

W. T. HARDING.
CASTING APPARATUS.
APPLICATION FILED JAN. 13, 1912.

1,040,314.

Patented Oct. 8, 1912.

2 SHEETS—SHEET 1.

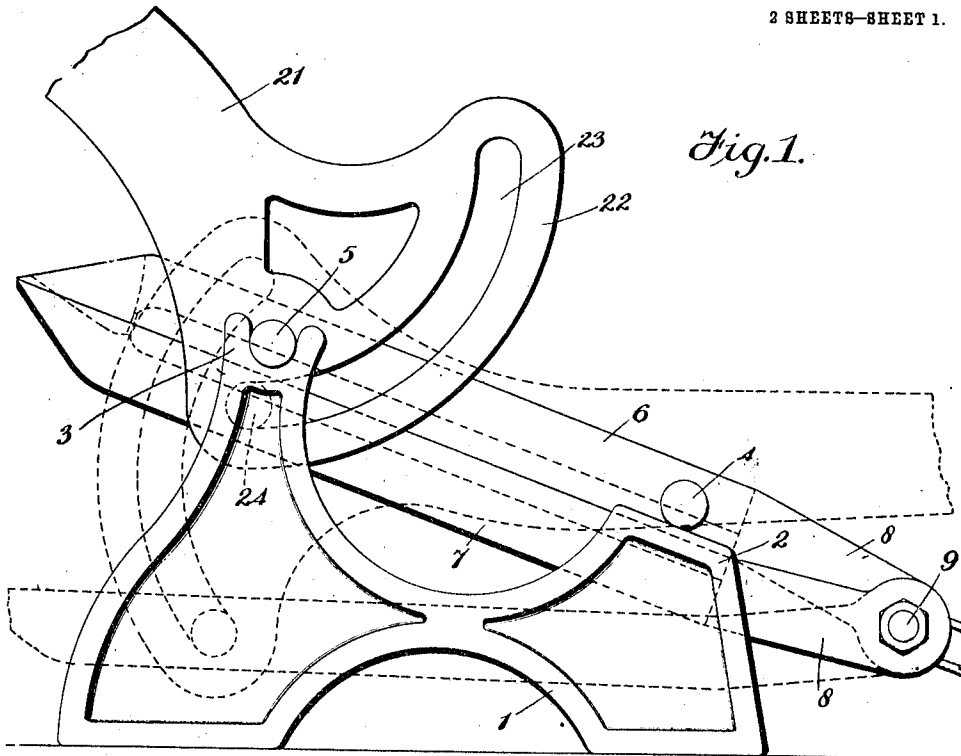


Fig. 1.

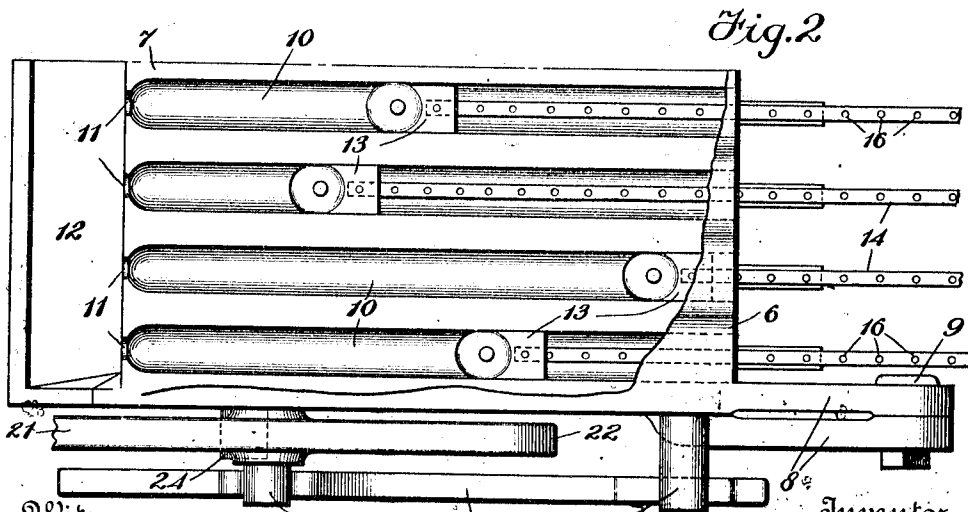


Fig. 2.

Witnesses
Byron B. Collings.
H. A. Byrne

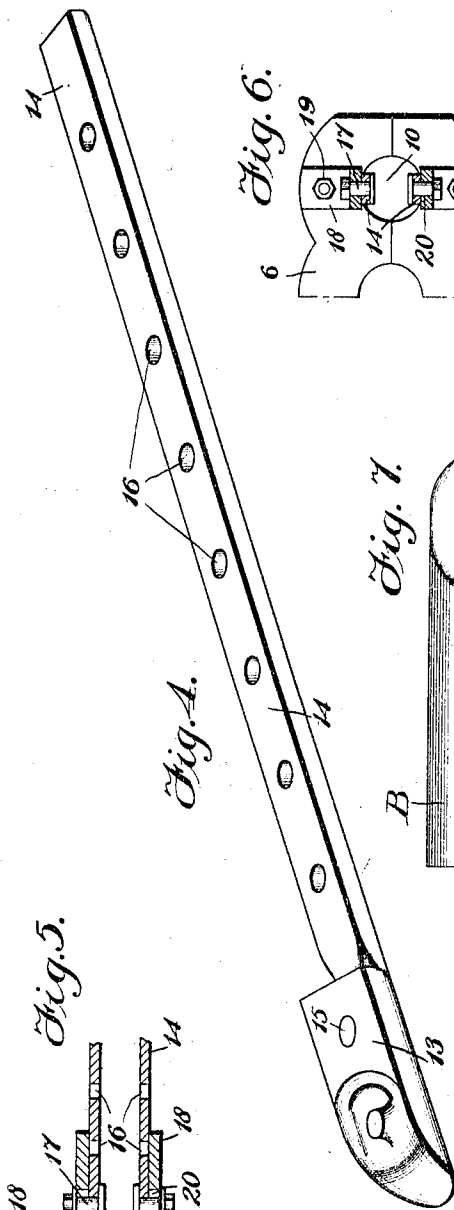
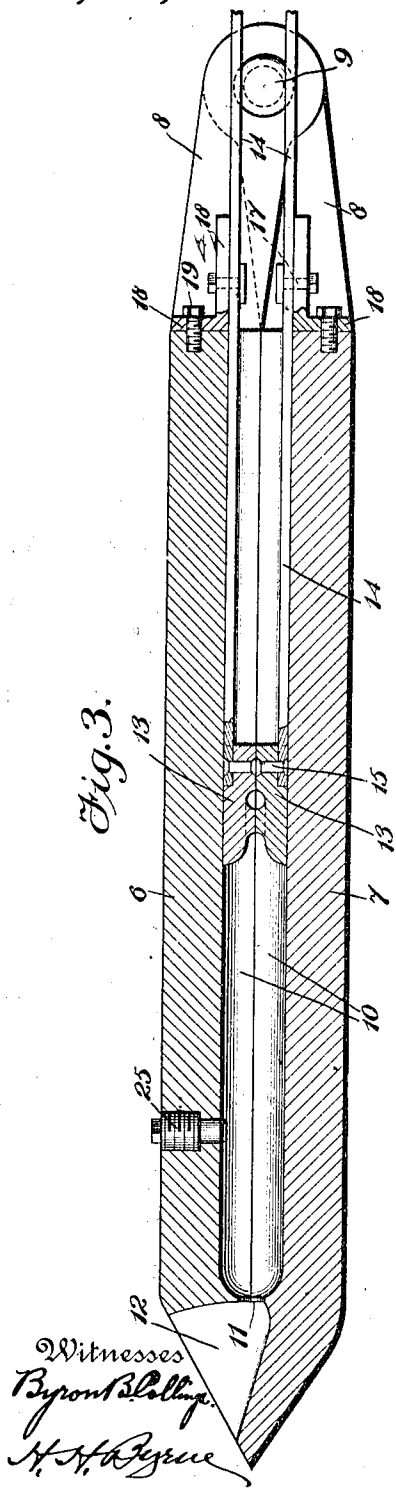
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UNITED STATES PATENT OFFICE.

WILLIAM T. HARDING, OF RALEIGH, NORTH CAROLINA.

CASTING APPARATUS.

1,010,314.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed January 13, 1912. Serial No. 671,073.

To all whom it may concern:

Be it known that I, WILLIAM T. HARDING, a citizen of the United States, residing at Raleigh, in the county of Wake and State of North Carolina, have invented certain new and useful Improvements in Casting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to casting apparatus and more especially to apparatus for casting sash weights, and has for its purpose to provide an apparatus wherein such weights may be cast in lots of the same or different sizes, and wherein the mold parts are held in the most convenient position for the pouring and stripping operations.

The invention further proposes a mold of the character in question having a die mounted in such a manner that it will automatically allow contraction to take place in the cooling metal without breaking out the eye of the sash weight formed by the die.

With these and other objects in view the invention consists in the arrangement and combination of parts hereinafter claimed, and while the invention is not restricted to the exact details shown and described, still for the purpose of disclosure reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which:—

Figure 1 is a side elevation of the apparatus complete. Fig. 2 is a top plan view thereof, partly broken away. Fig. 3 is a longitudinal section view, partly in elevation, of the mold *per se*. Fig. 4 is a detail perspective view of one of the die members and its adjusting rod. Fig. 5 is a detail sectional view showing the die adjusting device. Fig. 6 is a similar view taken at right angles to Fig. 5, and; Fig. 7 is an elevation of a part of the cast article.

Referring to the construction in detail and with like characters representing like parts throughout the apparatus consists in a chair 1 having an upright or supporting member 2 and a relatively higher supporting member 3 on which is mounted, through the medium of studs 4 and 5, the mold proper which consists in an upper and a lower section 6 and 7 respectively.

The mold sections 6 and 7 are each formed

with a pair of integral arms 8 (one of each being shown) that are connected by the bolts or hinges 9, whereby the mold sections may be readily assembled and disassembled. The mold sections are each designed with a plurality of complementary recesses or chambers 10 which, when the mold is assembled, conform to the shape of the articles to be cast. At one end these casting chambers are restricted and have each an aperture or opening 11 communicating with a trough 12, which trough receives the molten material from the ladle. The chambers 10 are of their full diameter and extend for the full length of the mold, the purpose whereof being to receive a die or follower which is adjustable within the chamber for the purpose of casting sash weights of different lengths as will be readily understood.

The dies or followers consist each of two members 13 constructed alike and designed to form the end A of the weight B in substantially that shape shown in Fig. 7. The members 13 are each cut away at one end to receive the bars or rods 14 which are secured thereto by the rivets 15, and the length of said bars is such that the die may be adjusted to any position within the chamber 10. The rods 14 are each provided with a plurality of perforations 16 disposed at equal intervals, and which are adapted to receive the bolts 17 carried by the angle irons or brackets 18 that are in turn secured to the ends of the die sections by the bolts 19 (see Figs. 3 and 5).

The brackets 18 have the perforations 20 through which the bolts 17 pass, formed as a slot whose length is such that the bolts 17 may have slight movement therein, the purpose whereof being to permit of slight play of the die rods 14 so that the dies may be free to move during the contraction of the metal while the metal is cooling, and thus not break the eye *a* in the end A of the sash weight. In this connection it seems appropriate to state that in molds of this character, as now employed, the dies for making the eyes in the sash weights are immovably secured after adjustment resulting in that the eyes are broken during the contraction of the metal, and which to avoid is one of the express purposes of the present invention.

When in position to receive the molten material the mold is supported on an incline in the chair 1 by having the studs 4

and 5 of the upper mold section supported upon the uprights 2 and 3 respectively and for holding the mold sections assembled and opening the mold, the lower section 7 is swung upon the hinges 9 through the medium of a lever 21. Said lever is fulcrumed on the stud 5 and has a web 22 in which is formed a slot 23 eccentric to said fulcrum, which slot receives a stud or pin 24 that is fixed to the lower mold section. Through the medium of the lever 21 and said slot and pin engagement (23 and 24) it will be readily seen that the lower mold section may be changed to either of the positions shown in dotted line or full line in Fig. 1.

Since the apparatus is designed to cast weights of different sizes and it is desirable to mark each weight in pounds, the several divisions of the mold are each provided with a removable plug 25 which projects within the casting chamber 10 and which bears the numeral designation for its respective size weight.

What I claim is:—

1. In a casting apparatus the combination of, a chair having supporting members of different heights, a separable mold comprising a pivotally connected upper and lower section, studs on said upper section resting on said supports and holding the mold on an incline; a lever mounted on the uppermost of said studs and having a slot eccentric to said stud, and a stud on the raised end of the lower section engaging with said slot, said lever operable through said slot and stud engagement to raise and

lower said section to close and open the mold, substantially as described.

2. In a casting apparatus the combination of, a pair of separable hinged sections, means for holding said sections assembled, an angle iron secured to one end of each section, said angle irons provided each with a slot, a pair of die members movably mounted between said sections, a perforated rod secured to each of said die members, and bolts for adjustably securing said rods to said angle irons, said bolts passing through the slots in said angle irons and permitting of movement of said dies after the same are adjusted to position, substantially as described.

3. The combination with a mold comprising separable sections, of a die therefor, and means for adjustably positioning said die in the mold, said means comprising a pair of brackets secured to said mold sections and having each an elongated perforation, rods secured to said die and provided with perforations; and bolts passing through the elongated perforations in said brackets and engaging with perforations in said rods; said bolts and elongated perforations permitting of movement of said die after the same has been adjusted to position, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

WILLIAM T. HARDING.

Witnesses:

B. S. JERMAN,
E. B. CROW.