

(No Model.)

F. OTTO.
BEADING MACHINE.

No. 248,204.

Patented Oct. 11, 1881.

Fig. 1.

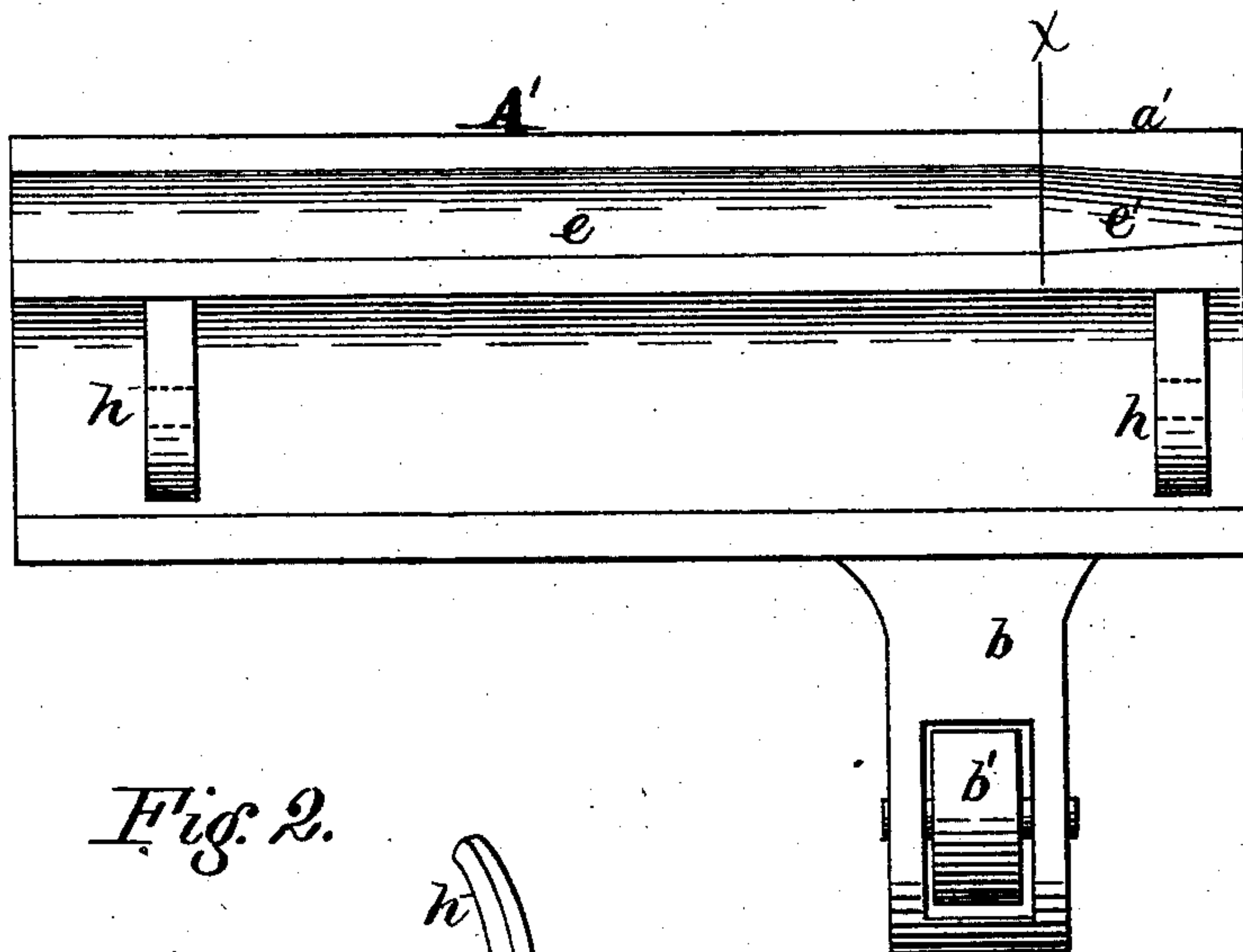


Fig. 2.

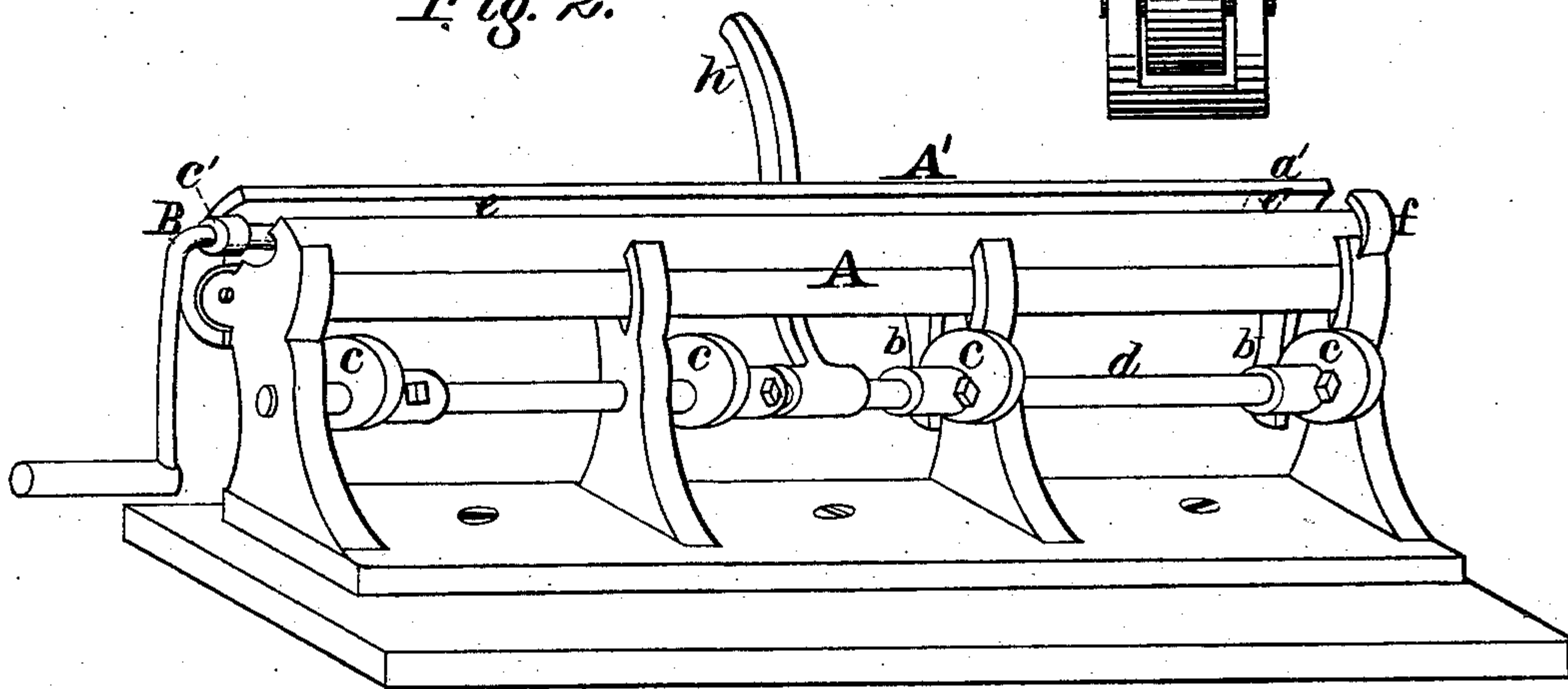


Fig. 3.

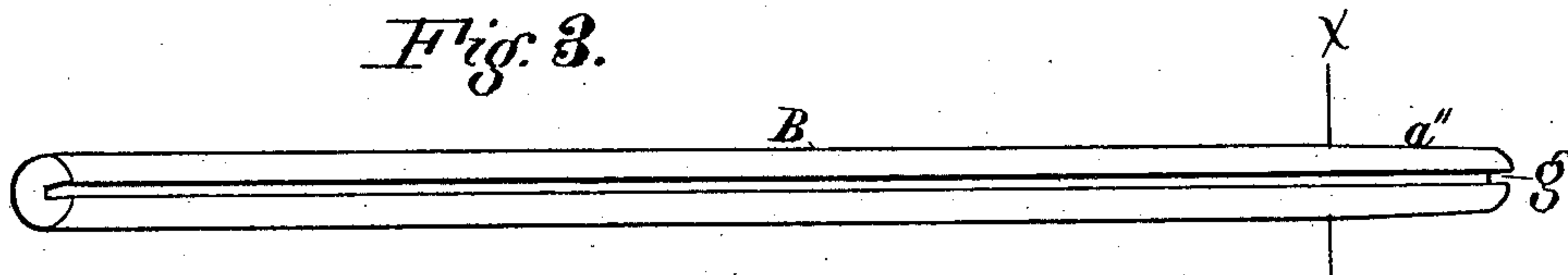
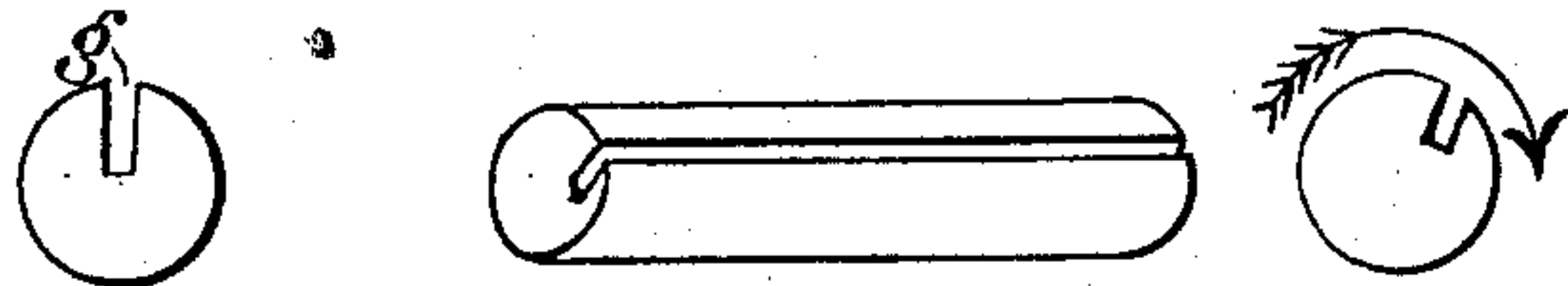


Fig. 4.



Attest.

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UNITED STATES PATENT OFFICE.

FERDINAND OTTO, OF SPRINGFIELD, OHIO.

BEADING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,204, dated October 11, 1881.

Application filed July 8, 1880. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND OTTO, of the city of Springfield, in the county of Clarke and State of Ohio, have invented a new and useful Improvement in Beading-Machines for Turning the Beads upon Eaves-Troughs, of which the following is a specification.

My invention relates to improvements in beading-machines for forming the beads upon the edges of eaves-troughs; and it consists in a machine for that purpose, by which the bead is formed on either side of the trough, each of the beads having a short taper end to allow the ends of the beads of the sheet joined thereto to easily slip over this tapered part without straining open the end of the female section, and thus secure a neat and tight-fitting joint. In my improved machine the bead can be turned upon either the right or left edge of the sheet, and it is particularly adapted to the manufacture of my improved eaves-trough, patented July 22, 1879, and also for the application of my improved stay, patented May 18, 1880.

Heretofore beading-machines have been constructed for turning the bead in one direction only, and were not adapted for turning it in opposite directions without reversing the sheet end for end.

The objects of my improved beading-machine are to make a right and left hand bead on the same machine without changing the turning-rod, and to form these beads (on the body of the trough) so as to make neatly-fitting joints, thereby making a better and stronger eaves-trough than is made in any other way.

The mechanism is illustrated in the accompanying drawings.

Figure 1 is an inside view of an end section of one of the jaws (movable one) of my improved beading-machine. Fig. 2 is an isometric view of the machine entire. Fig. 3 is a perspective view of the turning-rod. Fig. 4 shows end views and a perspective view of a portion of an old-style rod used for forming beads for eaves-troughs.

Similar letters of reference indicate similar parts.

A is the machine, which consists of a fixed and a movable jaw, common to all beading-machines. The movable jaw A' and the fixed

one are each grooved longitudinally from end to end with a groove, *e*, to form the bead upon the edge of the sheet when inserted in the groove or longitudinal slot *g* in the rod B inclosed therein. At the right end of the machine, as seen in dotted lines in Fig. 2 and more clearly in view Fig. 1, the groove *e* tapers from the line X about one inch from the end to its extremity. The male former or rod B (see Fig. 3) from the same line to its end tapers also, so that its end *a''* will fit into and form the tube or bead exactly to conform to the taper shown in the end *e'* of the jaw-section A', Fig. 1. In long sheets the former-rod B extends beyond the machine to allow the attachment of another crank upon the opposite end to facilitate the operation of turning the bead.

The groove *g* (seen in rod B extending throughout its length) is of the usual narrow width for receiving the edge of the sheet of tin; but its location differs from that in the turning-rod of other beading-machines. By reference to the views in Fig. 4 this difference can be plainly seen. The figures on the right show the old-style rod, the groove of which is not cut in toward the center, but tangentially, and to form a bead with this rod it is turned toward the right only, as seen by the arrow in the cross-section, while in the figure on the left (also a cross-section) it will be noticed that the groove *g* is cut into rod B toward its center, or radially. The object of this is to allow the rod B to be turned in either direction. The groove *g* is required to be cut deeper for this purpose than the old form of groove. The rod B is further provided with a collar, *c'*, at the crank end, which prevents it from entering too far or being displaced during the operation. As the sheet may be pushed too far to the right in inserting its edge into the turning-rod, a projecting stop or gage, *f*, (seen on the right end of the tool, Fig. 2,) is cast on the end of one of the jaws at this point. When the jaws are partially closed this gage overlaps the opposite one and prevents the sheet from being slipped beyond it.

Instead of the plain lugs depending from the movable jaw, which in the ordinary beading-machine wear very much from friction with the

cams by which the movable jaw is operated, I use a friction wheel or roller, *b'*, in the lower inside face of the lug *b*, as seen on the right in Fig. 1. This is pivoted centrally within a slot
5 cast in the lug, and is operated upon by the eccentrics *c* on the rod *d*, to which the handle-lever *h* is centrally attached. This arrangement greatly lessens the friction, so that the operation of turning a bead in either direction
10 upon the sheet is easily effected.

As the machine is a common tool long in use, further details of its operation are deemed unnecessary.

The invention herein, I wish it understood,
15 is confined to the improvement claimed, and I reserve the right to make another application for the novel devices herein described, but not specially claimed.

I claim as my improvement—

An organized machine for forming either 20 right or left hand beads upon the edges of eaves-troughs, consisting, essentially, of the fixed jaw A, movable jaw B', journaled together at the ends, each having the longitudinal groove formed therein tapered at one end, 25 the turning-rod B, formed with the radial groove *g* and tapered at one end, a friction-roller, *b'*, and eccentric *c*, all arranged and operating in the manner as described.

FERDINAND OTTO.

Attest:

B. C. CONVERSE,
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