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C. F. SCHERER

1,874,635

MOLDING MACHINE

Filed April 26, 1930

2 Sheets-Sheet 1

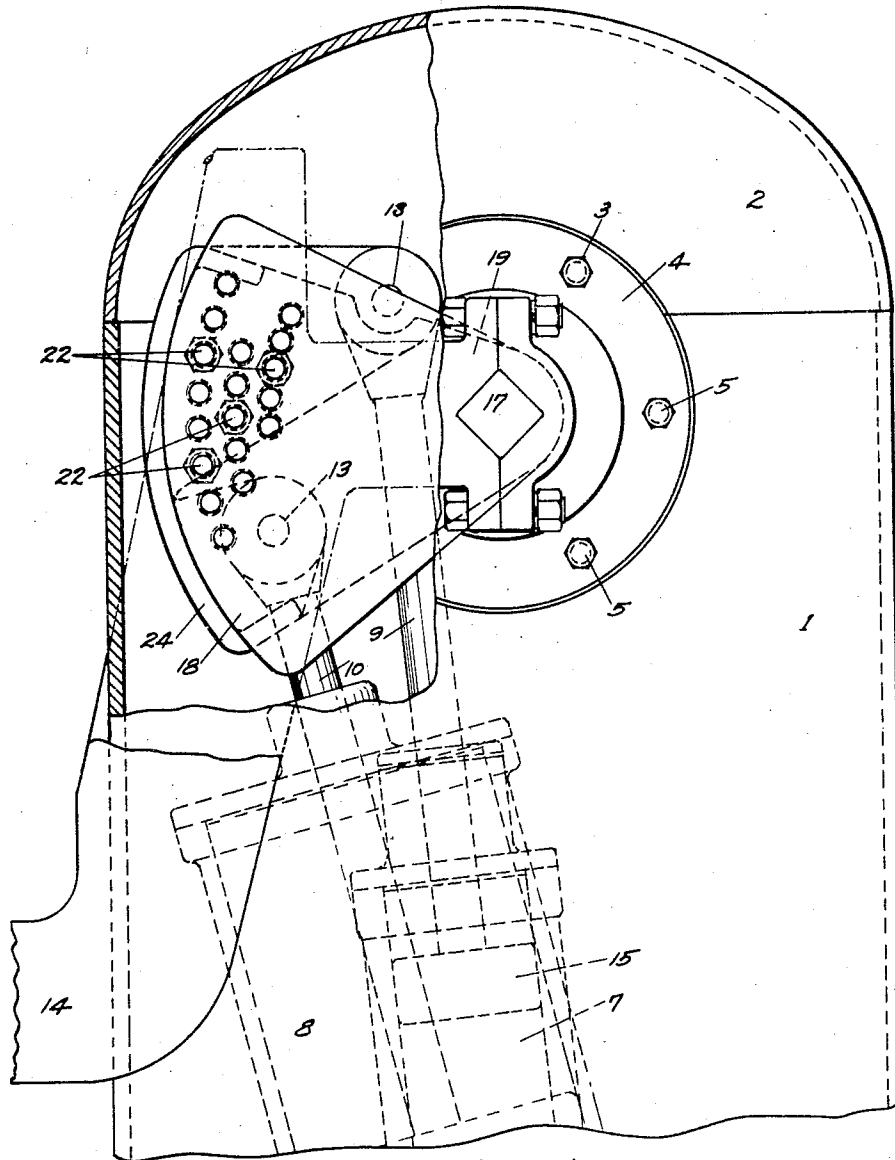


FIG. 1

C. F. SCHERER. INVENTOR.

BY  
Merrill M. Blackburn.  
ATTORNEY.

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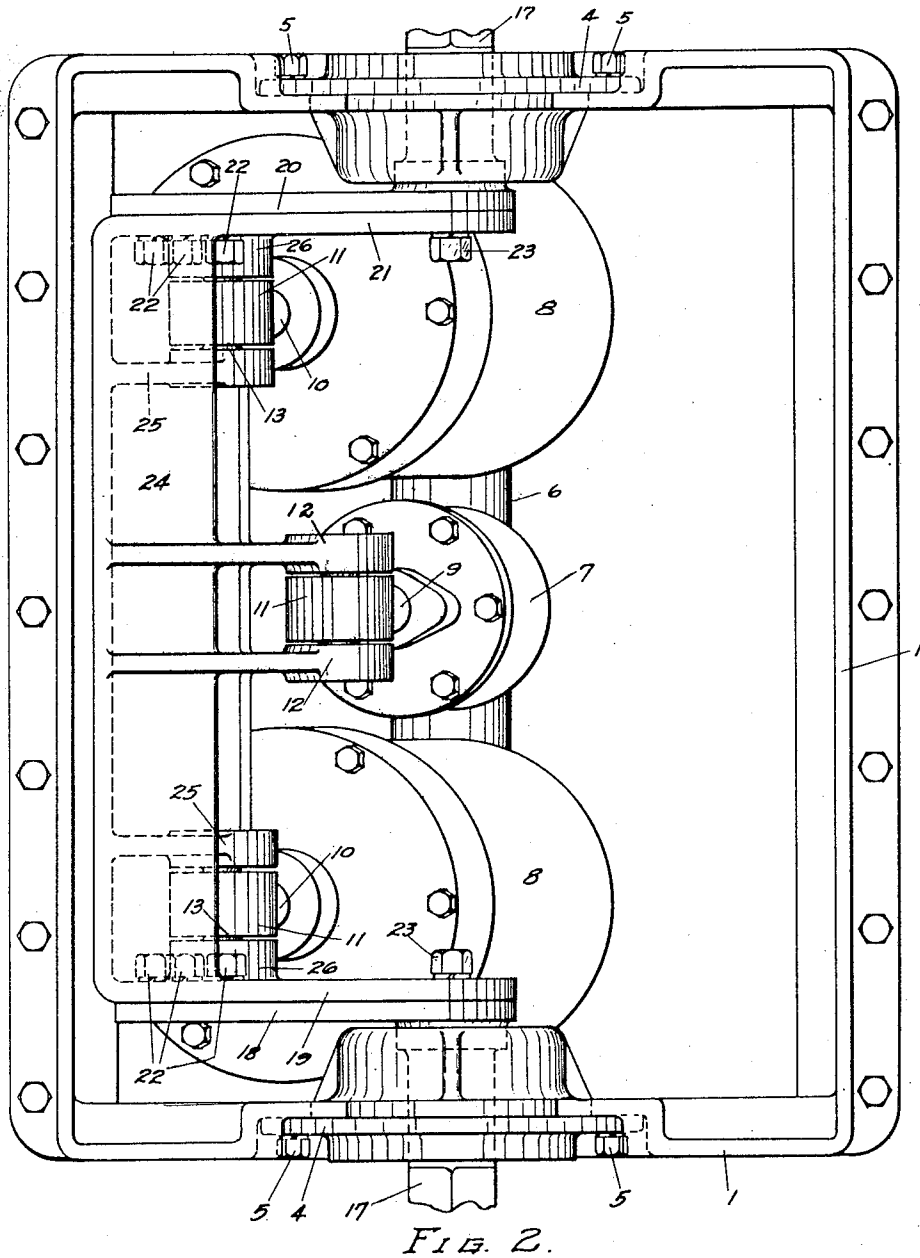
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C. F. SCHERER. INVENTOR.

BY  
Merrill M. Blackburn  
ATTORNEY

## UNITED STATES PATENT OFFICE

CHARLES F. SCHERER, OF DAVENPORT, IOWA, ASSIGNOR TO DAVENPORT MACHINE AND  
FOUNDRY COMPANY, OF DAVENPORT, IOWA, A CORPORATION OF IOWA

## MOLDING MACHINE

Application filed April 26, 1930. Serial No. 447,564.

The present invention relates to molding machines and more especially to a roll-over machine in which the actuating mechanism is encased so as to prevent sand from getting into the wearing parts and causing undue wearing thereof.

Among the objects of this invention are to provide in a machine of the character indicated means for keeping sand and other abrasives away from access to parts subject to considerable wear; to provide adjusting means to compensate for different loads so that the pattern plate and its load will always pass dead center when being turned over from one side to the other; to provide an enclosed check cylinder by means of which the descent of the roll-over arms and their load may be checked so that the load will be set down without any sudden jolt; and such further objects, advantages and capabilities as will hereafter appear and as are inherent in the construction disclosed herein. My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawings and, while I have shown therein what is now considered the preferred embodiment of this invention, I desire the same to be understood as illustrative only and not to be interpreted in a limiting sense.

In the drawings annexed hereto and forming a part hereof, Fig. 1 is a fragmentary side elevation of a structure embodying my invention with parts thereof broken away for the sake of better illustration; and Fig. 2 is a plan view of the structure shown in Fig. 1 with the cover cap thereof removed to show the interior mechanism.

Referring more in detail to the annexed drawings, a casing 1 is shown as provided with a cap 2 which may be removed therefrom by removing certain bolts 3 passing through a ring 4 and into the cover 2. This ring 4 is secured to the casing 1 by means of bolts 5. It will be obvious from Fig. 2 that the casing and its cover have depressions in the ends thereof, which permit the ring 4 and bolts 3 and 5 to be set in so that they will not project beyond the ends of the casing. It will also be obvious from Fig. 1 that it

will only be necessary to remove two bolts 3 at each end of the machine to entirely release the cover 2 from the casing 1. Since the top of the casing and the bottom of the cover are made to fit closely, there will be no trouble with sand or other grit getting inside of the casing and into the operating mechanism therein.

Mounted in the lower part of the casing 1 is a supporting shaft 6 upon which are mounted the check cylinder 7 and the lifting cylinders 8. Piston rods 9 and 10 connect the piston heads in these cylinders with appropriate means, as indicated in Fig. 2, whereby turning force may be transmitted to the roll-over arms. Each piston rod has an eye 11 at its free end by means of which connection is made to a yoke 24. This yoke has arms which are designated in Fig. 2 by the numerals 12. It will be seen that as the pistons in cylinders 8 are moved upwardly the roll-over arms 14 swing in vertical circles and the piston 15 in check cylinder 7 simultaneously moves upwardly but at a slower rate. When the roll-over arms 14 and pattern-plate carried thereby pass dead center and begin to move downwardly on the other side, the check cylinder 7 may come into play, thereby checking the descent of the load and permitting it to come to rest easily upon the supporting table.

The ends of the trunnions are squared as indicated at 17 and the roll-over arms have openings of the same size and shape so that they fit closely these squared portions of the trunnions. Therefore, power applied by means of the cylinders 8 is transmitted to the roll-over arms 14 in a manner which will be readily understood. The plates 18, 19, 20 and 21 constitute composite arms connecting the yoke 24 with the trunnions of the roll-over arms. By comparison of Figs. 1 and 2 it will be seen that when bolts 22 are removed from these composite arms the parts 19 and 21 may be moved relatively to 18 and 20 until the desired adjustment is secured when the bolts may be reinserted and tightened up into holding position. When the proper adjustment has been secured, the bolts 23 will be tightened up to assist in holding the parts to-

gether as if constructed unitary. Particular reference is now made to Fig. 1 from which it will be seen that there are five positions of adjustment which the arms 18 and 19 (and also 20 and 21) may assume relatively to each other. As illustrated in this figure, the arms are in mid-position, it being possible to adjust either upwardly or downwardly two points from the position illustrated. In this way, there is provided a wide range of adjustment for the parts.

As shown clearly in the drawings, a concave connecting bar joins the plates 19 and 21, making a unitary yoke. Also, webs 25 are connected with the concave bar and have the shafts 13 mounted in openings therein. These shafts are also mounted in openings in the bosses 26 formed on the plates 19 and 21. It will therefore be seen that the piston rods 10 are not adjustable relatively to a crank arm though there is relative adjustment between the cross bar or yoke 24 and the roll-over trunnions. Therefore, adjustment is permitted between the cross bar 24 and the pattern-plate, with the load carried thereby.

It will be seen from the foregoing description, taken in connection with the annexed drawings, that I have provided a simple mode of preventing any appreciable amount of grit from entering the bearings of a machine of this type, as well as preventing same from getting into check and roll-over cylinders and causing unnecessary wear thereof. It will also be seen that I have provided simple means for accomplishing adjustments to compensate for changes in location of the center of gravity of the roll-over arms and their load.

Having now described my invention, I claim:

1. In a roll-over machine, a closed casing having bearings in opposite sides thereof, trunnions mounted in said bearings, operating arms rigidly connected with said trunnions, operating means within the casing and having movable connection with said arms, the means connecting the operating means to the arms being shiftable from place to place to compensate for changes in location of the center of gravity of the roll-over arms and their load, the casing being adapted to prevent access of sand or other grit to the moving parts within the casing.

2. In a roll-over machine, a support having bearings in opposite sides thereof, trunnions, mounted in and rotatable within the bearings, arms rigid with the trunnions and extending laterally therefrom, a cross bar having arms extending laterally therefrom, said last mentioned arms being capable of being connected to the first named arms, the two sets of arms being adjustably connected by removable securing means by means of which they may be secured together in any one of several positions of adjustment.

3. In a structure of the nature indicated, a casing closed against access of abradant material to the interior thereof, operating mechanism within the casing for actuating roll-over arms, trunnions extending through opposite sides of the casing, said trunnions being co-axial, arms extending transversely to the axis of the trunnions and rigidly connected with the trunnions, a yoke within the casing having adjustable connection with the said transverse arms, said operating means having relatively fixed pivotal connection with the yoke whereby actuation of the operating mechanism will cause rotation of the trunnions and with them of the roll-over arms.

In witness whereof, I hereunto subscribe my name to this specification.

CHAS. F. SCHERER.

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