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A. L. AYERS ET AL

2,321,172

APPARATUS FOR COATING MOLDS AND THE LIKE

Filed Nov. 19, 1941

FIG. 1.

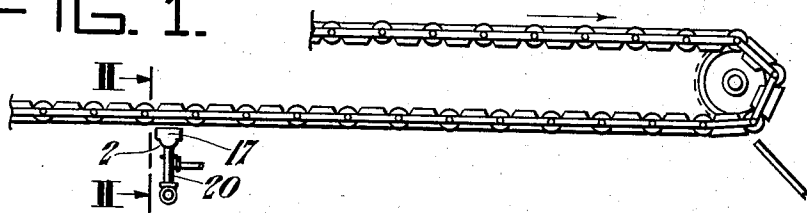


FIG. 2.

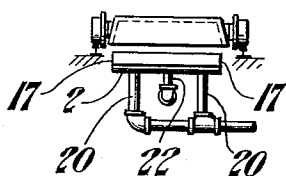


FIG. 3.

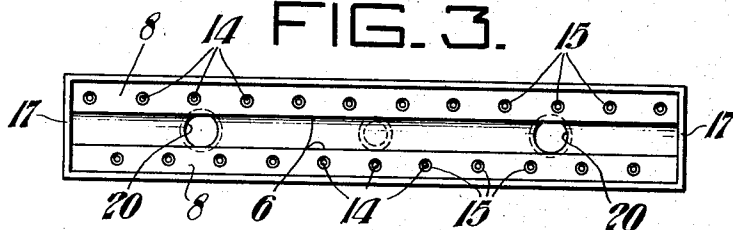


FIG. 4.

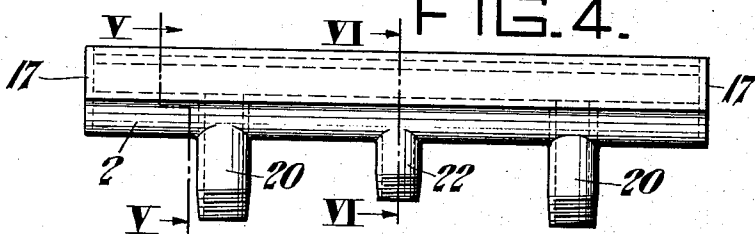


FIG. 5.

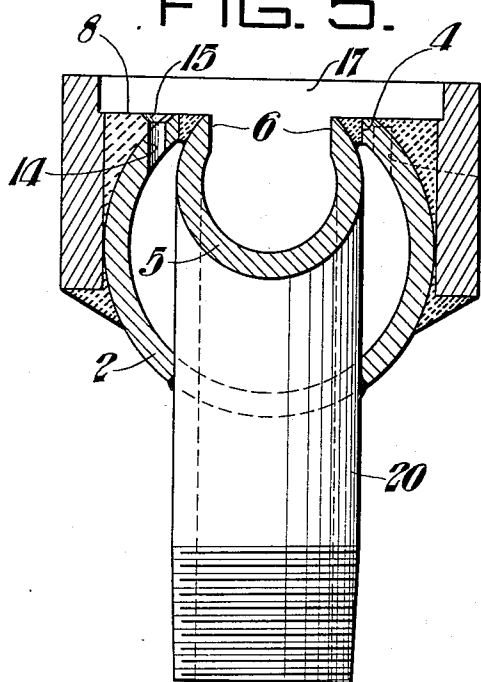
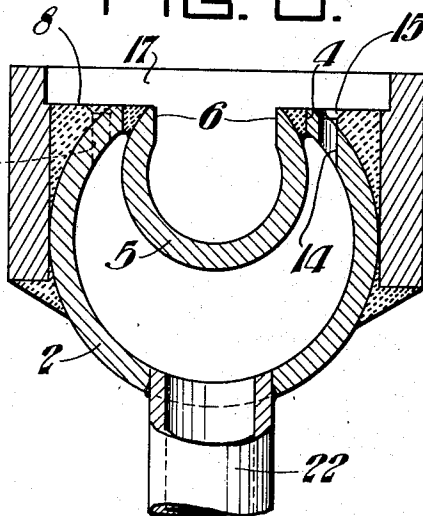


FIG. 6.



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UNITED STATES PATENT OFFICE

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APPARATUS FOR COATING MOLDS AND THE LIKE

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1 Claim. (Cl. 22—88)

This invention relates to apparatus for coating molds and the like, and more specifically to one which is particularly adaptable to coating the molds of pig-metal casting machines.

Machines for casting pig-metal comprise a pair of endless conveyor chains which extend around, and are driven by, sprocket wheels. Extending between these endless conveyor chains are a number of casting molds arranged adjacent to each other with their ends attached to the said conveyor chains. Molten metal is poured into the casting molds as the conveyor is continuously driven. The pigs so formed are successively discharged from their molds, and prior to being again filled with pig-metal, are coated on their interiors with a suitable mold coating, usually a mixture of lime and water.

It is among the objects of the present invention to provide an apparatus for applying an even coating to molds and the like.

Another object is to provide an apparatus of the class described which may be so used in connection with a heated work object that the heat from the latter is evenly dissipated by the quenching action of the application of the relatively cold liquid coating medium. This equal dissipation of the heat of the work object reduces to a minimum the possibility of stresses being set up in different sections, thereby eliminating fractures and failures in service.

Still another object is to provide a coating apparatus having the foregoing advantages and one which also may be easily and quickly cleaned.

A further object is to provide an apparatus for coating molds and the like which is not only attended by the foregoing advantages, but one which is relatively inexpensive and easy to manufacture, install, operate, and maintain.

The invention, then, comprises the features hereinafter fully described and as particularly pointed out in the claim, the following description and the annexed drawing setting forth in detail a certain illustrative embodiment of the invention, this being indicative of one of the number of ways in which the principles of the invention may be employed.

In said drawing, Figure 1 is a fragmentary side elevation of a part of the conveyor mechanism of a pig-metal casting machine and illustrating in combination therewith the coating apparatus of the present invention.

Figure 2 is an elevation on the line II—II of Figure 1.

Figure 3 is a plan of the coating apparatus of Figures 1 and 2.

Figure 4 is a side elevation of the showing of Figure 3.

Figures 5 and 6 are sectional views on the lines V—V and VI—VI respectively of Figure 4.

Referring more particularly to the drawing, the numeral 2 designates a horizontally disposed cylindrical pipe having a continuously open upper portion 4. Within this continuously open upper portion 4 there is mounted a pipe 5 of smaller diameter than the pipe 2 and having formed on its upper portion a continuous opening 6.

As shown more clearly in Figure 5, there is provided on either side of the openings 4 and 6 and extending outwardly therefrom a flat plate 8. Disposed to extend vertically through the plate 8 on either side of the pipes 2 and 5 is a series of apertures or orifices 14, the upper ends of which are counterbored in the said plates 8, as shown at 15.

The apertures 14 on their inner ends communicate with the interior of the pipe 2. The ends of the pipe 2 and the smaller pipe 5 are closed by end plates 17. This permits the interior of the larger pipe 2 to serve as a closed chamber except for the vertical apertures 14 which extend through the plates 8; and the smaller pipe 5 to serve as a trough having closed ends.

Extending vertically through the pipes 2 and 5 and communicating with the latter is a pair of pipes 20 through which there is supplied, in any suitable manner, lime water, whereby the trough formed by the pipe 5 serves as a receptacle therefor.

A vertical pipe 22 is connected to, and communicates with, the pipe 2 intermediate its ends, and through this pipe 22 there is fed air or steam under pressure.

In operation, the air or steam is turned on under controlled pressure and passes through the vertical pipe 22 into the chamber formed by the pipe 2. The air or steam under pressure is ejected through the vertical holes 14 in the plates 8.

The coating medium (such as the lime water) is made to rise above the level of the trough formed by the pipe 5 and to overflow onto the flat plates 8. This permits the air or steam to diffuse the coating medium.

When applying the apparatus of the present invention to the coating of molds, such as those employed in pig metal casting machines, the pipes 2 and 5 are made to extend longitudinally of the pig molds but transversely of the direction of movement of the latter. The length of the pipes

2 and 5 between the end members 17 conforms in width to the length of the mold to be coated.

The foregoing combination of elements may be composed sectionally in the manner shown or may, if desired, be cast.

While we have shown and described a specific embodiment of the present invention, it will be seen that we do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of the invention as defined in the appended claim.

We claim:

Apparatus for coating molds with a liquid com-

position comprising a tray supported beneath said molds and coextensive therewith, an outboard flat plate extending from each of the upper edges of said tray, each of said outboard flat plates being provided with at least one orifice, means 5 for continuously applying the coating composition to the tray and the outboard flat plates, walls surrounding said flat plates to prevent flow of the coating composition therefrom, and means 10 for supplying a gaseous medium under pressure through said orifices.

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