

M. BERNHART.

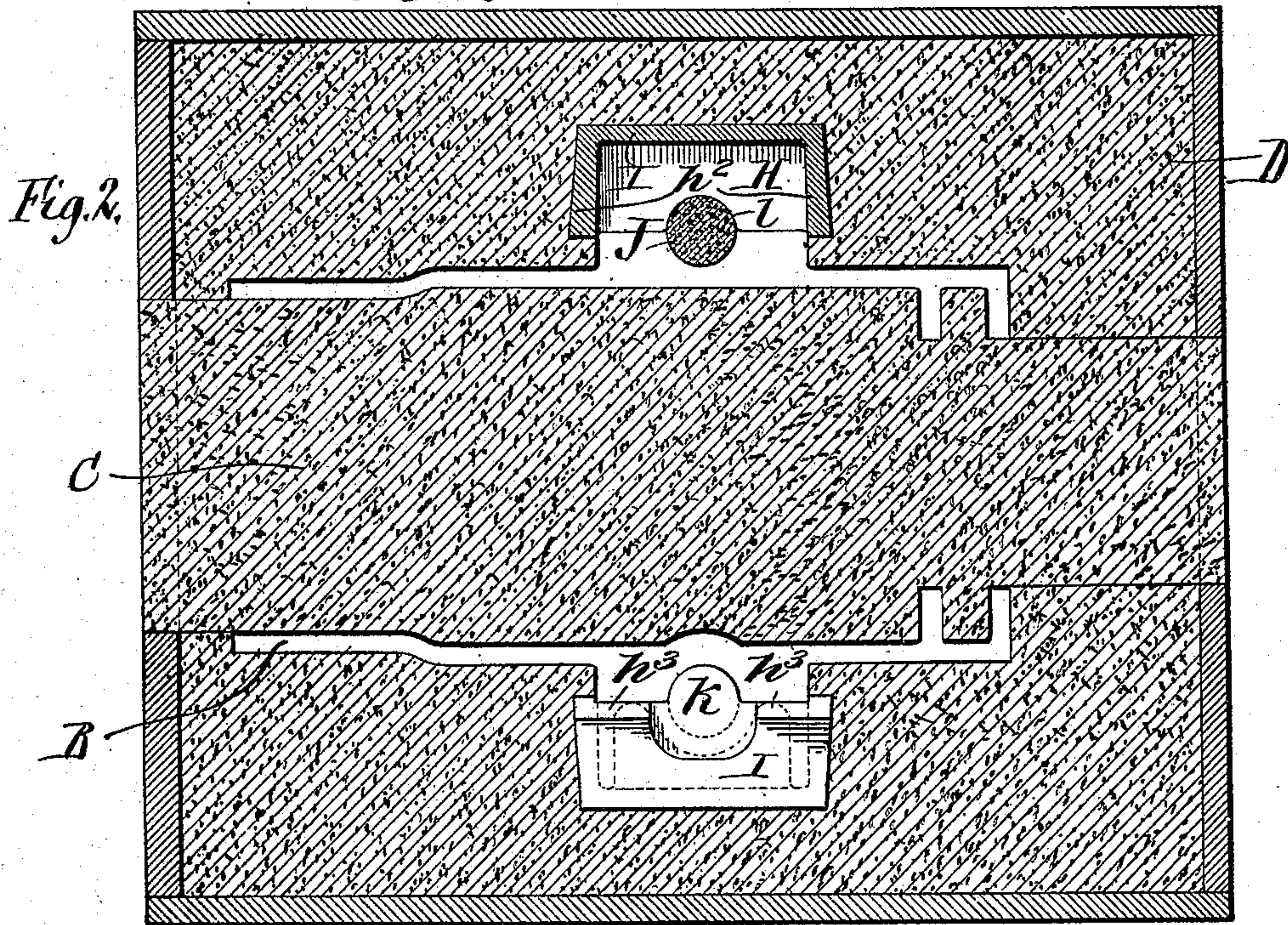
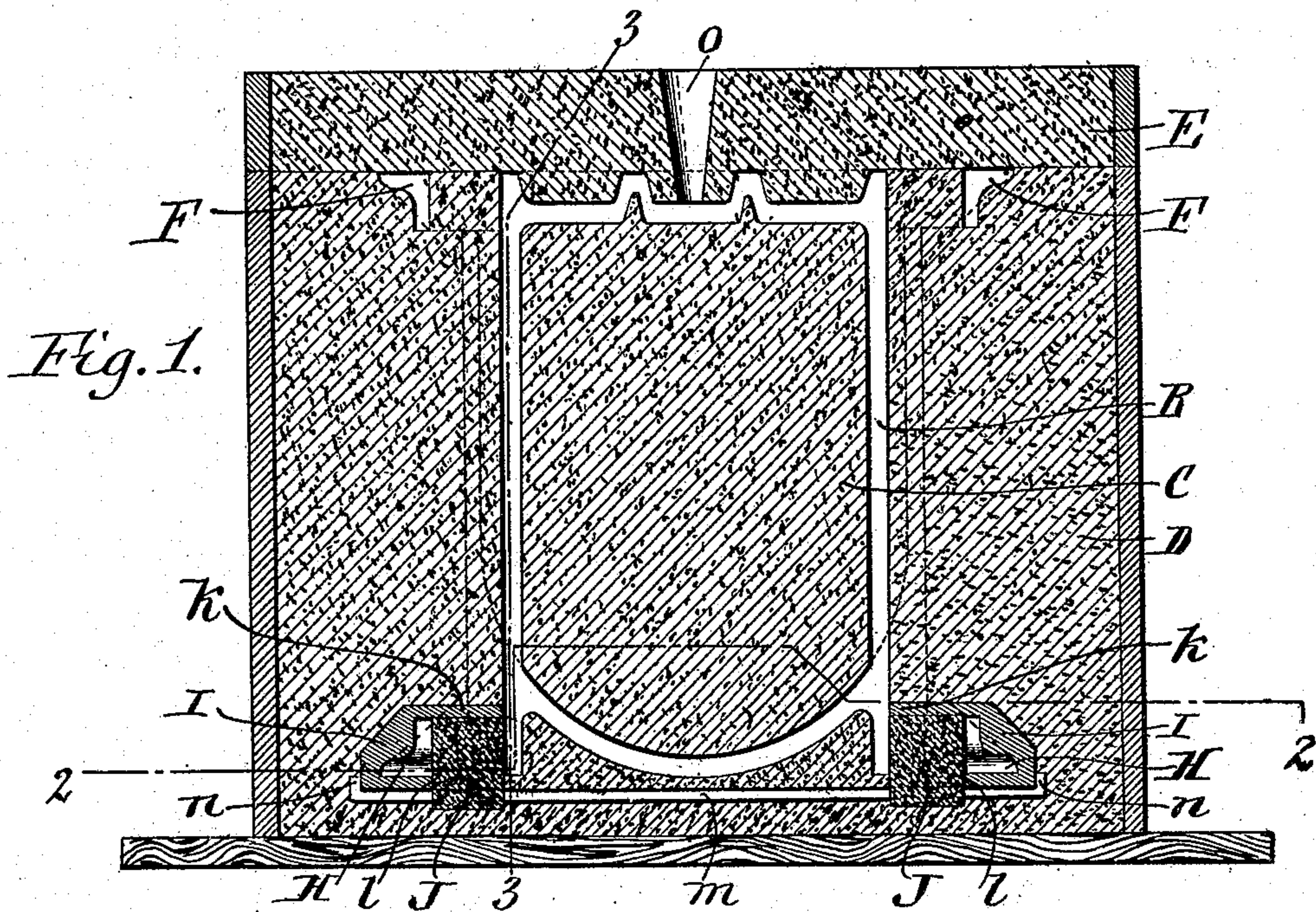
MOLD FOR CASTING JOURNAL BOXES AND SIMILAR ARTICLES.

APPLICATION FILED MAY 2, 1908.

907,955.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.



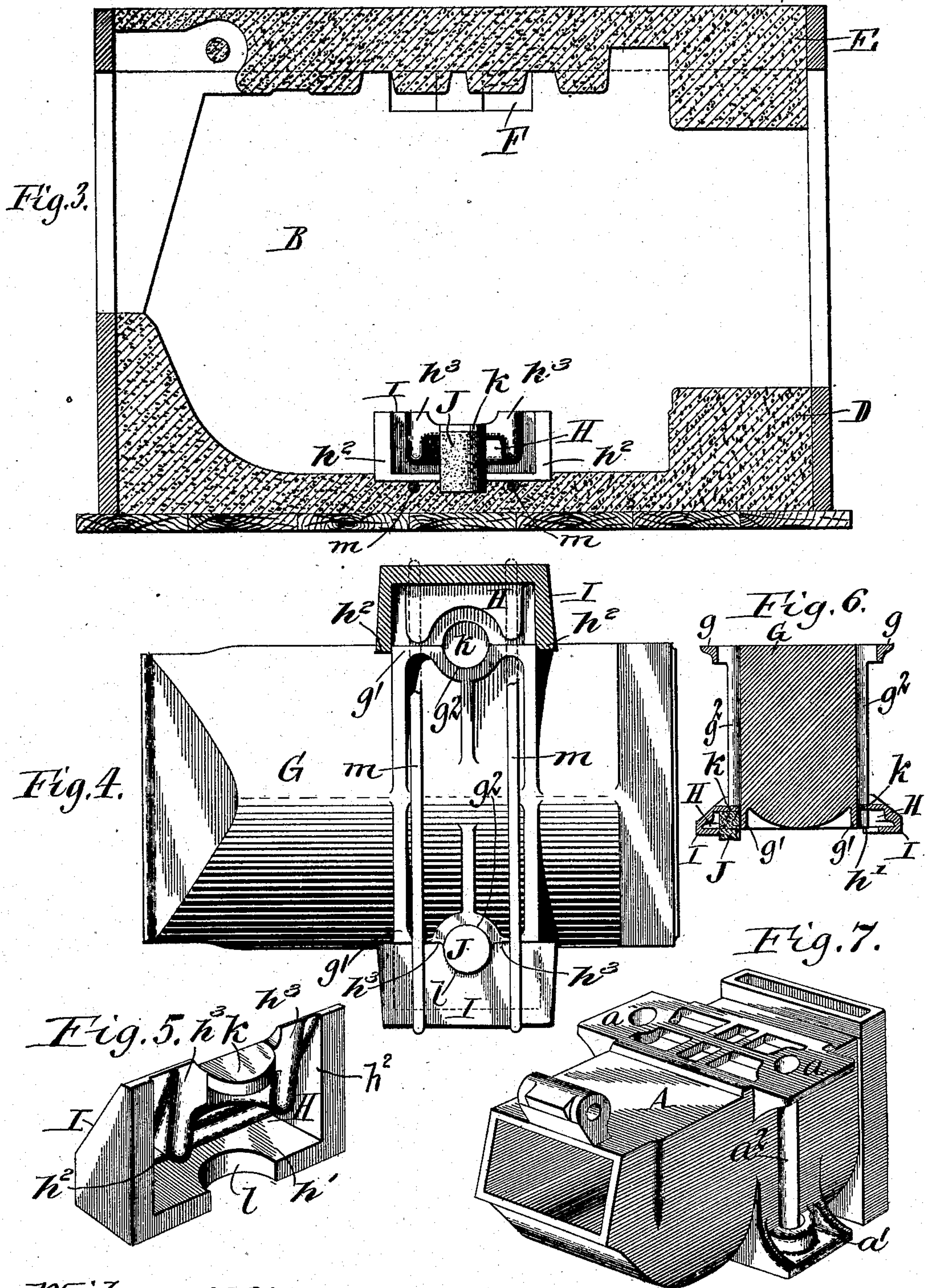
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UNITED STATES PATENT OFFICE.

MICHAEL BERNHART, OF LANCASTER, NEW YORK.

MOLD FOR CASTING JOURNAL-BOXES AND SIMILAR ARTICLES.

No. 907,955.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed May 2, 1908. Serial No. 430,524.

To all whom it may concern:

Be it known that I, MICHAEL BERNHART, a citizen of the United States, residing at Lancaster, in the county of Erie and State of New York, have invented a new and useful Improvement in Molds for Casting Journal-Boxes and Similar Articles, of which the following is a specification.

This invention relates to a mold which is more particularly designed for casting such journal boxes, and also relates to a method of making said mold, but my invention also applies to molds for casting articles in which similar conditions exist.

Journal boxes as now generally constructed are provided with bolt lugs or ears at the top and bottom of the body on opposite sides thereof which rendered it impossible to form the mold by means of an ordinary pattern because the same could not be drawn from the same if it had fixed lugs corresponding to the upper and lower lugs of the journal box body. It has therefore been the practice heretofore to produce the mold cavities of the lugs at the top of the body by means of lug patterns attached permanently to the upper side of the body of the pattern while the mold cavities for producing the lower lugs were each produced by a plurality of dry sand cores of expensive construction.

The object of this invention is to provide simple means whereby the mold cavities for the lower lugs of the journal box may be perfectly produced with facility and at low cost and without the necessity of exercising great care or employing skilled hands for this purpose.

In the accompanying drawings consisting of 2 sheets: Figure 1 is a vertical cross section of a mold constructed in accordance with my invention for casting journal boxes. Fig. 2 is a horizontal section in line 2—2, Fig. 1. Fig. 3 is a vertical section in line 3—3, Fig. 1. Fig. 4 is a bottom plan view, partly in section, of the body pattern showing the same provided with my improved means for producing the lower lug cavities in the mold. Fig. 5 is a perspective view of the metal mold section in which one of the lower lugs of the journal box is cast. Fig. 6 is a cross section of the pattern for producing the body, upper lug and part of the lower lug cavities and the metal molds and one of the lower cores for forming the mold of the lower lugs. Fig. 7 is a perspective view of a journal box which is produced by my improved mold.

Similar letters of reference indicate corresponding parts throughout the several views.

The journal box, which, for example, may be produced by my improved mold, comprises a hollow body A, which is open at its front and rear ends and which is provided with a pair of laterally projecting upper perforated lugs or ears *a* on opposite sides of its top, a pair of laterally projecting lower perforated lugs or ears *a*¹, *a*¹ on opposite sides of its bottom, and vertical bolt grooves *a*² on its opposite outer sides each groove being in line with the bolt openings in the bolt lugs on the respective side of the journal box, as shown in Fig. 7.

My improved mold in which this journal box is cast is constructed as follows:—

B represents the main mold cavity in which the body of the journal box is cast and which has its bottom and sides formed wholly between a main core C and the green sand of the drag D of the molding flask while its top is formed between the main core C and the green sand of the cope E of the flask.

F represents the mold cavities in which the upper perforated lugs or ears of the journal box are cast and which are also formed between the cope and drag.

The body, the upper lug cavities and the inner part of the lower lug cavities of the mold are produced by a pattern which comprises a body G, two perforated lugs *g* arranged on opposite sides of the top or upper part of the body G, and partial lugs *g*¹ arranged on opposite sides of the lower part of the body G, the opposite outer sides of the body also having vertical grooves *g*² each of which communicates at its upper and lower ends with the openings in the upper lugs on the respective side of the body pattern, as shown in cross section in Fig. 6.

H represents the mold cavities in which the outer parts of the lower perforated lugs or ears of the journal box are cast. Each of the lower perforated lug cavities H is formed partly by one of the lower pattern lugs *g*¹, partly in an auxiliary mold section I which is embedded in the sand of the drag, so that its cavity faces the cavity formed by a lower pattern lug *g*¹ and forms the outer side of a lower lug cast therein, and partly by a dry sand core J arranged between the metal mold section and the sand of the drag and forming the opening in said lug. The auxiliary mold sections are preferably made of metal but if desired the same may be constructed in the

manner of dry sand cores or in other suitable ways.

The lower end of the core J is seated in the sand of the drag and its upper end engages with an inwardly-projecting lip or shoulder *k* on the upper part of the respective metal mold section, while its lower part engages on its outer side in a seat or recess *l* in the inner edge of the lower part of said metal mold section, as shown in Figs. 1, 2 and 3. The inner part of the bottom *h*¹ of each metal mold section engages with the underside of the lower lug pattern *g*¹, as shown in Fig. 6, the inner parts of its side walls *h*² engage with the vertical opposite outer sides of the lug pattern *g*¹ and the inner edge of its top *h*³ on opposite sides of the lip *k* engages with the outer edge of the pattern lug *g*¹ on opposite sides of the groove therein, as shown in Figs. 4 and 6.

The metal mold sections I and the cores J for forming the cavities of the lower lugs of the journal box are preferably held in their proper position relatively to the body pattern G while making the mold by means of clamps consisting of rods *m* extending across the underside of the body pattern and the metal mold sections and provided at their ends with hooks *n* which engage with the outer sides of the metal mold sections, as shown in Figs. 1 and 4. These clamps remain in the drag, as shown in Figs. 1 and 3, when the body pattern is withdrawn preparatory to inserting the main core C.

In making this mold the body pattern A is placed in the drag of the flask while these parts are bottom side up and then the sand of the drag is filled in around the lower part of the body pattern and its upper bolt lugs *g*. The metal mold sections in an inverted position are then applied to the body pattern and held thereon by the clamps *m*, *n*, and the dry sand cores J forming the openings of the lower bolt lugs are placed between the metal mold sections and the body pattern.

During the molding operation inward displacement of each metal mold section is prevented by engagement of the inner edges of its upper and lower parts with the outer side of the lower core and the adjacent outer side of the lug pattern *g*¹, as shown in Figs. 4 and 6, outward displacement of the metal section is prevented by the clamps, and lengthwise displacement of the same is prevented by engagement of its side walls with the outer sides of the pattern lug *g*¹, thereby holding the metal mold sections securely in place during the operation of making the mold. The filling in of the sand of the drag is now completed, then the latter is turned right side up and the cope is formed. After separating the cope and drag the body pattern together with the integral upper lug patterns *g* and partial lower lug patterns *g*¹ is next withdrawn upwardly from the drag leaving the metal

mold sections I and lower lug cores J in the drag and then the cope is restored, thereby completing the mold ready for casting. The metal poured through the sprue *o* fills the mold cavities for the body and upper lugs which are formed between the sand of the drag and cope and the main core and also fills the cavities for the lower lugs in the metal mold sections, thereby producing a journal box having upper and lower perforated lugs on its body. The metal mold sections do not adhere to the casting but are free to be detached from the latter when the flask is open and may be used repeatedly as parts of molds for producing further journal boxes of this character. This means of forming the mold cavities of the lower lugs in molds for journal boxes is very simple, it enables the molds to be made better and quicker and without liability of spoiling the molds and requires only one small dry sand core of simple form for each lower lug, thereby effecting a considerable saving in the cost of making the molds as compared with the methods heretofore in use.

Although the mold sections containing the cavities for the lower lugs of the journal box body are made of metal any chilling effect which they produce on the casting is wholly immaterial as they are not designed to chill the casting but are intended solely to form parts of the improved mold and reduce the cost of making the same.

I claim as my invention:

1. A mold for casting an article having a body and a perforated projection on the body, comprising a main mold-member containing the cavity in which the body of said article is cast, a core for producing the opening in said perforated projection, and an auxiliary mold-member containing the cavity in which said projection is cast and having a lip or shoulder engaging with one end of said core.

2. A mold for casting an article having a body and a perforated projection on the body, comprising a main mold-member containing the cavity in which the body of said article is cast, a core for producing the opening in said perforated projection, and an auxiliary mold-member containing the cavity in which said projection is cast and having a lip or shoulder on one part which engages with one end of said core and a recess in another part which receives the side of said core.

3. A mold for casting an article having a body and a perforated projection on the body, comprising a main mold-member containing the cavity in which the body of said article is cast, a core for producing the opening in said perforated projection, an auxiliary mold-member containing the cavity in which said projection is cast and having a lip or shoulder on one part which engages with one end of said core, a recess in another part which receives the side of said core, and a

clamp for holding the auxiliary mold-member in place.

4. A mold for casting a journal box having a body, upper perforated lugs projecting laterally from opposite sides of the upper part of the body and lower perforated lugs projecting laterally from opposite sides of the lower part of the body, comprising green sand mold-members containing the cavity in which the body, the upper lugs and one part of the lower lugs are cast, dry sand cores which form the openings in the lower lugs, and metal mold members containing the

cavities in which another part of the lower lugs are cast and each of which is provided on its upper part with a lip or shoulder engaging with the upper end of the respective core and on its lower part with a recess which receives the lower outer side of the respective core.

Witness my hand this 25th day of April, 1908.

MICHAEL BERNHART.

Witnesses:

THEO. L. POPP,
ANNA HEIGIS.