C. M. SPENCER.

Machine for Shaping the Heads of Metal Screws.

No. 166,423. Patented Aug. 3, 1875.

Fig. 1

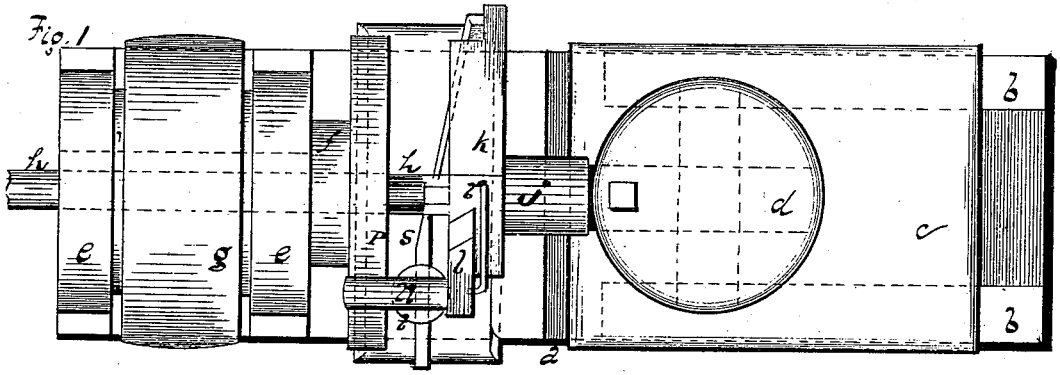


Fig. 2

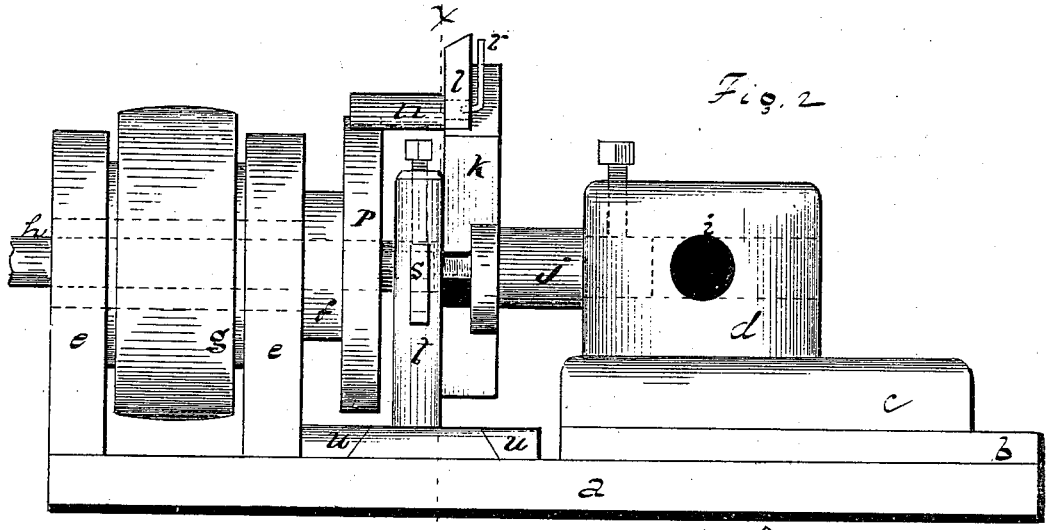


Fig. 3

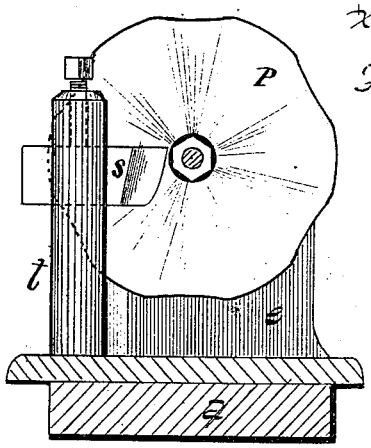
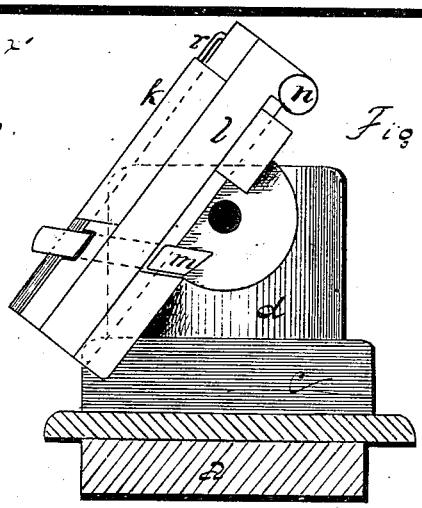


Fig. 4



Witnesses.

John Henry Brockelby

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UNITED STATES PATENT OFFICE.

CHRISTOPHER M. SPENCER, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR SHAPING THE HEADS OF METAL SCREWS.

Specification forming part of Letters Patent No. **166,423**, dated August 3, 1875; application filed December 7, 1874.

To all whom it may concern:

Be it known that I, CHRISTOPHER M. SPENCER, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements pertaining to Screw-Making Machines, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a top view of a machine embodying my said improvements. Fig. 2 is a side elevation of the same, which I will term a front view. Fig. 3 is a view of the same in vertical cross-section, on the plane *x x*, looking in the direction denoted by the arrow *x'*. Fig. 4 is a cross-section view on the same plane, but looking in the opposite direction.

The machine, as a whole, is intended for making what are commonly called "machine-screws"—that is, screws for fastening metallic parts together. The invention is an attachment to or part of such machine for forming and fashioning the periphery of the heads of the screws to almost any desired shape, as round, square, hexagon, octagon, &c.

The letter *a* denotes the base; *b b*, ways for the block *c*, carrying the horizontally-rotating tool-stock *d*; *e e*, the standards of the head-stock, in which is hung the hollow shaft *f*, rotated by a belt running on the pulley *g*. The stock *h* is fed through the shaft *f*, and caused to rotate with it by appliances which form no part of the present invention. The rotary tool-stock *d* has sockets *i* for different tools, as mills for cutting down the body of the stock to the desired size, and dies for cutting the screw-thread, which can be brought to bear successively upon the stock by the rotation and longitudinal motion of this tool-stock. One of these sockets bears upon the end of the stub or rod *j* the ways-block *k*, in which the tool-stock *l* has longitudinal movement. This tool-stock *l* bears the tool *m*, secured in place by screw *n*. From this tool-stock extends the tappet *n*, practically a part of the tool-stock *l*, kept in contact with the periphery of the rotating former *p* on the shaft *f* by the spring *r*. If the former *p* is circular it will cause the tool *m* to cut a round head on the screw *o*; if the former is square, the tool *m* cuts a square head. The former shown in the drawings is of about the right shape for causing the tool to cut a hexagon head, and the shape of the former can be varied to cut heads of almost any shape. The letter *s* denotes the cutting-off tool held in the tool-stock *t*, which has transverse motion on the base *a* in ways *u*. This tool is used to sever the finished screw from the stock at the proper time.

I claim as my invention—

1. The combination of the hollow rotating stock-feeding shaft *f*, the rotating former *p*, and the vibratory tool-stock *l*, all substantially as shown and described.

2. The combination of the hollow stock-holding shaft *f*, the rotating former *p*, the ways-block *k*, the tool-stock *l*, and the tool *m*, all substantially as shown and described.

3. The combination of the slide *c*, rotating head *d*, ways-block *k*, reciprocating tool-holder *l*, and rotating former *p*, all operating substantially as shown and described.

CHRISTOPHER M. SPENCER.

Witnesses:

WM. E. SIMONDS,

C. A. GRIFFIN.