

(No Model.)

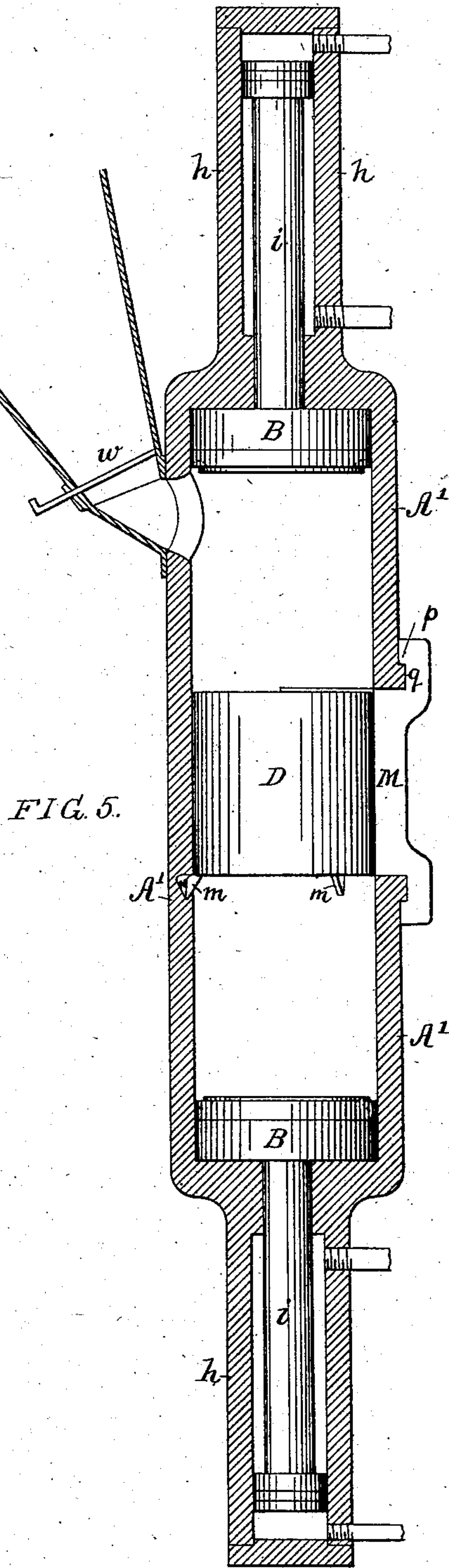
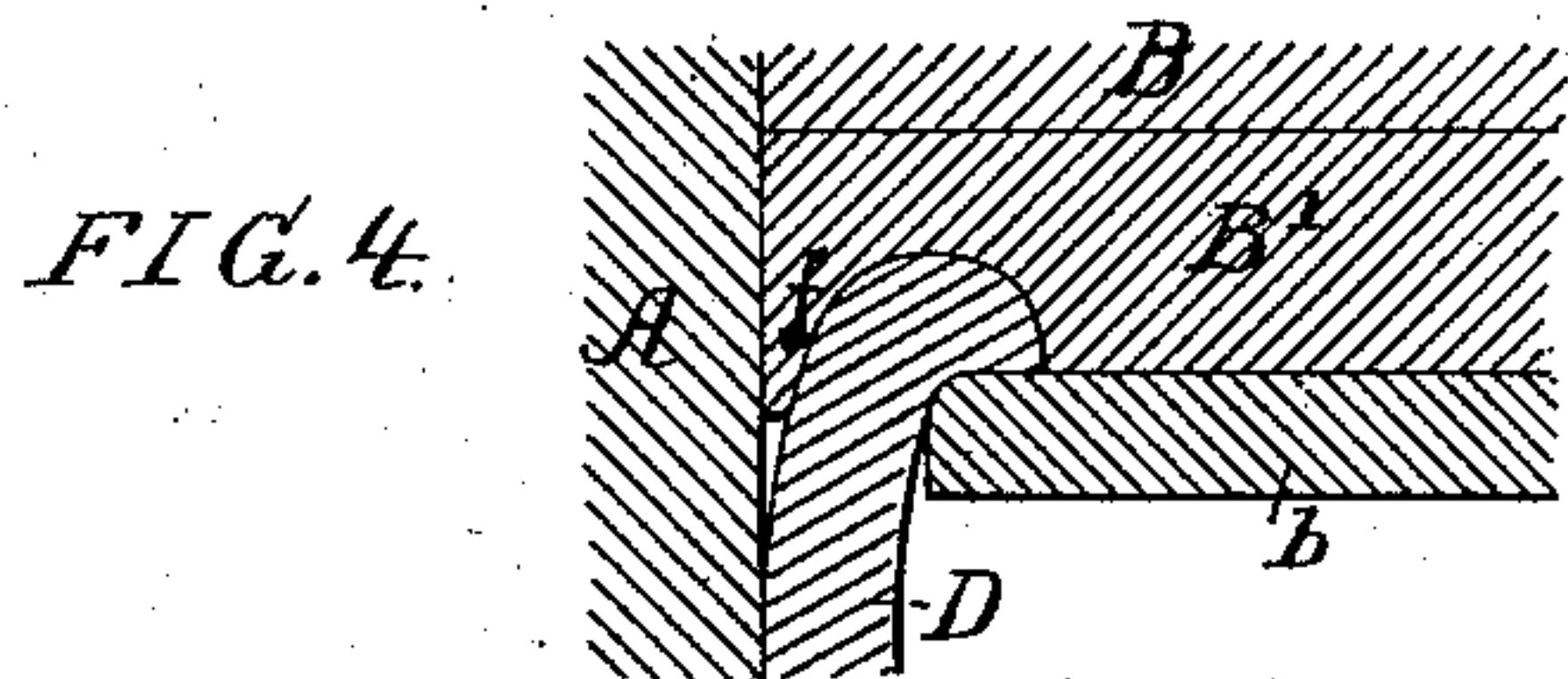
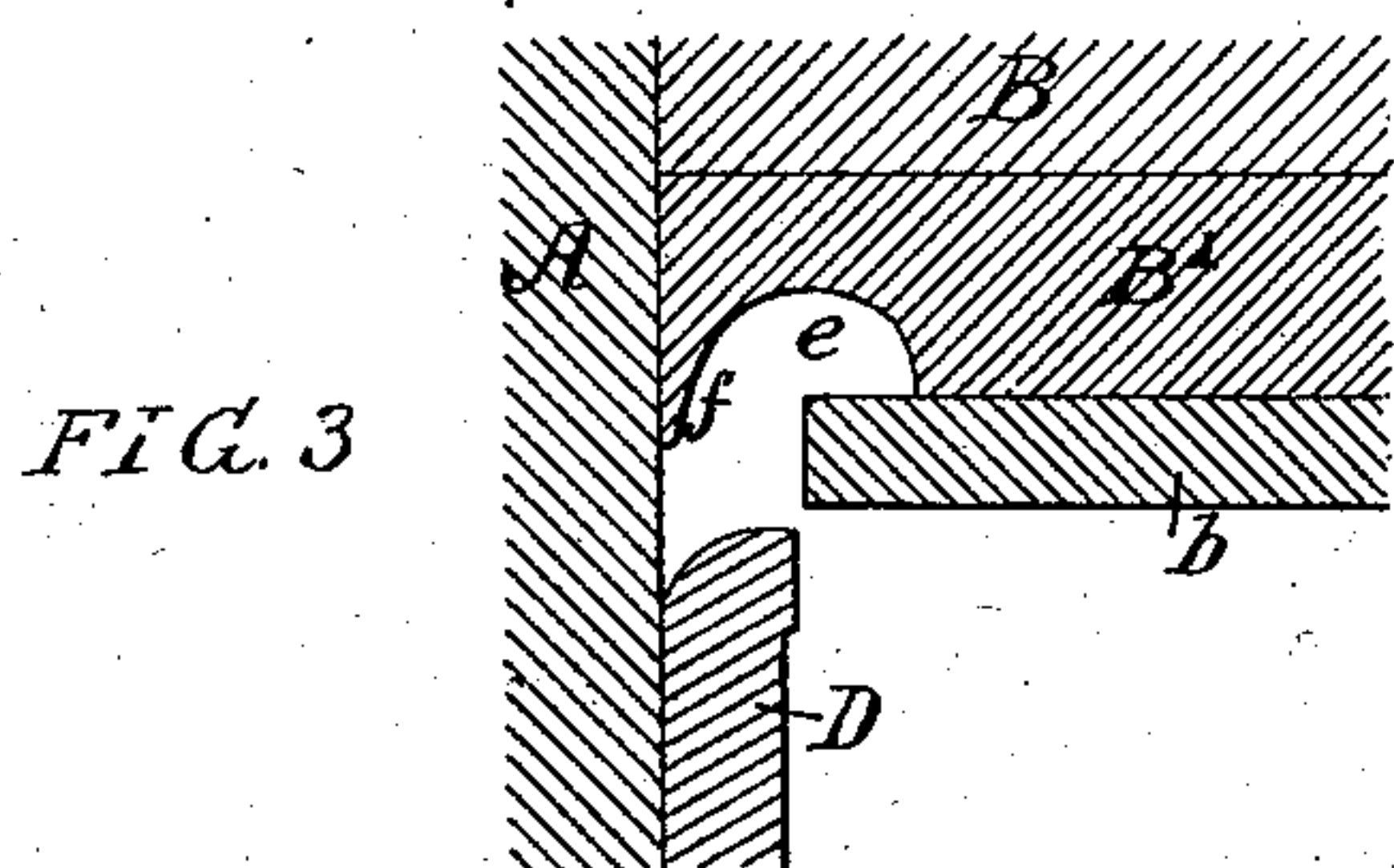
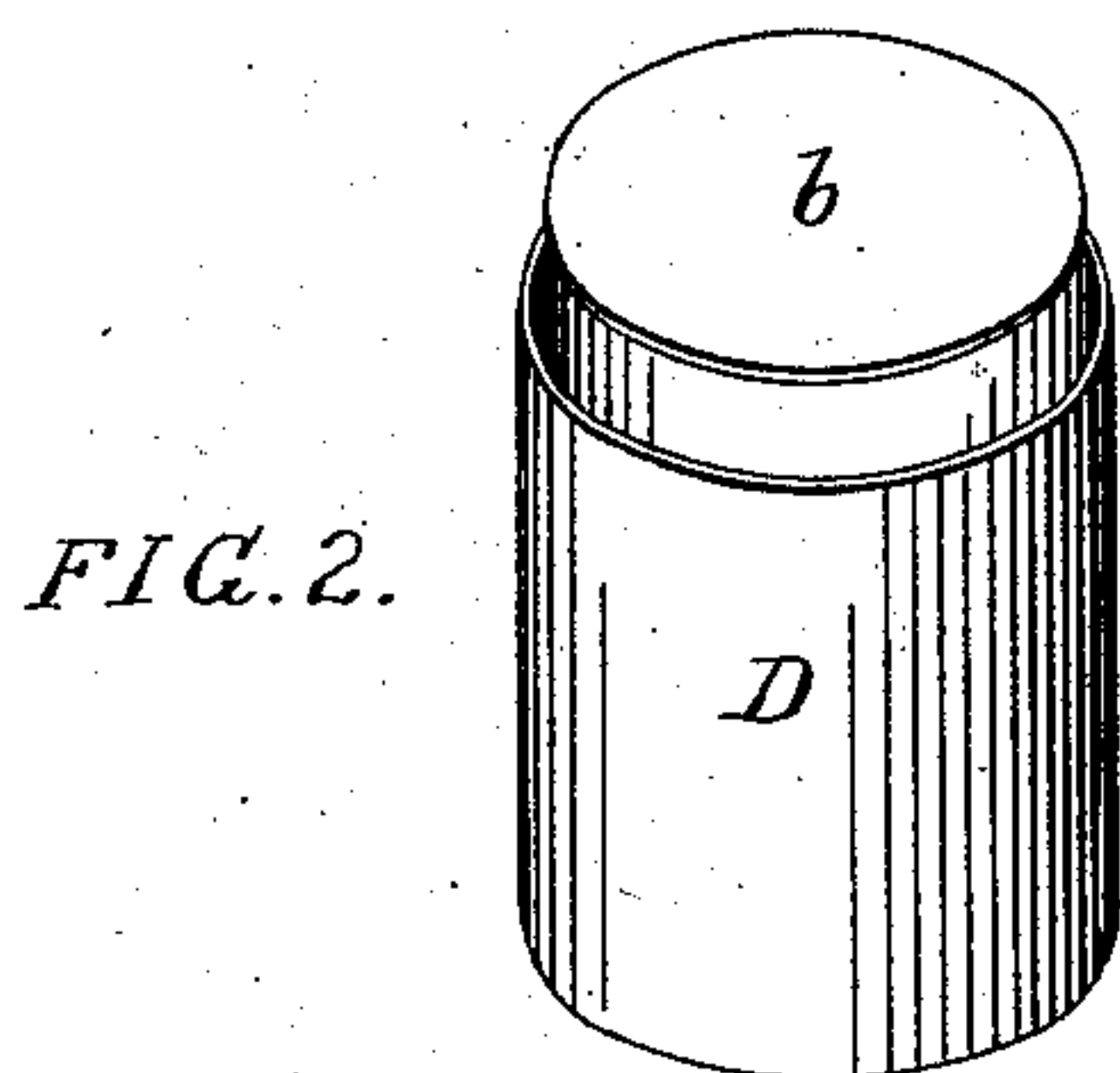
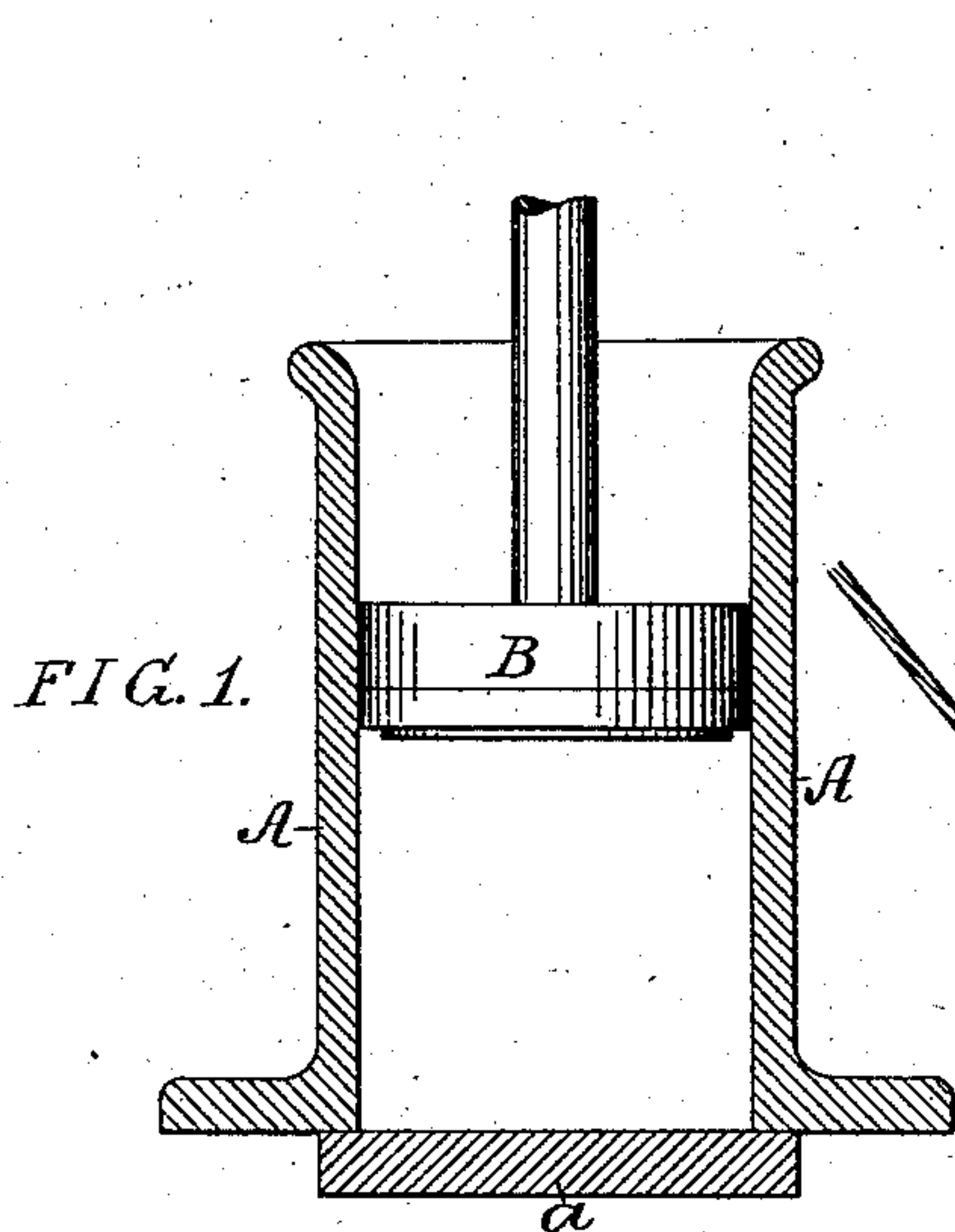
2 Sheets—Sheet 1.

J. ELDER.

DEVICE FOR PACKING BRAN, &c.

No. 290,013.

Patented Dec. 11, 1883.



WITNESSES:

John E. Parker
James F. Tobin

INVENTOR:

Joseph Elder
by his Attorneys
Howson & Sons

(No Model.)

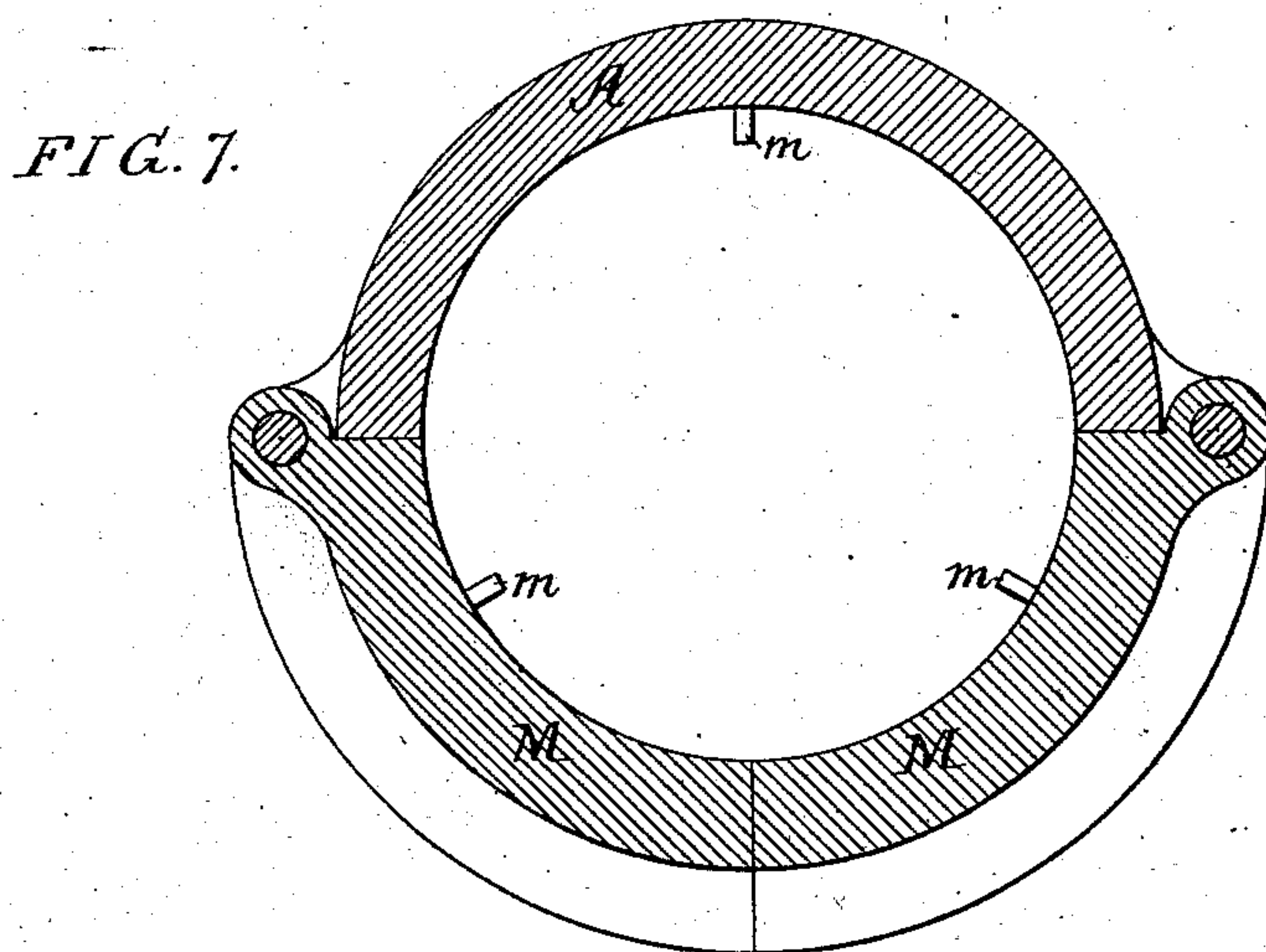
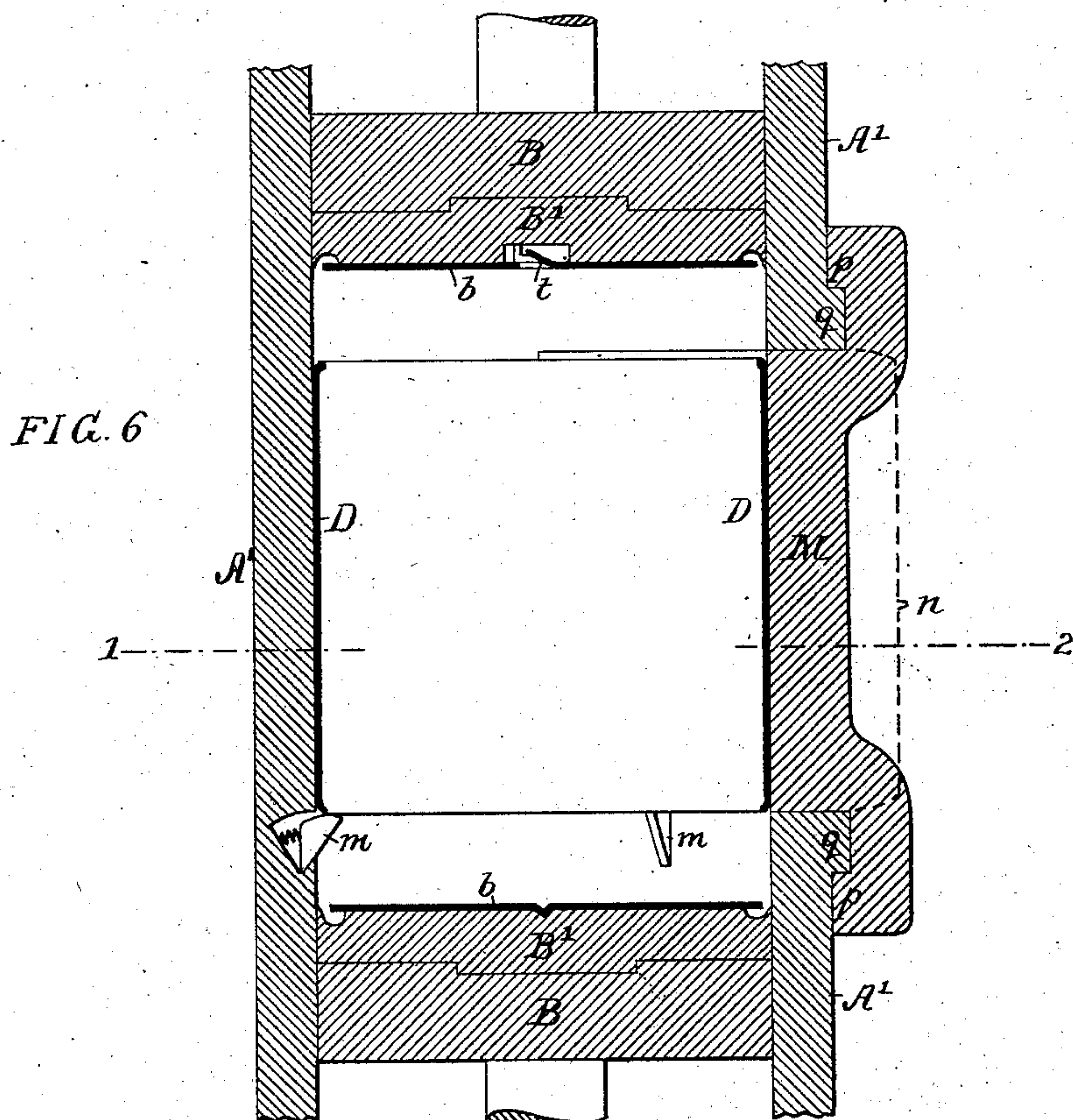
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WITNESSES:

John G. Barker
James J. Johns

INVENTOR:

Joseph Elder
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UNITED STATES PATENT OFFICE.

JOSEPH ELDER, OF PEORIA, ILLINOIS, ASSIGNOR OF ONE-HALF TO
BENJAMIN A. REID, OF SAME PLACE.

DEVICE FOR PACKING BRAN, &c.

SPECIFICATION forming part of Letters Patent No. 290,013, dated December 11, 1883.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ELDER, a citizen of the United States, and a resident of Peoria, Illinois, have invented an Improved
5 Mode of and Mechanism for Packing Bran, &c., of which the following is a specification.

My invention consists of a mode or process, fully described hereinafter, of packing bran for transportation, and also of certain mechanism
10 for carrying this process into effect, the process and mechanism being so fully explained hereinafter as to render a preliminary description unnecessary.

In the accompanying drawings, Figures 1
15 and 2, Sheet 1, are diagrams illustrating the main feature of my invention; Figs. 3 and 4, exaggerated sectional views, showing the manner of turning the edge of the can; Fig. 5, a vertical section of a machine which I prefer
20 to use in carrying out my invention; Fig. 6, Sheet 2, an enlarged view of Fig. 5; and Fig. 7, a sectional plan on the line 1 2, Fig. 6.

The main feature of my invention may be best explained in connection with Figs. 1, 2,
25 3, and 4, Sheet 1, in which A represents a cylinder containing a piston or plunger, B, which may be operated by hydraulic pressure, or by any mechanism such as is used in connection with ordinary presses, the cylinder having,
30 in the present instance, a bottom plate, *a*, which is removable or pivoted, so as to be turned to one side, and which may be locked in place by any suitable devices. A sheet-metal can D, closed at the bottom and open at
35 the top, is deposited in the cylinder and rests on the plate *a*. A disk, *b*, of sheet metal, to form the top or cover of the can, is attached to the under side of the piston, preferably in the manner described hereinafter. After the cylinder,
40 as well as the can D, has been filled with bran or other material of like consistency, the piston or plunger and the disk *b*, attached thereto, are depressed, thereby tightly packing the bran into the can, and thrusting the disk a
45 short distance into the same, the pressure of the piston being continued, so as to force the upper edges of the can inward and bend them over the edges of the sheet-metal disk, which is thus firmly secured, after which the plate
50 *a* is unlocked, so as to permit the packed can

to fall or be forced through the bottom of the cylinder.

The manner in which the disk is secured to the can is shown in the exaggerated sectional diagrams, Figs. 3 and 4.

In Fig. 3, D represents a portion of the upper edge of the sheet-metal can, this edge being slightly bent inward, as shown. A die, B', is secured to the under side of the piston or plunger B, and the under side of this die has
55 near its edge an annular recess, *e*, bounded by the annular inclined rib *f*. This recess and the rib by which it is bounded may be formed on the piston itself; but I prefer to use a die attached to the piston in any convenient manner. The disk *b* is carried by the
60 die, being temporarily attached thereto. As the piston descends and compresses the material into the can the disk is thrust into said can, and the rib *f* of the die then bends the edge of
70 the can inward, thereby effectually preventing the escape of the disk when pressure is removed from the contents of the can.

I prefer to embody the main feature of my invention in the machine shown in Figs. 5, 6,
75 and 7, which I will proceed to describe.

A long casing, A', Fig. 5, preferably of cylindrical form, has at each end a hydraulic cylinder, *h*, for a plunger, *i*, attached to or forming part of the piston B, which is arranged to slide in the long cylinder. Suitable
80 pipes carry water under pressure from any suitable pumping mechanism to the two hydraulic cylinders, so that both pistons may be moved toward or from each other. At or
85 near the middle of the long cylinder a portion of the same is cut away, leaving an opening into which the can-blank to be filled may be introduced, the opening being furnished with suitable doors, referred to hereinafter.

A disk having been placed on the die of the upper piston, and a similar disk on the top of the die of the lower piston, both pistons are retracted, and a can-blank, which is simply a hollow cylinder of sheet-iron open at both ends, is
95 introduced into the opening in the large cylinder A', so as to rest on small yielding dogs *m*. The opening in the cylinder A' having been closed, the bran is introduced into a hopper, and is permitted to flow therefrom into
100

the large cylinder until the latter and the can-blank are filled, after which the gate *w* of the hopper is closed and the pistons are moved toward each other until the entire mass of bran is compressed within the can and the two heads secured to the same by the dies of the two pistons in the manner described above.

Figs. 6 and 7 are enlarged views of the middle portion of the cylinder, *n* being the opening for the reception of the can-blank and for the withdrawal of the filled can; *M*, two doors hinged to the cylinder, the upper edge of each door having a rib, *p*, to overlap and fit snugly to the rib *q* on the cylinder, and the lower edge of each door having a similar rib to underlap a rib on the cylinder, so that when the doors are closed and secured by any appropriate locking devices they will enable the cylinder, which is necessarily weak at the opening, to resist the tensile strain to which it is necessarily subjected. Each dog *m* is partly contained within a pocket in the cylinder, is pivoted in the bottom of this pocket, and is connected to the back of the same by a spring, which tends to force the upper end of the dog outward, but prevents it from falling out of the pocket. There are preferably three of these dogs, which yield as the lower piston is completing its upward movement.

There are several ways of temporarily connecting the top disk to the under side of the upper piston; but I prefer to make a small lip, *t*, on the cover by forcing outward a portion of the same, and this lip may be hooked onto a projection in an orifice in the die or piston, the lip being withdrawn from its connection with the piston, when the latter is retracted, after the cover is secured.

I am aware that materials have been packed into a cylinder by pistons operating from opposite ends of the same; hence I disclaim this

feature. I also disclaim the heading of cans by pistons or disks operating in contrary directions while the body of the can is under confinement.

I claim as my invention—

1. The mode herein described of packing bran and other material into cans, the said mode consisting in forcing into a can-blank, while it is under confinement laterally, both the bran and cover or covers of the blank, and turning the edge or edges of the blank while pressure is being applied to the bran, substantially as set forth.

2. The combination, in a machine for packing bran and other material into cans, of a cylinder or casing, *A*, with a piston or plunger adapted thereto, and having at or near its edge an annular recess, *e*, bounded by an annular rib, *f*, substantially as set forth.

3. The combination of a cylinder having a communication with a hopper, and a lateral opening having a door or doors, *M*, with two pistons, one on one side and the other on the opposite side of the said opening, and with mechanism for moving the said pistons simultaneously toward each other, and for retracting the said pistons, substantially as specified.

4. The combination of the cylinder and its lateral opening and the ribs *q* on the upper and lower edges of the said opening with a door or doors having ribs *p*, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH ELDER.

Witnesses:

JOHN E. PARKER,
HARRY SMITH.