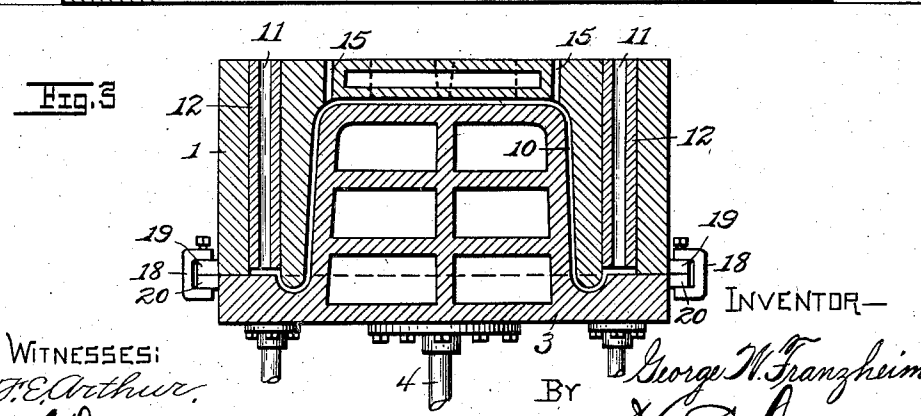
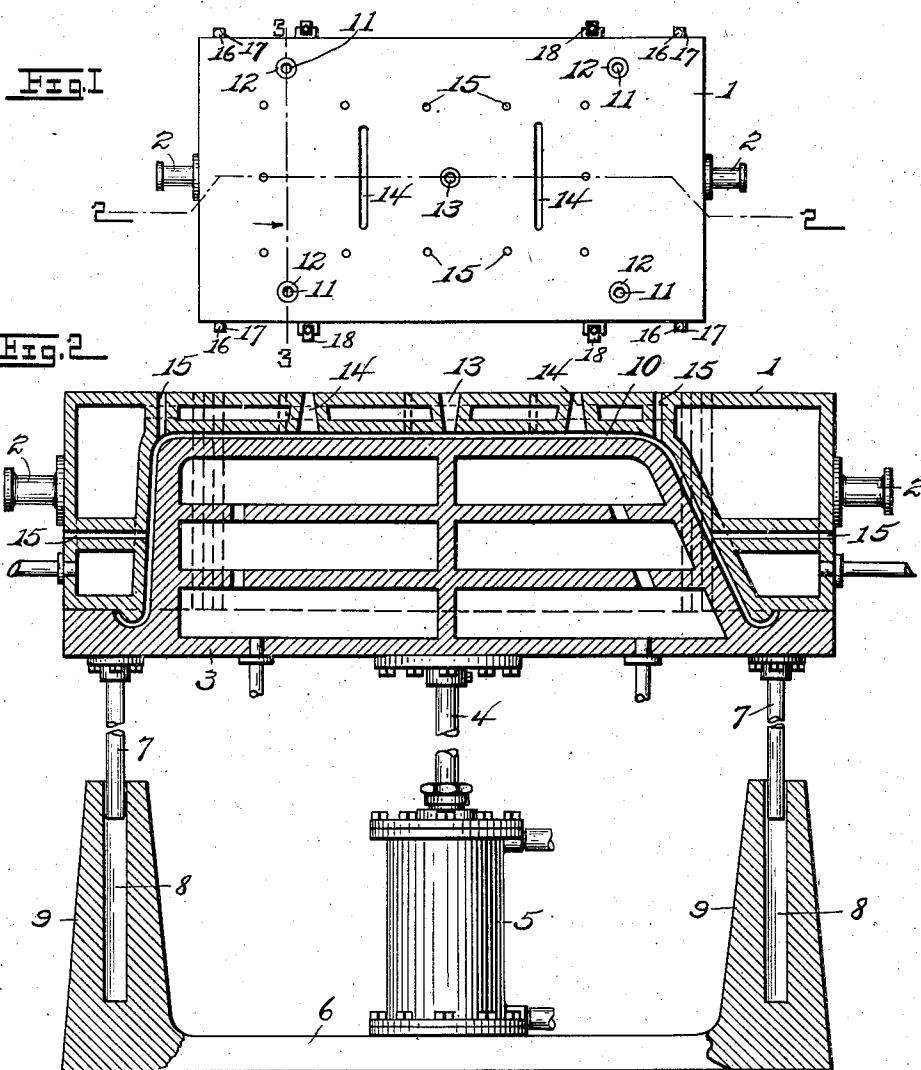


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 PERMANENT MOLD FOR METALLIC BATH TUBS AND THE LIKE.
 APPLICATION FILED JULY 20, 1910.

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PERMANENT MOLD FOR METALLIC BATH-TUBS AND THE LIKE.

1,009,296.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed July 20, 1910. Serial No. 572,932.

To all whom it may concern:

Be it known that I, GEORGE W. FRANZHEIM, a citizen of the United States of America, and resident of Wheeling, county of Ohio, and State of West Virginia, have invented certain new and useful Improvements in Permanent Molds for Metallic Bath-Tubs and the Like, of which the following is a specification.

10 This invention relates to a pressure mold for metallic bath-tubs and other similar articles, and it has for its primary object to provide a permanent mold whereby such articles may be formed.

15 A further object of the invention is to provide a two-part permanent mold, consisting of a cheek and drag, having means whereby said parts may be separated.

20 A still further object is to provide a mold of the character mentioned, formed either of metal or a refractory material, cast-iron being preferred, which shall obviate the necessity for employing sand for effecting the formation of the casting.

25 With these and other important objects in view, the invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, reference being herein had to the accompanying drawing, forming a part of this specification.

30 In said drawing,—Figure 1 is a top plan view of one embodiment of the invention; Fig. 2 is a general sectional elevation, the section being taken on the line 2—2, Fig. 1; and Fig. 3 is a transverse sectional view on the line 3—3, Fig. 1.

35 Referring to said drawings, wherein like designating characters distinguish like parts throughout the several views—1 indicates a cheek mold which is adapted to be supported in any appropriate manner, as by trunnions 2 formed on its opposite ends for mounting in a suitable supporting frame (not shown). The under side of said cheek-mold is hollowed out, the walls defining the hollowed-out portion conforming in shape to that desired for the bath-tube or other article to be molded, a bath-tub mold being herein depicted.

40 A drag-mold 3 is mounted to cooperate with the cheek-mold 1, the upper side of said drag-mold being shaped to conform in size and form with that desired for the tub. Said drag-mold is mounted so as to

be vertically movable, as upon the piston-rod 4 of a fluid or air pressure motor or cylinder 5. Said cylinder is suitably mounted in an upright position, as upon a base 6.

60 Suitable guiding means is employed whereby the drag-mold 3 is maintained against rotary movement while being raised and lowered with respect to the cheek-mold 1. The guiding means illustrated consists of a plurality of vertical rods 7 depending from said drag-mold and movable in vertical sockets 8 provided in upright pedestals 9 formed integral with the base 6.

70 When the drag-mold has been elevated to the limit of its upward movement with respect to the cheek-mold, an opening 10 of the thickness, size and contour desired for the tub is formed.

75 Located at suitable points in the cheek-mold is a plurality of vertical side gates 11 through which the fluid metal is poured, said side gates being preferably lined with a suitable refractory material 12. The metal enters the opening 10 from the side gate at or near the lowermost point of the former and rises, filling said opening.

80 At or near the center of the cheek-mold is a vertical inwardly-tapered opening or "riser" 13. When the metal has filled the opening 10, it rises in the riser 13 and through it the degree of solidification may be determined. Also provided in said cheek-mold is a plurality of upwardly tapered gates 14 termed bottom gates through which fluid metal may in some cases be poured, but which ordinarily serve as risers.

85 A plurality of vents 15 are provided in the cheek and drag for admitting of the escape of the gases from the poured metal and for preventing the resistance which would otherwise be created by the formation of a vacuum between the molded tub and the mold parts when the latter are separated.

90 Guide pins 16 carried by the drag-mold project through openings in lugs 17 carried by the cheek-mold for guiding the two mold parts into proper registration.

95 Clamps 18 may be secured upon outstanding lugs 19 and 20 carried by the cheek and drag, respectively, for maintaining said mold parts in fixed relation during the molding operation.

100 Both the cheek and drag are water-jacketed or cored out, as shown in Figs. 2 and 3, to allow of a circulation of water for main-

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taining the mold parts at substantially a uniform temperature.

From the foregoing, it will be seen that I provide an extremely simple device of the character described. It will, however, be noted that various alterations within the scope of the appended claims may be made without departing from the general spirit or scope of the invention. Hence I do not desire to limit myself to the precise construction and arrangement of parts herein shown and described.

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

1. A permanent mold for metallic bath tubs, comprising a metallic cheek having suitably mounted trunnions, a metallic drag located beneath said cheek, said cheek and drag when associated in coöperative relation having therebetween an opening of inverted tub form, said cheek having side gates lined with refractory material through which said opening may be filled, and also having bottom gates, said side gates communicating with said opening at the lowermost point of the latter, means for elevating and lowering

said drag with respect to said cheek, means for guiding said drag, and means for maintaining said drag against rotary movement while being raised and lowered.

2. A permanent mold for metallic bath-tubs and the like, comprising a suitably mounted metallic cheek whose under side is hollowed out to conform in size and shape to that of the outer surface of the article to be molded, a metallic drag whose upper side is shaped to conform in size and shape to that of the inner surface of said article, a piston rod upon which said drag is mounted, a motive power cylinder for imparting vertical movement to said piston rod, and means whereby said drag is guided into proper registration with said cheek, said means comprising apertured lugs carried by said cheek and guide-pins carried by the drag, said lugs and guide-pins coöperating.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

GEORGE W. FRANZHEIM.

Witnesses:

H. E. DUNLAP,
C. H. DUNLAP.