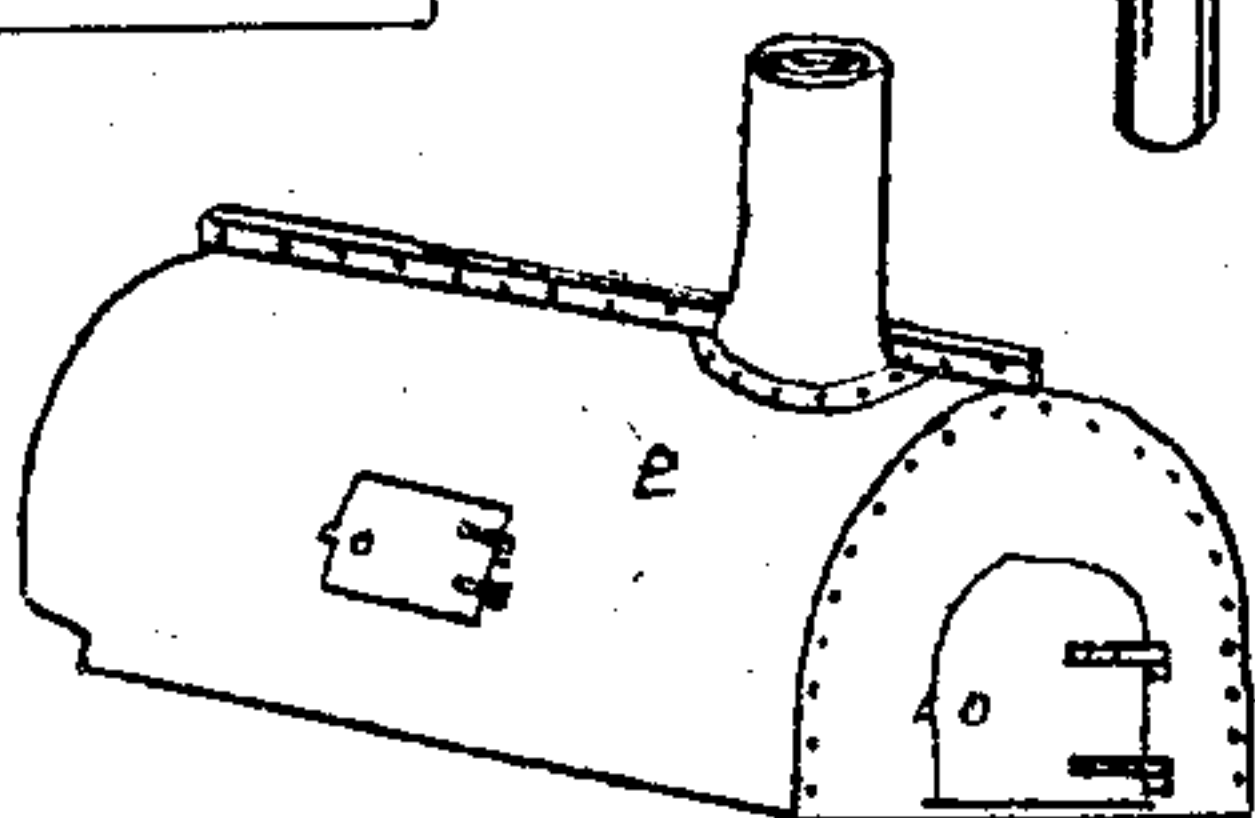
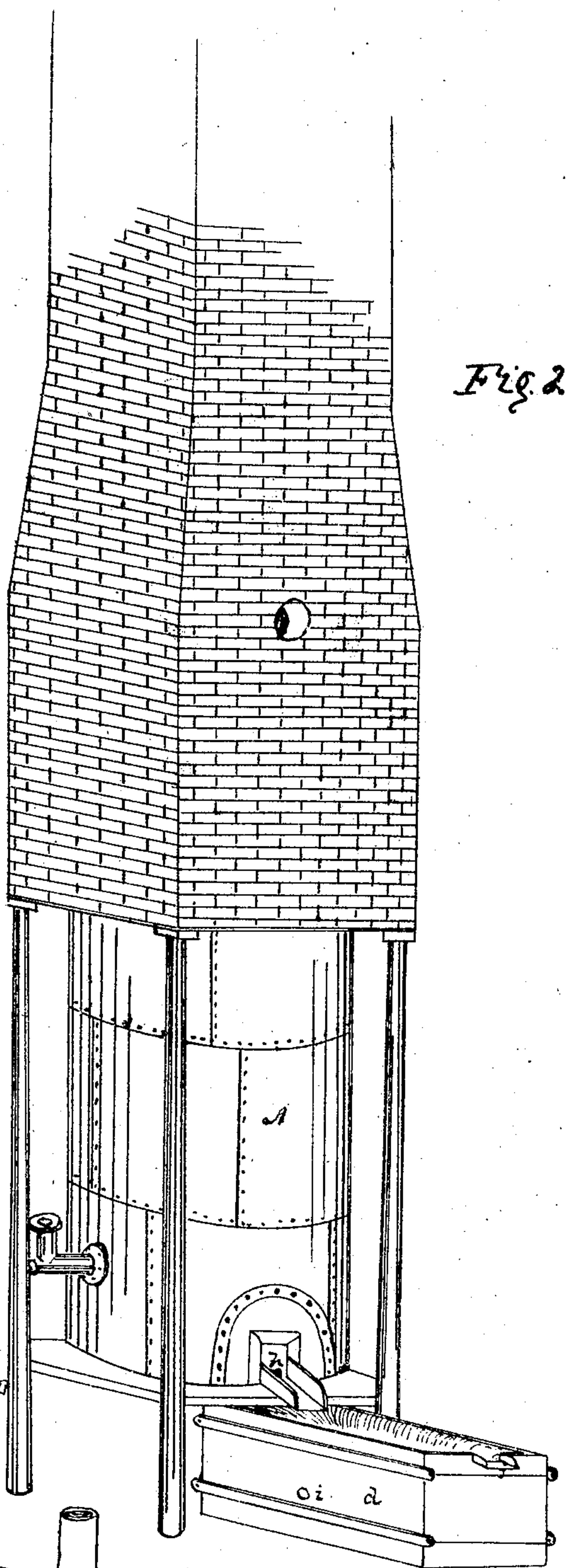
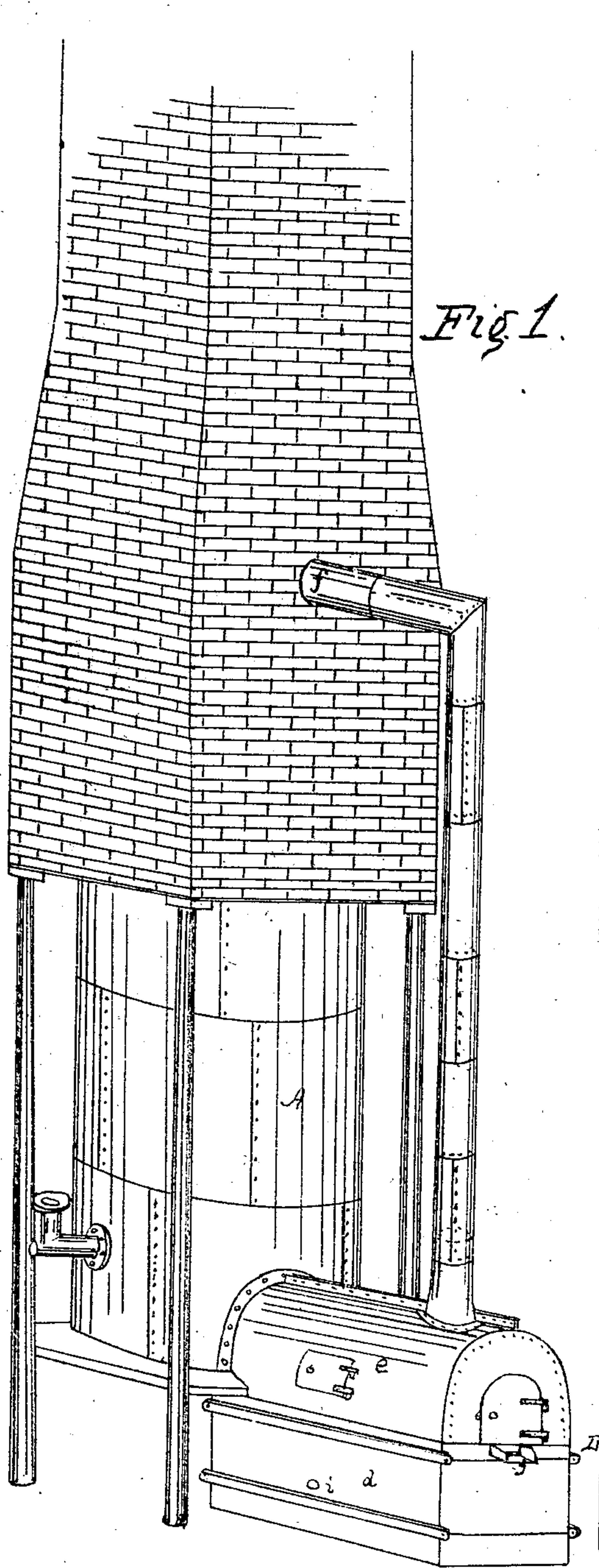


R. H. Hall.

Furnace.

N^o 75415

Patented Mar. 10, 1868.



Witnesses.

Horatio H. Hall,
Lemuel T. Talbot.

Inventor.

R. Henry Hall

United States Patent Office.

R. HENRY HALL, OF TAUNTON, MASSACHUSETTS.

Letters Patent No. 75,415, dated March 10, 1868.

IMPROVEMENT IN FURNACES FOR SMELTING ORES OF LEAD AND OTHER METALS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, R. HENRY HALL, of Taunton, in the county of Bristol, and State of Massachusetts, have invented a new and useful Improvement in Furnaces, to be used for the purpose of smelting ores of gold, silver, or lead; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a furnace with the improvement attached thereto.

Figure 2, the same, with the hood removed; and

Figure 3, the hood.

My improvement consists in the application of the receiving-basin D to the smelting-furnace A. I do not claim this furnace as new, but the application of the receiving-basin to it, for the purpose of smelting ores of gold, silver, or lead, is my invention.

The basin which I find to be the best for this purpose consists of two parts, the receiver *d* and the hood or oven *e*. The receiver *d* is made of sheets of cast or boiler-iron, bound together by iron rods in the form of a box, say four feet six inches long, by two feet eight inches wide, and two feet six inches deep, and having a spout, *j*, at one end. This box is lined with fire-brick, clay, or other refractory material on the sides and bottom. The hood *e*, made of the same material as the receiver, is made to fit on to the receiver, as shown in fig. 1. It is open at the end next the furnace, has a small door in the other end, another door on one side, and a pipe to connect with the furnace, as shown at *f*.

The operation of this my improvement is as follows: The receiver *d* being under the "tempt-hole" *h* of the furnace, and the hood *e* fitted on, as in fig. 1, the furnace is fired up as usual. Flame, slag, and metal are allowed to issue together from the "tempt-hole." The metal and slag run into the receiver D, (the metal sinking to the bottom,) are kept molten and fluid by the flame, which is impinged upon them by the hood *e*. When the receiver is full, the slag runs off at the spout *j*, and may be carried away in iron barrows or "cabs," but the metal is all retained, and may be drawn off at the tapping-hole *i*, or allowed to cool in the receiver.

The great advantage gained is, that the metal as it comes from the furnace concentrates and settles to the bottom of the receiver, and a complete separation of the metal from the slag is effected.

The size of the basin given above is suitable for working at least five tons of ore. I do not limit the size nor form of the basin, nor do I consider the hood or cover absolutely necessary. I prefer to use my improvement in connection with cupola-furnaces, but it can be applied to reverberatory furnaces also.

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

The application of a receiving-basin, as herein described, to furnaces used for smelting ores of gold, silver, or lead.

R. HENRY HALL.

Witnesses:

HORATIO H. HALL,

LEML. T. TALBOT.