J. J. LEBEAU.

MOLDING FLASKS.

No. 180,721. Patented Aug. 8, 1876.

Fig. 1

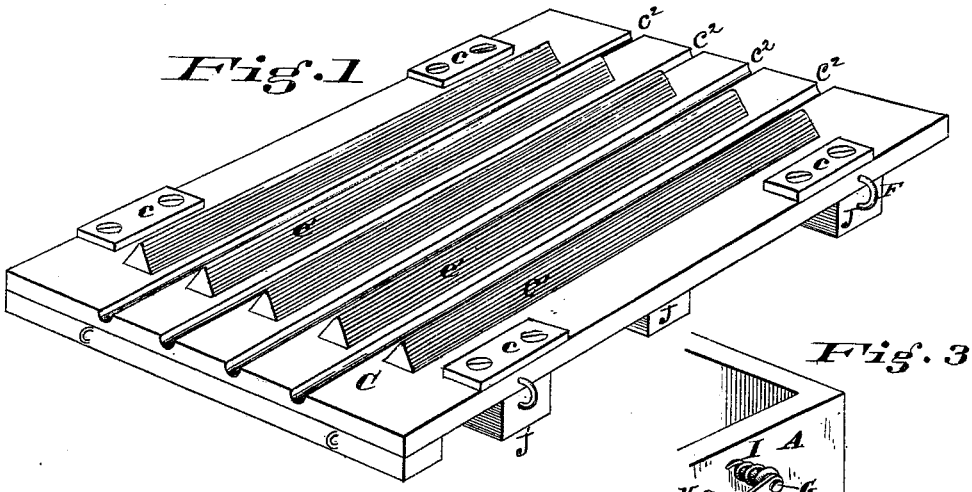


Fig. 3

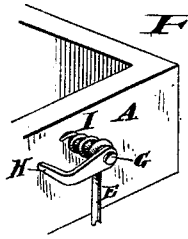
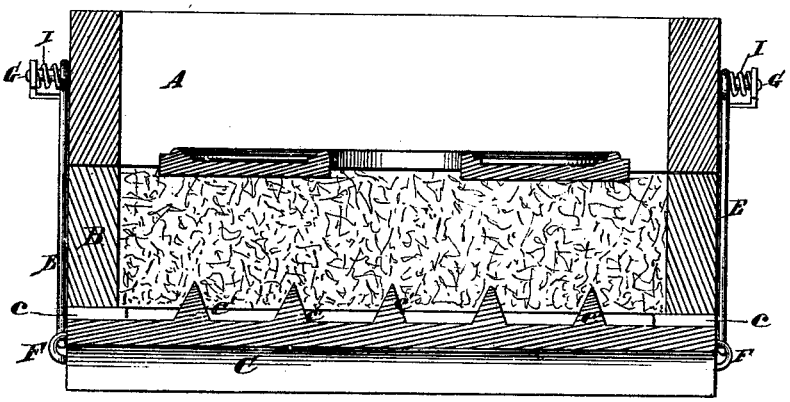


Fig. 2



Witnesses

Edgar J. Gross

John E. Jones

Inventor

John Jacob Lebeau

By F. Millward

Atty

UNITED STATES PATENT OFFICE.

JOHN J. LEBEAU, OF CINCINNATI, OHIO.

IMPROVEMENT IN MOLDING-FLASKS.

Specification forming part of Letters Patent No. **180,721**, dated August 8, 1876; application filed April 28, 1876.

To all whom it may concern:

Be it known that I, JOHN JACOB LEBEAU, of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Molding-Flasks, of which the following is a specification:

My invention consists, in the first part, in the provision upon the bottom board of the flask, of angularly or otherwise projecting strips, which, when the said bottom board is placed in position upon the "drag" of the flasks, embed themselves into the sand of the drag, supposing it to have been rammed beforehand, and form supporting-surfaces therefor when the position of the drag is reversed.

My invention consists, in the second part, in connection with said supporting-surfaces, of bearing-plates, which intervene between the drag and bottom board, and allow for ventilation and form a convenience in use.

My invention consists, in the third part, in a peculiar construction of the hooks of the flasks, by which they are made self-supporting in any position.

Figure 1 is a perspective view of the bottom board of the flask. Fig. 2 is a section through the entire flask. Fig. 3 is a perspective view of a portion of the flask, showing the construction of the connecting-hooks.

A is the "cope" of the flask; B, the "drag," and C the bottom board. To the bottom board, or possibly the drag, if so desired, I attach plates *c*, to intervene between said bottom board and the drag, and form a bearing instead of, as heretofore, the whole board. The objects of this construction are to obtain a ventilated bottom board, which shall provide for the escape of vapors and gases arising in the damp sand that are deleterious to perfect casting, and also to render the perfect attachment or connection of the said bottom board to the drag an easy matter should it be, as it sometimes naturally is, or by constant use becomes, uneven or rough. Now it is evident that with these elevating or rather separating plates there must needs be some projecting bearing for the sand in the drag, and I therefore form or secure upon the bottom board a series of projections, c^1, angular or otherwise, which project above or beyond the plane of the plates *c*, and will, consequently, in use, when the said plates are forming the bearing between the drag and bottom board, extend somewhat into the drag, and obviously into the sand, the drag having been previously rammed, where they will uphold the sand, leaving a space corresponding with plates *c* between drag and bottom board.

In operation, the drag is placed upon the follow-board (not shown) and rammed. The superfluous sand is then scraped or struck off even with the edge of the drag. The bottom board is then placed upon it and vibrated sufficiently to force the projections c^1 into the sand, and cause the plates *c* to assume their extending position between drag and bottom board. The drag and bottom board are then clamped together and their position reversed, leaving the bottom board under the drag. The cope is then applied and the whole secured by hooks E on the cope engaging in staples F on the bottom board. The hooks are hinged upon pins G, and upon these pins the ears H are also secured, with their ends sticking into the cope. Between these ears H and the flask are introduced springs I, which may sustain the hooks against the action of gravity at all times. The pins G may be screws, to thereby enable tension of the springs to be regulated. The advantages of the projecting bearing c^1 will appear when it is understood how difficult a thing it is to attain a perfect bearing between the bottom board and drag as now used, it requiring several applications of sand and consumption of time in frequent lifting of the board before a true bearing is attained.

To assist in the escape of vapors from the sand, I provide grooves c^2, running parallel to the projections c^1 cut in the bottom board, preferably its full length, but, if desired, only partially so. These grooves will serve as means of exit for vapors, even should the projections c^1 be dispensed with, in which case the plates *c* would also be discarded.

Formed to underlie the bottom board C at its ends, or at intervening points, are clamping-strips J, which may be used for ordinary clamping purposes, or for the attachment of the hook-ears F.

Having thus described my invention, I claim—

1. The bottom board C, having projections c^1, substantially as and for the purpose specified.

2. The bottom board C, having the grooves c^2, substantially as and for the purpose specified.

3. In a molding-flask, the combination of bottom board C c^1, bearing-plates c, and drag B, substantially as and for the purpose specified.

4. The combination of hooks E, screws G, ears H, and springs I, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JOHN JACOB LEBEAU.

Witnesses:
JOHN E. JONES,
J. L. WARTMANN.