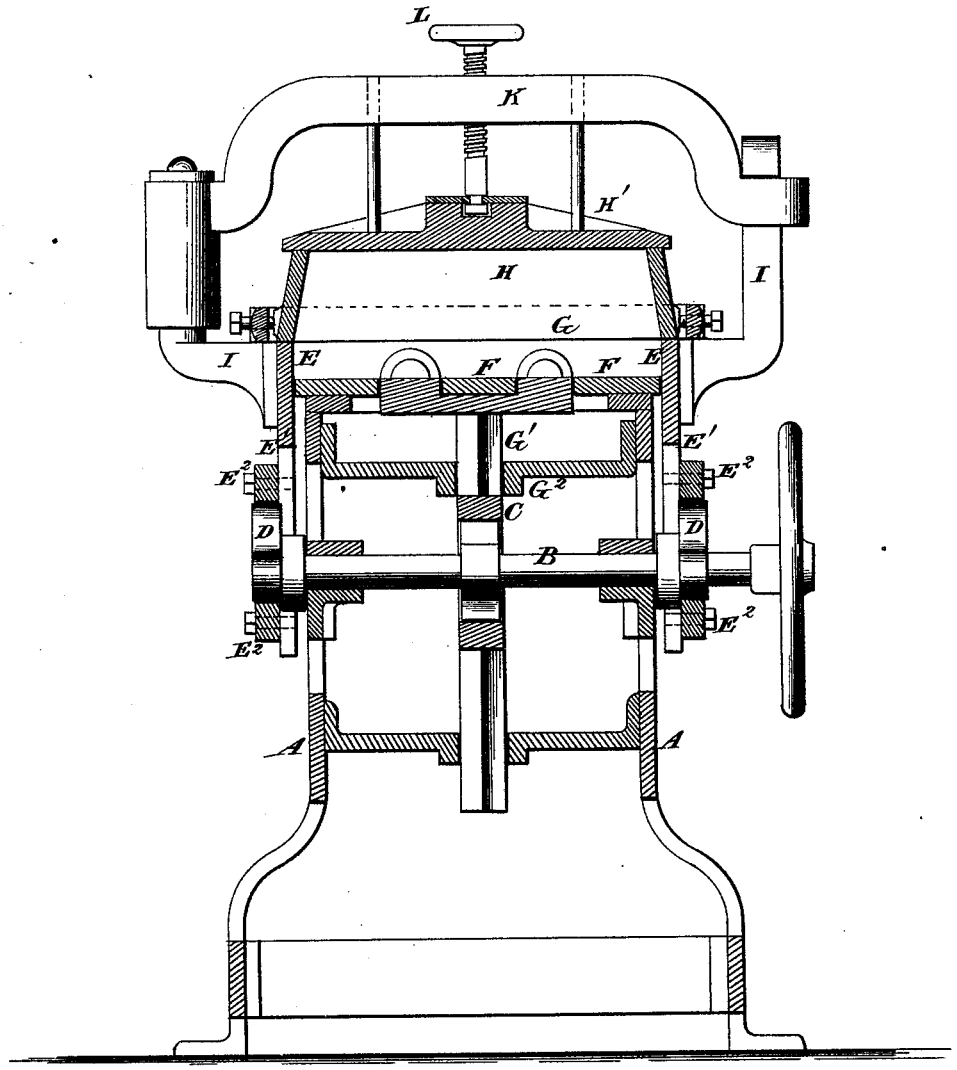
2 Sheets—Sheet 1.

W. AIKIN & W. W. DRUMMOND.

SAND-MOLDING MACHINES.

No. 195,786. Patented Oct. 2, 1877.

Fig. 1.



Witnesses.
A. Ruppert,
D. R. Lowe

W. Aikin
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Attys

2 Sheets—Sheet 2.

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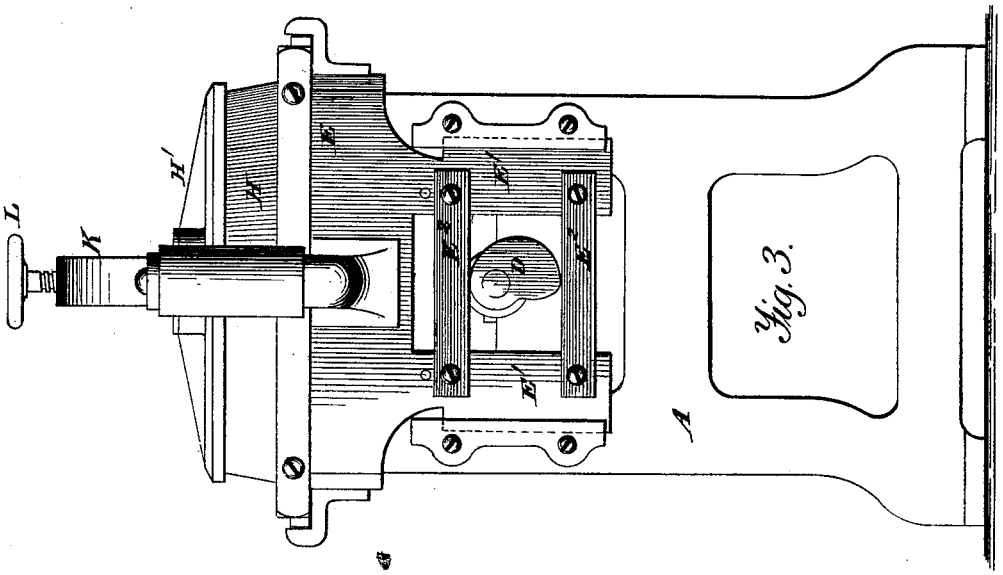

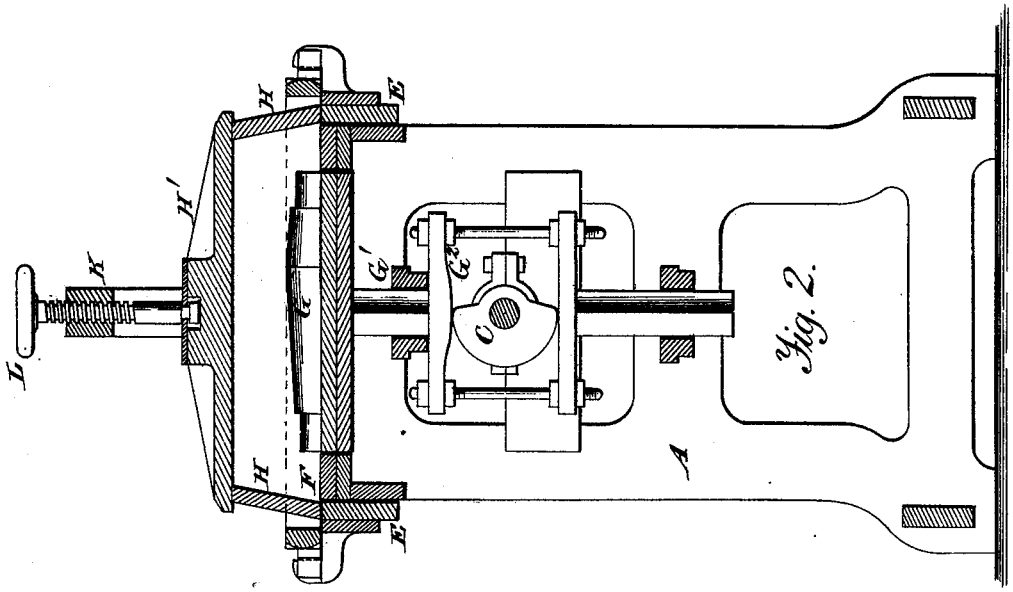

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UNITED STATES PATENT OFFICE.

WILLIAM AIKIN AND WILLIAM W. DRUMMOND, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN SAND-MOLDING MACHINES.

Specification forming part of Letters Patent No. **195,786**, dated October 2, 1877; application filed September 4, 1877.

To all whom it may concern:

Be it known that we, W. AIKIN and W. W. DRUMMOND, of the city of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Machines for Molding in Sand, of which the following is a specification:

In other machines for molding in sand, the pattern and templet-plate have been moved into the half-flask for the compression of the sand about the pattern to make the mold, which was completed by the withdrawal of the pattern and templet simultaneously or successively.

In the machine which is the subject of this application the templet-plate is stationary, and the pattern has no more movement than is necessary for the withdrawal of the pattern after the sand is compressed, which is done by the downward movement of the half-flask and sand-box.

In the annexed drawing, making part of this specification, Figure I is a vertical section of the machine in the line of the driving-shaft. Fig. II is a transverse vertical section, and Fig. III is an elevation.

The same letters are employed in all the figures in the designation of identical parts.

A is the frame supporting the machine. B is the driving-shaft, carrying a cam, C, to actuate the pattern, and also cam D D, for actuating the flask and sand-box, to form the mold by compression. E is the sand-box, with legs E^1, which extend over the frame and down below the driving-shaft, and are connected above and below cams D D by the bars E^2 E^2, the upper of which is adjustable, so as to give more or less room for the sand in the flask. F is a stationary templet and base-plate, to hold the sand and resist the pressure during the downward movement of sand-box, and is made in sections to permit the patterns G G to pass neatly through it. The patterns are fastened to a reciprocating head, G^1, carried on a plunger actuated by the yoke G^2 and cam C sufficiently to draw the patterns below the surface of the templet-plate, or raise them so as to be flush with it at their lower surfaces. H is a half-flask resting on the upper edge of the sand-box, and provided with a close-fitting cover, H′, which is suspended on the yoke K by the screw L. The standards I I are attached to the sand-box. On one of them the yoke is hinged, and on the other it may be hooked at the free end, so as to sustain the pressure.

The operation is as follows: The patterns being raised, as shown in the drawings, the sand-box and half-flask are filled with sand; then the cover H′ is swung on and fastened by the hook on the standard. The rotation of the shaft first draws the sand-box and flask down by the action of cams D D until the sand is sufficiently compressed. Then the cam C comes into action, draws the pattern down out of the sand, leaving the mold duly formed in the flask. The adjustment of the upper bars E^2 enables the operator to regulate the sand so that when the mold is formed the upper surface of the templet-plate F shall be just flush with the edge of the flask. The mold being formed, the yoke and cover are removed and the half-flask lifted off.

What we claim, and desire to secure by Letters Patent, is—

1. In combination with the stationary templet-plate and reciprocating pattern-head, the sand-box and half-flask, and mechanism, substantially as set forth, for drawing the latter two down to form a mold by compression, substantially as set forth.

2. In combination with the stationary templet-plate and reciprocating pattern-head, the reciprocating sand-box, and the adjustable yoke of the eccentric for regulating the quantity of sand contained in the box, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM AIKIN.
WILLIAM WHYTE DRUMMOND.

Witnesses:
WM. PRATHER,
WM. JOHNSON.