A. CHARBONO.

Improvement in Bolt-Making-Machines.

No. 128,853. Patented July 9, 1872.

Fig. 1

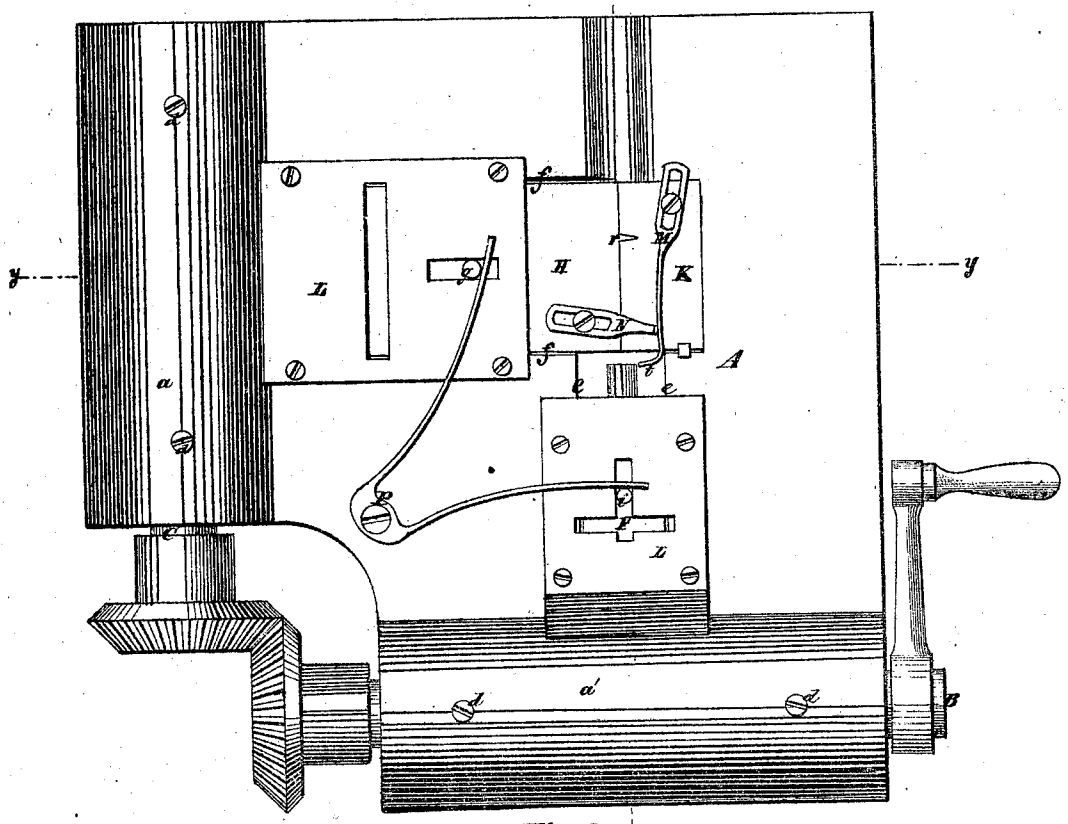


Fig. 2

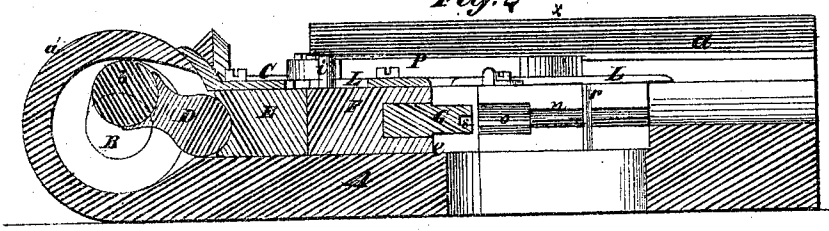
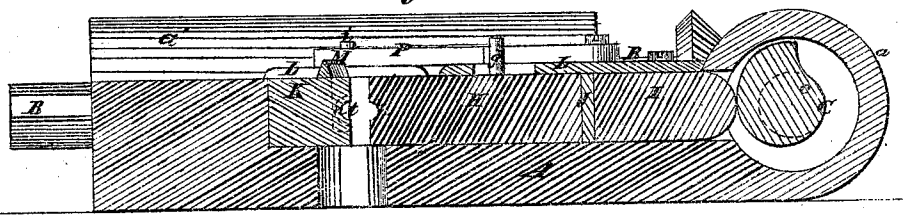


Fig. 4

Fig. 3



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UNITED STATES PATENT OFFICE.

AUGUSTINE CHARBONO, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO MELVIN O. WHITTIER, OF SAME PLACE.

IMPROVEMENT IN BOLT-MAKING MACHINES.

Specification forming part of Letters Patent No. 128,853, dated July 9, 1872.

Specification describing an Improved Machine for Heading Bolts and Screws, invented by AUGUSTINE CHARBONO, of the city and county of Worcester and State of Massachusetts.

This invention is designed chiefly for heading the blanks of screws for screw-wrenches but it is applicable to heading other screws and bolts. It consists in a novel arrangement of and means of operating a gauge by which the length of the screw or bolt is gauged.

In the accompanying drawing, Figure 1 is a plan of my improved machine. Fig. 2 is a section of the same at the dotted line *x x* in Fig. 1, and Fig. 3 is a similar section taken at the dotted line *y y* in that figure. Fig. 4 is a view of the blank of a screw for screw-wrenches.

Similar letters of reference indicate corresponding parts in all three figures.

A is the bed of the machine, of square form and having formed on two sides, at right angles to each other, boxes *a a'*, of which one, *a'*, contains the bearings for the driving-shaft B, and the other, *a*, the bearings for a shaft, C. The middle portion of the driving-shaft is formed to constitute a crank, *b*, and the corresponding portion of the other shaft, C, has a cam, *c*, provided on it; said shafts are geared by miter-wheels on their adjacent ends. In that portion of the bed opposite the crank of the driving-shaft there is a parallel opening constituting a way, *e*, which is arranged opposite the shaft. F is a slide, which carries the heading-plunger G and moves at right angles to the shaft B. Motion is transmitted to it by a vibrating arm, D, and block E. The former is concavely rounded to fit the crank *b* at one end, and at the other it is rounded to fit the concave end of the block E. The heading-plunger has a recess or cavity, *s*, in its end for the purpose of forming the pivot of the screw. The cam *c*, on the shaft C, operates the movable jaw of the forming and holding dies, and for this purpose an arc of its greatest radius is concentric with the shaft C to hold said movable die stationary during the operation of the heading-plunger. Opposite the cam there is in the bed a parallel opening constituting a way, *f*, in which the movable die-block H slides. It has interposed between it and the cam a block, I, and, when necessary, one or more packing-pieces, J. The stationary die-block K is arranged in the end of the way *f* in such position that the line of its face is opposite the center of the heading-plunger G. The faces of this and the movable die-block are similar, except that one is provided with the knife or cutter *r* and the other with a recess to receive said cutter. In each there is a holding portion, *n*, to grip and hold the rod or blank to be headed, and an enlarged portion, *o*, which forms the heading-die and receives the plunger G. On the top of the stationary die-block there is secured a gauge, M, consisting of a spring, which is secured at one end so as to be capable of adjustment, and has its other end turned at nearly a right angle, as shown at *t*, to form a stop, which projects over the end of the stationary die-block and gauges the length of the screw or bolt blank to be formed. A tappet, N, secured adjustably on the sliding die-block pushes the gauge aside and moves it out of the way of the heading-plunger as said block moves toward the other. L L are two cap-plates, which cover the ways *e* and *f* and secure the blocks within them. Each is provided with a slot; through one a pin, *g*, on the sliding die-block projects, and a pin, *i*, on the heading-plunger block projects through the other. A spring, P, provided with two arms, is arranged on the bed, so that its arms, bearing against the said projecting-pins *g* and *i*, force the slide F and block H back when not thrown forward by the crank *b* and cam *c*.

A heated bar of iron of the size of the body of the intended screw-blank is fed through a guide and between the dies till it ends touches the gauge M. The movable die then slides forward and the cutter cuts off a piece of the required length, which is griped between the dies. It also throws back the gauge out of the way of the plunger, which then moves

forward within the dies and upsets the ends of the piece of rod cut off, and forms the head of the screw-blank or bolt, and the cavity *s* in the end of said plunger forms the journal or pivot of said screw, shown in Fig. 4. The sliding die and the plunger then move back and the screw-blank drops through an opening in the bed and the gauge springs forward. This operation is repeated till the bar becomes too cool to be longer worked, and another is then used.

Claim.

The combination of the adjustable spring-gauge M and the adjustable stop N with the stationary and movable dies, substantially as and for the purpose specified.

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