

J. A. BLAKE.  
Molder's Flask.

No. 126,012.

Patented April 23, 1872.

Fig. 1.

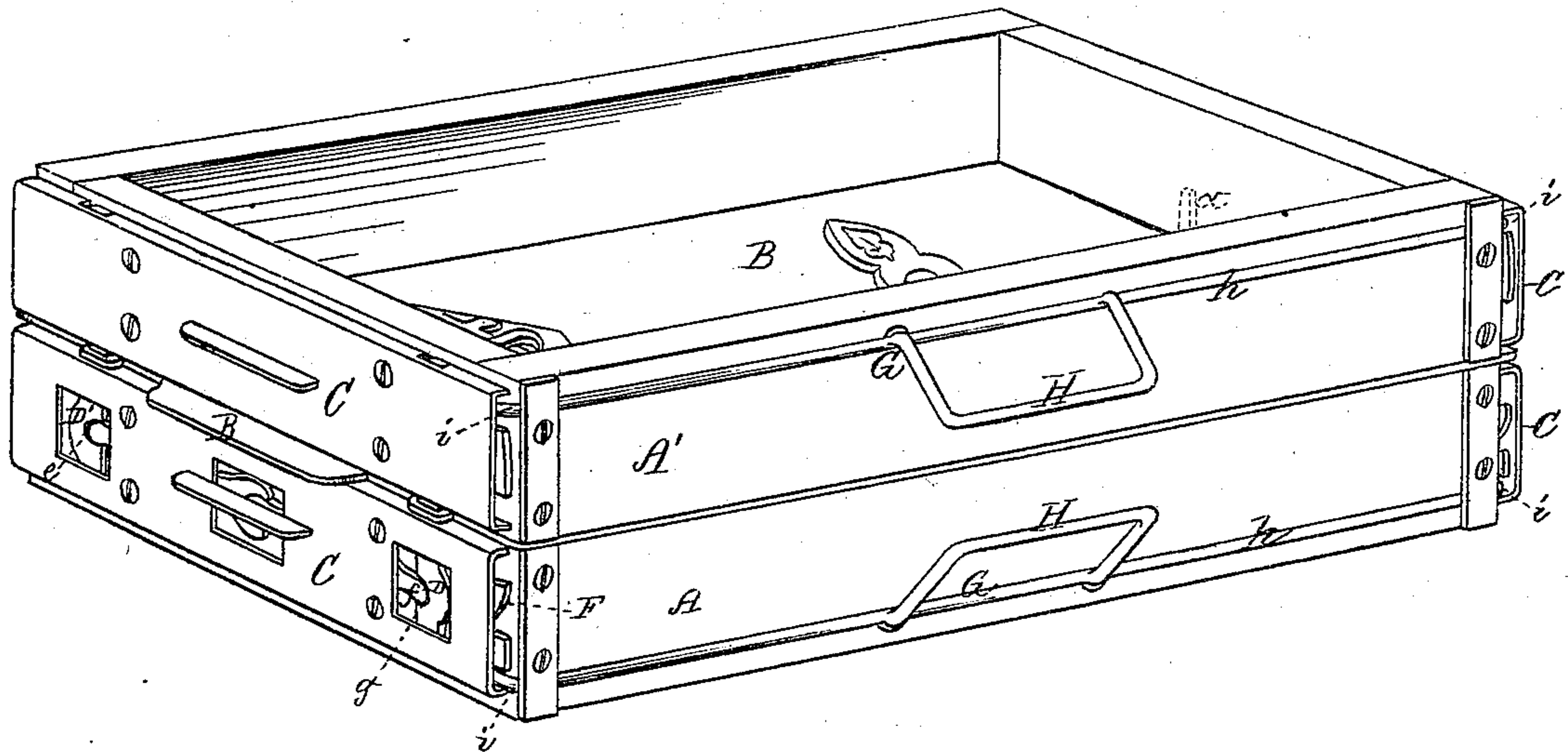


Fig. 2.

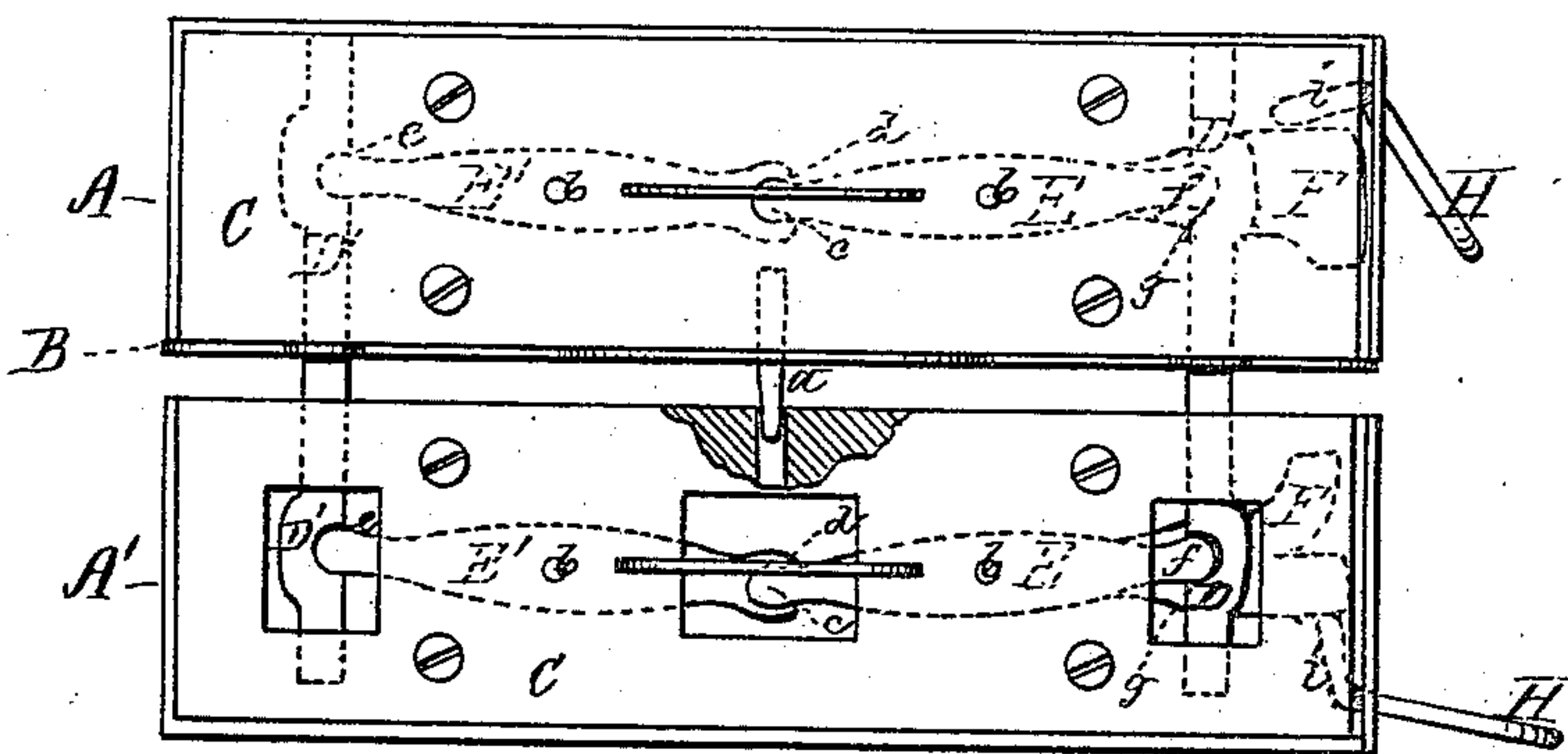
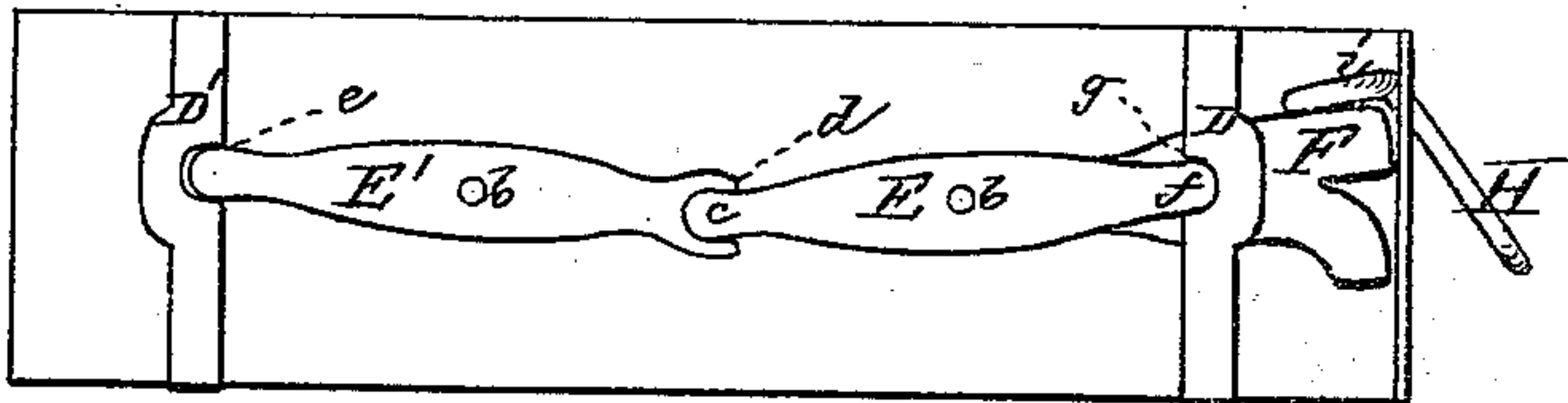


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOSIAH ALLEN BLAKE, OF PROVIDENCE, RHODE ISLAND.

## IMPROVEMENT IN MOLDERS' FLASKS.

Specification forming part of Letters Patent No. 126,012, dated April 23, 1872.

*To all whom it may concern:*

Be it known that I, JOSIAH ALLEN BLAKE, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in Molders' Flasks.

In the process of molding it is well known that when the patterns are removed from the sand there is a tendency for the impressions to become broken, resulting in an imperfect casting. This is particularly the case in that class of castings which, from their peculiar character, require the patterns to be mounted in halves on opposite sides of a match-plate, which is inserted between the two flask-frames. To facilitate the withdrawal from the sand of such patterns as are mounted on a match-plate is the object of my invention; and it consists in a novel arrangement of vertically-operating lifters combined with a system of compound levers connected to the flask and arranged with relation to it and to the match-plate, in such a manner that by the operation of the levers the lifters are caused to elevate evenly and regularly the match-plate and its patterns free from the sand; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming part of the same, is a full, clear, and exact description of a flask constructed in accordance with my invention.

In the drawing, Figure 1 represents a view in perspective of one of my improved flasks, with the several parts in position. Fig. 2 represents an end view partly in section, showing more clearly the arrangement of the levers and lifters for elevating the match-plate. Fig. 3 is a detached view of the operating mechanism.

A and A' denote the two sections of the flask. B denotes the match-plate placed between the sections A A'. The patterns are secured to the sides of the plate in the usual manner. Guide-pins or dowels *a*, attached to the section A, pass through openings in the ends of the match-plate and enter corresponding recesses in the section A', and serve to hold the parts in their proper positions when brought together. C denotes a metallic casing, within which the operating mechanism is placed. One of these casings is attached to each end of each of the sections A A'. D and

D' denote one pair or set of the lifters for elevating the match-plate B. Within each casing C two of these lifters are arranged, one at each end, as shown in Fig. 2. E and E' denote the levers for actuating the lifters D D'; they are supported within the casing C upon pivots *b*. The inner end *c* of lever E, in this instance, is made of a rounded form, which enters a corresponding socket, *d*, in the inner end of the lever E'. The outer end of the lever E' is similar in form to the inner end of the lever E, and is arranged to connect with a recess, *e*, formed in the side of the lifter D'. The outer end of the lever E is provided with an extension, *F*, and a projection, *f*, the latter entering a recess, *g*, in the lifter D. The arrangement of mechanism as above described is the same in the several casings C. G in each case denotes an operating lever. One is provided for each section of the flask. It consists, in this instance, of a rod, *h*, supported in a groove in the side of the flask. The ends *i* of the rod are curved, and enter the casings C at a point adjacent to the extensions *F* of the levers E, with which they come in contact. A handle, H, is attached to the rod *h*, by which it is semi-rotated in its bearings.

In the process of molding, the parts being in proper position, as shown in Fig. 1, the sand is packed within the section A or A' upon the pattern match-plate B. The position of the flask is then reversed and the handle H of the lever G depressed. This operation causes the rod *h* to turn and with it its curved ends *i*; the latter, acting upon the extensions *F* of the levers E, raise the outer ends of the said levers, which causes a depression of their inner ends, and also a corresponding simultaneous depression of the inner, and a raising of the outer ends of the levers E'. The lifters D D', being connected with the outer ends of the levers E E', are elevated with them, and by coming in contact with the plate B the patterns are raised in a truly vertical line from the sand. The operation as above described is then repeated upon the other section, and the impressions having been formed in both sections of the flask, they are placed together ready for the molten metal.

I am aware that previous to my invention various means have been employed in connec-

tion with molders' flasks for removing the match-plate patterns from the sand; that movable legs or lifters, in connection with levers, have been employed, but in such cases the levers were either operated by a screw or by a gear-wheel connecting with segment gears on the ends of the levers. Unless closely protected, the screws or gearing were liable to become clogged with dirt and thereby to render the operation of the levers ineffectual. By the simple, peculiar, but effective arrangement of the mechanism for operating the lifters, as herein described, the removal of the

patterns from the sand is greatly facilitated and accomplished in a satisfactory manner.

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

In combination with a molders' flask and a match-plate, the lifters D D', operated by the compound lifting-levers E E', and the hand-lever G, as and for the purposes specified.

JOSIAH ALLEN BLAKE.

Witnesses:

CHARLES SELDEN,  
JOHN C. PURKIS.