(No Model.)

C. SNEIDER.

Mold for Casting Metals.

No. 237,634. **Patented Feb. 8, 1881.**

Fig. 1.

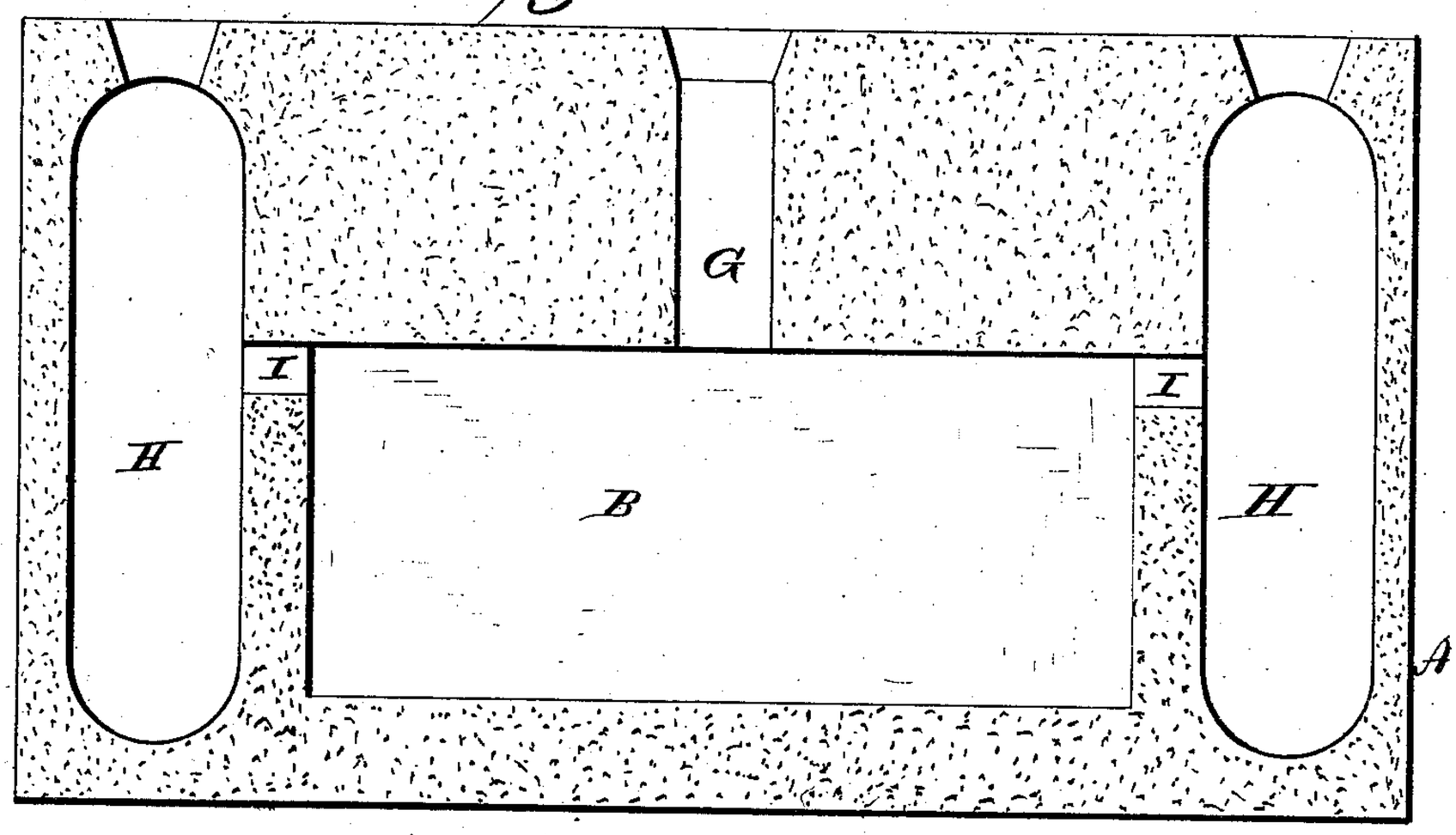
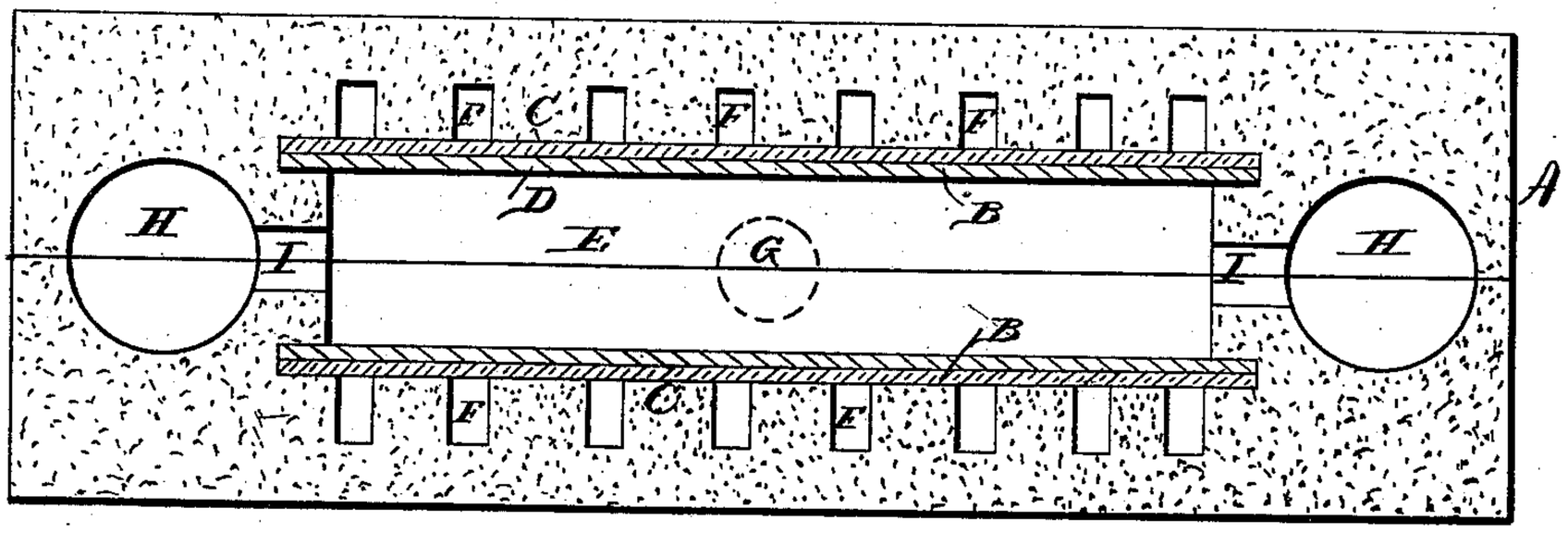


Fig. 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

CHARLES SNEIDER, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO SAMUEL L. CLEMENTS AND DANIEL SLOTE, OF SAME PLACE.

MOLD FOR CASTING METALS.

SPECIFICATION forming part of Letters Patent No. 237,634, dated February 8, 1881.

Application filed December 8, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SNEIDER, of New York city, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Molds for Casting Metals; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in the construction of molds for casting metals by an improved method, for which I have made application for Letters Patent of the United States, being specially designed for the production of fine castings, such as plates and blocks for printing and engraving; and it has for its objects to provide a mold whereby the casting may be formed with one or more faces complete, and in which provision is made for the free escape of the gases contained in and developed by the heated metal in entering the mold and collecting and forming therein, whereby the imperfections caused by such gases in the ordinary molds—such as blow-holes, bubbles, and the like—are wholly obviated, as more fully hereinafter specified. These objects I attain by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a top view of a half-flask, showing my improved mold formed therein; and Fig. 2, a vertical section through the flask, showing the mold complete.

The letter A indicates a flask of the ordinary or any approved pattern, and constructed in two parts, in which the mold is formed.

The letter B represents the matrices of the mold, which consist each of a plate of glass, C, which is readily frangible under the intense heat of the molten metal of which the casting is formed. The said matrices are formed with a coating or facing of refractory material, D, of such nature that the designs, figures, or letters to form the face of the casting may be readily cut, engraved, stamped, or otherwise formed in intaglio. The matrices with their facings and intaglio designs are embedded in proper position in the mold, as indicated in the drawings, the body of the mold being formed, as usual, of sand, with the recess or cavity E for the reception of the molten metal which is to form the body of the casting. At the back of each matrix in the mold a series of air-passages, F, are formed in the sand by means of a suitable instrument for the escape of gases, as more fully hereinafter specified, the said passages extending entirely through the sand, so as to vent into the open air, or only partly through, the gases in the latter case being diffused through the sand.

The letter G indicates the gate through which the molten metal is poured into the mold. This gate is formed at one side of the mold, and enters the cavity therein on a line with the adjoining faces of the two parts thereof.

The letter H indicates two chambers or receptacles formed in the mold, at opposite sides of the same, connecting with the cavity thereof by means of the gates I. The said chambers or receptacles are open to the air, as indicated by the letter K, to permit of the escape of the gases from the molten metal, as more fully hereinafter explained.

The operation of my invention is as follows: The molten metal, being poured in the gate G, flows into the cavity in the mold, the gases passing out through the gates I into and out of the receptacles or chambers H. The superfluous metal also passes into said chambers, heating the matrices, so as to take the metal readily, and carrying all slag, scoria, and other impurities over into said chambers, and permitting the pure metal to rise in the mold and fill the cavity therein. The matrices of the mold being formed with a backing of frangible material, such backing is broken up under the influence of the heat, forming innumerable passages for the gases, and thus effectually obviating the formation of blow-holes, bubbles, and other imperfections. The mold in the present instance is shown as formed with two matrices; but it is evident that a single matrix may be used, or several matrices, according to the nature of the casting to be produced.

I do not claim, broadly, in this application the matrix for casting metals composed of a facing of refractory material adapted to receive suitable designs, and a backing frangible by

heat of the molten metal. Neither do I claim, broadly, a mold constructed with a matrix having a backing frangible by the aid of heat, and provided with a pool at one side for the reception of the superfluous metal, and a gate for the metal, as such forms the subject-matter of another application for Letters Patent filed by me December 6, 1880.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A mold for casting metal constructed with one or more matrices having backings frangible by the molten metal, and provided with air-passages for the escape of gases, and with a gate or sprue, and receptacles for the superfluous metal, substantially as specified.

2. In combination with the matrix and its frangible backing, the passages in the mold for the escape of the gases of the molten metal, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of December, 1880.

CHAS. SNEIDER.

Witnesses:
J. J. McCARTHY,
H. AUBREY TOULMIN.