

(No Model.)

S. J. ADAMS.
BOTTOM BOARD FOR SAND MOLDS.

No. 433,587.

Patented Aug. 5, 1890.

Fig 1

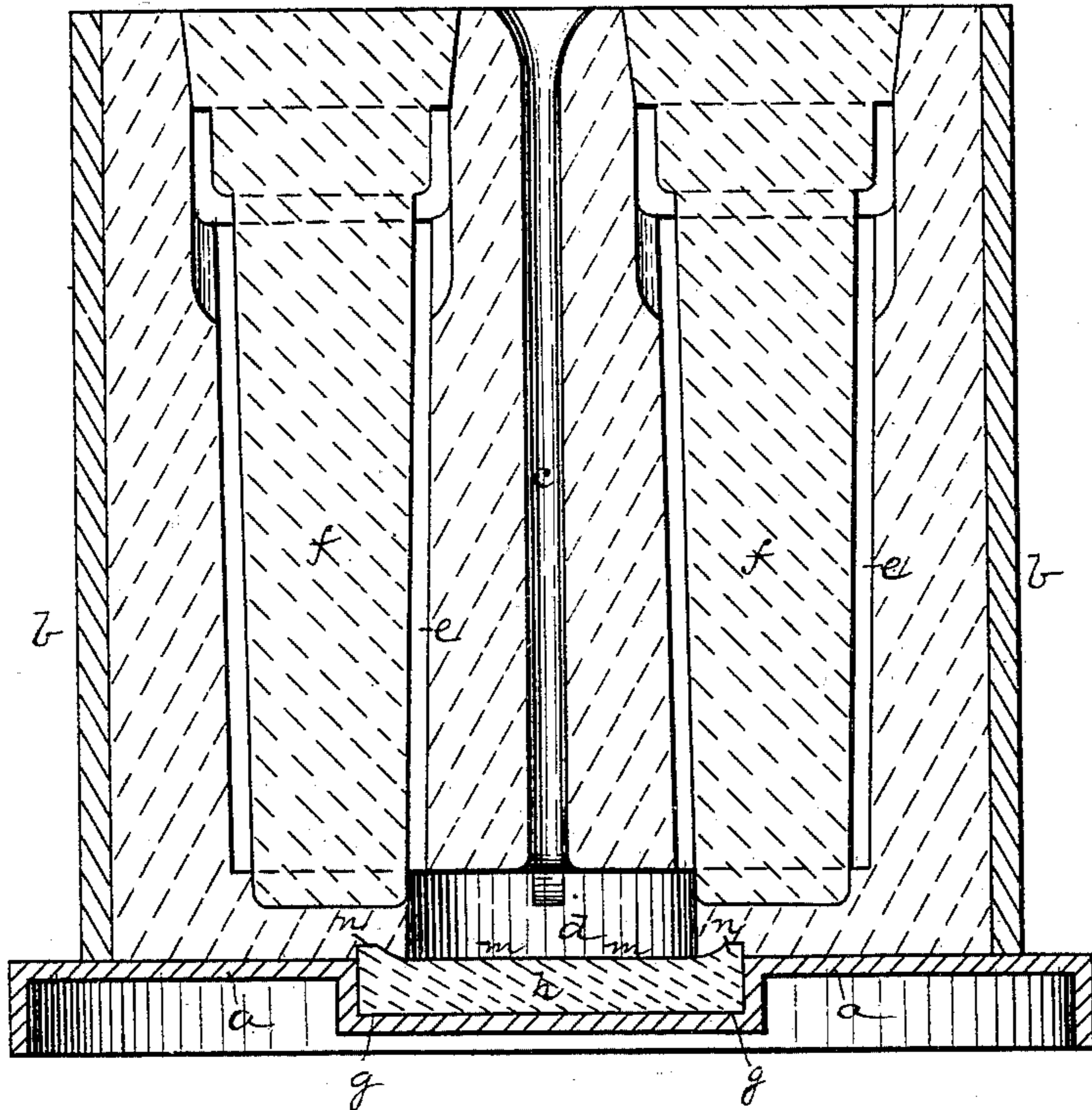
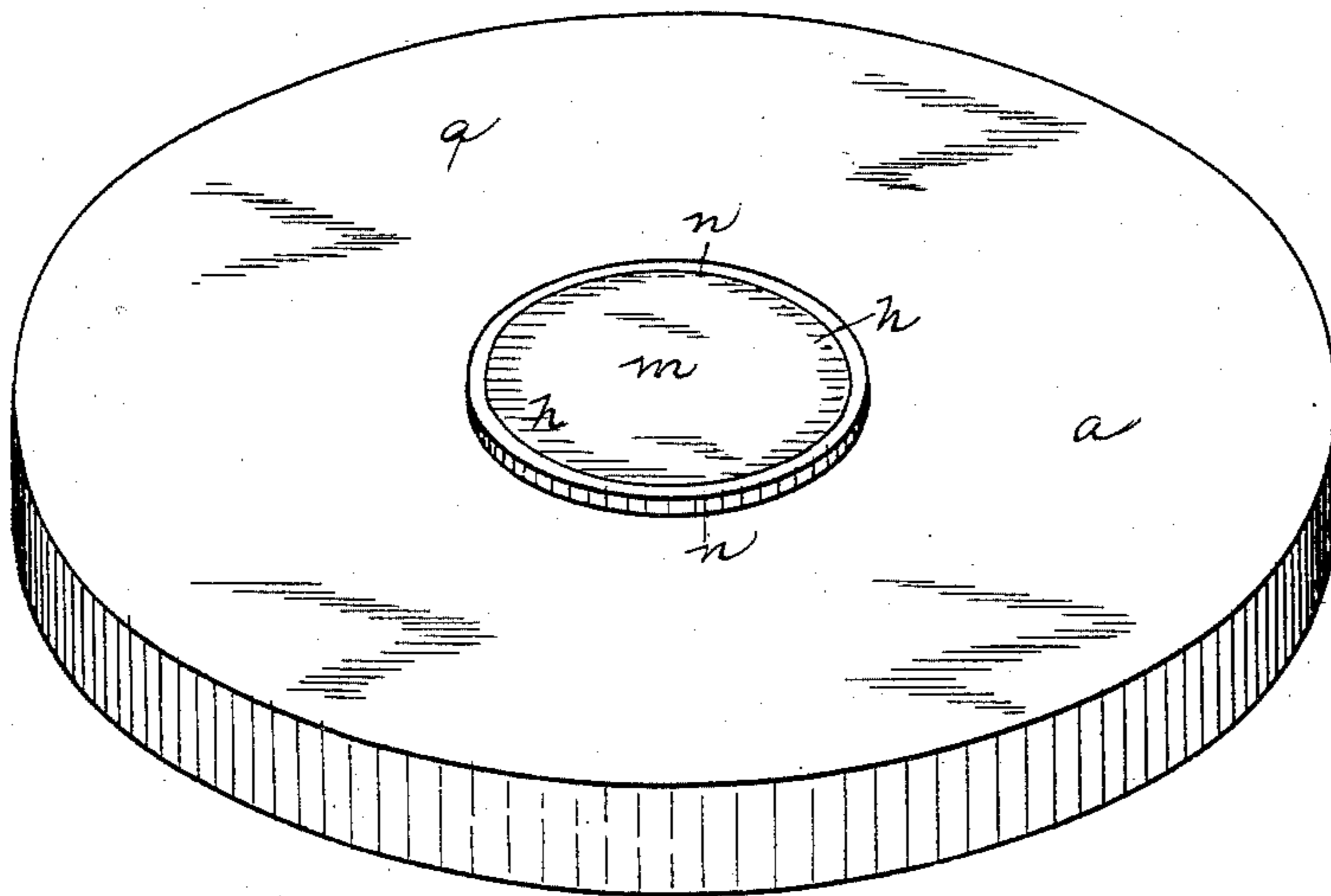


Fig 2



Witnesses:

J. H. Cooke
Robt. D. Follen

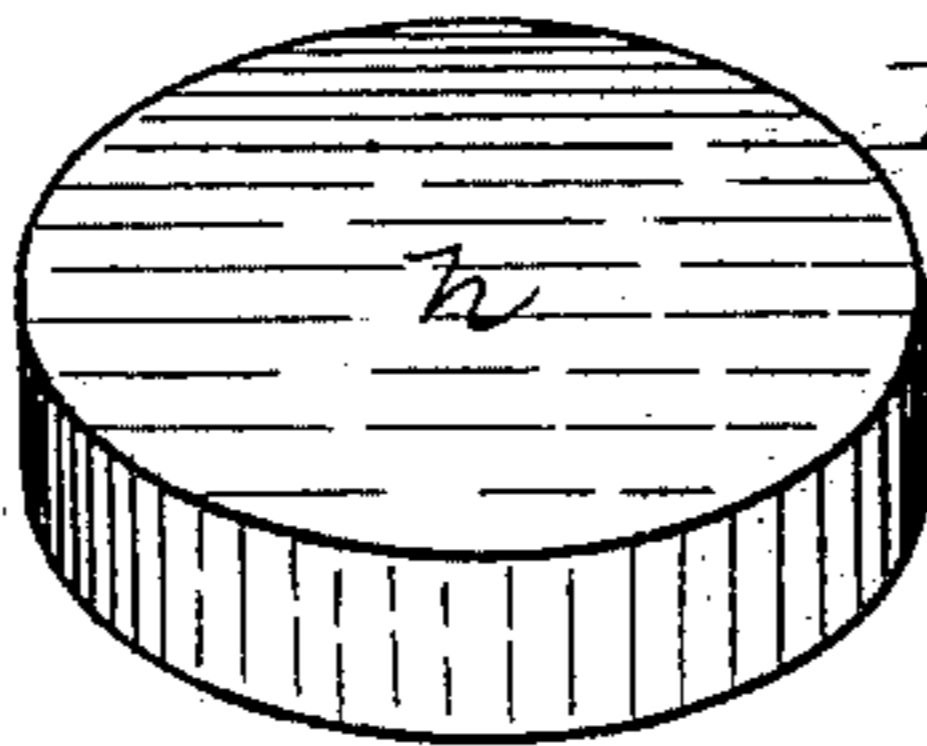


Fig 3

Inventor

Stephen James Adams
By James D. Ray
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UNITED STATES PATENT OFFICE.

STEPHEN JARVIS ADAMS, OF PITTSBURG, PENNSYLVANIA.

BOTTOM BOARD FOR SAND MOLDS.

SPECIFICATION forming part of Letters Patent No. 433,587, dated August 5, 1890.

Application filed January 4, 1890. Serial No. 335,915. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN JARVIS ADAMS, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bottom Boards for Molds; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to molds for forming castings, and the bottom boards thereof, having special reference to that class of molds in which the metal is caused to flow from the top of the mold or body of sand downwardly through the same, and thence by a side runner into the mold-cavity.

The object of my invention is to provide on the bottom board a surface to receive the metal passing through the mold, which will protect the body of the bottom board from injury by the molten metal, and will at the same time form a tight joint with the bottom surface of the mold and prevent the escape of the molten metal between the mold and the bottom board.

To these ends my invention consists, generally stated, in a bottom board for these sand molds having a seat or depression below the flat surface thereof, in combination with a sand or other suitable core fitting on said seat and extending above the adjoining portion of the bottom board, so that when the mold itself having the flat lower surface is placed upon the bottom board this sand core will be pressed slightly up into the sand of the mold and so close the base of the runner and form a tight joint between the mold and bottom board, so protecting the body of the bottom board from the action of the metal and preventing the escape of the metal between the mold and bottom board.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a mold having my invention applied thereto. Fig. 2 is a perspective view of the bottom board employed, and Fig. 3 is a view of the core to be inserted within the bottom board.

Like letters of reference indicate like parts in each figure.

The mold illustrated is for the formation of what are known as "wagon-boxes," the mold having the bottom board *a* and the flask *b*, in which the sand is packed, resting on said bottom board. Within the mold or body of sand is the vertical pouring-gate or runner *c*, which has at the base thereof the enlarged chamber *d*, acting as side runners to communicate with the bases of the mold-cavities *e*, these mold-cavities having therein the cores *f*, which are seated at their ends in the body of the sand. The bottom board *a* is preferably cast to shape and has at a proper point therein the seat or depression *g*, this seat or depression being under the pouring-gate and containing the core *h*, which acts to close the base of the runners leading from the pouring-gate to the mold-cavities, or the runner-chamber *d* serving the same purpose. The upper surface may be formed concave, as shown at *m*, Fig. 1, and I prefer this form of core, as it forms an annular rib or raised portion *n* around the edge of the core which will be more easily pressed up into the sand of the mold and so make a more perfect joint. The core may, however, have a flat upper surface, as shown in Fig. 3. Where the core has the concave or depressed upper surface, the depression therein may act as a runner to feed the metal from the pouring-gate to the runners leading to the mold-cavities.

The surface of the bottom board is flat and the base of the mold rests thereon; but the core *h* extends slightly above the surface or adjoining portion of the bottom board, so that when the mold is placed thereon the core will be pressed up into the base of the mold and will form a tight joint therewith. This core is formed of incombustible material and may be formed of sand, fire-clay, or else of some pliable elastic material—such as asbestos—the advantages being that as the core extends above the body of the bottom board it shall make a tight joint with the sand of the mold and the metal will simply strike on this core, and flow thence into the several molds, the core thus forming the base to the runner-chamber and preventing escape of the molten metal. The core may be molded to shape and baked, if desired; or it may be specially made of green sand for each time of use and set in

the seat *g*. I prefer, however, to employ a baked core of sand or fire-clay, which will last a long time and so protect the surface of the bottom board and prevent the metal from cutting through the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A bottom board for sand molds having a seat or depression below the flat surface thereof, in combination with a sand or other suitable core fitting in said seat and extending above the adjoining portion of the bottom board, substantially as and for the purposes set forth.

2. The combination, with a sand mold having a pouring-gate or runner extending vertically through the same, of a bottom board having a seat or depression below the flat surface thereof, and a sand or other suitable core fit-

ting in said seat and extending above the adjoining portion of the bottom board, so as to embed itself in the sand of the mold and form a base to the runner, substantially as and for the purposes set forth.

3. A bottom board for sand molds having a seat below the flat upper surface thereof, in combination with a sand or other suitable core fitting in said seat and extending above the body of the bottom board and having a depression in the upper face of the core, substantially as and for the purposes set forth.

In testimony whereof I, the said STEPHEN JARVIS ADAMS, have hereunto set my hand.

STEPHEN JARVIS ADAMS.

Witnesses:

JAMES I. KAY,
ROBT. D. TOTTEN.