

(No Model.)

2 Sheets—Sheet 1.

N. J. ALTMAYER.
LADLE FOR POURING STEEL.

No. 540,292.

Patented June 4, 1895.

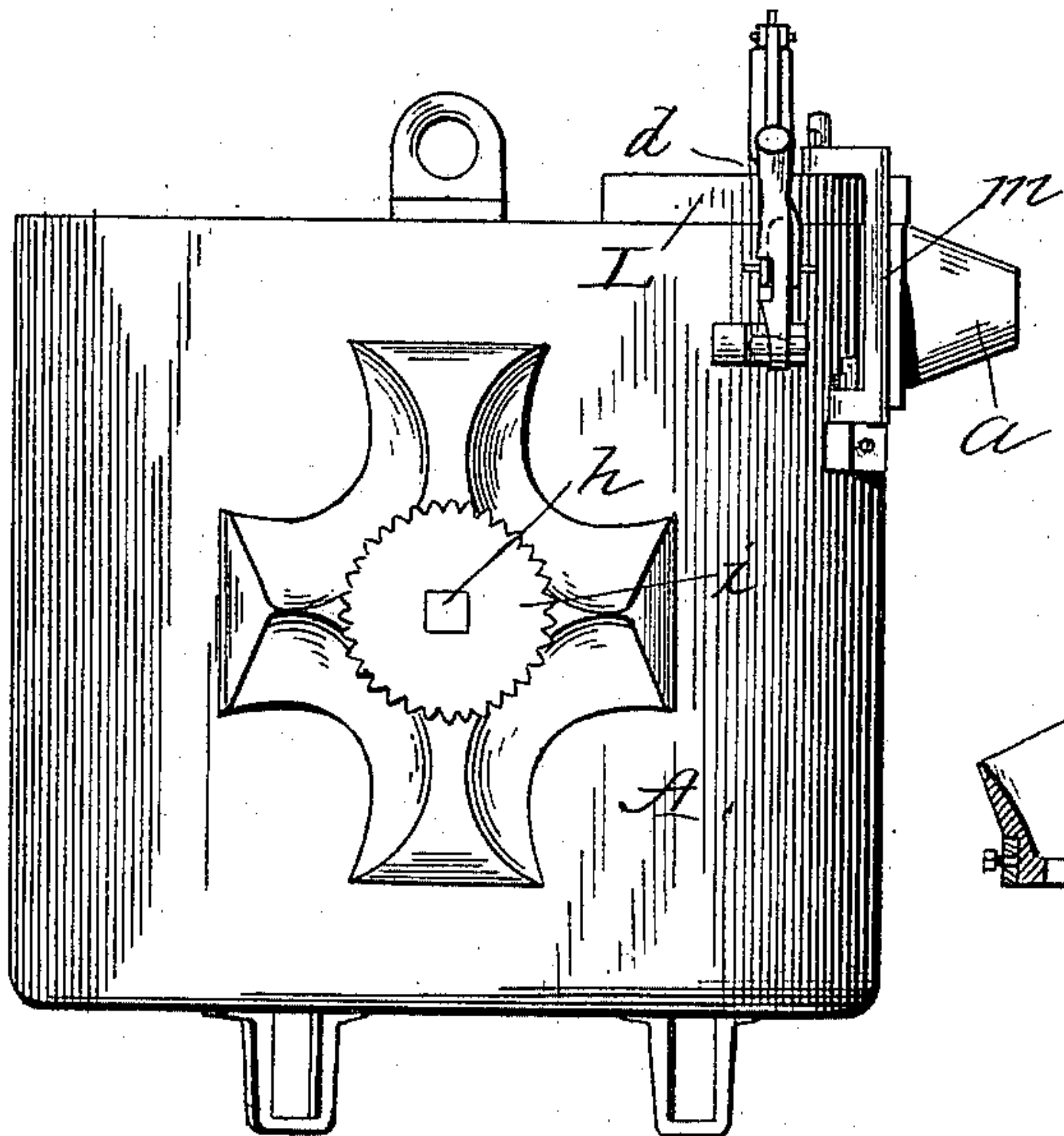


Fig. 1.

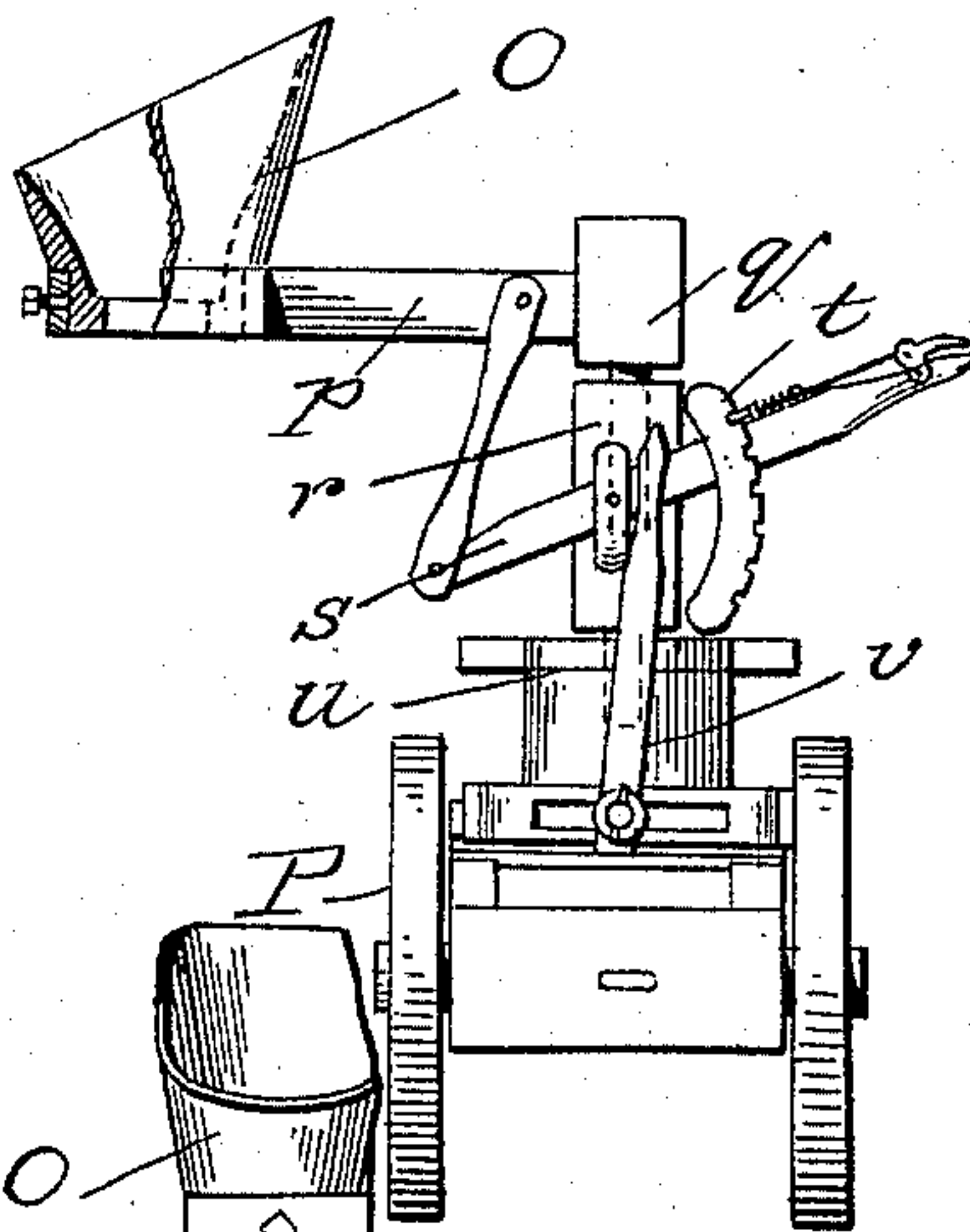


Fig. 2.

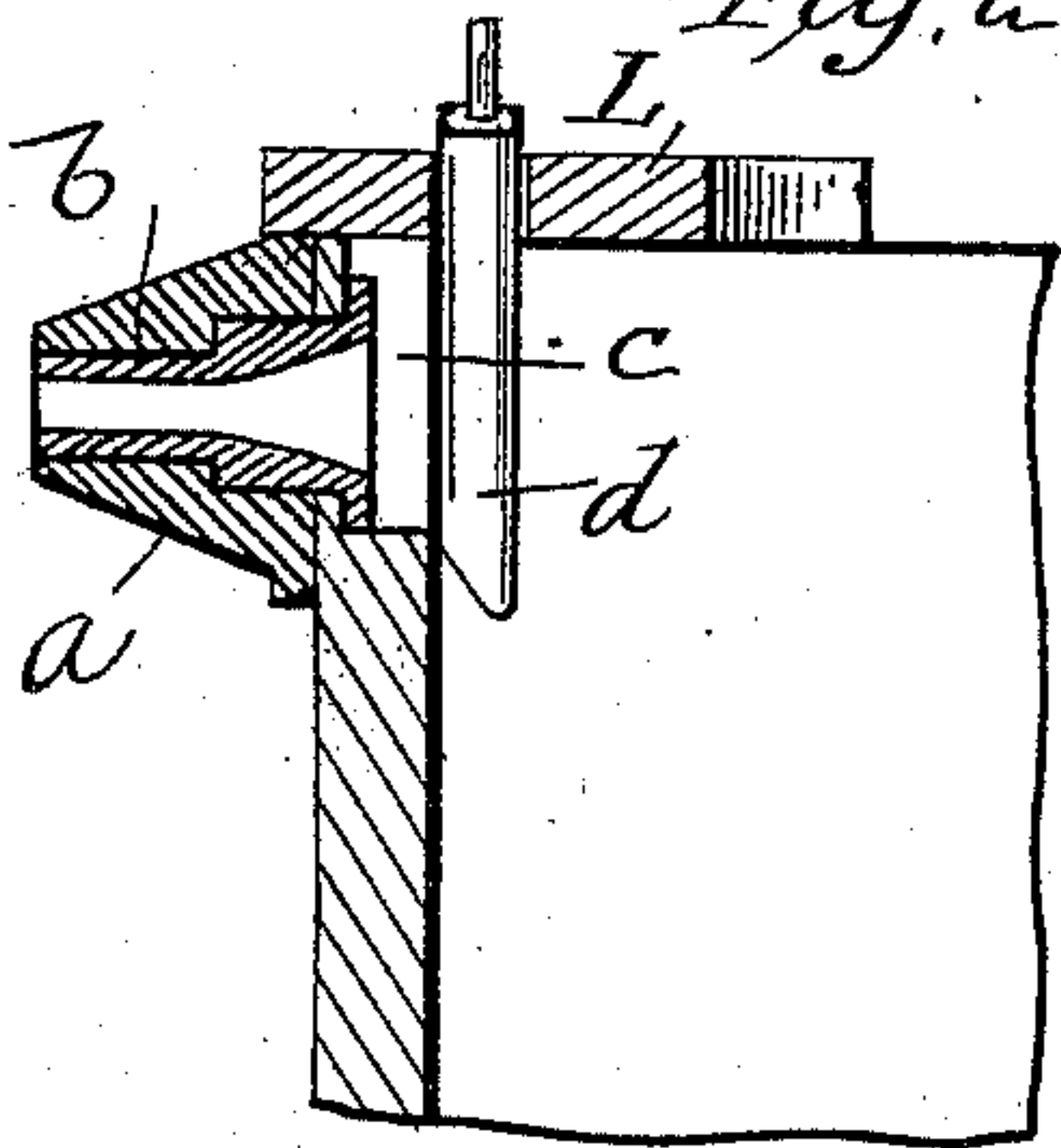
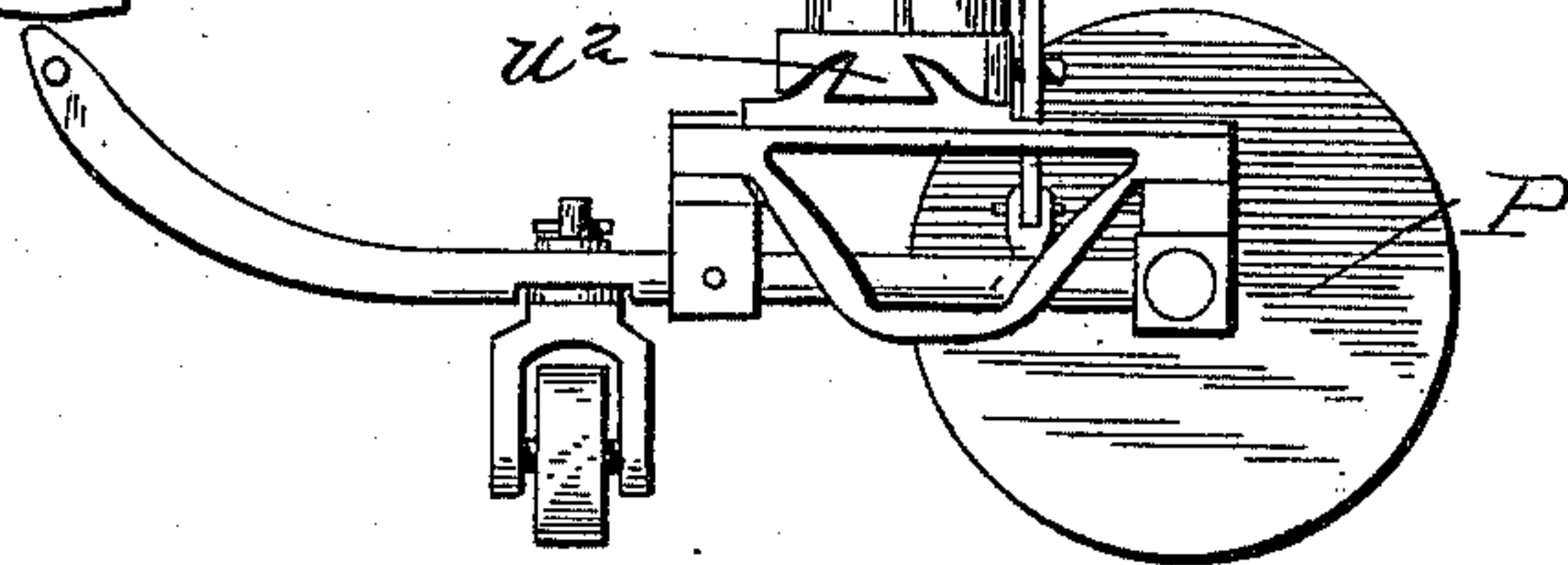


Fig. 5.



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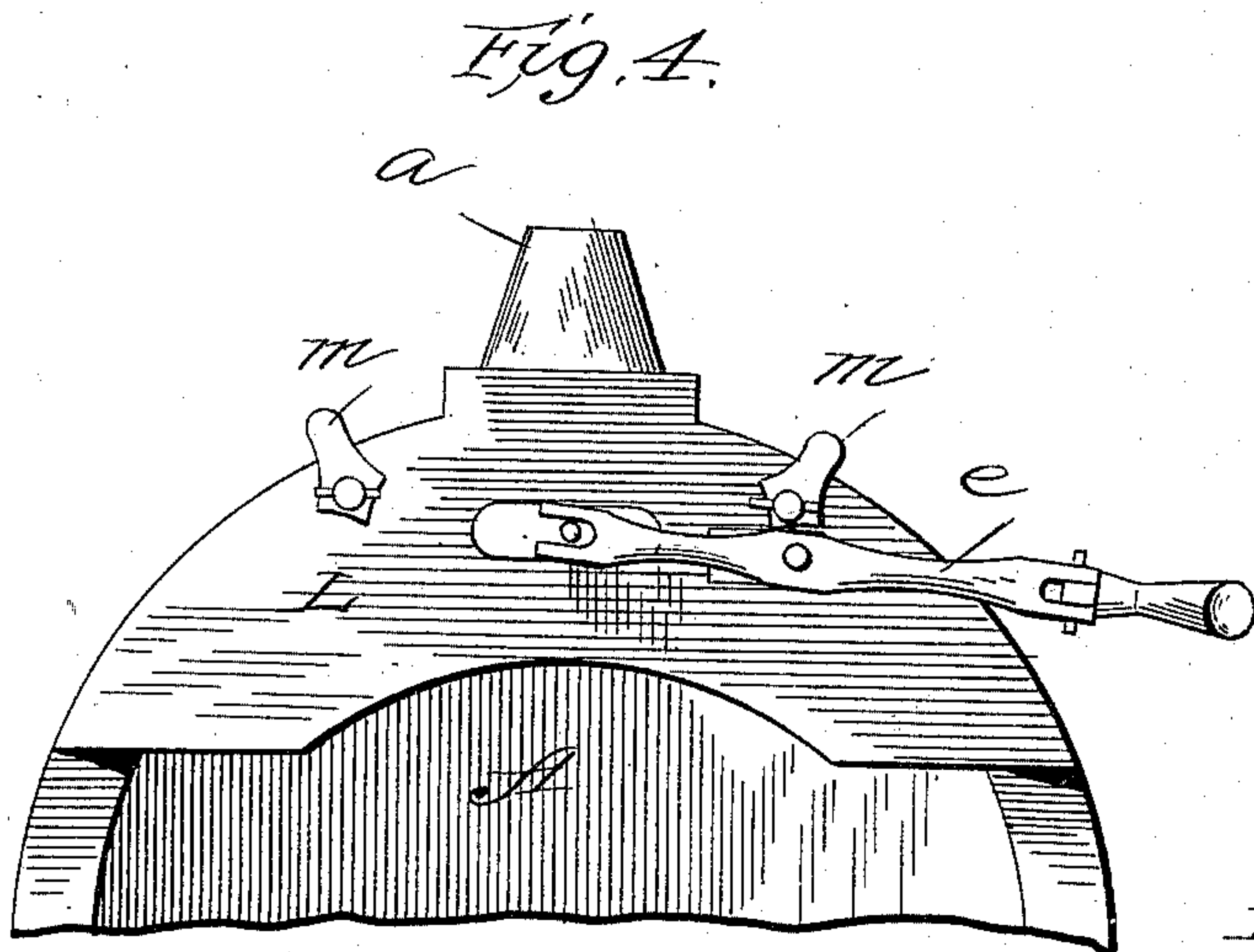
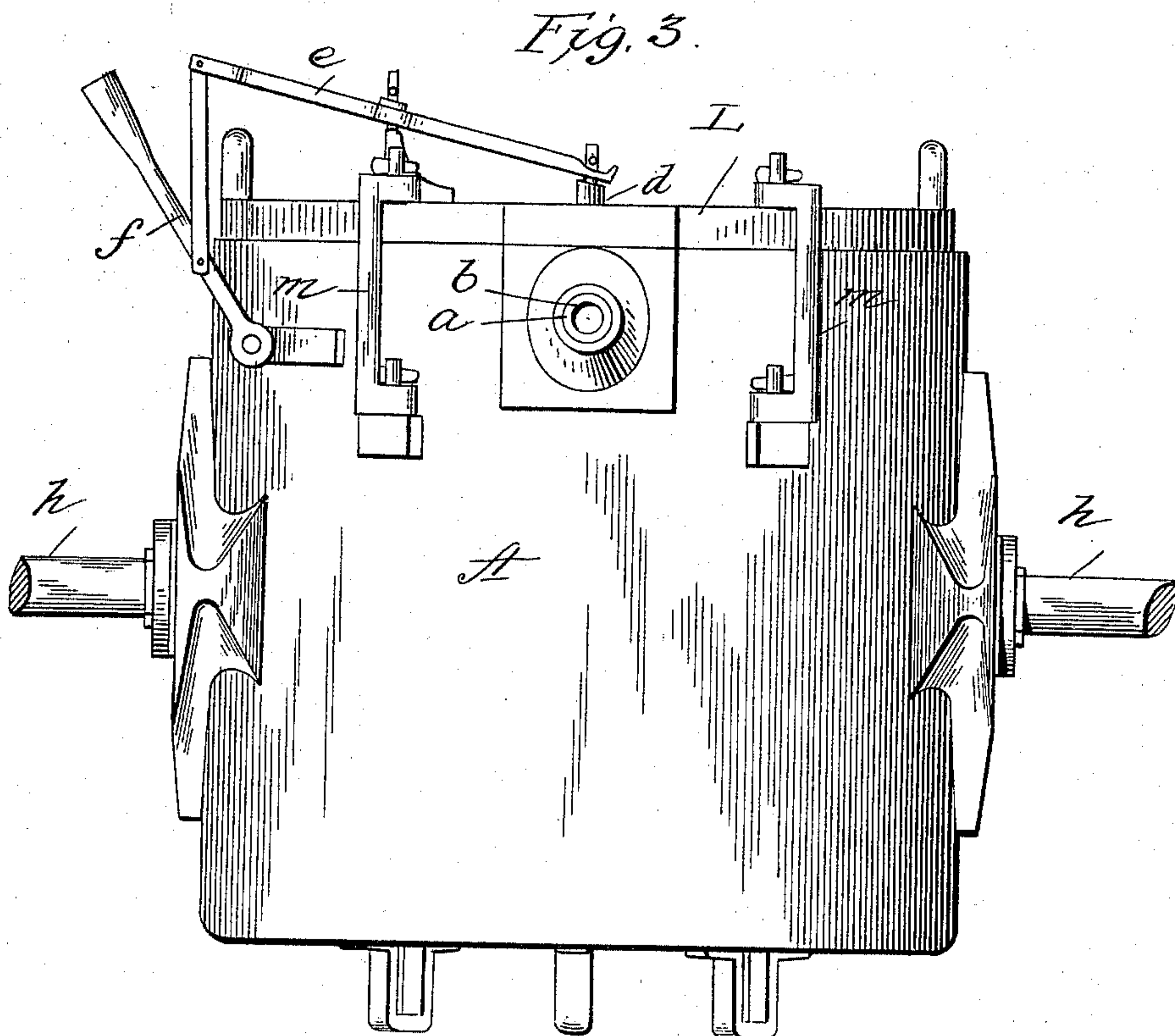
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

NICHLAS J. ALTMAYER, OF NEW CASTLE, PENNSYLVANIA.

LADLE FOR POURING STEEL.

SPECIFICATION forming part of Letters Patent No. 540,292, dated June 4, 1895.

Application filed July 26, 1894. Serial No. 518,672. (No model.)

To all whom it may concern:

Be it known that I, NICHLAS J. ALTMAYER, a citizen of the United States of America, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Ladles for Pouring Steel, of which the following is a specification.

My invention relates to ladles used in connection with converters, in the manufacture of steel.

My said invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the ladle with its shield and carrier. Fig. 2 is a detail view showing the nozzle. Fig. 3 is a view of the ladle a quarter-turn from Fig. 1. Fig. 4 is a plan view of a part of the ladle, and Fig. 5 is a detail view of the shield and carriage a quarter-turn from that shown in Fig. 1.

In the drawings A represents a ladle which, except in the particulars hereinafter explained is the same as those heretofore used; but instead of a hole in the bottom, for the discharge of the metal, I have provided a nozzle, *a*, which is located on the front of the ladle, near the top. In the nozzle is a brick or other fire proof lining piece *b*, and behind this a chamber or recess *c*, behind which is a gate *d* forming the inner wall of the recess *c*. The gate *d* is moved by raising or lowering it, in guides, and the movement is imparted or controlled by means of any suitable levers as *e* and *f*.

The ladle is supported on trunnions *h* with any suitable means for turning, part of which means are indicated at *i*.

When the metal is poured by the tipping of the ladle, the gate is raised sufficiently to allow the metal to pass under it to the nozzle, but not above the scum which is thereby held back during the pouring.

The nozzle recess is made of a removable casting, and the nozzle is also made of brick and in a single piece removable from the recess. In the form shown I have provided a plate or casting *L*, adapted to fit upon the edge of the ladle, and to form a guard over the nozzle to prevent slopping over of the metal. This casting or cover supports the

fulcrum of the lever and forms also part of the guide for the gate. The cover is held to the ladle by clamps *m m*.

In connection with the tipping ladle, I have provided a movable shield *O* which is supported upon a carriage *P*. In order that the shield may be adjusted accurately under the nozzle and over the mouth of the mold, at the proper height, I have mounted it upon an arm *p* which has at its outer end a frame in which the shield sits. The inner end of the arm is fixed in a block *q*, having a sliding stem which fits in a vertical hole in the top of the post *r*. It is raised or lowered by a lever *s*, and held by a notched segment *t*. The post turns in a socket *u* adapted to slide on a dovetailed guide *u*² on the carriage, it being moved to and fro by the lever *v*. Thus the shield may be arranged without accurately moving the carriage and put in position to allow the metal to flow through it and be guided thereby to the mold. By this form of ladle, the work is facilitated, the life of the ladle is prolonged and the troublesome formations on the bottom of the ladle are prevented.

I claim—

1. In combination with a tipping-ladle, having a nozzle at its upper edge, and a suitable recess in rear of the nozzle, a gate and means for moving and controlling said gate, the said gate being arranged to slide vertically behind said recess, whereby the scum may be held back in the pouring by the lower end of the gate, substantially as described.

2. In combination with the carriage, a movable shield mounted upon an arm *p*, arranged to hold the shield, said arm being fixed in a block on a sliding stem fitting in the top of a post, and means for moving said block, vertically, the said post being arranged to turn in a sliding socket on the carriage and provided with a lever for moving it, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

NICHLAS J. ALTMAYER.

Witnesses:

HENRY E. COOPER,
M. F. ALTEMUS.