Dec. 29, 1931. J. LE MAY 1,838,418

ART OF CASTING

Filed Sept. 15, 1930

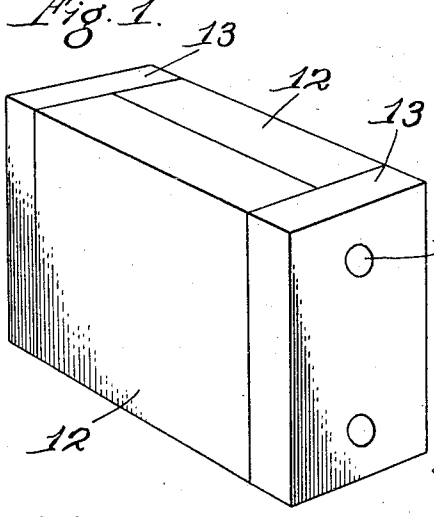


Fig. 1.

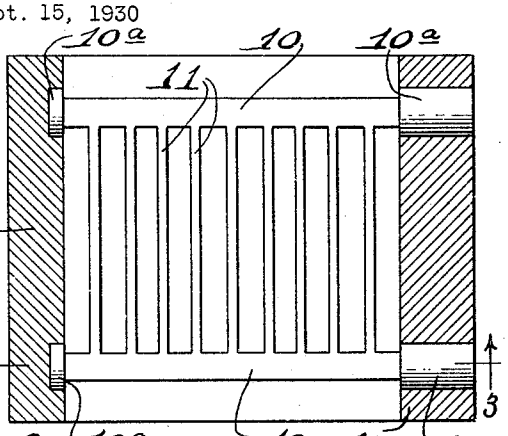


Fig. 2.

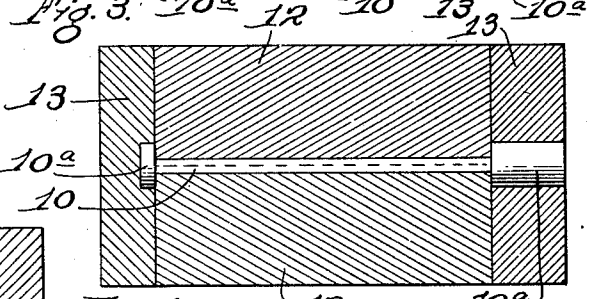


Fig. 3.

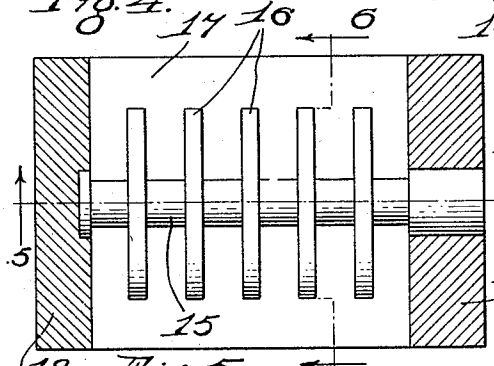


Fig. 4.

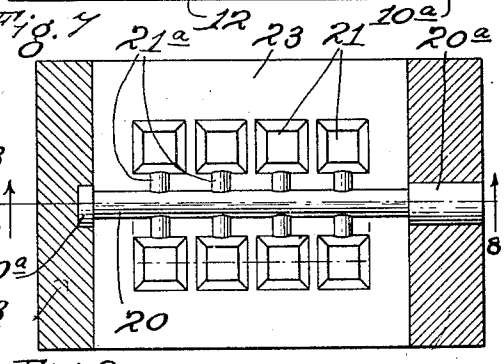
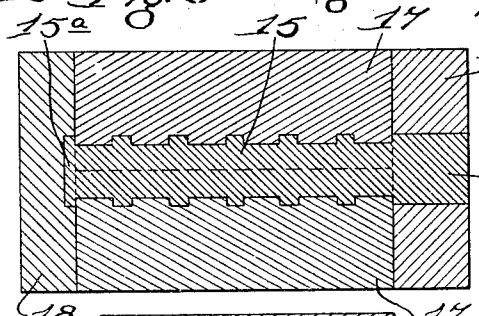


Fig. 7

Fig. 8.

Fig. 5



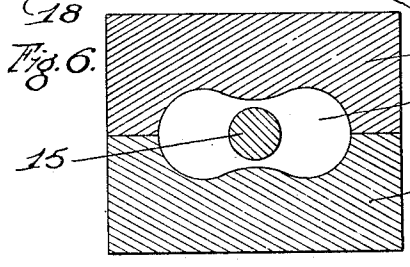
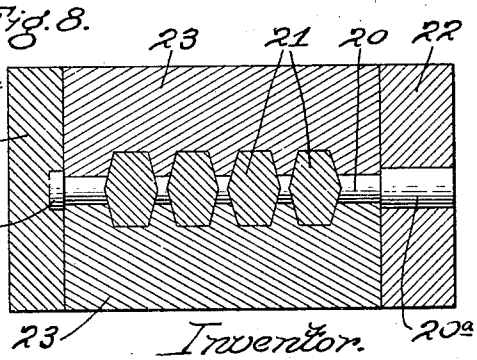


Fig. 6.



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Patented Dec. 29, 1931 1,838,418

UNITED STATES PATENT OFFICE

JOHN LE MAY, OF AURORA, ILLINOIS, ASSIGNOR TO AURORA METAL COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS

ART OF CASTING

Application filed September 15, 1930. Serial No. 482,021.

This invention relates to improvements in the art of casting and more especially the casting of metal. My invention is especially applicable for use in connection with die casting under pressure or vacuum in separable molds.

Among the features of my invention is the provision of a method and means for preventing cast elongated members from shrinking in length. In the casting of grids, and the like, or any elongated members with branches, difficulty frequently has been encountered by the shortening of the elongated member with the resultant shearing off or damaging of the branches. By the use of my invention this difficulty is lessened or prevented.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

Apparatus for carrying out my invention is shown in the accompanying drawings, in which Fig. 1 is a view in perspective of a separable mold, Fig. 2 is a vertical sectional view of the same, Fig. 3 is a view taken as indicated by the line 3 of Fig. 2, Fig. 4 is a view similar to Fig. 2 showing a modified form, Fig. 5 is a view taken as indicated by the line 5 of Fig. 4, Fig. 6 is a view taken as indicated by the line 6 of Fig. 4, Fig. 7 is a view similar to Fig. 2 showing a modified form, and Fig. 8 is a view taken as indicated by the line 8 of Fig. 7.

As shown in the drawings, the mold of Figs. 1, 2 and 3 is adapted for casting a grid with the two elongated side members 10, 10, connected by the branches or bars 11, 11. The mold is separable, and includes the two side pieces 12, 12 and the two end pieces 13, 13. Any ordinary clamping or other mechanism (not shown) may be employed for holding the parts of the mold together during the casting operation which may be facilitated by pressure or vacuum.

In the casting of a piece such as the grid shown, the elongated members 10, 10, unless prevented, may shorten upon cooling thus shearing off or damaging the relatively smaller or lighter branches or connecting bars 11, 11. By the use of my invention, such undesirable shortening of the members 10, 10 is lessened or prevented. This is accomplished by providing the enlarged heads 10^a, 10^a on the ends of the members 10, 10. These enlarged heads are here shown as formed in suitable cavities in the end pieces 13, 13 of the mold and they engage the ends of the center pieces 12, 12 thus holding the members 10, 10 against shortening, any necessary shrinkage being permitted by a slight reduction in diameter. The ends of the center pieces 12, 12 form shoulders that the heads bear against.

The mold may be filled in any suitable manner. For example, in the forms shown the metal may enter through one of the openings in the end piece 13.

In Figs. 4, 5 and 6, I have shown a mold for casting another form of device. The principle, however, is the same. As here shown, the mold is made to cast a central elongated member 15 with fins 16. In order to prevent the elongated member 15 from shrinking in length and shearing off or damaging the fins 16, I provide the heads 15^a, 15^a which engage the ends of the center pieces 17 of the mold. The end pieces 18, 18 of the mold are provided with suitable cavities to form the enlarged heads 15^a.

The same invention is illustrated in Figs. 7 and 8 in which there is shown a mold for casting an elongated member 20 with the smaller pieces 21, 21 attached thereto by the stems or branches 21^a. To prevent the elongated member 20 from shortening in length it is provided with the enlarged heads 20^a in the end pieces 22 of the mold. The center pieces of the mold are indicated by 23, 23.

It is obvious that in cases where the elongated member can be removed without separation of the central part of the mold, said central part may consist of only one piece.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claim, in which it is my intention to claim all nov-

elty inherent in my invention as broadly as possible in view of the prior art.

I claim:

In the art of casting an elongated member with laterally projecting parts, the method consisting of providing a mold having an elongated cavity with enlarged excess metal cavities at the ends thereof, and introducing molten metal into said cavities, whereby the elongated cast member formed upon cooling is prevented from materially shortening and damaging its laterally projecting parts by the formation of heads thereon in the said enlarged excess metal cavities.

In witness whereof, I have hereunto set my hand and seal, this 10th day of September, 1930.

JOHN LE MAY.