Nov. 3, 1931. A. J. MUELLER 1,830,479

HOT TOP FOR INGOT MOLDS

Filed Feb. 19, 1930

Fig. 1

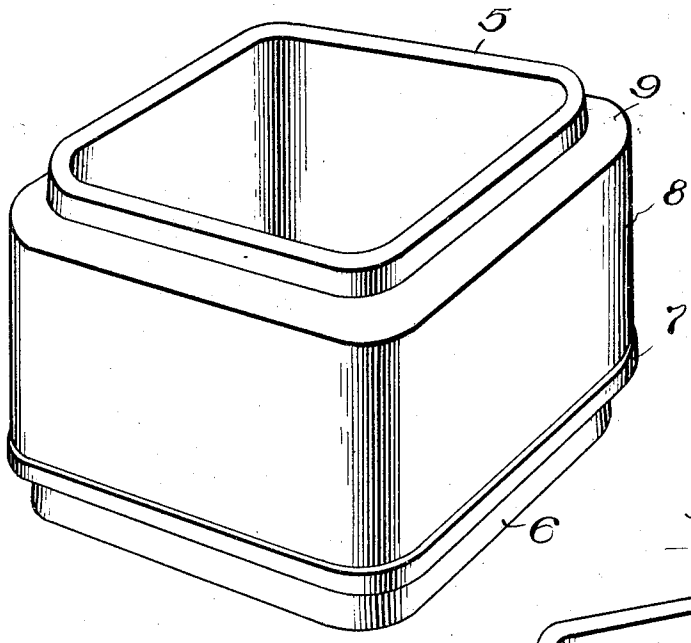


Fig. 2

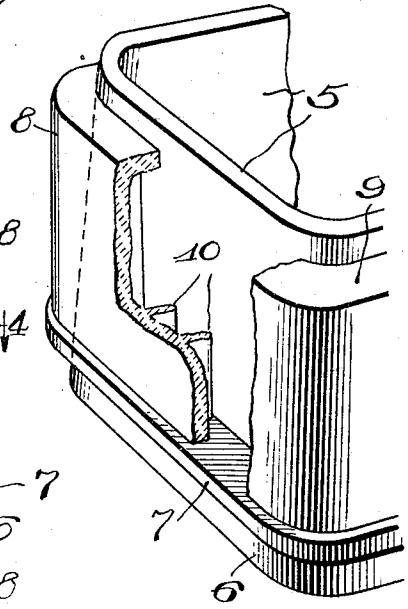
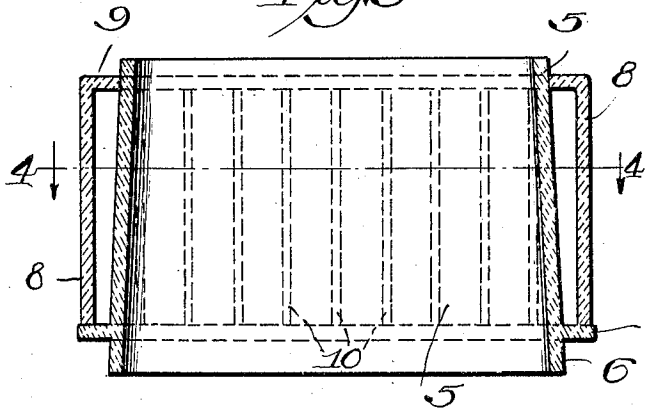


Fig. 3



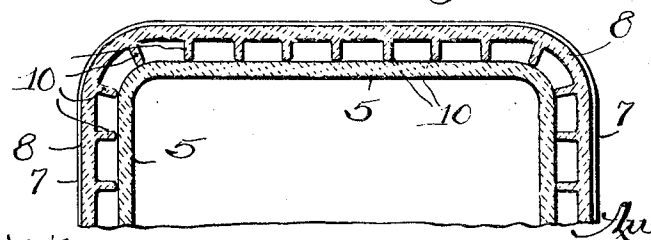


Fig. 4

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UNITED STATES PATENT OFFICE

AUGUST J. MUELLER, OF CHICAGO, ILLINOIS

HOT TOP FOR INGOT MOLDS

Application filed February 19, 1930. Serial No. 429,524.

My present invention relates to improvements in hot tops for ingot molds. Hot tops are associated with the tops of ingot molds for receiving a small quantity of molten metal in excess of the amount necessary for filling the mold and maintaining this excess metal in a fluid state while the metal in the mold is cooling and solidifying for filling the voids caused by contraction during such cooling and solidification. The temperatures involved are relatively high and in order to get a requisite degree of heat insulating effect to keep the contents of the top fluid the tops are generally made of a considerable mass of burnt refractory material such as brick clay and are expensive to construct and heavy to handle. Some hot tops have, in addition to the above, inserts or linings of material of greater heat insulating value which is of too fragile a character to permit the construction of the entire top therefrom.

My present idea is to provide a hot top with suitably disposed cellular voids which secure excellent heat insulating effects, greatly lighten the structure, and increase its strength. My hot tops can be more economically and uniformly produced and have characteristics much more uniform than can be possibly obtained in the burning of a mass of several hundred pounds of brick clay.

I have attained the foregoing objects and results by means of the structure illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective of a hot top embodying my invention;

Fig. 2 is a fragment of the structure shown in Fig. 1, a portion of the outer member being broken away to disclose its interior construction;

Fig. 3 is a central, vertical, transverse section of the article shown in Figs. 1 and 2; and

Fig. 4 is a fragmental section on line 4—4 of Fig. 3.

Similar reference characters refer to similar parts throughout the several views.

I prefer to make my hot tops in two members, the inner member 5 being of a shape at the bottom 6 to enter and fit into the ingot mold and tapering therefrom upwardly to the top at an angle to facilitate drawing when that may be possible or desirable. Extending laterally and outwardly from adjacent the bottom of the inner member 5 is a shelf 7 which performs the dual purpose of supporting the structure upon the top of the ingot mold and supporting or assisting to support, the outer member of the hot top. The outer member 8 of the hot top consists of a jacket surrounding the inner member 5, the lower edge whereof rests upon the shelf 7, and the top 9 whereof turns laterally inward to space the top of the jacket 8 from the inner member 5 and to bridge and close the space at the top between the outer and inner members. To further strengthen the structure and perfect its heat insulating qualities by interrupting circulation in the air spaces I provided upon the inside of the jacket 8 inwardly extending flanges 10, the inner edges whereof abut the outer face of the inner member 5 when the parts are assembled.

Both of the members of my hot top may be more easily and economically molded in forms under pressure and burnt without distortion than the solid walled hot tops as the same are now made.

It is obvious that the inner and outer members, as above described, may be put together before burning so as to produce an integral structure or that the voids could be produced by piercing the shelf 7, or in a number of other ways, so as to secure the advantages arising from the presence of the voids and utilizing the inventions herein described without producing the top of two separable members.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A hot top for ingot molds comprising an inner member of refractory material formed to enter into and seat upon the top of an ingot mold, a separate outer member seating about the portion of said inner member which protrudes from said ingot mold, the side walls whereof are spaced from said inner member and a plurality of flanges extending between the walls of said outer and inner members.

2. A hot top for ingot molds comprising an inner member of refractory material formed to enter into and seat upon the top of an ingot mold, a separate outer member seating about the portion of said inner member which protrudes from said ingot mold, the walls whereof are spaced from said inner member and a plurality of flanges extending from the inner walls of said outer member to abut the walls of said inner member.

AUGUST J. MUELLER.