Method of Molding Cored Articles

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INVENTOR

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My invention relates to improvements in a process of molding cored articles.

It has hitherto been common practice in molding such articles to set core supporting chaplets on the pattern and lower the sand of the mold around them, thus incorporating the chaplet in the mold with a portion protruding therefrom. This not only requires considerable time and care to set the chaplets properly and to prevent them from becoming dislodged or misplaced during the molding operation and the subsequent handling of the mold, but leaves a portion of the chaplet protruding from the casting, thus requiring an extra operation for the removal of this protruding portion.

It is the object of this invention to obviate the above-mentioned difficulties by providing a method of molding wherein the chaplet is not incorporated in the mold and does not protrude from the finished casting.

With these and related objects in view the invention consists in the process disclosed herein and illustrated in the accompanying drawing, in which Figure 1 is a sectional view of a mold constructed in accordance with the invention; Figure 2, a longitudinal sectional view of the core, taken along the line 2--2 of Figure 1; and Figure 3, a transverse sectional view of the core and chaplet, taken along the lines 3--3 of Figure 2.

The invention is herein illustrated and described with particular reference to its use in connection with the molding of a radiator section; however, it is by no means limited to such use, and its adaptation to the molding of other articles will be apparent to those skilled in the art.

In the performance of the process the mold is made in a plurality of sections, preferably two, a cope 1 and a drag 2, adapted to be joined to form the mold and enclosed in the flask 3. The mold cavity 4 is formed with the mold cavity 4, in the form of the article to be molded, by ramming or packing the mold sand around a suitable pattern (not shown). This operation may be performed manually or by the use of various types of molding machinery and the pattern may be an integral pattern, matchplate or other of the conventional types of patterns, as desired.

Since the casting must be provided with a hollow center portion to permit the passage of fluid therethrough, a core 5 is utilized. The core 5 is spaced above the lower portion of the mold cavity 4 by any suitable means, such as the spacing cores 6 (shown in dotted lines in Figure 1) which also act to form the header of the radiator section.

The core 5 is preferably formed with longitudinally extending vents 7 to allow the escape of gas during the casting operation and is also formed with longitudinally extending slots 8 which are relatively long and narrow in comparison to their depth. These slots are formed in the core during the formation thereof. The core is then baked in the usual manner to harden it. The slots 8 are designed to receive chaplets 9 which are formed to fit therein with a portion protruding therefrom. The chaplet 9 is preferably formed by bending a wire into a substantially parallelogrammic shape. However, the chaplet may, if desired, be formed of other material or of a different configuration.

As will be seen from the illustration, the chaplet 9 rests upon the bottom of the slot 8 and protrudes from the slot a distance equivalent to the desired space between the core and the wall of the mold cavity 4 and thus engages the wall of said mold cavity and prevents the core from rising or “floating” when the molten metal is poured in the mold.

When the mold is cast the molten metal flows into the slot 8 and around the chaplet 9, fusing it and welding it firmly into the casting to form an integral part thereof. No portion of the chaplet protrudes from the exterior of the casting, and the interior fin formed by the metal entering the slot 8 is unobjectionable.

The chaplet may be placed in the core after it has been positioned in the mold and just prior to closing the mold, hence no special care is required to prevent it from becoming misplaced or dislodged. The operation of placing the chaplet is a simple one, requiring no special skill or care.

It will be obvious that numerous changes may be made in the specific details disclosed herein; therefore, I do not limit myself to said details but claim all processes within the spirit of the invention and the scope of the appended claims.

I claim:
1. In molding methods wherein a mold containing a mold cavity is formed in a plurality of sections; a core inserted in said mold cavity; the mold closed and molten metal poured into said mold cavity and around said core to form a casting; that improvement which comprises forming a slot, relatively long and narrow in comparison to its depth, in the core during the formation thereof; baking said core; forming a chaplet by bending a wire into a parallelogrammic shape and positioning said chaplet in the slot in said core prior to closing the mold with a portion of said chaplet protruding beyond the surface of
said core and adapted to engage the wall of said mold cavity.

2. In molding methods wherein a mold containing a mold cavity is formed in a plurality of sections; a core inserted in said mold cavity; the mold closed and molten metal poured into said mold cavity and around said core to form a casting; that improvement which comprises forming a slot in the core during the formation thereof; baking said core and positioning a chaplet in said slot prior to closing the mold with a portion of said chaplet extending beyond the surface of said core and adapted to abut the wall of said mold cavity.

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