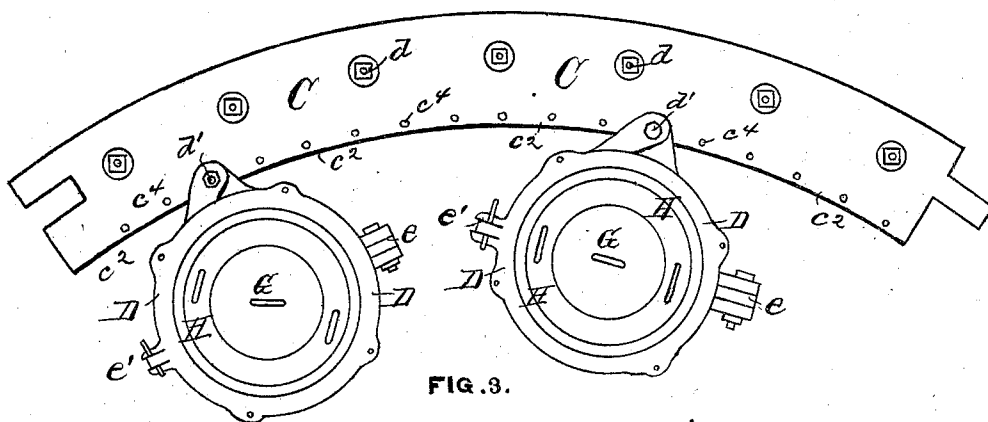
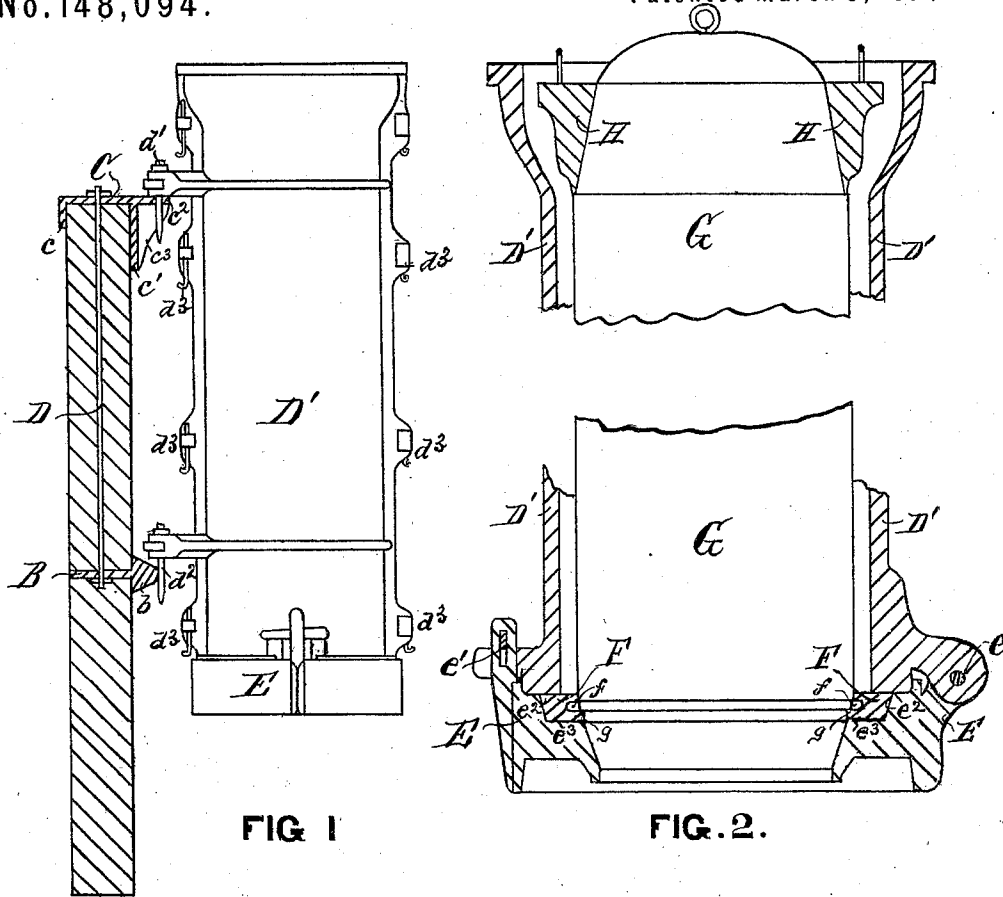


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Molding Pipes.

No.148,094.

Patented March 3, 1874.



Witnesses.
J. W. Kerthel.
Chas. Muir.

Inventor.
Frederick Shickle
per *Kerthel & Co*
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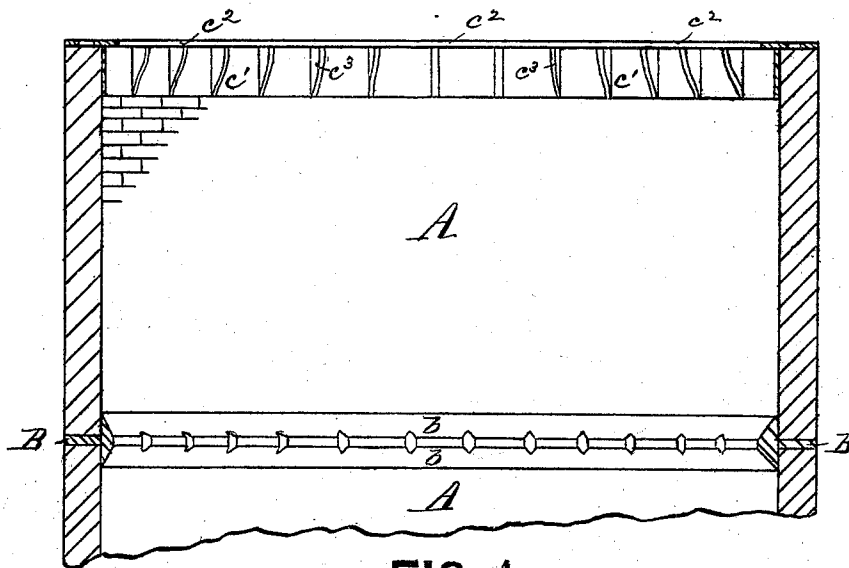


FIG. 4.

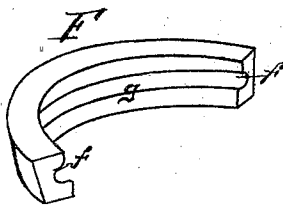


FIG 5

Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK SHICKLE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF,
THOMAS HOWARD, AND JOHN W. HARRISON, OF SAME PLACE.

IMPROVEMENT IN MOLDING PIPES.

Specification forming part of Letters Patent No. **148,094**, dated March 3, 1874; application filed May 19, 1873.

To all whom it may concern:

Be it known that I, FREDERICK SHICKLE, of St. Louis, St. Louis county, State of Missouri, have invented certain Improvements for Molding Pipe, of which the following is a specification:

This invention relates to certain instrumentalities, as will be hereinafter described, for molding and casting pipe, and removing the pipe and mold or bead pattern from the flask and from each other.

Of the drawing, Figure 1, Sheet 1, is a sectional end of pit-wall and side elevation of suspended flask. Fig. 2 is a sectional elevation of flask, especially showing improved formation of the bottom in which the "bead" is formed. Fig. 3 is a part top plan of wall, also plan of flask. Fig. 4 of Sheet 2 is a front elevation of pit-wall, and Fig. 5 is a perspective of one section of "chills."

A represents the wall surrounding the pit in which the molding or formation of the pipes, columns, and similar cylindrical bodies is accomplished.

In order to retain the flask near bottom (of pit-wall) in plumb position, I provide the wall A with a lower plate cast with a V-shaped projecting bearing, having a series of notches at its face. Hence, as shown in Figs. 1 and 4, the lower plate consists of the peculiar construction, viz., a flat plate, B, which is to be inserted or built in the wall. Forming part of the plate B is cast the V-shaped projecting bearing *b*, the object thereof being that, in hoisting, lowering, and otherwise manipulating the flask, the same is prevented from catching against, and is made to glance off from contact with, said bearing, the object of the grooves or notches, Fig. 4, being simply to form a ready bearing to retain the lower part of the flask in plumb position with the top thereof, as required, and to allow the flask to be readily disengaged and swung out of its position.

In order to support the flask at top of the pit-wall in vertical position, I "bonnet" the pit-wall by a top ring or plate formed as follows: C is the top plate, cast with a rear and front vertical faces *c* *c*¹, fitted to cap the wall,

as shown in Figs. 1, 3, and 4. Further, the top plate C projects or flanges partly from the inner line of the wall, to form the bearing-edge *c*², from which the flask is suspended. Also, forming part of the top plate C are brackets *c*³, Figs. 1 and 4, which add not only strength to the bearing-edge *c*², but said "bracketing" especially guides and branches off the movements of the flask until it is properly positioned and suspended. Further, *c*⁴, Fig. 3, are a series of holes provided in the bearing-edge *c*² to receive the pin of the flask. Said holes are positioned plumb with the notches *b* of the lower plate. The top plate C, thus formed, I connect by means of anchor-rods D (which pass through the wall) to the lower plate B, the rods being secured to both plates by bolts *d*. (See Figs. 1 and 3.)

My improved pit-wall is thus made most durable and strong to sustain the great weight, and, being braced and bonneted by top and lower plates, affords a most practical means from which to hang as well as obtain a plumb support for the flask.

D' is the flask. The hinge-joint of the ribs of the flask is united by extension-bolts *d*¹ *d*², in order to support on the wall the flask, and to allow the equal halves thereof to swing in open and closed position. When closed, the clamps *d*³ secure the joints.

My improvement in the construction of flasks, however, consists in the part that relates to and forms the bead at the end of the pipe. As ordinarily done, to form the bead, a ring forms part of ramming-stand, or a loose ring is used and placed on the stand. The pattern is next dropped, or inserted, or placed in the flask. After the ramming, and when the flask is raised, the ring is removed, and the separate bottom, with chill, is clamped to the flask, to form the other half of bead. By this manner, one-half the bead is formed in the sand; the other half made by the chill, which is formed in the bottom plate. Hence, a ramming-stand, separate ring, and separated bottom are used, all incurring the possibility of crushing or clogging up when lowering the pattern or core in flask; also, the difficulties of insuring a proper fit of parts, dangers of

breaking off the sand by pulling out the ring, besides requiring extra labor, time, and expense.

To avoid all this my improvements consist as follows: E represents the bottom, which is hinged to flask at *e*, so as to form part of same, and be readily swung open and closed; also, to permit the operator to control interior parts. The closing-joint of bottom with flask is made and secured by a proper clamp, *e*¹. The bottom E I form with a beveled circular recess, *e*², to create a seat, *e*³, (see Fig. 2,) this feature being to adapt and properly seat my improved chill-rings. F are the chill-rings, formed in two or more sections, of the shape shown in Fig. 5, and fitted to correspond and be seated in the seat *e*³, the object of the sectional feature of chill-rings being that, when acted upon by the pattern, said chill-rings shall spread, seat, and form the proper fitting joint with relation to bottom seat and pattern, as well as to facilitate the removal of said chill-rings, as required. Each section of chill-ring F is further provided with a part groove, *f*, so that when all are placed together said sections complete the required chill-ring to form the bead. (See Figs. 2 and 5.) When the chill-rings are seated in the bottom E, and the same is clamped in closed position to the flask, the pattern G is next inserted, preparatory to ramming of the sand in the mold, and to obtain a true impression of the outer surface of pattern. The bottom of the pattern G is made to conform and make a perfect fit with relation to the chill-rings and bottom. Hence said pattern is slightly tapering inward, which allows its proper bearing-edge *g* to be seated on the seat or lower edge of the chill-ring. (See Figs. 2 and 5.) The pattern finally finds its full bear-

ing and support by means of its bevel edges fitting and corresponding to the bevel of the bottom proper.

As apparent, the pattern G, sectional chills F, and bottom E are so related to each other that a most accurate fit is at all times made, not being liable to clogging or interference by the action of the sand, and the bead-space proper is entirely protected from the action of the parts in the flask.

Again, it will be noticed that the sand is protected and supported above the top edge of chill-rings, which greatly facilitates a proper withdrawal of the pattern without liability to fracture the true impression of the pattern, and otherwise leaves a perfect mold for the reception of the core. H is the usual pattern to form the bell end of pipe.

I claim—

1. A lower plate, consisting of plate B, V-shaped bearing *b*, having grooves or notches, as and for the purpose set forth.

2. A top plate, C, having vertical faces *c* *c*¹, bearing-edge *c*², brackets *c*³, and holes *c*⁴, as and for the purpose set forth.

3. The pit-wall A, provided with a lower plate, B, top plate C, connecting-rods D, constructed as and for the purpose set forth.

4. Movable chillings F, in two or more sections, and containing the entire recess for forming the whole bead, in combination with the annular conical seat in the bottom plate E, substantially as and for the purpose described.

In testimony of said invention I have hereunto set my hand.

FREDERICK SHICKLE.

In presence of—

JOHN U. HARRISON,
THOMAS HOWARD.