

(No Model.)

J. KOHLER.
HOT AIR FURNACE.

No. 468,424.

Patented Feb. 9, 1892.

Fig. 1.

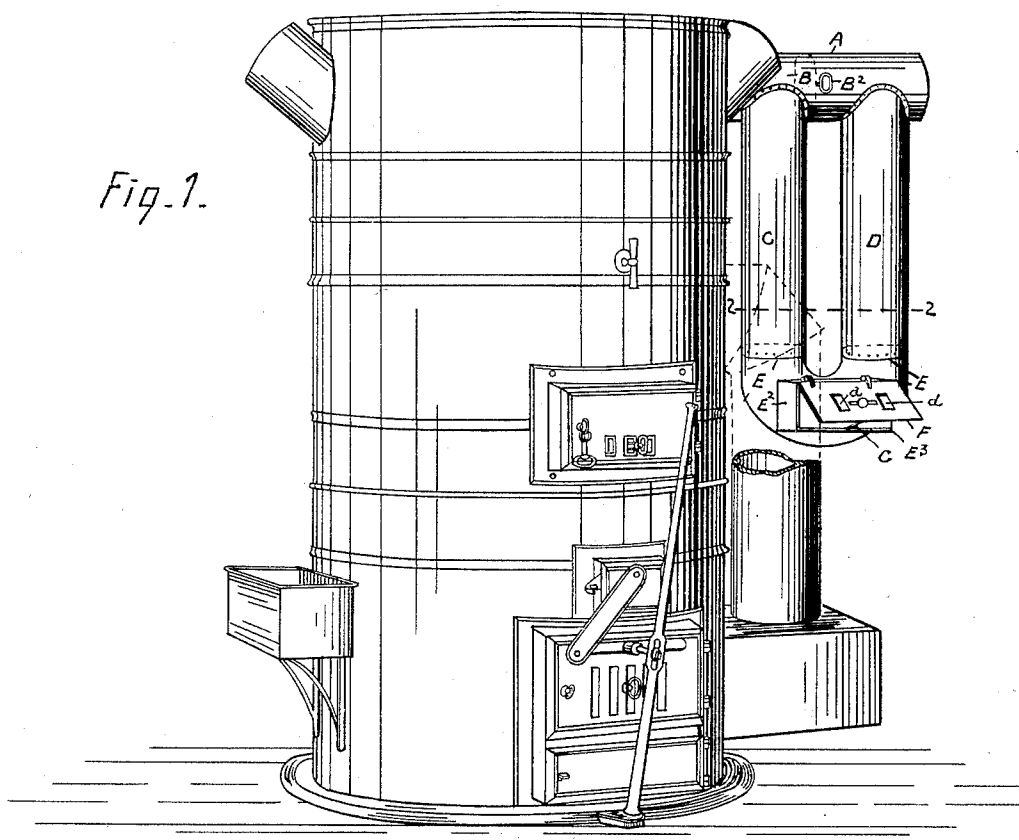


Fig. 2.

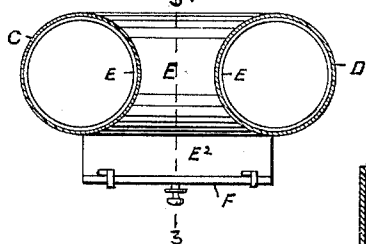


Fig. 4.

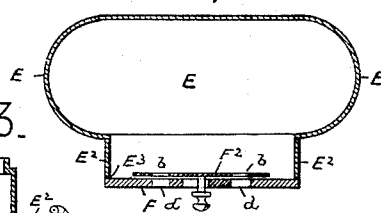
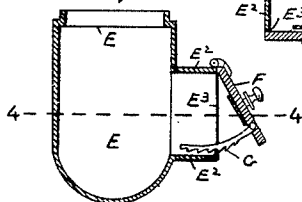


Fig. 3.



WITNESSES.

Mary H. Storer.
Marion E. Brown.

INVENTOR.

Joseph Kohler
by his Attorneys
Brown Bros.

UNITED STATES PATENT OFFICE.

JOSEPH KOHLER, OF BOSTON, MASSACHUSETTS.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 468,424, dated February 9, 1892.

Application filed July 20, 1891. Serial No. 400,151. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH KOHLER, a citizen of the United States of America, and a resident of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Hot-Air Furnaces, of which the following is a full, clear, and exact description.

This invention in hot-air furnaces particularly pertains to that portion known as an "up and down draft pipe" and which is combined and has communication with the smoke-pipe, so that having closed the damper of the smoke-pipe the products of combustion are diverted at one side of said damper into said up and down draft pipe and finally again entered at the other side of said damper into the smoke-pipe.

The invention consists in the combination, with two vertical sheet-metal pipes making the up and down sections of an up and down draft pipe, of a cast-metal or iron pipe having from end to end a semicircular bend and adapted at each of its upper ends for said sheet-metal pipes to be thereto attached and a damper-door located on one side of said pipe-bend and at its upper side hung thereto, to be opened from and closed over an opening of said bend and adapted when opened to be supported, as may be desired, by a ratchet-tongue held on it and arranged to engage the lower edge of said opening of said bend, all substantially as hereinafter described.

In the drawings forming part of this specification, Figure 1 is a perspective view of a hot-air furnace, which may be of any suitable construction, and of the combined sheet-metal and cast-iron up and down draft pipe of this invention. Fig. 2 is a horizontal section, line 2 2, Fig. 1. Fig. 3 is a vertical section, line 3 3, Fig. 2. Fig. 4 is a horizontal section, line 4 4, Fig. 3.

In the drawings, A is the smoke-pipe leading out from the combustion-chamber of a hot-air furnace, all as well known or otherwise suitably arranged. The smoke-pipe A has a damper B (shown in dotted lines) for opening and closing it, and B² is the handle

for the damper, all as well known. On opposite sides of the handle B² of the damper of smoke-pipe are sheet-metal and vertical pipes C D, which lead out from the under side of the smoke-pipe downward and at their lower ends are joined by a cast-iron pipe E, that from end to end has a semicircular bend, and it and said pipes C D constitute the up and down draft pipe of this invention for the smoke-pipe of the furnace. The cast-iron bend E has off from one side a rectangular-shaped boxing E², which is in one piece with it. This boxing E² has an opening E³, through which free and direct access can be had to the interior of cast-iron bend E to clean it out, as may be desired. F is a door for the opening E³ of said cast-iron bend E. This door F is hung on the upper edge of the boxing E² of said casing, so as to open upwardly and to secure it when it is open, and as may be desired. It has a ratchet-tongue G, which at one end is hung on the inside of the door and along its length, suitable to be engaged with the lower edge of the opening E³. By means of this door, according as it is more or less opened and if the up and down draft pipe is put into service by closing the smoke-pipe damper, a more or less checking of the draft through the up and down draft pipe can be secured. The cast-metal bend E, joining and attached to the sheet-metal pipes C D and having a draft-checking door F, all as described, obviously is most simple, efficient, and practical, and not only is it a ready means of joining the pipes, but further allows ready access to be had to clean out the bend. As a further means of regulating the draft in the up and down draft pipe, the damper-door F of said pipe is provided with a slide-damper F², having holes b to be registered either in part or in whole with or closed to corresponding holes d of the door.

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

In hot-air furnaces, the combination, with its smoke-pipe and a damper to open and close said pipe, of an up and down draft pipe com-

posed of sheet-metal pipes C D, a cast-metal
semicircular bend E, joined to one end of said
metal pipes and said pipes at their other ends
joined to said smoke-pipe and at each side of
5 its damper, and a door hung on one side of
and adapted to open and close an opening E³
of said bend, substantially as described, for
the purposes specified.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

JOSEPH KOHLER.

Witnesses:

ALBERT W. BROWN,
MARY W. STORER.