

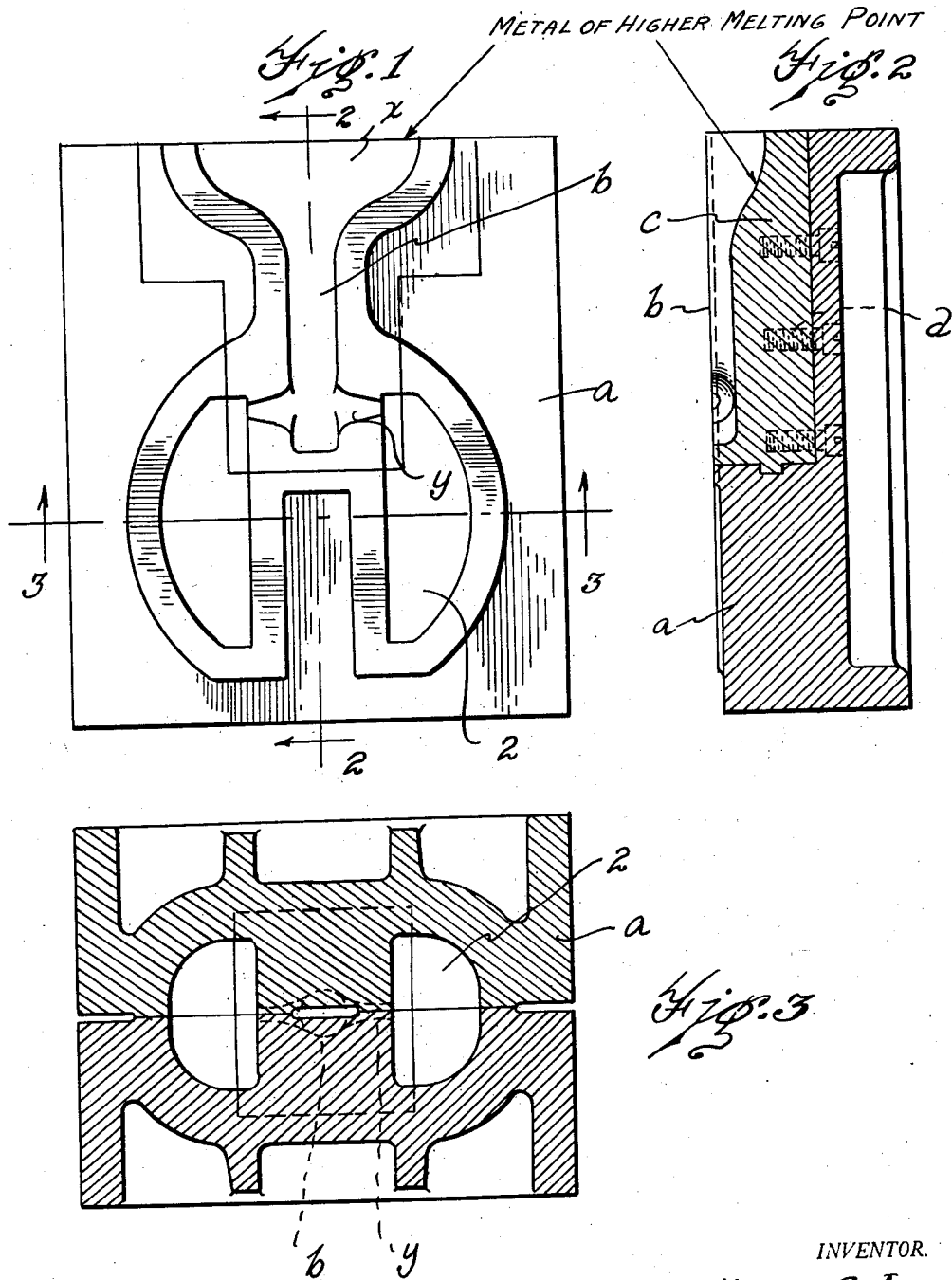
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PERMANENT MOLD CONSTRUCTION

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PERMANENT-MOLD CONSTRUCTION.

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This invention relates to a permanent mold, and has for its object the construction of a mold which is provided with a protective insert at any critical part, as for instance around the sprue opening. The object of this insert is to protect the metal of the mold at any critical point from the molten metal poured therein, and to prevent the molten metal from fusing to the mold.

10 In the drawings:—

Fig. 1 is a front elevation of a mold section constructed with a protective lining around the sprue opening, the pouring basin, and the gate.

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

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1.

We have shown the usual form of a permanent mold section *a* which is ordinarily made of cast iron and has mold cavities 2. These molds are provided with a coating or lining of insulating material for preventing the molten metal from ordinarily fusing with the mold. The melting point of the permanent mold is quite close to the melting point of the molten metal which is poured therein to form the casting, but due to the protective lining in the mold the casting does not ordinarily fuse to the mold. This protective lining may be of fire-clay, kieselguhr etc., or the metal may be impregnated with some substance such as zinc, etc.

However, it is found that occasionally the molten metal fuses to the mold especially around the sprue opening *b*, pouring basin, or gate or some other critical point. This may be due to the fact that the molten metal is poured in at a slightly higher temperature than usual, or the insulation normally in the mold at these points may be deteriorated or broken down to some extent, thus permitting the molten metal to come into contact with the metal of the mold. The temperature of the molten metal is ordinarily hottest around this sprue opening, pouring basin, or gate, and it is my object to provide an insert for the mold at this point which eliminates any chance of the molten metal fusing to the mold.

To accomplish this we insert in the mold an insert *c* of a different material and which

has a higher melting point than the melting point of the metal of the mold. The melting point of this insert may be as high as desired so as to avoid any likelihood of the molten metal from fusing thereto, due to any of the above mentioned reasons. This insert may be secured to the mold by bolting the same thereto by the bolts *d* as shown in Fig. 2; or the same may be cast in the mold section when it is made. It is immaterial just what means are used for securing the sub-mold section to the mold.

What I claim is:—

1. A permanent mold in which part of the same is formed of a metal having a higher melting point than the remaining part of the mold for protecting a critical part of the mold.

2. A permanent mold having a sprue opening, pouring basin and gate, and made of a material having a melting point approximating the melting point of the molten material poured therein, and which is provided with a metal insert of another material having a relatively higher melting point than the rest of the mold and which forms the sprue opening, pouring basin, gate and part of the mold cavity wall to prevent the molten metal from fusing to the mold.

3. A permanent metallic mold having a sprue opening and which is provided with an insert of another metal having a higher melting point than the rest of the mold and which surrounds the sprue opening to prevent the molten metal poured therein from fusing to the mold.

4. A permanent mold having a sprue opening and which is provided adjacent said opening with a metal insert of higher melting point.

5. A permanent mold having a sprue opening, and a critical portion, said mold being provided with a metal insert at such critical portion and with an insert positioned adjacent said sprue opening, said inserts having a higher melting point than other parts of the mold.

In testimony whereof I have affixed my signature.

HARRY S. LEE.