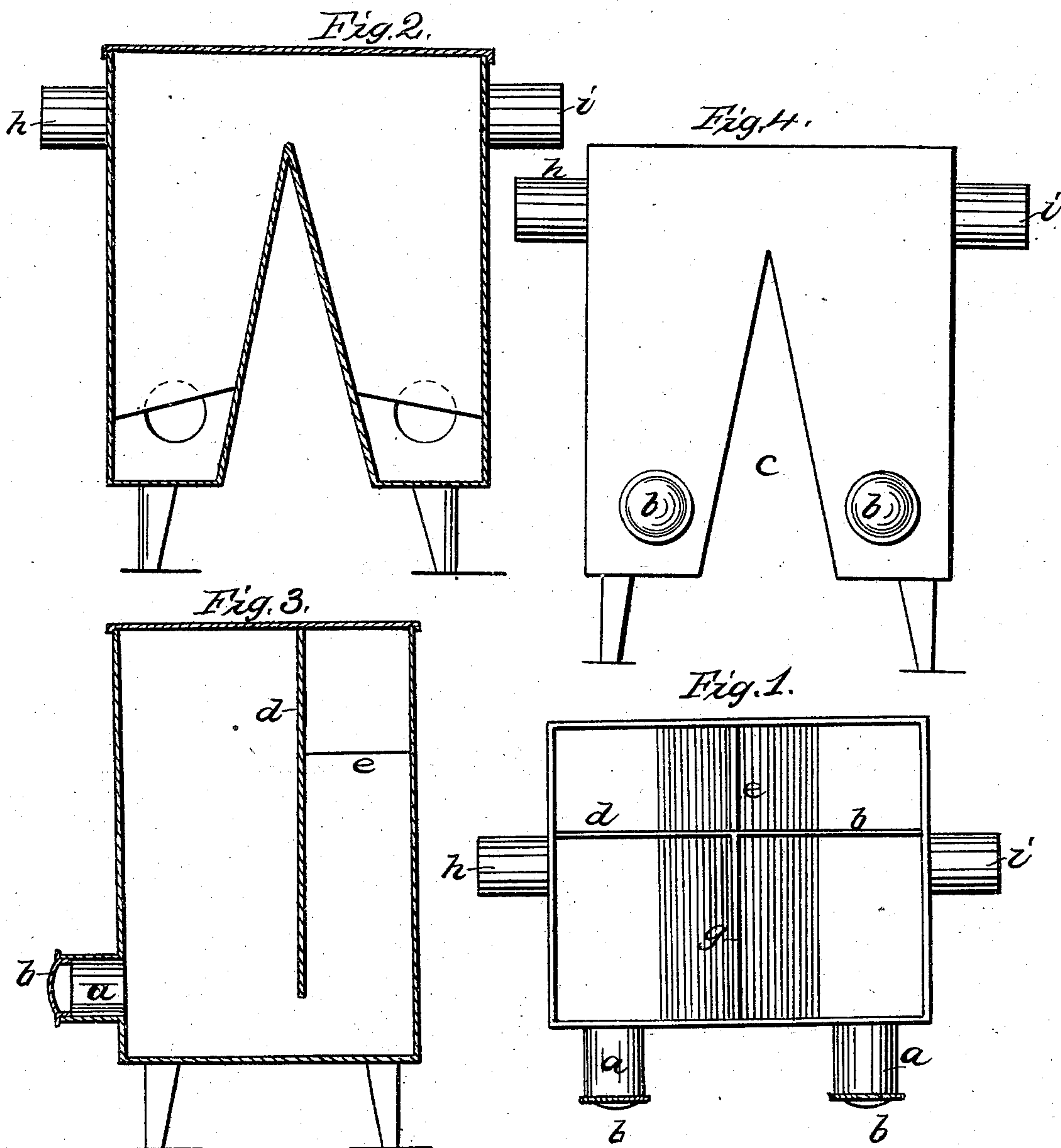


W. STEFFE.
Heating Drum.

No. 80,883.

Patented Aug. 11, 1868.



Witnesses,
Lewis Goodrich
C. M. Taylor

Inventor
William Steffe

United States Patent Office.

WILLIAM STEFFE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JESSE REYNOLDS, OF SAME PLACE.

Letters Patent No. 80,883, dated August 11, 1868.

IMPROVEMENT IN RADIATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM STEFFE, of the city of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Drums or Radiators for Air-Heaters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters and marks thereon, which said drawings form part of this specification, and show a drum or radiator constructed under my invention—

Figure 1 being a top view of the drum, with the cap or top plate removed,

Figure 2 being a side view, with one of the side plates removed,

Figure 3 being a view by transverse section, and

Figure 4 being a side view, showing the pipes or openings into the interior of the drum.

In each of these figures, where like parts are shown, like marks and figures are used to indicate the parts.

My invention relates to that class of drums or radiators which are used in the air-chambers of heaters, and through which the products of combustion pass, and by which the heat of the air in the air-chamber is increased.

As now generally made, these drums have to be removed from the chamber, to be cleaned, at least once a year, and, when bituminous coal is used as the fuel, much oftener. If this is not done the drums will rust out. The operation of removal and cleaning is an expensive one, as only those most skilled in the work can do it properly. My invention is intended to overcome the objections existing against these kinds of drums.

First. My drum is made of heavy plate or wrought iron, well riveted together, to prevent, by expansion or contraction, the opening of the seams, which would emit gas or smoke.

Second. My drums are intended to be permanent fixtures in the air-chamber, attached permanently to the heater itself.

Third. They are provided with one or more flues, openings, or pipes, *a*, which have tight doors or covers, *b*, the pipes or covers passing through the brick wall, and giving access for thorough cleaning, without removing the drum or radiator from the chamber, or in any manner disturbing it. This can be done by any person of ordinary knowledge, as often as may be required, no skill being necessary to do the work.

Fourth. The drums are made with a V or A-shaped space, *c*, or bifurcated, in order to give the greatest amount of surface to be acted on by the cold air left in the chamber to be warmed, or for increasing the radiating surface.

Fifth. The drums are partitioned or divided off interiorly, to cause the products of combustion to impinge on the largest amount of surface in passing to the flue. The plates *d e f g*, forming these partitions, are so arranged in relation to the ingress, *h*, and egress, *i*, pipes, that the air has first a downward track; then upward, then downward, and then again upward for exit, as indicated by figs. 1, 2, and 3 of the drawings.

Sixth. The doors or covers, *b*, on the outside of the chamber, may be used to check the draught of the heater by opening them for the admission of external air, thus checking the draught, and not materially changing the temperature of the heated air in the chamber, on account of the products of combustion passing away from the heater slowly.

What I claim as my invention, and desire to secure by Letters Patent, is—

A permanent wrought-iron drum or radiator, constructed substantially as herein specified.

This specification signed, this 10th day of July, 1868.

WILLIAM STEFFE.

Witnesses:

LEWIS GODLOVE,

G. W. TAYLOR.