E. S. Pierce.

Shaving & Slotting Screws.

No 71908 Patented Dec. 10, 1867.

Fig. 1

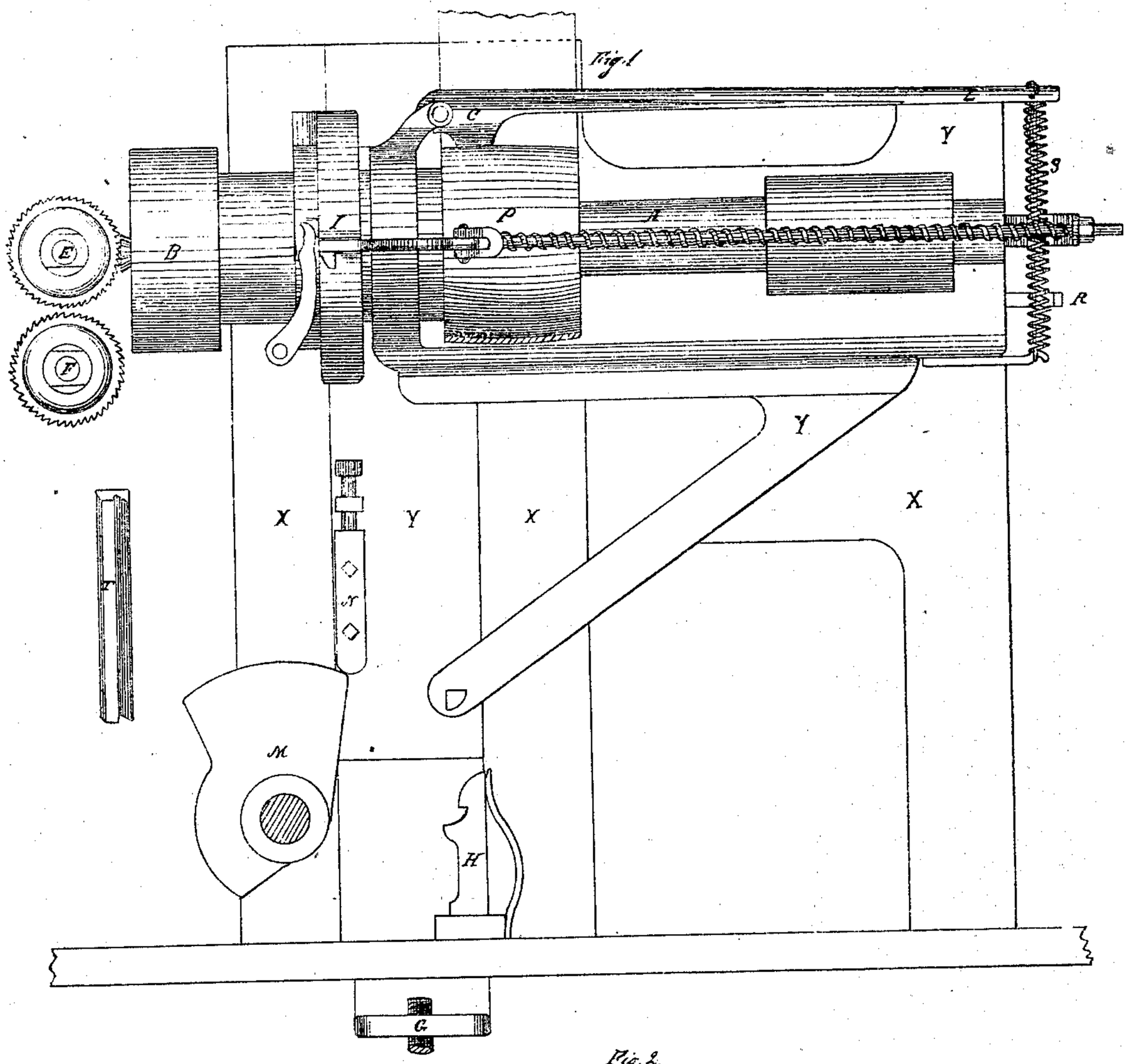
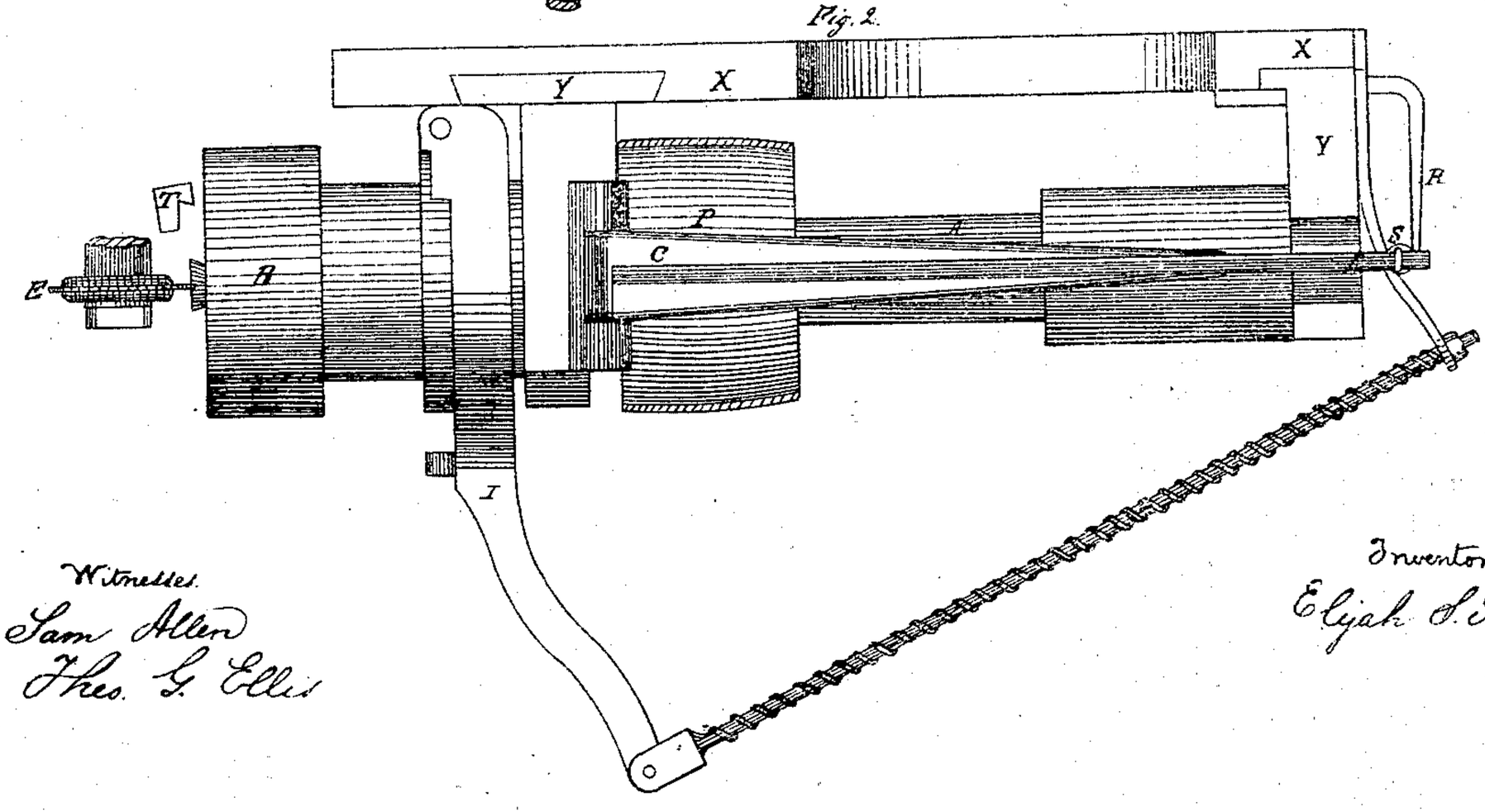


Fig. 2.



Witnesses.
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ELIJAH S. PIERCE, OF HARTFORD, CONNECTICUT.

Letters Patent No. 71,908, *dated December* 10, 1867.

IMPROVEMENT IN MACHINERY FOR SHAVING AND SLOTTING SCREWS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ELIJAH S. PIERCE, of Hartford, in the county of Hartford, and State of Connecticut, have invented a new and useful Improvement in Mechanism for Shaving and Slotting Screw-Heads; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a side view of the improved mechanism.

Figure 2 is a top view of the same.

My invention consists of a mechanism by which the heads of screws or screw-blanks are turned or shaved, while the jaws and spindle are rapidly revolved, and then nicked or slotted by being passed across one or more revolving saws, while the spindle is firmly clamped on its axis and prevented from revolving, as before. They then pass back to the first position to remove the burr.

A is the spindle, having jaws at B, operated in the usual manner for receiving and holding the screw-blank. The spindle runs in bearings in the sliding frame Y Y, which has a motion up and down on vertical slides attached to the principal frame X X of the machine. P is a pulley for giving a rotary motion, by means of a belt passing under it from above, to the spindle A. C is a clamp, held firmly down upon the pulley P by the spring S. R is a rest or support, attached to the frame of the machine, upon which the lever L of the clamp C rests when the spindle is near its lowest position. M is a cam, attached to a shaft in the frame X of the machine, to which the improved mechanism is applied. This cam gives a vertical motion to the sliding frame Y Y by means of the adjustable piece N, which rests upon the working edge of the cam. This cam is so constructed that it leaves the spindle at rest, when at its lowest point, long enough for the shaving to be completed. It then raises the sliding frame Y Y rapidly, until the screw comes opposite the first saw; then it rises slowly, till the saw passes through the head; it then again rises rapidly to the next saw, through which it also passes slowly, and then returns rapidly to the first position. G is an adjustable stop for arresting the downward motion of the slide Y and supporting it while the head of the screw is being shaved. H is a hook for locking the slide Y in its lowest position, and is operated by a pin on the cam M, which unlocks it at the proper moment. T is the shaving-tool, and E and F two saws for cutting the slot, all of which are attached to the principal frame of the machine by proper contrivances.

The operation of my invention is as follows: When the sliding frame Y is at its lowest position, and resting upon the stop G, it is not moved by the cam M till the shaving is completed. In this position the clamp C is raised from the pulley P by the lever L resting upon the support R, and the pulley is rapidly revolved by a belt passing under it from above. As soon as the shaving is completed the cam M raises the frame Y rapidly, till the blank reaches the first saw, F. The raising of the frame Y has lifted the lever L off from the support R, and the spring S now presses the clamp C down upon the pulley P, holding it firmly in its position and preventing it from turning. The belt passing under the pulley P has also become loose by the raising of the pulley, and continues to run freely under it without causing it to revolve. The screw-head now passes slowly past the saw F by the action of the cam M. It then rises rapidly to the other saw E, and passes that slowly, as before. The cam then allows the frame Y to descend rapidly to its first-described position. The lever L is stopped by the support R, and releases the pulley, which again comes in contact with the belt and commences to turn. The blank is brought back to its first position in which the head was shaved, and the burr caused by the saws in cutting the slot is removed by the same tool which performed the shaving, the screw-blank turning upon the same axis and held in the same position in the jaws as before. The blank is now thrown out and another inserted, when the preceding operations are repeated.

Claim.

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

1. The combination of the cam M, the sliding frame Y, the spindle A, the pulley P, the clamp C, the spring S, and the rest R, or their equivalents, with a shaving-tool, and one or more nicking-saws, substantially as herein specified.

2. The combination of the sliding frame Y, the spindle A, and the clamping-device C, with a shaving-tool and one or more saws, substantially as described, for the purpose of shaving, nicking, and burring screw-blanks or other similar articles while held in the same jaws.

ELIJAH S. PIERCE.

Witnesses:

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