June 25, 1935. K. PLASCHKA 2,006,148

MUFFLE FOR USE IN CONNECTION WITH THE CASTING OF PRECIOUS METALS

Filed Jan. 27, 1934

Fig.1

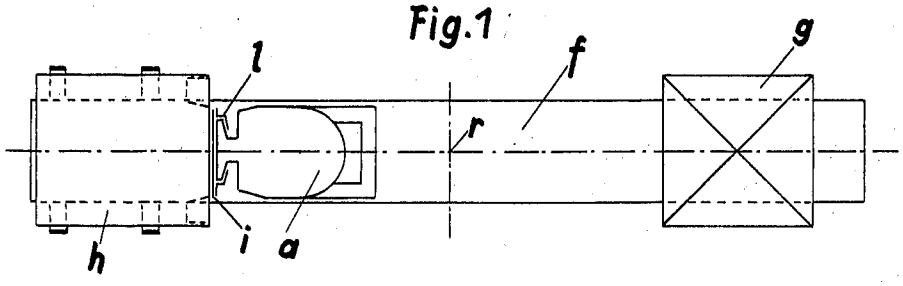


Fig. 2

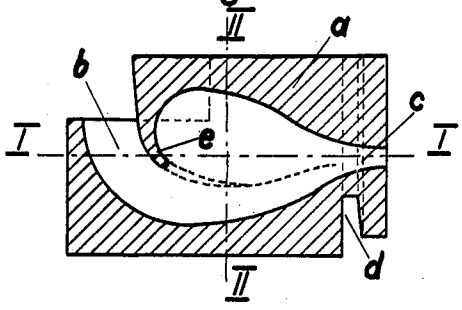
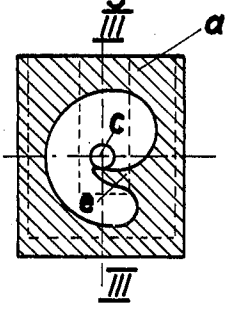


Fig.5



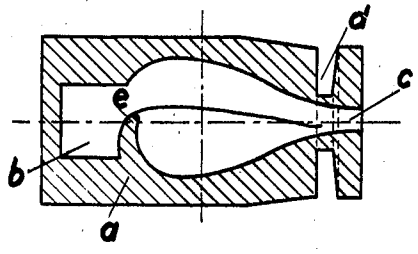


Fig.3

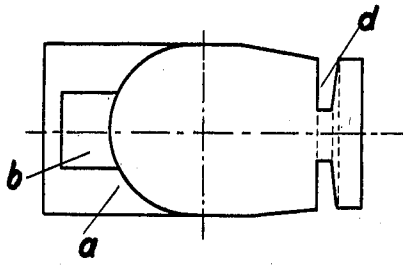


Fig.4

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MUFFLE FOR USE IN CONNECTION WITH THE CASTING OF PRECIOUS METALS

Karl Plaschka, Vienna, Austria

Application January 27, 1934, Serial No. 708,556
In Austria January 10, 1933

1 Claim. (Cl. 22—65.1)

This invention relates to an improved type of muffle for use in connection with the casting of precious metals, for the melting down of the latter and for charging the molds. The casting of precious metals, for dental purposes, goldsmith's work, and the like, has hitherto been effected by means of open cup-shaped muffles mounted on a horizontal centrifuging arm with the discharge aperture of the muffle adjoining the end of the mold inlet. The opposite end of the centrifuging arm is provided with an adjustable counterbalance weight. After the mold (flask) and the melting muffle have been placed in position, the precious metal charge is placed in the muffle and melted by a blow-pipe flame, whereupon the centrifuging arm is set in rapid rotation by means of a special slinging device. In consequence of the sudden starting-up of the rotary movement of the centrifuging arm, in the case of larger charges the molten precious metal becomes in part forced up the side wall of the open muffle, and is apt to be flung off the upper edge thereof. In this manner loss of material, imperfect casting, and serious injuries to operators have been likely to occur.

As distinguished from the known types of equipment working in the manner outlined, the muffle according to the present invention is characterized by the essential features, firstly, that the muffle is totally enclosed with the exception of the charging and delivery apertures, and secondly, that there is provided on the inside of the muffle a baffle wall of conchoidal shape which compels the charge to flow towards the delivery aperture with increasing velocity. A constructional example of muffle according to the present invention is shown in the accompanying drawing, in which:

Fig. 1 shows the lay-out of the casting plant in plan view.

Fig. 2 is a longitudinal section of the muffle.

Fig. 3 is a horizontal section of the muffle, taken on the line I—I of Fig. 2.

Fig. 4 shows the muffle as seen in plan view from above.

Fig. 5 is a transverse section of the muffle, taken on the line II—II of Fig. 2.

Referring to Fig. 1, the muffle *a*, which is made of ceramic material, is completely enclosed except for the charging and delivery apertures, and is adapted to be tightly fitted against the inlet end of the mold *h*, with the aid of the straining or tensioning means *i* and *l*. The centrifuging arm *f* is provided at the opposite end with a counter balancing weight *g*, and is adapted to be rotated about the pivot point *r*. The casting metal is inserted in the solid state at the charging aperture *b* (see Fig. 2), and heated to melting point by means of a blow-pipe flame. On rotation of the arm, the molten material is caused by dynamic pressure to travel up the side of the muffle into engagement with the conchoidal baffle *e*, whence it is directly flung by centrifugal force in a radial direction through the delivery aperture *c* into the mold *h*. The muffle is slidingly inserted into a thrusting-up frame on the tensioning plate *l*, with the aid of the tapered grooves *d*.

Fig. 3 of the drawing shows, in horizontal section taken on the line I—I of Fig. 2, the body *a* of the muffle, the charging aperture *b*, and the conchoidal baffle *e* extending into the interior of the muffle and having an edge extending right up to the delivery aperture *c*. Fig. 4 shows, in plan view, the totally enclosed muffle body *a*, with the charging aperture *b* and the fitting grooves *d*.

Fig. 5 is a vertical transverse section of the body *a* of the muffle, taken on the line II—II of Fig. 2, showing the inwardly projecting conchoidal baffle *e*, and the delivery aperture *c*. The lower and the two lateral fitting grooves are indicated by broken lines in Fig. 5.

With the described new type of muffle for use in connection with the casting of precious metals higher injeition pressure and increased safety and reliability of working are obtained than with the hitherto known types.

What I claim is:

In a muffle for the charging of precious metal casting molds which is completely enclosed except for a charging aperture and a delivery aperture, a conchoidal baffle forming part of said muffle and projecting inwardly into the hollow space within the muffle and adapted positively to direct the charge towards the delivery aperture at an increased injection pressure.

KARL PLASCHKA.