(No Model.)

A. C. BRUCE & J. W. WARNOCK.

APPARATUS FOR CASTING SASH WEIGHTS.

No. 490,184. Patented Jan. 17, 1893.

Fig. 1.

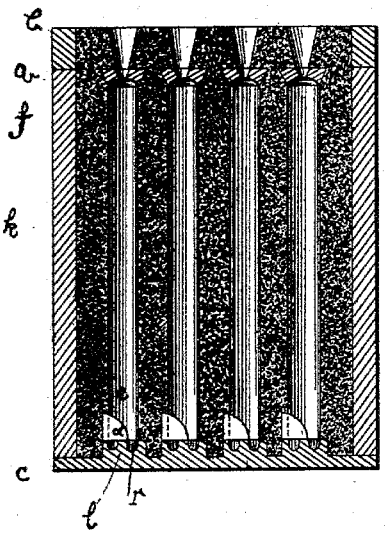

Fig. 2.

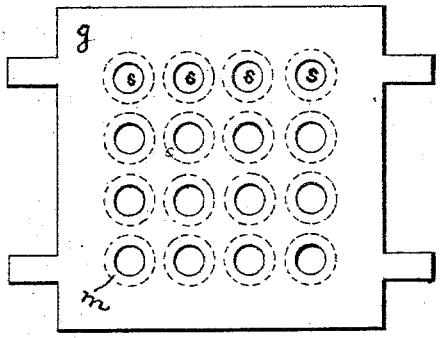

Fig. 4.

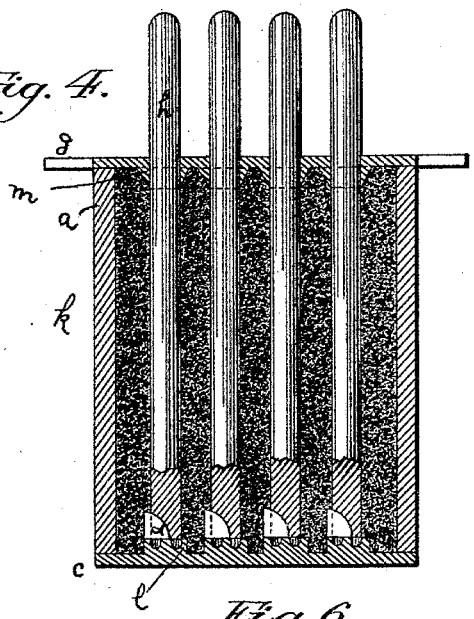

Fig. 3.

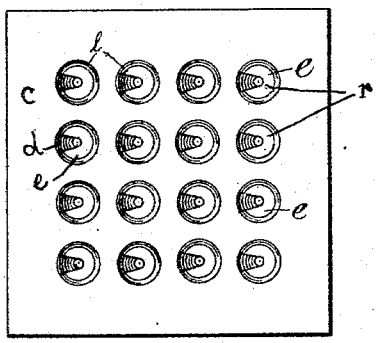

Fig. 5.

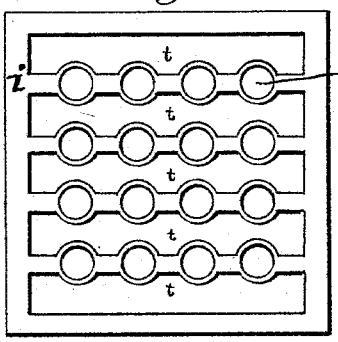

Fig. 6.

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AVERY C. BRUCE AND JOHN W. WARNOCK, OF SOUTH PITTSBURG, TENNESSEE.

APPARATUS FOR CASTING SASH-WEIGHTS.

SPECIFICATION forming part of Letters Patent No. 490,184, dated January 17, 1893.

Application filed September 12, 1890. Serial No. 364,784. (No model.)

To all whom it may concern:

Be it known that we, AVERY C. BRUCE and JOHN W. WARNOCK, citizens of the United States, residing at South Pittsburg, in the county of Marion and State of Tennessee, have invented a new and useful Apparatus for Casting Sash-Weights, of which the following is a specification.

Our invention relates to improvements in molds and patterns for casting sash-weights, and the objects of our improvements are, First: To cast sash weights in a single flask as compared with a parting flask. Second: To cast weights with a clear and perfect eye in the top so that when the cord is attached, the weight will hang perfectly perpendicular in the sash box. Third: To cast any number of weights at the same time in the same flask on end instead of laterally. Fourth: To use the same patterns for casting weights of the same circumference but of different lengths. Fifth to finish both ends of each weight by chilling. We attain these objects by the mechanism illustrated in the accompanying drawings, in which,

Figure 1, is a cross section of the mold complete ready for pouring. Fig. 2, is a temporary pattern plate (*g*. Fig. 4.) Fig. 3, is the bottom plate on which the flask rests, with projections *l*, *l*, *l*, which form the eye end of the mold in which the sash weights are cast. (*c*. Figs. 1. and 4.) Fig. 4. is a cross section of the mold after the sand has been rammed, with patterns ready for drawing. Fig. 5. is a templet used temporarily to hold patterns *h*, *h*, *h*, in a perpendicular position while in the process of ramming. Fig. 6. represents a top and sectional view of one of the end chills. (*f*, *f*, *f*, Fig. 1.)

Similar letters refer to similar parts throughout.

To use our apparatus in casting sash weights metal bottom plate *c*. is placed on the floor in such a position that the face having the projections *l*, *l*, *l*, *l*, is uppermost. Chills *d*, are placed upon said projections *l*, *l*, *l*, in the positions shown in Figs. 1 and 4, the bottom of the chills occupying the position shown in Fig. 3. It will be noticed that when the flask is rammed the chills will project slightly into the sand. This not only has the effect of holding the chill firmly in position when the sand has been rammed and the patterns *h*, *h*, *h*, withdrawn, but after the weight has been cast it allows the chill to be easily separated from the weight by a slight blow with a hammer on the projection. Flask *a*, is placed squarely on bottom plate *c*, (Figs. 1 and 4.) Templet *i*, is then placed on top of flask *a*, in the position occupied by temporary plate *g*, in Fig. 4, so that the circular openings *x*, *x*, will come directly over the projections *l*, *l*, on bottom plate *c*. The wooden patterns *h*, *h*, *h*, which are of the same circumference as the annular slots or grooves in projections *l*, *l*, *l*, and openings *x*, *x*, *x*, are dropped through the openings *x*, *x*, *x*, in templet *i* so that the slots in the ends of *h*, *h*, *h*, will fit down over chills *d*, *d*, *d*, the ends extending slightly into the annular slots in projections *l*, *l*, *l*, as shown in Fig. 4. While patterns *h*, *h*, *h*, are in this position sufficient sand is rammed into the flask to hold them firmly in position. Templet *i* is then removed and the flask is rammed to within two or three inches of the top of the flask. The remaining portion of the flask is then filled with loose sand until it projects slightly above the top. Plate *g*, (Figs. 1 and 4) is then squarely pressed down on flask *a*, until it occupies the position shown in Fig. 4. Care should be taken to have this plate rest evenly on the flask and it is best to force it into position by tapping it with a mallet. This causes projections *m*, *m*, *m*, to form recesses in the sand. The patterns *h*, *h*, *h*, are now withdrawn, plate *g*, removed and top chills *f*, *f*, *f*, *f*, dropped into the recesses above described. These top chills have holes through their centers as is shown in Fig. 6. Sprues are now placed into these holes, section flask *b*, placed on top of flask *a*, and rammed with sand, runners cut in the sand, sprues removed and the flask is ready for pouring, as is shown in Fig. 1.

We do not confine ourselves, however, to any one particular method of gating, but use any of the common methods, using either metal or sand runners, nor do we confine ourselves to any one material out of which the

component parts of said apparatus is made but use any suitable material metal, wood, or clay.

We are aware that prior to our invention sash weights have been cast by many different methods, we therefore do not claim an apparatus for casting sash weights on end broadly, but

What we do claim and desire to secure by Letters Patent is:

1. The combination in an apparatus for casting sash-weight of bottom plate *c*, having projections *l*, with annular grooves *r*, slotted patterns *h* and chills *d*, used in conjunction with flask *a*, substantially as shown for the purposes specified.

2. Templet *i*, having circular openings *x*, used for guiding and steadying the patterns during the first process of ramming, and having tamping openings *t*, in combination with bottom plate *c*, having projections *l*, with annular grooves *r*, slotted patterns *h*, and chills *d*, substantially as shown for the purposes specified.

3. Temporary plate *g*, having projections *m*, through which are openings *s*, of the same circumference as patterns *h*, top chills *f*, having circular openings for the sprues through the center; in combination with bottom plate *c*, having projections *l*, with annular grooves *r*, slotted patterns *h*, and chills *d*, substantially as shown for the purposes specified.

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