

June 14, 1932.

R. G. REDMANN

1,862,982

OPEN JOINT MOLD

Filed June 1, 1931

Fig. 1

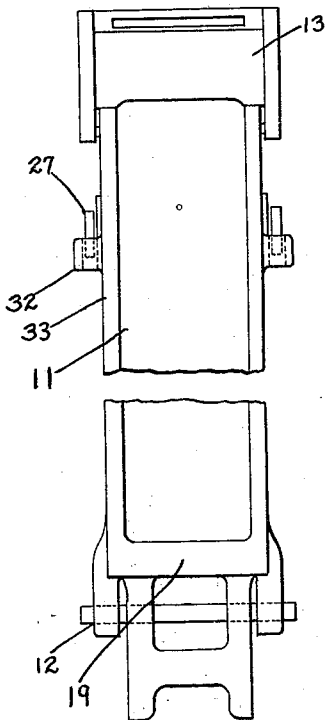


Fig. 2

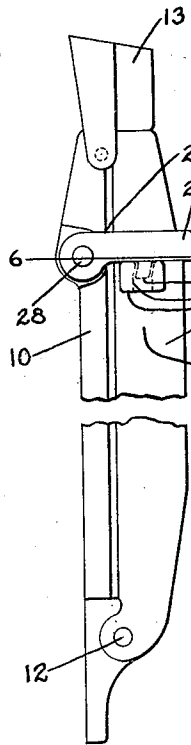


Fig. 3

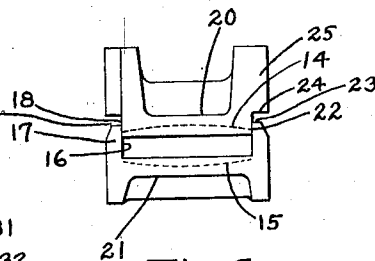


Fig. 4

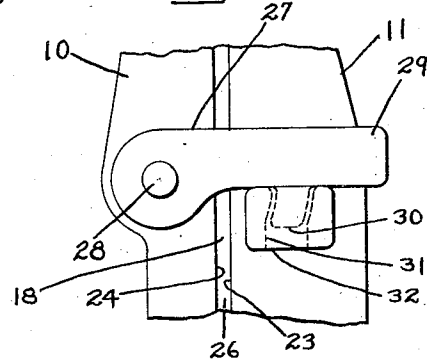


Fig. 5

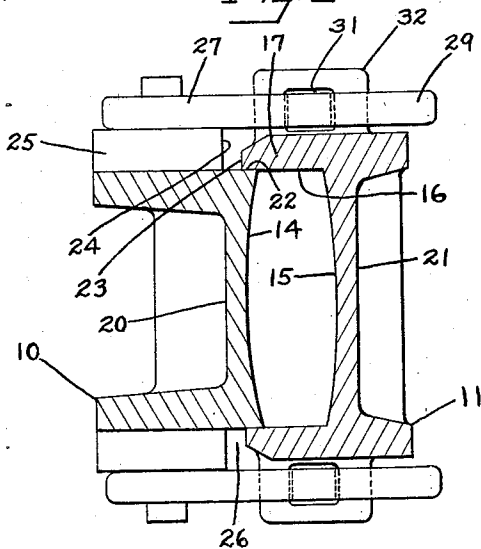
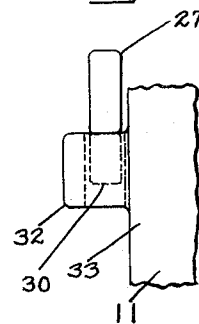


Fig. 6



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OPEN-JOINT MOLD

Application filed June 1, 1931. Serial No. 541,318.

My invention relates to improvements in open-joint molds of the form that is used for casting ingots of non-ferrous metal such as shown generally and described in patents that have been issued in my name, such as Patent No. 1,804,275, issued May 5, 1931, and the object of my present improvement is to produce a mold for ingots that may be described briefly as being characterized as of strictly open-joint form in that there is no seating of opposed mold parts in the closed position with cooperating clamping devices as is common and in lieu thereof provision is made for relative unrestricted expansion and contraction of the overlapping sides of the mold joint structure, and instead of the usual clamping means devices are provided for holding the mold parts positively in their proper relation against two-way movement, both inward and outward, involving the use of hook-like structures with bolt-like ends that engage with keepers in the form of socket structures, thus providing plug-and-socket positioning means for the mold parts.

In the accompanying drawing:—

Figure 1 is a front elevation of my improved open-joint mold, including the pouring cup.

Fig. 2 is a side elevation of the same.

Fig. 3 is a plan view of the mold.

Fig. 4 is an enlarged fragmentary view of the holding devices.

Fig. 5 is an edge view of the hook member and associated parts.

Fig. 6 is a sectional view on the line 6—6 of Fig. 2, extending through the mold structure at the elevation of the keeper socket.

My improved open-joint mold comprises a vertically elongated back mold part 10 that may be regarded as a fixed part and a cooperating front part 11, the two parts being operatively connected at their lower ends by a hinge connection 12, and the structure as a whole is surmounted by the pouring cup 13 that is adapted to direct the molten metal toward the mold cavity that is provided between the two mold parts, all of which features are common.

The mold composed of the parts 10 and 11 is adapted for producing an ingot that is rel-

atively wide and thin, the back and front walls being of much greater extent than the side walls, and the front and back walls may be curved or concave, as is common.

The back wall 14 is provided by the back 10 and the front wall 15 by the front part 11. The side walls 16 are provided by the front part 11 in the form of flat faces on flange-like structures 17 that are of greater depth than the thickness of the ingot and that by the excess portions effect a sliding tight fit with opposed side face portions 18 on the back 10.

Thus the back proper is virtually a slab-like structure that slides into the proper operative position between the flange-like structures 17.

The bottom 19 is closed in any proper manner.

The thicknesses of the main wall parts, being respectively the distance between the mold back wall 14 and the rear outside wall 20 in the case of the back part 10 and the corresponding distance between the mold front wall 15 and the front outside wall or face 21 in the case of the front part 11 in the present instance is a minimum, possibly an inch or so.

Also, the two outside walls of faces 20 and 21 are plain and flat.

The mold is adapted for casting ingots having thicknesses of from two to three or more inches and for metal alloys that require high temperatures, even such as may closely approach the melting point of the iron of which the mold is made.

The reason for this is that provision is made for permitting of unrestricted expansion of the mold parts along the joints 22 provided by the overlapping side faces 16 and 18. Thus, the flange-like structure 17 in each case terminates in an end face 23 of some form that may be opposed to an end face 24 on a laterally overhanging portion 25 of the back part 10, and these opposed faces 23 and 24 are in the closed position of the mold separated positively by a clearance space 26, and which clearance space 26 is of sufficient extent to prevent the positive meeting of the

front and back mold parts, even when expanded by the heat of liquid metal.

The mold structure as described if properly set-up is operative for casting ingots. It is desirable, however, to provide spacer holding or positioning means of some form, and such devices may be provided, as shown, adjacent the upper end of the mold structure, the hinge structure 12 functioning for the lower end.

Thus on each side is a hook-like structure 27 that is pivoted on a bar 28 that is supported by the back part 10 so as to swing forwardly alongside the mold structure, the front end portion 29 serving as a handle and that is provided along one edge with a projection 30 that operates as a bolt or plug that is adapted to cooperate with a suitable keeper for positioning the parts of the mold against relative inward or outward movement. Such a keeper is provided in the form of a socket 31 in the form of an opening in a lug 32 that is cast integral with the side wall structure 33 of the front mold part 11.

I claim as my invention:—

1. An open-joint mold comprising a back part and a front part having opposed cooperating main portions that enclose a mold cavity, said portions comprising free and unobstructed overlapping faces at the side spacer positioning means for said parts for use in the closed molding position that operate to restrict relative movements of the parts both towards and away from one another.

2. An open-joint mold comprising back and front parts having cooperating main portions that enclose a mold cavity, the sides of said main portions being provided with opposed faces that freely and unobstructedly overlap one another, a hinge structure serving to operatively connect the lower ends of said parts, and positioning means for the upper portions of said parts that serve to prevent outward separation of the parts and to limit the relative inward movement thereof.

3. An open-joint mold as described in claim 2, said positioning means being in the form of a hook-like structure on each side pivoted to one of said parts and having a projecting nose and a socket structure on the other of said parts for receiving said nose.

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