

No. 639,753.

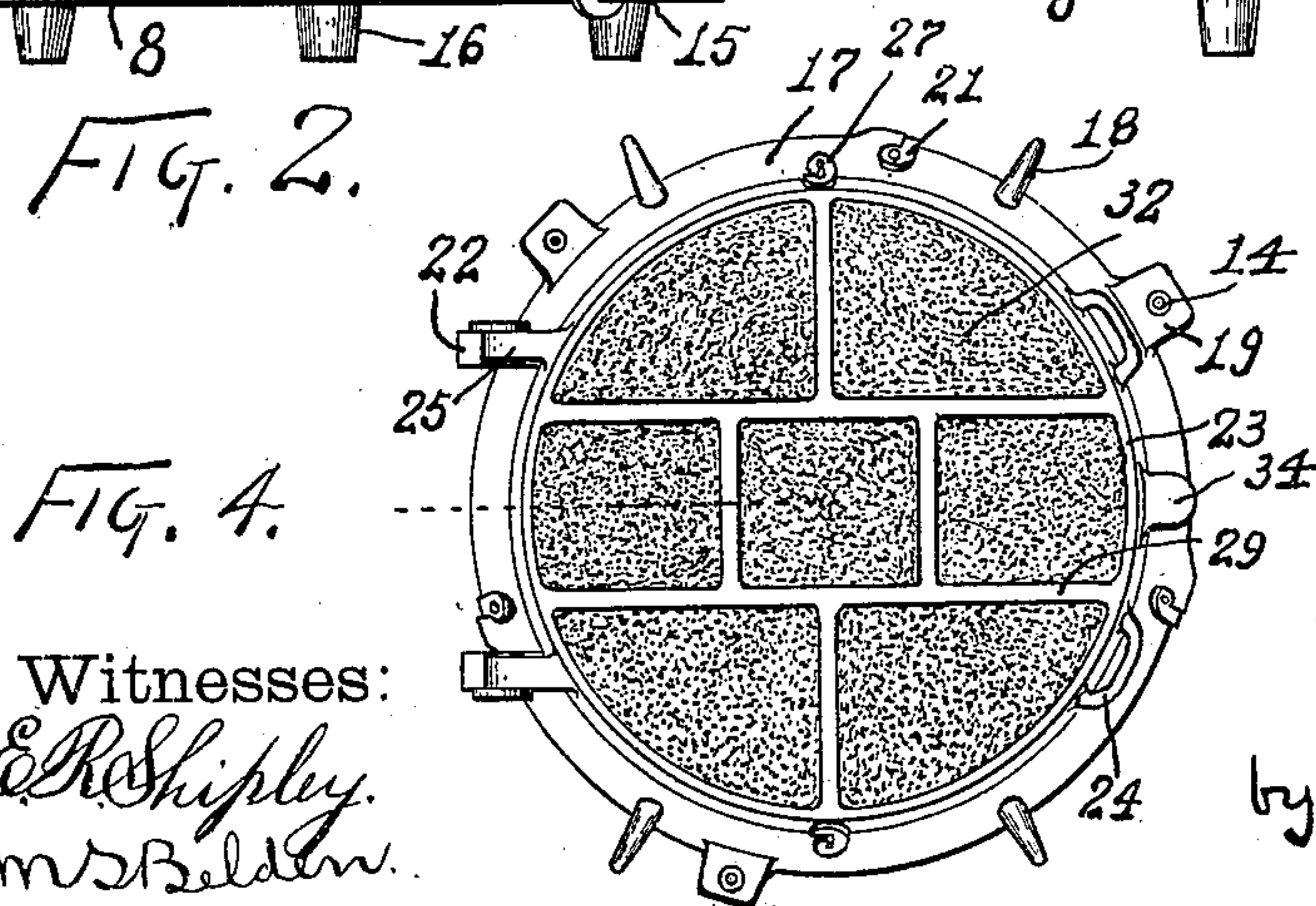
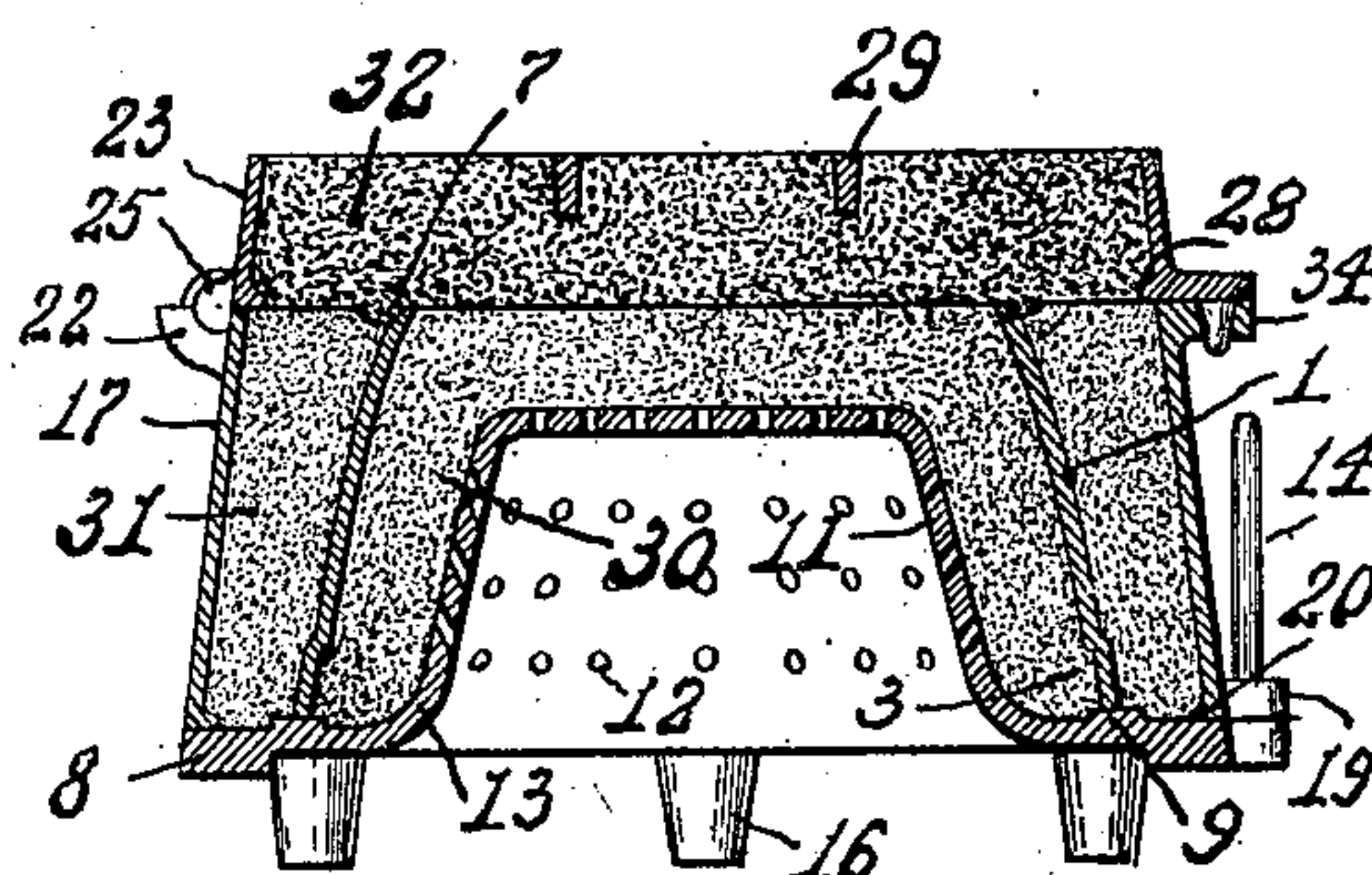
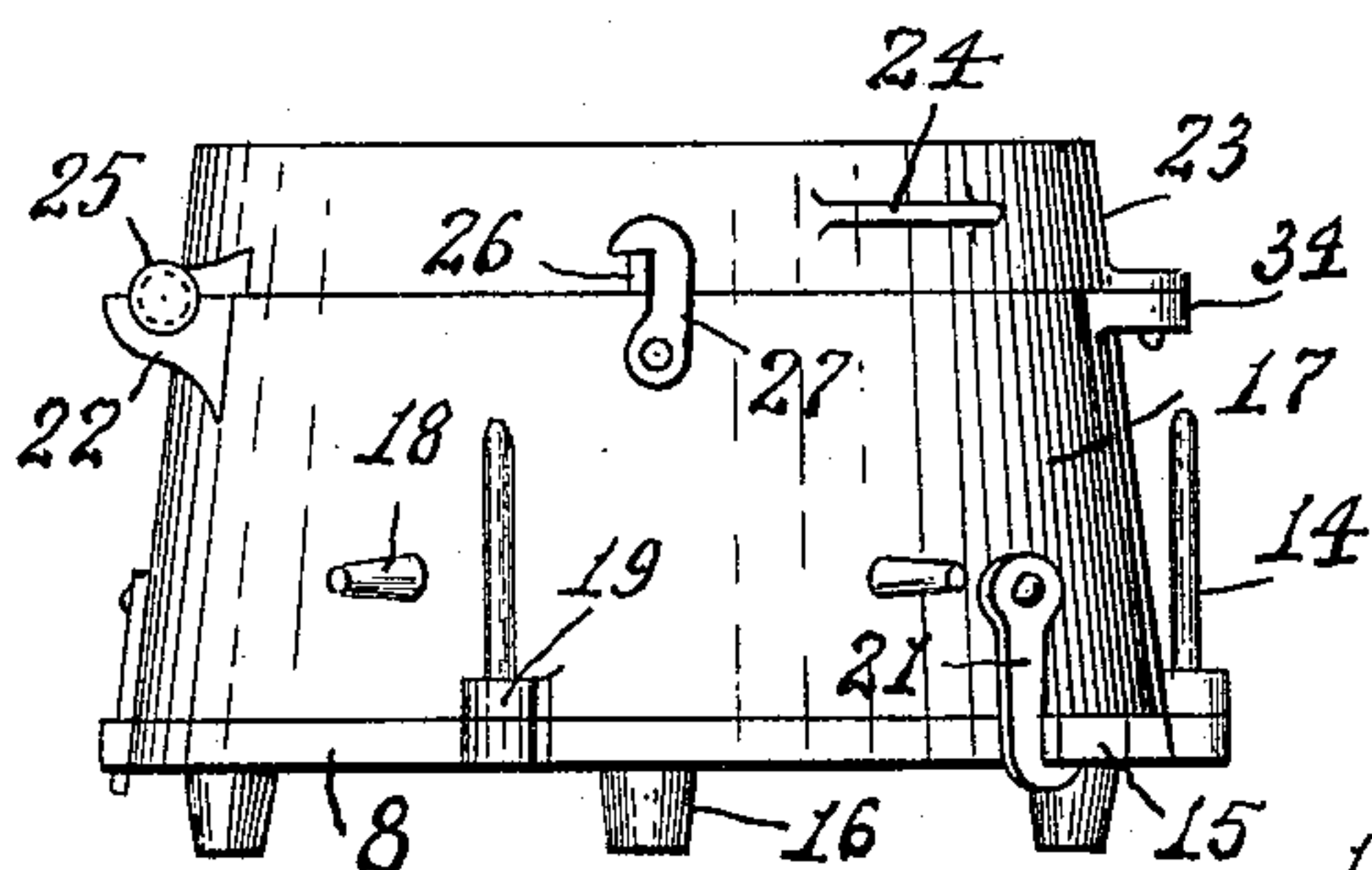
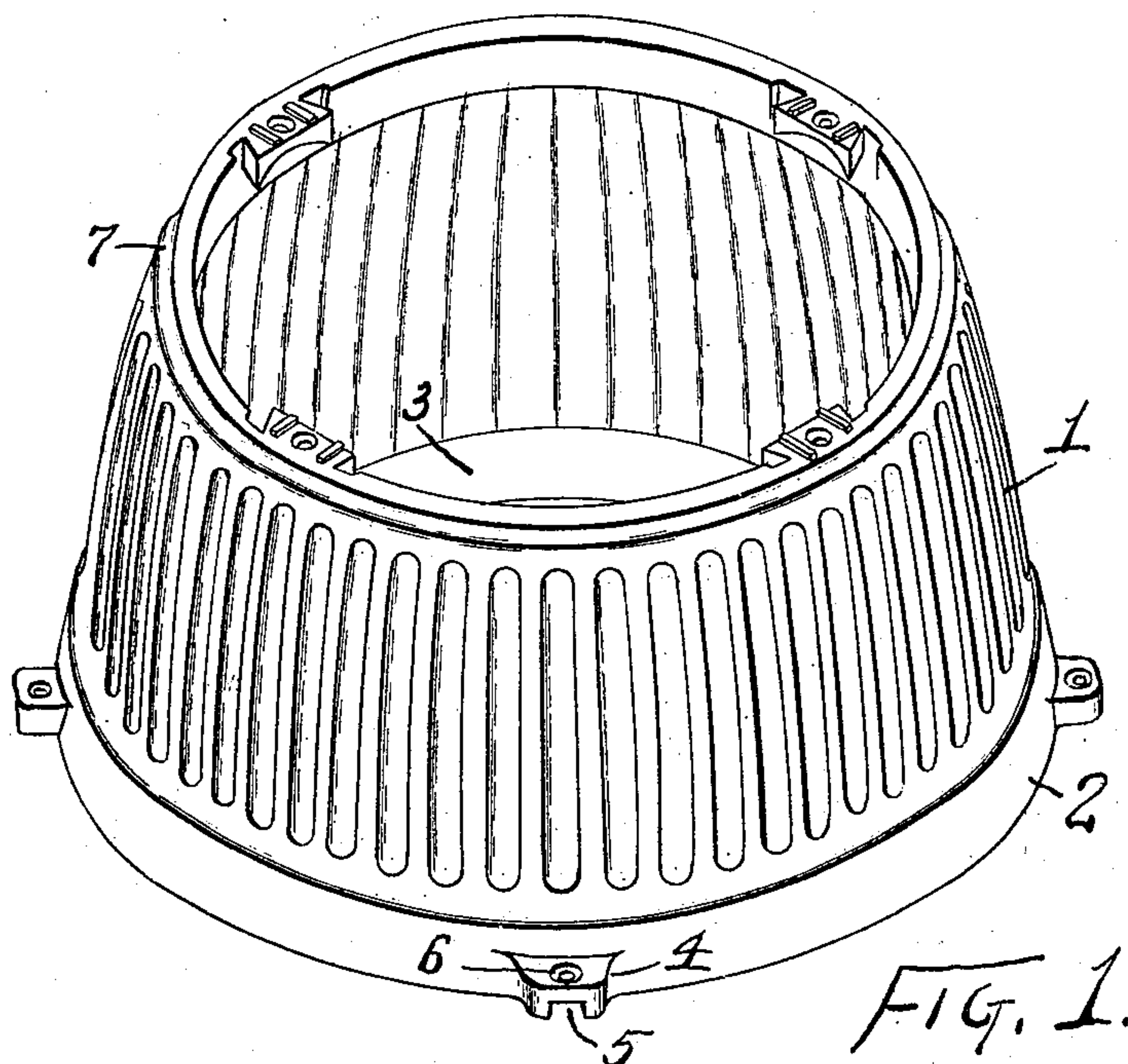
Patented Dec. 26, 1899.

H. V. MOORE.
MOLD FOR STOVE FIRE POTS.

(Application filed Sept. 13, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

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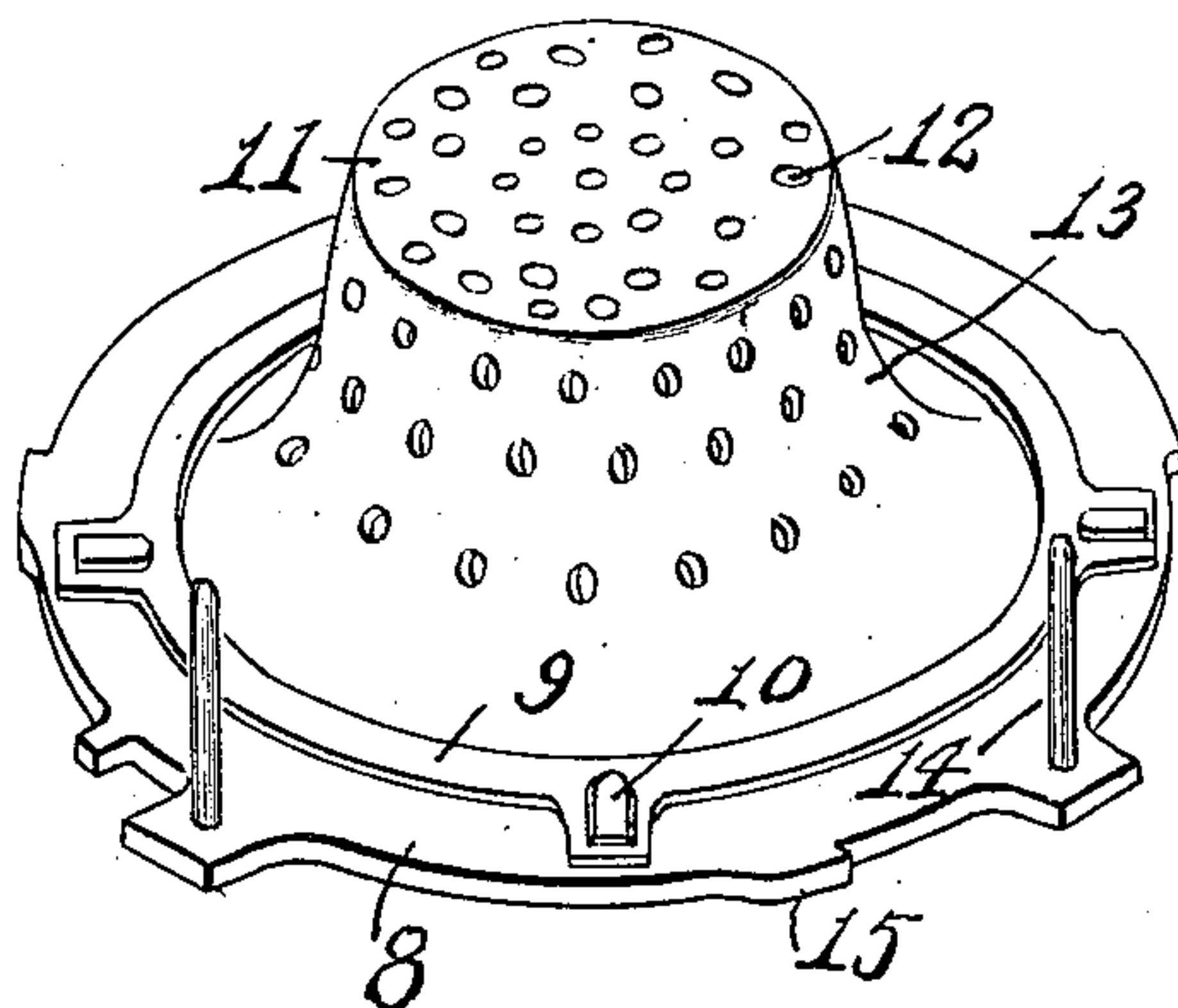


FIG. 5.

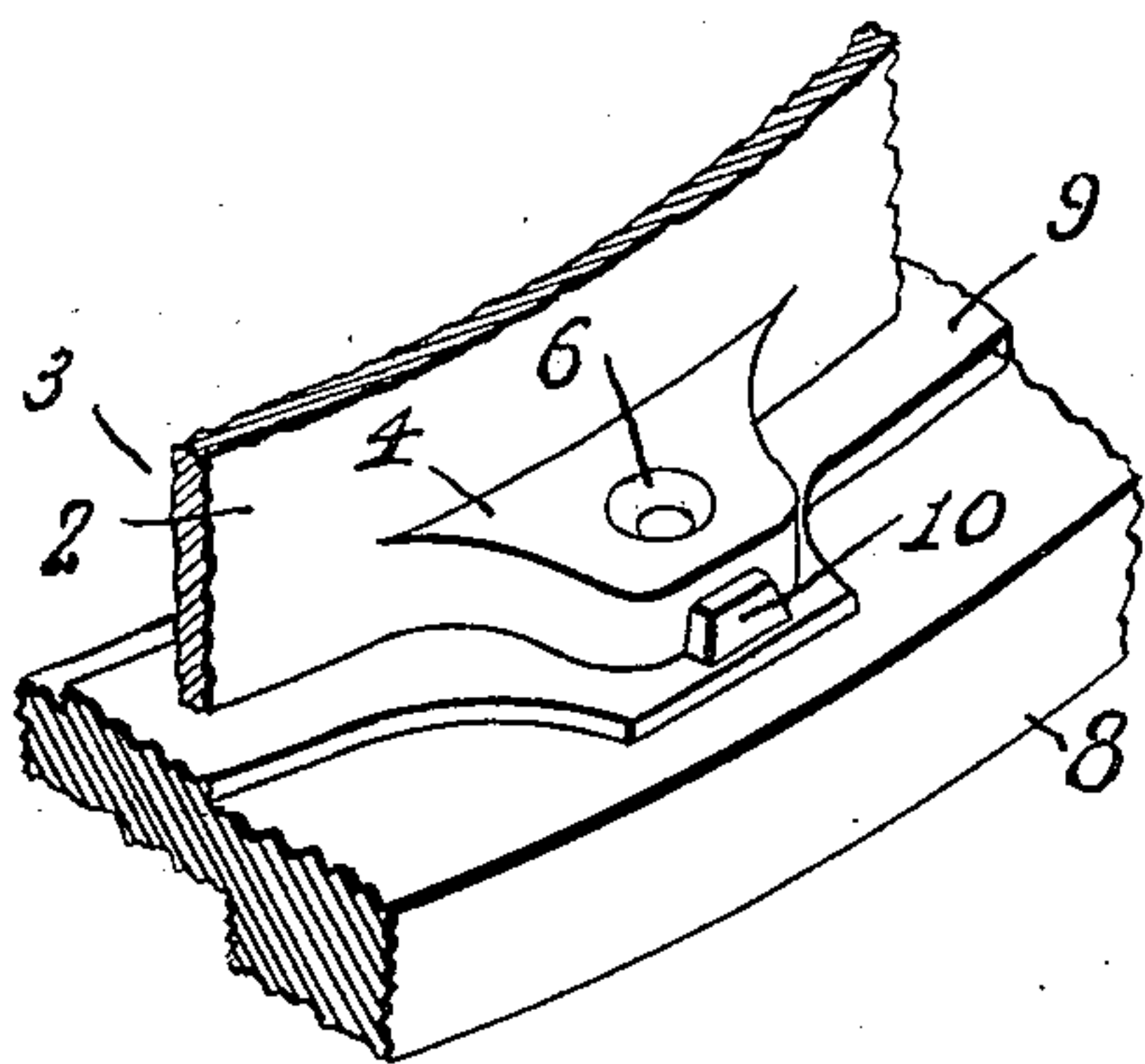


FIG. 6.

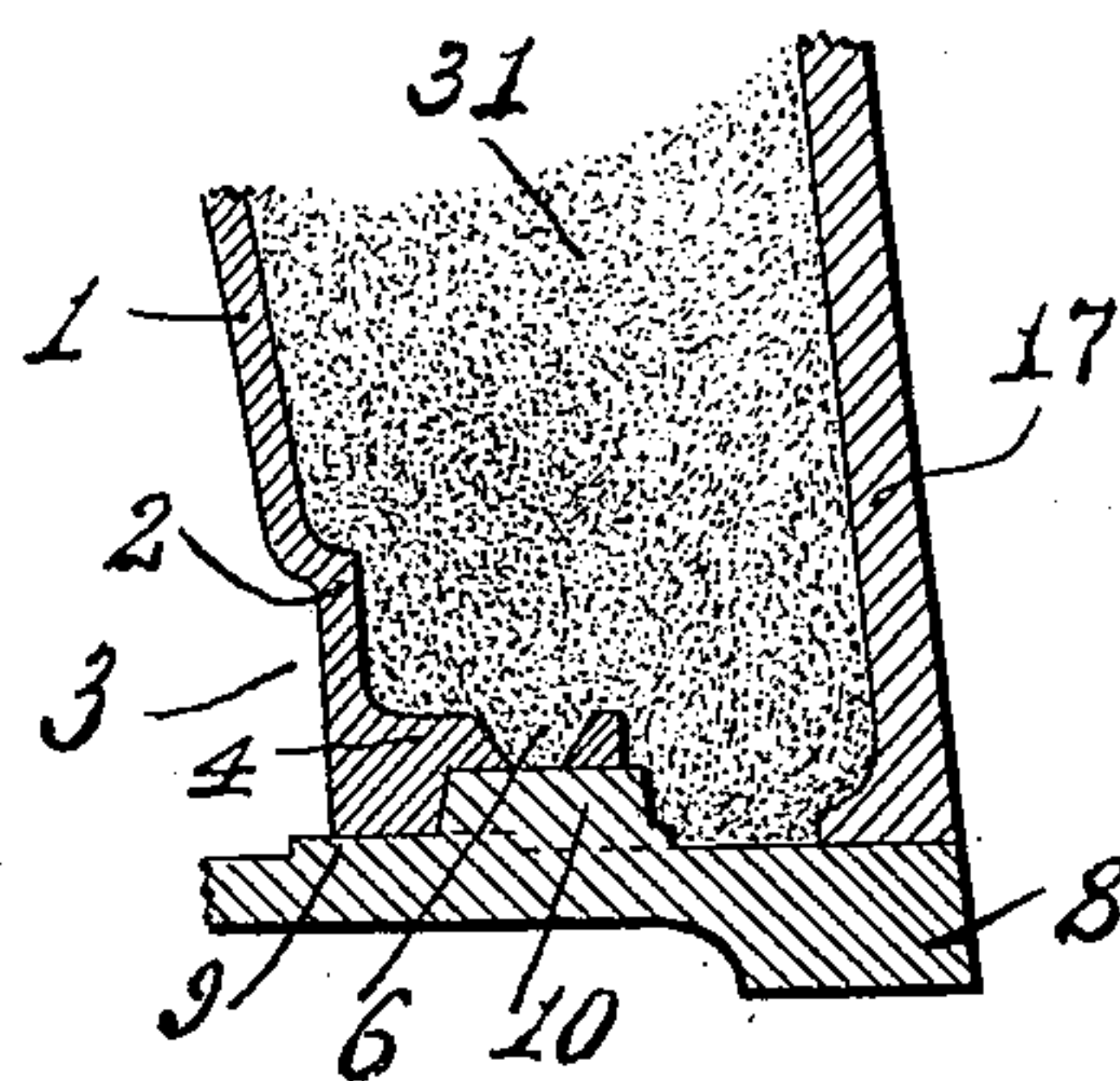


FIG. 7.

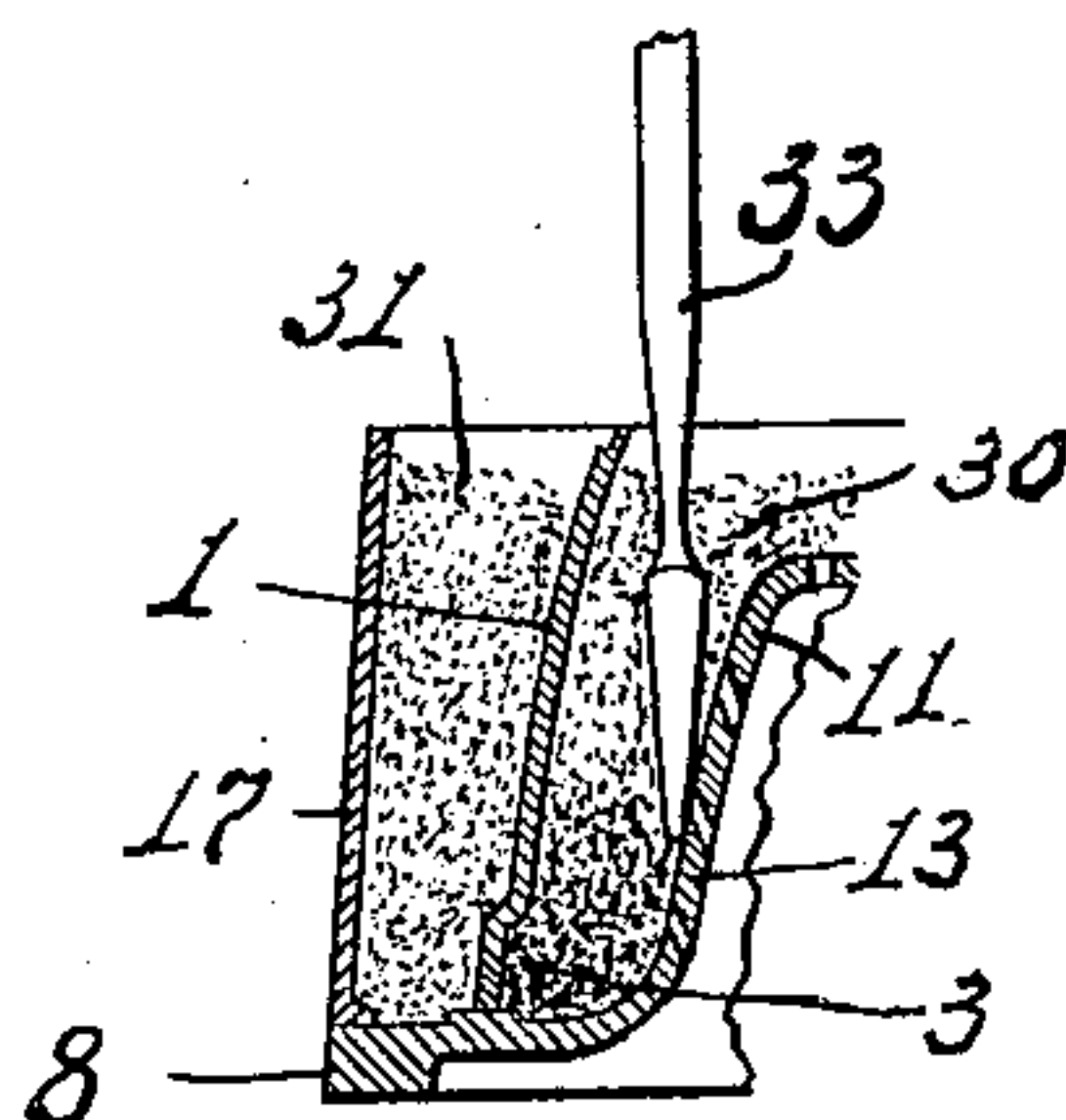


FIG. 8.

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HARRY V. MOORE, OF HAMILTON, OHIO, ASSIGNOR TO F. & L. KAHN & BROS., OF SAME PLACE.

MOLD FOR STOVE FIRE-POTS.

SPECIFICATION forming part of Letters Patent No. 639,753, dated December 26, 1899.

Application filed September 13, 1899. Serial No. 730,296. (No model.)

To all whom it may concern:

Be it known that I, HARRY V. MOORE, a citizen of the United States, residing at Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Molds for Stove Fire-Pots, of which the following is a specification.

My improvement in molds for stove fire-pots will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of a fire-pot, exemplifying the type of structure designed to be produced in my improved mold, this figure of the drawings also serving to illustrate the pattern employed in producing the mold, the terms "fire-pot" and "pattern" being herein used indiscriminately, as the pattern is the same as the fire-pot to be produced, except as to mere trifling difference in dimension due to shrinkage; Fig. 2, a side elevation of the complete mold in condition for pouring; Fig. 3, a vertical diametrical section of the same; Fig. 4, a plan of the same; Fig. 5, a perspective view of the drag; Fig. 6, a perspective view of an edge portion of the drag at one of the lug-dowels in connection with a portion of the pattern seated upon such portion of the drag; Fig. 7, a vertical radial section of a portion of the drag, cheek, and pattern in the vertical plane of one of the dowel-lugs; and Fig. 8, a vertical radial section of a portion of the drag, cheek, and pattern, the cheek being shown as partially filled and under the action of the rammer within the pattern.

In the drawings, and referring for the present especially to Fig. 1 thereof, 1 indicates the body of the fire-pot or its pattern, the same having a not unusual form, being circular in plan and having a tapering fluted exterior, Fig. 1 showing the structure in the position which it will occupy as a pattern in the mold, but upside down as related to the position which such a fire-pot would occupy in a stove, the pattern position of the structure—that is to say, with the larger end down—being the one hereinafter referred to when using such expressions as "top," "bottom," &c.; 2, a projecting bead or skirt at the base of the pattern, this skirt having substantially the

same thickness as body portion 1; 3, (best seen in Fig. 7,) the counterbore at the base of the pattern, due to the outward projection of bead 2; 4, lugs projecting outwardly from bead 2 of the pattern and representing bolt-lugs coming at the top of the fire-pot in the mounted stove; 5, a radial recess in the base of each lug 4, resulting in thinning the top of the lug while still leaving the general structure of considerable weight and strength; 6, a hole through the roof of recess 5 of lug 4, the same being strongly tapered with its large end uppermost in the pattern, as best seen in Fig. 7, these holes 6 representing the bolt-holes at the top of the fire-pot in the mounted stove; and 7, a circumferential rabbet at the top of the pattern, representing the bottom rabbet of the fire-pot for engaging the ash-box of the stove, to which the fire-pot is secured by bolts through the lugs illustrated in the top of the pattern.

The fire-pot and its pattern present no material points of novelty except as regards the construction of lugs 4, the structure represented being one of common use and involving considerable difficulty in molding, the highest order of molding skill being required and the daily product being small.

Referring, further, to the drawings, 8 indicates the drag, the same being a flat iron ring somewhat larger than the base of the pattern for the fire-pot; 9, a true flat circular seat formed upon the upper surface of the ring of drag 8, this seat having a width somewhat in excess of the thickness of bead 2 of the pattern, the seat being preferably raised somewhat above the general level of the ring 8, though this superior elevation of seat 9 is not at all essential; 10, lugs projecting upwardly from seat 9 at points corresponding with lugs 4 of the pattern, these lugs 10 having a height and width corresponding with the dimensions of recesses 5 in the lugs of the pattern and having their margins strongly tapering so as to be smaller above, the lugs 10 being radially arranged on the drag, and seat 9 and lugs 10 being of such size and disposition that when the pattern is set upon the drag the lower rim of bead 2 will take a fair bearing on seat 9 and the lugs 10 be nicely engaged by the recess 5 of the pattern; 11, a

large boss projecting upwardly from drag 8 within seat 9, the height of this boss being somewhat less than that of the fire-pot pattern and its diameter being somewhat less than that of the interior of the pattern, this boss being hollow and open underneath, its top being roofed; 12, numerous vent-holes through the roof and wall of boss 11; 13, an outward downward flare represented by the vertical cross-section of boss 11, the outer surface of the boss flaring outwardly and downwardly and joining the ring of the drag by an easy curve; 14, long dowel-pins projecting upwardly from the outer portion of drag 8; 15, lugs projecting outwardly from the margin of drag 8; 16, short legs projecting downwardly from drag 8; 17, the cheek of the flask, the same being a circular metallic box of a diameter somewhat larger than the pattern, its base being adapted to seat upon the surface of the drag exterior to seat 9, the height of the cheek being such that its top will come even with the top of the pattern when the cheek and pattern both rest upon the drag, the wall of the cheek having, preferably, a taper or upward contraction corresponding substantially with the taper of the pattern; 18, handles upon the cheek; 19, dowel-lugs projecting outwardly from the cheek and nicely fitting dowel-pins 14; 20, an annular lip projecting inwardly from the base of the wall of the cheek to serve for the support of the sand in the cheek; 21, a series of hooks mounted upon the outer surface of the cheek and adapted for engagement under lugs 15 of the drag; 22, a pair of upwardly open hinge-lugs projecting outwardly from the top of the cheek; 23, the cope, the same being a shallow metal ring adapted to set upon the top of the cheek; 24, handles upon the cope; 25, hinge-lugs projecting outwardly from the cope and adapted to nicely but separably engage in the hinge-lugs 22 of the cheek; 26, lugs projecting outwardly from the cope; 27, hooks mounted upon the cheek and adapted to engage over lugs 26; 28, an annular lip projecting inwardly from the base of the cope to serve in supporting the sand in the cope; 29, cross-bars in the cope to serve in supporting the sand therein; 30, the drag-sand forming the core for the mold, the same being formed within the pattern and around and over boss 11; 31, the cheek-sand, the same being formed around the pattern and within cheek 17; 32, the cope-sand, the same being formed in the cope 23 over the pattern and over the sand 31 of the cheek and the sand 30 of the drag, there being a parting between the sand of the cope and the sand below it; 33, (see Fig. 8,) the molder's ram in the act of ramming the sand 30 of the drag, its peculiar action being hereinafter explained; and 34, a dowel at the juncture of the cope and cheek at a point opposite the hinge-lugs which unite those parts.

The device is used as follows: Drag 8 is set upon the foundry-floor at the point where the

completed mold is to be poured, legs 16 supporting the drag away from the floor, so as to give free vent from the interior of boss 11. Seat 9 of the drag is then carefully cleaned and the fire-pot pattern set upon it, the lower edge of the pattern coming down nicely on seat 9 and the recess 5 of lugs 4 of the pattern nicely engaging lugs 10 of the drag. Cheek 17 is then set upon the drag and clamped to it by means of hooks 21. Cheek-sand 31 is then filled in and rammed and so also with drag-sand 30. As drag-sand 30 is rammed within the pattern and around boss 11 the blade of the rammer in descending strikes down along the flaring wall of boss 11, and as it approaches the base of the boss it becomes forced outwardly by the action of the flaring roof of the boss, the action of the rammer thus being to tuck the sand outwardly into counterbore 3 of the pattern and against the inner wall of the pattern generally, as well as to generally compact it within the annular space around the boss. The cheek and drag having been filled and rammed, a straight edge is employed in striking the top of the mold as thus far produced, the straight edge striking the sand off even with the top of the cheek and with the top of the pattern, thus exposing the top edge of the pattern. A tool, stick, or even the thumb is then run around the top rabbet 7 of the pattern, thus removing the sand therefrom. The top of the mold as thus far produced is then brushed off, thus clearing away all loose sand and smoothing the top of the sand and exposing the top edge of the pattern and the rabbet 7. The exposed sand is now dusted with parting-sand, after which cope 23 is placed in position on the cheek, being accurately positioned thereon by the hinge-lugs and by dowel 34, after which it is clamped to the cheek by hooks 27. The cope is now filled and rammed and gated as desired. Hooks 27 are now to be released, after which the cope is swung up vertically on its hinge and lifted off and stood aside on its edge. The pattern may now be rapped upon its top, after which hooks 21 should be released and cheek 17 wedged a mere trifle up from the drag. The cheek is now lifted and turned upside down over a facing-box, after which the interior of the cheek is dusted with facing, the surplus falling into the facing-box. The pattern is now to be drawn upwardly and set aside, after which the cheek is to be restored to position upon the drag and the cope restored to position upon the cheek, after which books 21 and 27 are engaged and the mold is ready for pouring.

Referring to Fig. 7, as the cheek is lifted from the drag the sand within it lifts away from the metal of the drag, that portion of the sand disposed within conical holes 6 of lugs 4 of the pattern lifting away from the metal of lugs 10 of the drag. After the pattern has been removed and when the cheek is restored to position upon the drag the sand in the cheek again comes in contact with the

metal of the drag, the sand formed by lug-holes 6 again coming in contact with lugs 10 of the drag. When the mold is poured, it fills the cavity of the sand portion of the mold, as usual, the lower edge of the casting being, however, formed by chilled contact with seat 9 and the recesses 5 of the lugs 4 of the casting being formed by chilled contact with lugs 10 of the drag. The minimum amount of sand is required to be handled in forming the mold. The necessity for using a vent-wire is avoided. No amount of tuck-ing is required and no hand-formed partings require to be made. The molds are to be produced by comparatively unskilled labor, and by the use of the improved appliances a comparatively unskilled molder can produce from three to five times as much output as can be gotten by any method of which I have knowl-
edge.

I claim as my invention—

1. In a founder's mold, the combination, substantially as set forth, of a drag formed of metal and having an upwardly-projecting roofed boss and having an upwardly-presenting seat to receive the pattern and to form the mold-surface for the lower edge of the casting, and a mold member doweled to said drag and adapted to contain sand in contact with the surface of said drag exterior to said upwardly-presenting seat.

2. In a founder's mold, the combination, substantially as set forth, of a drag formed of metal and having an upwardly-projecting roofed boss and having an upwardly-present-

ing seat to receive the pattern and to form the mold-surface for the lower edge of the casting, lugs projecting upwardly from said seat and adapted to engage recesses in the lower edge of the pattern and to form mold-surfaces for such recesses in the casting, and a mold member doweled to said drag with the surface of said drag exterior to said upwardly-presenting seat.

3. In a founder's mold, the combination, substantially as set forth, of a drag formed of metal and having an upwardly-projecting roofed boss and having an upwardly-presenting seat to receive the pattern and to form the mold-surface for the lower edge of the casting, a cheek doweled to said drag and having its upper edge at the level of the top of the pattern, and a cope doweled to said cheek.

4. In a founder's mold, the combination, substantially as set forth, of a drag formed of metal and having an upwardly-projecting roofed boss and having an upwardly-presenting seat to receive the pattern and to form the mold-surface for the lower edge of the casting, a cheek doweled to said drag and having its upper edge at the level of the top of the pattern, a cope upon the top of said cheek, and a separable hinge connecting said cope to said cheek.

HARRY V. MOORE.

Witnesses:

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