(No Model.)

C. E. STEVENS.

MOLD FOR CASTING METALLIC ARTICLES.

No. 356,669. Patented Jan. 25, 1887.

Fig. 1.

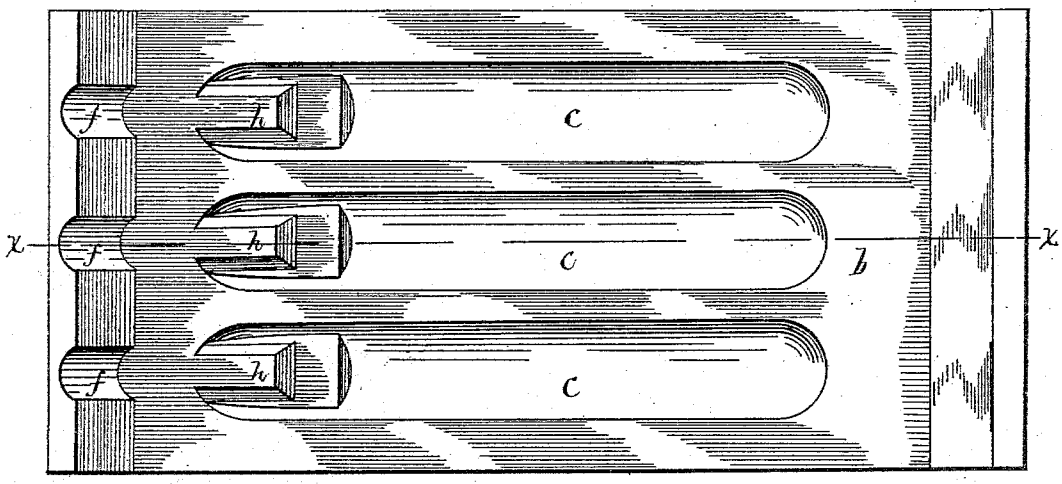


Fig. 2.

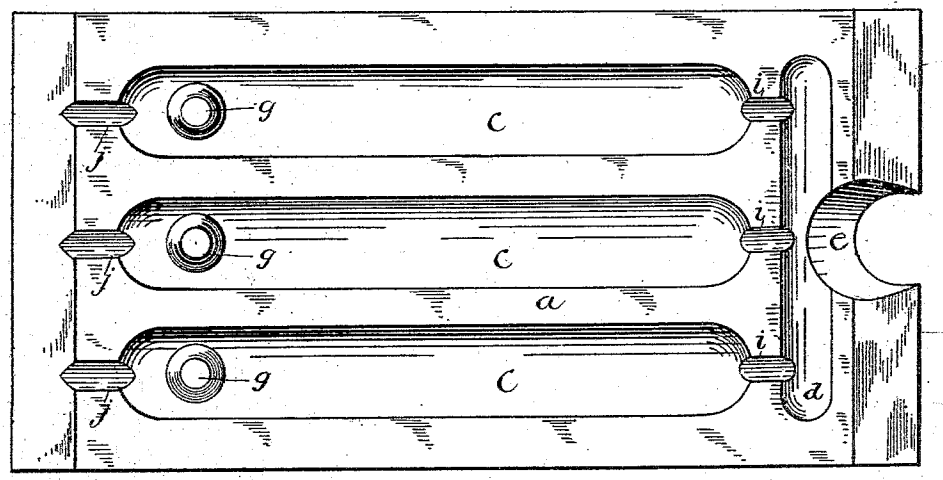
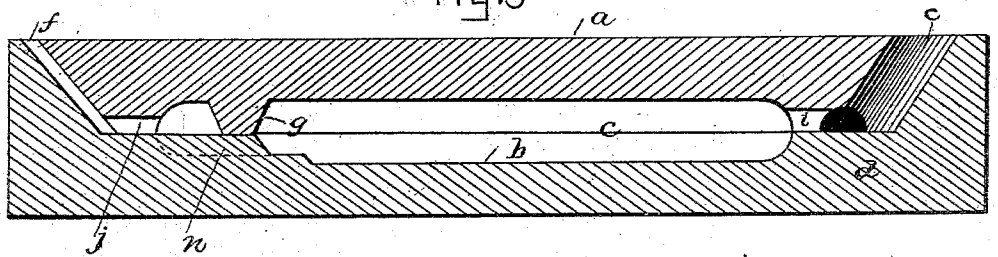


Fig. 3



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UNITED STATES PATENT OFFICE.

CHARLES E. STEVENS, OF SOMERVILLE, MASSACHUSETTS.

MOLD FOR CASTING METALLIC ARTICLES.

SPECIFICATION forming part of Letters Patent No. 356,669, dated January 25, 1887.

Application filed December 7, 1885. Serial No. 184,939. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. STEVENS, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Molds for Casting Metal Articles, of which the following is a specification.

My invention relates to molds for casting metal articles, and more particularly to molds for casting window and sash balance-weights, its object being to provide an improved permanent metallic mold whereby such weights and similar articles may be readily and conveniently cast.

To the foregoing ends my invention consists in the improvements as hereinafter fully described, and subsequently pointed out in the claim.

Of the drawings accompanying this specification and forming a part hereof, Figure 1 represents a top plan view of the lower section of my mold. Fig. 2 represents a bottom plan view of the upper section of my mold. Fig. 3 represents a vertical section of the complete mold, taken on the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

I form my mold in two parts or sections, *a* representing the upper section, and *b* the lower section. In each of these sections parts of the pattern-cavities *c* are formed in such manner as that substantially one half of each cavity shall be formed in one section and the other half in the other section, and when the two sections are brought together the fractional parts of each of such cavities will coincide or "register" with the other parts and form a complete series of pattern-cavities. I mention a series of pattern-cavities, for the reason that a number of castings may be made at a single operation quite as readily as one. The series of pattern-cavities communicate with a lateral supply-channel, *d*, which in turn connects or communicates with a common receiving-aperture, *e*, preferably formed in the upper section, *a*, of the mold at one end thereof.

At the opposite end of the mold and communicating with each pattern-cavity *c* is an air vent or aperture, *f*, in this instance formed in the lower section, *b*, of the mold. These air-vents extend obliquely from the pattern-cavities upward along the line of junction of the two sections to the upper edge of the end of the mold.

By placing the air-vents at the end of the mold opposite to that in which the receiving-aperture is formed the air is completely driven out of the pattern-cavities at a point at which it will most naturally seek escape, and perfect castings at each operation are secured, which is not the case where the venting takes place through the crevices or along the meeting surfaces of the parts of the molds.

The "pattern-cavities," as the term indicates, are made of the proper form or shape to have the metal poured therein form the desired casting. In the present case the pattern is designed, as stated, to form window and sash balance-weights, in the main or body portion of which the body of the weight is formed.

g represents a stud or projection near the lower end, *c*, in each cavity, formed on the upper section of the mold, which stud or projection rests against one end of a projection or rib, *h*, on the lower mold. Said projection or rib *h* extends from said stud *g* to the lower end of the pattern-cavity. An eye for fastening the suspending-cord of the weight is thus formed by the stud *g*, while the projection or rib *h* forms a slot in which said suspending-cord may rest without danger from wear or abrasion when in use.

Small channels *i* communicate with the lateral supply-channel *d* and the pattern-cavity *c*, and at the other end said pattern-cavities communicate with the air-vents *f* by means of the small channels *j*.

Any desired number of pattern-cavities *c*, with their communicating or connecting channels and air-vents, may be constructed in a single mold.

The manner of using my device, which is, as mentioned, preferably constructed of iron, will now be easily understood. The two sections *a* and *b* are placed together, so that the pattern-cavities, &c., will coincide or register, and the molten metal is poured into the receiving-aperture *e*. The lateral passage *d* and communicating passages *i* permit of the proper

and equal distribution of the metal throughout the series of pattern-cavities, while the air in such cavities is forced out through the passages *j* and vents *f* at the opposite ends of the mold, and all liability of molding defective weights, as hereinbefore mentioned, is avoided, and perfect castings are formed. When the metal has cooled sufficiently, the upper section, *a*, of the mold is removed, the castings taken out, and the part formed in the passage *i* and *j* and parts adjacent are broken off.

It will be noticed that, in addition to placing air-vents at the end of the mold opposite to that at which the receiving or pouring aperture is formed, each pattern-cavity is provided with an individual air-vent, which construction is to be regarded as an important feature of my invention, since it provides against the possibility of the chilling and clogging of the metal in one mold, preventing the air from escaping from another or others into which metal is poured, as is the case in molds provided with a single air-vent communicating with several pattern-cavities.

Having thus described my invention, I claim—

The combination of the lower section, *b*, provided with part of the pattern-cavity *c*, and rib *h*, an air-vent, *f*, with the upper section, *a*, provided with the other part of said pattern-cavity and having the supply-aperture *e*, the lateral channel *d*, passages *i* and *j*, and stud *g*, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 3d day of December, 1885.

CHARLES E. STEVENS.

Witnesses:
W. A. BARTLETT,
C. F. BROWN.