

C. O. Crosby,

Making Sewing-Needles,

N^o 57,873.

Patented Sep. 11, 1866.

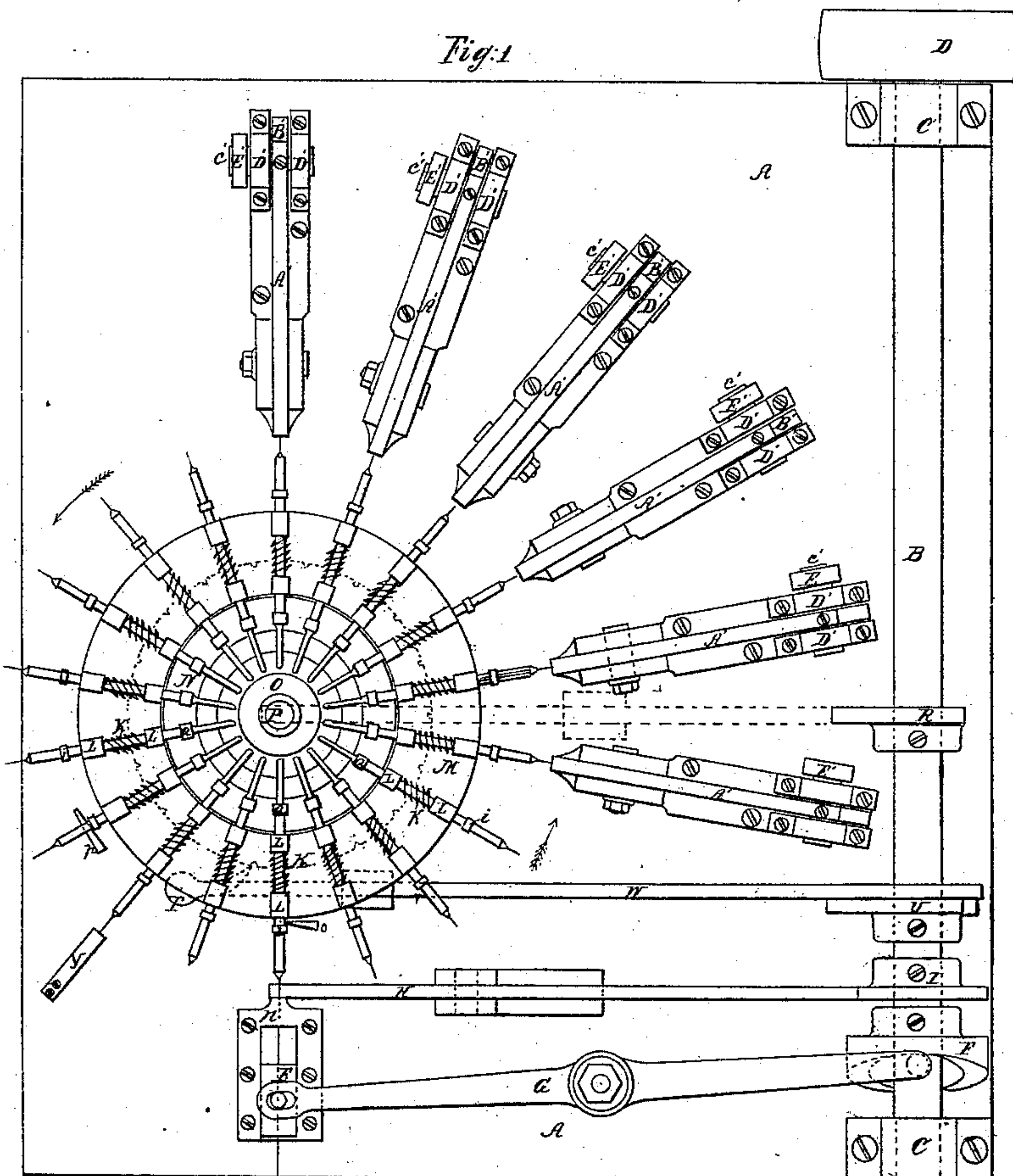
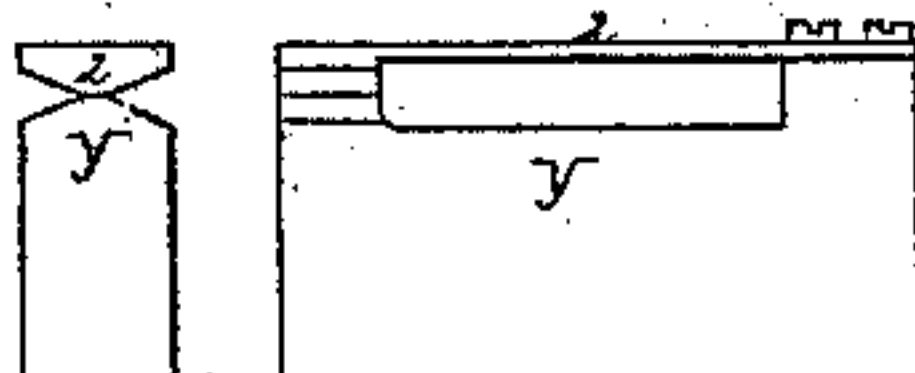


Fig. 3

Fig. 4 Fig. 5



Witnesses

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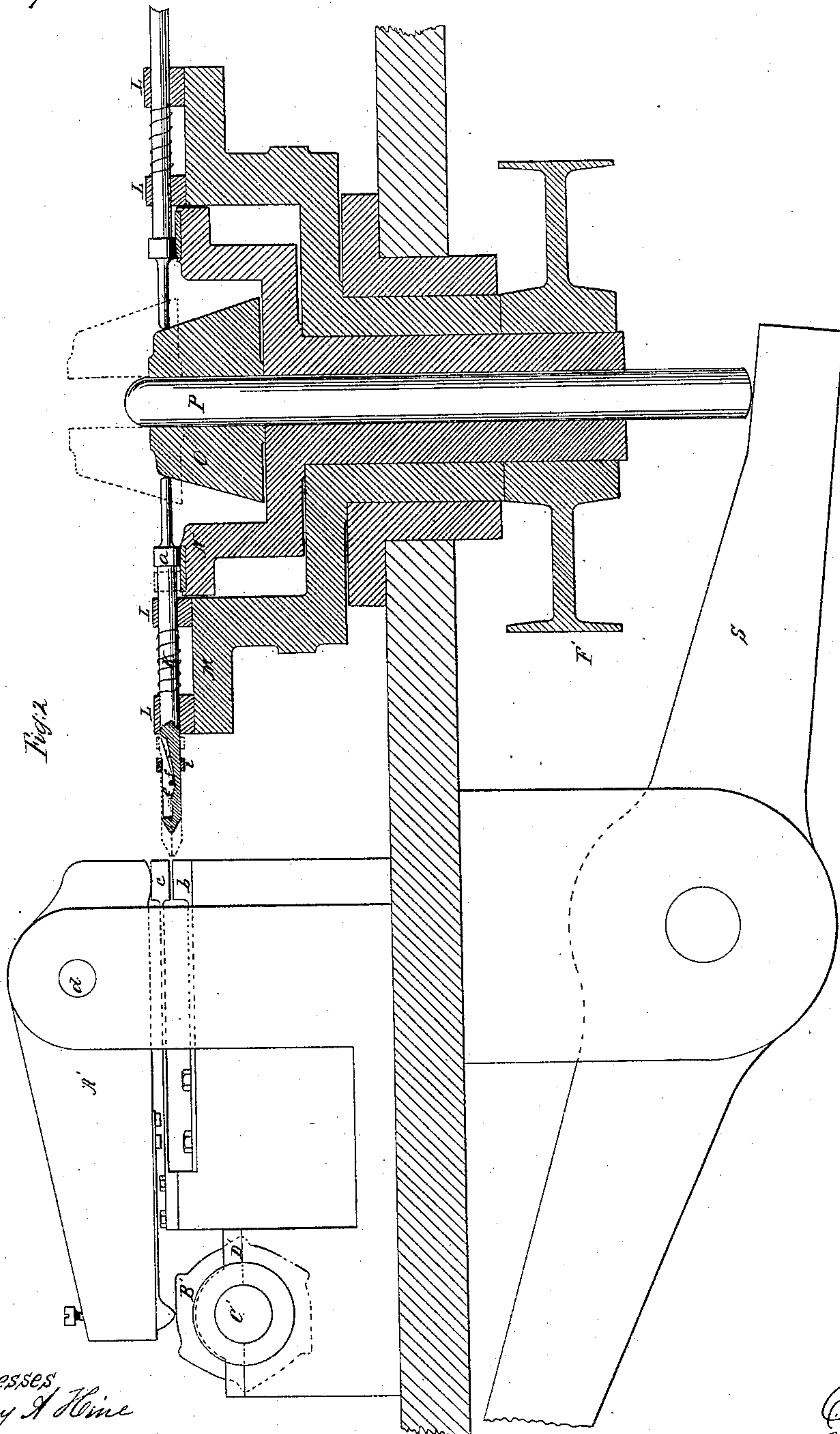


Fig. 2

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UNITED STATES PATENT OFFICE.

C. O. CROSBY, OF NEW HAVEN, CONNECTICUT.

IMPROVED MACHINE FOR POINTING WIRES.

Specification forming part of Letters Patent No. 57,873, dated September 11, 1866.

To all whom it may concern:

Be it known that I, C. O. CROSBY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Machines for Pointing or Reducing Wire; and I do hereby declare the following to be a full, clear, and exact description of the same, when taken in connection with the accompanying drawings and the letters of reference marked thereon, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view; Fig. 2, a vertical cross-section; Fig. 3, an oval point as formed on my machine; and in Figs. 4 and 5, the discharging device.

Similar letters and characters indicate corresponding parts in the several figures.

My invention relates to improvements in machines for reducing and tapering or pointing wire or other metal rods, such as spinning-spindles, hatchel-teeth, dress-pins, &c.; and it consists in placing automatically or otherwise the pieces of metal to be tapered, reduced, or pointed into revolving spindles, which will present the said pieces successively to one or more rapidly-vibrating hammers, the said spindles having a lateral movement, so as to introduce each piece under the hammer, and withdrawing therefrom the hammers will gradually draw the wire tapering, or reduce it in diameter or to a point, as desired.

To enable others skilled in the art to make and use my invention, I will proceed to fully describe the same, as illustrated in the accompanying drawings.

A is the bed-plate on which the operative mechanism is placed. B is a driving-shaft revolving in bearings C, and driven by power being applied to the pulley D. E is the feed, operated by the cam F through the lever G to draw the wire into the machine. H is a cutter, operated by the cam I to cut off the wire or rod when fed the required length. K are spindles supported in bearings L on the plate M, (see Fig. 2, enlarged,) and are made to revolve by means of the wheel N revolving against the pulley a on the said spindles. O is an inclined plane fixed to a shaft, P, and caused to rise and fall by means of the cam R acting through the lever S, upon which the

said shaft P rests. The upward movement of the said inclined plane O, (as from the position in black to that denoted in red, Fig. 2,) bearing against the inner end of the spindles K, will cause the said spindles to move out, as denoted in red, Fig. 2, and its descent will allow them to return by the action of the spring denoted in red.

The plate M, on which the spindles K are placed, is turned in the direction denoted by arrows by means of the pawl T, operated by the cam U through the lever W, as denoted in Fig. 1, so that at each movement of the plate M a new spindle, K, is presented to the feed to receive a new piece of metal.

A' are hammers placed upon the bed-plate A radially from the plate M and opposite the spindles K, as seen in Fig. 1. The said hammers are shown enlarged in Fig. 2.

b is a die secured to the bed of the hammer. c is a corresponding die hung to the bed of the hammer as far back as possible in order to make the vibration of die c nearly perpendicular. The hammer A' is hung upon a fulcrum, d, its shorter end bearing upon the upper die, c, its longer arm upon the cam B'. The said cam B' is fixed to a shaft, C', which is supported and revolves in bearings D' by application of power to the pulley E'.

The outer ends of the spindles K are fitted to receive and hold the metal fed to them in the following manner, as seen in Fig. 2: A hole of the proper size and depth is formed in the end of the spindle. A lever, e, hung within the spindle upon a fulcrum, f, bears down upon the wire (denoted blue) by the force of the spring (denoted in red) around the said spindle; and passing over lever e is placed a ring, i. When the said ring i is forced back in the manner as hereinafter shown to the position denoted in blue it will press down the inner end of the lever e, opening the outer end, in which position it is ready to receive the wire from the feed.

The operation of my machine is as follows: The wire (I use the word "wire," intending that to include rods, square or round, or whatever it may be required to reduce) is passed through the feed E and the guide n. Power is applied to the pulley D to revolve the driving-shaft, also to each of the hammers, and to

the pulley F' to revolve the wheel N. The feed carries the wire into the spindle presented to guide *n*, as denoted in blue, Fig. 1, and is cut off by the cutter H; then, by the action of the pawl T, the plate M revolves sufficiently to present the next spindle to receive a second piece of wire, in which movement the ring *i* passes the inclined plane *o*, which forces the said ring forward to release the lever *e*, to grasp and hold the metal therein, and, so continuing, each spindle, as it is presented to the feed, receives its piece of wire and presents it to the first hammer, which is vibrating rapidly. The inclined plane O now rises by action of the cam R and forces the spindles forward, as denoted in red, Fig. 2, inserting the wire between the dies *b* and *c*. The inclined plane O then descends slowly, allowing a spindle to withdraw the wire from the dies *b* and *c*. The spindle K, revolving while the wire is between the dies, is hammered upon every side and gradually drawn down, the spindles holding the wire by the friction of the spring therein for the purpose of revolving it between the stroke of the dies, and so that while the dies rest upon the wire the spindle will revolve upon the wire without injuring it by twisting.

The form of the drawing, whether oval, as seen in Fig. 3, conical, or parallel, may depend upon the withdrawing of the wire from the dies; or the dies may be constructed to give the required form.

The wire may be allowed to remain in the first dies sufficiently long to complete the form desired, in which case but a single hammer would be required; but I prefer more hammers and less labor for each.

When the wire is withdrawn from the first hammer the spindles are advanced by another action of the pawl T, presenting the wire to the next hammer while the second wire is operated upon by the first hammer, as before, and so on, presenting the several wires successively to each hammer until the last, where it is finished, thence advancing until the ring *i* comes in contact with the inclined plane *p*, which forces the said ring back to the position denoted in blue, Fig. 2, thence passing onto the discharging device Y, when the spindle, still retaining the wire, forces it beneath a spring, 2, (see Figs. 3, 4, and 5,) which is sufficiently strong to retain the wire while the spindle retreats. The next spindle leaves its wire in like manner, the second forcing the first out from the spring, and so on, the spindle passing onto the feed to receive a new piece of wire.

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

A device for holding and rotating the wire, rod, or similar article, in combination with compressing dies or hammers, when the holding device is constructed to operate so as to avoid injury to the said wire, rod, or article being drawn by twisting, substantially as herein set forth.

C. O. CROSBY.

Witnesses:

JOHN E. EARLE,
MARY A. HINE.