T. BOARDMAN.

Machine for Inserting Rivets.

No. 203,882. Patented May 21, 1878.

Fig. 3

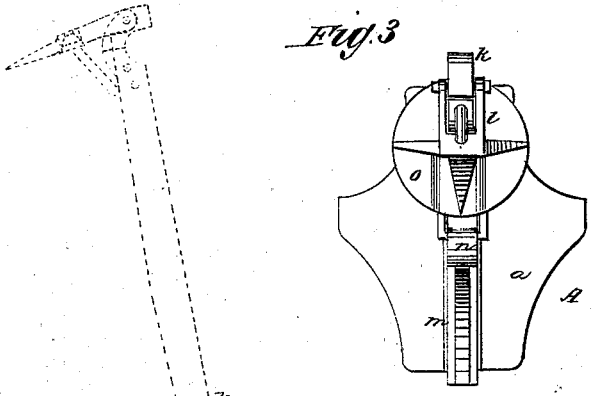


Fig. 1.

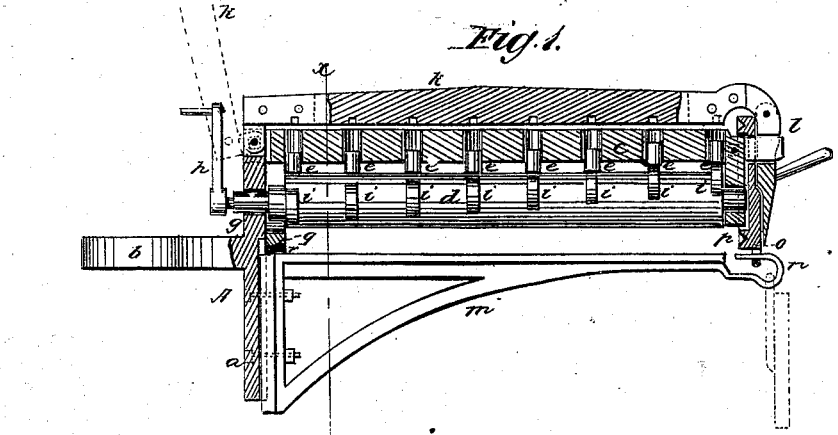
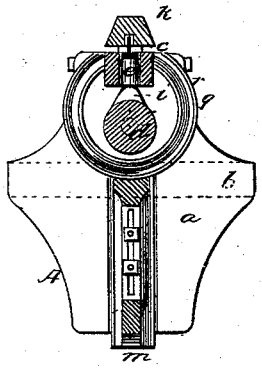


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS BOARDMAN, OF CHARLOTTETOWN, CANADA.

IMPROVEMENT IN MACHINES FOR INSERTING RIVETS.

Specification forming part of Letters Patent No. **203,882**, dated May 21, 1878; application filed February 21, 1878.

To all whom it may concern:

Be it known that I, THOMAS BOARDMAN, of Charlottetown, in Prince Edward Island, Dominion of Canada, have invented a new and Improved Machine for Riveting Stove-Pipe, of which the following is a specification:

Figure 1 is a side elevation, partly in section. Fig. 2 is a vertical section taken on line *x x* in Fig. 1. Fig. 3 is an end elevation.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a machine for introducing at one operation into a length of stove-pipe all of the rivets employed in fastening the pipe together.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

Referring to the drawing, A is a head-stock, which consists of a vertical portion, *a*, and a horizontal portion, *b*. The latter is bolted to the bench. An arm, *c*, projects from the head-stock A, and is apertured to receive the followers *e*. Below the arm *c* is placed a roller, *d*, one end of which is journaled in the head-stock, while the other end is journaled in a hanger, *f*, attached to the outer end of the arm *c*. Upon the gudgeon *g* of the roller *d*, which projects through the head-stock, a crank or lever, *h*, is fixed for turning the roller.

Cams *i* correspond in number and position with the followers *e*, and are capable of forcing the followers upward, even with the upper surface of the arm *c*. The cams *i* are arranged in a spiral line on the surface of the roller, so that the followers are moved one at a time.

An arm, *k*, is hinged to the head-stock, and is provided with a hasp, *l*, that fits over the end of the arm *c* and confines the arm *k*. The under surface of the arm *k* is perforated opposite the centers of the followers *e* to receive the rivets as they are projected through the metal of the pipe. A bracket, *m*, is adjustably secured to the head-stock A, and is provided with a loop, *n*, for receiving a staple that projects from the gage-disk *o*. The said gage-disk is apertured to receive the projecting end of the arm *c*, and has an annular V-shaped groove, *p*, for receiving the edges of the sheet metal at the end of the length of the pipe. A ring, *q*, having a V-shaped groove, *r*, is fastened to the head-stock in any suitable manner. The disk *o* and the ring *q* are easily removed and replaced by others of different sizes.

The operation of my improved machine is as follows: The arm *k* being raised, as shown in dotted lines in Fig. 1, a rivet is placed head downward on each of the followers *e*, and a length of stove-pipe, which has been previously formed, is placed on the arm *c* with the seam uppermost. The disk *o* is now closed over the end of the pipe, which is forced to the bottom of the grooves *p r*, and thus expanded or contracted to the exact size required. The hasp *l* is now brought down upon the disk *o*, and the crank *h* is turned through a part of a revolution, raising all the followers, and forcing the rivets one at a time through the lapped portion of the pipe, the rivets acting as punches and the perforated arm *k* acting as a series of dies.

After the rivets are thus inserted in the iron the arm *k* is released, and the length of pipe is turned slightly on the arm *c* to clear the rivets from the follower-holes, when the rivets are set down in the usual way.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the hinged perforated arm *k*, the crank-roll *d*, having spirally-arranged cams *i* and followers *e*, the arm *c*, the apertured movable gage-disk *o*, having groove *p*, and the hasp *l*, as and for the purpose specified.

THOMAS BOARDMAN.

Witnesses:
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JAMES OFFER.