

(No Model.)

2 Sheets—Sheet 1.

H. V. MOORE.
ASH BOX MOLDING APPARATUS.

No. 586,241.

Patented July 13, 1897.

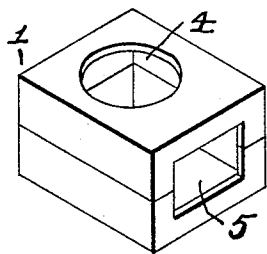


FIG. 1.

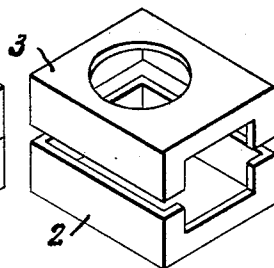


FIG. 2.

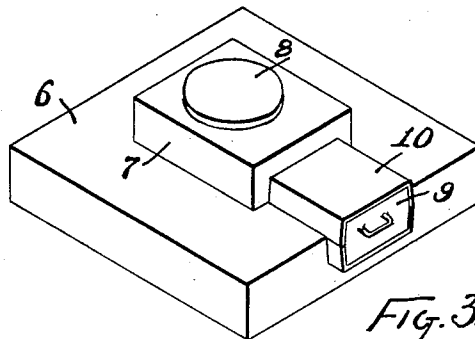


FIG. 3.

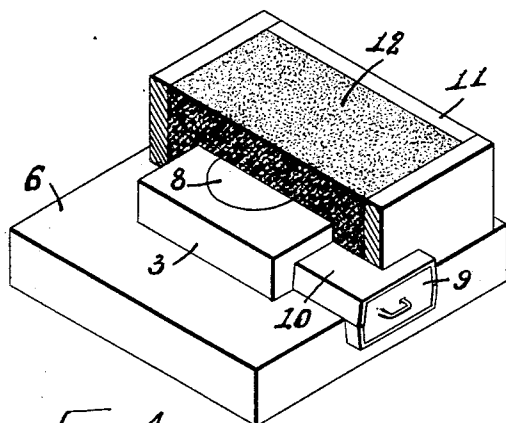


FIG. 4.

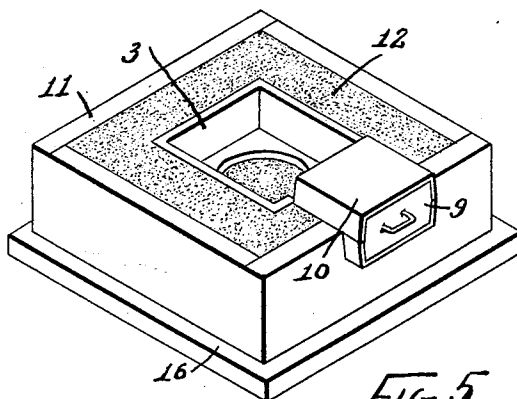


FIG. 5.

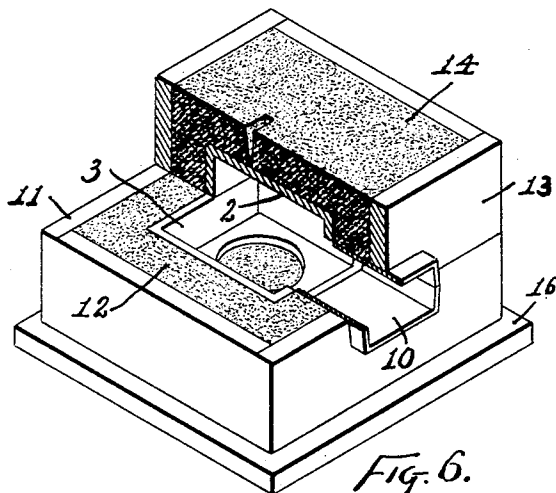


FIG. 6.

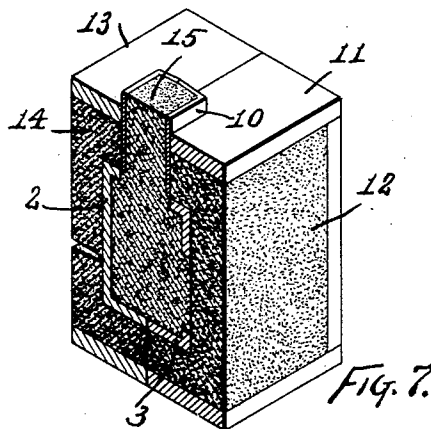


FIG. 7.

Witnesses:
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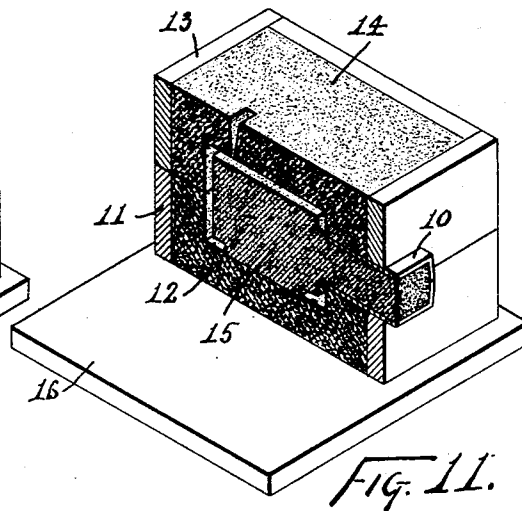
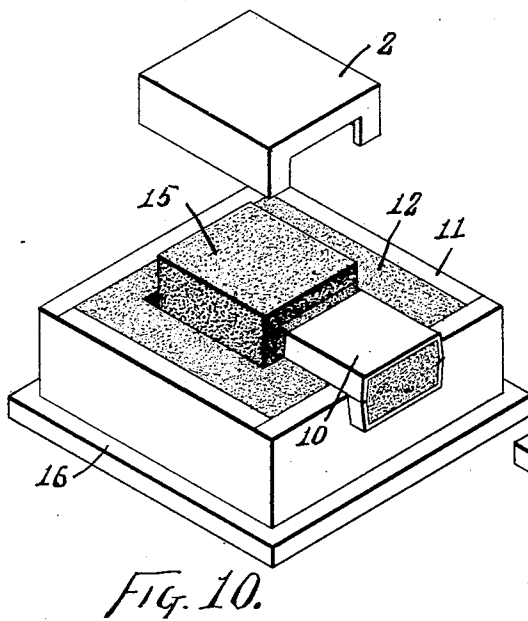
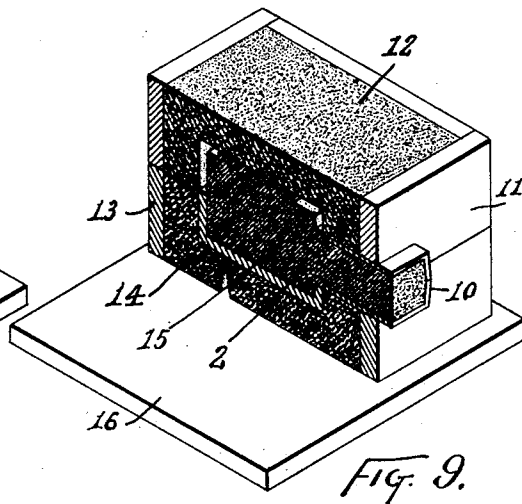
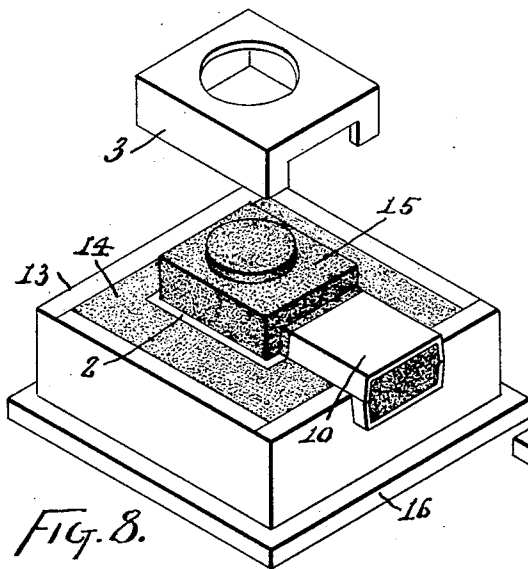
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UNITED STATES PATENT OFFICE.

HARRY V. MOORE, OF HAMILTON, OHIO, ASSIGNOR TO F. & L. KAHN & BROS., OF SAME PLACE.

ASH-BOX-MOLDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 586,241, dated July 13, 1897.

Application filed May 4, 1897. Serial No. 635,093. (No model.)

To all whom it may concern:

Be it known that I, HARRY V. MOORE, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Ash-Box-Molding Apparatus, of which the following is a specification.

This invention pertains to improved apparatus for use in the production of molds for cast-iron ash-boxes having top and front openings.

My improvement will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of an exemplifying ash-box whose mold is to be produced by means of my improved apparatus; Fig. 2, a perspective view of the two parts of the pattern for the same, the parts being shown slightly separated at the parting line; Fig. 3, a perspective view of the follow-board and core-nose; and Figs. 4 to 11, inclusive, perspective views illustrating successive stages in the formation of the mold.

In the drawings, giving present consideration to Figs. 1, 2, and 3 only, 1 indicates an exemplifying ash-box having an opening in its top to receive the fire-pot of a stove and having an opening in its front for the ash-door; 2, the base portion of the pattern, corresponding in all respects with the lower portion of the ash-box 1; 3, the upper portion of the pattern, the two pattern portions being parted through the front opening in a plane substantially parallel with the top and bottom surfaces of the general pattern; 4, the top opening in the ash-box, there being a corresponding opening in the top of pattern part 3; 5, the front opening in the ash-box, there being a corresponding opening formed in the front walls of pattern parts 2 and 3; 6, the follow-board; 7, an upwardly-projecting portion of the follow-board adapted to fit within the interior of pattern part 3 and position that pattern part upon the follow-board and give it stability while the sand is being rammed; 8, a projection upwardly from follow-board portion 7, adapted to fit and fill the top opening in pattern portion 3; 9, a nose-plug supported by the follow-board in front of projection 7 and serving to close the front opening in pat-

tern part 3 when that pattern part is placed upon the follow-board, this nose-plug extending outwardly to the front edge of the follow-board and being preferably provided with a handle, and 10 a thin shell surrounding the nose-plug.

The mode of procedure with my improved apparatus is as follows, first giving attention to Fig. 4: Pattern part 3 is set over the projection 7 of the follow-board, projection 8 of the follow-board filling the top opening in the pattern part. Nose-plug 9, with its shell 10, is laid in its receiving-recess in the follow-board, its inner end closing the front opening in the pattern part. Drag 11 is now applied, the front wall of the drag having a notch neatly fitting the exterior of shell 10, the nose-plug and its shell thus projecting outwardly from the front wall of the drag. The drag-sand 12 is now filled in and rammed. A turning-board 16 is now applied to the top of the drag and the entire structure turned over and the follow-board withdrawn, thus yielding the complete drag portion of the mold, as seen in Fig. 5, in which 16 is the turning-board.

Turning to Fig. 6, we have again the structure seen in Fig. 5. Pattern-base 2 is placed in position over pattern part 3. Cope 13 is placed over the drag, and the cope-sand 14 is filled in and rammed, thus producing the cope portion of the mold. The two half-flasks are now to be clamped together and nose-plug 9 removed and the flask turned up, so as to stand on its rear edge. The core is now to be filled in and rammed through shell 10. This brings us to the condition illustrated by Fig. 7. The mold is now to be turned over to bring the cope downward, after which the drag is to be lifted off and pattern part 3 withdrawn. This brings us to the condition indicated in Fig. 8, in which it will be seen that the drag having been lifted away leaves supported in the cope the nose of the core surrounded by shell 10. The drag is now to be put back, which brings us to the condition indicated in Fig. 9, in which it will be seen that pattern part 2 is still in place in the closed mold and that the body of the core is supported by that pattern part. The flask is now to be clamped and rolled over to bring the drag downward, after which the cope is

to be lifted and pattern part 2 withdrawn. This gives us the condition indicated in Fig. 10. The cope is now to be replaced, producing the condition indicated in Fig. 11, which represents the complete mold ready for pouring, the body of the core being supported on drag-sand 12, while the nose of the core is supported by shell 10.

The only office of nose-plug 9 is to give stability to shell 10 while the cope and drag are being rammed, and the nose-plug will not be needed if the shell is of sufficient thickness to resist the ramming. Assuming that shell 10 is of cast-iron and of reasonable thickness, say a quarter of an inch, then the nose-plug need not be employed. The shell may be in one piece with outside draft at its sides, so that the cope and drag may lift from it, or it may be parted to form upper and lower halves, and these halves may stay with their respective mold portions and lift away from the nose of the core. The shell forms a nozzle through which the core-sand may be filled in and rammed without danger of injuring the interior of the neck of the cope and drag, and it also avoids the necessity for using parting-sand within the neck of the cope and drag; but if the shell 10 is extremely thin then plug 9 is useful in preventing its collapse while the cope and drag are being rammed. In case the nose-plug is used then the shell may be as thin as desired. It may be of tin or even of paper, the presence of the plug giving it stability against collapse while the cope and drag are being rammed, and when the plug is withdrawn the shell, no matter how thin it may be, will protect the neck of the cope and drag. In practice I prefer to employ an extremely thin metallic shell placed on the plug in the manner which has been indicated in the general description of the mode of operation, but the same results are arrived

at if the shell is omitted during the ramming, the cope and drag sand coming into direct contact with the plug, the plug being withdrawn and the shell inserted in its place just before the core is rammed. Thus, referring to Fig. 6, the shell is in position, and it is entirely immaterial whether it shall have just been placed in position after the withdrawal of the plug, as distinguished from originally placing it in position when placing the plug.

I claim as my invention—

1. In ash-box-molding apparatus, the combination, substantially as set forth, of an ash-box pattern having a front opening and a top opening and having a parting substantially parallel with its top and through the front opening, half-flasks inclosing said pattern and having their front walls notched in line with the front opening of said pattern, and a shell conforming substantially to the front opening in the pattern and engaging the front wall of the pattern and projecting outwardly through the notched front walls of said half-flasks.

2. In ash-box-molding apparatus, the combination, substantially as set forth, of an ash-box pattern having a front and top opening and a parting substantially parallel with its top and through the front opening, a shell conforming substantially to the front opening in the pattern and projecting outwardly from said front wall, half-flasks inclosing said pattern parts and having their front walls notched to engage the exterior of said shell, and a removable plug fitting the interior of said shell.

HARRY V. MOORE.

Witnesses:

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