(No Model.)

J. FLOCKHART.

MOLDER'S FLASK.

No. 501,414. Patented July 11, 1893.

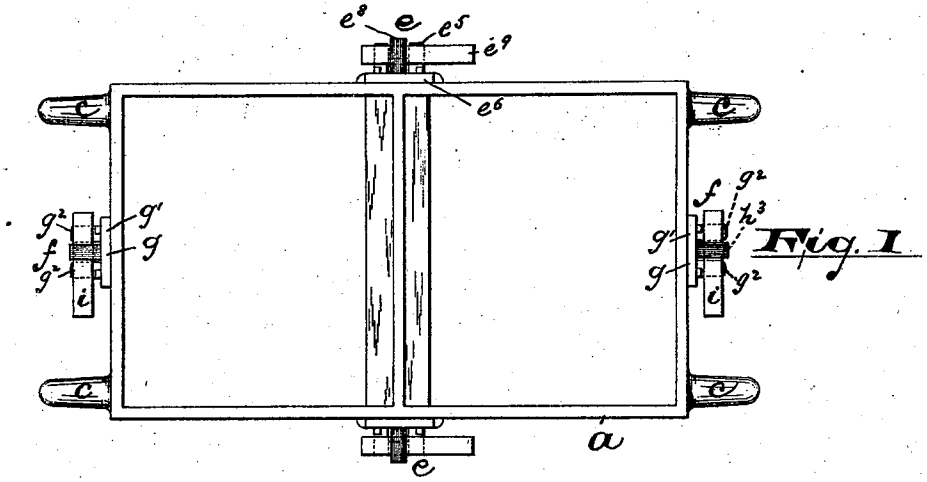

Fig. 1

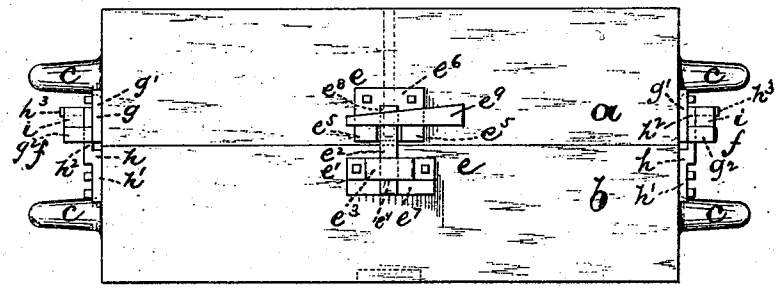

Fig. 2.

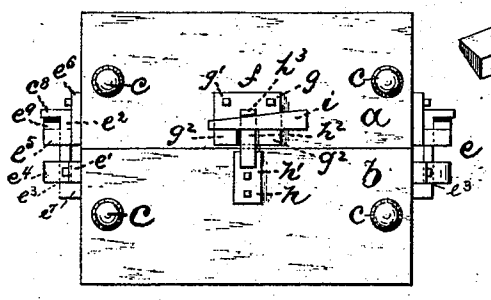

Fig. 3.

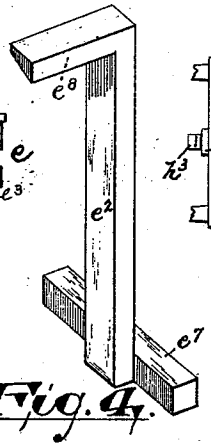

Fig. 4.

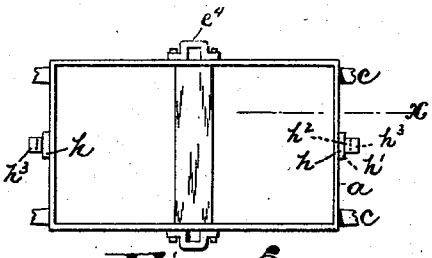

Fig. 5.

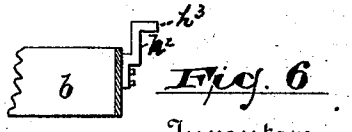

Fig. 6

Witnesses:

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Wm Sunderland

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By Drake & Co. Atty's.

UNITED STATES PATENT OFFICE.

JAMES FLOCKHART, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO EDWARD MAHER.

MOLDER'S FLASK.

SPECIFICATION forming part of Letters Patent No. 501,414, dated July 11, 1893.

Application filed March 3, 1891. Serial No. 383,602. (No model.)

To all whom it may concern:

Be it known that I, JAMES FLOCKHART, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Molding-Flasks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to facilitate the operation of casting metal ingots and to render the same more convenient and easy, more particularly in connection with the operation of manipulating the mold flasks, and it consists in the arrangements and combinations of parts substantially as will be hereinafter set forth and finally embodied in the clauses of the claim.

Referring to the accompanying drawings in which like letters indicate corresponding parts in each of the several figures, Figure 1 is a plan of the improved flask; Fig. 2 a side elevation of the same; Fig. 3 an end view thereof; Fig. 4 an enlarged detail view of a movable tongue adapted to be employed in holding the flask sections together; Fig. 5 a reduced plan of one of the said sections and Fig. 6 a section of Fig. 5 on line x.

In said drawings, a and b indicate the upper and lower parts or sections which contain the cope and drag of the mold in any ordinary manner.

c indicates the handles; e, e, and f, f, side and end clamps, respectively, which hold the sections together.

The invention relates more particularly to the novel construction of the said clamps. The end clamps, f, consist of sections g, h, bolted to the end boards of the flask, as shown more clearly in Fig. 3, (and thus removable therefrom and applicable to other end boards in the event of breakage,) and a wedge or key i adapted to engage portions of said bearings and to force the same and the flask sections connected therewith into proper relation to receive the molding sand. The end clamp section h, fastened to the lower flask section, is provided with a broad plate or bearing h' to properly engage the flask and receive the bolts, and a tongue h^2 which projects above the upper edge of the lower flask section as shown more clearly in Figs. 3 and 6 and is preferably shouldered or provided with an offset to extend out from the flask far enough to clear the section on the other flask. The upper end of said tongue is provided with a lip h^3 which projects outward from the vertical line of the tongue to provide, on the under side a bearing for the wedge or key. The said under bearing may be inclined to correspond and properly coincide with the inclined surface of the wedge, as indicated in Fig. 3.

The clamp section, g, secured at the end of the upper flask section comprises a plate g' similar to the plate h' and serving substantially the same purposes, and outwardly projecting lips g^2, g^2, arranged to lie at the opposite sides of the tongues h^2 and below the lips h^3 as shown in Fig. 3 and provided on their upper sides with bearings for the wedge i, which latter, when forced in between said lips h^3 and g^2 force the same apart and draw the ends of the flask sections together as will be understood. As both the lips h^3 and g^2 project outwardly from the flask sections, or the broad bearing plates g', h', the wedge is exposed more perfectly to view and can be removed with greater facility.

The side clamps e, e, are of similar construction, excepting that of the lower clamp section e', in which case, the upwardly extending tongue e^2 is made adjustable in relation to the carrying plate, e^3, of said section e'. The said carrying plate has a loop or eye, e^4, thereon slightly below the upper edge of the section in which the said tongue slides or moves vertically, so that it may drop from projecting above the margin of the flask section b so as to be out of the way of the workmen when preparing the mold or be raised so as to pass between the lips or lugs e^5, of the plate e^6.

The sliding tongue e^2, at its lower end is provided with bearings, e^7, to engage the under side of the eye, e^4, and at its upper end with a lip, e^8, to engage the wedge, e^9, which lip is preferably inclined on the under side to properly engage the inclined surface of the said wedge.

In operating the flasks, preparatory to clamping, the sections are placed together so that the tongues, h^2, which serve as centering dowels, pass between the end lugs g^2 and the sections a, b, are thus brought into proper coincidence and are fixed by means of the wedges i. The sliding tongues, e^2, are then raised so that the wedges, e^9, may be interposed between the lips e^5, e^8, and thus the sides of the flask section are clamped together.

Having thus described the invention, what I claim as new is—

1. In a clamp for molders' flasks, the combination, with the upper and the lower flask sections, of a plate secured to the upper section provided with two projections, a loop secured to the lower section slightly below the upper edge thereof, a longitudinally movable tongue under the loop, the lower end of which tongue is provided with a bearing for engaging with the loop and the upper end is provided with a projection and a wedge for engaging with the projections on the plate and on the tongue for drawing the parts together, the projection on the upper end of the tongue being adapted to rest upon the top of the loop when not in use whereby the upper end of the tongue is supported at a point so as not to project above the top of said lower section, substantially as set forth.

2. The combination with the flask section, a, provided with suitable lips, of a flask section, b, having clamps bolted at the ends and sides thereof, the end clamps having permanently projecting and lipped tongues serving as centering dowels and the side clamps having adjustable tongues adapted to be raised to project into holding relation to the lips of the section a and to be lowered to or below the edge of the section b and suitable wedges substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of February, 1891.

JAMES FLOCKHART.

Witnesses:
OSCAR A. MICHEL,
CHARLES H. PELL.