Jan. 2, 1945. E. H. WHITTAKER 2,366,581

FLASK AND WEIGHT MEANS THEREFOR

Original Filed July 9, 1941

FIG. 1.

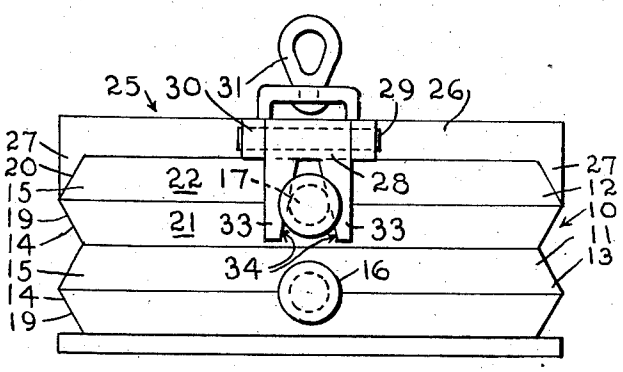


FIG. 2.

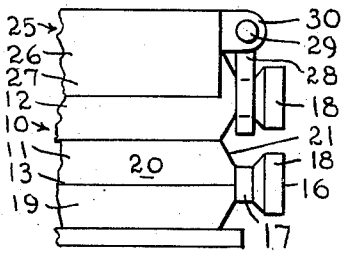


FIG. 3.

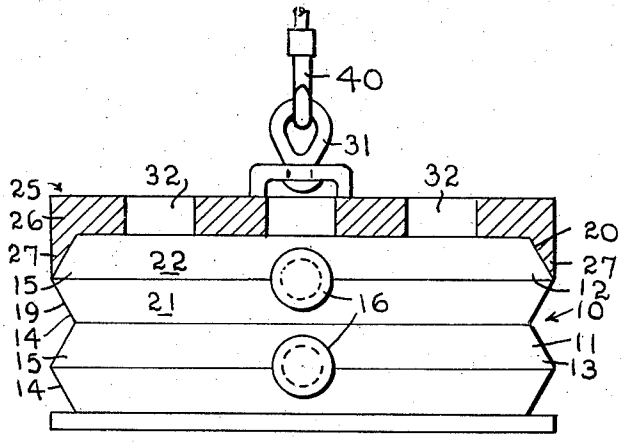
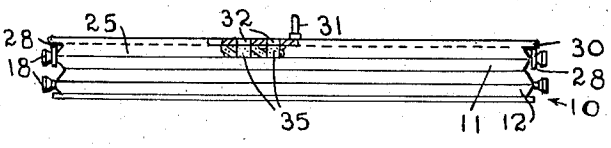


FIG. 4.



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FLASK AND WEIGHT MEANS THEREFOR

Edward H. Whittaker, Jersey City, N. J.

Original application July 9, 1941, Serial No. 401,651. Divided and this application September 9, 1942, Serial No. 457,763

5 Claims. (Cl. 22—112)

This invention relates to flasks used in foundry plants, and this application is a division of an application for United States patent on Foundry plants filed by me on July 9, 1941, Serial Number 401,651.

The principal object of the invention is to provide a flask and a weight means for firmly holding together the cope and drag sections of the flask, during the pouring operation, and until the hot metal has been reduced in temperature to a point where it ceases to flow, thus eliminating the use of clamps, bands, screw-threaded means and jackets for the flask sections.

Another object is to provide a weight means for the above named purpose, which may be used over and over again during the pouring period.

Still another object is to provide such a means which may be detached from the flask, simply by an upward pull.

Another object is to provide a weight means of this nature which may be coupled to the flask simply by lowering the weight means upon the cope section.

Other objects and advantages of this invention will appear in the following detailed description, taken in connection with the accompanying drawing, forming a part of this specification, and in which drawing:

Figure 1 is a view in end elevation of a flask and the novel weight means applied thereto.

Figure 2 is a fragmentary side elevation of the flask and weight means of Figure 1.

Figure 3 is a view, somewhat similar to Figure 1, but with the weight means in transverse section.

Figure 4 is a view in side elevation of a flask with the weight means partly in elevation and partly in longitudinal section.

The flask 10 comprises a drag section, or portion 11, and a cope section, or portion 12, each section 11 and 12 preferably comprising an elongated rectangular frame 13, forming side walls 14 and end walls 15 for the mold, and trunnions 16 extending outwardly from substantially the centers of the end walls 15. Each trunnion 16 has a neck portion 17 and a head 18.

Each side wall 14 may be shaped to provide two elongate faces 19 and 20 at its exterior, running longitudinally of the flask 10, these faces being in planes in obtuse angular relation to each other and symmetrically disposed at opposite sides by the center plane of the flask sections, as shown in Figure 1.

Likewise each end wall 15 may be shaped to provide two elongate faces 21 and 22 at its exterior, running cross-wise of the flask 10, these faces being in planes in obtuse angular relation to each other and symmetrically disposed at opposite sides of the center plane of the flask sections, as shown in Figure 2.

The novel weight 25 comprises an elongate plate portion 26 somewhat similar to a top board, but being made of metal and weighing considerable, longitudinally extending paralleling flanges 27, projecting downwardly from the plate portion 26 and having their confronting faces in inclined angular relation to the plane of the plate portion 26 for surface engagement with the uppermost faces 20 of the cope section 12, forked retainers 28, pivoted as at 29 to ears 30, extending from the ends of the plate portion 26 for embracing relation with the neck portions 17 of the trunnions 16 of the cope section, and an upwardly-extending swiveled eye 31 disposed at substantially the center of the plate portion 26 and carried thereby. The plate portion 26 may be provided with a suitable number of sprue holes 32, to align with gates 35 through which the molten metal may flow into the mold.

From Figure 1, it will be seen that the two forks 33 of the retainers 28 have inner faces 34 which diverge downwardly.

The eye 30 is provided so that a suitable means, such as a hook 40, may be employed when raising, lowering and transporting the weight 25, as set out in my co-pending application for United States patent, Serial Number 401,651.

It should be borne in mind that the weight means for firmly retaining the cope section 12 upon the drag section 11 need not accompany the flask 10 except during the pouring operation, and until the metal is no longer molten at the surface of the casting. Consequently it may be moved from one flask, by a straight upward pull, and centered upon a second flask, by lowering it upon the cope portion thereof. Thus each weight may be used over and over again upon various flasks.

The pivoted forked retainers 28, cooperating with the trunnions 16, and the depending, outwardly diverging, longitudinal side flanges 27 of the weight 25, cooperating with the upwardly converging side walls 14 of the cope section 12, tend to center the weight upon the cope section 12, so that the sections 11 and 12 will be held together firmly and so that the sprue holes 32 will align with the gates 35.

It will be noted that, even if the weight 20 is rocked somewhat as it descends upon the cope section 12, it will not dislodge the latter be-

cause of the pivoted forked retainers **28** with their downwardly diverging inner faces **34**, which may swing about the neck portions **17** of the trunnions **16**. And these forked retainers **28**, it will be noted in Figure 1, extend below the bottom of the flanges **27** and engage the trunnions before the flanges **27** seat upon the outer surfaces of the faces **20** of the cope section **12**.

I claim:

1. In combination with a flask including a drag section and a cope section, as least the cope section being provided with oppositely-extending trunnions; means for holding said cope section upon said drag section comprising a weight; and means cooperating with said trunnions for holding said weight centered upon said cope section, including a pair of depending, forked retainers, pivotally carried at opposite ends of said weight and adapted to straddle and contact said trunnions, and each retainer being provided with a horizontally disposed pivot for oscillation of said retainers.

2. In combination with a flask including a drag portion and a cope portion at least the cope portion provided with oppositely-extending trunnions, each having a head and a neck portion; means for holding said cope portion firmly upon said drag portion, comprising a weight, provided with downwardly-extending, oppositely-disposed flanges adapted to engage opposite sides of said cope portion; and means cooperating with said trunnions for holding said weight centered upon said cope portion, comprising forked retainers disposed to straddle said neck portions, in contact with said trunnions, and between the cope portion and said heads, said retainers being longer than said flanges and extending below the bottoms of said flanges.

3. In combination with a flask including a drag portion and a cope portion at least the cope portion provided with opposite-extending trunnions, each having a head and a neck portion; means for holding said cope portion firmly upon said drag portion, comprising a weight; and means cooperating with said trunnions for holding said weight centered upon said cope portion comprising forked retainers pivotally carried by said weight disposed to straddle said neck portions and between the cope portion and said heads.

4. In combination with a flask including a drag portion and a cope portion at least the cope portion provided with oppositely-extending trunnions, each having a head and a neck portion; means for holding said cope portion firmly upon said drag portion, comprising a weight and longitudinally-extending, paralleling side flanges projecting downwardly from said weight; and means cooperating with said trunnions and flanges for guiding said weight into a position centered upon said cope portion with said flanges in contact with opposite side walls of said cope portion, comprising forked retainers pivotally depending from opposite ends of said weight and having horizontally-disposed pivot pins.

5. In combination with a flask including a drag portion and a cope portion at least the cope portion provided with oppositely-extending trunnions each having a head and a neck portion; means for holding said cope portion firmly upon said drag portion, comprising a weight and longitudinally-extending, paralleling side flanges projecting downwardly from said weight; and means cooperating with said trunnions and flanges for guiding said weight into a position centered upon said cope portion with said flanges in contact with opposite side walls of said cope portion, comprising forked retainers pivotally depending from opposite ends of said weight and having horizontally-disposed pivot pins, said forked retainers and pivot pins being disposed outwardly of the planes of the end faces of said weight.

EDWARD H. WHITTAKER.