

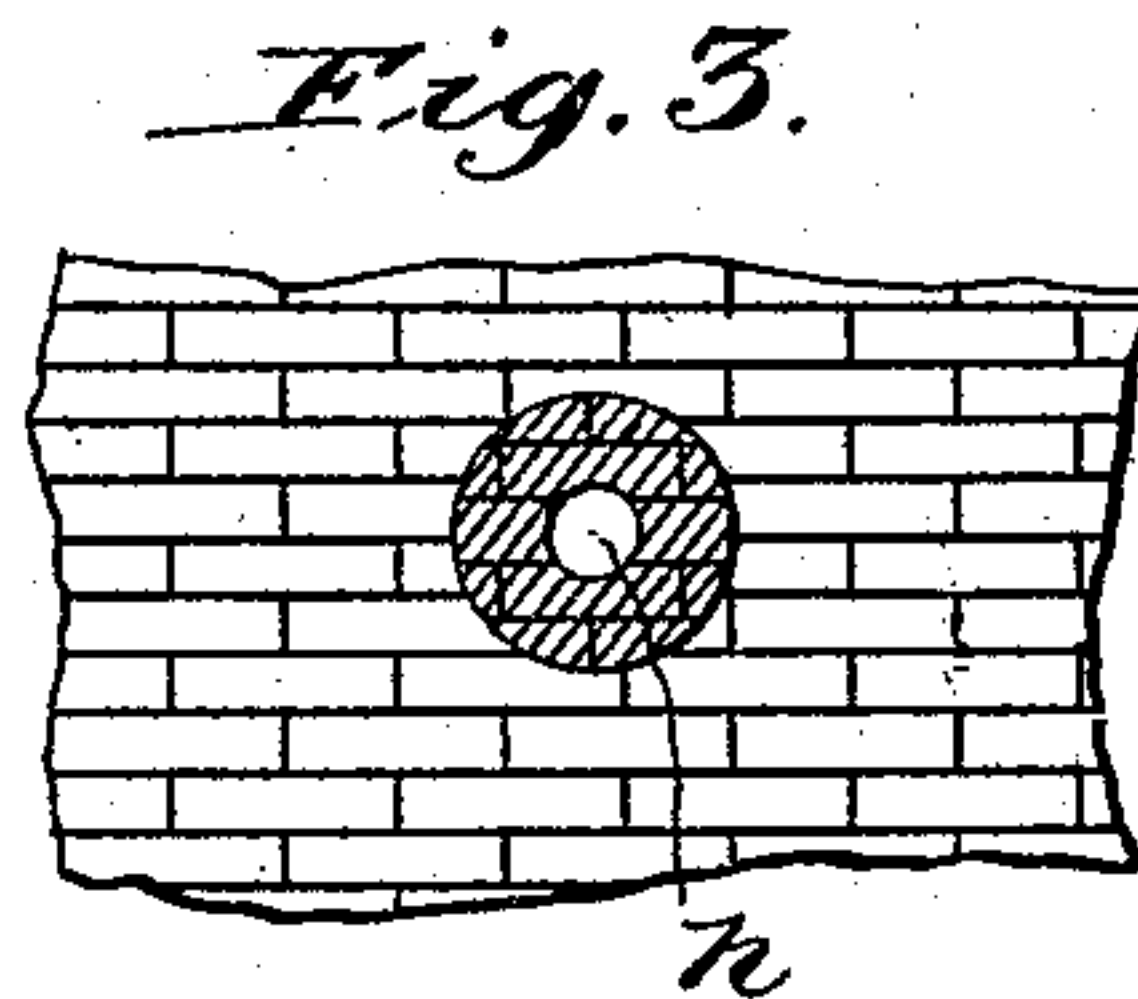
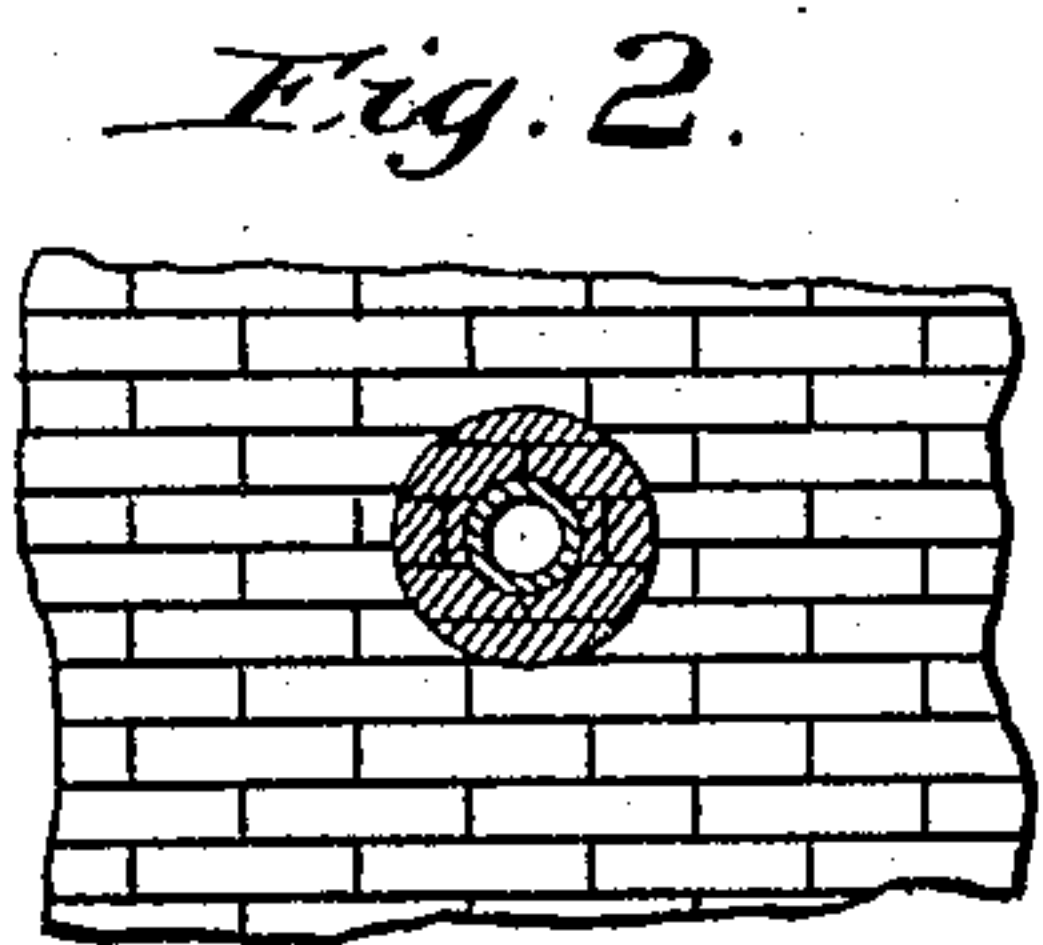
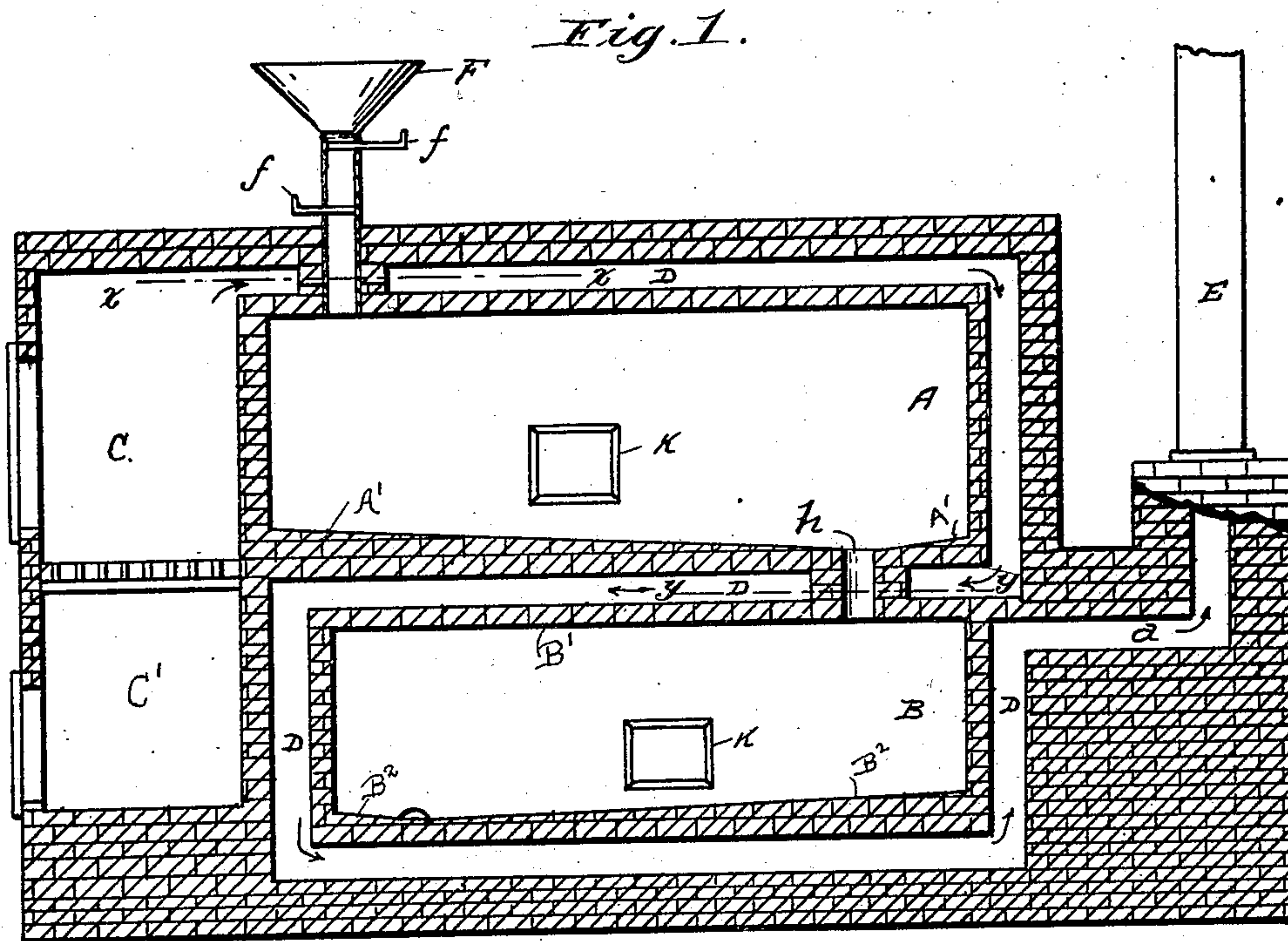
No. 725,661.

PATENTED APR. 21, 1903.

E. F. BLESSING.
SMELTING FURNACE.

APPLICATION FILED JULY 19, 1902.

NO MODEL.



Witnesses
Florence Kelly
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By Attorneys *Edgar Kelly*

UNITED STATES PATENT OFFICE.

EDGAR F. BLESSING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO HERBERT M. SHIMER, OF PHILADELPHIA, PENNSYLVANIA, AND FRANK BLESSING, OF HARRISBURG, PENNSYLVANIA.

SMELTING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 725,661, dated April 21, 1903.

Application filed July 19, 1902. Serial No. 116,141. (No model.)

To all whom it may concern:

Be it known that I, EDGAR F. BLESSING, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Smelting-Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in furnaces; and the object is to produce a furnace in which metals, such as brass, may be melted satisfactorily and without danger of burning the metal during reduction and minimizing the volatilization of the metal.

The invention consists of duplicate chambers or muffles arranged so as to be surrounded by a continuous passage-way for the circulation of heat and of means for feeding the metal to the furnace and other details of construction.

The invention is fully described in the following specification and clearly illustrated in the accompanying drawings.

Figure 1 shows my furnace in vertical section. Fig. 2 is a sectional view on line xx of Fig. 1. Fig. 3 is a sectional view on line yy of Fig. 1.

The furnace-body is built of fire-brick or other suitable material, may be of any desired form, and has two melting-chambers or muffles, a main chamber A and a smaller or supplemental chamber B, arranged beneath the main chamber, but spaced therefrom.

The fire-chamber C is located at one end of the furnace adjoining the chamber or muffle A, and directly beneath said chamber C is another chamber C' for receiving the ashes, &c. A passage-way or heat-flue D leads from the top of the fire-chamber C over the top of the chamber or muffle A down past its rear end and forward between the bottom of the upper chamber or muffle A and the top of the lower chamber or muffle B, thence downward and beneath the floor of the chamber or muffle B, and upward along its rear end to an opening d into the stack E, as shown by arrows, thus passing entirely around both chambers and creating a

comparatively uniform temperature throughout. The heat is prevented from passing upward around the end of the chamber A by the top B' of the lower chamber or muffle B. This top is continued outward beyond the end of the chamber B and forms a baffle-plate or partition between the rear ends of the two muffles, thereby directing the heat into the chimney-opening d . At the same time this extension serves as a means for compelling the heat to circulate around both muffles.

A feed device F is located in the top of the furnace and has a double gate or valve device ff for feeding. The upper slide f is opened, and when the proper amount has been fed into the hopper it is closed and the lower slide f opened, thus dropping the feed into the upper chamber or muffle A of the furnace without any appreciable communication with the outer atmosphere.

The floor of the upper chamber or muffle A is slightly inclined from its ends, as at A', to a point near the rear end and opposite the feed device and is there provided with an opening h into the chamber B beneath it. The chamber B is also provided with an inclined floor B', and at its lowest point is located a tap-hole from which to draw the molten metal. The lowest part of the chamber or muffle B is located near the front end or at a point directly opposite to that at which the opening in the upper muffle is located.

When the metal is fed into chamber or muffle A, its reduction to a molten state will cause it to flow down the inclined floor to the opening h and into the chamber or muffle B, and as both chambers are heated by the continuous current of heat through the heat-flue D the metal contained in the lower chamber will always be ready for tapping.

The furnace is provided with suitable doors k , permitting access to the chambers or muffles for the purpose of mixing the contents thereof or for repairing, and these doors are substantially air-tight, making as near as possible an air-tight furnace and overcoming volatilization as nearly as may be.

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

1. A device of the class described consisting of a heating-chamber, a fire-box therein, a main muffle within said chamber contacting with said fire-box, and a continuous flue
5 surrounding the muffle and leading from the fire-box, a supplemental muffle within the chamber beneath the main muffle, a flue surrounding the supplemental muffle, and an opening in the bottom of the main muffle
10 communicating with the supplemental muffle through the top of the latter, a floor in the main muffle inclined toward the opening, a tap-opening in the supplemental muffle at the opposite end thereof from the communi-
15 cating opening of the two muffles, a floor in the supplemental muffle inclined toward the tap-opening, and doors in said muffles.

2. A device of the class described consisting of a heating-chamber, a fire-box therein,
20 a main muffle within said chamber contacting with said fire-box, and a continuous flue surrounding the muffle and leading from the

fire-box, a supplemental muffle within the chamber and beneath the main muffle, a flue surrounding the supplemental muffle, and
25 an opening in the bottom of the main muffle communicating with the supplemental muffle through the top of the latter, a floor in the main muffle inclined toward the opening, a tap-opening in the supplemental muffle at
30 the opposite end thereof from the communicating opening of the two muffles, a floor in the supplemental muffle inclined toward the tap-opening, and an extension on the top of the supplemental muffle forming a partition
35 between the flue surrounding the main muffle and the exit of the flue surrounding the supplemental muffle.

In testimony whereof I affix my signature in presence of two witnesses.

EDGAR F. BLESSING.

Witnesses:

GEO. REED,

WM. A. RILEY.