

[54] **SLAG-REMOVING APPARATUS**

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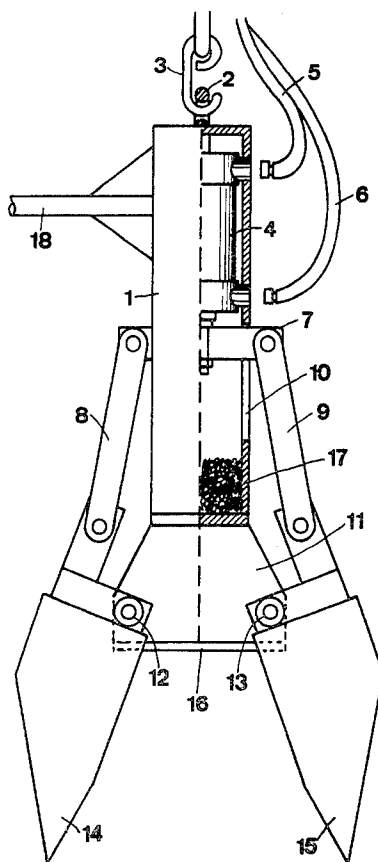
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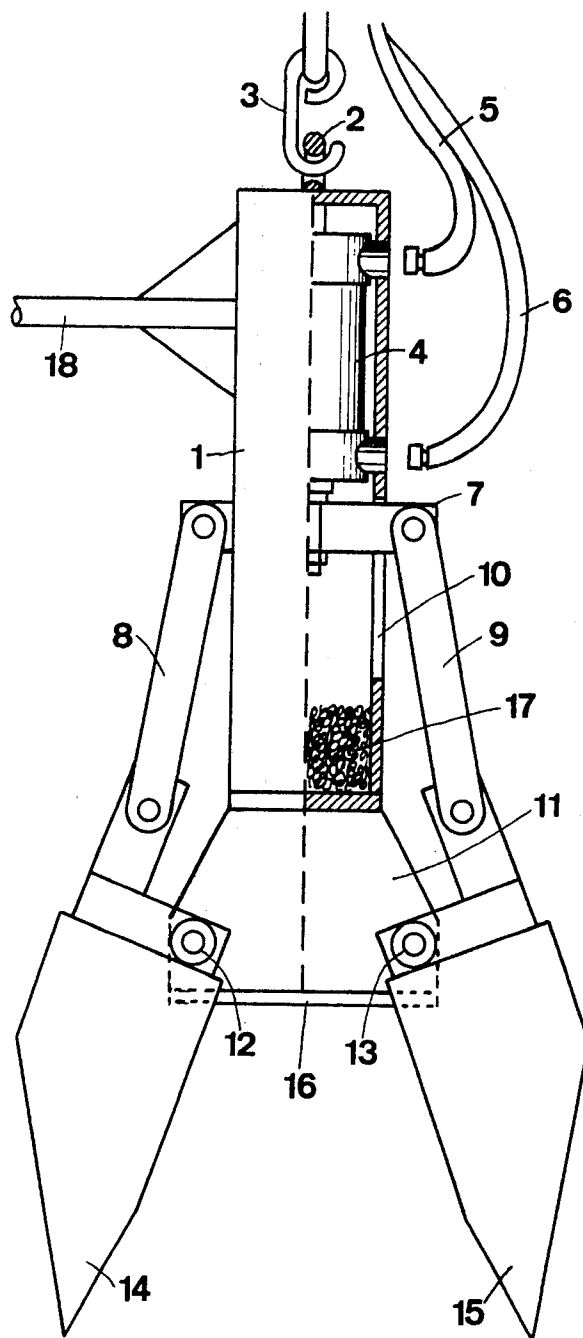
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ABSTRACT

The specification discloses an apparatus for removing slag from a bath of molten metal. It has a casing provided with a gripping device at one end to allow it to be connected to the hook of a travelling crane. Two cooperating metal slag removing scoops are pivotally mounted at the other end of the casing and a mechanism is connected to the scoops to cause their pivoting action when it is moved axially of the casing. The mechanism is actuated by a pneumatic jack housed in the casing and having connections to a source of pneumatic fluid. The scoop operating mechanism is connected to the operating rod of the pneumatic jack so that actuation of the operating rod causes pivoting of the scoops for slag removal. Preferably, the apparatus includes a rigid structure at the other end of the casing, the scoops being pivotally mounted on the said structure. The latter is preferably further provided with a shield intended to protect the casing and the jack from the heat of the bath of molten metal. Also, the bottom of the casing is filled with heat insulating material.

1 Claim, 1 Drawing Figure





SLAG-REMOVING APPARATUS

The present invention relates to an apparatus for removing slag from a bath of molten metal.

Such apparatus serving to remove the slag floating on a bath of molten metal in a crucible already exists. A known apparatus of this type is constituted by twin scoops and by a hydraulically actuated mechanism, the assembly being mounted on a movable support arranged on a self-propelled vehicle. It is always difficult to move with a self-propelled vehicle about a crucible filled with molten metal. Furthermore, the use of a hydraulic liquid in an ambient atmosphere of high temperature may perturb the operation of the apparatus due to the fact that a certain quantity of hydraulic liquid may reach the evaporation temperature.

The purpose of the present invention is to avoid the use of a hydraulic fluid and to make the slag-removing apparatus more easy to handle. It is characterized by the provision of a casing provided at its upper end with a gripping device capable of being connected to the hook of a travelling crane, by a pneumatic cylinder actuating the mechanism of the twin scoops and by means connecting the pneumatic jack to a source of pneumatic fluid and by a heat shield at the lower end of the casing.

The present invention is explained hereinafter with respect to a specific embodiment having reference to the appended drawing of which the single FIGURE is a half elevation view and a half cross-sectional view.

Referring to the drawing, the apparatus for slag removal is shown to be made up of a casing 1 provided at its upper end with a gripping device, for instance a ring 2 for a hook 3 of a travelling crane, not shown. A pneumatic jack 4 is solid with the casing 1 and may be connected by means of flexible hoses 5 and 6 to a pneumatic fluid feeding device which may be supported by the travelling crane, for instance. The jack 4 actuates a compensation bar 7 to which two connecting rods 8 and 9 are connected. The compensation bar 7 is guided in a slot 10 of the casing 1. The lower end of the casing 1 has secured thereto a rigid structure 11 supporting

the pivots 12 and 13 of two scoops 14 and 15 which are, on the other hand, connected to the compensation bar 7 through respectively the connecting rods 8 and 9. Thus, the position of the compensation rod 7 determines the position of the two twin scoops 14 and 15.

Since the apparatus for slag removal is meant to operate above a bath of molten metal at a very high temperature, protection against heat is provided by the fact that the structure 11 has a shield plate 16 and that the bottom of the casing 1 is filled with a heat insulating material 17, such as mineral fibres.

In order to allow an accurate handling of the slag removing apparatus, a rod 18 or a handling bight is fixedly secured to the casing 1.

I claim:

1. An apparatus for removing slag from a bath of molten metal, said apparatus comprising:

- a. a casing having a gripping means at a first end thereof adapted for connection to a hook of a travelling crane;
- b. a rigid structure having a first end thereof secured to a second end of said casing;
- c. a pair of cooperating scoops pivotally mounted on said rigid structure for removing slag, and a means connected to said scoops for causing pivoting thereof when moved axially with respect to said casing;
- d. a pneumatic jack within said casing solidly connected thereto near said first end thereof and means for connecting said jack to a source of pneumatic fluid, said jack having an operating rod mobile in said casing;
- e. means connecting said operating rod to said pivoting means whereby actuation of said operating rod causes pivoting of said scoops for slag removal;
- f. a metallic shield, for protecting said casing and jack from the heat of said bath of molten metal, fixed at a second end of said structure, and
- g. heat insulating material within said casing disposed between the second end thereof and the space wherein said operating rod moves.

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