

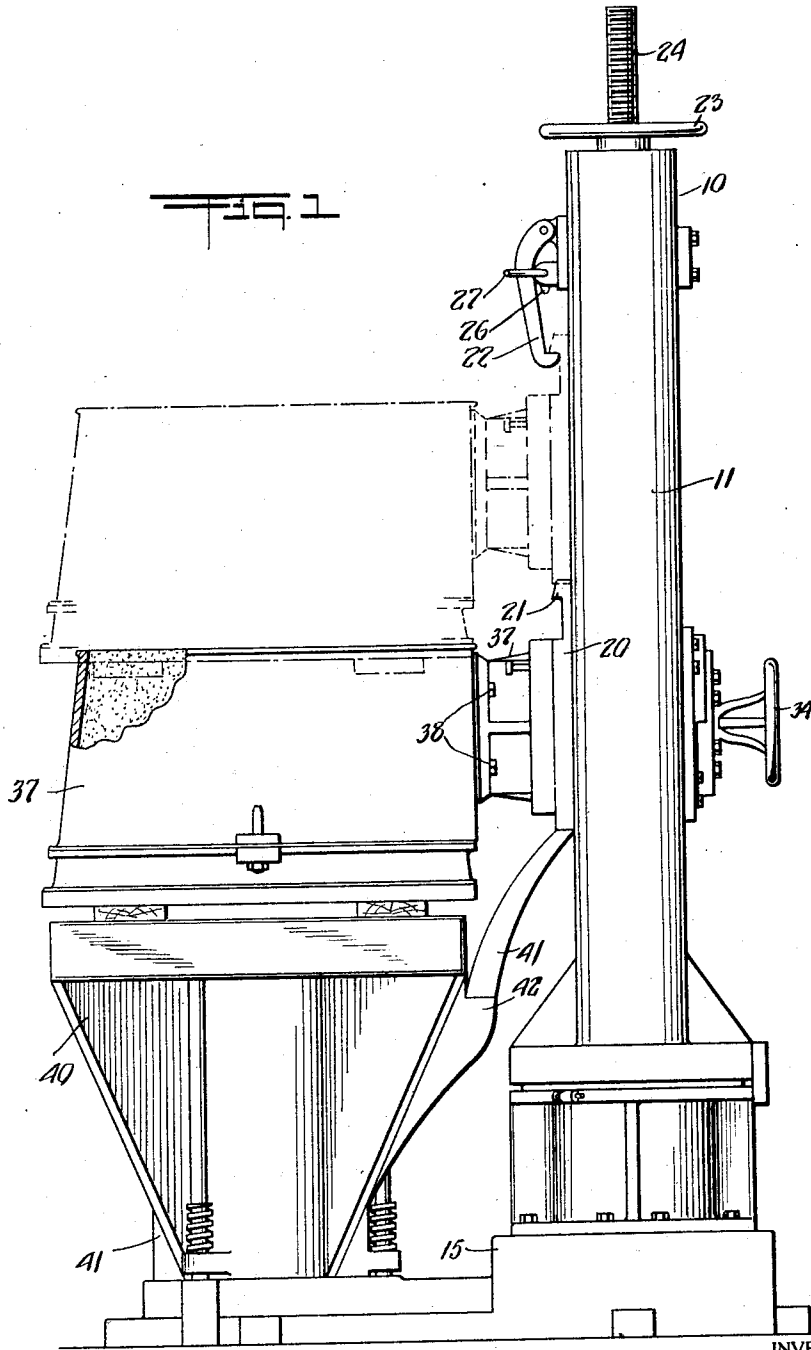
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1,672,047

J. R. WOOD
MOLD MAKING MACHINE

Filed May 29, 1925

4 Sheets-Sheet 1



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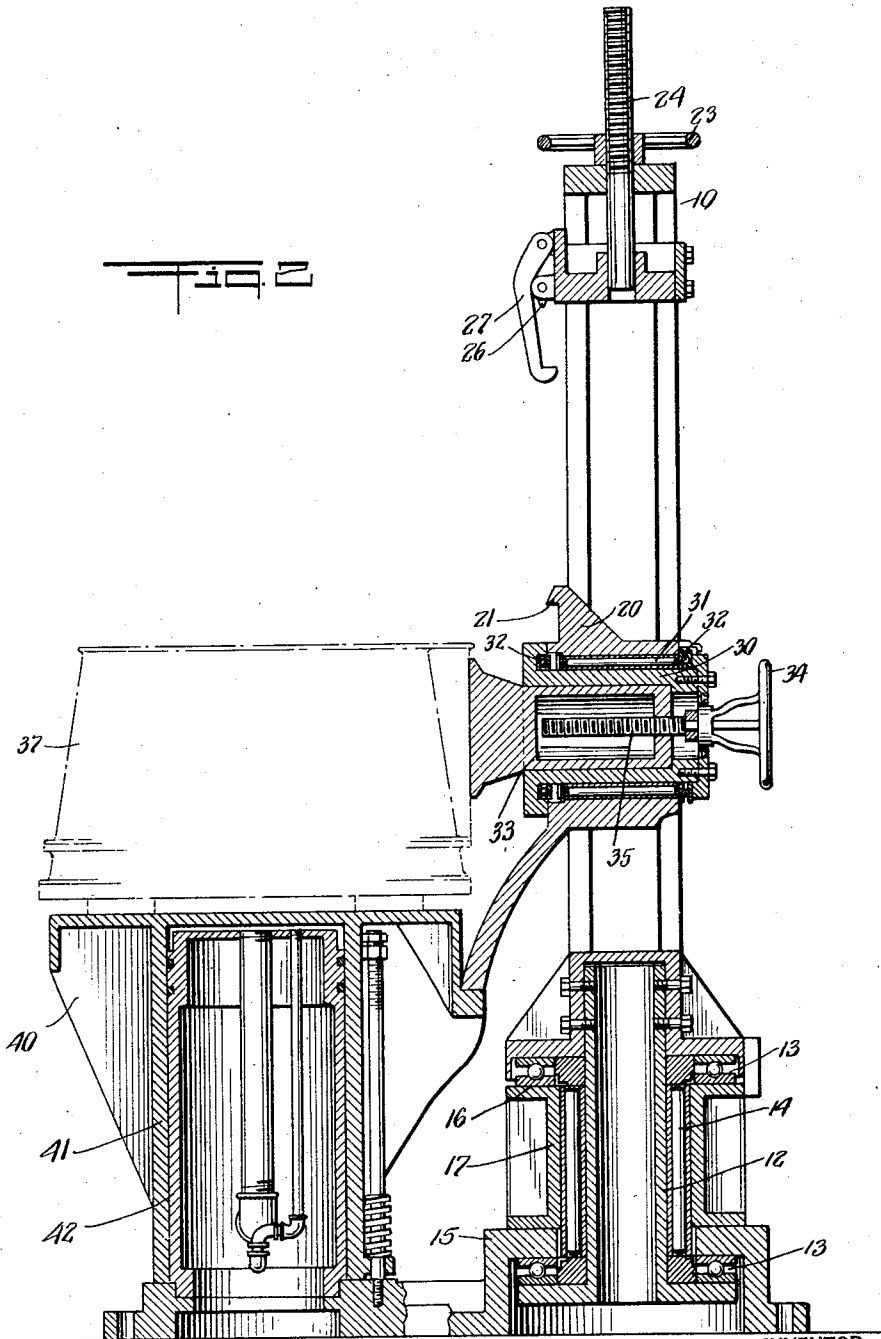
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4 Sheets-Sheet 2



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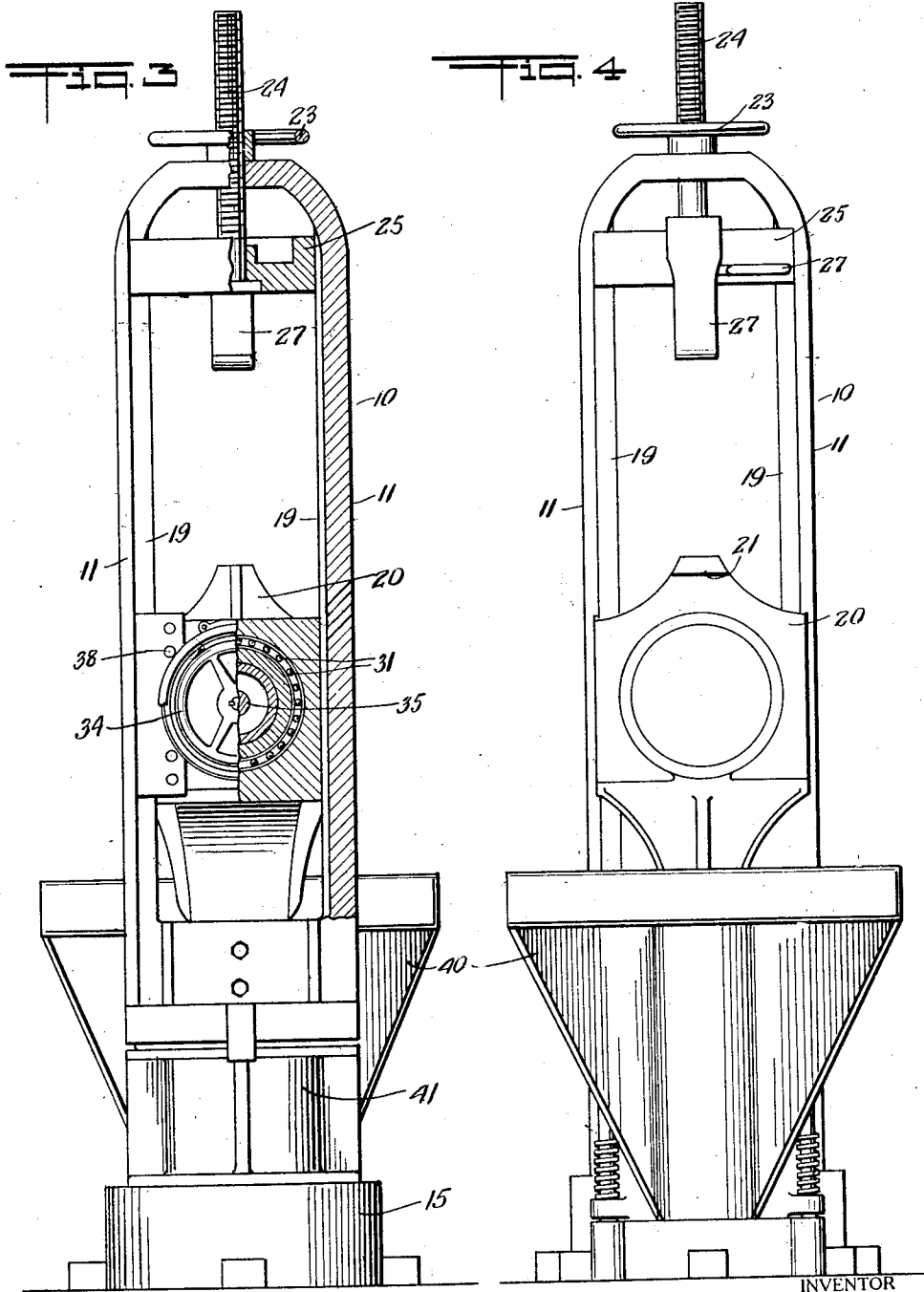
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4 Sheets-Sheet 3



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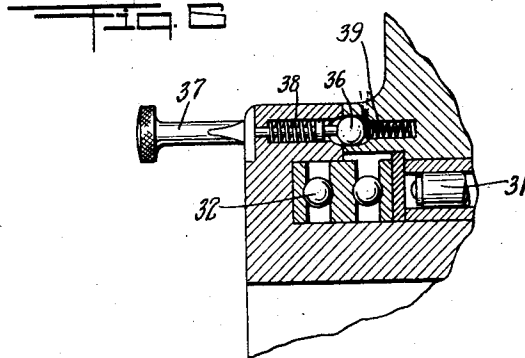
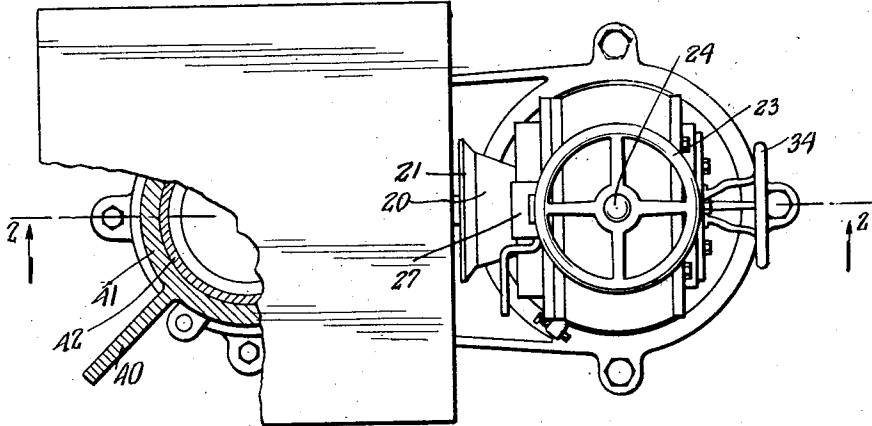
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4 Sheets-Sheet 4

FIGS



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UNITED STATES PATENT OFFICE.

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MOLD-MAKING MACHINE.

Application filed May 29, 1925. Serial No. 33,603.

My present invention relates to a mold making machine in which a cope flask is detachably fixed to the machine and movable about a horizontal axis and also vertically and laterally into and out of operable relation with a jolting table, means being provided for holding the cope flask at a predetermined position above the lower limit of the jolting table while the latter is used to lower the drag flask and mold for stripping the cope therefrom.

In the drawings forming part of this application:

Fig. 1 is a side elevation view of a machine embodying my invention in which is shown a standard which is rotatable about a vertical axis and which has mounted thereon a cope flask holding arm which is movable vertically on said standard and means for securing the flask at a predetermined point above a jolting and lifting table mounted in operable relation therebeneath at one radial position.

Fig. 2 is a mid section in elevation of the machine of Fig. 1.

Fig. 3 is a back view in part section of the machine.

Fig. 4 is a front view of the machine without a flask mounted thereto.

Fig. 5 is a plan view of the machine showing the jolting table in part section, and

Fig. 6 is a sectional view of a means for locking the cope arm against rotational movement about horizontal axis.

In the drawing the standard 10 which is in the form of an elongated yoke with the sides 11, 11 parallel is mounted for rotation about a vertical axis on the drum 12 which is provided with two sets of ball bearings 13, 13 and vertical roller bearings 14, the plates 15 and 16 and the outer drum 17 serving to co-operate with the parts of drum 12 and said bearings. The inner surfaces of sides 11, 11 are provided with the vertical ways 19, 19 between which slide the supporting member 20 which carries at its upper end a catch recess 21 which is engageable with the hook 22 which hangs from the top of yoke 10 and is adjustable in height by the handwheel 23 and screw 24 which connect with the cross member 25 slidable between ways 19, 19 and to which said hook 21 is hinged, the hook being movable into and out of engaging position by means of cam

26 mounted on member 25 and rotatable by means of handle 27.

In member 20 is mounted for rotation about a horizontal axis the journal member 30 between which and the member 20 are provided the roller bearings 31 and the ball bearings 32, 32. Movable transversely in said member 30 is the flask support arm 33 whose position in relation to member 30 is adjustable by means of the handwheel 34 rotatable in member 30 and the screw 35 fixed to said wheel 34 and engaging in said arm 33. A latch comprising the ball 36, handle 37, and springs 38 and 39 (see Fig. 6) serves to lock said arm 33 at a desired position with respect to member 30. To the arm 33 is detachably mounted the cope flask 43 by means of the bolts 44, 44 which extend through the flange 45 formed on the forward end of arm 33.

At the front of the machine is mounted the raising and jolting table 40 actuated by the cylinder 41 and piston 42 in a manner well known in the art.

In the use and operation of the mold making machine embodying my invention as above described the cope 43 in the inverted position and resting on table 40 has mounted thereon a pattern plate over which is placed a drag flask 46 which is held in proper registry by the pins 40 passing through a lower flange on cope 37. Mold material such as sand is then supplied to the drag and pattern plate and jolted in a manner well known in the art. After the drag mold is struck off a bottom board is placed thereover and clamped in position in a manner well known or according to the use of the flask of my copending application Serial No. 33,605, filed May 29, 1925, to which reference is hereby made.

After clamping the bottom board on the drag the flask is raised by means of table 40 until catch 21 engages hook 22 (see Fig. 1) and the table lowered away from the flask. The latch 37 being then disengaged by moving handle 37 the flask is rotated through 180° on arm 33. The table 40 is again raised to engage the flask, hook 22 is disengaged from catch 21 and the table lowered. Sand being supplied to the cope flask and pattern board the mold is again jolted to form the cope part thereof in a manner well known. It is to be understood

that during the above described use of my invention that the drag mold is jolted more than the cope mold to provide for the holding of the shape and size thereof during the subsequent jolting thereof with the cope mold, all in accordance to my invention disclosed in my copending application Serial No. 663,694 filed Sept. 19, 1923.

After the cope mold is formed the table 40 is raised to move the flask into engagement with hook 22 after which the drag is unclamped, the table lowered to strip the drag and pattern plate from the mold pattern and the cope mold by disengageable means well known in the art and particularly shown in my copending application Serial No. 33,605, filed May 29, 1925, to which reference is hereby made. The pattern plate is then stripped from the drag, the drag raised to the cope, and the cope mold disengaged from the cope in the usual manner. The table is then lowered to strip the drag, the drag mold, and the cope mold from the cope whereupon they are together moved to a place where the pouring is to be done, the drag being used with a cope mold shell for casting in accordance with my copending application Serial No. 33,606, filed May 29, 1925, to which reference is hereby made. It is to be understood however that the machine embodying my invention as above described is not limited in use to that above described as other modes of use will be apparent from knowledge of the use above described.

This machine can be used with different flasks which are detachably fixed to arm 33 by bolts 44 as above described and the arm 33 is movable by means of screw 35 and handwheel 34 to properly position any sized cope within given limits on said table 40. In the jolting of the cope by the table 40 the arm 33 and member 20 are movable therewith and the member 41 extending from member 20 into engagement with the ledge or member 42 formed on table 40 serves to relieve excessive strains in arm 33 and member 20 caused by such jolting of the cope by the table.

I claim:

1. In a mold making machine, in combination, a rotatable standard, an arm extend-

ing therefrom rotatable about a horizontal axis, cope supporting means on said arm and said arm being movable vertically on said standard, a raising and jolting means in operable relation with said arm. 55

2. In a mold making machine, in combination, a standard rotatable about a vertical axis, an arm extending therefrom rotatable about a horizontal axis, cope supporting means on said standard, a raising and jolting means in operable relation to said arm, and an adjustable engaging means for said arm on holding it at a distance from said jolting means. 60 65

3. In a mold making machine, in combination, a standard, a cope supporting arm movable vertically on said standard and rotatable about a horizontal axis, means whereby said arm is rotatable about a vertical axis, and a raising and jolting means in operable relation for a cope or flask supported by said arm. 70

4. In a mold making machine, in combination, a standard, a cope supporting arm movable vertically on said standard means whereby said arm is rotatable about a vertical axis, and a raising and jolting means in operable relation for a cope or flask supported by said arm. 75 80

5. In a mold making machine, in combination, a standard, a cope supporting arm movable vertically on said standard and rotatable about a horizontal axis, means whereby said arm is rotatable about a vertical axis, means on said standard for raising and lowering said arm and for holding it at a predetermined point thereon, and means for jolting a flask or cope mounted on said arm. 85 90

6. In a mold making machine, in combination, a standard, a cope supporting arm movable vertically on said standard, means whereby said arm is rotatable about a vertical axis, means on said standard for raising and lowering said arm and for holding it at a predetermined point thereon, and means for jolting a flask or cope mounted on said arm. 95 100

In testimony whereof I hereto affix my signature.

JOHN R. WOOD.