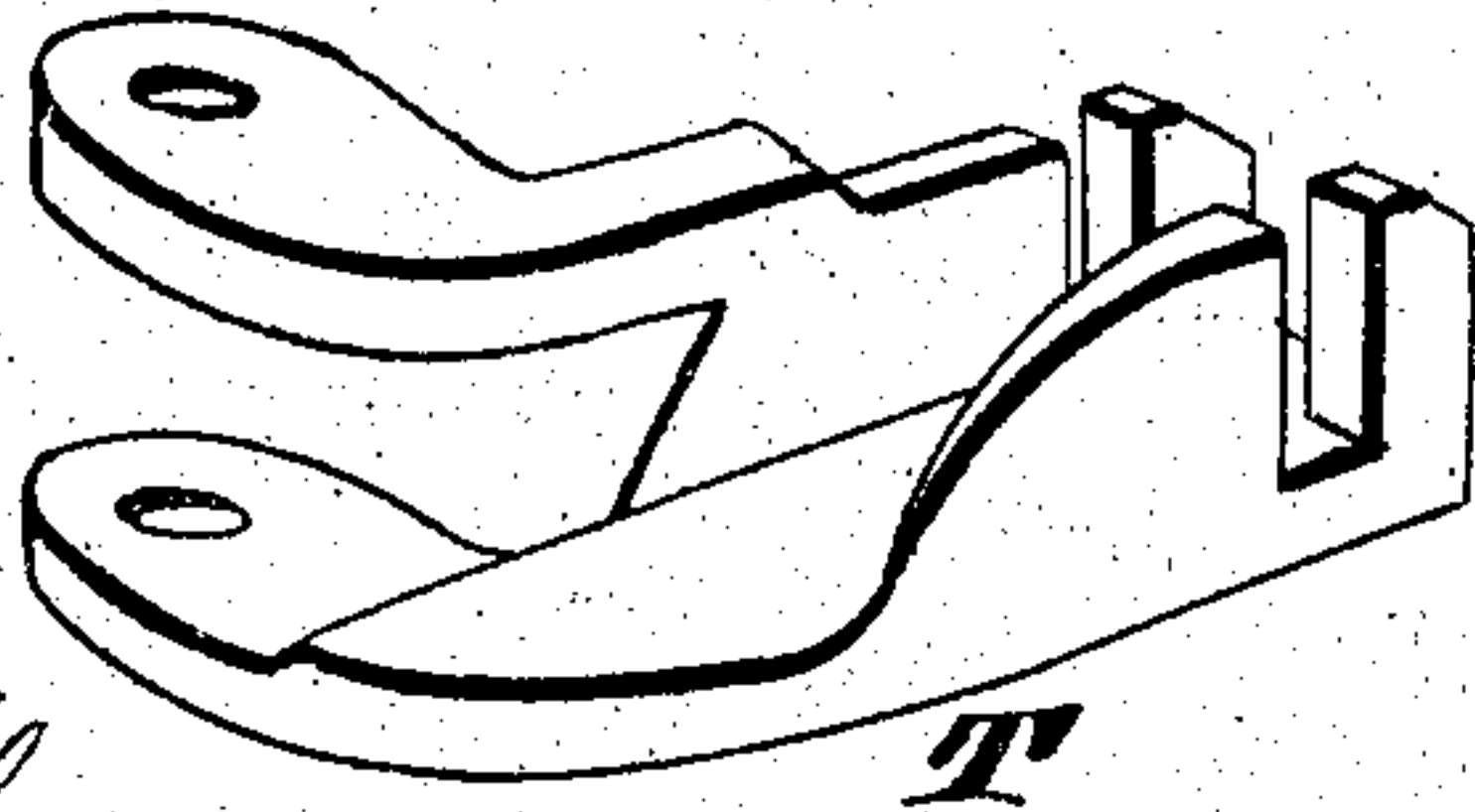
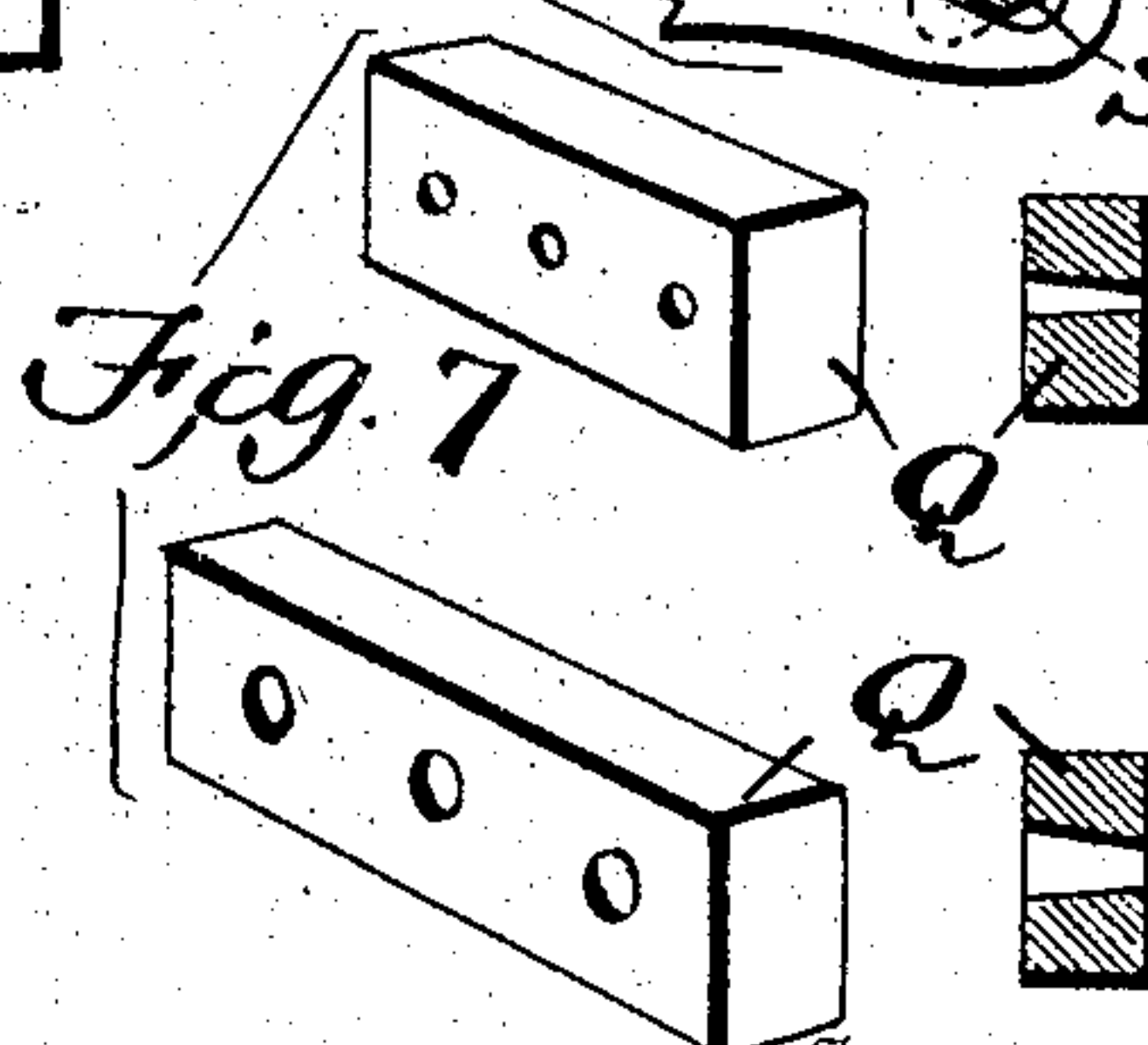
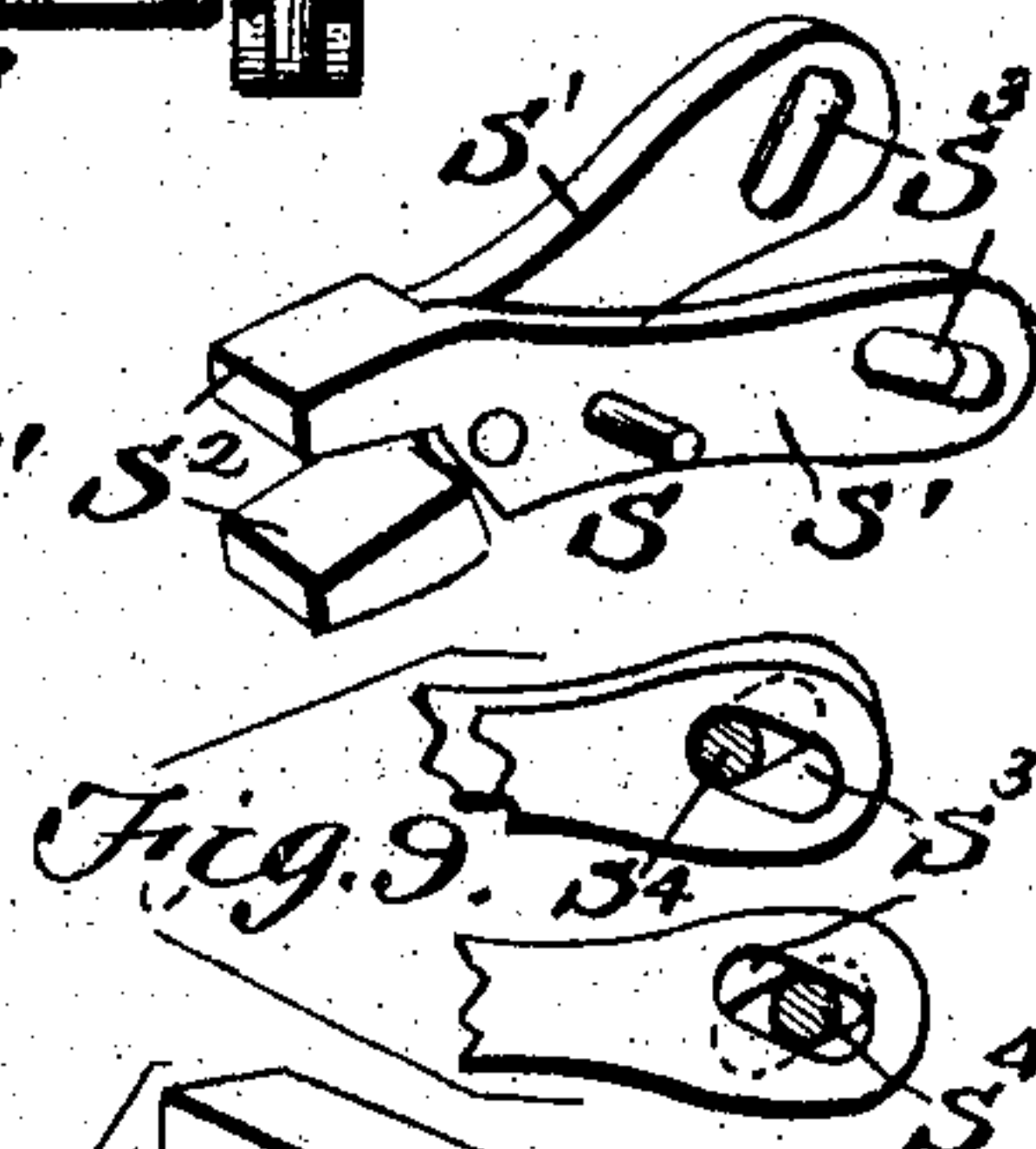
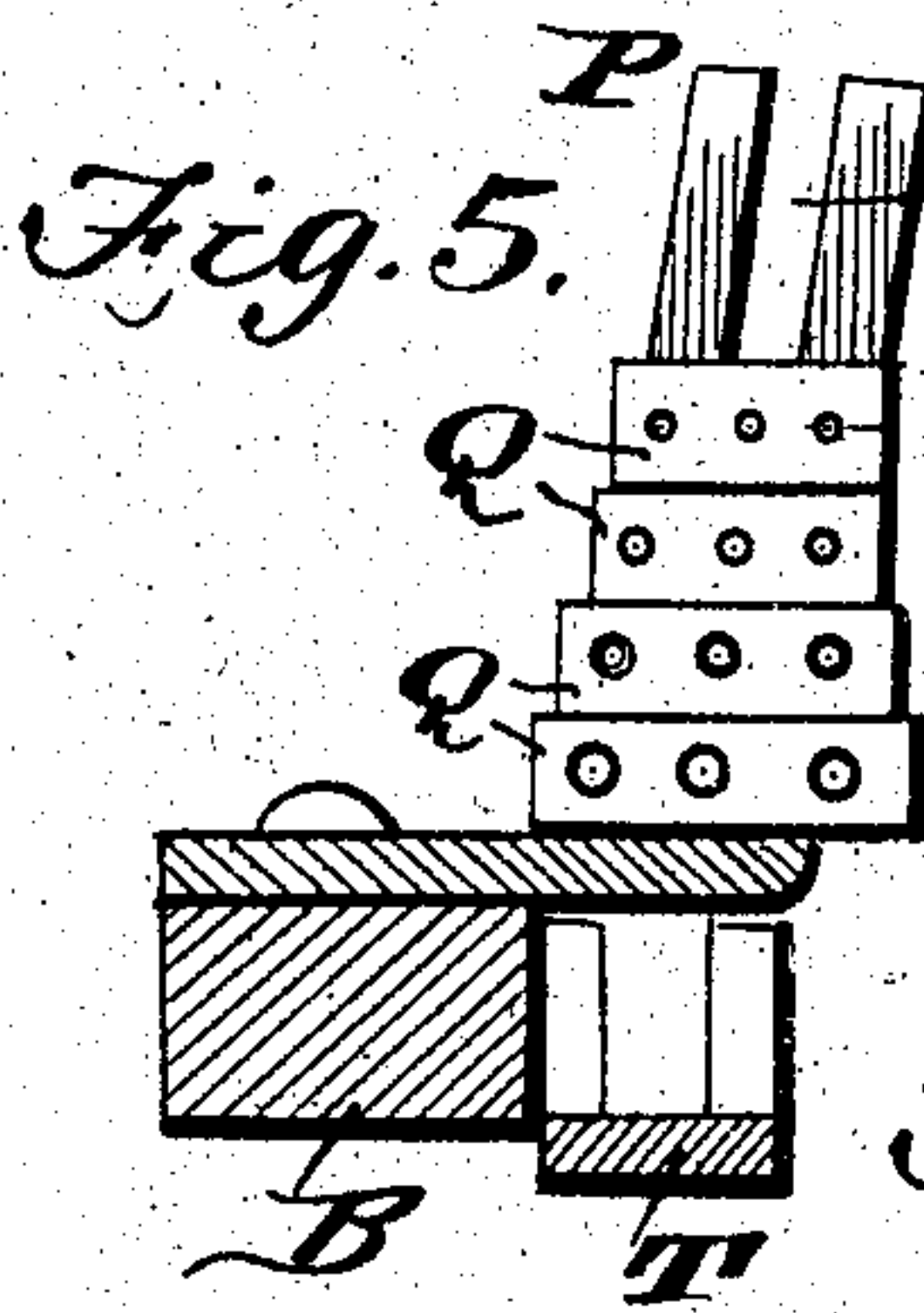
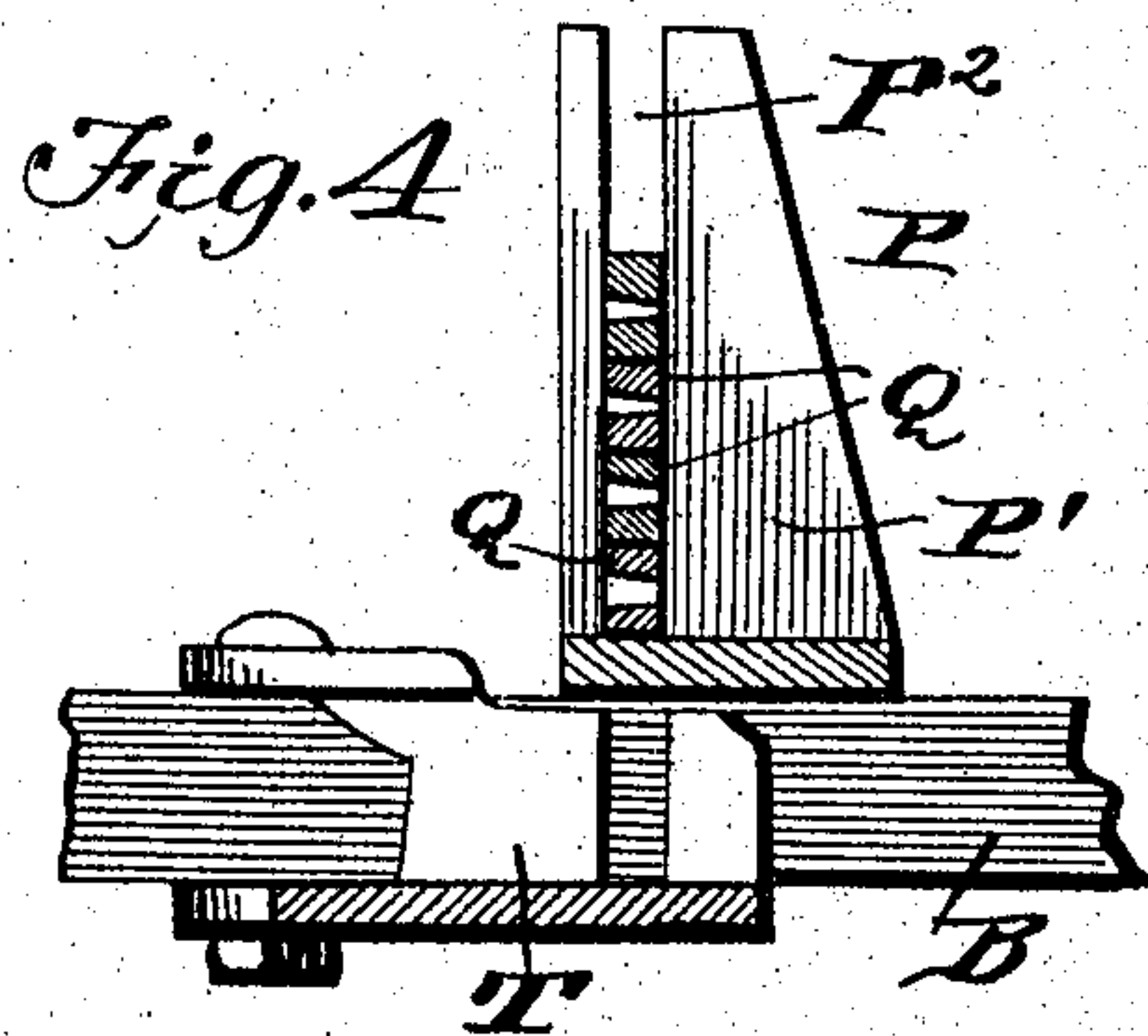
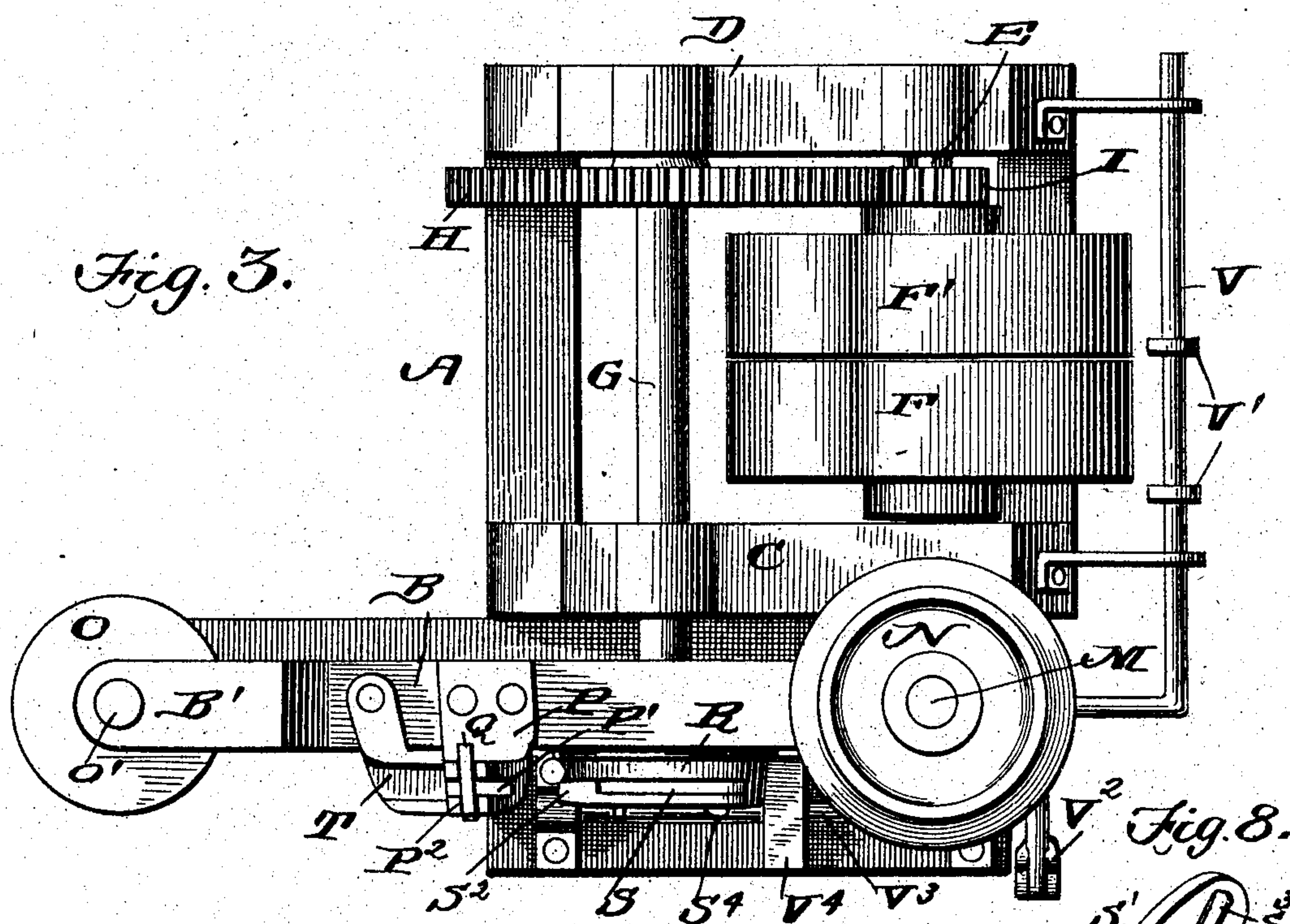


No. 796,261.

PATENTED AUG. 1, 1905.

A. SMITH.
WIRE DRAWING MACHINE.
APPLICATION FILED JAN. 19, 1903.

2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ANTHONY SMITH, OF TRENTON, NEW JERSEY.

WIRE-DRAWING MACHINE.

No. 796,261.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed January 19, 1903. Serial No. 139,604.

To all whom it may concern:

Be it known that I, ANTHONY SMITH, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented a new and useful Wire-Drawing Machine, of which the following is a specification.

This invention is a machine for drawing wire, the object being to provide a simple and efficient machine by means of which wire can be drawn to any degree of fineness, and a still further object is to provide a machine in which the drawing operation can be quickly and easily started.

With these objects in view the invention consists in the novel features of construction, combination, and arrangement, all of which will be fully described hereinafter, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a wire-drawing machine constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a top plan view. Fig. 4 is a sectional view taken through the die-holder. Fig. 5 is a sectional view taken through the die-holder, said section being in a plane at right angles to the plane of Fig. 4. Fig. 6 is a detail perspective view of the holder adapted to contain the first or starting die. Fig. 7 is a view illustrating in perspective and section the construction of the drawing-dies. Fig. 8 is a detail perspective view of the wire-gripping device, and Fig. 9 shows relative positions of the lever-jaws during the gripping and pulling operations.

In carrying out my invention I employ a skeleton base A, to which is bolted an upright skeleton frame B and also the skeleton brackets C and D. A horizontal shaft E is journaled in the brackets C and D and carries a fast pulley F and a loose pulley F'. A second horizontal shaft G is journaled also in the brackets C and D, said shaft having a large gear H mounted thereon, which meshes with a pinion I, mounted upon the shaft E adjacent to the bracket D. The opposite end of the shaft E projects through the bracket C and has a beveled gear K mounted thereon, said beveled gear meshing with a beveled gear L, which is mounted upon the vertical shaft M, journaled in skeleton frame B and carrying the combined drawing and winding drums N upon its upper end. These combined drawing and winding drums comprise the upper portion N', upon which the wire is wound

after being drawn to the proper degree of fineness, the extreme end of the wire being connected to the winding-drum by running the end through a perforation N². The winding-drum is tapered in stepped order, each portion being separated from the other by means of collar N³, and it will be noted that the upper portion N' is larger in diameter than the uppermost section of the lower part. This construction provides a uniform tension upon the wire during the drawing operation. The opposite end of the skeleton frame B is formed with a bracket B', in which is mounted a series of guide-rollers O, said rollers being arranged one above the other and all journaled upon a common shaft O', and these guide-rollers O are independent of each other in reference to their movements. Mounted upon the skeleton frame B between the drawing and winding drums and the guide-rollers is the die-holder P, divided longitudinally, as shown at P', to permit the passage of the wire, and slotted transversely, as shown at P², to receive the drawing-dies Q, which are arranged one above the other, the broadest gage die being arranged lowermost, as most clearly shown in Figs. 4 and 5. The holder P is bolted to the top of the frame B and projects upwardly in an oblique position, so as to hold the drawing-dies in proper alinement with the spool N, it being necessary, of course, to have the longitudinal slot P' oblique in order to correspond with the stepped winding-drum N. A winding-drum R is mounted upon the end of the shaft G which projects through the frame B, the face of the drum being cut away, as shown at R', and connected to the pulley at the point where it is cut away is the wire-gripping device S, comprising two levers S', formed with gripping-jaws S², the ends of said levers being obliquely slotted in reverse directions, as shown at S³, the connecting-bolt S⁴ passing through said slots and connecting the gripping device to the cut-away face of the drum. A depending die-holder T is connected to the frame B adjacent to the bracket B' and is adapted to hold the first die through which the wire is passed while a sufficient amount of wire is wound upon the drum R to start the machine. Power is applied to the fast pulley F and rotates the shaft E, said shaft transmitting its power through the pinion I and gear H to the shaft G, which causes the drum R to rotate in the proper direction after winding a sufficient quantity of wire thereon to start the machine. After a sufficient quantity of

wire has been wound upon the drum R to start the machine the proper dies are arranged in the holder P and the wire run therethrough, the free end of the wire being connected to a winding-drum N at the upper portion thereof. The machine is then started and run at the proper rate of speed, and the wire U will be rolled off from the main reel, (not shown,) drawn through the series of dies, and wound upon the combined winding and drawing drum. The machine is provided with a suitable belt-shifting device, by means of which the belt can be thrown from the fast to the loose pulley, said belt-shifter comprising a rod V, having collars V' mounted thereon, said rod being connected to a lever-arm V², mounted upon the end of a rock-shaft V³, having a treadle V⁴ arranged thereon, and by pressing on this treadle with the foot the belt can be shifted to either pulley desired.

It will thus be seen that I provide an exceedingly simple and efficient construction of wire-drawing machine by means of which the wire can be quickly and easily drawn to the desired degree of fineness and one in which the starting operation can be accomplished with considerable ease and speed.

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

1. In a wire-drawing machine, the combination of a single unitary drawing and winding device, a single series of guide-rollers independently mounted and having a common axis, and a series of dies located intermediate said drawing and winding device and said guide-rollers, substantially as described.

2. In a wire-drawing machine, the combination of a single unitary drawing and winding device consisting of a stepped drawing-

drum and a winding-drum, a single series of guide-rollers independently mounted and having a common axis, a die-holder intermediate said drawing and winding device and said guide-rollers and a series of dies in said die-holder, substantially as described.

3. In a wire-drawing machine, the combination of a single unitary drawing and winding device consisting of a stepped drawing-drum and a winding-drum having a common vertical axis, a single series of independently-mounted guide-rollers, a die-holder slotted at right angles and located intermediate said drawing and winding device and said series of guide-rollers, a series of dies in said die-holder, and means for rotating said drawing and winding device, substantially as described.

4. In a wire-drawing machine, the combination of the frame, a horizontal driving-shaft, a vertical shaft, intermeshing gear between said driving-shaft and said vertical shaft, a unitary drawing and winding device mounted axially on said vertical shaft and consisting of a stepped drawing-drum having collars located between the steps thereof, and a winding-drum above said drawing-drum, a single series of guide-rollers independently mounted and having a common vertical axis, a die-holder mounted on said frame intermediate said drawing and winding device and said series of guide-rollers, said die-holder being slotted at right angles, and a series of dies in said die-holder, substantially as described.

ANTHONY SMITH.

Witnesses:

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