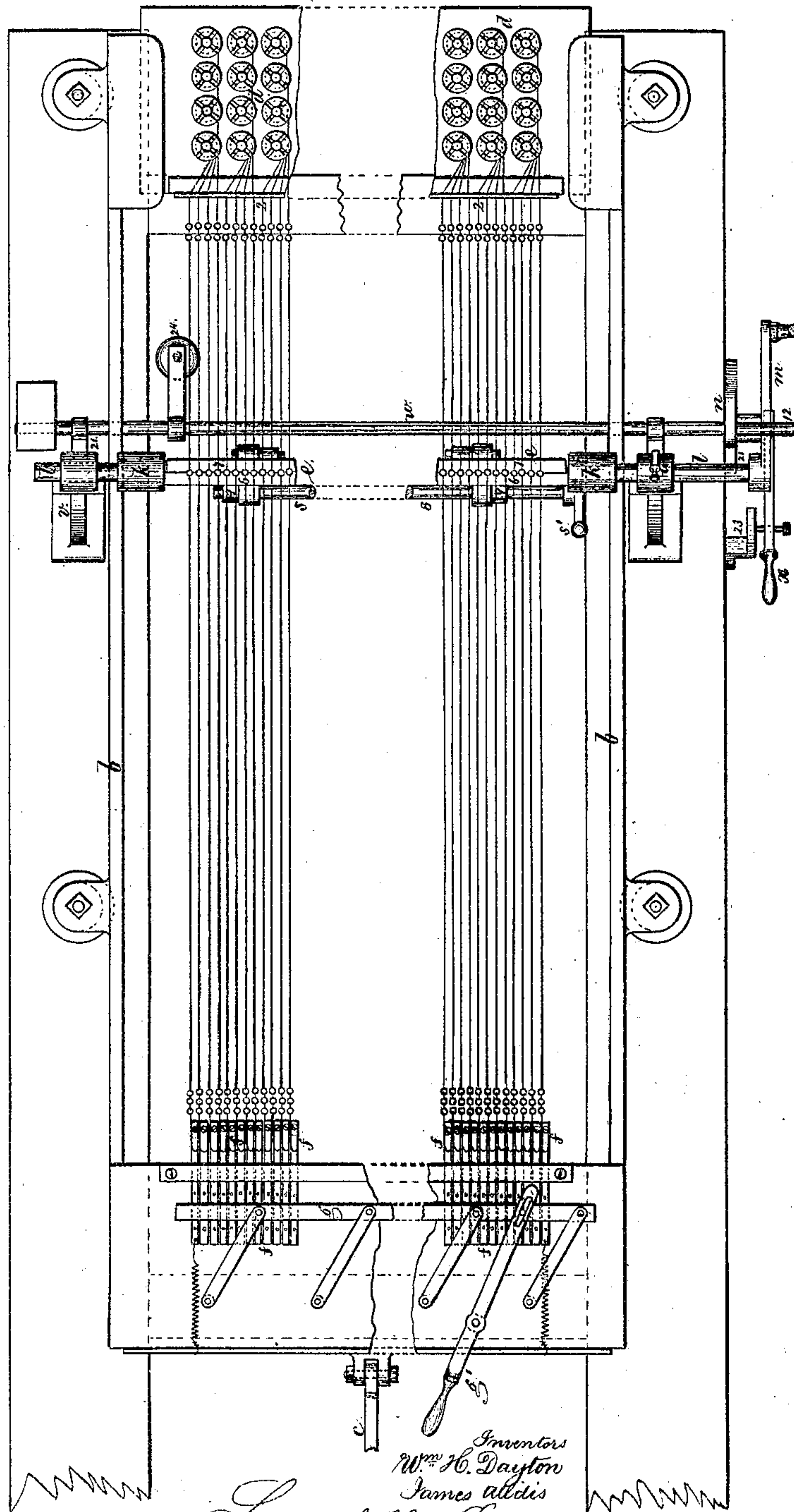
W. H. DAYTON & J. ALLDIS.

Improvement in Machines for Polishing the Eyes of Needles.

No. 127,582.

Patented June 4, 1872.

Fig. 1.



Witnesses.

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Geo. D. Walker.

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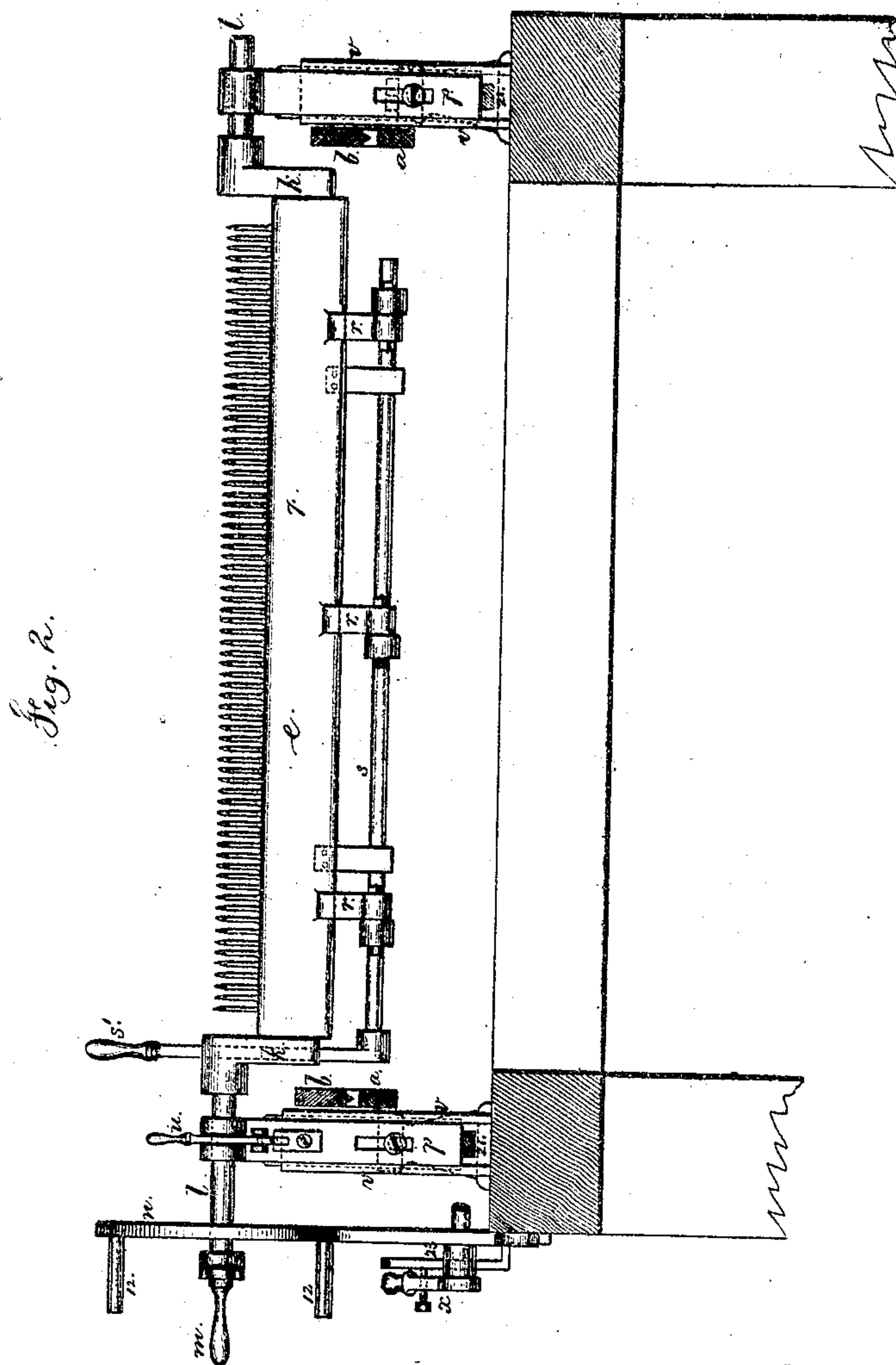
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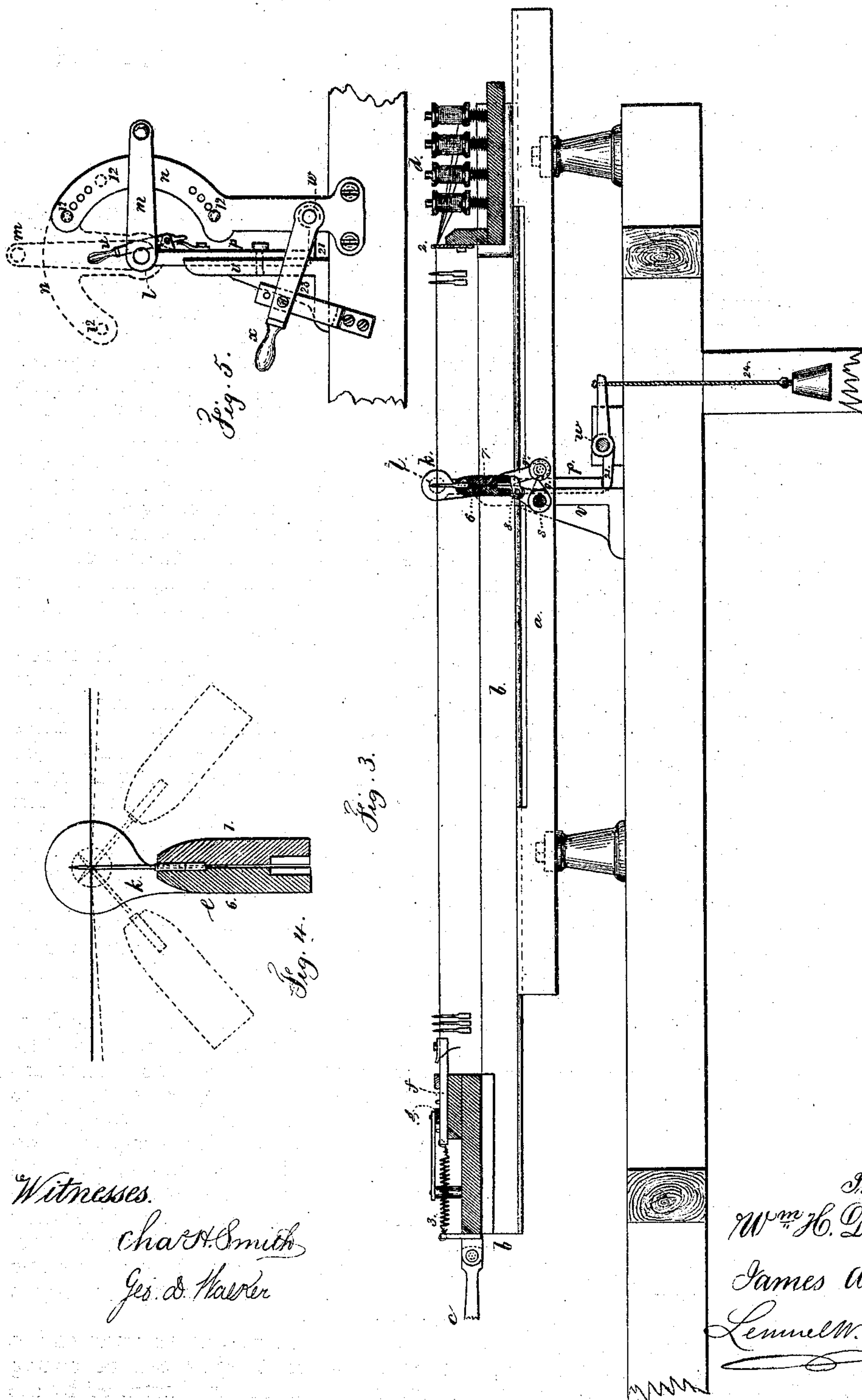
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UNITED STATES PATENT OFFICE.

WILLIAM H. DAYTON AND JAMES ALLDIS, OF WOLCOTTVILLE, CONN., ASSIGNORS TO "THE EXCELSIOR NEEDLE COMPANY," OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR POLISHING THE EYES OF NEEDLES.

Specification forming part of Letters Patent No. 127,582, dated June 4, 1872.

To all whom it may concern:

Be it known that we, WILLIAM H. DAYTON and JAMES ALLDIS, of Wolcottville, in the county of Litchfield and State of Connecticut, have invented and made an Improvement in Machines for Polishing the Eyes of Needles, and the following is declared to be a correct description of the same.

This invention is based upon the patent granted October 4, 1870, to Thaddeus Fowler, No. 107,896, and the present improvements relate to means for holding the needles and presenting them to the action of the emery and threads; also to means for supplying the thread from time to time as the same may become worn.

In the accompanying drawing, Figure 1 is a plan of the machine, showing the two sides thereof, the intermediate parts being duplicated and extended to suit any desired width of machine and capacity for a greater or less number of needles. Fig. 2 is an elevation of the needle-holding jaw, and a section of the bed of the machine. Fig. 3 is a longitudinal section. Fig. 4 is a section of the holding-jaw in larger size; and Fig. 5 is a side view of the handle for rocking the jaw and the parts for raising or lowering the same.

The machine is provided with stationary slides *a*, in which the slides of the frame *b* move, and this frame *b* is reciprocated by a connecting-rod, *c*, to a crank driven by suitable power, so that the necessary length and speed of reciprocation is given to the said frame *b*, and the range of thread carried by the said frame. At one end of the frame *b* there is a table carrying ranges of spools *d*, the spools being equal in number to the number of needles that are held at one time in the jaw *e* to be operated upon by the threads drawn back and forth through the eyes by the reciprocation of said frame *b*. Each spool, *d*, is upon a ~~spool~~ ^{pin} fixed in the table, and such pin has around it a spring acting to lift the spool, and in the top of the spool is a slit or groove, and a horizontal pin passes across through the vertical pin and holds the spool from turning; but when the spool is pressed down it can be turned and more or less thread drawn off, as may become necessary from time to time, according to the wear upon the thread in pol-

ishing the needle-eyes. A notched or perforated guide-bar, 2, serves to hold the threads at equal distances apart, and at the other end of machine a range of slides, *f*, is provided. Each slide is made with a hook at one end to catch the thread, and at the other end is a contractile spring, 3, so as to apply the power required for straining the thread; but said slide and spring will yield under undue strain and lessen the risk of breaking the thread. Across the slides *f* is the parallel motion-bar *g*, moved by the handle *g'*, and operating against pins in the slides *f*, to press them along and loosen the threads during the operation of changing the needles in the jaw and taking out one range of needles and introducing another, or while any other operation is performed requiring the threads to be slack.

In operating this machine, it is to be understood that twenty or thirty needles, more or less, are to be threaded upon each thread, and the loose ends connected to its slide *f*. After the needles have been threaded on all the threads they are to be slipped along upon the threads toward one end of the frame *b*, then the operator takes the first needle on each thread into the jaw, forming thereby a range of needles, the other needles hanging from the threads; and when the needles of this range are done they are passed away from the jaw toward the other end of the frame *b*, and a second range of needles is taken into the jaw and polished, and so on.

The jaws *e* are in two parts, and hung from the arms *k* and shafts *l* at the ends, and the parts are constructed so that the needles are held in the jaws with the eyes about in line with the centers of the shafts *l*. One part, 6, of the jaws *e* is made with or firmly connected to the arms *k*, and other part, 7, is hinged at 8 to the jaw 6, and has downward projections, *r*, against which cams 9 on the shaft *s* operate to close the jaws and clamp the needles, said shaft *s* and its cams being turned by the handle or lever *s'*. A spring is employed for opening the jaws.

One of the shafts *l* has, at its outer end, a handle, *m*, by which the jaw can be swung into an inclined position, as illustrated by the dotted lines in Fig. 4, so that the polishing-threads, as they are drawn back and forth

through the needle-eyes, will polish the top and bottom edges of such eyes. The pins 12 on the standard *n* limit the extent of movement, so that the operator will not turn the needles at too great an inclination to the threads. The shafts are supported in the standards *p*, and can turn therein for the aforesaid purpose; or the shaft *l* may be slidden endwise in their bearings, so as to carry the jaw and needles bodily one way or the other, and by that means make a slight angle in the polishing-threads and cause them to bear against the sides of the eyes of the needles and polish the same.

In order to hold the jaws in position transversely of the machine while being rocked, I employ a lever, *u*, passing through a slot in the side of the journal-box, on the standard *p*, and entering a notch or neck in the shaft *l*.

To round the top or bottom of the needle-eyes, the jaw *e* is raised or lowered bodily, so as to be above or below the plane of the threads and bend those threads at an angle. The standards *p* are set in slides *v*, and across the machine is a shaft, *w*, with toes 21 beneath the standards *p*, so that the standards *p* can be moved up or down by the lever *x*, that is at the end of the shaft *w*. A pin entering one of the holes in the bar 23 serves to hold the parts in position, and a counterpoise, 24, may be applied to an arm from the shaft

w. The standards *p* are connected to the slides *v* by slots and bolts.

A machine constructed in the aforesaid manner will operate with great rapidity, and polish and round the eyes in an accurate manner; and as the threads become worn they are drawn along from time to time.

We claim as our invention—

1. The combination of the reciprocating-frame *b*, spools *d*, spring-hooks and slides *f*, polishing-threads and guide-bars 2, substantially as set forth.

2. The slides *f* with hooks, and the spools *d* for the respective polishing-threads, in combination with the parallel-motion bar *g* and reciprocating-frame *b* for loosening the threads of the range of polishing-threads, substantially as set forth.

3. The standards *p* in the slides *v*, the shafts *l*, and needle-holding jaws *e*, in combination with the shaft *w* and toes 21 for raising or lowering the standards *p* and parts carried by them, and presenting the needles to the polishing-threads, as specified.

In witness whereof we have hereunto set our signatures this 1st day of December, A. D. 1871.

WM. H. DAYTON.
JAMES ALLDIS.

Witnesses:

GIDEON H. WELCH,
MAX ALVORD.