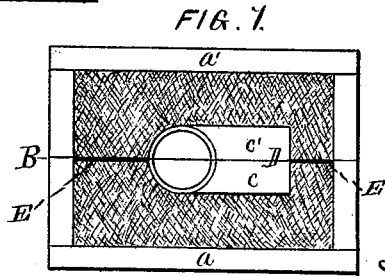
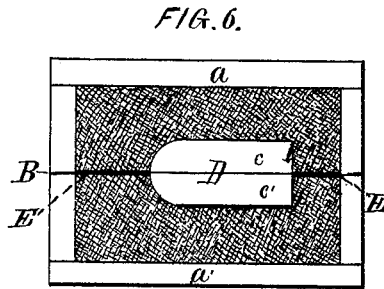
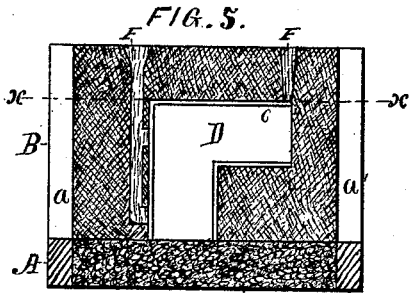
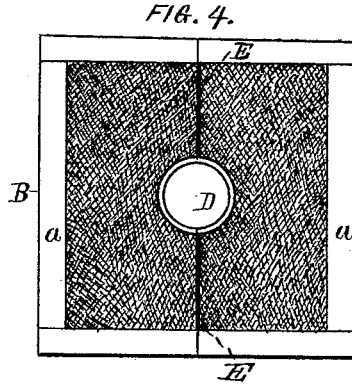
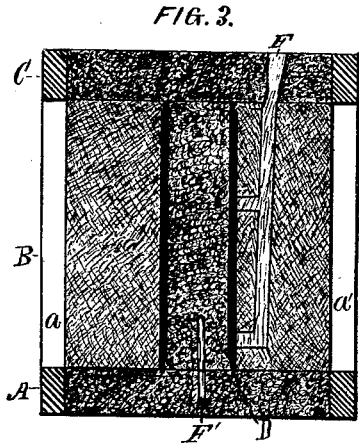
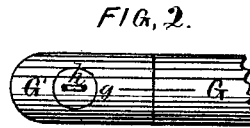
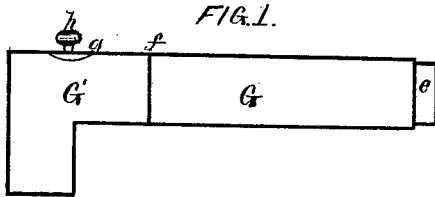


H. & F. TANK.  
 MOLDS AND CORES FOR CASTING.

No. 180,807.

Patented Aug. 8, 1876.



Witnesses:  
*C. W. Sherburne.*  
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# UNITED STATES PATENT OFFICE.

HENRY TANK AND FRIEDRICK TANK, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN MOLDS AND CORES FOR CASTING.

Specification forming part of Letters Patent No. **180,807**, dated August 8, 1876; application filed January 20, 1876.

*To all whom it may concern:*

Be it known that we, HENRY TANK and FRIEDRICK TANK, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Flask for Casting Metal Pipe; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which our invention appertains to use the same, reference being had to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 represents a section of cast-metal pipe, showing the elbow, and Fig. 2 represents a top view of the same. Fig. 3 represents a vertical central section of the flask, showing the position of the pattern during the process of forming the mold. Fig. 4 represents a top view of the cheeks with cope removed. Fig. 5 represents a vertical central section of the flask employed in casting elbows, showing the position of the pattern during the first part of the process of forming the mold. Fig. 6 represents a sectional plan of the same, taken on the line *x x*, drawn across Fig. 5; and Fig. 7 represents an inverted plan of the cheeks with drag removed, showing the position of the pattern during the last part of the process of forming the mold.

Like letters of reference indicate like parts.

Our invention relates to that class of flasks employed in casting metal pipe, such as stove-pipe, stove-pipe elbows, and other similar hollow ware.

The object of our invention is to provide a flask which will admit of the mold and core being formed at the same time, and of the same material, and so constructed as to allow the pattern to be drawn from the mold laterally without removing the core; and to that end our invention consists in the construction and arrangement of the several parts of the flask, as hereinafter more fully described.

In the drawing, A represents the drag, B the cheeks or middle of the flask, and C the cope, which are made in the usual form, the cheeks or middle being made of two parts, *a a'*, hinged or otherwise adjustably connected one to the other, so as to admit of being readily separated one from the other, and removed from the drag. D is the pattern, which is made

in two parts, *c c'*, doweled together in the usual manner, and is hollow its entire length, forming a shell equal in thickness to the desired thickness of the walls of the pipe to be cast. E E are sheet-metal parting-plates, adapted to closely fit between the pattern and inner side of the flask, as shown in Figs. 4, 6, and 7. F is the opening through which the fused metal is poured into the mold. F' is a vertical pintle, located within the sand, filling the drag, and extending upward into the cavity of the pattern for supporting the core. G is a section of the pipe, and G' the elbow.

To form the mold for straight pipe, ready to receive the fused metal, we first fill the drag with sand, which is tamped in the usual manner. The cheeks or middle part *a a'* of the flask are then placed upon the drag, and firmly secured together, when the pattern is placed in a vertical position centrally in the flask, and the parting-plates arranged between the pattern and inner surface of the flask in the same plane with the parting-line of the pattern, as shown in Fig. 4. The middle portion of the flask and the cavity in the pattern are then filled with sand, which is firmly tamped therein. The cope is then placed upon the cheeks and filled with sand, which is tamped in the usual manner. The cope is then removed from the cheeks, and the two parts of the cheeks disengaged one from the other, and removed from the drag, together with the parting-plates, leaving the pattern and the core standing in a vertical position. The pattern is then parted and removed from the core laterally, leaving the core attached to the sand in the drag. The opening F, communicating with the mold, is then formed in one of the parts, *a*, as shown in Fig. 3, and the several parts of the flask readjusted to their normal position, when the mold is complete.

To form the mold for casting elbows, we first fill the drag with sand, the same as when preparing the mold for straight pipe. The two parts *a a'* of the cheeks are then placed upon the drag and firmly secured together, and the pattern arranged centrally within the same, as shown in Fig. 5, with the parting-plates between the pattern and walls of the flask, in the same plane with the parting-line of the pattern. The cheeks are then filled with sand,

which is properly tamped, and extending above the pattern a sufficient distance to form the drag when the cheeks are inverted. The hole is then inverted and the drag removed, when the cavity of the elbow is filled with sand, which is firmly tamped. The drag is then replaced, and pintle F passed through the sand in the drag into the end of the core when the flask is turned back to its normal position, and the parts *a a'* of the cheeks disconnected and removed from the drag, together with the parting-plates, and the pattern is then separated and removed from the core. The opening F, communicating with the mold, being formed, the parts *a a'* are then replaced on the drag, and firmly secured together, when the mold is complete, ready to receive the fused metal.

By this method of forming the core at the time of, and of the material from which the mold is made, and by dividing the pattern in the center, so as to part it from the core laterally without disturbing the core, the core is left much more perfect than it would be if the pattern was drawn from it vertically, as in

the ordinary method of molding, thereby requiring much less labor to finish the mold ready for the fused metal; consequently we are enabled to make cast-metal pipe much cheaper than by any of the methods heretofore known, wherein the core is made separate from the mold.

We do not claim in this application the cast-metal pipe, as shown, as it is made the subject-matter of a separate application.

Having thus described the nature and object of our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a flask for casting metal pipe, the combination of the drag A and cope C with the cheeks B, made in two parts, *a a'*, and the parting-plates E E, adjusted to receive the pattern between them, substantially as specified.

HENRY TANK.  
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Witnesses:

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