S. J. SULLIVAN.

SASH WEIGHT MOLD.

APPLICATION FILED OCT. 28, 1915.

1,171,275.

Patented Feb. 8, 1916.

Fig. 1.

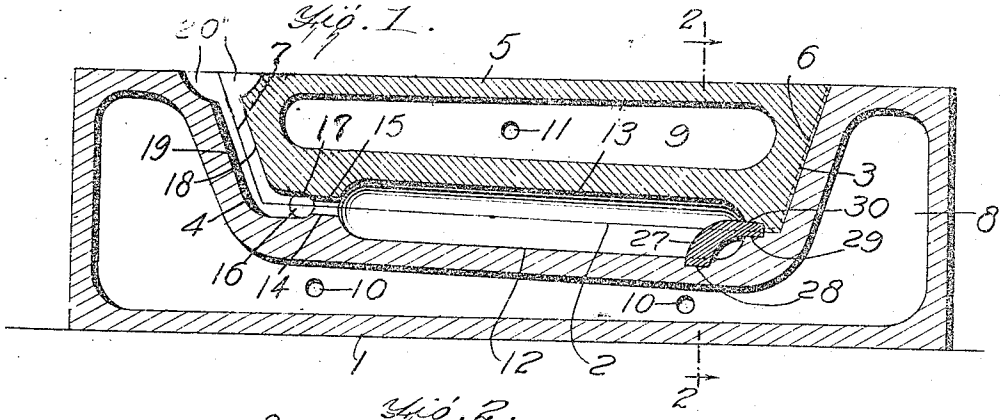


Fig. 2.

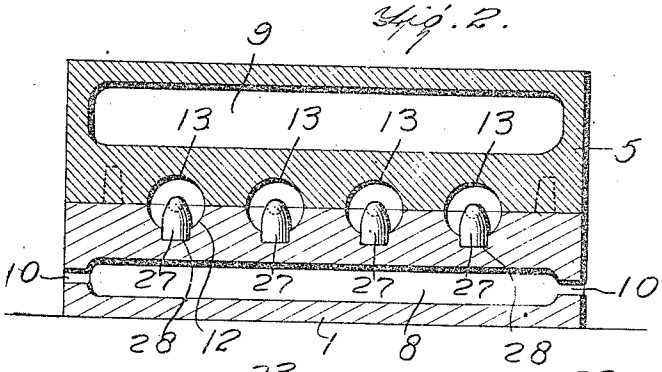


Fig. 5.

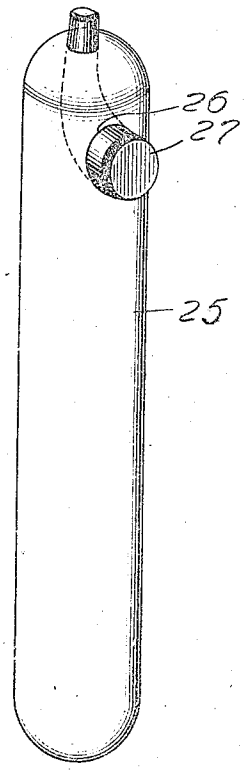


Fig. 3.

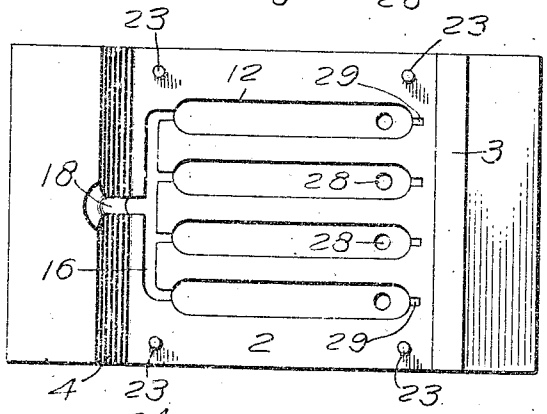
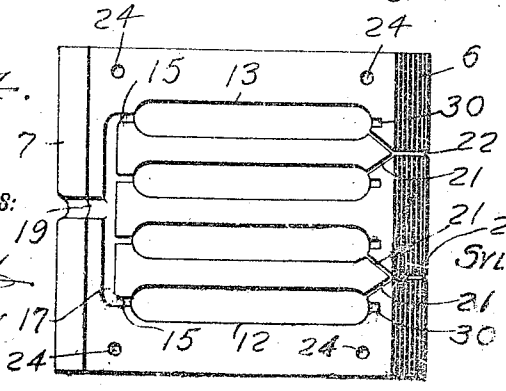


Fig. 4.



WITNESSES:

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SASH-WEIGHT MOLD.

1,171,275. Specification of Letters Patent. Patented F

Application filed October 23, 1915. Serial No. 58,391.

To all whom it may concern:

Be it known that I, SYLVESTER J. SULLIVAN, a citizen of the United States, and a resident of Hot Springs, in the county of Garland and State of Arkansas, have invented a new and useful Improvement in Sash-Weight Molds, of which the following is a specification.

My invention is an improvement in sash weight molds, and the invention has for its object to provide a mold of the character specified adapted for permitting the simultaneous casting of a number of weights, each of the desired shape and size, and provided with the eye for the passage of the cord, wherein the mold is so arranged that it may be heated or cooled during the operation of molding, and wherein air vents are provided for preventing the formation of air bubbles, flaws, and the like in the cast article.

In the drawings:—Figure 1 is a longitudinal vertical section through the improved mold ready for casting, Fig. 2 is a section on the line 2—2 of Fig. 1, looking in the direction of the arrows adjacent to the line, Fig. 3 is a top plan view of the bottom section of the mold, Fig. 4 is a bottom plan view of the upper section, and Fig. 5 is a perspective view of a completed weight with the eye core in place.

The present embodiment of the invention comprises a lower section and an upper section fitting within the lower section, the sections having coöperating recesses forming the molds, and forming passages and air vents when the mold sections are properly placed with respect to each other, and each section is provided with means for permitting the same to be cooled or heated.

The bottom section 1 of the mold is cellular or hollow, and the said section is recessed on its upper face transversely as indicated at 2. This recess extends the full width of the mold section, and the opposite side walls 3 and 4 of the recess are inclined as shown, diverging from each other. The upper section 5 of the mold is shaped to fit within and fill the recess 2, and when in place, the upper surface of the upper section 5 is flush with the upper surface of the lower section 1.

The side walls 6 and 7 of the upper section are beveled or inclined similar to the side walls 3 and 4 of the recess, and both sections are cellular or chambered as indicated at 8 for the lower section and per section.

Openings 10 and 11 are pr respective sections 1 and 5, co with the chambers 8 and 9, fo the passage of air to compensa sion and contraction during cooling, and to permit the pass ing fluid or a heating fluid whe

The adjacent abutting faces sections are recessed longitudi cated at 12 and 13, respectively cesses being semi-circular in and coöperating to form cyli cavities. In the present instan cavities are provided, but it is as many cavities might be provi be necessary.

A groove or passage 14 lea end of each recess 12 which i the side wall 4 of the recess, a ing groove 15 leads from each the end adjacent to the wall 7 section. These grooves 14 and to provide ports leading to the and each port or passage form operating grooves 14 and 15 common groove 16 for the lowe 17 for the upper section, the 16 and 17 coöperating to for transverse to the axes of the and communicating with each by a port or passage 14—15.

Coöperating grooves 18 and the grooves 14 and 15, respect inclined walls 4 and 7, and th of the said grooves 18 and 19 bored or enlarged and the co enlargements coöperate to f shaped depression 20 for fac pouring of the molten metal.

Grooves 21 lead from the re end adjacent to the wall 6, an 21 of adjacent recesses 13 ope mon groove 22 extending alon of the section 5. These groov are air vents for permitting the that may be trapped during the preventing air bubbles and lik

The mold sections are center of pins 23 on the bottom of th the lower section, which enga 24 on the under face of the u When the mold sections are pr with respect to each other, t enter the openings 24, and u

pins do enter the openings the mold sections cannot seat properly with respect to each other.

The sash weights 25 shown in Fig. 5 have their ends rounded as shown, and an eye or opening 26 is provided for permitting the passage of the sash cord to connect the weight to the sashes. These eyes 26 are frusto-conical and they are curved longitudinally. Each eye leads from the center of one end of the weight axially a short distance and then curves opening at the side of the weight. The small end of the opening is at the axis of the weight and the large end is at the side. These eyes are formed by cores 27, each of the said cores being frusto-conical in shape and curved longitudinally as shown. The cores are held in place at the ends of the mold cavities remote from the pouring recess 20, each core having its large end received in an opening 28 in the bottom of a groove 12 and having its small end received in a cavity extending axially from the mold cavity and formed by coöperating grooves 29 and 30 in the lower and upper mold sections respectively.

In order to cast a series of weights, the upper section is first removed from the lower section and the cores are inserted, if they are not already in place. Each core is inserted by placing the large end in the recess 28, as indicated in Figs. 1 and 2. The small end of each core rests in a groove 29 in the lower section, and the upper section may now be placed without disturbing the cores. When the pins 23 enter the openings 24 the sections are centered with respect to each other, and the grooves 30 of the upper section will fit over the rounded upper surface of the small ends of the cores. The molten metal is now poured in the recess 20 and it passes down the ports 18—19, 16—17, 14—15 into the mold cavities. The trapped air is driven up through the vent grooves 21—22, and there is nothing to prevent the molten metal filling the entire mold cavity and making a perfectly formed weight. The air in the chambers 8 and 9 will become heated during the casting and will expand but the ports 10 and 11 permit the air to pass out without damage to the mold sections.

During the cooling the air will contract in the chambers 8 and 9, and air will pass in through the openings 10 and 11 to compensate for the contraction. If desired a cooling fluid may be made to circulate through the chambers 8 and 9 by one of the openings 10 and 11. After the cast weights have cooled the upper section is removed, and the weights may then be removed. The cores are easily detached being tapering or frusto-conical as shown, by tapping lightly on the small end of each core.

The improved core is simple in construction yet very efficient in operation. The sections may be exactly centered and there is no danger of breakage from heating or chilling.

I claim:—

1. A mold for sash weights, comprising chambered upper and lower sections, the lower section having a transverse recess in its upper face and having the side walls of the recess inclined outwardly away from each other, the upper section fitting within the recess, means for centering the sections with respect to each other, the sections having on their abutting faces coöperating grooves forming mold cavities and having coöperating grooves leading from one end of the first-named grooves and coöperating to form pouring passages, said last-named passages communicating with a common passage extending to the upper surface of the mold and being enlarged to facilitate pouring, the upper section having vent grooves at the opposite side wall from the pouring passages for permitting the venting of the air trapped in the mold cavities, each of the first-named grooves of the lower section having a radial depression at the end adjacent to the vent grooves, and the sections having coöperating grooves at the said end forming axial passages leading from the mold cavities, and cores held by the axial passages and the radial depressions of the first-named grooves, said cores being curved longitudinally and being frusto-conical in shape.

2. A mold for sash weights, comprising chambered upper and lower sections provided with openings for permitting the circulation of a cooling fluid or permitting the escape of air from the chambers, the lower section having a transverse recess in its upper face and having the side walls of the recess inclining outwardly away from each other, the upper section fitting within the recess, means for centering the sections with respect to each other, the sections having on their abutting faces coöperating grooves forming mold cavities and having pouring passages at one end and vent passages at the other end, said sections having means for supporting a core at the end of each mold cavity adjacent to the vent passages, each of the said cores being curved longitudinally and being frusto-conical and having its small end at the axis of the mold cavity and its large end at the under side thereof, each core supporting means comprising cooperating axial grooves leading from the mold cavity at the end adjacent to the vent passage, and a radial depression at the bottom of the mold cavity.

3. A mold for sash weights, comprising chambered upper and lower sections provided with openings for permitting the circulation of a cooling fluid or permitting the

escape of air from the chambers, the lower section having a transverse recess in its upper face and having the side walls of the recess inclining outwardly away from each other, the upper section fitting within the recess, means for centering the sections with respect to each other, the sections having on their abutting faces coöperating grooves forming mold cavities and having pouring passages at one end and vent passages at the other end, said sections having means for supporting a core at the end of each mold cavity adjacent to the vent passages, each of the said cores being curved longitudinally and being frusto-conical and having its small end at the axis of the mold cavity and its large end at the under side thereof.

4. A mold for sash weights, comprising chambered upper and lower sections provided with openings for permitting the circulation of a cooling fluid or permitting the escape of air from the chambers, the lower section having a transverse recess in its upper face and having the side walls of the recess inclining outwardly away from each other, the upper section fitting within the recess, means for centering the sections with respect to each other, the sections having on their abutting faces coöperating grooves forming mold cavities and having pouring passages at one end and vent passages at the other end, said sections having means for releasably supporting a core at the end of each mold cavity adjacent to the vent passages, and a core supported in each mold cavity.

5. A mold for sash weights, comprising upper and lower sections, the sections having on their abutting faces coöperating grooves for forming mold cavities having pouring passages at one end and vent passages at the other, said sections having means for supporting a core at the end of each mold cavity adjacent to the vent passages, each of the said cores being curved longitudinally and being frusto-conical and having its small end at the axis of the mold cavity and its large end at one side thereof.

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Witnesses:
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J. W. ANGLE.