

J. LE MAY & M. M. HOUSE.
CENTRIFUGAL CASTING MACHINE.

APPLICATION FILED DEC. 22, 1913. RENEWED DEC. 4, 1914.

1,128,009.

Patented Feb. 9, 1915.

Fig. 1.

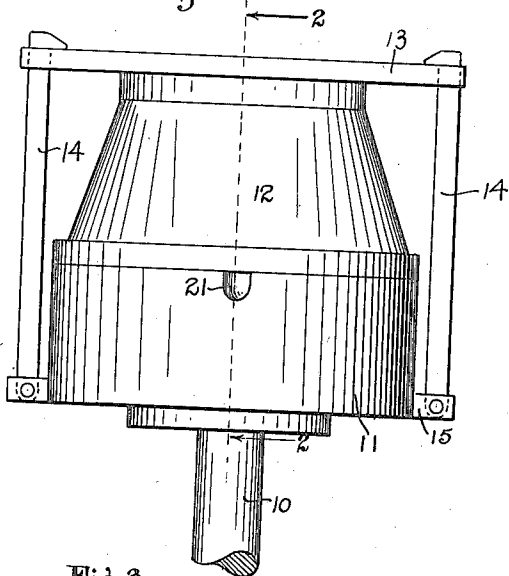


Fig. 2.

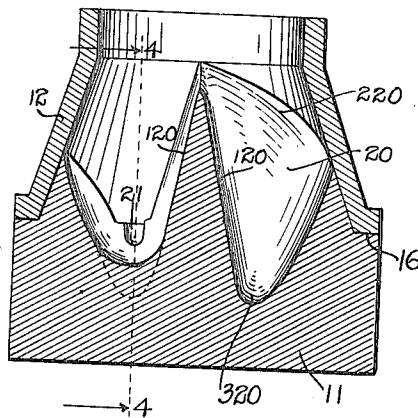


Fig. 3.

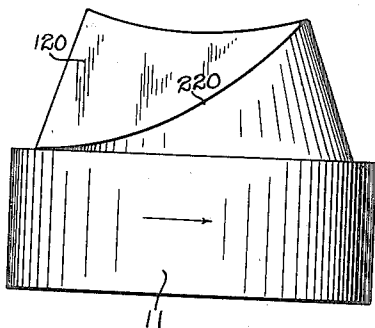


Fig. 4.

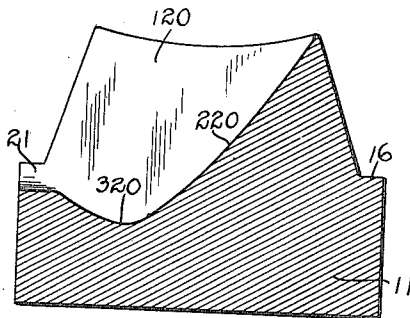
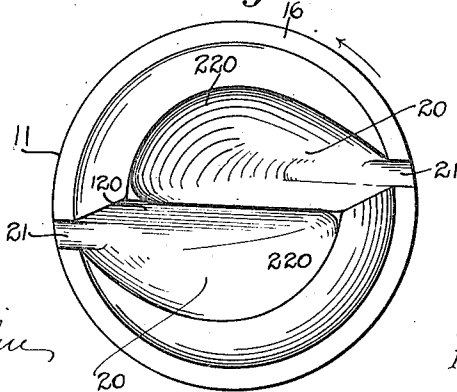


Fig. 5.



WITNESSES:

O. M. McLaughlin
A. H. Edgerton

INVENTORS
John Le May +
Milus M. House.

BY
V. H. Fockwood
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN LE MAY AND MILUS M. HOUSE, OF INDIANAPOLIS, INDIANA, ASSIGNORS, BY
MESNE ASSIGNMENTS, TO PAYNE DIE CASTING COMPANY, OF INDIANAPOLIS,
INDIANA, A CORPORATION.

CENTRIFUGAL CASTING-MACHINE.

1,128,009.

Specification of Letters Patent.

Patented Feb. 9, 1915.

Application filed December 22, 1913, Serial No. 808,219. Renewed December 4, 1914. Serial No. 875,545.

To all whom it may concern:

Be it known that we, JOHN LE MAY and MILUS M. HOUSE, citizens of the United States, and residents of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Centrifugal Casting-Machine; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to distribute the metal in a rotary casting apparatus so that there will be no splattering which tends to chill the metal and cause particles of the chilled metal to enter the mold and into the product, and to facilitate the movement of the metal through the distributing means into the mold or die and thus cause it to leave the distributor quickly so that it will not chill and collect too much on the surface of the distributor, and also to facilitate the removal of the metal which is chilled and collected on the surface of the distributor. Said results are accomplished herein by forming the distributor of two quickly separable members so that the metal which has chilled and collected on the surface of the distributor can be quickly removed and by forming the chambers in the distributor which convey the metal from the receiving member through the discharge openings to the mold or die with such a contour that it will prevent any sudden change in direction of the metal, but will cooperate with the natural movement of the metal.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a side elevation of the distributor. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 2 is a side elevation of the lower member of the distributor. Fig. 4 is a central vertical section through the same. Fig. 5 is a plan view of the same.

The entire centrifugal casting apparatus is not here shown, but, as those familiar with the art understand, a series of dies or

molds are arranged concentric and at the center of the series a rotary distributor is provided for distributing the metal to the molds or dies as the distributor rotates. The invention relates to the construction of said distributor.

There is shown herein a shaft 10 which carries the lower member 11 of the distributor and upon which the upper member 12 is clamped by an arm 13 and a plurality of catch bars 14 having hooks on their upper ends and pivoted at their lower ends to arms 15 extending from the lower member 11 of the distributor. The upper ends of the bars 14 enter longitudinal slots in the ends of the arm 13, which slots, however, are not shown.

The means for clamping the two members of the distributor together may be varied, but said distributor consists of two members 11 and 12 so that the upper member 12 can be very quickly removed or replaced. The upper member 12 is hollow and the main part thereof is in the form of the frustum of a cone with a horizontal flange at the lower end. The lower member 11 is cylindrical and the sides of the upper portion thereof are tapering so that the upper member 12 will fit snugly thereon and rest on the shoulder 16 and constitute a combined lid and receiving member for the distributor. The upper member is open at the top so that the metal is introduced at such open end and enters the chambers 20 of the lower member and issues from each chamber through a port 21 to the molds which are located surrounding said distributor. The outlet, as shown in Fig. 4, is horizontal and the molds are located in a horizontal position.

There may be any desired number of the chambers 20, only two being here shown for convenience in illustrating the same. The inside walls 120 are substantially straight, that is, the surface of each side 120 lies substantially in the same plane, although it is not necessarily a vertical plane, as shown in Fig. 2. Where there are two chambers their inner sides 120 meet at the top and show a substantial diametric line, as shown in Fig. 100

5. The recesses are kidney-shaped, extending only partially across the member 11 to one side thereof and when there are two chambers their outlets are diametrically opposite.

The chief feature of the invention lies in forming the outer surface 220 with a spirally formed surface. The outer line at the top of such surface 220 starts some distance from one side of the member and gradually approaches the periphery of the member both horizontally and vertically, as shown in Figs. 3 and 5. The result is that when the metal goes through the upper member 12 into the chambers, it has a partial gyratory movement given to it as it passes from the top of the chamber to the outlet. The metal does not pass in a vertical line directly to the bottom of the chamber, but has centrifugal movement as it descends, its path being a part of the convolution of the spiral. Thus the direction of the metal is changed, not suddenly at any time, but gradually and with about the same degree of change from the time it enters the chamber until it leaves it. There is a bottom pocket 320, which receives some metal, although most of the metal will pass around to the curved side 220 above said pocket. The metal which gathers in the pocket serves in the nature of a cushion over which the main quantity of the metal passes. Because of the pocket and chiefly because of the spirally disposed surface 220, the metal does not make any sudden change and does not splash or splatter, but passes quickly and almost directly to the outlet.

As shown in Fig. 2, the upper member 12 constitutes a part of the wall of the chambers 20, although the metal seldom reaches the upper member 12, as it passes around and down on the side surface 220 of the pocket. Thus it causes the metal to naturally flow while revolving.

When the metal gathers on the surfaces of the chambers 20, the bars 14 are thrown back, the upper member 12 removed and the metal is discharged from the chambers 20 of the lower member in any desired way. The cleaning of the distributor, therefore, can be very quickly and conveniently done as the metal is easily removed from the chambers and it is to be noted that the chambers from the bottom upward enlarge constantly so that the upper end is very open and, therefore, by turning the member over the metal will drop out. In devices heretofore, the chambers have been so formed that it is difficult to get the chilled metal out of them. The upper member constitutes the upper surface of the outlet 21 so that the chilled metal will easily come out of said outlet.

The invention is:

1. A distributor for a centrifugal casting machine which distributor is rotatable composed of two separable members arranged so that they may be readily separated for removing chilled metal therefrom, substantially as set forth.

2. A distributor for a centrifugal casting machine which distributor is rotatable having chambers for receiving and distributing metal, the walls of which flare upwardly at all points so that chilled metal remaining in said chambers may be readily removed, substantially as set forth.

3. A distributor for a centrifugal casting machine having upper and lower members readily separable from each other, the lower member being provided with chambers for receiving and conveying the metal to the molds, and the upper member being open at the top for receiving the metal and constituting a part of the walls of said chambers, substantially as set forth.

4. A distributor for a centrifugal casting machine having upper and lower members, the upper member being open at the top to receive the metal and the lower member having a chamber, said chamber divided by a wall substantially centrally located so that substantially equal quantities of the metal will enter said chambers, substantially as set forth.

5. A distributor for a centrifugal casting machine having upper and lower members, the upper member being open at the top to receive the metal and the lower member having chambers for receiving and conveying the metal to the molds which have spirally and downwardly inclined outer surfaces, substantially as set forth.

6. A distributor for a centrifugal casting machine having upper and lower members, the upper member being open at the top to receive the metal and the lower member having chambers for receiving and conveying the metal to the molds which have spirally and downwardly inclined outer surfaces, and substantially straight inclined inner surfaces, substantially as set forth.

7. A distributor for a centrifugal casting machine having upper and lower members, the upper member being open at the top to receive the metal and the lower member having chambers for receiving and conveying the metal to the molds which have spirally and downwardly inclined outer surfaces and substantially straight inclined inner surfaces and the upper edge of said surfaces inclining downward spirally from the top of said member to the outlet, substantially as shown.

8. A distributor for a centrifugal casting machine having upper and lower members,

the upper member being open at the top to receive the metal and the lower member having chambers for receiving and conveying the metal to the molds which have spirally and downwardly inclined outer surfaces and substantially straight inclined inner surfaces, and a depression or pocket in the lower end of each of said chambers, substantially as shown.

In witness whereof, we have hereunto affixed our signatures in the presence of the witnesses herein named.

JOHN LE MAY.
MILUS M. HOUSE.

Witnesses:

J. H. WELLS,
O. M. McLAUGHLIN.