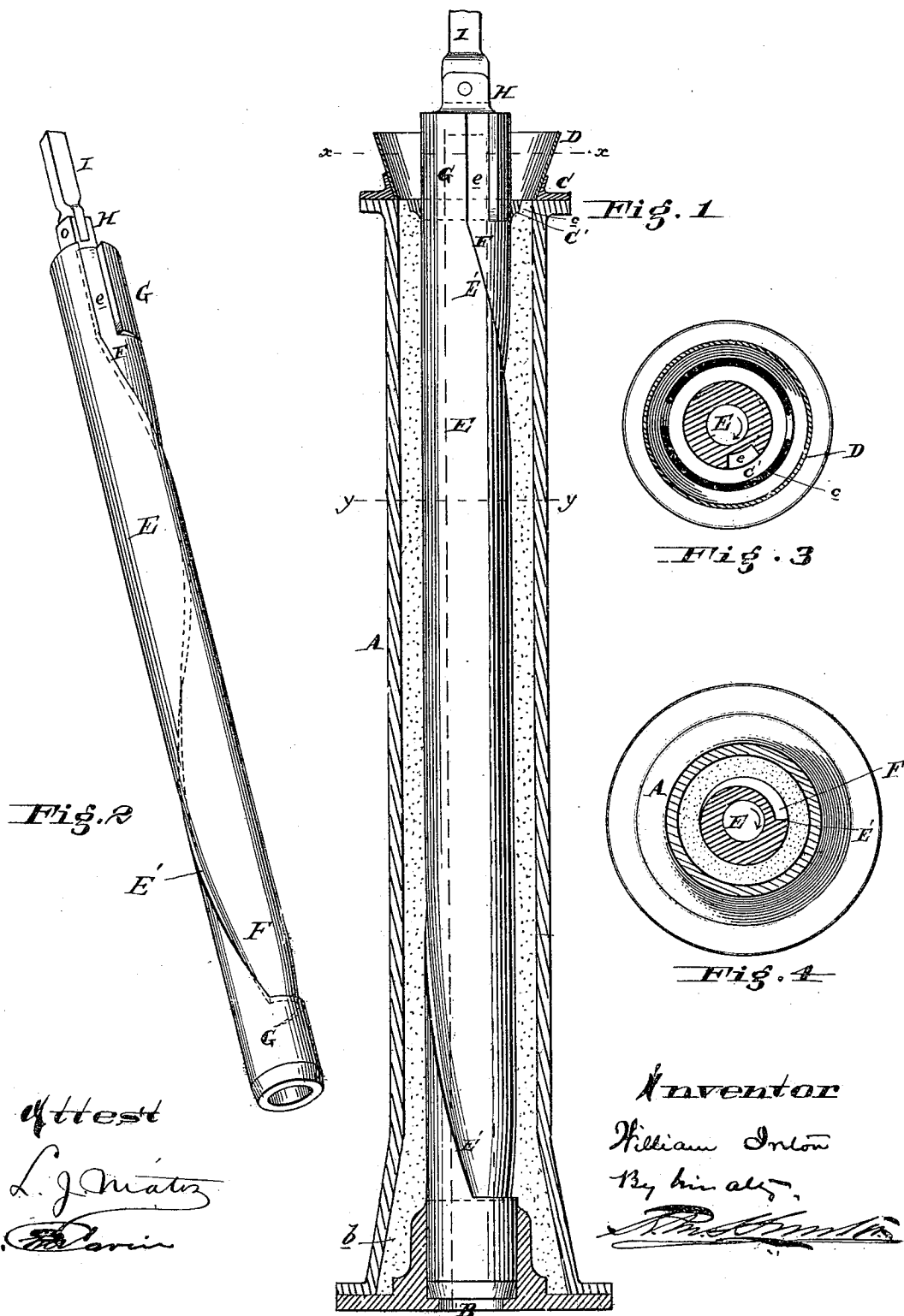


(No Model.)

W. IRETON.
MANUFACTURE OF PIPE.

No. 273,738.

Patented Mar. 13, 1883.



UNITED STATES PATENT OFFICE.

WILLIAM IRETON, OF CAMDEN, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
FRANK WECKERLY AND SAMUEL E. WHITELOCK, BOTH OF SAME PLACE.

MANUFACTURE OF PIPE.

SPECIFICATION forming part of Letters Patent No. 273,738, dated March 13, 1883.

Application filed December 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM IRETON, of the city and county of Camden, and State of New Jersey, have invented an Improvement in the Manufacture of Pipe, &c., of which the following is a specification.

My invention has reference to molding apparatus for the manufacture of pipe, &c.; and it consists of a cam-shaped former supported within the flask and adapted to be rotated, causing the sand to be compressed into the requisite form for the reception of the core, and in many details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The object of my invention is to provide suitable apparatus to correctly and speedily form the outer mold in the flask and place it in condition for the reception of the core, the same being adapted to the manufacture of cast-metal pipe.

In the drawings, Figure 1 is a sectional elevation of my improved molding apparatus. Fig. 2 is a perspective view of the former. Fig. 3 is a cross-section on line *x x*, and Fig. 4 is a cross-section on line *y y*.

A is the flask, and may be made tubular or in any other convenient form. The base B is secured to the bottom of the flask A, and is made to act as the bottom bearing for the former used in molding the sand in the flask, and also forms the mold for one end of the tube or pipe.

C is the top flange, and supports the hopper D.

C' is a bearing arranged in the top of the flask A in any suitable manner, and supports the upper end of the former when in the act of molding up the sand in the flask and the core when placed in position. *e* are annular openings to admit the sand to the flask.

E is the cylindrical former, and is made of metal provided with lugs H on top, to which is secured the square rod I, by which it may be turned by hand-power or suitable machinery. The cylindrical body of the former is provided with bearings G G at top and bottom, working in supports B and C', before set forth, and the surface between said bearings is pro-

vided with a cam-groove, F, starting from an upright edge, E', and gradually decreasing until even with the surface of the cylinder, and the said edge E' is preferably made spiral, as shown.

e is a grooved channel through the upper bearing G, and opens into the deepest part of the groove F, as shown, and is used to admit sand during the compression operation. If desired, the groove F may be made parallel with the axis of the former.

The operation of the apparatus is as follows: The former E being removed, the annular space *b*, between the casting B and flask A, is filled with sand and rammed down solid. Then the former E is placed in position, the flange B' supporting it, and the flask is then filled with sand, and, if desired, may be rammed down from above; but this is not necessary, as the compression operation may be performed wholly by the former E. After filling the flask the former is rotated, as indicated by the arrow, which action forces out the sand by means of the cam-surface of the groove, and as it is being rotated sand may be thrown into the hopper and allowed to pass down through the groove and be packed in the flask. By increasing the number of revolutions and quantity of sand admitted I may compress the sand in the flask to any degree desired. After a few revolutions the former is withdrawn while it is rotating, thus giving a smooth clean internal surface in the mold, first by the main body and then by the lower bearing G. The spiral arrangement of the groove F insures a more perfect and smooth packing of the sand. After the former has been removed the core is inserted, and the mold is ready to receive the liquid iron.

I do not limit myself to the particular construction shown, as it may be modified in various ways without departing from my invention, as my invention comprehends, broadly, a compressing-former for flasks arranged to rotate within said flask, and being supported in bearings in said flask.

I am aware of the patents to Adams, No. 257,991, of 1882, and Smith, No. 83,668, of 1868, and claim nothing therein set forth or claimed.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus for molding pipe, &c., a stationary flask, in combination with a rotating former supported against lateral pressure in said flask, and adapted during its revolutions to compress the sand within said flask into the requisite shape, substantially as and for the purpose specified.
2. In molding apparatus, a stationary flask, in combination with a cylindrical former supported in said flask, arranged to rotate within said flask, and having its surface made cam shape, substantially as and for the purpose specified.
3. In molding apparatus, a stationary flask, in combination with a former arranged to rotate within said flask, supported at the bottom by a bearing secured to said flask, and having a longitudinal cam-groove arranged upon its surface, substantially as and for the purpose specified.
4. In molding apparatus, a stationary flask, in combination with a former supported in bearings in said flask, arranged to rotate within said flask, and having a spirally-arranged cam-groove about its surface, substantially as and for the purpose specified.

5. In molding apparatus, a flask having supports for a former, both at top and bottom, in combination with a rotating former provided with corresponding bearings, and having its surface made cam-shaped, substantially as and for the purpose specified.

6. In molding apparatus, a flask having supports for the former both at top and bottom, in combination with a rotating former provided with corresponding bearings, having its surface made cam-shaped, and being provided in its upper bearing with a feed groove or slot to admit sand to the interior of the flask during the operation of packing, substantially as and for the purpose specified.

7. The herein-described process for forming molds for casting, which consists in gradually and continuously forcing the falling sand, freshly and gradually admitted into the flask, from the center outward simultaneously throughout its entire length, substantially as set forth.

In testimony of which invention I hereunto set my hand.

WILLIAM IRETON.

Witnesses:

R. M. HUNTER,
R. S. CHILD, Jr.