

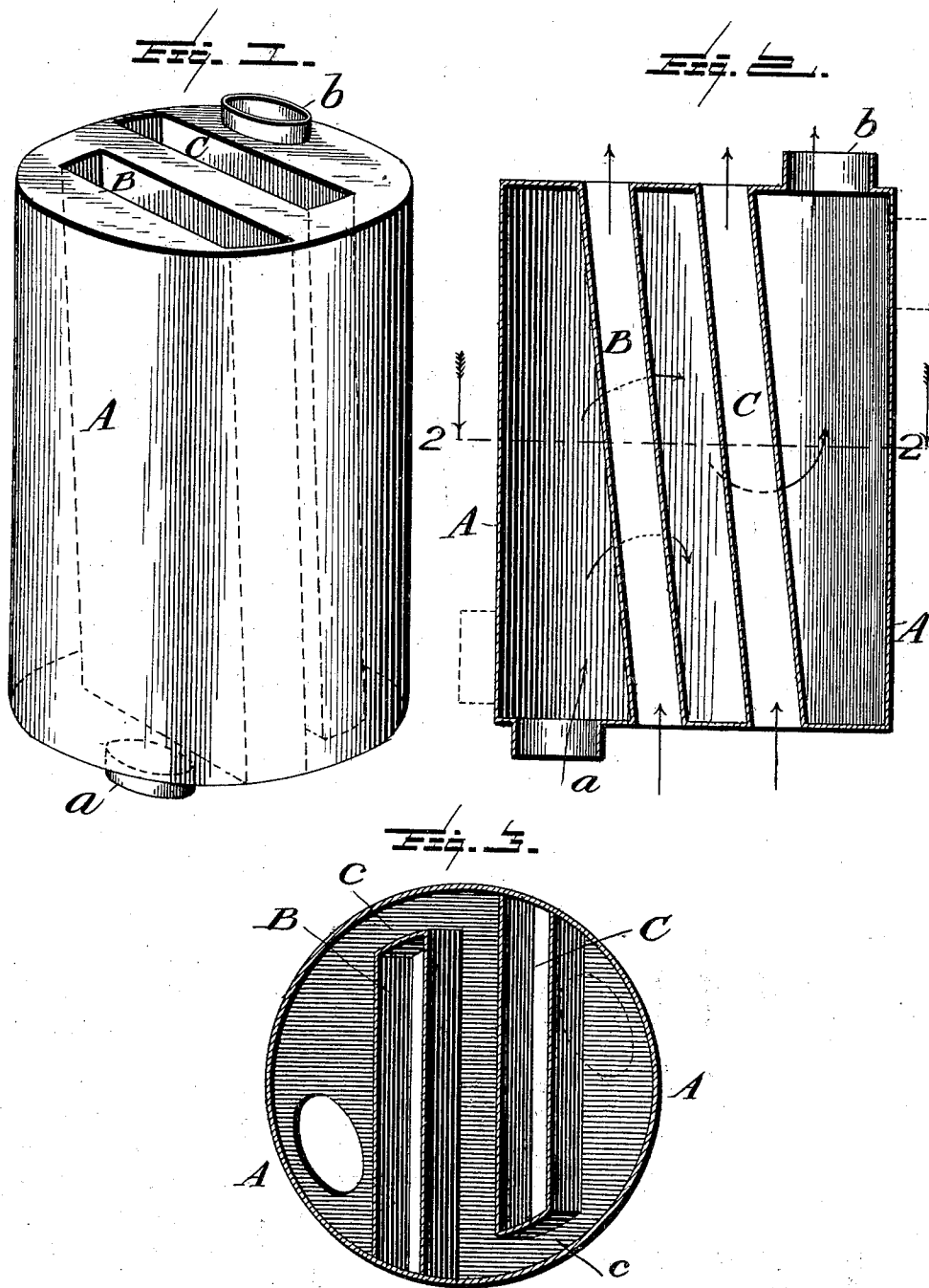
No. 668,332.

Patented Feb. 19, 1901.

A. JOHNSTON.
HEATING DRUM.

(Application filed Oct. 24, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

ABNER JOHNSTON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
GEORGE R. JOHNSTON, OF SAME PLACE.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 668,332, dated February 19, 1901.

Application filed October 24, 1900. Serial No. 34,151. (No model.)

To all whom it may concern:

Be it known that I, ABNER JOHNSTON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Heating-Drums; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has reference to that class of heating-drums adapted for connection with a stove, furnace, or other heat-generating device for utilizing the escaping products of combustion as a medium for heating the air as it passes through the flues of the drum.

It is the object of the invention to provide a drum with air-flues of such form and so disposed on an incline that the greatest possible heating-surface will be presented to the air as it passes up and out of the flues into the room to be heated, thereby materially facilitating the heating of the escaping air and furnishing a heating-drum of superior construction and effectiveness.

The invention consists in a heating-drum constructed substantially as shown in the drawings and hereinafter described and claimed.

Figure 1 of the drawings is a perspective view of a heating-drum constructed in accordance with my invention; Fig. 2, a central vertical section showing in dotted lines where the pipes or other conduits for the passage of the products are connected; Fig. 3, a horizontal section taken on line 3 3 of Fig. 2 looking in the direction of the arrows.

In the accompanying drawings, A represents the drum, of any suitable length and diameter and provided at its bottom and top with openings having collars *a b* for connecting thereto in any preferred manner the pipes or tubes for conducting off the products of combustion from the stove or other heat-generating device.

I do not wish to be understood as limiting my invention to any particular means of connecting the drum with the pipes or other conduits of the heat-generating device, as the same may be connected to the sides of the drum instead of at the bottom and top, as shown in Fig. 2 of the drawings.

The air-flues B C are flat or straight sided, extending across the drum, as shown in Fig. 1 and 3 of the drawings, and disposed on an incline, as indicated in Fig. 2 of the drawings.

Having the air-flues B C flat-sided increases the area of the heating-surface without the necessity of a multiplication of tubes, the forms of the flues herein shown being rectangular in cross-section and of such width as to allow a space *c* between it and the wall of the drum for the products of combustion to circulate around the flues to heat the air as it passes up the same. The flues are disposed on an incline, as shown in Fig. 2 of the drawings, thereby gaining a greater length of flue and again increasing the area of heating-surface, the essential feature of the invention being to obtain as great an area of heating-surface with the least number of flues, and thereby materially simplifying the construction of the heating-drum and enabling it to be manufactured at a greatly-reduced cost, besides rendering its effectiveness in heating the escaping air more effective. It will be noticed that the flues are so disposed with relation to each other that the spaces *c* for the passage of the products of combustion are at the opposite sides of the drum, as shown in Fig. 3 of the drawings, thereby allowing passage of a perfect circulation of the heating product around the flues, and thereby more quickly and satisfactorily heating the air passing through the same.

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

A heating-drum and rectangular or flat-sided air-flues therefor, said flues being disposed on an incline and only partly across the drum to form passages for the circulation of the products of combustion at the opposite sides of the drum and around the flues, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ABNER JOHNSTON.

Witnesses:

JAMES L. MCEWEN,
C. W. LIND.