Feb. 21, 1950 H. R. STREET 2,498,015

POURING JACKET FOR MOLDS

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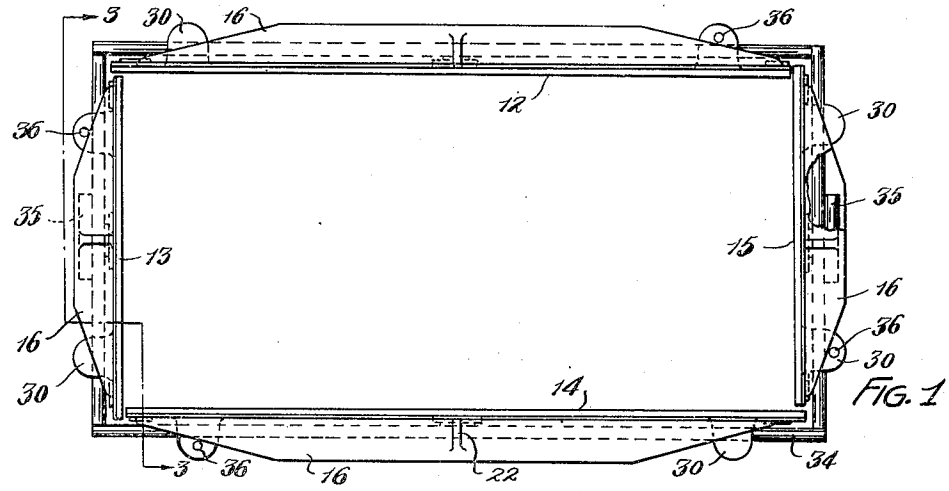


FIG. 1

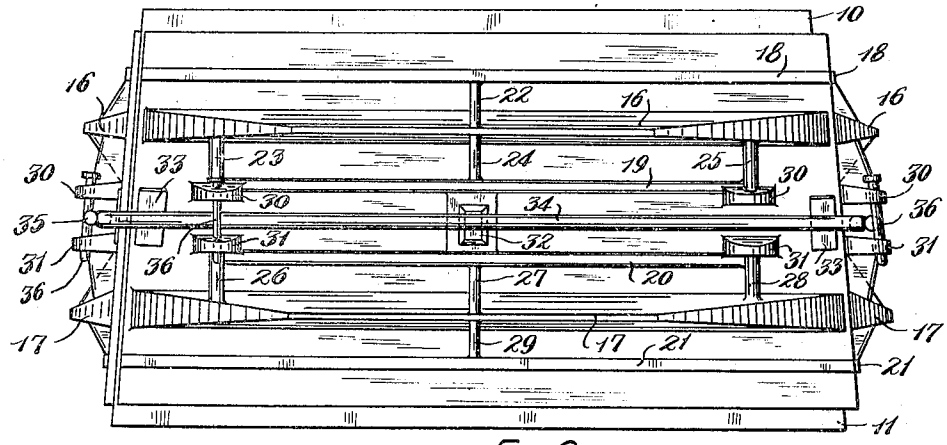


FIG. 2

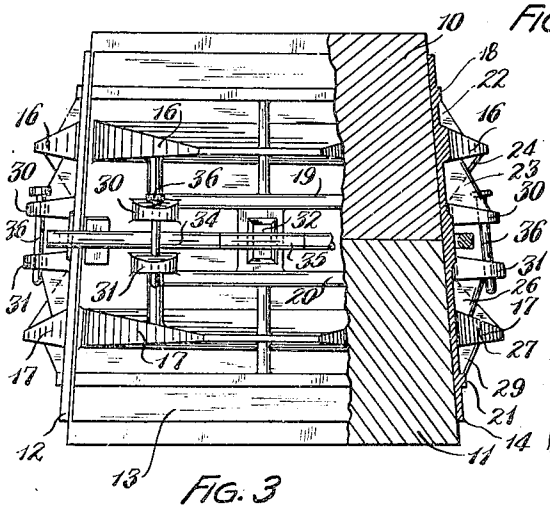


FIG. 3

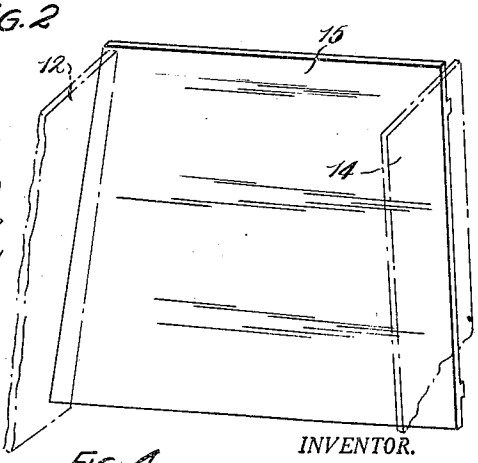


FIG. 4

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POURING JACKET FOR MOLDS

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3 Claims. (Cl. 22—112)

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This invention relates to improvements in pouring jackets for molds, that is to say jackets to be placed around completed molds after they have been removed from the flasks in order to hold the molds against distortion or breakage during the pouring of molten metal into the mold cavities. In certain respects the invention constitutes an improvement over that of my Patent No. 1,983,581, issued December 11, 1934.

For the purpose of reinforcing molds during the pouring of metal into the mold cavities it is conventional practice to enclose the molds in jackets. The jackets should fit the molds rather accurately, because if there are areas in the mold walls which do not at first contact the jacket walls the pressure of the metal may force the mold outwardly in such areas until contact with the jacket is effected, and such action produces distortion in the mold cavities with consequent inaccuracy in the resulting casting. It is good practice therefore to provide jackets the walls of which are not rigidly connected together at the corners and wherein the mounting of the walls permits a limited degree of movement in various directions so that a good fit against the mold may be effected automatically. The jacket of the present invention falls within this class.

One of the objects of the invention is the provision of a jacket which shall be self-adjusting relative to the side and end walls of the mold in order that the jacket may fit the mold closely even though dimensions are not held to close tolerances.

Another object is the provision of novel side and end plates to be assembled and mounted in the frame in a novel manner.

Another object is the provision of mounting means such as to facilitate the assembly of the plates in the frame and the removal and replacement of any plate which may become damaged in use.

Other objects and features of novelty will appear as I proceed with the description of that embodiment of the invention which, for the purposes of the present application, I have illustrated in the accompanying drawing, in which

Fig. 1 is a plan view of a jacket constructed and assembled in accordance with the invention.

Fig. 2 is a side elevation of the jacket in operative position upon a mold.

Fig. 3 is an end view of a mold with the jacket thereon, the view being partly in section substantially upon the line 3—3 of Fig. 1, and

Fig. 4 is a diagrammatic perspective view

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showing the overlapping of side plates at the corners of the jacket.

In the drawing the cope and drag of a mold are indicated at 10 and 11. The jacket comprises two side plates 12 and 14 of identical form and size and two end plates 13 and 15 also of identical form and size. The relative lengths of the side and end plates may vary of course, and in many instances they may be of the same length. Consequently I shall use the term side plate hereinafter to refer to the end wall elements as well as the side wall elements of the jacket.

All of the side plates are provided with reinforcing ribs on their exterior surfaces, the principal reinforcement being provided by longitudinal ribs 16 and 17, the upper surfaces of which are inclined downwardly and outwardly in order to shed and deflect any molten metal which may fall upon them. Minor longitudinal ribs 18, 19, 20 and 21 may be provided also, and transverse ribs such as 22 to 29 inclusive are advisable.

On each side plate there are two pairs of ears or lugs 30, 31 which are disposed in longitudinal alignment near the ends of the plate. Centrally between the ribs 19 and 20 there is a pad 32, and at the extreme ends of the plate in line with the pad 32 there are other pads 33 of somewhat less thickness. A frame 34 formed of rod material surrounds the jacket between the lugs 30 and 31 of the various pairs. When the assembled jacket is mounted upon a mold the pads 32 bear against the frame 34, and these points of contact become in effect fulcra around which the plates may have limited universal movement.

At two opposite ends or sides the frame 34 is provided with means to constitute hand holds. Preferably for this purpose I weld to the frame proper short lengths of rod 35. By grasping these hand holds an operator is enabled to lift the jacket and lower it over a mold. Through one pair of lugs 30, 31 of each plate I drill holes outwardly of the frame 34, and through each pair of holes I drop a pin 36.

In assembling the jacket the operator starts with one side plate, plate 12 for example. The plate is put inside the frame 34 and moved outwardly until its two pairs of lugs 30, 31 embrace the frame on that side. Then the pin 36 is dropped into place in the drilled holes through the lugs at the right hand end of the plate. Next the plate 13 is brought into the illustrated position with its right hand end, as viewed from the inside of the frame, overlapped by the left hand end of plate 12. A pin is then dropped into the drilled holes in the right hand end of

plate 13 to hold that end of the plate from movement inward. The right hand end of plate 13 is thus positioned behind the left hand end of plate 12 and holds that end of plate 12 against inward movement. Plate 14 is then placed in position by a similar procedure and pinned at its left hand end, as viewed in Fig. 1, thereby holding the left hand end of plate 13 against inward movement. The final plate 15 is put into position by slipping its left hand end, as viewed from the inside of the frame, into position in front of the plate 12, whereby the left end of plate 15 is held against inward movement, after which the right hand end of plate 15 is swung around behind plate 14 and pinned to the frame 34. Each one of the plates therefore is held outwardly in operative engagement with the frame 34, by the next adjacent plate at one end and by a pin at the other end.

When the jacket has been thus assembled it may be lifted by the two handholds 35 and carried from one place to another as may be necessary in foundry procedure. In mounting a jacket upon a mold the operator lowers the jacket by the handholds 35 until the plates of the jacket engage the walls of the mold. The frame 34 while supporting the jacket bears against the under surfaces of lugs 30. With the jacket on the mold the operator releases the handholds 35 and the frame drops a short distance and wedges itself against the inclined pads 32. If the weight of the frame is not sufficient to produce a good wedging action the operator may force the frame down into tight engagement with the pads 32. The plates of the jacket then bear closely against the walls of the mold, and all movement of the plates due to pressure of the metal in the mold is prevented. After the casting has cooled and the jacket is to be removed from the mold the operator grasps the handholds 35 and lifts the frame 34, thereby loosening its engagement with the pads 32. Further lifting effort applied to the handholds raises the frame into engagement with lugs 30 and thereafter lifts the jacket off the mold.

It is to be understood of course that pins could be used at both ends of each plate, but in any event the overlapping of the plates at the corners must be retained, as otherwise the plates would be free to turn upon the frame 34 to such an extent as to get out of proper relation with each other and thus interfere with the handling of the jacket.

Whenever a plate becomes damaged and requires removal it can be removed readily, for example plate 12 could be removed by withdrawing the pin 36 from the holes in lugs 30, 31, at the right hand end of the plate, swinging that end inwardly a certain distance and then moving the plate endwise far enough to clear its left end from the adjacent end of plate 13. A new plate can then be installed by reversing such procedure.

Having thus described my invention, I claim:

1. A pouring jacket for molds, comprising a rectangular frame of rod material, four externally reinforced plates disposed inwardly of the respective sides of said frame, each plate being separably and loosely connected with said frame to permit limited movement relative to the frame, one end of each plate overlapping the end of an adjacent plate and held by the latter plate against inward movement, the opposite end of each plate being overlapped by the plate adjacent thereto, and disengageable bracket means near the overlapped end of each plate engaging said frame for preventing movement of that end of the plate inwardly relative to said frame.

2. A pouring jacket for molds, comprising a rectangular frame of rod material, four externally reinforced plates disposed inwardly of the respective sides of said frame, two pairs of longitudinally aligned external lugs on each plate, one pair near each end of each plate, the lugs of each pair loosely embracing said frame, certain of said pairs of lugs at each corner of the jacket having aligned perforations therethrough outwardly of said frame, and pins in said perforations, the ends of said plates adjacent the pinned ends of other plates overlapping said pinned ends between said pinned ends and said frame, whereby both ends of all plates are held against inward movement.

3. A pouring jacket for molds, comprising a rectangular frame of rod material, four externally reinforced plates disposed inwardly of the respective sides of said frame, two pairs of longitudinally aligned external lugs on each plate, one pair near each end of each plate, the lugs of each pair loosely embracing said frame, one end of each plate overlapping the end of an adjacent plate and held by the latter plate against inward movement, the opposite end of each plate being overlapped by the plate adjacent thereto, said lugs near the overlapped end of each plate having aligned perforations outwardly of said frame, and a pin removably mounted in each such pair of perforations, whereby that end of each plate is held against inward movement.

HORACE R. STREET.

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