

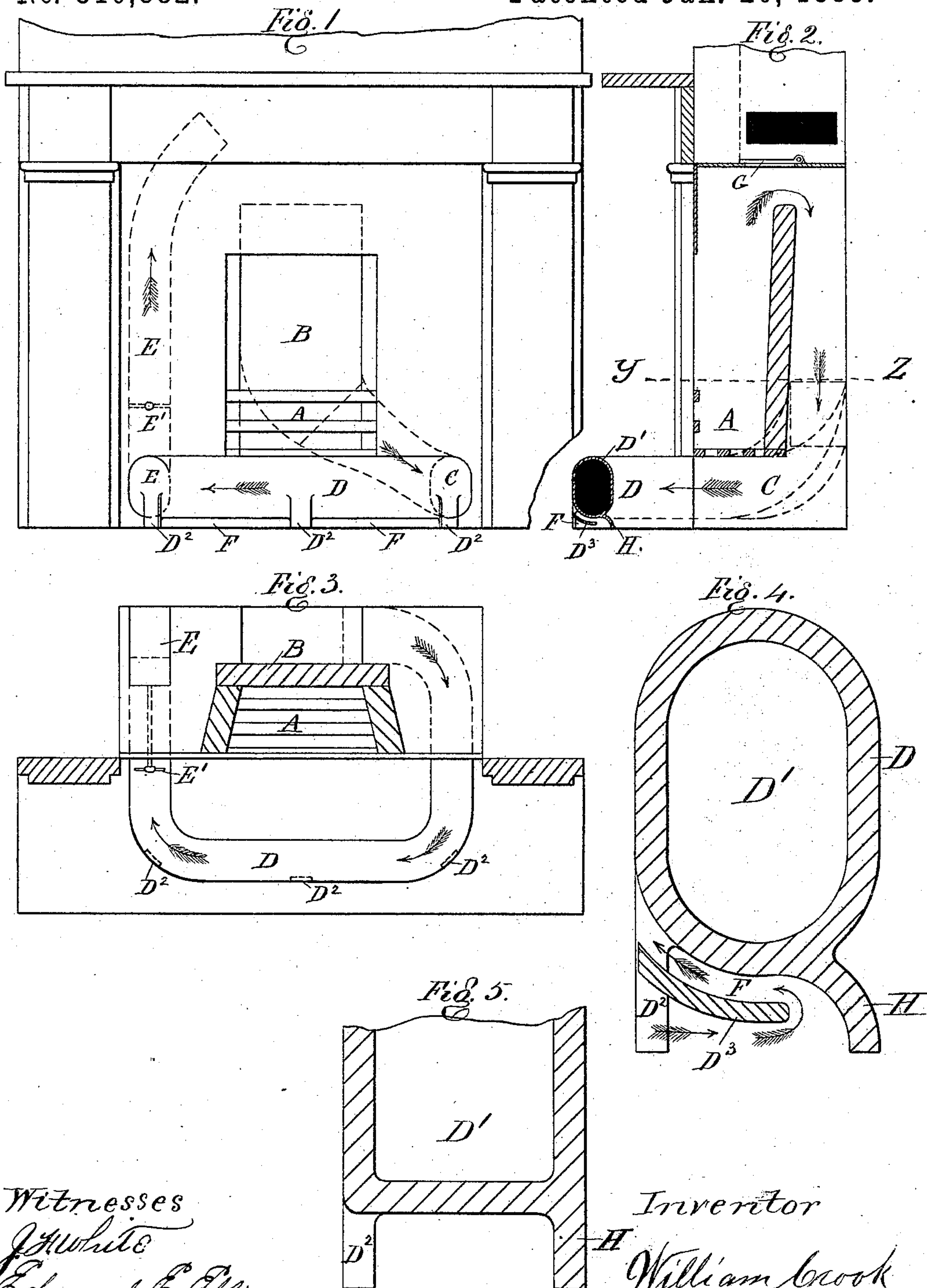
(No Model.)

2 Sheets—Sheet 1,

W. CROOK.
FIRE PLACE.

No. 310,882.

Patented Jan. 20, 1885.



Witnesses
J. White
Edward C. Ellis

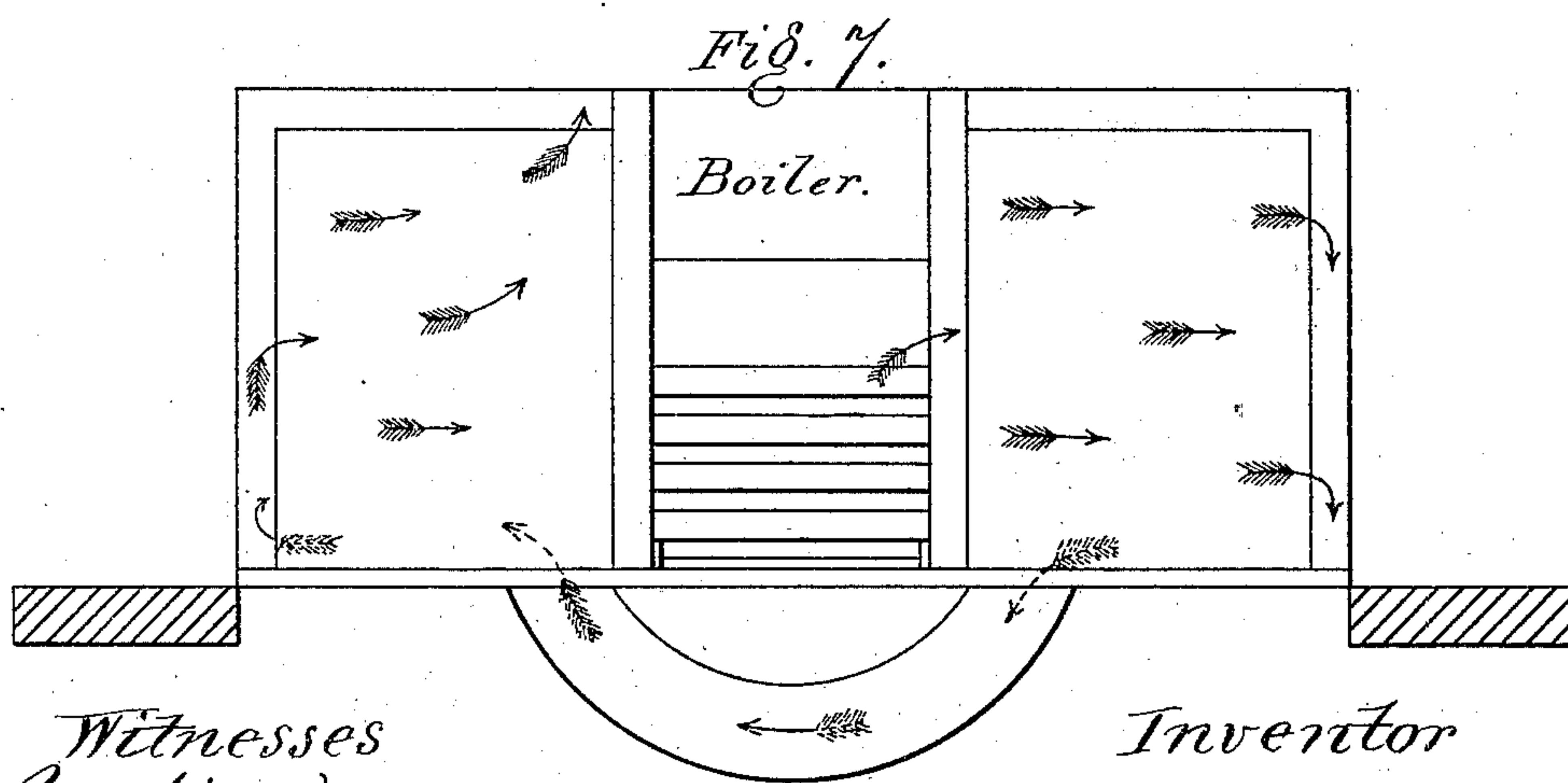
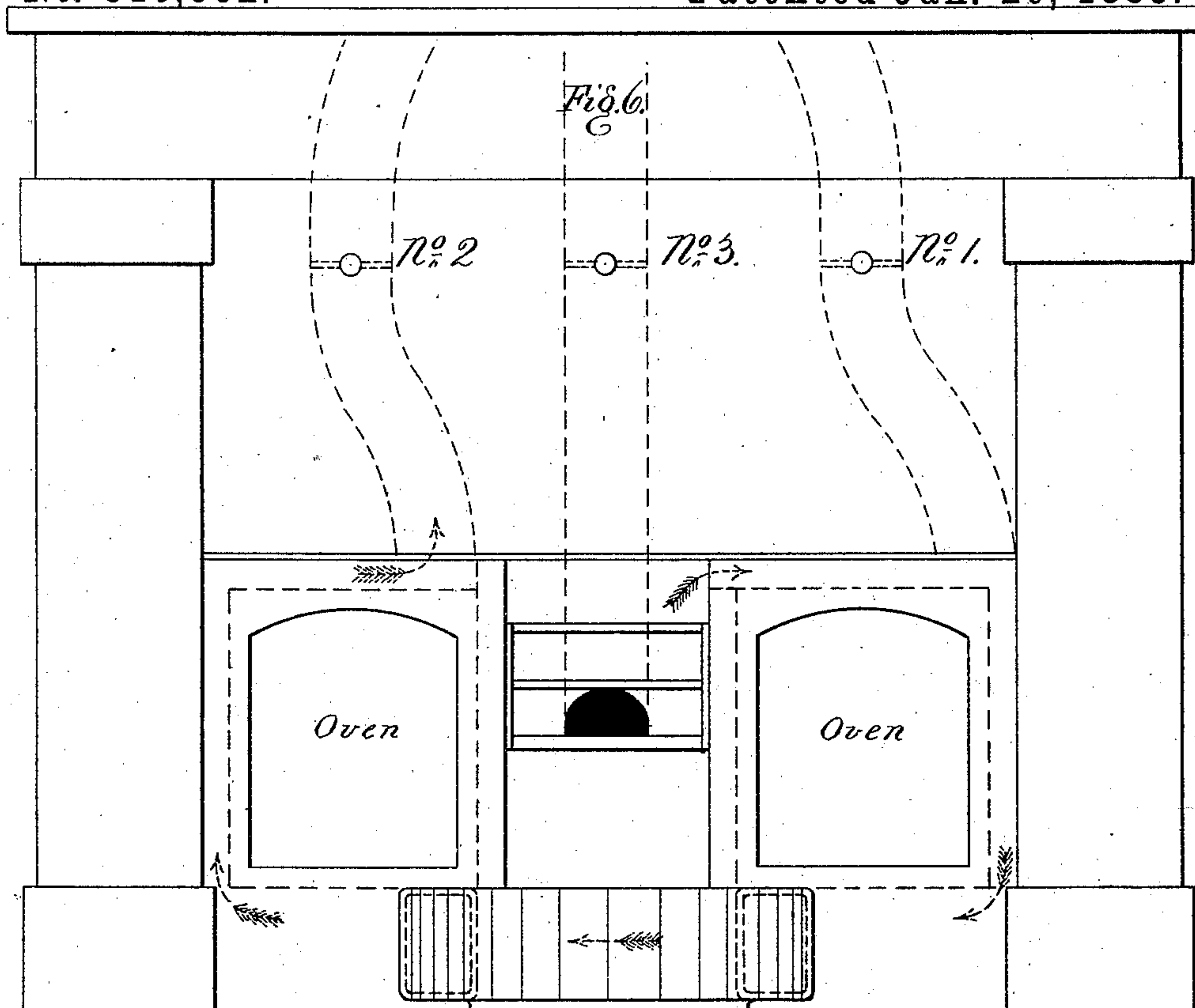
Inventor
William Crook
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UNITED STATES PATENT OFFICE.

WILLIAM CROOK, OF SALISBURY, ENGLAND.

FIRE-PLACE.

SPECIFICATION forming part of Letters Patent No. 310,882, dated January 20, 1885.

Application filed March 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CROOK, a subject of the Queen of England, residing at Salisbury, England, have invented new and useful Improvements in Fire-Places, of which the following is a specification.

This invention is designed for economy and other advantages chiefly in domestic grates, stoves, ranges, &c., although it is applicable to almost any kind of heating apparatus having a fender, and by it I am enabled to bring the heat more forward into the room, and nearer to the floor, so as to more effectually warm the feet than can be accomplished by the ordinary stoves, &c., especially when fixed in the wall of the room.

In the accompanying drawings, Figure 1 is a front elevation of an open stove embodying my invention. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a sectional plan upon line *y z*, Fig. 2, and Fig. 4 is an enlarged sectional view of fender. Fig. 5 is an alternative arrangement of the same. Fig. 6 shows the application to a kitchener or close range, and Fig. 7 is a sectional plan of same.

A is the fire place or grate; B, the lining, of fire-clay or equivalent; C, the flue, which extends from the top of the lining B downwardly behind it, coming out in front at or near the floor-level, and to one side of the grate A.

In the drawings, the grate A is shown raised from the floor-level, but it can be placed lower down, if desired. D is the fender, plain or ornamental, which is hollow, so as to form the flue D'. This is connected in any suitable manner with the flue C at one end, its other end being similarly connected with the rising flue E at the other side of the grate, as is clearly shown in the drawings. The flue E is carried upward, as shown, and has its exit into the ordinary chimney. It is provided with a damper, E', so that the draft can be regulated from the front. The arrows show the direction which the products of combustion take. The fender D is, by preference, formed as shown in section in Fig. 4, so as to have the open space F closed by the back H immediately above the floor, into which the cold air

which is being drawn toward the fire will rush, driving out the air which has previously entered and become heated, thus providing a barrier of heated air, which rises up in front of the fire and tends to check the supply of cold air to the fire, and to make the combustion slower, and therefore to economize the consumption of fuel. The combustion may be further regulated by means of the damper E'. Feet D² are provided, if desired, and to facilitate the circulation of air through the space F a diaphragm, D³, can, if desired, be employed. In cheap fenders, however, the space F may be dispensed with, and in any case the use of the diaphragm D³ is optional. The ordinary register or lid, G, may be used, so as to enable the chimney to be easily swept in the usual manner, and the fender D should be movable, so that it can easily be removed and the flue D' cleaned at any time with an ordinary flue-brush. When the fender is removed, the flues C and E can be easily cleaned with a flue-brush at the same time. The fender D is by preference placed as low down as possible, so as to serve for warming people's feet, and also for warming the air of the room as low down as may be.

I do not bind myself in the matter of materials, but for common purposes cast-iron is perhaps as good and cheap as anything for the fender.

The application to kitchen or close ranges is clearly shown in Figs. 6 and 7, the arrows indicating the course taken by the products of combustion from the fire, round one oven, through the fender-flue, and round the other oven to the chimney. The damper No. 2 would stop the heat off the second oven and fender-flue, the damper No. 1 being drawn if the first oven only required heating. The boiler-damper No. 3 serves the usual purpose and is used in the usual manner.

The fender-flue may be utilized for heating plates and dishes and the like, or as a supplementary hot plate.

Having now described my invention and the method of carrying it into effect, I claim—

1. The combination, with an open or closed stove or range, of a flue located to the rear

thereof, and extending out to the front at the bottom, the hollow fender connecting therewith, having deflector H and diaphragm D³, and the flue E, for carrying off the products of combustion, substantially as described.

5 2. The combination, with the hollow fender having the back or deflector H, of the dia-

phragm D³, forming a space, whereby the circulation of air to the fire is facilitated, substantially as and in the manner described.

WILLIAM CROOK.

Witnesses:

ALFRED J. BOULT,
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