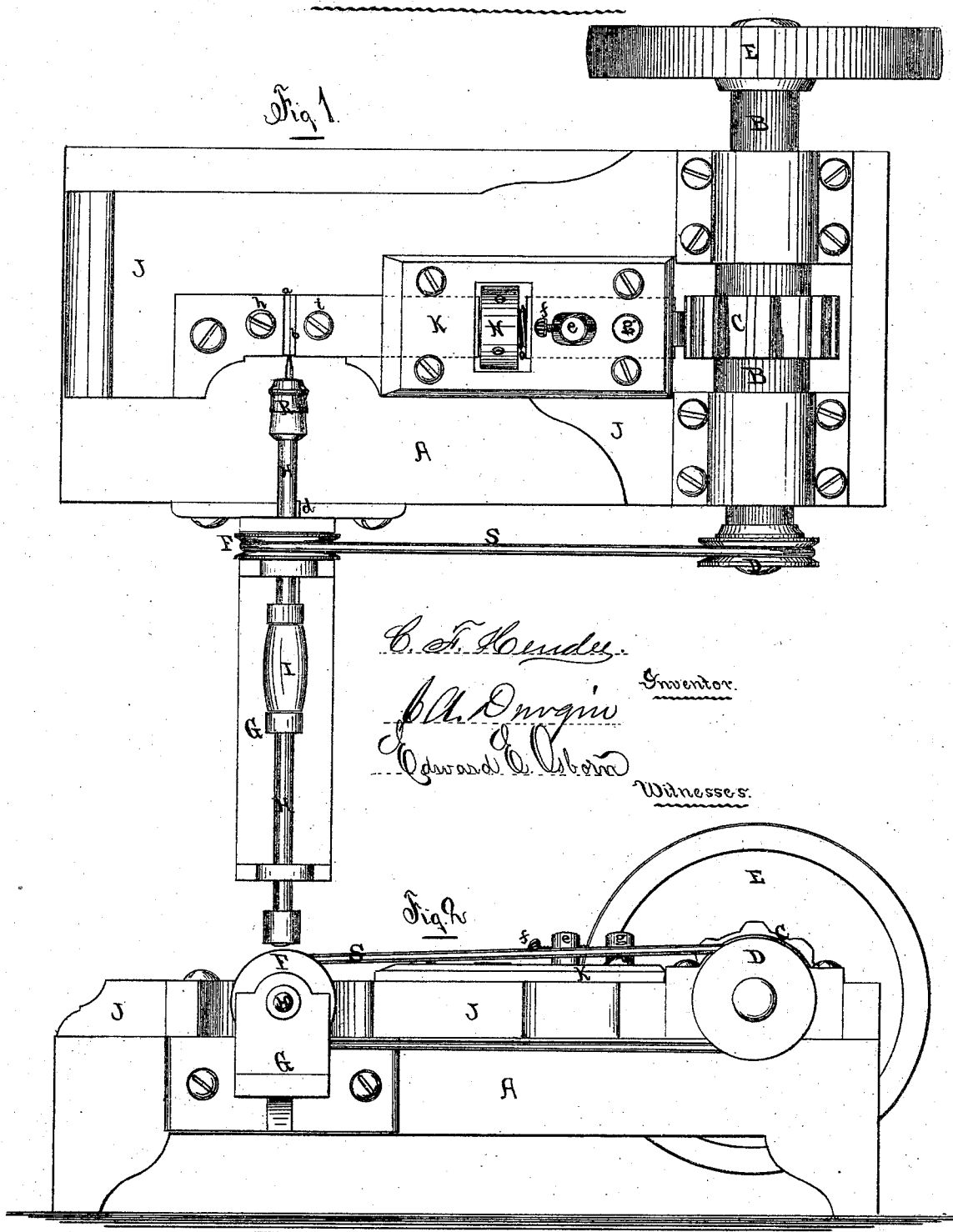


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Machine for Reducing Wire, &c.

No. 123,101.

Patented Jan. 30, 1872.

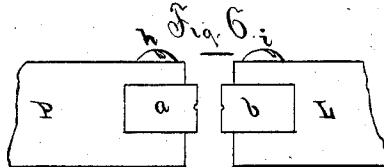
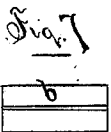
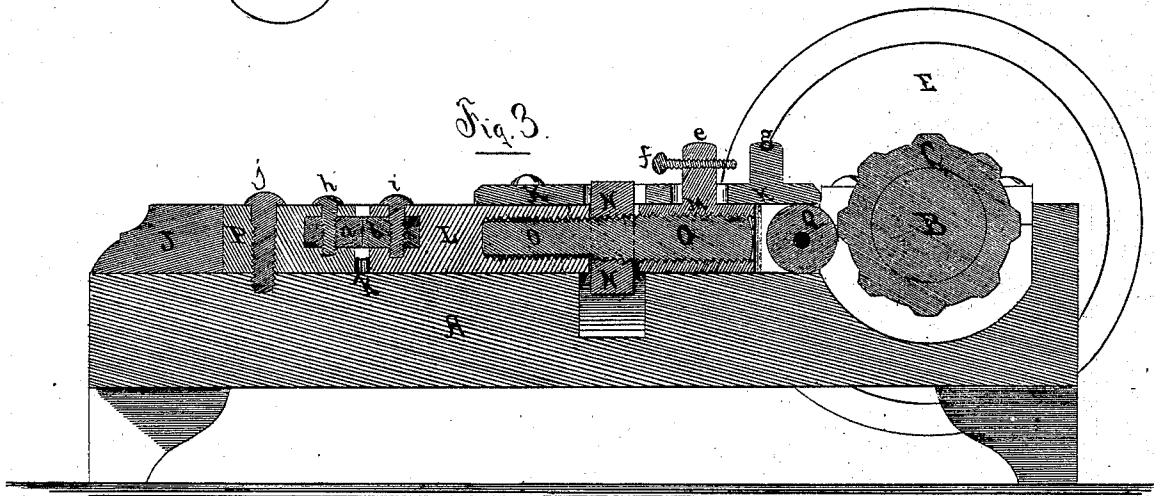
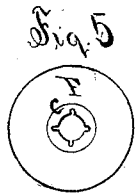
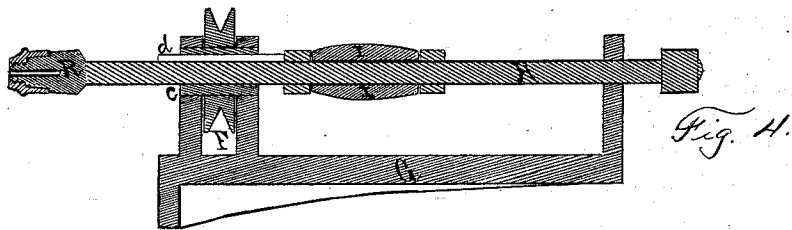


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UNITED STATES PATENT OFFICE.

CHARLES F. HENDEE, OF WATERBURY, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR SWAGING AND REDUCING WIRE.

Specification forming part of Letters Patent No. 123,101, dated January 30, 1872; antedated January 13, 1872.

SPECIFICATION.

I, CHARLES F. HENDEE, of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Swaging or Drawing Metal for the manufacture of various articles, particularly sewing-machine needles, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to machinery for reducing metal between dies, one of which reciprocates and is driven by a toothed or cam-wheel; and it consists in certain novel combinations and arrangements of parts, which have for their object to make a simple, effectual, and rapid machine for this purpose, as will be fully set forth.

Description of the Drawing.

Figure 1 is a top view of my improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal vertical section through the center of the machine. Fig. 4 is a similar section through the spindle H and the bracket that supports it. Fig. 5 is a view of the pulley F which drives the spindle H. Figs. 6 and 7 are enlarged views of the dies used in drawing wire to a circular form. Figs. 8 and 9 represent the shape of the dies used when a square form is given to the wire.

General Description.

A represents the bed of the machine. It is provided with suitable bearings for the shaft B, and has secured to it the pieces J J, in which the reciprocating stock L M slides. The shaft B carries the cam-wheel C, and has a band or fly-wheel, E, secured upon one end, and a pulley, D, upon the other. A bracket, G, secured upon the side of the frame, supports the spindle H and the pulley F. Motion is given to this pulley to drive the spindle through the medium of the belt S. The spindle slides in the mandrel c, to which the pulley F is secured, and it is provided with a feather, d, which fits in a groove in the mandrel c, so that, as the pulley revolves, the spindle will turn with it. The length of the feather permits it to be withdrawn at pleasure from the mandrel c, so that the spindle may be disconnected from the pul-

ley and the latter permitted to revolve without imparting its motion to the spindle. R represents a chuck for holding the lengths of wire to be acted upon by the dies. It is secured upon the end of the spindle H and turns with it. P represents the block which holds the stationary die a. It is secured in place by the screw j, and may be removed when it is desired to change the dies. The reciprocating stock, which carries the die b, is composed of the two blocks L M, connected and operated by the right-and-left-hand screw O, which works in properly-threaded chambers in the ends of the parts L M. The forward motion of the die b is given by the cam C against the roller Q, and the return motion is produced by the spring k placed in the space beneath the dies and bearing against the block L, as shown in Fig. 3. The screw-stud O, by which the length of the reciprocating stock is regulated, is operated by the nut N fixed on the stud and projecting through a slot in the plate K. When the nut N is turned the blocks L M are either moved toward or away from each other, according to the direction in which the stud O is moved, so that the length of the stock L M is thereby regulated, and made either longer or shorter, as desired. This arrangement enables the distance between the stationary and reciprocating die to be accurately adjusted, and causes them to work with the best effect upon the wire. The plate K is provided with a small stud or post, g, projecting from its upper surface, which forms a stop against which the set-screw f strikes at each backward movement of the reciprocating stock. The set-screw f works in a small post, e, which projects from the block M through a longitudinal slot in the plate K, so that the extent of throw of the stock carrying the die b is regulated by turning the screw f. This arrangement is plainly shown in Fig. 3.

When other than a round form is given to the metal it becomes necessary to disconnect the pulley F from the driving-pulley, so that no rotary motion shall be given to the spindle H.

The dies a b are held in the blocks by the screws h i, and may be removed to permit others to be inserted.

By the use of dies of proper form, and the manner of holding the metal to be acted upon, any desired shape may be given to it.

I am aware that dies and swages of different shapes and sizes for reducing metal are in general use and well known; and I am also aware that patents have been granted to several persons for improvements in machines for reducing wire.

I claim as my invention—

1. The plunger, composed of the two parts L M, the nut N, and screw O, in combination with the cam-wheel C and the dies *a* and *b*, substantially as shown and described.

2. The combination, with the dies *a b* and stock L M, made adjustable by the screw O, of the screw *f*, posts *e g*, and spring *k*, for regulating the motion of the stock L M, substantially as described and specified.

C. F. HENDEE.

Witnesses:

C. A. DURGIN,

EDWARD E. OBSORN.