June 12, 1928. 1,673,115

E. L. HAUMAN

CRUCIBLE

Filed Nov. 13, 1926 2 Sheets-Sheet 1

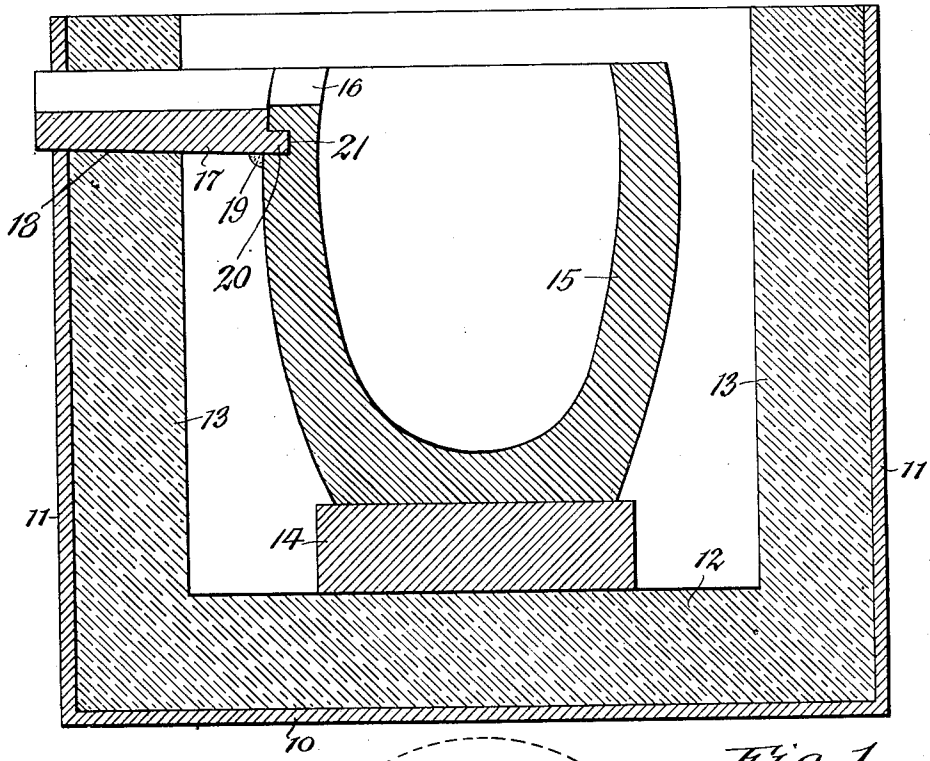

Fig. 1.

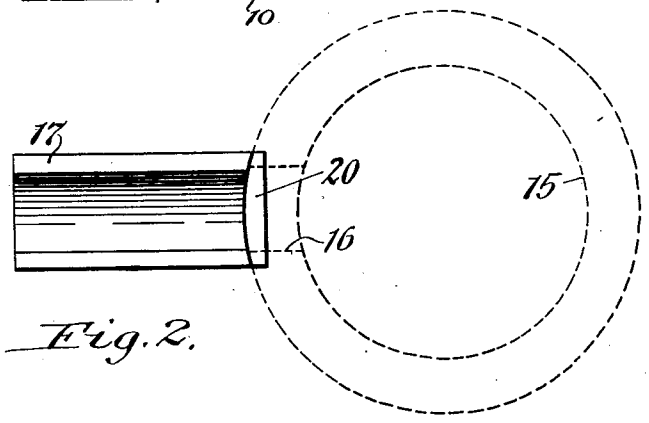

Fig. 2.

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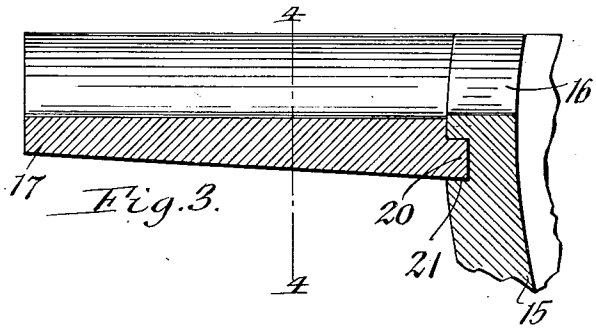

Fig. 3.

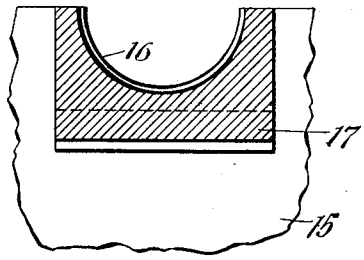

Fig. 4.

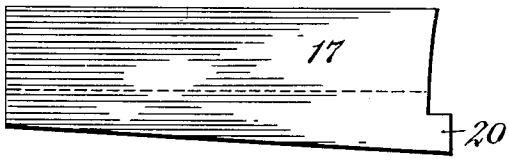

Fig. 5.

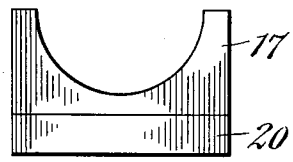

Fig. 6.

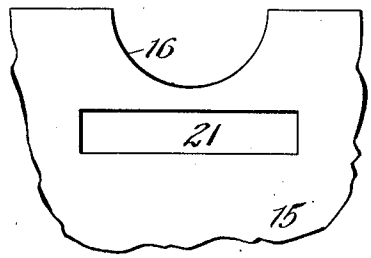

Fig. 7.

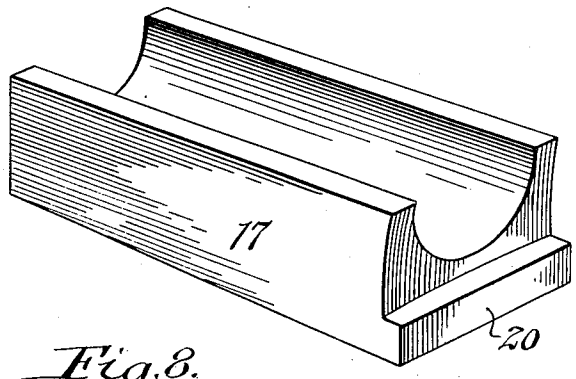

Fig. 8.

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Patented June 12, 1928. 1,673,115

UNITED STATES PATENT OFFICE.

EARL L. HAUMAN, OF HAMBURG, NEW YORK.

CRUCIBLE.

Application filed November 13, 1926. Serial No. 148,274.

This invention relates to a refractory crucible provided with a separate lip and adapted to be mounted in a furnace, such as, for example, those commonly employed in the brass melting industry.

Heretofore the pots of crucibles have been provided with integral lips which is objectionable because the lips are liable to become cracked or broken off either in the process of manufacture, or while packing and shipping the same, but principally while the same are in actual use in the heating furnace, inasmuch as any shrinkage of the supporting parts of the crucible throws the strain on the lip which is cemented into the lining of the furnace wall and therefore is substantially rigid so that any slight shifting of the crucible body or pot and the lip relatively to each other will result in breaking the lip.

It is the object of this invention to provide the pot or body of a crucible with a lip which is separate and distinct from the pot but so fashioned as to be readily joined to the pot at the time of installing the crucible in the heating furnace in which the melting is performed.

In the accompanying drawings:

Figure 1 is a vertical section showing a crucible consisting of a separate pot and lip connected with each other and mounted in a heating furnace in accordance with my invention. Figure 2 is a top plan view of the lip and the pot in dotted lines. Figure 3 is a fragmentary vertical longitudinal section, on an enlarged scale, of the lip and the adjacent part of the pot with which it is connected. Figure 4 is a vertical cross section taken on line 4—4 Fig. 3. Figure 5 is a side elevation of the lip. Figure 6 is an elevation from the inner end thereof. Figure 7 is a fragmentary side view of the pot showing the outlet thereof and the recess therein which receives the supporting tongue of the lip. Figure 8 is a perspective view of the lip.

Similar characters of reference indicate corresponding parts throughout the several views of the drawings:

The furnace adapted to receive the crucible for melting the contents thereof may be of any suitable and approved construction, that shown in the drawings comprising a bottom 10, side walls 11, a bottom lining 12, a side wall lining 13, and a pedestal 14, arranged on the bottom lining, said walls being usually constructed of metal and said lining consisting of any well known refractory material.

The numeral 15 represents the pot or body of the crucible of refractory material which rests on the pedestal and is adapted to receive the material which is to be melted by the heat in the furnace.

On its upper edge the pot is provided with an outlet 16 for the molten contents, which outlet in the preferred construction has the form of a downwardly curved notch or recess which is slightly less and substantially of semi-circular form.

Arranged in line with the outlet of the pot is a lip 17 which is of trough shaped form, the cross section of the same being struck from a radius slightly greater than the radius of the substantially semi-circular outlet of the pot. This lip fits at its inner and against the outer side of the pot around the outlet thereof so that the bottom of the outlet is slightly above the bottom of the trough in the lip. By this means any tendency of the molten material to leak through the joint between the pot and lip is prevented inasmuch as the molten material during the operation of pouring the same from the pot to the lip will jump from the high bottom part of the outlet to the low bottom part of the trough in the lip without any tendency of the material flowing backwardly through the joint between the pot and lip.

As a further precaution against leakage between the pot and lip the joint between the same is sealed with cement which also aids in connecting the lip and pot.

The lip may be so mounted that it receives its support wholly from the wall and lining of the furnace by extending the outer part of the lip through an opening 18 in the wall and lining, as shown in Fig. 1. It is preferable, however, to additionally support the lip on the pot by providing the inner end of the lip below its trough with an inwardly projecting tongue 20 which engages with a groove or recess 21 formed in the exterior of the pot below its outlet, as shown in Figs. 1, 3 and 4. As an additional means of retaining the lip in place the same may be connected by plastic cement with the pot, as shown at 19. A separate or detached lip connected with the pot or body and supported on the furnace in the manner shown and described possesses no inherent rigidity at the point of contact between the pot and

lip and thus obviates the danger of breakage through shrinkage or displacement of the pot, as would be the case if the lip were formed integrally with the pot and held in a rigid position relatively thereto.

I claim as my invention:

1. A crucible comprising a pot provided in its upper edge with a substantially semi-circular outlet, and a lip which is trough shaped in cross section and arranged in line with said outlet and has its bottom arranged slightly below the lower part of said outlets.

2. A crucible comprising a pot provided at its upper end with an outlet and also provided on its exterior below said outlet with a recess, and a lip arranged in line with said outlet and having a tongue engaging with said recess.

3. A crucible comprising a pot provided in its upper edge with a substantially semi-circular outlet and a recess on the exterior of said pot below said outlet, and a lip which is trough shaped in cross section and arranged in line with said outlet and provided on the lower part of its inner end with a tongue which engages with said recess.

4. A crucible comprising a pot provided in its upper edge with a substantially semi-circular outlet and a recess on the exterior of said pot below said outlet, and a lip which is trough shaped in cross section and arranged in line with said outlet and provided on the lower part of its inner end with a tongue which engages with said recess, the lower part of said outlet being arranged slightly above the bottom of said lip.

5. A crucible comprising a pot provided at its upper end with an outlet and also provided on its exterior below said outlet with a recess, and a lip arranged in line with said outlet and having a tongue engaging with said recess, and said lip and pot being united by cement.

In testimony whereof I hereby affix my signature.

EARL L. HAUMAN.