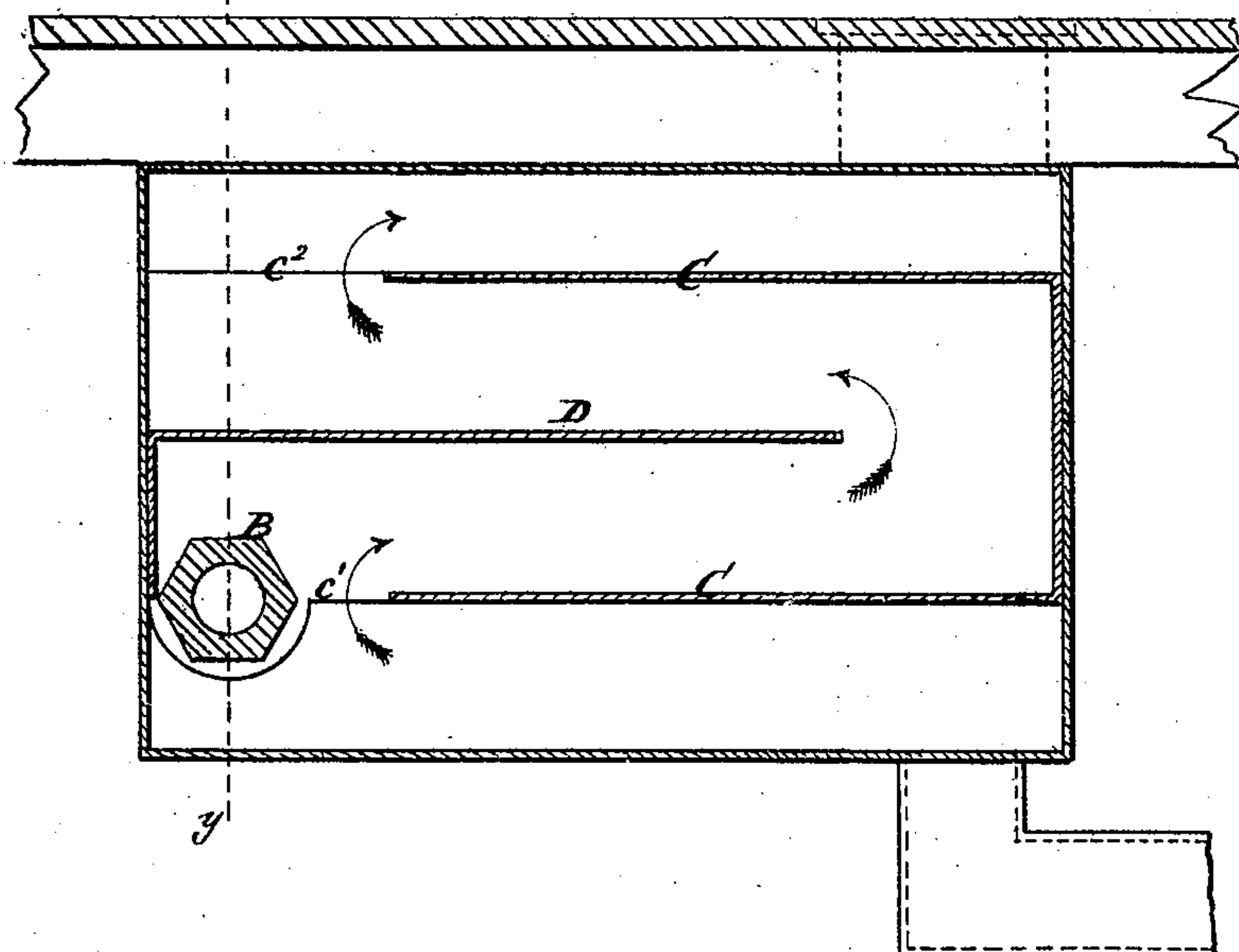


J. J. SMITH & S. R. WOOD.  
Steam-Heater.

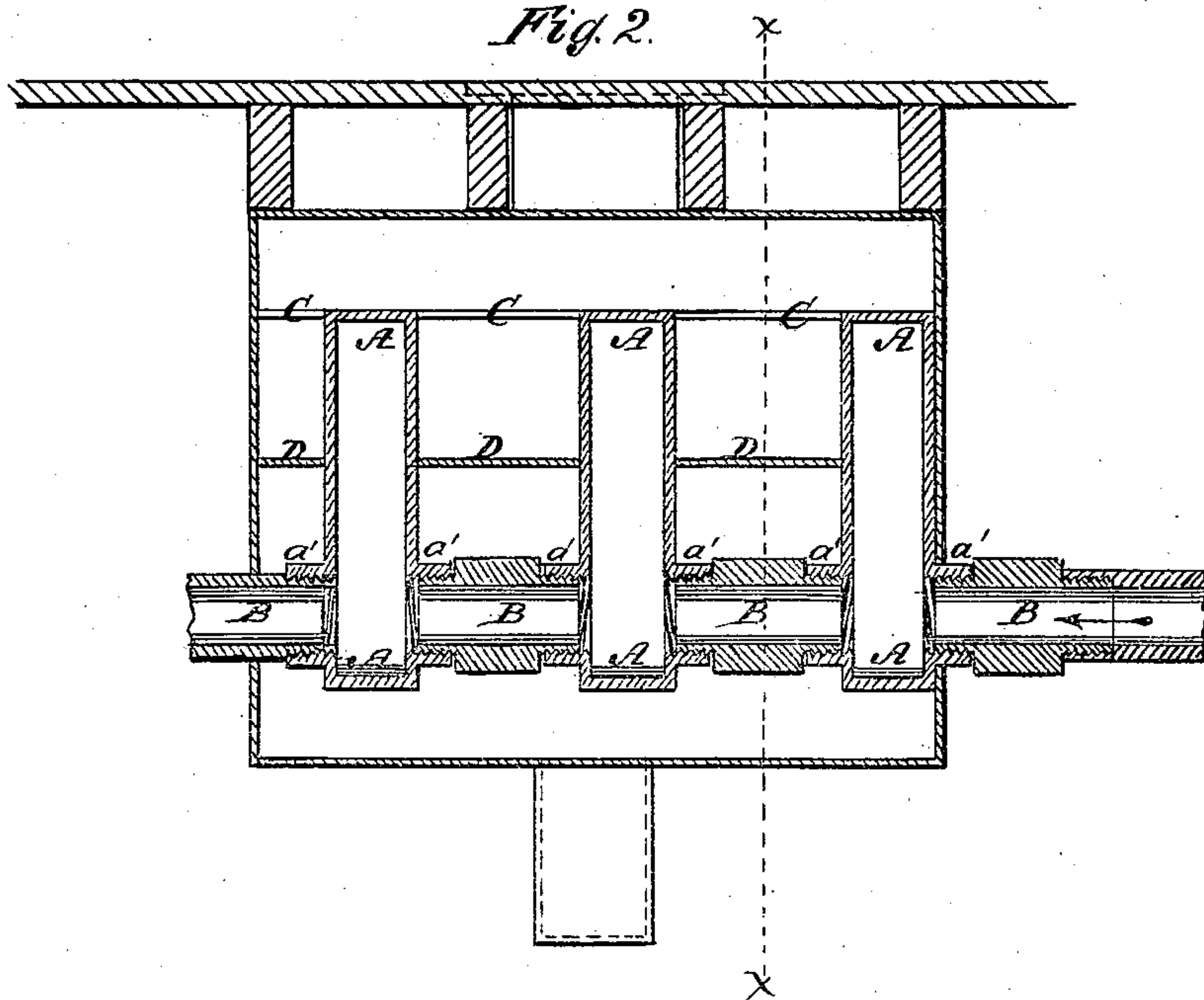
No. 132,418.

Patented Oct. 22, 1872.

*Fig. 1.*



*Fig. 2.*



Witnesses:

*E. Wolff.*  
*C. Sedgwick.*

Inventor:

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PER

# UNITED STATES PATENT OFFICE.

JAMES J. SMITH AND SAMUEL R. WOOD, OF CLEVELAND, OHIO.

## IMPROVEMENT IN STEAM-HEATERS.

Specification forming part of Letters Patent No. 132,418, dated October 22, 1872.

*To all whom it may concern:*

Be it known that we, JAMES J. SMITH and SAMUEL R. WOOD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Steam-Heaters, of which the following is a specification:

Figure 1 is a detail vertical longitudinal section of our improved heater taken through the line *x x*, Fig. 2. Fig. 2 is a detail vertical cross-section of the same taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

Our invention has for its object to improve the construction of steam-heaters, so that they may more effectually warm the air before it is discharged into the room, and which shall at the same time be simple in construction and inexpensive in manufacture; and it consists in the construction and combination of the various parts of the heater, as hereinafter more fully described.

A are rectangular cast-iron boxes, into which the steam is introduced, and by contact with which the air is heated. In the lower part of the opposite sides of the boxes A, near one end, are formed holes, in which are inserted short pipes *a'* having a screw-thread cut in their inner surfaces. Any desired number of the boxes A are placed side by side and at a short distance apart, as shown in Fig. 2, and are connected together by short pipes B, which have a right screw-thread cut upon the outer surface of one end, and a left screw-thread in the outer surface of the other end, so that the said pipes B may be screwed into the pipes *a'* of two adjacent boxes, A, by being turned. The middle part of the pipes B may be made polygonal in form to enable them to be readily grasped by a wrench. The space between each two boxes A is inclosed with a case, C,

which has an opening, *c'*, in its bottom near the pipes *a'* for the entrance of the air, and an opening, *c''*, in its top directly over the opening *c'* for the escape of the air. D is a horizontal partition extending longitudinally through the middle part of the space, between each two boxes A from the end of the case C, at or near which the openings *c'* *c''* are formed, nearly to the other end of said box, thus forming a flue and compelling the air to pass twice along the sides of the steam-boxes A before it escapes. The heater should be surrounded with a box or casing fitting closely to it at the sides and ends, but leaving spaces or compartments at the bottom and top, as shown in Figs. 1 and 2. The cold air to be heated is designed to be introduced into the lower compartment at the end furthest from the opening *c'*. The heated air escapes from the upper compartment into the register-pipe at the end of said compartment furthest from the opening *c''*. The air thus passes along the bottom of the heater before entering the holes *c'*, and along its top after escaping from the holes *c''*. The steam is introduced into the pipe *a'* at one side of the boxes A, and it and the water of condensation escape through the pipe *a'* at the other side of said boxes.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

The steam-boxes A, provided with short pipes *a'* and connecting-pipes B, the cases C, and partitions D, said parts being constructed and arranged in connection with each other, substantially as herein shown and described, and for the purpose set forth.

JAMES J. SMITH.

Witnesses:

SAMUEL R. WOOD.

JOHN WALSH,

JOHN L. RICE.