

(No Model.)

W. A. PALMER.
APPARATUS FOR MOLDING PIPES.

No. 396,506.

Patented Jan. 22, 1889.

Fig. 1.

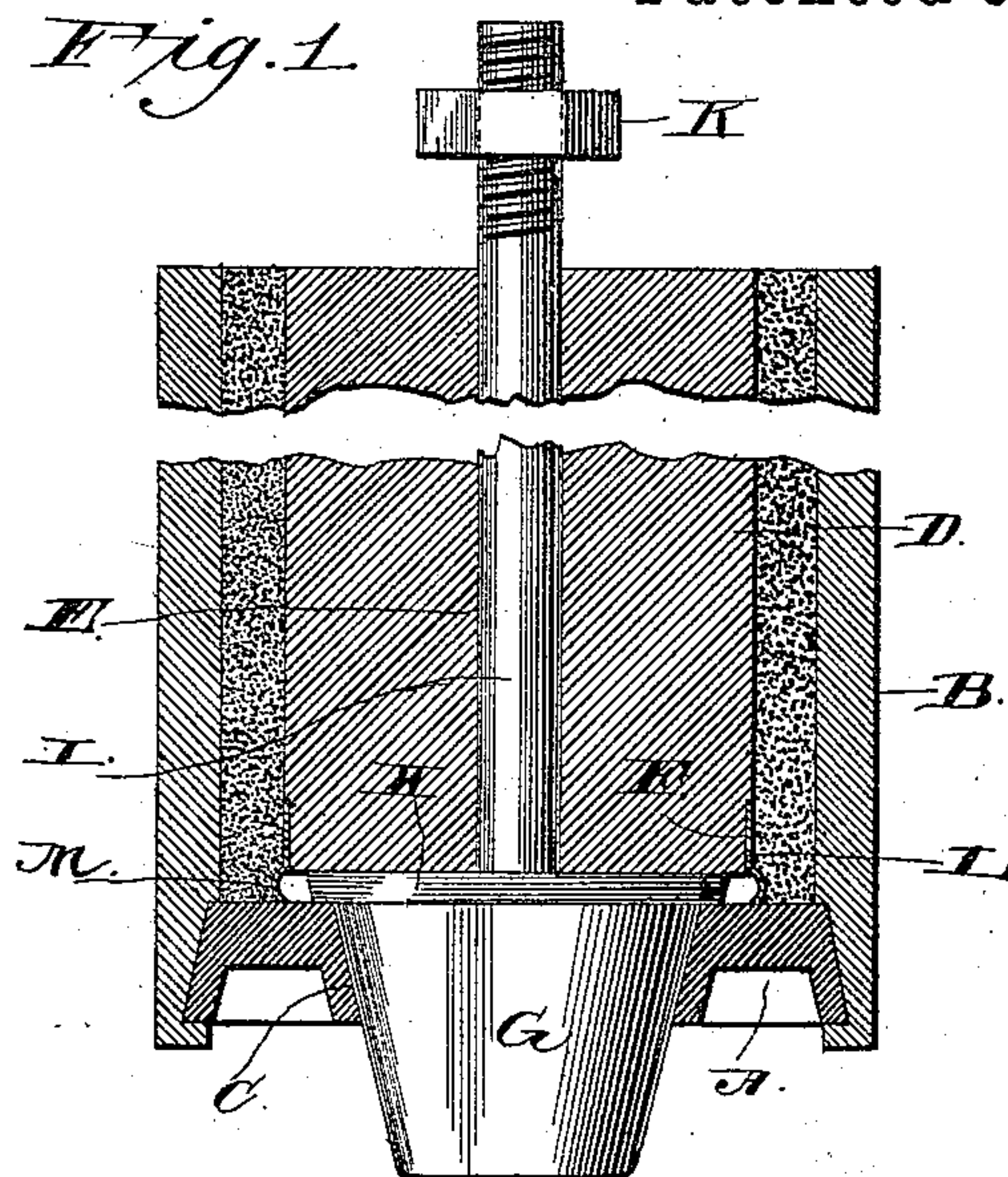


Fig. 2.

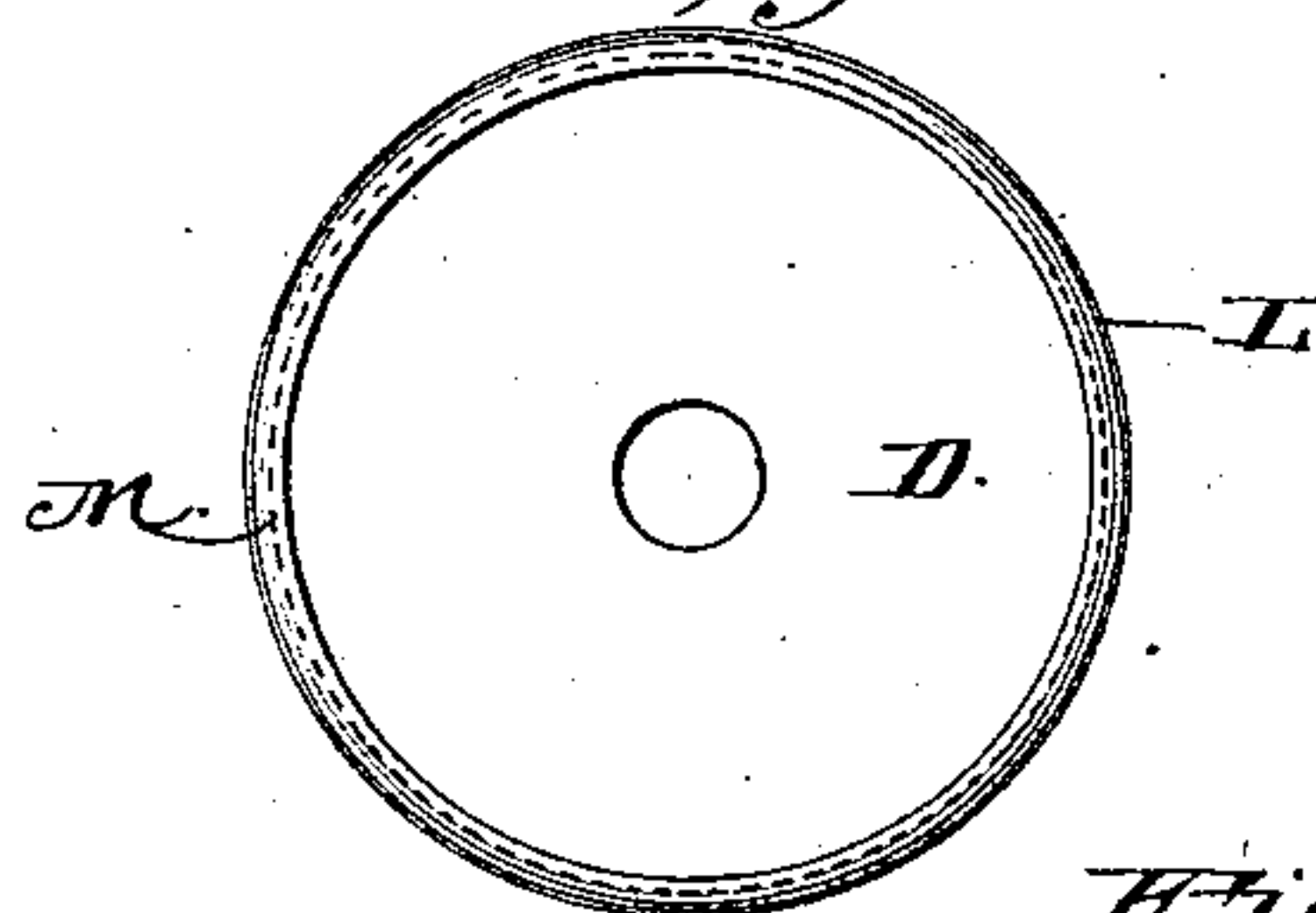


Fig. 3.

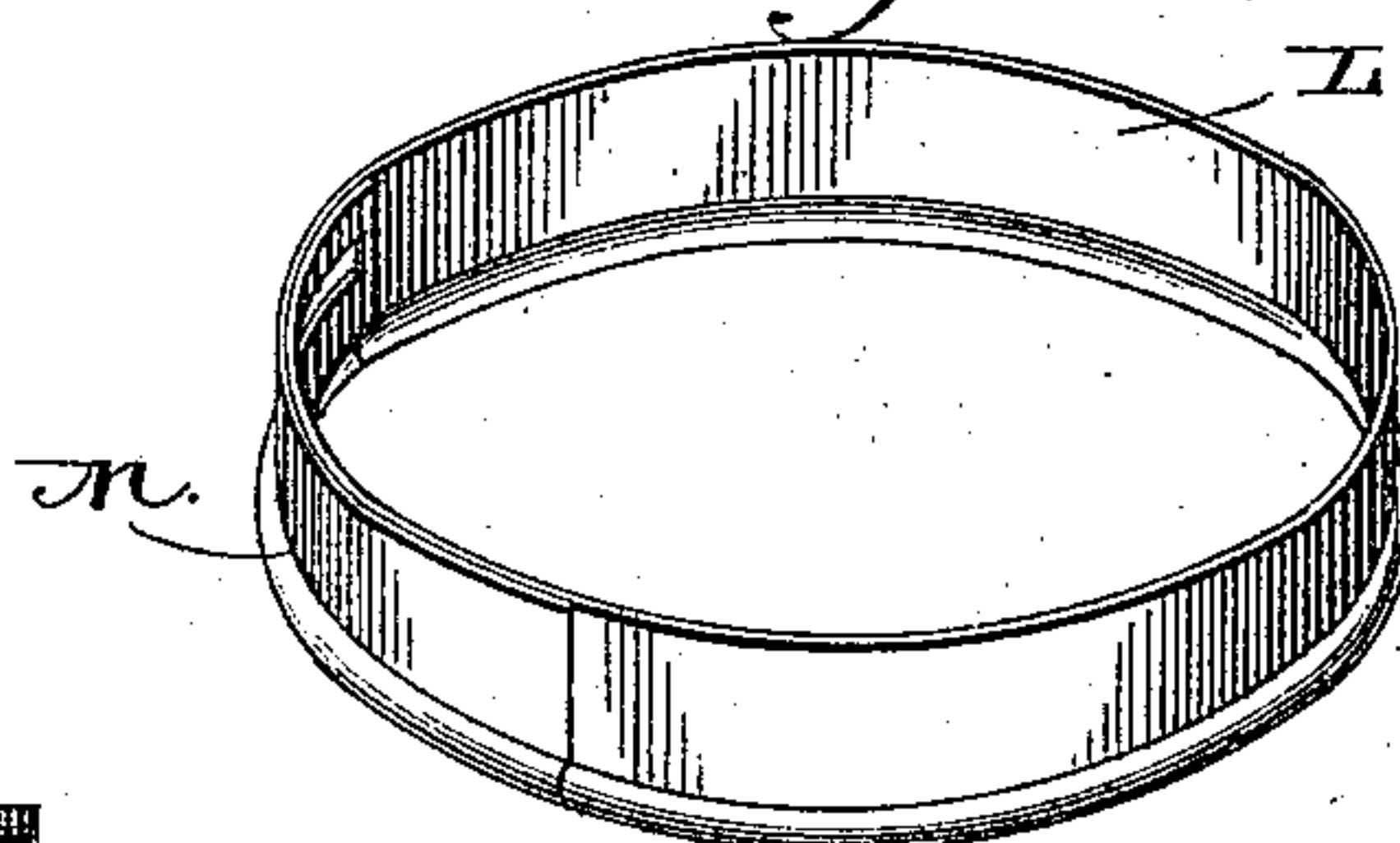
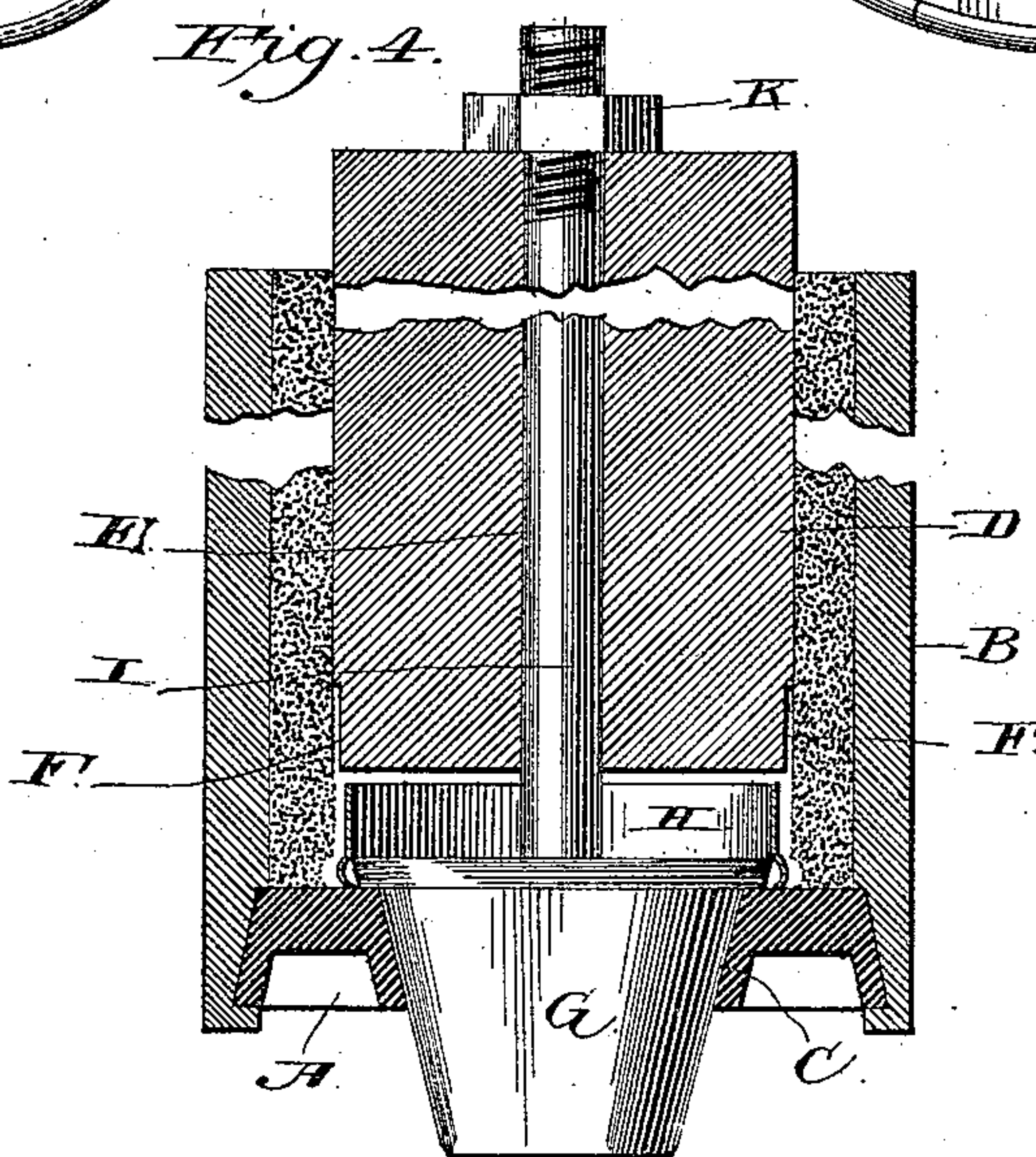


Fig. 4.



Witnesses.

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WILLIAM ASBARRY PALMER, OF SOUTH PITTSBURG, TENNESSEE.

APPARATUS FOR MOLDING PIPES.

SPECIFICATION forming part of Letters Patent No. 396,506, dated January 22, 1889.

Application filed August 25, 1888. Serial No. 283,726. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ASBARRY PALMER, a citizen of the United States, residing at South Pittsburg, in the county of Marion and State of Tennessee, have invented a new and useful Improvement in Apparatus for Casting Pipes, of which the following is a specification.

My invention relates to an improvement in apparatus for casting pipes; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a pipe-casting apparatus embodying my improvements. Fig. 2 is a detail bottom plan view of the pattern. Fig. 3 is a detail perspective view of the bead-ring. Fig. 4 is a vertical sectional view of the improved apparatus, showing the pattern partly raised in the act of withdrawing it from the flask and the bead-rings slipped from the lower end of the pattern and engaged with the flange of the centering cone or plug.

Cast-iron pipes used for conducting water underground are commonly provided with enlarged mouths or bells at one end, and have the opposite end provided with the raised annular bead to enable the joint between the pipes when the same are coupled together to be calked before pouring in the melted lead, which is employed to perfect the joint. The casting of this bead on the smaller end of the pipe has been hitherto accomplished only with considerable difficulty, involving a great loss of time, and correspondingly increasing the cost of manufacturing pipe.

The object of my invention is to provide an apparatus whereby the pattern is adapted to form its bead in the mold in the flask, and whereby the pattern is adapted to be drawn from the flask after the mold is formed without loss of time and without requiring subsequent manipulation of the mold to form the bead therein.

A represents a circular chill-plate, which is adapted to form the bottom of the flask B, and is provided with a central downwardly-tapered opening, C.

D represents the pattern which is adapted

to be inserted in the flask when tamping the earth or sand in the latter to form the mold. The said pattern is provided with a vertical central opening, E, and the lower end of the pattern is provided with an annular rabbet, F.

G represents a centering-plug, which is conical in shape, is adapted to fit snugly in the central opening of the chill-plate, and is provided at its upper side with an annular projecting flange, H.

I represents a rod, which extends upward from the center of the plug or cone entirely through the central opening or bore of the pattern, and has its upper end, which projects beyond the upper end of the pattern, provided with a screw-thread to engage a nut, K.

L represents an open ring, which is made of thin sheet-steel, is resilient, and has its ends overlapped. The normal diameter of the said ring is much less than the diameter of the pattern; but said ring is adapted to be distended or enlarged so as to enable it to slip over the rabbet F at the lower end of the pattern. The depth of the said rabbet and the thickness of the ring are such that when the latter is engaged with the rabbet its outer side is flush with the surface of the pattern, as shown in Fig. 1. The said ring L is provided at its lower side with a bead or annular flange, M, which projects outwardly therefrom, and forms part of the pattern, so that when the latter is arranged in the flask and the earth or sand is tamped therein the said bead M forms its impression in the mold.

The diameter of the upper side of the centering plug or cone is less than the diameter of the bottom or smaller end of the pattern, and the said plug or centering-cone bears snugly against the bottom of the pattern when the mold is being formed. The width of the ring L is greater than the width of the rabbet F of the pattern, and consequently the lower edge of the ring, in which the concavo-convex bead is formed, projects downward from the bottom of the pattern and is arranged in the same horizontal plane with the flange H of centering cone or plug G, the said flange H being concentric with the ring L, as shown.

The nut K is screwed onto the upper end of the rod I for only a slight distance, so as to

leave a space of an inch or more between the nut and the upper end of the pattern, and thereby adapt the pattern to be raised a corresponding distance in the flask before the centering-plug begins to move.

The operation of my invention is as follows: When the mold has been completed by tamping in the earth or sand between the pattern and the flask, the pattern is raised by the usual means and withdrawn from the flask. As the pattern starts to move upward, the projecting bead of the ring L, being of greater diameter than the lower end of the pattern, is retained by the pressure of the superincumbent earth or sand in the mold, and consequently the pattern is caused to slip upward from the ring, so as to leave the latter in the bottom of the mold, as will be readily understood. As soon as the pattern has been raised a sufficient distance to clear it of the ring the latter contracts by its own resilience and the bead thereof closes around and engages the flange at the upper end of the centering cone or plug, thereby securely fastening the said ring to the cone or plug below the pattern. As the pattern continues to rise its upper end engages the nut K, and thereby causes the rod, centering plug or cone, and the bead-ring to be drawn with it from the mold, thereby leaving the impress of the bead-ring at the bottom of the mold, as will be very readily understood, and the casting is then proceeded with in the usual way.

By means of this combination and arrangement of devices I am enabled to form the bead for the flange of the pipe in the lower end of the mold without expense and without loss of time and as easily as it would be possible to make a mold not provided with the bead.

Having thus described my invention, I claim—

1. The combination of the pattern having

the annular rabbet at its lower end, the plug or cone below the pattern, and the contracting ring fitted on the rabbet at the lower end of the pattern, provided with the projecting bead or flange, and adapted to engage the cone or plug when the pattern is pulled upward out of the ring, substantially as described.

2. The combination of the pattern having the reduced portion at its lower end and the contracting ring lying in the said reduced portion of the pattern and provided with the projecting flange or bead, substantially as described.

3. The combination of the pattern having the reduced lower portion, the rod movable longitudinally through the pattern, the centering cone or plug at the lower end of said rod, and the contracting ring lying in the reduced lower end of the pattern and provided with the projecting bead or flange, substantially as described.

4. The combination of the chill-plate having the opening C, the centering-plug fitting the said opening and having the flange at its upper edge, the rod extending upward from the said plug, the pattern having the longitudinal opening through which the rod extends, and provided at its lower end with the reduced portion, and the contracting ring lying in reduced portion of the pattern and provided with the projecting bead or flange, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM ASBARRY PALMER.

Witnesses:

LUCIEN KEITH,
S. G. LAWRENCE.