

W. C. AMISH.
Molding Apparatus.

No. 145,828.

Patented Dec. 23, 1873.

Fig. 1.

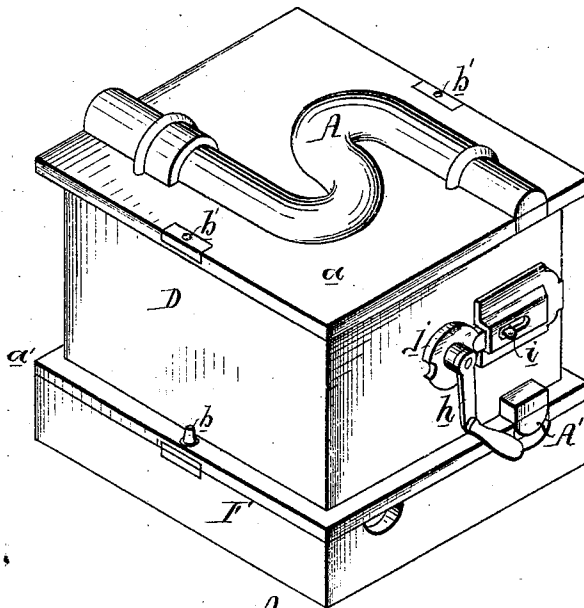


Fig. 3.

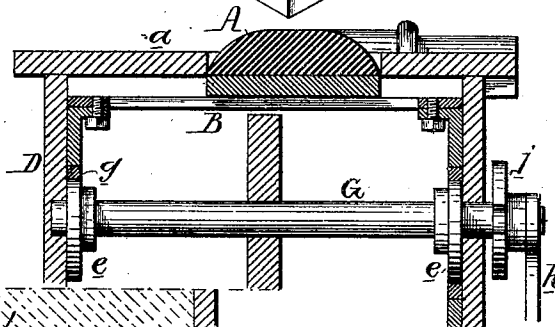


Fig. 2.

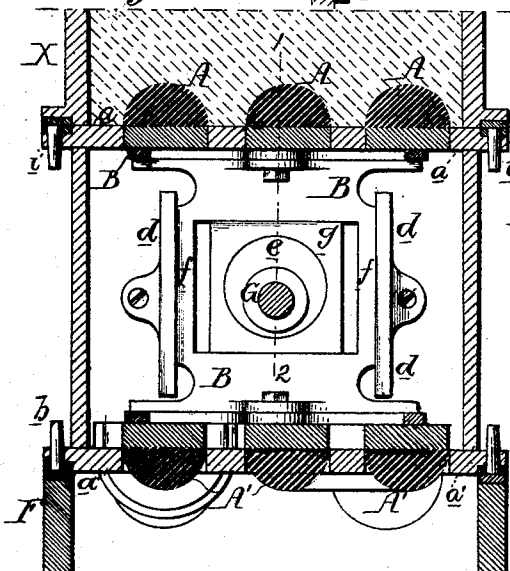
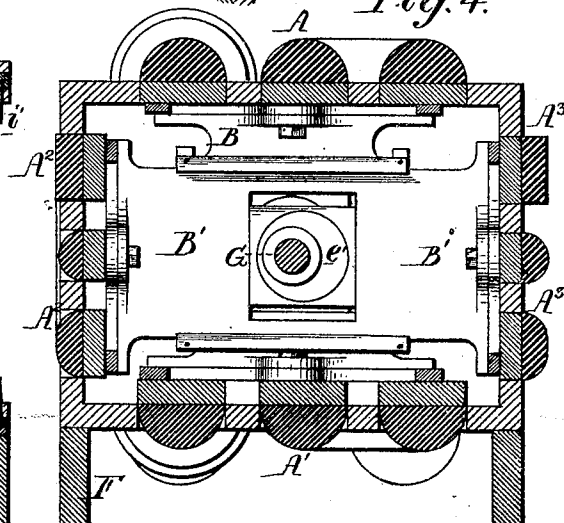


Fig. 4.



Witnesses, Thomas McIlwain
Harry Smith

Wm C. Amish
by his Attys
Howes and Son.

UNITED STATES PATENT OFFICE.

WILLIAM C. AMISH, OF HAINESPORT, NEW JERSEY.

IMPROVEMENT IN MOLDING APPARATUS.

Specification forming part of Letters Patent No. **145,828**, dated December 23, 1873; application filed November 24, 1873.

To all whom it may concern:

Be it known that I, WILLIAM C. AMISH, of Hainesport, Burlington county, State of New Jersey, have invented a Reversible Molding Apparatus, of which the following is a specification:

The object of my invention is to facilitate the operation of molding, and to obtain perfect and uniform castings, and I attain this object by securing one-half, A, of the pattern to a frame, B, arranged to slide in a reversible box, D, and the other half, A', to the opposite side of the said frame, so that the said halves of the pattern may be advanced and retracted through slots of corresponding shape in the opposite side plates *a* and *a'* of the box, in order to permit the molding of the sand and the drawing of the patterns, first on one side of the box and then on the other, as fully described hereafter, and as illustrated by the perspective view, Figure 1; sectional elevation, Fig. 2; and sectional elevation, Fig. 3, on the line 1 2, Fig. 2, of the accompanying drawing.

The reversible box is supported in either of its two positions upon a suitable base, F, pins *b b*, at the opposite sides of which, are adapted to corresponding holes *b' b'* formed in the plates *a a'* of the box, for the reception of the steady pins of the flask, as hereafter described. The frame B, to which the two halves of the pattern are secured, occupies nearly the whole interior of the box, and is adapted within the latter to guides *d*, Fig. 2, in which it is caused to slide to the required extent by eccentrics *ee* on a shaft, G, turning in suitable bearings in the box. The portion of the frame acted on by eccentrics is enlarged to form yokes *ff*, in which blocks *g*, adapted to the said eccentrics, slide transversely; but these blocks may be dispensed with, if desired, and the eccentrics be combined directly with the yokes. One end of the shaft G projects through the box, and is provided with a crank, *h*, by simply turning which, in either direction, the portion A of the pattern may be advanced simultaneously with the retracting of the portion A', and vice versa. A spring-bolt, *i*, on the exterior of the box is adapted to a notched disk, *j*, on the shaft G, as shown in Fig. 1, and serves to lock and prevent accidental movement of the parts after the adjustment of the pattern.

The method of using the apparatus is as follows: The box is first placed upon and secured to the base F, as before described, and the portion A of the pattern is, by a movement of the crank *h*, advanced to its full extent and locked, as shown in Figs. 1 and 2. The lower section or drag X of a molding-flask is next adjusted to the plate *a* of the box, which serves all the purposes of a follow-board, and is secured thereto in exactly the proper position by inserting its steady-pins *i* into the holes *b'* in the said plate. The sand is next packed into the flask, and rammed upon and around the pattern, after which the latter is drawn or retracted, without requiring special care, by a simple movement of the crank *h*, and the flask is removed.

The half of the mold thus formed may, if desired, be dusted and again adjusted to the box, and its interior smoothed by simply raising and lowering the pattern, as before.

To form the other half of the mold, the whole apparatus is reversed on its base F, in order to bring the pattern A' uppermost, (the latter having been already advanced in the act of retracting the pattern A,) and the upper section or cope of the flask is then adjusted to the plate *a'*, its exact position being determined by the steady-pins and holes *b'*. The sand is then rammed in as before, the pattern drawn by a movement of the crank, and the flask removed, after which the mold is completed, ready for the casting operation, by uniting the two sections of the flask, as usual, upon the molding-floor.

The retracting of one-half of the pattern in the drawing operation advances the other half, which is then ready for use when the box is reversed, as above mentioned, and mold after mold may be rapidly formed without the tedious manipulation required in ordinary molding, and without requiring the employment of skilled labor, the molds, and consequently the castings, being uniform and perfect, if ordinary care is exercised in adjusting the flasks and in advancing and retracting the patterns.

In the present instance, I have illustrated a pattern for a water-closet trap; but it will be evident that my invention is applicable to the molding of a variety of objects.

The sectional view, Fig. 4, illustrates a mod-

ified form of apparatus, in which there is a duplex arrangement of patterns, an additional frame, B', and additional cams c' , being shown, which operate additional patterns A² and A³. This renders the same apparatus available for the molding of objects of entirely different character.

I prefer, for the reason given above, to operate the two sections of each pattern simultaneously, by a single sliding frame, B; but the said sections may be controlled by independent appliances, if desired.

I claim as my invention—

1. A reversible molding apparatus in which the two halves of the pattern are arranged at opposite sides of a box, D, and admit of being advanced and retracted thereon, for the purpose specified.

2. The combination of the box D, the sections A and A¹ of the pattern, and the sliding frame B, whereby one of the said sections may be advanced through an opening in the box simultaneously with the retracting of the other section, for the purpose specified.

3. The combination of the bolt i and notched disk j with the cam-shaft G, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM C. AMISH.

Witnesses:

WALTER J. OLIPHANT,
FRANK B. LEVIS.