Jan. 27, 1925. 1,524,610

J. M. AHLGREN

ROTARY GRID MOLDING MACHINE

Filed July 1, 1922 2 Sheets-Sheet 1

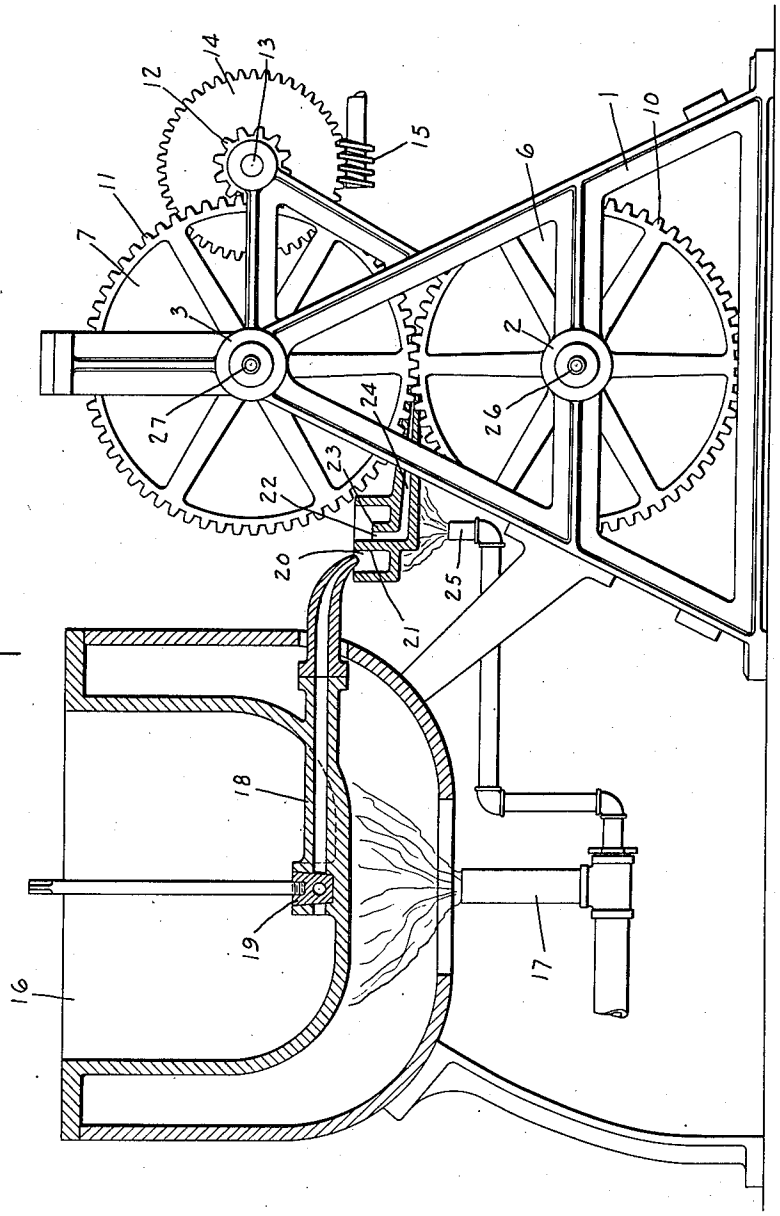


FIG. 1

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FIG. 2

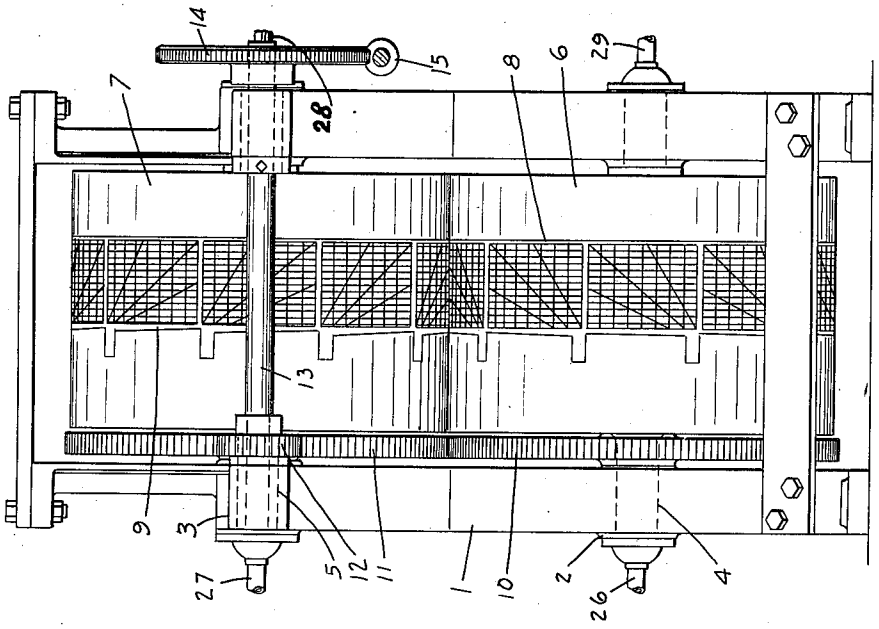
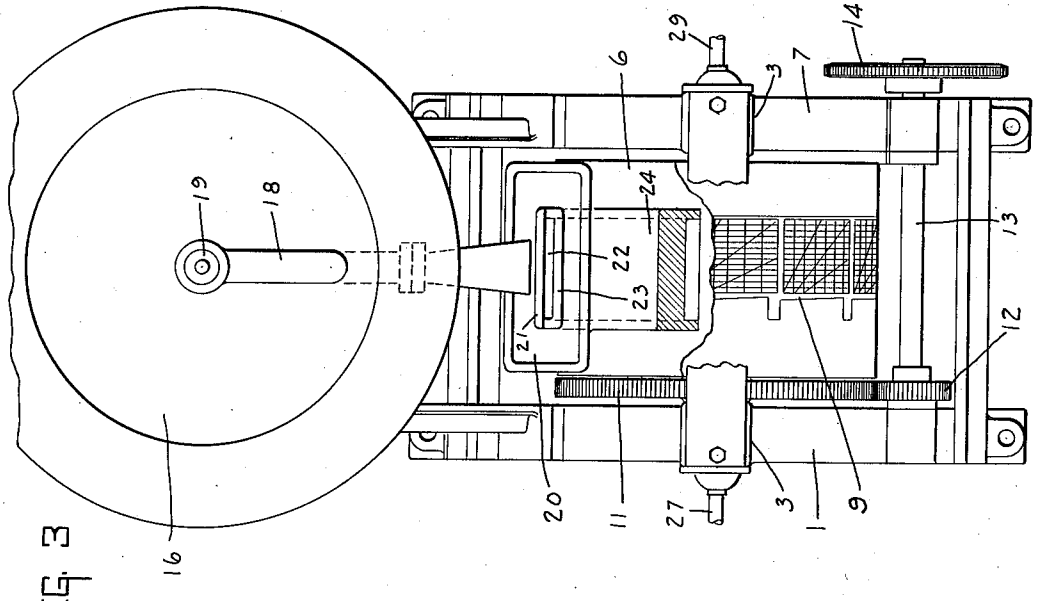


FIG. 3



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Patented Jan. 27, 1925. 1,524,610

UNITED STATES PATENT OFFICE.

JOHN M. AHLGREN, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO A. E. THOMPSON, OF WINDSOR, CANADA, AND ONE-FOURTH TO SIDNEY A. STOUT, OF INDIANAPOLIS, INDIANA.

ROTARY GRID-MOLDING MACHINE.

Application filed July 1, 1922. Serial No. 572,195.

To all whom it may concern:

Be it known that I, JOHN M. AHLGREN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Rotary Grid-Molding Machines, of which the following is a specification.

This invention relates to rotary grid molding machines and the prime feature of the invention is the provision of a pair of drums having co-operating molding dies formed in the peripheral faces thereof into which is poured molten metal for molding grids.

A further feature of the invention is the provision of means in connection with the drums for melting and introducing the metal into the molds while in a molten state.

A further feature of the invention is the provision of means for controlling the flow of the molten metal on its passage from the melting pot to the molds.

A further feature of the invention is the provision of means for driving said drums in unison,

And a further feature of the invention is the provision of means for introducing a cooling medium into the drums.

Other objects and advantages will be hereinafter more fully set forth and pointed out in the accompanying specification.

In the accompanying drawings.

Figure 1 is a side elevation, partly in section, of the combined molding device and melting pot,

Figure 2 is an edge elevation of the molding device and parts for operating the same, and

Figure 3 is a top plan view of the device with parts broken away.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates frame members which may be constructed in any suitable manner and having bearings 2 and 3 into which enter the hubs 4 and 5 of hollow drums 6 and 7, the drum 7 being mounted in a plane above the drum 6, and having its peripheral face in contact with the peripheral face of the drum 6.

Formed in the peripheral faces of the drums 6 and 7 are series of companion grid dies or molds 8 and 9, said molds being so arranged that they will register with each other and form a continuous strip of grids when the drums are rotated and molten metal is introduced into the molds at one side of the drums, successive grids being formed so long as the drums are rotated and molten metal introduced into the molds. The drums 6 and 7 are driven in unison through the medium of gears 10 and 11 which intermesh with each other and which are secured to the hubs of the drums and at one end thereof, power being applied to the gears through the medium of a pinion 12, which is mounted upon a shaft 13 and intermeshes with the gear 11, the shaft 13 having a worm gear 14 attached thereto, which is driven from any suitable source of power through the medium of a worm 15. By providing a worm and gear drive for the drums, said drums will be given a constant steady drive, and consequently the companion molds will always register with each other so as to form a perfect grid.

In order to convey molten metal to the molds and feed the same thereto in a constant stream and without undue wastage of the metal, a melting pot 16 is positioned at one side of the drums 6 and 7 into which the metal to be melted is placed and below the melting pot is positioned a burner 17 for heating the metal and reducing the same to a molten state. Communicating with the lower portion of the melting pot 16 is a discharge spout 18 through which the molten metal is conveyed from the interior of the retort, a valve 19 being provided for controlling the discharge of the molten metal through the spout. The outer end of the discharge spout 18 terminates over a reservoir 20 which is preferably oblong, and in order to cause the metal discharging from the spout 18 to be spread out and flow towards the ends of the reservoir, a baffle plate 21 is extended upwardly from the bottom of the reservoir so that the metal discharging from the spout 18 will enter the reservoir between the baffle plate and the wall of the reservoir nearest the discharge spout.

On the opposite side of the baffle plate 21 is a vertically extending discharge port 22, the flange 23 forming the walls of port 22 extending a distance above the floor of the

reservoir, but terminating short of the top of the baffle plate 21, consequently the force of the flow of the metal as it is discharged from the spout 18 into the reservoir will be greatly retarded by the time it flows around the baffle plate, consequently the metal will enter the discharge port 22 at a normal flow, co-incident to the speed of rotation of the drums.

Communicating with the lower end of the port 22 is a nozzle 24, the opening through which is of a width equal to the width of the grid molds 8 and 9, and the free end of the nozzle is so constructed and positioned that the metal flowing therefrom will be discharged directly into the molds at their point of registration with each other, consequently no appreciable quantity of the metal can escape from the molds. A burner 25 is also positioned below the reservoir 20 so as to maintain the metal at proper temperature while flowing from the melting pot to the molds.

In order to maintain the temperature of the drums at a substantially normal degree, the hubs 4 and 5 are formed hollow and streams of water are conveyed into the drums 6 and 7 through pipes 26 and 27 respectively, while the hubs at the opposite ends of the drums are likewise connected with pipes 28 and 29 through which the water escapes from the interior of the drums thereby maintaining a constant flow of water through the drums which will thoroughly cool the same and maintain an even temperature. The water flowing through the drums also tends to chill the metal as it strikes the molds thereby causing it to quickly harden and rendering the grids in condition to be handled as soon as they pass from between the rolls.

As the grids leave the molds they are integral with each other and form a continuous strip, consequently it is necessary to sever the grids, one from the other, which may be done in any suitable manner.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. A molding machine comprising companion rotating molds, and means for discharging molten metal horizontally into said molds substantially as set forth.

2. In a rotary molding machine, the combination with a pair of drums having companion molds in the peripheral faces thereof, and means for rotating said drums in unison, of means for discharging a constant flow of molten metal horizontally into said molds, substantially as set forth.

3. In a rotary grid molding machine, the combination with a pair of drums having co-operating molds in the peripheries thereof, and means for rotating said drums in unison, of means for reducing metal to a molten state, means for conveying the molten metal to said molds, and means for causing the metal to flow horizontally to the molds at a speed in unison with the rotation of said drums, substantially as set forth.

4. In a rotary grid molding machine, a pair of drums, one above the other and contacting therewith, continuous mold sections in the peripheries of said drums and arranged for co-operation with each other, means for rotating said drums, and means for maintaining the drums in cooled condition, substantially as set forth.

5. In a rotary grid molding machine, the combination with a pair of rotating companion grid molds, of means for discharging a constant flow of molten metal horizontally into said molds, means for regulating the flow of the metal, and means for maintaining the metal at a uniform temperature, substantially as set forth.

6. In a molding machine, the combination with a pair of drums having co-operating molds in the peripheries thereof, means for rotating said drums in unison, a melting pot for reducing metal to a molten state, a reservoir intermediate the melting pot and the point of discharge of the metal into the molds, and means for heating the metal in the reservoir, substantially as set forth.

7. In a molding machine, the combination with a pair of drums having co-operating molds in the peripheries thereof, means for rotating said drums in unison, a melting pot for reducing metal to a molten state, a reservoir intermediate the melting pot and the point of discharge of the metal into the molds, said reservoir having a baffle arranged therein to regulate the flow of metal therethrough, and means for heating the metal in the reservoir, substantially as set forth.

8. In a molding machine, a source of molten metal, a plurality of molds, a supply line for continuously supplying metal from the said source to the molds successively including a reservoir, an outlet leading from the reservoir to the molds, a nozzle discharging in the reservoir, a baffle in the reservoir between said nozzle and said outlet said baffle having its ends spaced from the sides of the reservoir, and means for heating the metal in the reservoir, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 3rd day of February, A. D., nineteen hundred and twenty-two.

JOHN M. AHLGREN. [L. S.]

Witnesses:
CAREY S. FRYE,
M. L. SHULER.