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METHOD OF FORMING SELF-FLUXING INGOTS

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Fig. 1

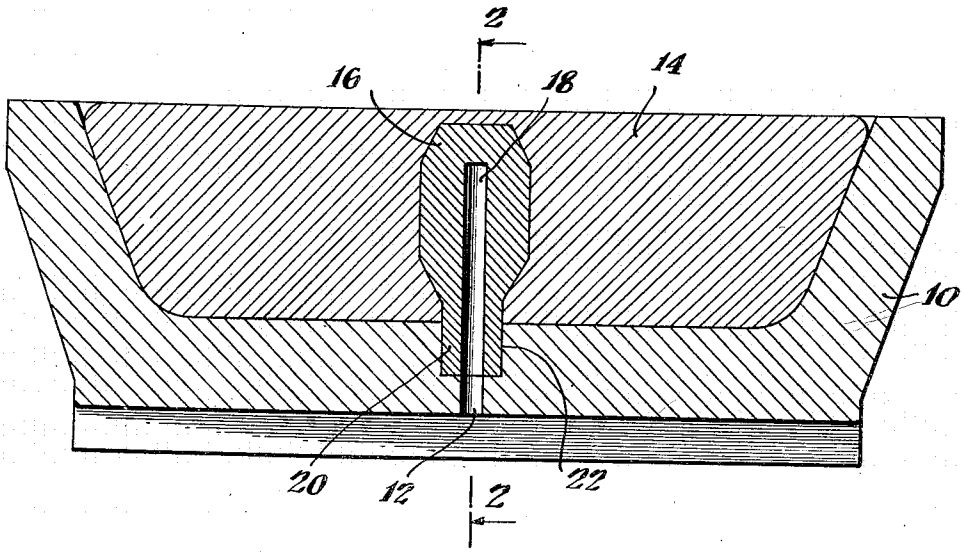
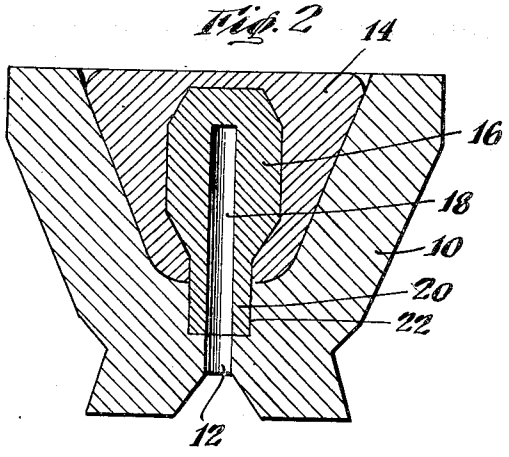


Fig. 2



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METHOD OF FORMING SELF-FLUXING INGOTS

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1 Claim. (Cl. 22—202)

This invention relates to the fluxing of metals and particularly concerns a new manner for producing ingots which are self-fluxing upon remelting.

Briefly, the invention contemplates an improved method for casting a metal ingot with a flux core so that upon remelting the ingot, the flux is automatically released within the bath to perform its function.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claim appended hereto, the invention itself, as to its objects and advantages, and the manner in which it may be carried out, may be better understood by referring to the following description taken in connection with the accompanying drawing forming a part thereof, in which—

Fig. 1 is a longitudinal section through an ingot mold and an ingot provided with a suitable flux core; and

Fig. 2 is a section taken on the line 2—2 of Fig. 1.

Referring more particularly to the drawing, 10 is a cast iron ingot mold having vent 12 in the bottom thereof. Within the mold 10 is ingot 14 containing a core of flux 16 provided with a central vent 18. The flux core 16 is provided with a base portion 20 which is of lesser diameter than the body of the core in the ingot 14 and which is seated in the recess 22 in the bottom of mold 10.

In forming the ingot, the base portion 20 of the flux core is inserted in the recess 22 in the bottom of the mold 10, the base portion 20 preferably being of such diameter as will secure the core in place by friction between the sides of the base portion 20 and the walls of the recess 22 thereby rendering the use of adhesives or the like unnecessary. The molten metal is then introduced into the mold where it surrounds and covers the core 16. Any gases evolved from the core as a result of the contact of same with the molten metal are free to pass to the atmosphere via vents 18 and 12 in the flux core and mold, respectively. Upon dumping the solidified ingot from the mold, the base portion 20, being of a friable nature, readily fractures at a point along the upper part of the recess 22 so that the ingot contains the body of the flux core.

Upon remelting the ingot the flux is released in the body of the bath which is, of course, an ideal position from the standpoint of attaining maximum efficiency in the performance of its function. Further, by automatically fluxing metal in this manner, there is no opportunity for the addition of the flux to be overlooked by the user. Also, the invention provides a ready method for introducing an exact predetermined amount of flux at all times with any particular composition.

It will be readily apparent to those skilled in the art that the principles of the invention are capable of use with a great many different compositions both as regards the metal of the ingot and the contained flux. The following specific adaptations of the invention, and which may be regarded as illustrative thereof, have already proved their value in commercial use: brass ingots composed of 70% copper, 5% tin and 25% lead and 68% copper, 2% tin and 30% lead, respectively, and containing a flux core made up of approximately 90% pulverized oil-bearing shale, 7% pulverized 15% phosphor-copper and 3% linseed oil.

In making the flux core, such as that above mentioned, the pulverized ingredients are thoroughly mixed with the binder and pressed into the desired size and shape. A vent is provided in the core and the latter removed to the baking oven after which it is ready for insertion in the ingot mold as heretofore described.

What is claimed is:

The method of forming a self-fluxing ingot which comprises forming a flux core having a base portion of lesser cross-sectional area than the body portion thereof, positioning said core in a metal mold having a recess in the bottom thereof adapted to receive and secure said base portion, encasing said core by the introduction of molten metal into the mold, solidifying the metal, and removing the ingot from the mold as a consequence of which the base portion of the core is severed from the flux-cored ingot.

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