F. RICHARDSON.

MACHINES FOR WINDING SPIRALS FOR STUDS.

No. 176,195. Patented April 18, 1876.

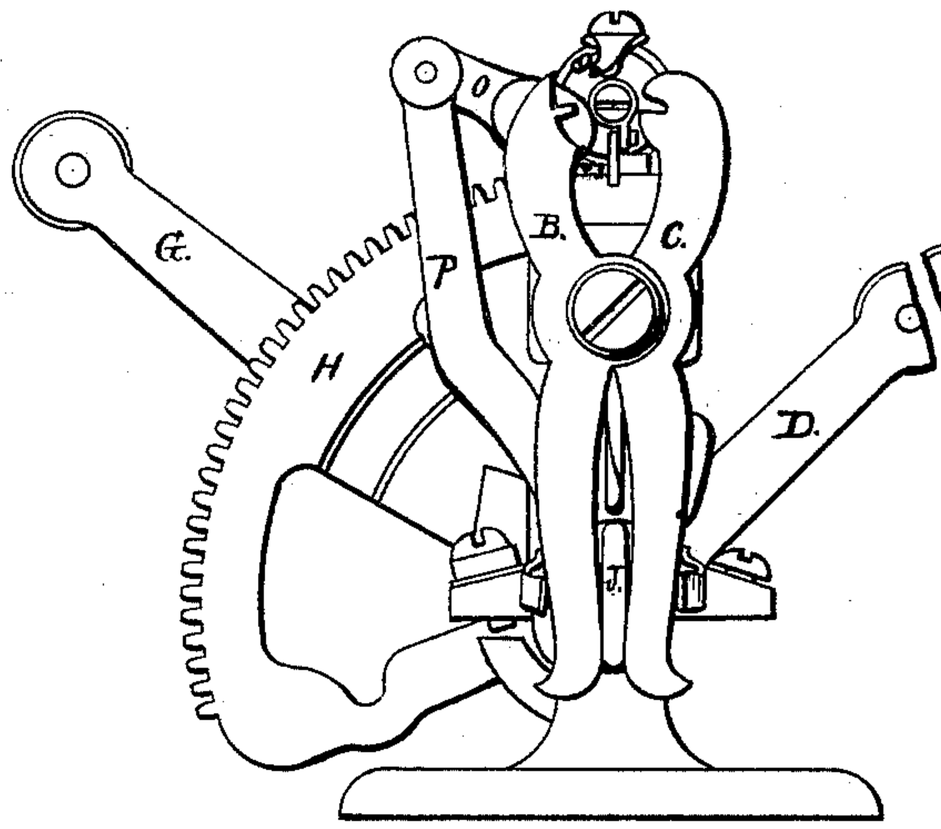

FIG. 1.

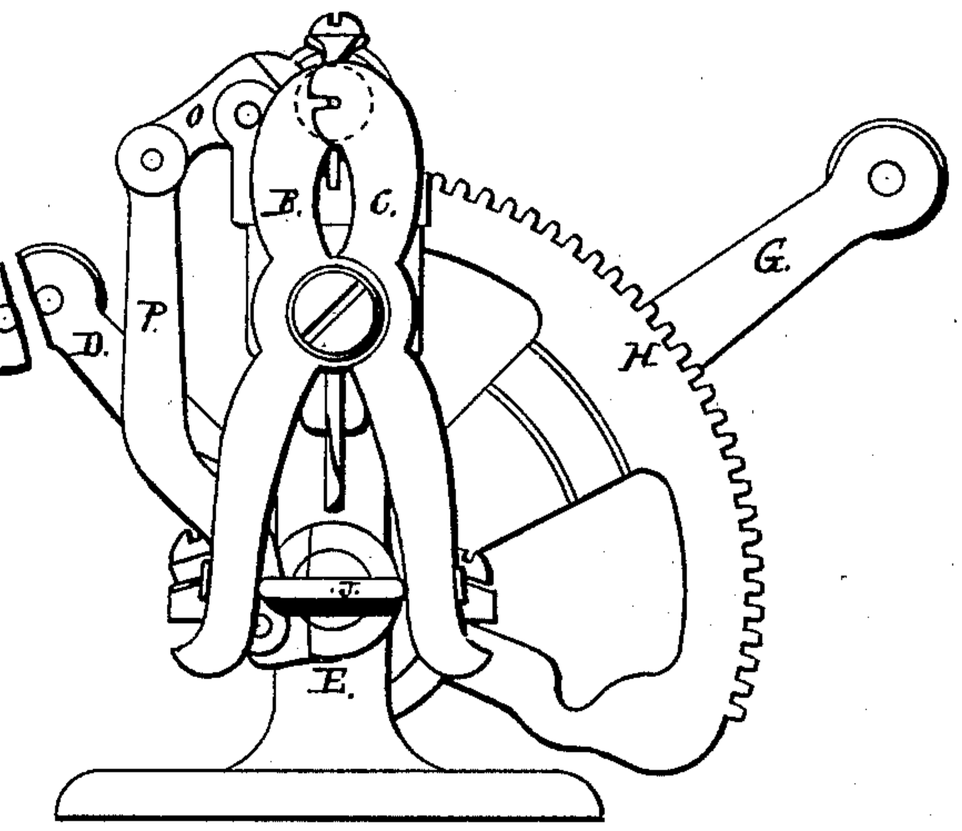

FIG. 2.

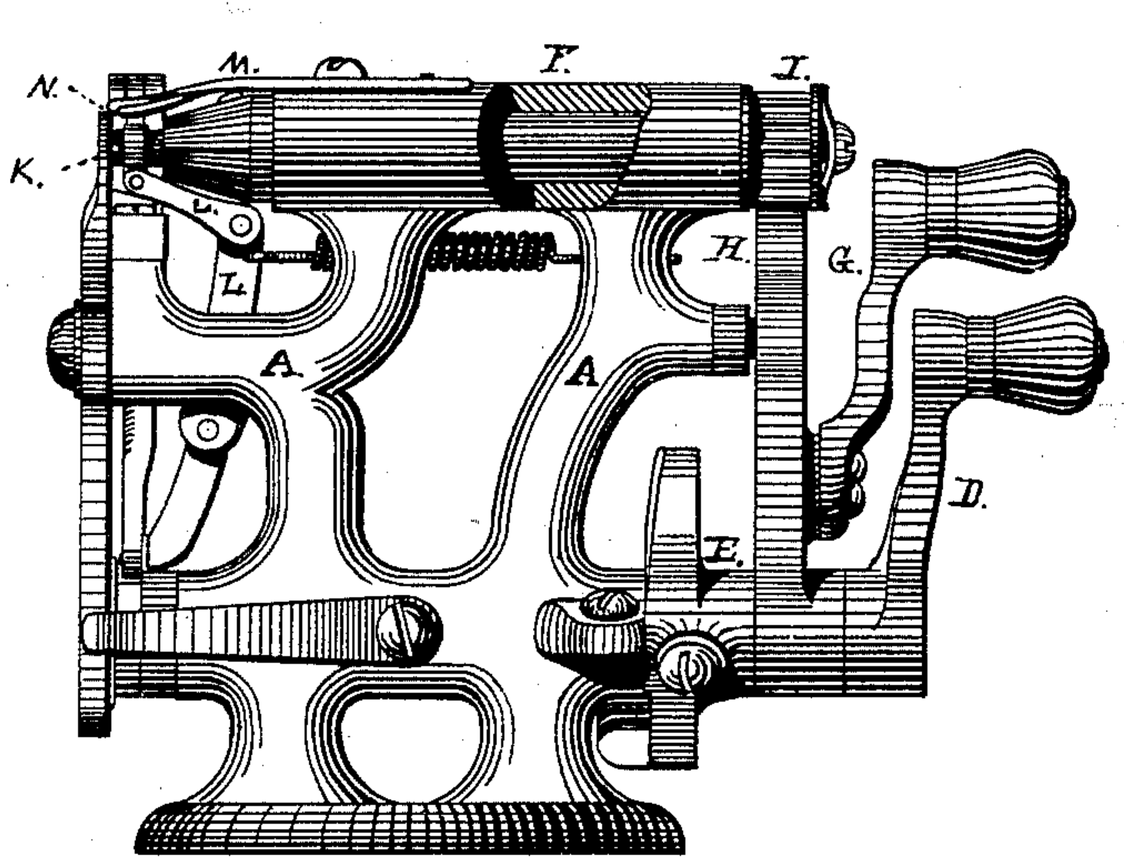

FIG. 3.

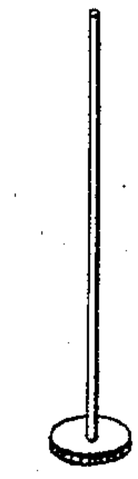

FIG. 5.

FIG. 6.

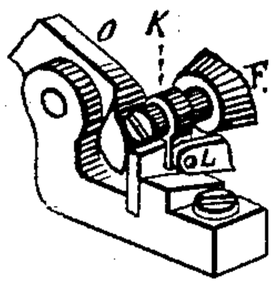

FIG. 4.

WITNESSES.

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FREDERICK RICHARDSON, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN MACHINES FOR WINDING SPIRALS FOR STUDS.

Specification forming part of Letters Patent No. **176,195**, dated April 18, 1876; application filed March 13, 1876.

To all whom it may concern:

Be it known that I, FREDERICK RICHARDSON, of Providence, in the State of Rhode Island, have invented a new and useful Machine for Winding Spirals for Studs; and I do hereby declare that the following specification, taken in connection with the drawing making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is an end view of the machine, showing the jaws open. Fig. 2 is an end view, showing the jaws closed. Fig. 3 is a side elevation. Fig. 4 shows the clearing device. Fig. 5 and 6 show the blank before and after being wound.

The object of my invention is to produce a machine for winding the spirals of studs which have heretofore been wound by hand, by which the same can be much more uniformly and rapidly done, and consists in the mechanism hereinafter described.

The several parts operating together are attached to a suitable frame, A A. B and C are jaws pivoted near the center and are operated by a crank, D, through the arbor E. F is another arbor, operated by a crank, G, through the rack and pinion H I, around the end of which the wire is wound.

Commencing with the parts in the position shown in Fig. 1, the operation of my invention is as follows: The blank shown in Fig. 5 is placed in the jaw C, and the crank D moved forward rotating the arbor E. Upon the end of the arbor E, and between the lower ends of the jaws B and C, is a cross-piece, J, which, upon the rotation of the arbor E, spreads apart the lower ends of the jaws and brings together the upper ends, as shown in Fig. 2. Upon the coming together of the upper ends of the jaws the blank is forced into the slot in the jaw C and securely held therein by the tooth upon the jaw B, and at the same time the wire which is to form the spiral is carried through the slot in the end of the arbor F, which bends it at right angles to the head of the blank which is upon the outside of the jaws. The crank G is now brought back toward the operator, which causes the arbor F to revolve and coil upon itself the wire, which being done the crank D is brought back to its former position, which opens the jaws, and at the same time the clearer K, operated by a cam upon the arbor E through the levers L L, throws off the completed work. Upon the top of the frame and projecting over the end of the arbor are two adjustable fingers, M N. The office of the finger M is to catch and hold the wire while it is being coiled, and the finger N presses it close to the arbor and secures the coil in place during the subsequent bending of the end. As the crank D is brought back for the purpose of opening the jaws, the end of the lever O, operated by an eccentric upon the end of the arbor E through the rod P, descends and catches the end of the coiled spiral, and bends it, as shown in Fig. 6, just previous to its removal by the clearer, which enables it to be more easily inserted in the eyelet hole.

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

1. The jaws B and C, and the arbors E and F, the whole constructed and operating together, in the manner substantially as described, for the purposes specified.

2. The combination of the arbor E, the rods L L, the clearer K, and arbor F, the whole constructed and operating together, in the manner substantially as described.

3. The combination of the fingers M and N, and the arbor F, the whole constructed and operating together substantially as described.

4. The combination of the arbor E, the rod P, and the lever O and arbor-F, the whole constructed and operating together in the manner substantially as described.

FREDERICK RICHARDSON.

Witnesses:

WALTER B. VINCENT,

G. M. CARPENTER, Jr.