W. AIKIN & W. W. DRUMMOND.

SAND-MOLDING MACHINES.

No. 195,785. Patented Oct. 2, 1877

Fig. 1.

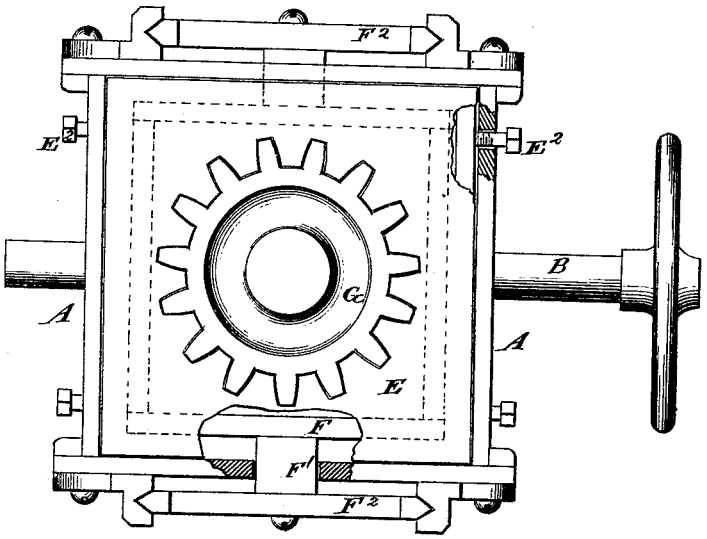


Fig. 2.

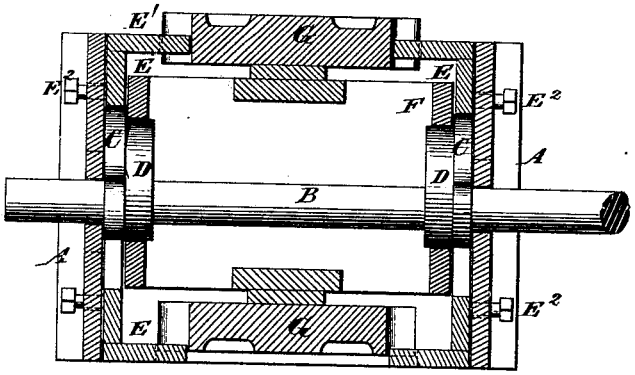
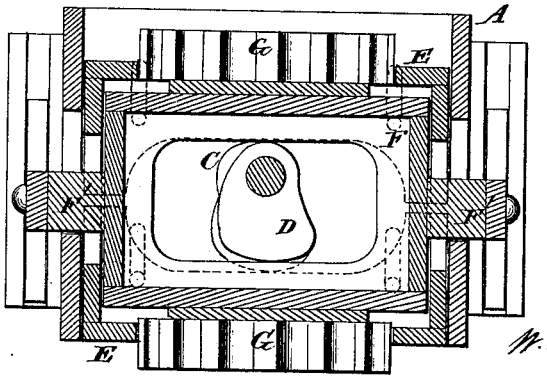


Fig. 3.



Witnesses.
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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. **195,785**, dated October 2, 1877; application filed September 4, 1877.

To all whom it may concern:

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

This invention relates to that class of machines used for molding in sand for making castings, and is especially intended for such work as would be liable, in other machines invented by us and made the subject of other applications, to give an excess of pressure to the sand in the flask immediately above the pattern.

Our invention consists in giving to the templet-plate surrounding the pattern an upward movement, while the pattern is stationary, and then moving the templet and pattern together to complete the mold, thus making the sand in the flask of uniform density.

We have illustrated our invention as applied to our reversible machine, shown in another application.

In the annexed drawings, making part of this specification, Figure 1 is a plan view of the sand-box. Fig. 2 is a vertical section in the line of the driving-shaft, and Fig. 3 is a transverse vertical section.

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

A is the reversible sand-box, and B the driving-shaft, on which are two pairs of cams, C C and D D. E is the frame carrying the templet-plate E^1, which forms the bottom of the sand-box, and actuated by cams C C; and F is a frame carrying the pattern, and actuated by cams D D. The frame F has, on each side, studs F^1, which project through the box, and carrying the cross-heads F^2, which, sliding in ways, keep the frame and pattern in proper position. The slide-bolts E^2 project from the frame E^1 through slots in the box, and are intended to regulate the movement of the templet and frame. G G are patterns attached to frame F, and projecting through holes in the templet-plates, in which they are neatly fitted.

The operation of the machine is as follows: The half-flask being placed on the sand-box, and filled with sand and covered and secured, the shaft B is rotated. The cams C C give an upward movement to the templet-plate, by which a partial compression of the sand is completed before the pattern is moved; then the cams D D come into action, and, in conjunction with the templet-plate, compress the sand around the pattern. The box is then turned over, and the other half of the flask being placed on top and filled, as before, the further revolution of the shaft, as it forces the other half-pattern into the upper half-flask, withdraws the lower half-pattern from the lower half-flask, which is then removed with the mold duly formed in the sand. Then the box is reversed, and in the same manner the mold is formed in the other half-flask by the withdrawal of the half-pattern, and, being removed, we have the two half-flasks, containing, when they are united, the entire mold.

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

1. As an improvement in the art of molding in sand by mechanical compression, first compressing the sand partly around the pattern by the movement of the templet-plate only, and then compressing it uniformly by the simultaneous movement of the pattern and templet-plate, and then withdrawing the pattern to complete the mold, substantially as set forth.

2. The combination of the templet-plate and its frame, and the pattern and its frame, and actuating mechanism, substantially as described, for imparting motion, first to the templet-plate and then to both it and the pattern, 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.