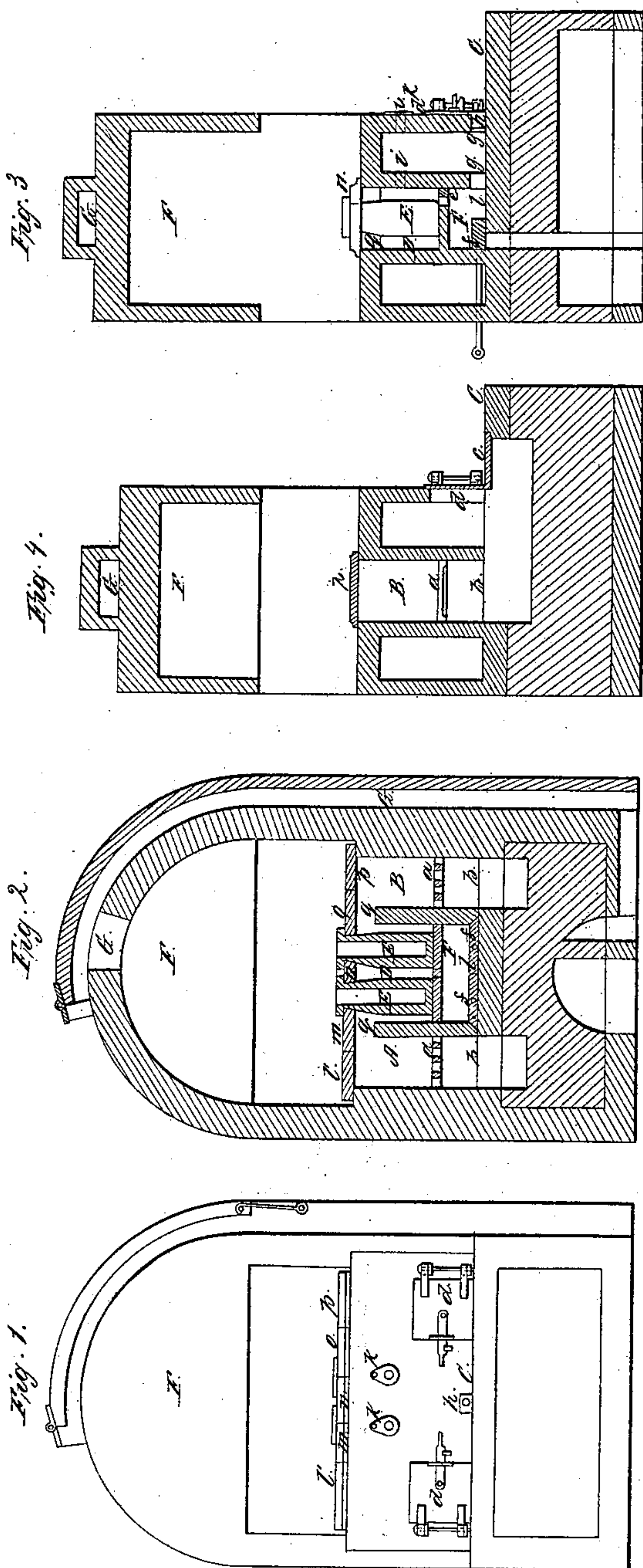


J. S. BROWN.
METALLIC BATH FURNACE.

No. 43,006.

Patented June 7, 1862.



Witnesses:
A. P. Hale Jr
Frederick Curtis

Inventor:
James L. Brown
by his attorney
R. W. Ledy

UNITED STATES PATENT OFFICE

JAMES S. BROWN, OF PAWTUCKET, RHODE ISLAND.

IMPROVED METALLIC-BATH FURNACE.

Specification forming part of Letters Patent No. 43,006, dated June 7, 1864.

To all whom it may concern:

Be it known that I, JAMES S. BROWN, a resident of Pawtucket, in the county of Providence and State of Rhode Island, have invented an Improved Metallic-Bath Furnace; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation. Fig. 2 is a longitudinal section taken through its bath-pots. Fig. 3 is a transverse section of it, taken through its middle, while Fig. 4 is another transverse section, taken through one of its fire places.

In such drawings, A B represent two fire-places or chambers for combustion of coal or fuel, each of them being provided with a grate, *a*, and an ash-pit, *b*, which is disposed underneath the grate and has two doors, *c d*, one of which makes part of the hearth C and is horizontal, while the other is arranged in a vertical plane. Between the two fire-places or chambers of combustion A B there is a chamber, D, for holding one or more metallic baths or pots, E E, which rest on a bridge or shelf, F. The said shelf or bridge constitutes the bottom of the chamber D, and has a flue-passage, *e*, made through it or against its front edge, as seen in Fig. 3. The said passage *e* leads from the chamber D into an escape-flue, *l*, in which there are one or more dampers, *f f*, the said flue being made to lead to a chimney and to pass directly underneath and against the said bridge. There is an air-passage, *g*, leads out of the front of the flue *l* under the bath-pot chamber D, such passage *g* being provided with a stopper, *h*. Furthermore, there are one or more sight-holes, *i i*, made through the masonry of the furnace and leading into the chamber D, each of these holes being provided with a cover, *k*, by which it may be closed. The chambers of combustion A B and the bath-chamber D are covered by cap-plates *l m n o p*, three of which—viz., those marked *m n o*—surround and serve to

support the two bath pots E E, as well as to cover the chamber D and two flues or passages, *q q*, which open communication between the chambers A and B and the chamber D. A hollow dome or arch, F, may be arranged over the bath-pots, and have a flue, G, leading out of its top and downward to the external atmosphere, or a flue leading into the same. The said dome F and its flue G operate to collect and carry off the deleterious vapors and gases which may escape from the fire places and the baths.

The furnace, as described, is intended to have its pots supplied with lead or other metal or composition of metals easily fusible, the same, when in a molten state, answering the purpose of a bath for heating files in the process or processes of their manufacture, the bath producing an equality of temperature throughout each file when submitted to it.

It has been found in practice that the bath-pots cannot be heated to advantage when immersed in the fuel or placed directly on or over it, and therefore I employ a separate chamber, D, combined with one or more chambers of combustion, and having a bridge or shelf, (for supporting the pots,) and also a flue-passage alongside of and going underneath and against the under surface of the said bridge. By having the flue-passage go underneath the bridge, in manner as explained, the bottom of each of the pots, as well as the sides of such pot, will be subjected to heat, as the bridge will become heated and the heat thereof will be conducted into the bottom of the pot.

I claim—

The improved metallic-bath furnace or combination and arrangement of one or more fire-places, A B, a bath-pot chamber, D, a bridge, F, a flue-passage, *e*, and an escape-flue, *l*, the whole being connected in manner and so as to operate substantially as specified.

JAMES S. BROWN.

Witnesses:

JAMES BROWN,

CHAS. A. WARLAND.