

April 29, 1947.

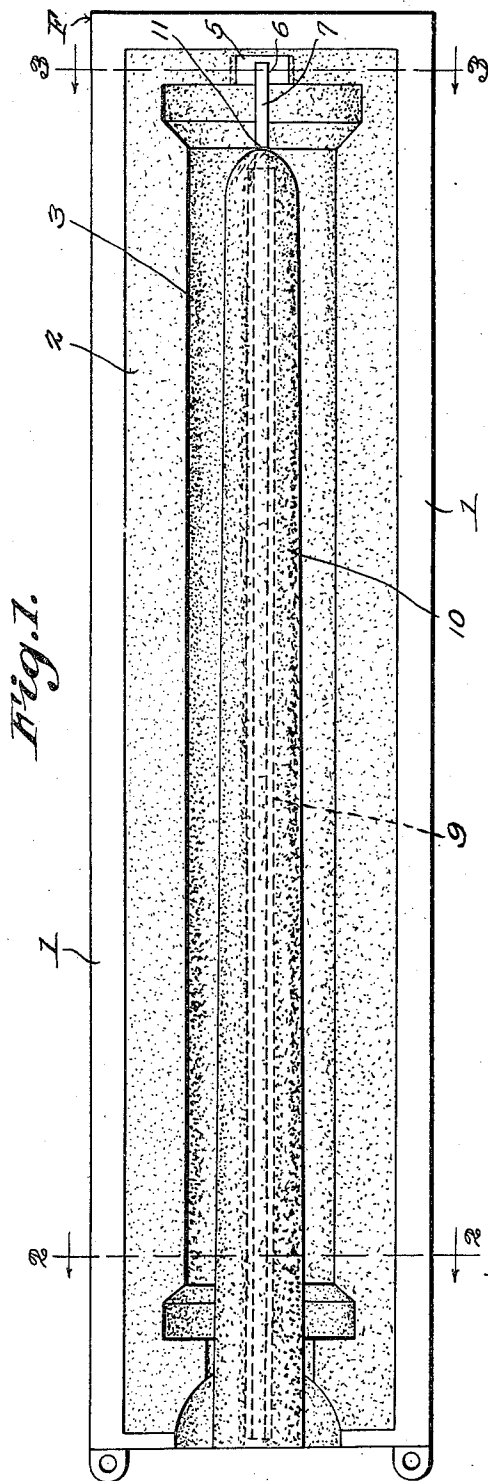
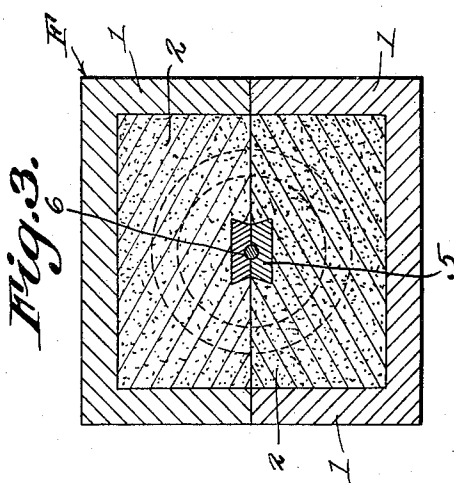
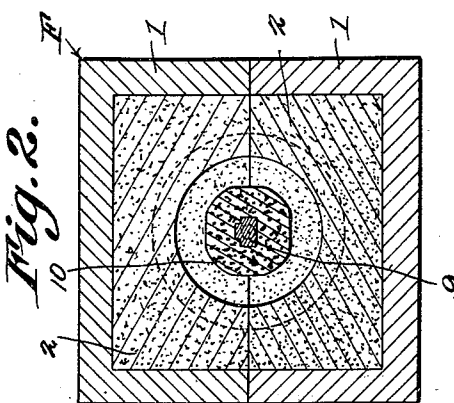
T. BELLSNYDER, SR., ET AL

2,419,873

MOLD AND CORE AND METHOD OF CASTING IN SAME

Filed Jan. 31, 1944

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

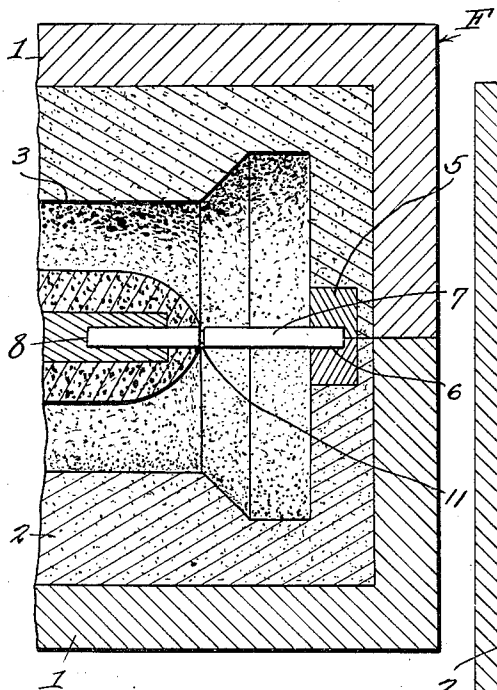


Fig. 4.

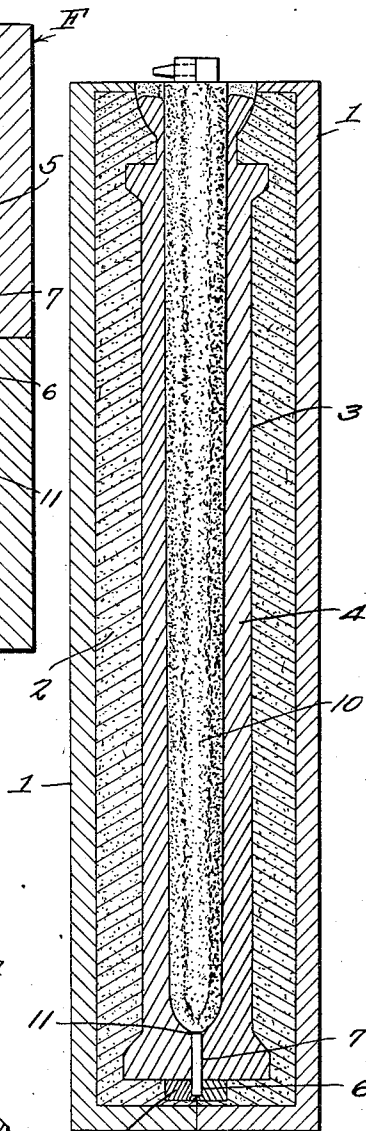


Fig. 5.

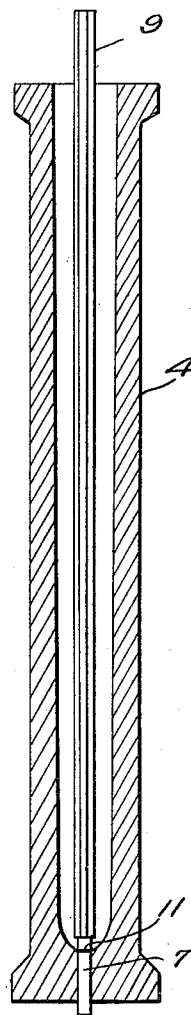


Fig. 6.

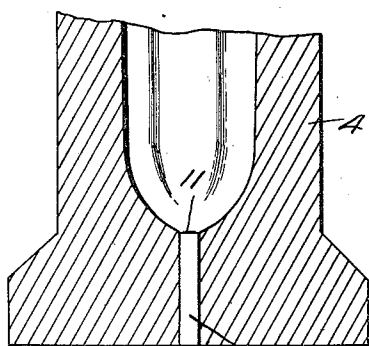


Fig. 7.

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UNITED STATES PATENT OFFICE

2,419,873

MOLD AND CORE AND METHOD OF
CASTING IN SAMEThomas Bellsnyder, Sr., and Robert Ritchie,
Birmingham, Ala.

Application January 31, 1944, Serial No. 520,484

2 Claims. (Cl. 22—133)

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This invention aims to provide novel means for supporting and centralizing a core, during a casting operation, such as that carried out, for instance, in the making of an ingot mold.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 shows in top plan, a flask embodying the present improvements, the cope having been removed, and the drag being prone;

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

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

Fig. 4 is an enlarged section wherein parts are broken away;

Fig. 5 is a vertical section wherein the flask is in its vertical, operative position, the casting operation having been completed;

Fig. 6 is a longitudinal section showing the casting as it will appear before the core has been removed;

Fig. 7 is a longitudinal section through the lower part of the casting as it will appear after the core arbor has been removed.

The numeral 1 marks the constituent portions of a flask F, containing sand 2, provided with a cavity 3, shaped to form a casting 4, the casting, in the present instance, but not of necessity, being an ingot mold.

The constituent parts of a chill 5 are mounted in the sand 2 at the lower end of the cavity 3, the chill having a seat 6, adapted to receive the lower portion of a pin 7, preferably made of cast iron, the upper portion of the pin being received in a bore 8, removably, the bore being disposed in the lower portion of a core arbor 9, carrying a core 10, the pin being weakened, preferably by a circumferential grooving, as shown at 11, flush with the lower end surface of the cavity 3.

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The metal is poured, the casting 4 is formed, the sand 2 is removed, the arbor 9 is moved transversely, relatively to the casting 4, and the pin 7 breaks off at its weakened portion 11. So much of the pin 7 as extends beyond the lower part of the casting 4, where it seats into the chill 5, is cut off, as shown at 12, and the casting, in the present instance an ingot mold, is complete.

The pin 7 is used for the purpose of supporting the core and for holding it coaxially with respect to the cavity 3, to the end that the wall of the casting 4 may have a uniform thickness.

The pin 7 is straight throughout its entire length and preferably of substantially uniform cross section throughout its entire length. The phrase "substantially uniform cross section throughout its entire length" is to be construed to mean that the construction of the pin is such as its name indicates. The pin is not a chaplet, double-headed or single-headed, the single-headed chaplet being known as a "stem anchor."

A double-headed chaplet is employed to support a core, or to hold cores apart, in order that the casting may have the proper thickness after the casting has been poured. After the casting has been poured, the chaplet remains, in its entirety, a part of the casting. Single-headed chaplets (or stem anchors) are used to hold the core down and to keep it from rising when metal is poured into the mold.

With such devices, the present invention has no concern. As an example of this foreign art, note Charles G. Raible's Patent No. 1,945,358, issued on January 30, 1934.

The portion of the pin 7 which is between the lower end surface of the core 10 and the bottom surface of the casting 4 remains in the casting as an integral part thereof. Upon removal of the core arbor 9, after breaking off the pin 7, that part of the pin which remains in the arbor is removed therefrom, thus making it possible to utilize the same arbor in the manufacture of other castings.

What is claimed is:

1. Steps in a method of casting an ingot mold, which comprise pouring metal around a core on a core arbor having a depending, transversely grooved pin engaged with a chill, to form a hollow ingot mold and to embed a portion of the pin in the mold, moving the core arbor laterally

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and relatively to the mold to break the pin at the point of grooving and at the point of contact between the core and the casting, and severing away so much of the pin as extends below the mold for engagement with the chill during the casting operation.

2. In a device for making a closed-bottom ingot mold by a casting process, a flask having a sand-receiving space, a chill in the lower portion of said space, a core arbor within the flask and having a bore in its lower end, the bore terminating close to the lower end of the arbor, a core on the core arbor, a pin having its lower portion engaged detachably with the chill, the upper portion of the pin being detachably received in the bore, the pin being weakened at the lower end of the core, whereby when the arbor is moved lat-

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erally the pin will break substantially flush with the upper surface of the bottom of the mold which is being cast, a portion of the pin remaining in the bottom of the mold, to render the bottom of the mold imperforate.

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REFERENCES CITED

The following references are of record in the file of this patent:

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