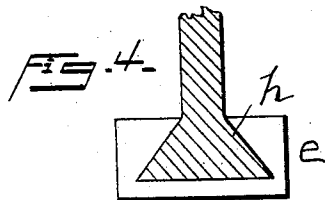
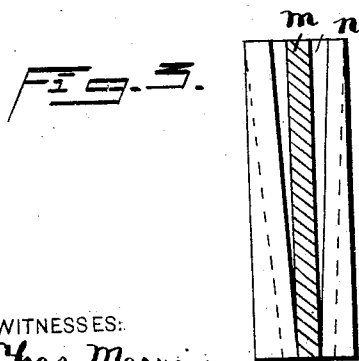
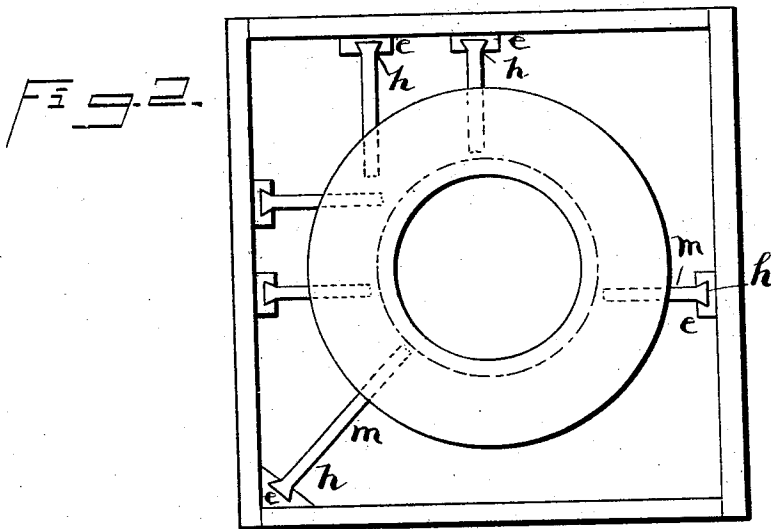
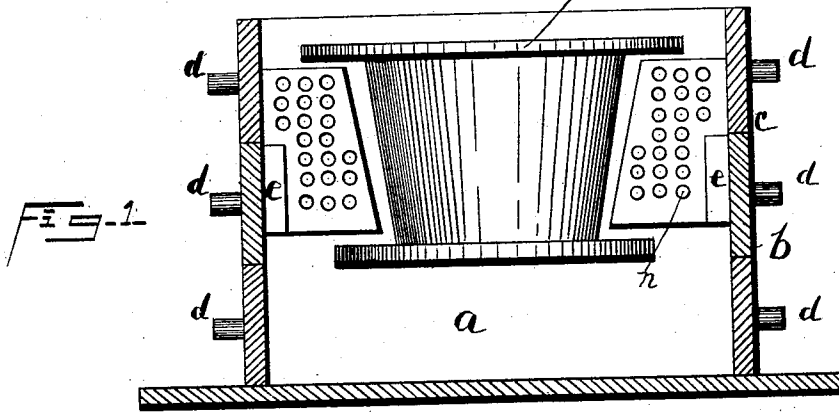


(No Model.)

J. BYRNES.
MOLDING FLASK.

No. 534,949.

Patented Feb. 26, 1895.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH BYRNES, OF SYRACUSE, NEW YORK.

MOLDING-FLASK.

SPECIFICATION forming part of Letters Patent No. 534,949, dated February 26, 1895.

Application filed November 23, 1893. Serial No. 491,695. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BYRNES, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Molding-Flasks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to molding flasks.

My object is to construct a flask with insertible and removable sand-boards, connecting them to the inner walls of the cope or cheek, or to one section of the cope or cheek, or to both sections, in such manner that their inner edges will approach nearly to the mold or casting, will hold up the sand, and when the flask or cope or cheek is reversed will be readily knocked out with the sand and the casting; a feature particularly valuable in making castings flanged on opposite ends or sides, such as fire-pots for heaters, columns or other articles, solid or tubular, whereby the body of the cope need not be torn apart or the ordinary ribs torn out, or both, to remove the casting, and the cope or cheek rebuilt before another casting can be made; my cope or cheek being provided with sockets to receive and removably hold the sand boards, which can be readily stuck or placed in said sockets after the pattern is set, and before the sand is packed or rammed; and where the cope is in sections, said sand boards may be used with either or both sections.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claim hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a vertical sectional elevation of a flask, with the pattern set and sand boards inserted. Fig. 2, is a top plan thereof, showing part of the sand boards in place. Figs. 3 and 4, are sectional details of a sand-board and a socket therefor.

The flask body is constructed in the usual manner, and for illustration is shown as sectional, comprising a drag —*a*— and a cope consisting of sections —*b*—*c*—; each part of the flask being provided with ordinary trunnions —*d*— when deemed necessary.

Upon the inner walls of the cope, or of one or both sections thereof, sockets —*e*— are se-

cured, here shown, for illustration, as provided with a dovetailed and tapered groove or seat, to receive the head —*h*— upon a sand-board —*m*—.

The socket may be of any form desired, the head on the sand-board being of corresponding shape to properly fit into the socket. These sand-boards project inwardly nearly to the pattern and are arranged in the cope according to the judgment of the molder, or flask-builder. In order to better hold up the sand they may be provided with concavities or perforations —*n*— in their faces or through them.

In the drawings a pattern —*r*— is shown, of a fire-pot for a furnace or heater, flanged at both ends and the sand-boards standing between said flanges.

It will be readily seen that after a casting is made, and the cope is turned over, the casting, sand and sand-boards readily drop or are knocked out; and when the boards are picked up out of the sand, they can be replaced in the cope, or a duplicate set inserted.

It will be further seen that my sand-boards are mounted only at one end, and do not extend clear across the flask, but only part way, projecting inwardly from the four walls thereof and that each sand-board on one wall is entirely independent of and not connected to any other one upon another wall, the lines of said boards being substantially converging, though this is not absolutely necessary.

What I claim as my invention, and desire to secure by Letters Patent, is—

A flask body, provided with dovetailed tapering seats upon its inner sides, combined with removable sand boards, having heads corresponding in shape to the seats, which boards are of less width than the flask body and have their tapering ends approaching the center of the flask; each board being made separate and detachable and extending toward the center of the flask body at a different angle, and adapted to drop from position when the body is upset, substantially as shown.

In witness whereof I have hereunto set my hand this 18th day of November, 1893.

JOSEPH BYRNES.

In presence of—

M. M. BORST,
HOWARD P. DENISON.