

F. H. HAMILTON.
MOLD FOR SASH WEIGHTS.
APPLICATION FILED MAR. 13, 1911

994,388.

Patented June 6, 1911.

2 SHEETS-SHEET 2.

Fig. 6,

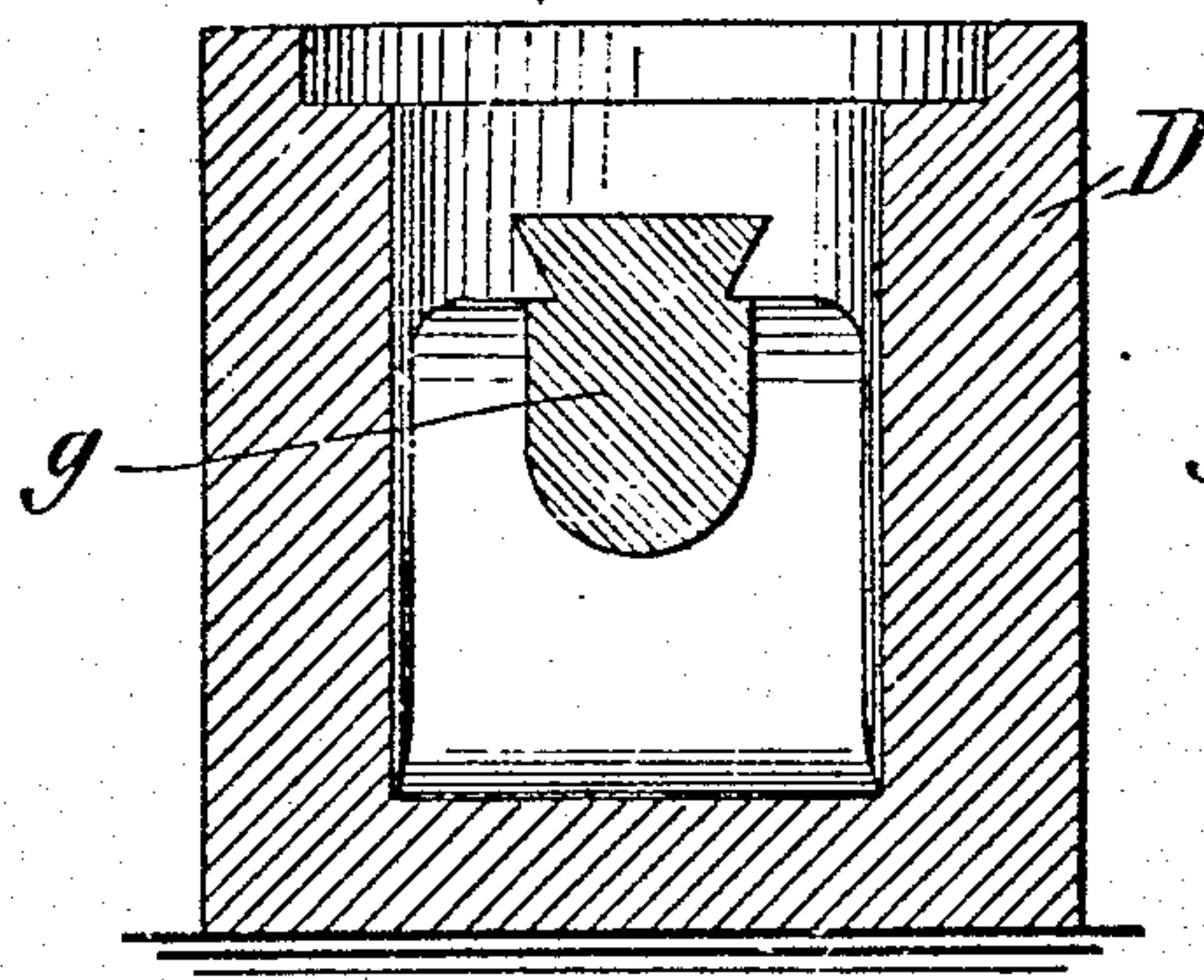


Fig. 7,

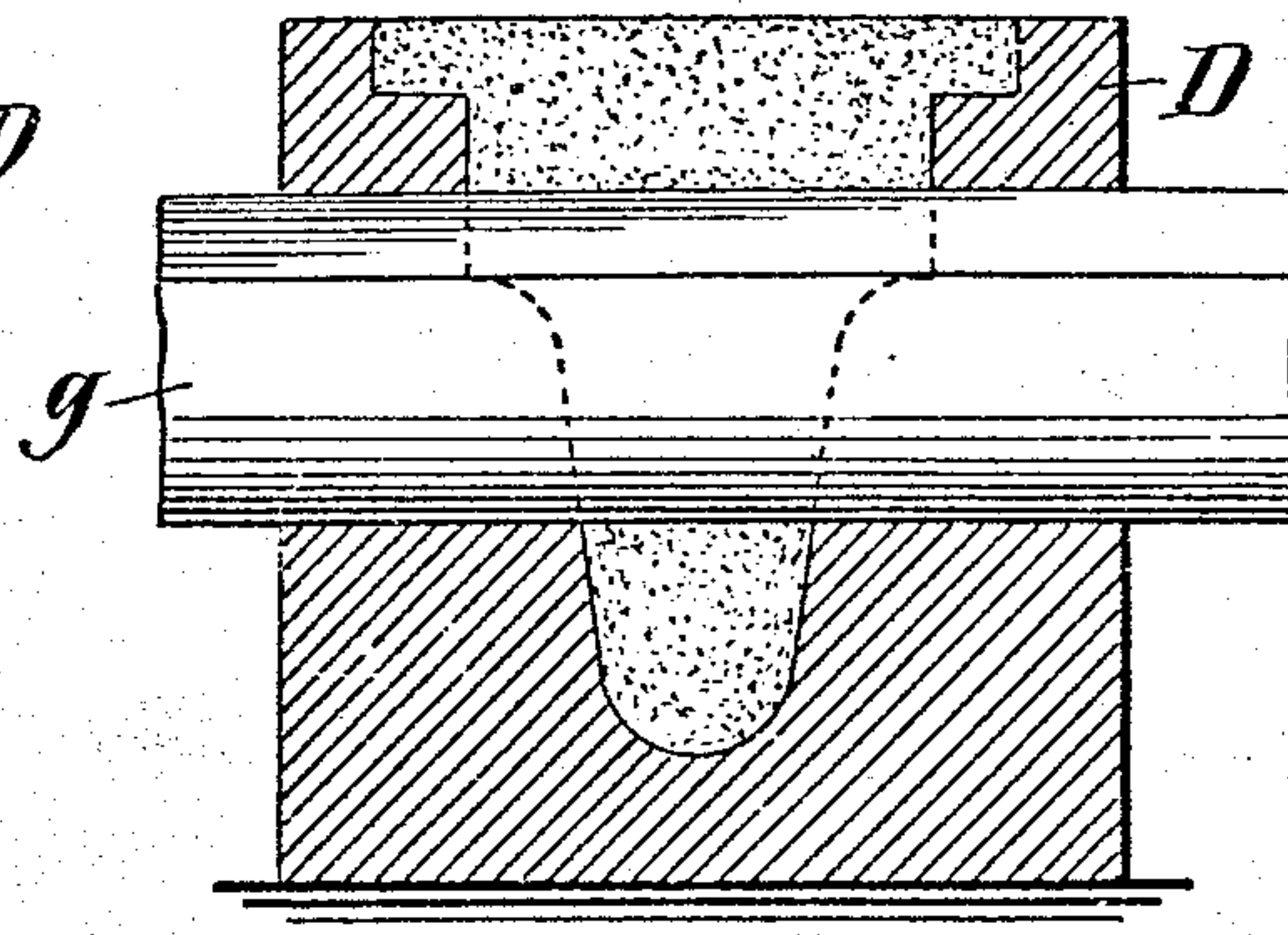


Fig. 8,

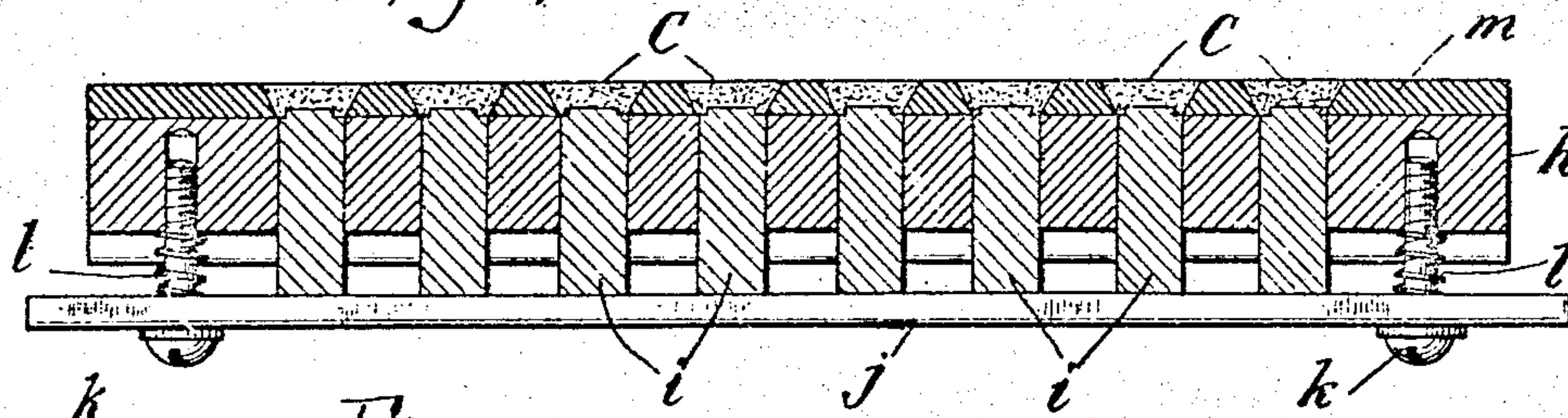


Fig. 9,

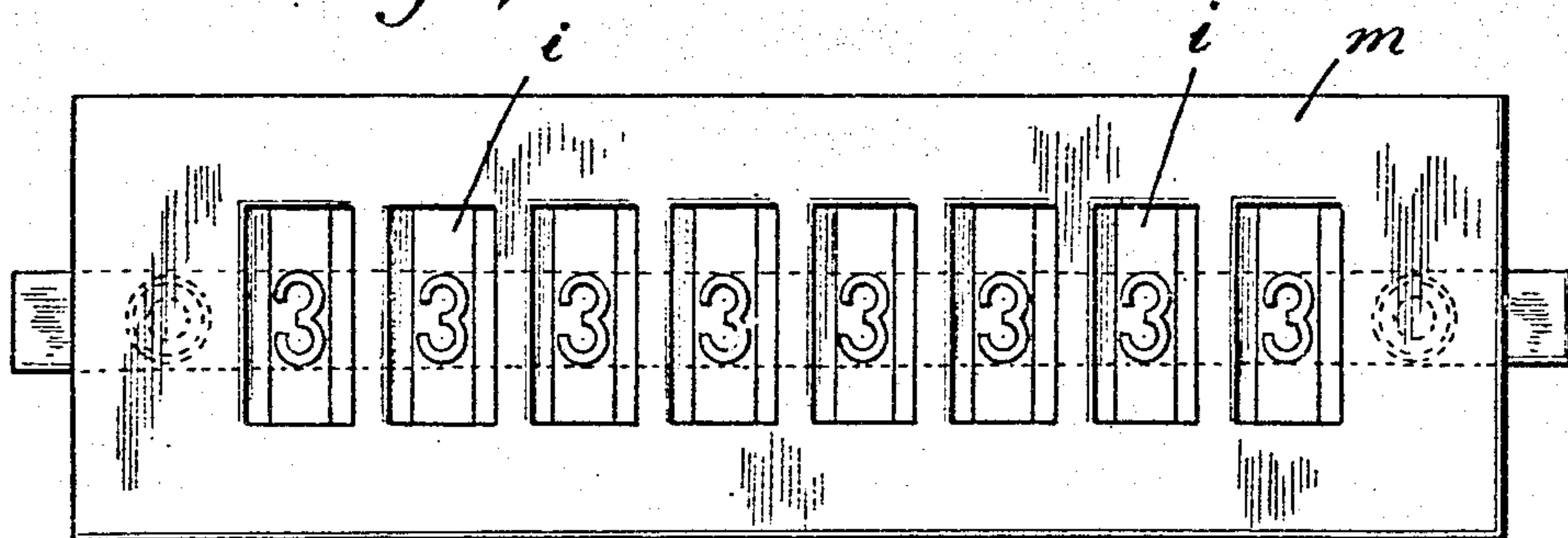
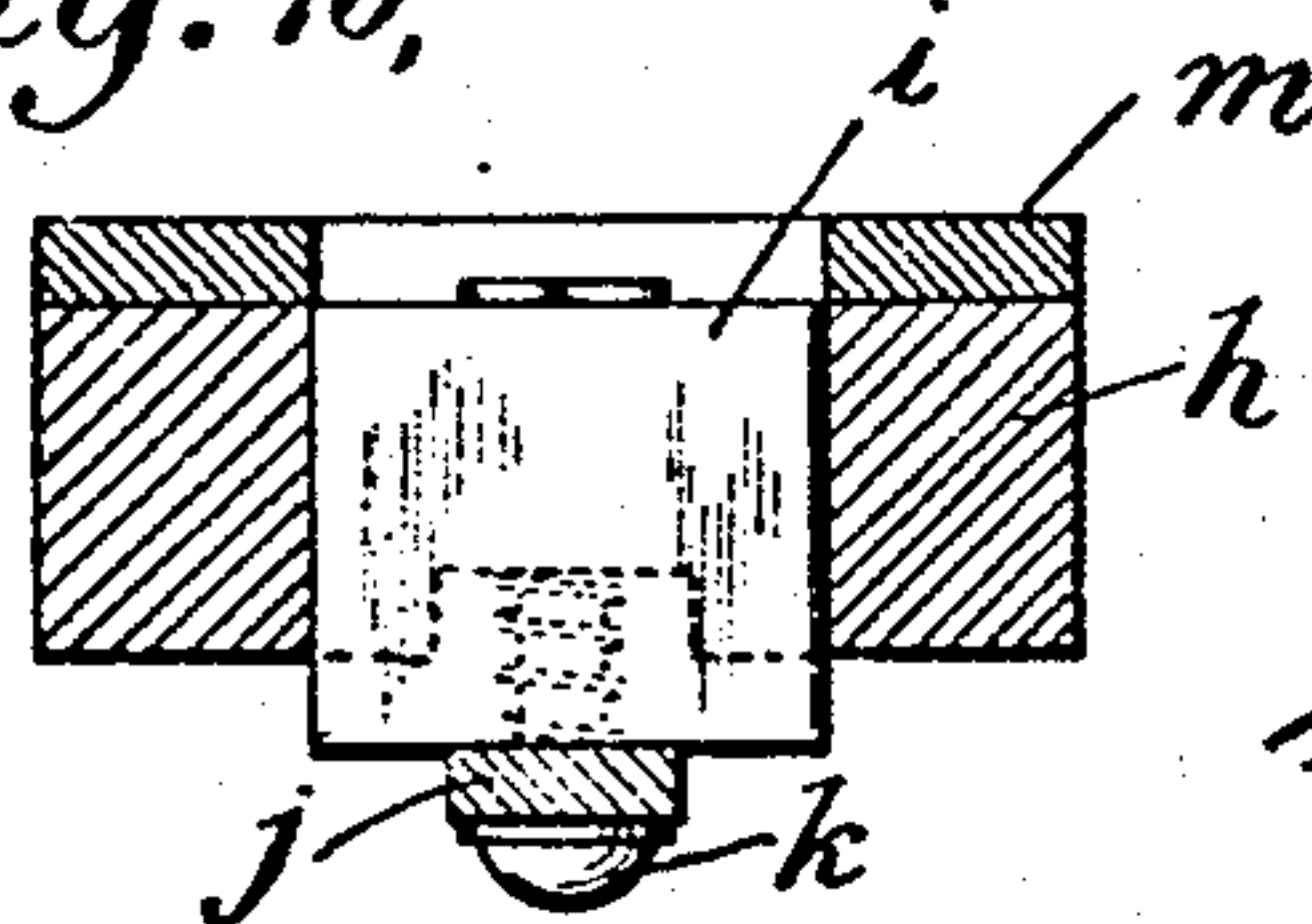


Fig. 10,



WITNESSES:

A. L. Kearney
C. A. Hameray

INVENTOR:

Frank H. Hamilton,

BY

Samuel Goldberger
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK H. HAMILTON, OF PERTH AMBOY, NEW JERSEY, ASSIGNOR TO VULCAN DETIN-
NING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

MOLD FOR SASH-WEIGHTS.

994,388.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK H. HAMILTON, a citizen of the United States, residing at No. 343 Rector street, Perth Amboy, county of Middlesex, State of New Jersey, have invented certain new and useful Improvements in Molds for Sash-Weights; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it will enable others skilled in the art to which it appertains to make and use the same.

These improvements consist in the production of head and character-forming cores of extremely simple and useful design and their application to one-piece or non-separable molds.

It is desirable and it is well known in the art of molding to indicate by a numeral or other reference character cast in the surface of a sash weight, the number, weight or size thereof and it is also well known in the art of casting sash weights to form one-piece sand molds for cylindrical sash weights by inserting a number of cylindrical patterns in a gate, ramming the sand thereabout, and drawing the patterns out, leaving only the end openings in the molds to be closed by suitable head forming pieces or cores afterward applied and secured. This practice has also permitted of sash weights of various lengths and consequently varying weights being formed through the use of the same gate and cylindrical patterns. So also have head forming molds and cores been made providing for the change of designating characters, which may be applied to the molds for making the various sizes of weights which may be made with these patterns and which have been of more or less intricate construction or necessitated the employment of more or less intricate devices for their formation or application. Another objectionable feature of this type of mold has been the employment of frames or metal holders which accompanied the head and character cores when placed in the completed mold and would be there subjected to the corroding and baking heat of casting, besides that encountered in the core ovens and which eventually have to be separated from the sand of the broken mold and cleaned before being used again.

This invention contemplates overcoming these objectionable features by constructing the all sand head and character forming cores as illustrated in the accompanying drawings and as hereinafter described, the head forming core being applicable to all lengths of sash weight molds and the character matrix core quickly attachable thereto and secured in place by the placement of the head core in the mold.

In the drawings Figure 1 represents a section of the end of a one-piece mold with the head and character forming cores applied thereto. Fig. 2 is a similar view taken at right angles to that shown in Fig. 1. Fig. 3 shows the head end of a sash weight as cast in the mold shown in Fig. 1. Fig. 4 is a view in perspective of the head end of the sash weight showing the numeral raised upon its end surface. Fig. 5 is a view in perspective of the head forming core showing the method of application thereto of the character forming core. Fig. 6 is a section through the core box for molding the head forming core. Fig. 7 is a similar view taken at right angles to that shown in Fig. 6. Fig. 8 is a section through the multiple core box used in molding the character forming cores. Fig. 9 is a plan of the core box shown in Fig. 8, and Fig. 10 is a cross-section of Fig. 8, one of the matrices being shown in elevation.

Referring to the drawings, A represents a portion of a sand mold in which the cylindrical print *a* remains after the endwise withdrawal of the pattern. A head forming core B is shown applied to the open end of the print *a* in Figs. 1 and 2 in the manner to complete the mold for the formation of the sash weight shown in Figs. 3 and 4. This head forming core B is provided with a flange *b* which abuts the end of the mold A and insures the correct positionment of the core B within the print *a* and this positionment is maintained, when the weight is cast, by packing sand behind the core B and between the mold A and the end wall of the flask.

The sash weight head (see Fig. 4) as cast in the completed mold has a U-shaped channel *c* for the sash cord and the bridge *d* forming this channel is provided with a des-

ignating character cast in its upper surface, the numeral "3" being that shown in the drawing. The head forming core B has the form of a plug to fit the end of the print *a* and is provided with the flange *b* at its outer end to limit its insertion into the print while its inner end is formed with an arch *e* in the form of an inverted U to form the U-shaped channel *c* in the sash weight. A dovetail slot or channel *f* is formed in the body of the head forming core B running transversely of the core B at the base of and under the arch *e* and opening into the space beneath the arch in such manner that it may be formed by the same draw-out bar *g* which forms that space, as hereinafter described in connection with the core box for making the head forming core. A character forming core C is made dovetail in cross section to fit the dovetail slot or channel *f* in the head forming core B and is in length equal to the diameter of the body portion of the core B so that when it is inserted in the channel *f* and the core B is inserted in the mold A it is secured against movement axially of the mold by the dovetail construction of the channel in which it rests and lengthwise of said channel by abutment with the walls of the mold A. Obviously the channel *f* need not be of dovetail cross section though that is a simple construction, but may be of any suitable undercut form to constitute a retaining channel.

In Figs. 6 and 7 are shown sections of the core box D with the draw-out bar *g* inserted transversely therethrough. The cross section of the bar *g* comprises the upper dovetail portion for forming the dovetail channel *f* in the core B and the larger lower body portion designed to form the space beneath the arch *e* in said core which eventually shapes the bridge *d* of the sash weight. The core box D is provided with openings in its side walls conforming to the bar *g* and after the bar is inserted the sand is rammed into and struck from the top of the core box and the bar *g* withdrawn when the completed core may be jarred from the box.

In Figs. 8, 9 and 10 a multiple core plate for forming the character forming cores C is shown. This plate consists of a body *h* which is perforated with a series of rectangular openings in which a series of matrices *i, i* are mounted with their character bearing faces normally flush with the face of the body *h*. The several matrices *i, i* are secured to a connecting bar *j* which is held in the normal position by the heads of screws *k, k* and springs *l, l*. A top plate *m* is secured upon the body *h* and has perforations with inclined side walls which perforations coincide with those in the body *h* and form the side walls of the molds for the several cores which are filled with sand, tamped and struck off. The connecting bar *j* is then

pressed to the body *h* ejecting the character cores C. C. and the springs *l, l* return the matrices to their normal positions.

It is obvious that various changes may be made in the design and in many of the details of construction of the herein described devices without departing from the spirit of this invention.

What I claim is:

1. A sash weight mold comprising a non-separable body mold, a head-forming-plug-core fitting said mold and provided with a transverse retaining channel, and a character-forming core adapted to be inserted in said channel from the side of said plug core and to be retained therein by the walls of said body mold after the insertion of said plug in said body mold; substantially as described.

2. A sash weight mold comprising a non-separable body mold, a head-forming plug core having a portion adapted to enter and fit said mold and a flange adapted to abut against the end of said mold, said plug core being formed with a transverse retaining channel, and a character-forming core adapted to be inserted in said channel from the side of said plug core and to be retained therein by the walls of said body mold after the insertion of said plug in said body mold; substantially as described.

3. A sash weight mold comprising a non-separable body mold, a head-forming-plug-core fitting said mold and provided with an arch and a transverse retaining channel at the base of and running through said arch, a character-forming core adapted to be inserted in said channel from the side of said plug with its character surface facing said arch and to be retained thereby by the walls of said body mold after the insertion of said plug in said body mold; substantially as described.

4. A sash weight mold comprising a body mold, a head forming plug core conforming to said body mold and provided with a transverse dovetailed channel, a flange on said plug core adapted to abut against the end of said body mold, an arch on said plug core bridging said channel and a dovetailed character-forming core adapted to be inserted in said channel from the side of said plug with its character surface facing said arch and to be retained therein by the walls of said body mold after the insertion of said plug in said body mold; substantially as described.

5. The combination with a sash weight mold, of a head-forming core having an arch, and a separate character-forming core secured to said head-forming core and spanned by said arch; substantially as described.

6. The combination with a sash weight mold, of a head-forming-plug-core formed with a transverse channel having undercut

side walls and an arch bridging said channel; substantially as described.

7. The combination with a sash weight mold, of a head-forming-plug-core formed
5 with a transverse retaining channel adapted for the reception of a character-forming core and a flange upon said head-forming core adapted to engage with and position

said head-forming core within said mold; substantially as described. 10

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

FRANK H. HAMILTON.

Witnesses:

LESTER J. SAUL,
WILLIAM H. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
