

ABSTRACT

A mold device for forming metal in a high-level vacuum environment.

5 The mold device includes a fixed mold 110, a movable mold 120 adjoining the upper portion of the fixed mold 110 to form a cavity 130, and an ejector pin 140 extending through the movable mold 120 to the cavity 130. An exhaust unit 190 creates a vacuum environment by drawing air from the cavity 130.
10 In this state, molten metal is filled into the cavity 130, where it is subsequently formed into a product. Afterwards, the ejector pin 140 pushes out the formed product.

A closing plate 150 is closely placed on top of the movable mold 120, and the ejector pin 140 sequentially extends
15 through the closing plate 150 and the movable mold 120. Packing P1 is disposed in a hole in the closing plate 150 through which the ejector pin 140 extends, thereby preventing atmospheric air from entering the cavity 130. A blocking space 180 is formed between the movable mold 120 and the packing P1,
20 thereby preventing heat from being transferred to the packing P1.

Since the metal can be formed in a high-level vacuum environment created in the metal-forming space, it is possible to prevent the properties of the molten metal from changing
25 through contact with the air and to minimize the damage in the

packing caused by heat, the packing being disposed to prevent the atmospheric air from entering the metal-forming space. Since use of inexpensive packing is possible, the metal-forming operation can be performed in an economic high-level vacuum
5 environment.