

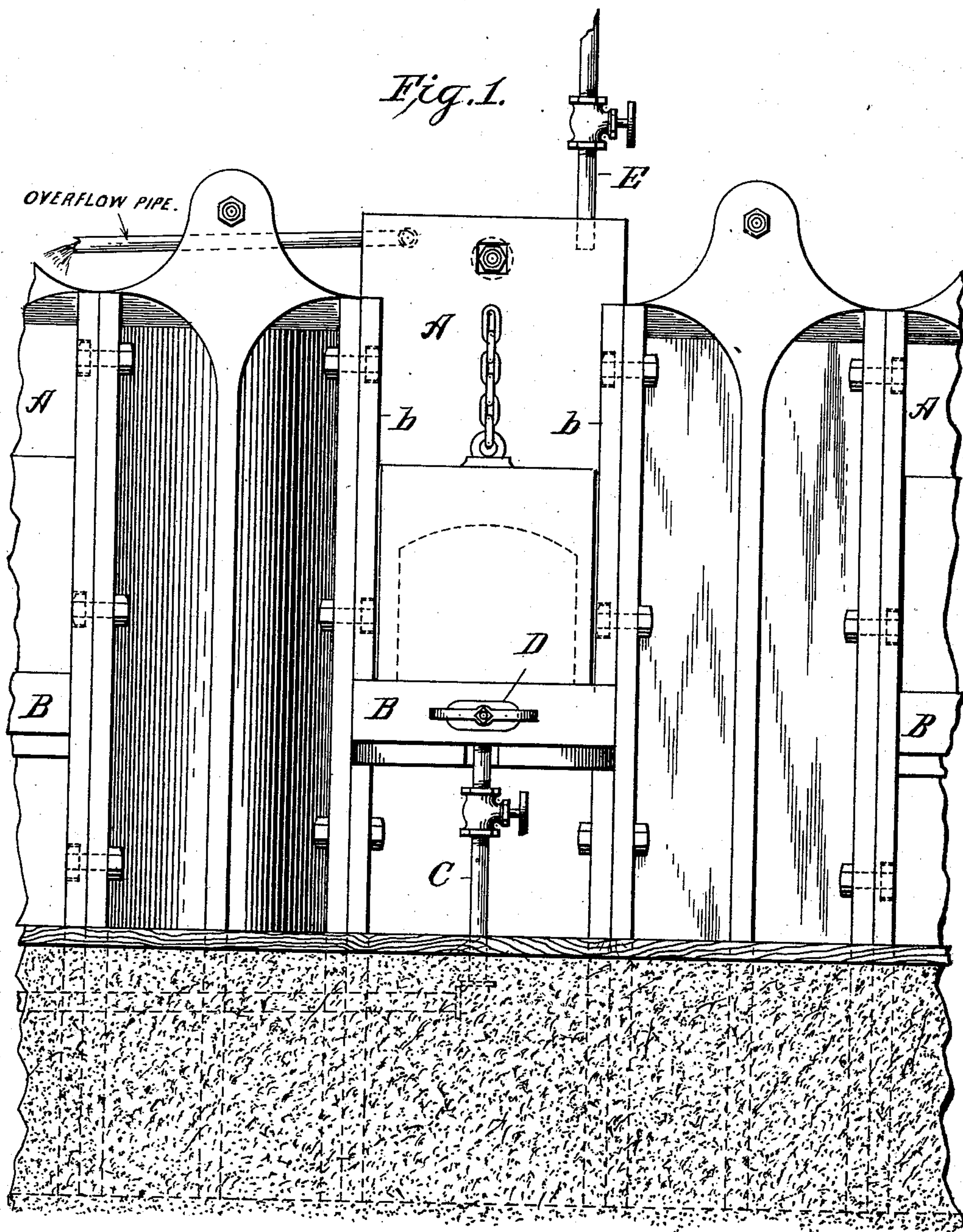
(No Model.)

2 Sheets—Sheet 1.

B. G. ROSS & J. T. JOHNSON.
FURNACE DOOR FRAME.

No. 578,363.

Patented Mar. 9, 1897.



Witnesses:

Boyd E. Warner.
T. Jeff. Duncan.

Inventor's.
Byers G. Ross & John T. Johnson.
By *Mark M. Decker*
Attorney

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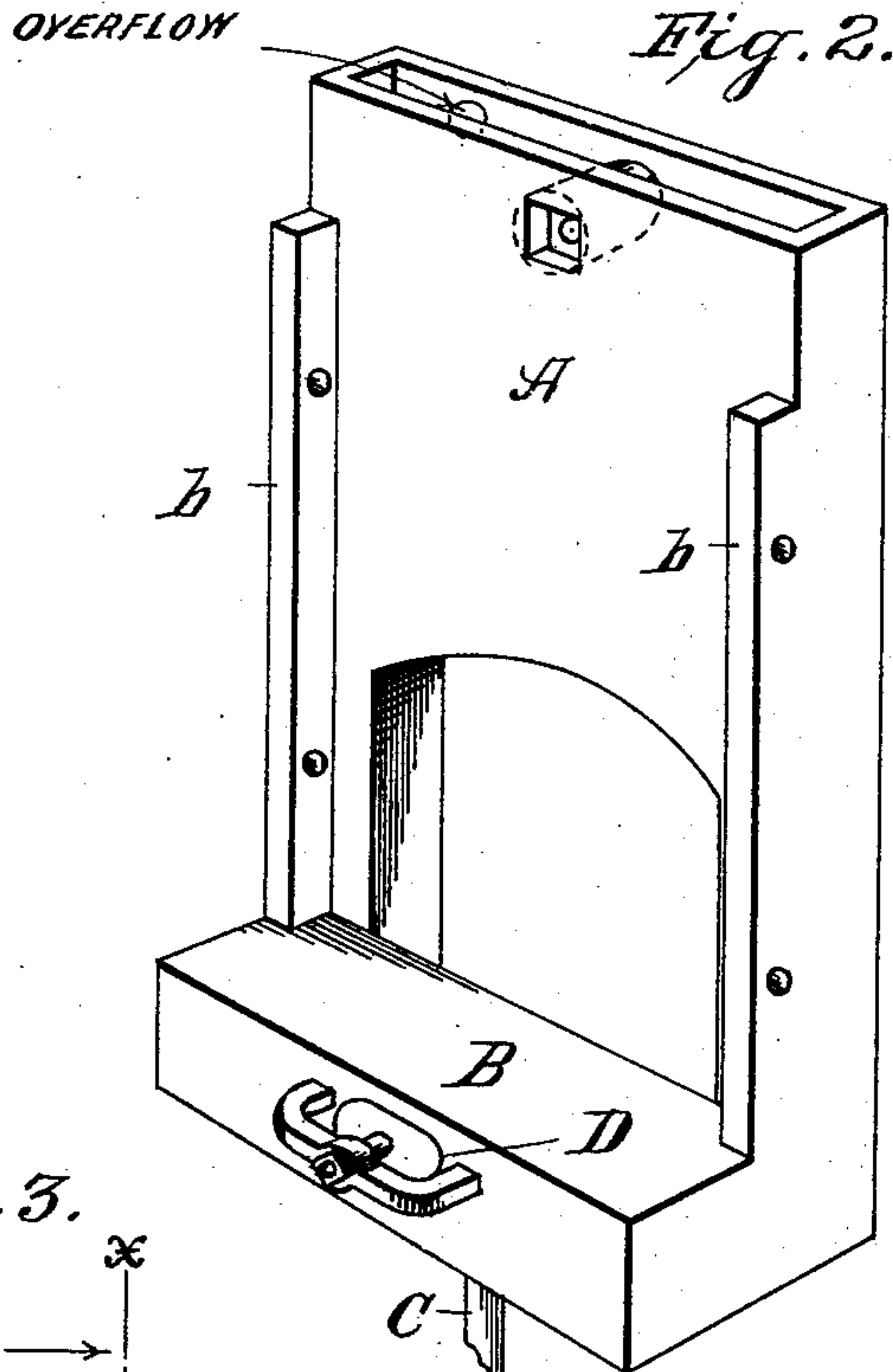
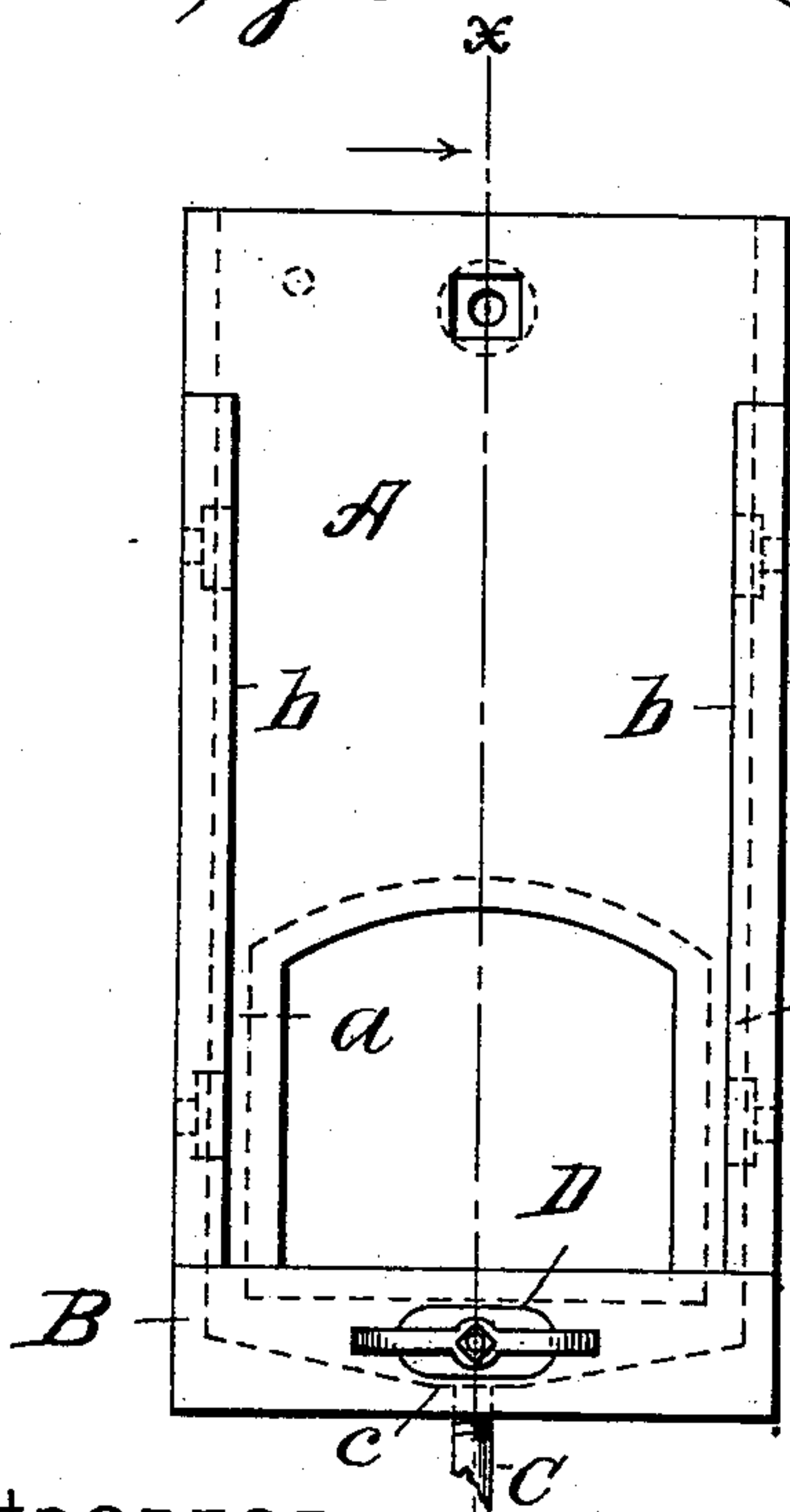


Fig. 3.



Witnesses:

Boyd E. Warne,
D. J. Duncan

Fig. 5.

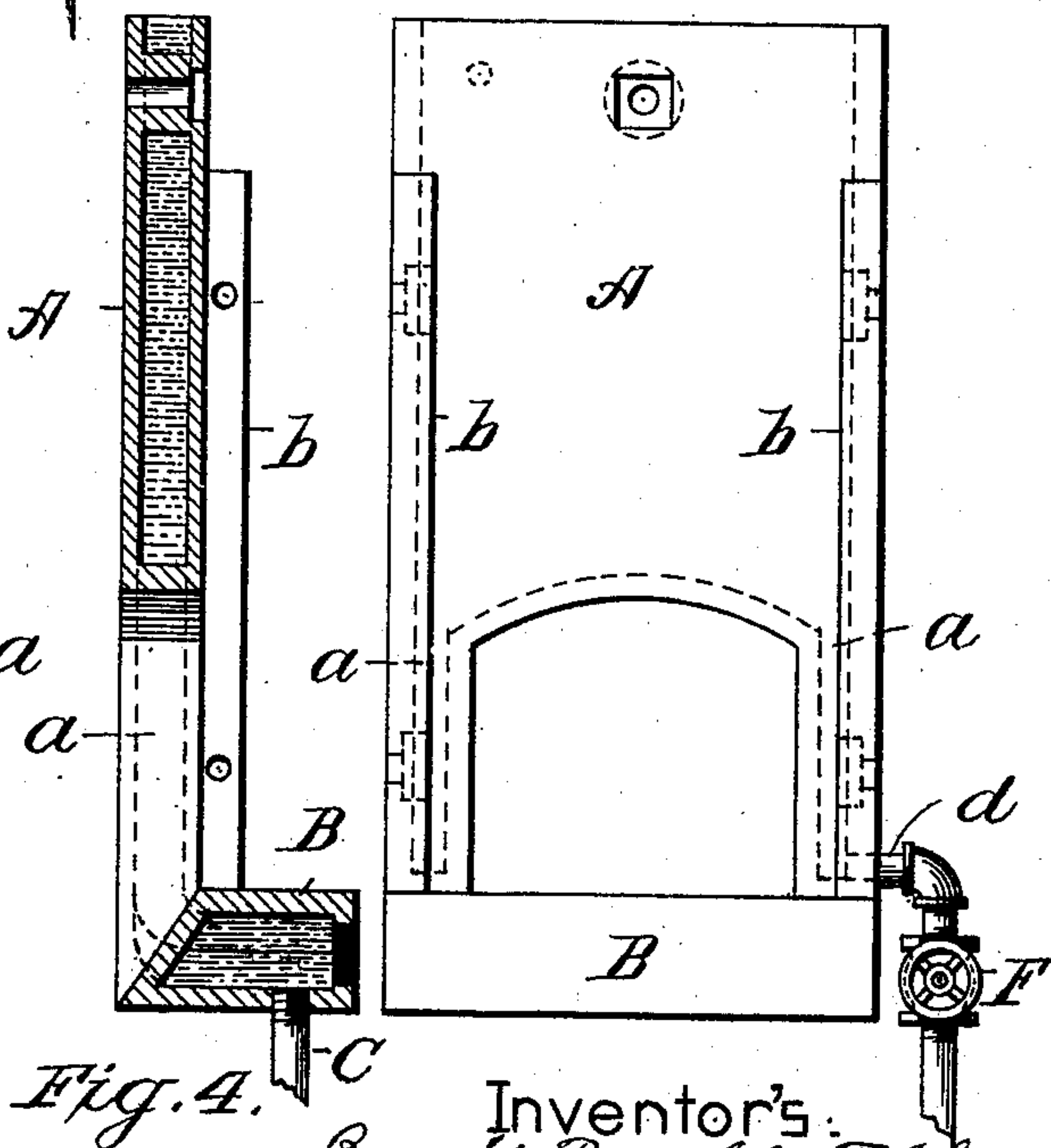


Fig. 4.

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UNITED STATES PATENT OFFICE.

BYERS G. ROSS AND JOHN T. JOHNSON, OF WASHINGTON, PENNSYLVANIA.

FURNACE-DOOR FRAME.

SPECIFICATION forming part of Letters Patent No. 578,363, dated March 9, 1897.

Application filed November 25, 1896. Serial No. 613,396. (No model.)

To all whom it may concern:

Be it known that we, BYERS G. ROSS and JOHN T. JOHNSON, citizens of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented a new and useful Improvement in Furnace-Door Frames; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in furnace-door frames such as are used in heating, puddling, blast, annealing, and other similar furnaces.

The object of our invention is to provide a furnace-door frame which will prevent to a greater extent its being burned, thus rendering it more durable and economical inasmuch as there will be a great saving in castings, brickwork, and time employed in changing furnace-fronts.

Our invention consists in a furnace-door frame the interior of which is hollow, forming a receptacle for containing water, a further description of which will appear hereinafter, reference being had to the accompanying drawings, in which similar letters indicate corresponding parts in the several figures.

Figure 1 is a front elevation of a heating-furnace, showing our improved door-frame applied. Fig. 2 is a perspective view of our frame detached. Fig. 3 is a front elevation of the same. Fig. 4 is a vertical sectional view taken on line *x x* of Fig. 3, and Fig. 5 is a front elevation showing a modified form of our invention.

A indicates the upper portion of our frame, and B the sill or lower portion.

The upper portion A is of the usual construction down within a point near the door-sill B, being provided with flanges *b* for bolting or otherwise securing it to the furnace-frame proper. The lower portion B is where our improvement exists, being cast integral with or otherwise secured to the upper portion A. The upper portion A and the lower portion B are hollow, forming a receptacle for containing water, and are connected with each other by passages *a*, which provide for

a continuous circulation of said water, thus keeping the entire frame in a comparatively cool state or condition, preventing to a greater extent the frame from being burned by the intense heat of the furnace.

The receptacle in the lower portion B slopes to the center *c*, the purpose of which is to carry any sediment which may form or collect in the receptacles or passages to the exhaust or waste pipe C.

A hand-hole D, as shown in Figs. 1, 2, and 3, is provided for the purpose of cleaning the lower receptacle in case any of the sediment might become burned fast thereto.

The door-frame proper is kept supplied with water from a pipe E, which leads from the main overhead supply-pipe usually used in and about furnaces of this nature. (Not shown.)

The modification shown in Fig. 5 is the means we employ for causing a continuous circulation of the water in the ordinary furnace-door frames now in use, and consists in tapping or drilling the side of the frame at or near the bottom of the leg and screwing a pipe *d*, having a valve F for regulating the flow or discharge of the exhaust-water.

By the use of our improved frame the work of the heater and his helpers is greatly facilitated and a better protection is afforded to the brickwork of the furnace.

Having described our invention, what we claim is—

A furnace-door frame, consisting of an upper and lower portion each provided with receptacles for containing water, and connected with each other by passage-ways permitting of a continuous circulation of the water, said lower receptacle being formed with a bottom sloped toward the center for carrying off any sediment which might form or collect in said receptacle, an outlet at or near the bottom for discharging the superfluous or heated water and a hand-hole for cleaning said receptacle, substantially as shown and described.

BYERS G. ROSS.
JOHN T. JOHNSON.

Witnesses:

BOYD E. WARNE,
T. JEFF. DUNCAN.