

(No Model.)

J. J. RICHARDSON.
HEATING FURNACE.

No. 270,698.

Patented Jan. 16, 1883.

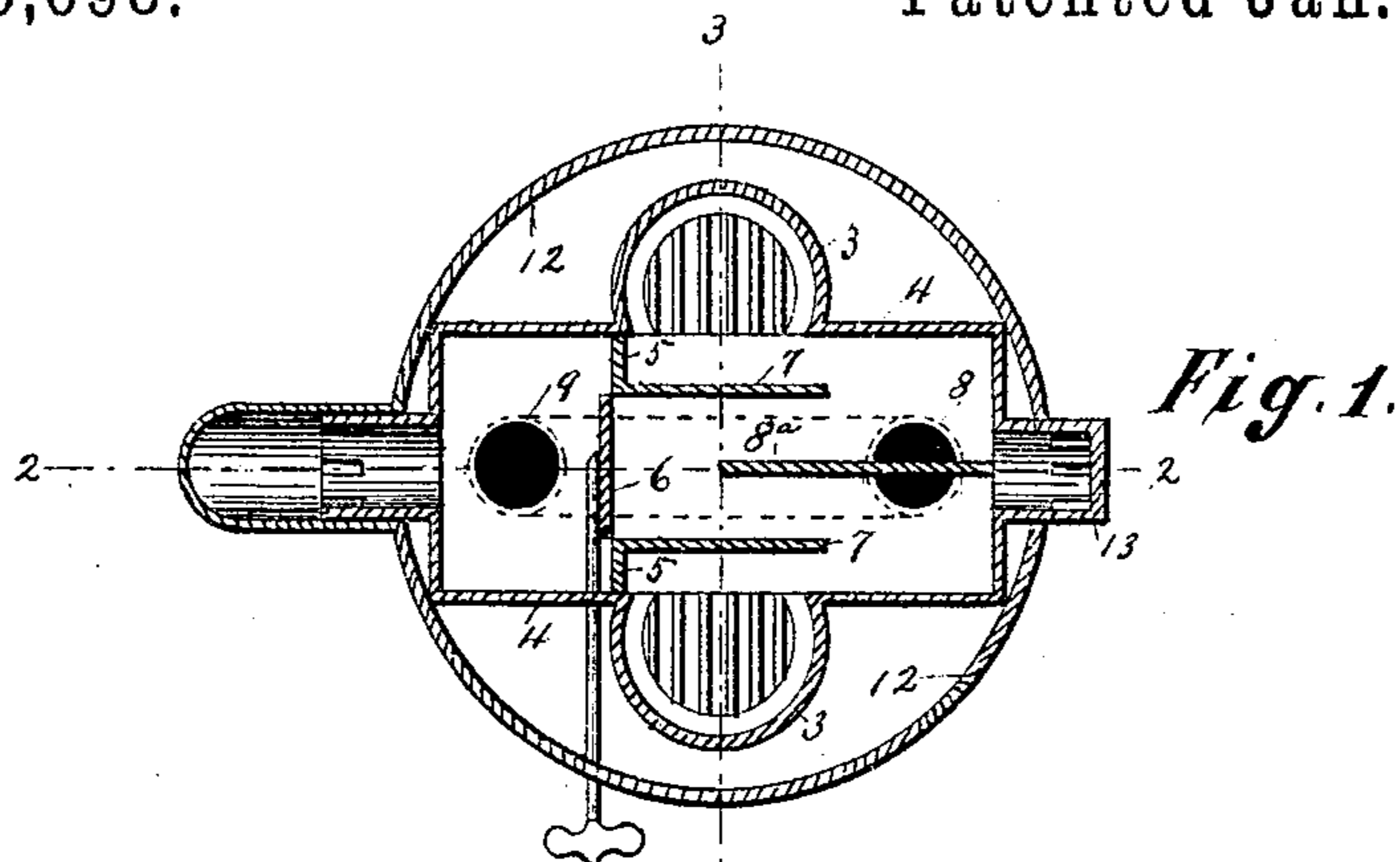


Fig. 1.

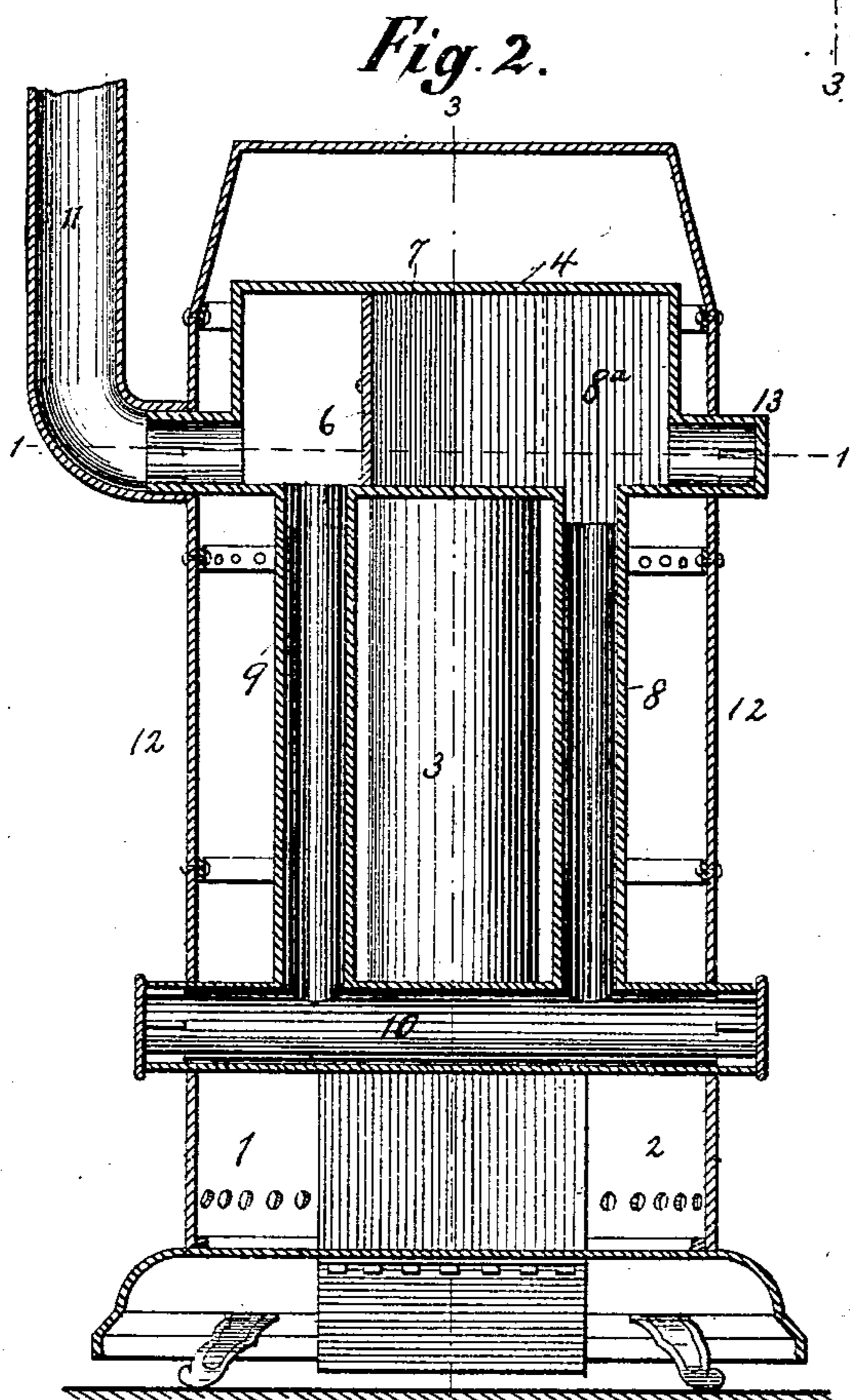


Fig. 2.

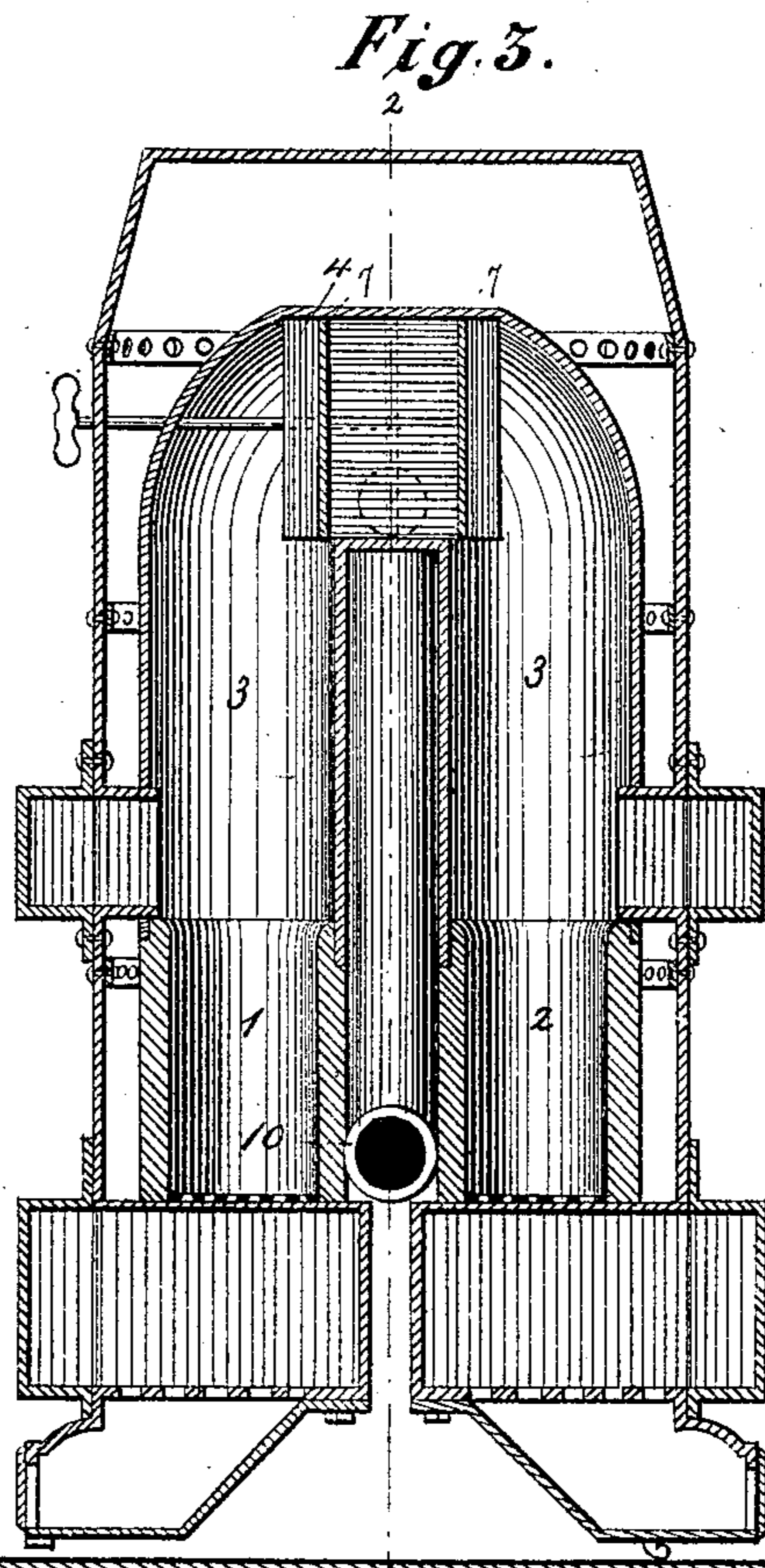


Fig. 3.

Witnesses:

Chas. J. Baur
Charles Buckley

Inventor:

Jeremiah J. Richardson
By Wright Bros
Atty.

UNITED STATES PATENT OFFICE.

JEREMIAH J. RICHARDSON, OF BROOKLYN, NEW YORK.

HEATING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 270,698, dated January 16, 1883.

Application filed November 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH J. RICHARDSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Heating-Furnaces, of which the following is a specification.

My invention relates to a double furnace having separate fire-chambers with a drum common to both, and one or more transverse division-plates inside the drum, serving to deflect the products of combustion from both furnaces into the descending radiating-flues, or to allow the direct communication with the discharge-flue under the control of a suitable damper.

In Letters Patent No. 264,565, granted to me on the 19th day of September, 1882, I described a radiating-drum in a transverse position relative to the fire-chambers, and a partition-plate extending the entire length of the radiating-drum, directly over the center of the downwardly-extending draft or discharge flues, one of which is provided with a damper and communicates with a flue leading to the chimney.

The present improvement consists in placing in the radiating-drum, between the openings of the fire-chambers and the discharge-flue, a transverse division-plate provided with a suitable damper, and also in placing the smoke or discharge flue in the drum. By closing the damper in the division-plate the products of combustion which ascend through the flues leading from the fire-chambers into the drum are deflected downwardly into the descending radiating-flues, from thence returned into the drum on the opposite side of the division-plate and out at the discharge or smoke flue. By arranging the parts in the manner stated a radiating-drum of greater capacity than in the former patent is obtained, and the construction is also simplified.

In the accompanying drawings, Figure 1 is a horizontal section on the line 1 1, Figs. 2 and 3, the drum being horizontal. Fig. 2 is a vertical section on the line 2 2, Figs. 1 and 3. Fig. 3 is a vertical section on the line 3 3, Figs. 1 and 2.

The furnaces or fire-chambers are shown at 1 and 2 with flues 3 3 leading from the respective fire-chambers and communicating with a drum, which latter is divided transversely into two chambers by a division-plate, 5, which is situated between the flues 3 3 and the radiat-

ing-flue 9, and is provided with a damper, 6, and vertical deflecting-plates 7 7.

8 and 9 are vertical flue-pipes, opening out of the drum 4, and, passing down between the furnaces 1 and 2, are connected at the bottom by a horizontal flue, 10. The radiating-flue 8 has, directly over the center of its opening in the drum, a vertical partition-plate, 8^a, which extends from the side of the drum to midway between the deflecting-plates 7 7.

11 is the discharge or smoke flue, leading to the chimney.

The furnace-casing is shown at 12. Pipe 13, extending through the casing, gives access to the interior of the drum for cleaning, the end of said pipe being covered by a customary cap or door.

The principle of operation is as follows: Products of combustion generated in the chambers 1 and 2 ascend through the flues 3 3 into the drum 4, and are deflected (the damper 6 being closed) by the division-plate 5 and deflecting-plates 7 7 on each side of the partition-plate 8^a into the flues 8, 10, and 9, and thus returned to the drum 4, finding its exit out at the discharge or smoke flue 11.

By this device a continuous radiation is obtained through the pipes or flues 8 9 10 and both ends of drum 4, whereas in my former patent, No. 264,565, the discharge or smoke flue is situated in the flue 9 and regulated by a damper directly above it:

By opening the damper 6 a direct communication between the flues 3 3 and the discharge or smoke flue 11 is obtained.

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

1. In a heating-furnace, the combination of the radiating-drum 4, having drum-flues 8 9 opening into the same, bottom connecting-flue 10, the fire-chambers 1 2, flues 3 3, communicating with the latter and with the radiating-drum 4, with the transverse division or partition plate 5 and its damper 6, situated between the openings of the flues 3 3, and the drop-flue 9 and the discharge or smoke flue 11.

2. The combination, with the drum 4, flues 3 3, and division-plate 5, of the vertical deflecting-plates 7 7 and partition-plate 8^a, substantially as and for the purpose set forth.

Witnesses: JEREMIAH J. RICHARDSON.
CHARLES B. BOYNTON,
L. H. BRONSON.