C. O. WOOD.

MOLDING JACKET.

APPLICATION FILED JULY 30, 1913.

1,101,160. Patented June 23, 1914.

Fig. 1.

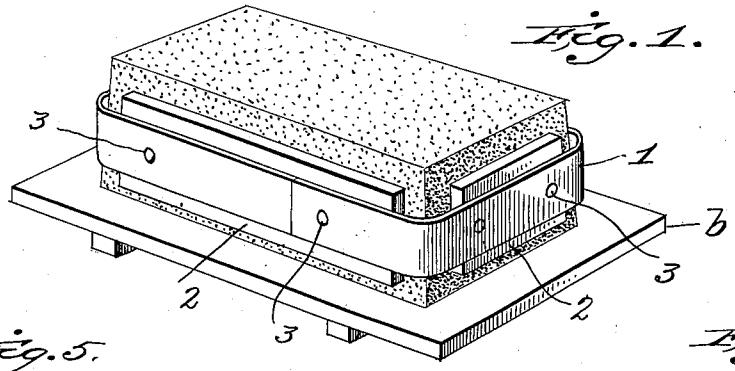


Fig. 5.

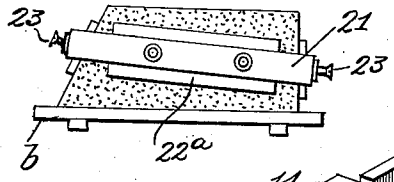


Fig. 2.

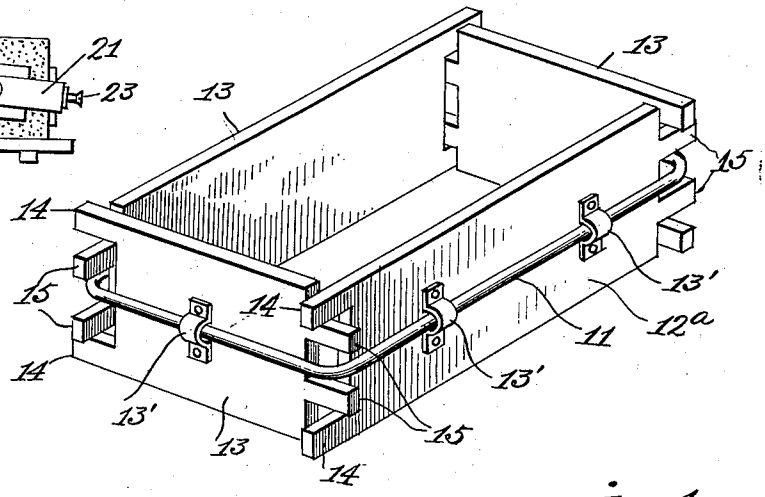


Fig. 3.

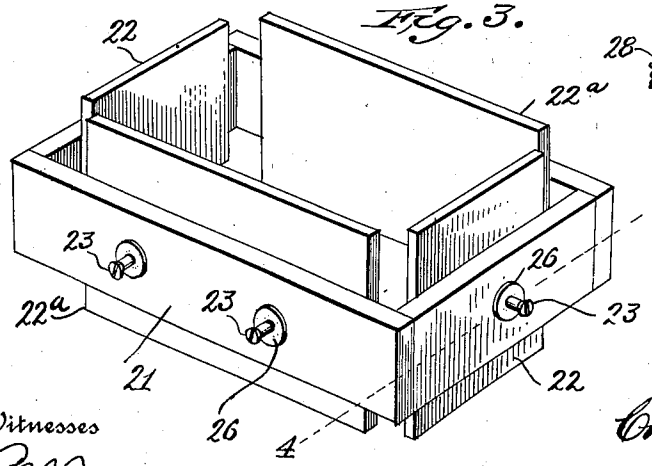
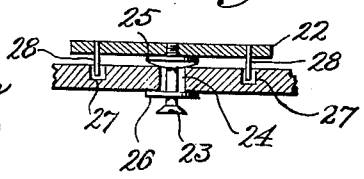


Fig. 4.



Witnesses

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MOLDING-JACKET.

1,101,160. Specification of Letters Patent. Patented June 23, 1914.

Application filed July 30, 1913. Serial No. 782,027.

To all whom it may concern:

Be it known that I, CHARLES O. WOOD, a citizen of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, United States of America, have invented certain new and useful Improvements in Molding-Jackets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

It is well known to molders that no two flasks, presumably of the same size, are alike. They usually differ from one another by a small fraction of an inch in one or more of their dimensions, or in the slant of their sides, thereby deviating slightly from their true geometrical form in horizontal or vertical section, and this is true, whether the flask consists of two parts or more than two parts. It is customary in using flasks to place them on a bottom board, first filling the drag around the wooden or other pattern, then placing the cope on the drag and completing the mold. The cope and drag are then separated and the pattern removed, whereupon the cope is replaced on the drag and the flask is removed, leaving the sand mold supported only by the bottom board. The flask is then used for making other molds. Ordinarily the metal cannot be poured into the mold without supporting the sides of the mold, for the reason that, (where there is to be a large volume of metal in the mold,) the weight of the fluid metal in the mold will push out the sand and damage or destroy the mold. In order to prevent this, it is the present practice to place a rigid frame or casing presumably of the same size as the flask over the mold. These casings being commonly rigid frames of cast iron, sheet metal or wood, have the same defects as the flasks in which the molds are made, and usually have greater variations than the flasks, as they are not so carefully made. If a cast iron or other rigid casing be used, the variations above-referred to are present, consequently there are some parts of the side of the mold that cannot touch the side of the casing or frame, and the supporting of the mold is not uniform. Consequently, when the metal is poured into the mold the sand at the unsupported places is moved against the sides of the frame or casing, destroying the contour of the cavity in the mold, and producing either a distorted casting or a worthless casting, and in many cases the molten mass runs out through the ruptured mold.

The object of my invention is a molding jacket for obviating the inconveniences stated, and constructed and arranged to fit any mold of a given size without adjustment, so as to automatically compensate for any of the before mentioned discrepancies in the dimensions of the flask.

Referring to the drawings, in which like parts are similarly designated—Figure 1 is a perspective view of one form of my invention: Fig. 2 is a like view of a modification. Fig. 3 is a perspective view of another form. Fig. 4 is a section on line 4—4 of Fig. 3, and Fig. 5 is a side elevation of a mold, the irregularities being exaggerated, and showing a jacket in place and inclined.

The molding jacket comprising my invention comprises a frame 1, 11, or 21, to which are connected mold engaging members or plates, 2, 13 or 22, which may be of thin iron, or of wood, or any other suitable material.

In the drawings I have shown a rectangular jacket, but any other shape may be used with correspondingly shaped molds.

In the figures of drawing I have illustrated jackets in which all of the plates, or all but one of the side plates are arranged to have a small amount of universal movement sufficient to automatically compensate the irregularities in molds made in different flasks of the same size. When in use my jacket is not supported by the bottom board *b* of the mold, but by contact with sides of the sand mold itself. In order to permit the plates to automatically accommodate themselves to the sides of the mold, the frame must either be yielding, or the plates must be so connected to the frame that they have slight movement with respect thereto.

In Fig. 1 I have illustrated a yielding frame 1 comprising a thin piece or strip of sheet metal, preferably, but not necessarily, spring metal, to which the mold engaging members or plates 2 are connected by screws 3, bolts, or similar securing means. By reason of the frame 1 being yielding and

flexible or resilient, as the jacket is placed on the mold the plates 2 readily accommodate themselves to variations in taper and deviation of the horizontal section from a true rectangle. It is, of course, obvious that a round wire may be secured in any convenient manner to the sides of wood of my novel jacket.

In Fig. 2 the frame 11 is a round bar of iron or wire, to which the mold-engaging members or plates 13 are connected. These plates are provided with perforated ears 13′ through which the frame loosely passes. The ends of these plates are provided with projections or lugs 14 and 15, the lugs 14 at one end of the plates being near or at the side edges of the plate, and those 15 at the other end of the plate being nearer the middle of the plate and arranged to pass between the lugs of an adjacent plate. The lugs 14, 15, on adjacent plates at the corners mutually prevent the plates 13 from rotating on the frame 11 to a horizontal position, said lugs having sufficient play between them to permit the plates which are loosely connected to the frame, to have a slight amount of universal movement with respect to the frame 11, which latter is yielding or flexible. As illustrated in Fig. 2, the frame element 11 or that portion of the jacket that permits the automatic adjustment of the sides 12^a, 13, passes around the corner of the jacket, and lies in a substantially horizontal plane between the lugs of each pair.

In Fig. 3 I have illustrated a rigid frame, 21, on which the plates or mold engaging members 22 are mounted. The manner of connecting the plates to frame 21 is more clearly shown in the sectional view, Fig. 4. The plates 22 are each provided with a headed pin or bolt 23 that passes through a hole 24 in the frame somewhat larger than the screw, pin or bolt 23. On each side of the frame is a washer 25, 26, the one 25 having a rounded or curved face adjacent the inner face of the side of the frame. The bolt 23 passes through these washers. On one or both sides of the hole 24, and on the inner face of the side of the frame is a recess or recesses 27, into which projects the end of a pin or pins 28 secured to the plate 22. These recesses 27 are larger than the end of the pins 28. The structure is such as to permit a small amount of universal movement of the plate with respect to the frame, and the pin or pins 28 prevent the plate from turning entirely around on the bolt 23.

I have previously stated that one of the plates need not have universal movement; and in Figs. 2 and 3 I have shown the plates 12^a and 22^a respectively, as connected to the frame by two connecting elements 13′ and 23, respectively. These two structures will permit one of the plates to swing on its longitudinal axis. There is a decided advantage in not supporting the jacket by causing the plates to rest on the bottom board *b* and supporting the entire jacket by the mold itself. If the distortion of the mold is considerable, or if the mold be unduly small, the jacket may be placed on the mold in an inclined position, as illustrated in Fig. 5, thus the jacket may be used within greater limits; in other words, if the dimensions of the mold be slightly less than normal distance between sides of jacket, the inclination of the jacket tends to overcome this discrepancy.

I claim—

1. A molding jacket comprising a continuous flexible frame, a plurality of mold engaging members and connections between some or all of the members and frame, permitting universal movement of some or all of the members.

2. A molding jacket comprising a plurality of mold engaging members, a yielding frame to which said members are connected, said members arranged to be supported only by the sides of the mold when in operative position.

3. A molding jacket comprising a plurality of plates, a flexible frame to which said plates are loosely connected, said plates arranged to be supported when in operative position by the sides of the mold above its bottom board.

4. A molding jacket comprising a plurality of mold engaging plates, a flexible frame and means for connecting some or all of the plates to the frame to permit a limited amount of universal movement of the plates with respect to the frame, said jacket arranged to be supported only by the sides of the mold when in operative position.

5. A molding jacket comprising a frame, a mold engaging plate connected to each side of the frame, means to connect one of the plates to the frame to rock about its horizontal axis, and means for connecting the other plates to said frame to permit of their universal movement.

6. A molding jacket comprising a yielding frame, and mold-engaging members secured to the frame.

7. A molding jacket comprising a yielding frame and mold engaging members connected to the frame.

8. A molding jacket comprising a closed yielding frame and mold engaging members loosely connected to the frame.

9. A molding jacket comprising a yielding frame and mold engaging members connected to the frame, the connection of one of said members permitting a swing about a horizontal axis and the connection of the other members permitting their universal movement.

10. A molding jacket comprising a frame, mold engaging members movably connected

to the frame, said members loosely interlocking at their adjacent ends to confine the movement of the members.

11. A molding jacket comprising a round yielding frame, a plurality of mold engaging plates having ears thereon through which said frame loosely passes, said members loosely interlocking adjacent ends to limit the extent of universal movement of the members.

12. A molding jacket having automatically movable sides and means for connecting the sides, the ends of said sides arranged with respect to one another to cause one end of one side to limit the movement about a longitudinal axis of an adjacent end of the other side at the corner.

13. A molding jacket having automatically movable sides and means for connecting the sides while permitting said movement, said sides at the corners of the jacket arranged to mutually limit their movement about a horizontal axis.

14. A molding jacket having automatically movable sides and means connecting the sides together, each of said sides having a pair of end lugs at its edges and a pair of end lugs intermediate its edges and middle, whereby the lugs of adjacent sides at the corners of the jacket will mutually limit the swing or tilt of the plate on a horizontal axis.

15. A molding jacket having sides self adjusting to the mold, means for connecting said sides together while permitting said self adjustment, each of said sides having a lug at its upper and its lower edge on one end, a lug between the middle and its upper edge and a lug between the middle and its lower edge on the other end, said latter lugs on one side passing between the former lugs on another side at the corners of the jacket mutually limiting the tilting of the sides.

16. A molding jacket having sides self adjusting to the mold, a flexible frame for connecting said sides together while permitting said self adjustment, each of said sides having a lug at its upper and its lower edge on one end, a lug between the middle and its upper edge, and a lug between the middle and its lower edge on the other end, said latter lugs on one side passing between the former lugs on another side at a corner of the jacket mutually limiting the tilting of the sides, said frame arranged in a plane passing between the lugs of each pair of lugs at the corners of the jacket.

17. In a molding jacket having a movable side, lugs on the end of said side to limit the swing of the side about a horizontal axis in two directions when co-acting with an adjacent side.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

CHARLES O. WOOD.

Witnesses:
W. T. BRONSON,
CHAS. J. ZULLINGER.