July 3, 1928. 1,676,199

J. R. WOOD

MOLD SHELL

Filed May 29, 1925 2 Sheets-Sheet 1

Fig. 1

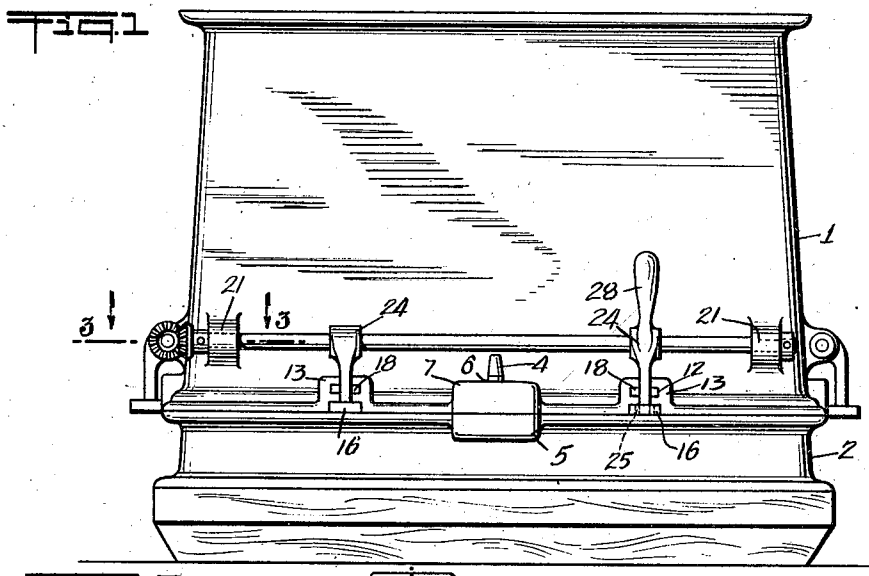


Fig. 2

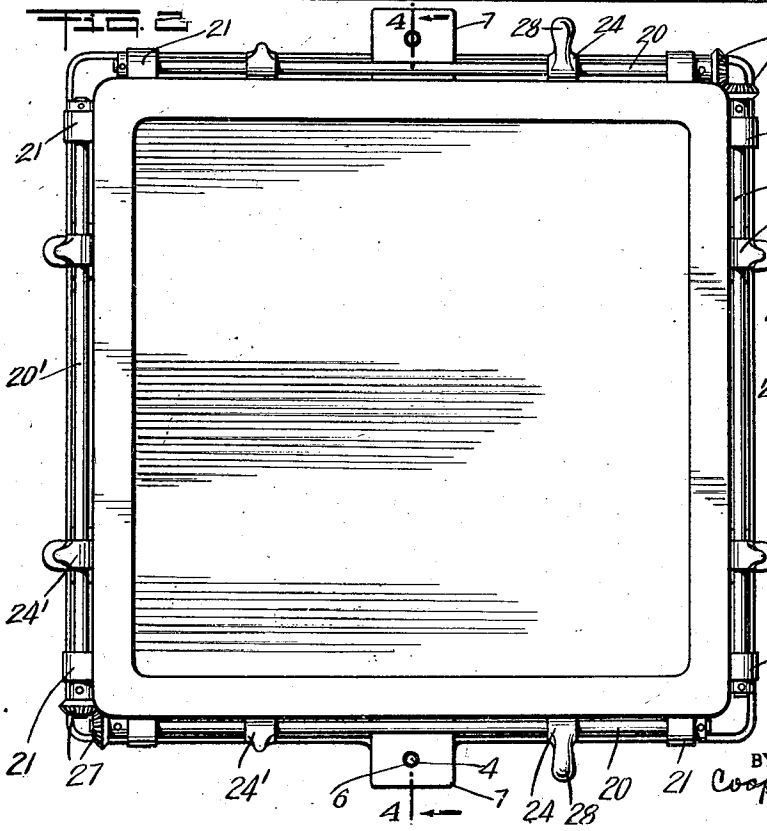
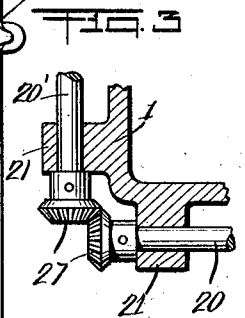


Fig. 3



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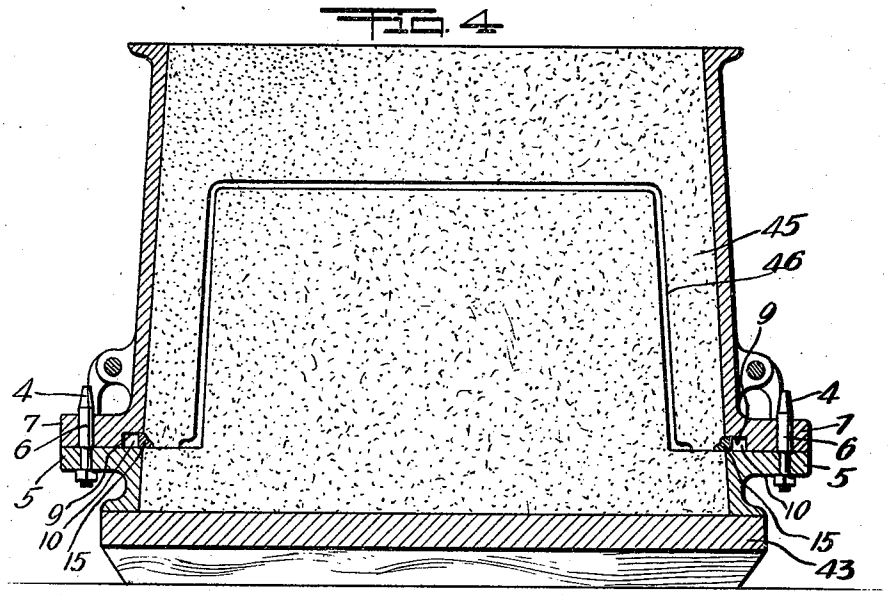
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Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN R. WOOD, OF HATBORO, PENNSYLVANIA, ASSIGNOR TO NEW PROCESS MULTI-CASTINGS COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MOLD SHELL.

Application filed May 29, 1925. Serial No. 33,605.

My present invention relates to method and means for making casting molds of sand and the like in a flask and for relieving the flask of the mold for the formation of another mold therein. It further relates to releasable mold retaining means in a flask mold which is so formed as to prevent the obstruction thereof by mold material such as sand and to aid in securing sound and uniform molds. It further relates to means for holding the mold during pouring thereinto and to a shell for this purpose having brace members across the top thereof which are adjustable on the shell to permit of their placement thereon to provide a clear space for pouring wherever the gate may be positioned in the mold.

In the drawing which illustrates embodiments of my invention:

Fig. 1 is an elevation view of a two part flask adapted to be relieved of its mold without the injuring thereof and having means for detachably engaging the mold.

Fig. 2 is a plan view of the flask of Fig. 1.

Fig. 3 is a section view along the line 3—3 of Fig. 1 looking in the direction of the arrows and shows details of means for moving the mold retaining means.

Fig. 4 is a sectional elevation view along the line 4—4 of Fig. 2 showing a wax pattern and mold in the flask.

In Figures 1 to 4 of the drawings the cope 1 and drag 2 comprise a flask suitable for use with a pattern and with a core box or with matched plates and pattern in a manner well known in the art. The pins 4, 4 fixed to the lug 5, 5 on either side of the drag 2 fit into and through the holes 6, 6 in the lugs 7, 7 on the cope 1 and therewith serve to properly position the cope on the drag. The inner sides of the cope and drag are slanted downwardly and outwardly to permit the lifting of the flask from a mold formed therein. As shown in Fig. 4 the sides of the cope and their lower edge are inset to provide a rectangular shoulder 9 thereat so that when the cope and drag are assembled a rectangular channel 10 is formed in and about the inner sides of the assembled flask. Connecting with said shoulder 9 (and channel 10) are the H shaped slots 12, 12 formed in the lugs 13, 13 on said cope. Slidable transversely in the inset of shoulder 9 (and in channel 10) on each side of the flask are the mold retaining strip members 15, 15 which are chamfered on their upper corners nearer the interior of the flask.

Fixed to each of said members 15, 15 are two bar members 16, 16 which extend outwardly, one through the bottom slot of each of said H-channels 12, 12. In the upper part of the H-channels and the seat connecting the two side slots thereof ride the T-bar members 18, 18 which are fixed to each of said members 16, 16 which with their slots serve as guides and means for holding said members 15, 15 on the flask and in the shoulders 9, 9 thereof. About the outer sides of said cope 1 and parallel with the bottom edges thereof are mounted the shafts 20, 20 and 20′, 20′ which are rotatable in the bosses 21, 21 fixed to the sides of said cope. Each of said shafts 20 and 20′ carries fixed thereto two arms 24, 24 and 24′, 24′, each of which at its lower end engages a slot 25 formed in the outer end of a corresponding one of said bar members 16. The said shafts 20 and 20′ form two sets, each set comprising a shaft 20 and shaft 20′ which have ends adjacent each other and which connect for mutual rotation through bevel gears 27, 27. On the arm 24 of each of said shafts 20, 20 is formed a handle 28 each of which serves to rotate the set of shafts to which it is connected and thereby to move said members 15, 15 into and out of the mold retaining position.

In the use and operation of the apparatus of the drawings mold parts are formed in the cope 1 and drag 2 in a manner well known in the art after which they are properly assembled as shown in Figs. 1, 2, and 4. During the inverting of the cope from the mold making position to its position on the drag the mold engaging members 15, 15 are retained in the mold holding positions. After the cope and drag are assembled on the board 43, the handles 28, 28 are turned to move said members 15, 15 to disengage them from the mold, and the flask (cope and drag) is lifted from the mold. A mold shell of the common form is then placed over the mold with its lower edge resting on the board 43 and the hooks thereof hooked thereonto. The metal is then poured and the shell moved to another mold where the operation is repeated.

With the use of the mold shell of my in-

vention the flask is relieved of its mold immediately upon the formation thereof therein and is free for immediate use for the making of further molds. The shells are applied to the molds just before pouring thereinto and are then removed and placed on another mold. The usual practice is to use two or three shells for a large number of molds and changing one shell from a poured mold to a fresh one while another shell is being used on a mold which is being poured. Likewise two or three flasks serve to make a large number of molds in rapid succession.

I claim:

1. In combination, a mold cope having a longitudinal shoulder extending along the bottom of each of opposed inner faces and having openings extending outwardly through the cope wall from each of said shoulders, said openings having upwardly facing surfaces, disengageable mold retaining means comprising a slide extending inwardly from under each of said shoulders and movable completely thereunder, means for holding said slides in operative position on said cope comprising members attached to the said slides and riding on said upwardly facing surfaces, and means for moving said slide into and out of the retaining and releasing positions comprising members attached to said slides and extending through to the outside of the cope.

2. In combination, a mold cope having a longitudinal shoulder extending along the bottom of each of opposed inner faces and having openings extending outwardly through the cope wall from each of said shoulders, said openings having upwardly facing surfaces, disengageable mold retaining means comprising a slide extending inwardly from under each of said shoulders and movable completely thereunder, means for holding said slides in operative position on said cope comprising members attached to the said slides and riding on said upwardly facing surfaces, means for moving said slide into and out of the retaining and releasing positions comprising members attached to said slides and extending through to the outside of the cope, and actuating means comprising a rotatable shaft mounted to the outside of said cope having a handle therefor and a loose connection with said outwardly extending member adapted to impart a sliding movement thereto toward and from the inside of the cope.

In testimony whereof I hereto affix my signature.

JOHN R. WOOD.