Nov. 30, 1926. 1,608,683

S. M. UDALE

MOLD COOLING MEANS

Filed Dec. 19, 1923

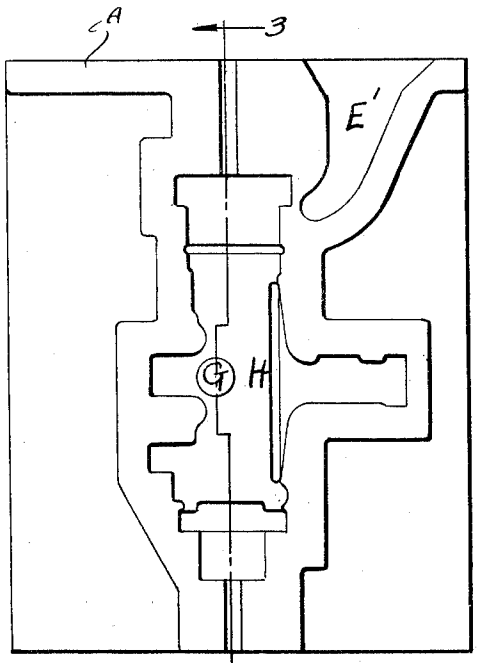


Fig. 1

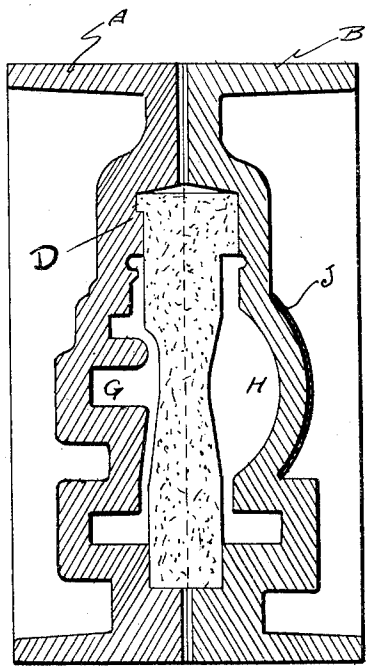


Fig. 3

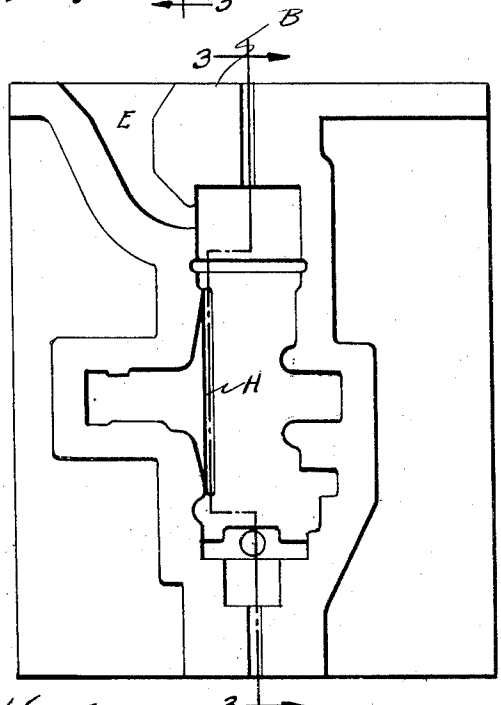


Fig. 2

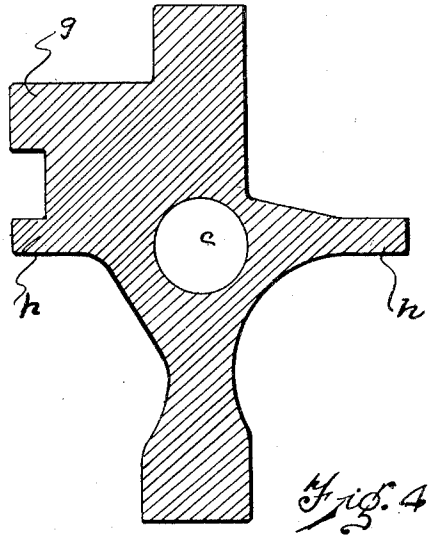


Fig. 4

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UNITED STATES PATENT OFFICE.

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MOLD-COOLING MEANS.

Application filed December 19, 1923. Serial No. 681,456.

This invention relates to a metal mold adapted for the production of unsymmetrical castings. It is specifically adapted to the production of cast iron carbureters of the horizontal type. The object of this invention is to compensate for the unequal heating of various parts of the mold due to the lack of symmetry of the castings cast therein.

Figure 1 shows in elevation one of the molds.

Figure 2 shows in elevation a corresponding mold.

Figure 3 shows in cross sectional elevation, on the plane 3—3 of Figures 1 and 2, these two corresponding molds in position enclosing a core.

Figure 4 shows a cross sectional elevation of the castings adapted to be cast in these molds.

In Figures 1, 2, and 3, A is the left hand mold of Figure 3, shown in elevation in Figure 1. B is the right hand mold of Figure 3, shown in elevation in Figure 2. C is the core supported and locked in place by means of the projection D. Each mold is provided with corresponding sprues E and E′, shown in Figures 1 and 2, and arranged to discharge iron against the core C, as described in the co-pending application of De Forest W. Candler, Serial No. 544,114, allowed July 27, 1923, filed March 16, 1922.

In Figure 3, J is the coating of some heat insulating material, preferably fire clay with a heat resisting binder such as soluble silicate, commonly known as water glass. This coating of fire clay may be applied as in the manner described in the patent to Meloche, #1.453,593.

The purpose of this coating of fire clay will be described below:

Figure 4 shows the casting cast in the mold. *h* is the flange corresponding to the depression H in the mold. *g* is the boss corresponding to the depression G in the mold, see Figures 1, 2, and 3.

Now it is obvious that when castings are repeatedly cast in the molds there will be a tendency for that portion of the mold surrounding the depression G to become overheated due to the relatively massive section adjacent to the part *g* of the casting, see Figure 4. On the other hand, that portion of the mold adjacent to the depression H tends not to overheat and to remain relatively cold because in it is cast only the thin flange *h* (Figure 4).

It is therefore very desirable to prevent the chilling of the iron of the flange *h*, and equally important to prevent the overheating of the metal mold adjacent to the depression G.

The cooling of the mold is very conveniently arranged by directing a blast of air at the back of the mold which is left open for this purpose. Obviously some means must be provided for preventing the overcooling of the portion of the mold adjacent to the depression H.

The heat insulating coating J prevents the flow of heat from that portion of the mold surrounding the depression H and thus a balance is struck between the tendency of the mold to overheat at G and the tendency of the mold to chill the casting in the depression H.

What I claim is:

A mold adapted for castings having large and small sections, comprising a mold having substantially uniform wall thickness, a layer of heat insulating material applied on the outside of that portion of the mold in heat conducting relationship to the relatively less massive section of the casting, whereby the heat dissipating surface is decreased at selected portions for the purpose described.

In testimony whereof I affix my signature.

STANLEY M. UDALE.