

(No Model.)

2 Sheets—Sheet 1.

J. T. BREADNER.
RADIATOR.

No. 418,395.

Patented Dec. 31, 1889.

Fig. 1.

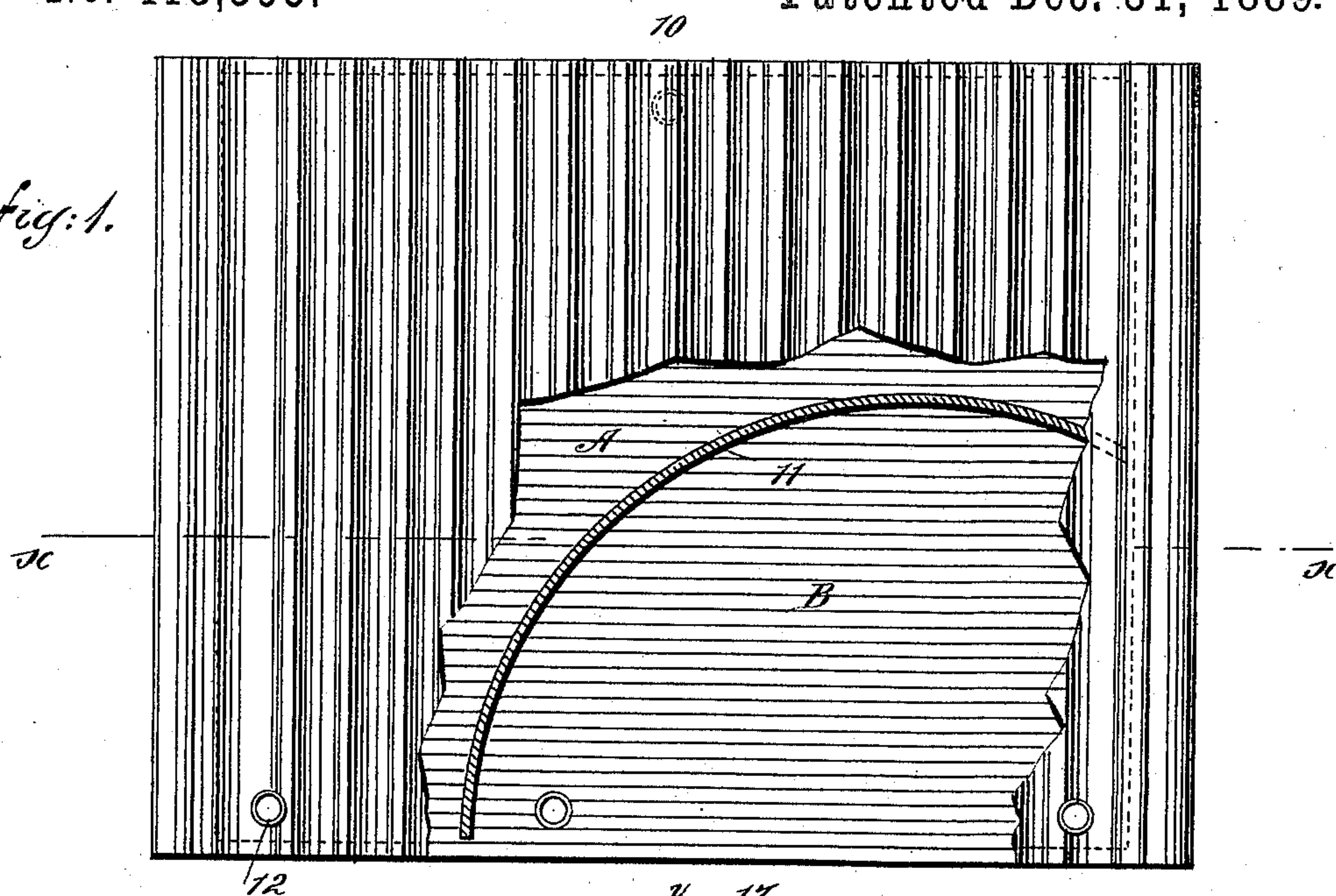
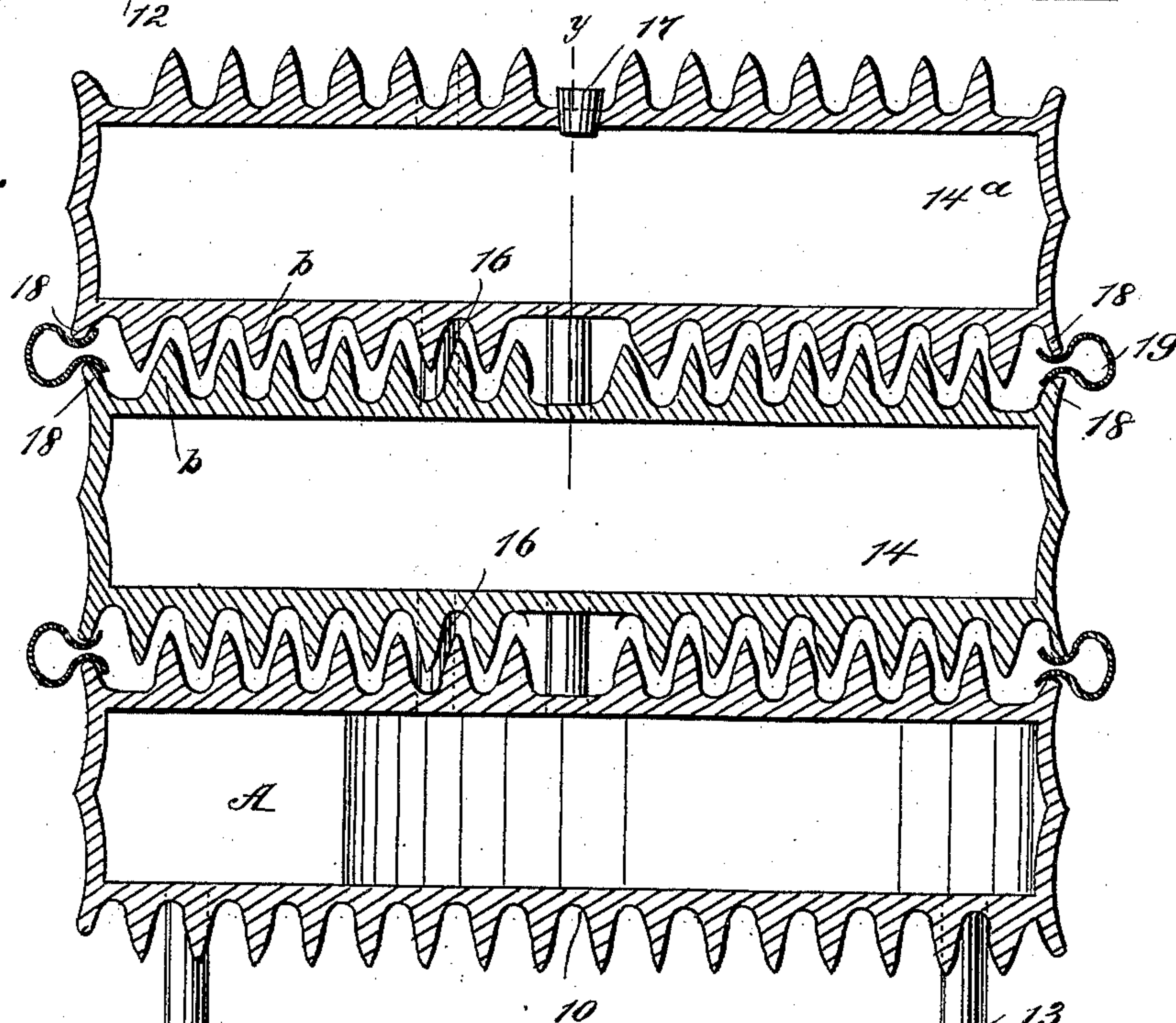


Fig. 2.



WITNESSES:

Chas. Wade
C. Sedgwick

INVENTOR

J. T. Breadner

BY

Munn & Co.

ATTORNEY

(No Model.)

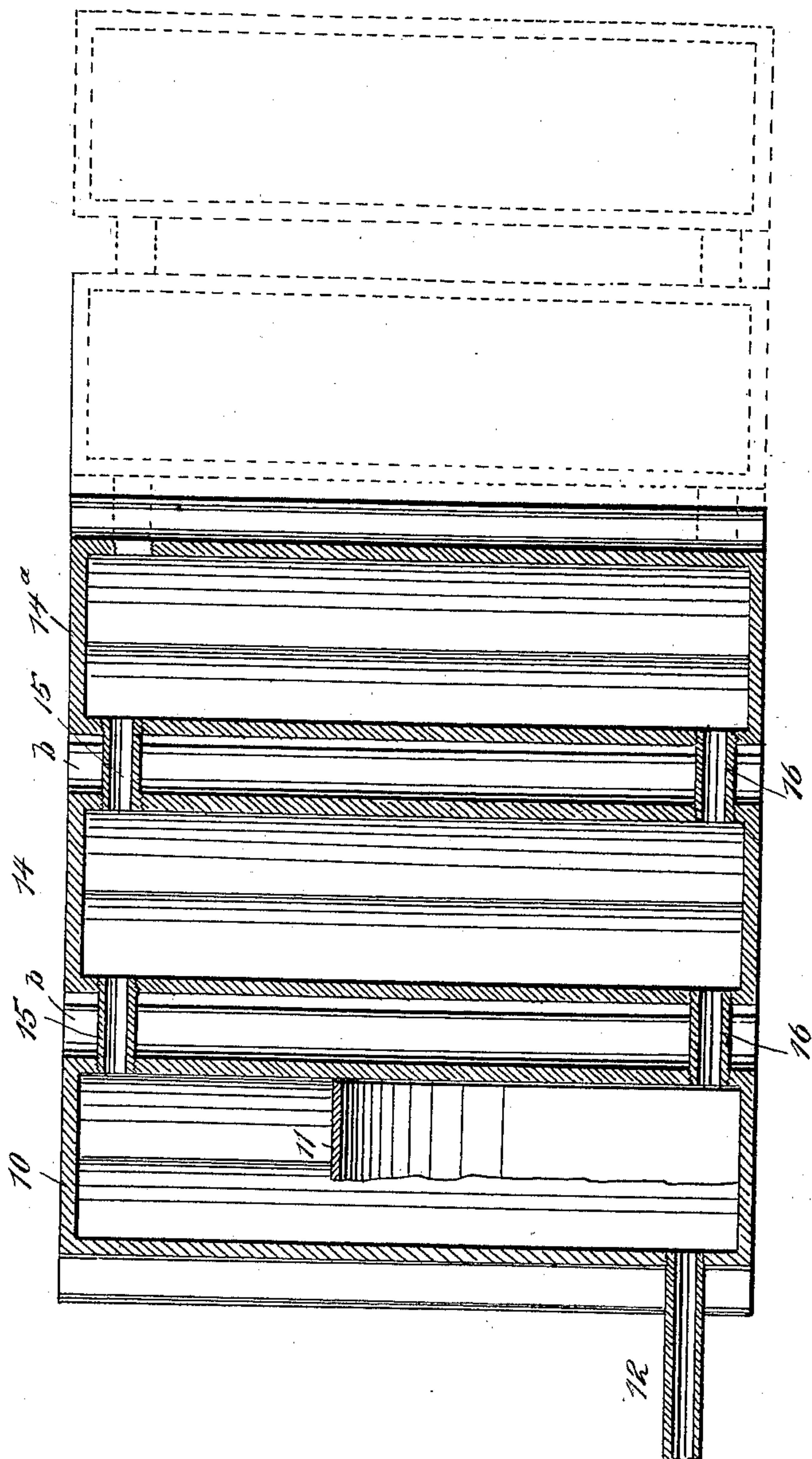
2 Sheets—Sheet 2.

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Fig. 3.



WITNESSES:

Charles Nida
C. Sedgwick

INVENTOR

J. T. Breadner
BY *Munn & Co*

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN T. BREADNER, OF PORT HENRY, NEW YORK.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 418,395, dated December 31, 1889.

Application filed March 2, 1889. Serial No. 301,734. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. BREADNER, of Port Henry, in the county of Essex and State of New York, have invented a new and Improved Radiator, of which the following is a full, clear, and exact description.

This invention relates to hot-water radiators, the object of the invention being to provide for an increased radiating-surface without disturbing the induction and eduction pipes; and to the end named the invention consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the receiving and discharging radiator-section, parts being broken away. Fig. 2 is a sectional plan view taken on line *xx* of Fig. 1, the partition, however, by which the receiving and discharging section is divided being shown in full lines; and Fig. 3 is a central longitudinal sectional elevation of my improved hot-water radiator, representing the same as it appears when two auxiliary sections are employed, the position of other auxiliary sections being indicated by dotted lines.

In the drawings, 10 represents the receiving and discharging radiator-section, which said section is divided into compartments A and B by a partition 11. In the drawings I have shown a curved partition; but it will of course be understood that a horizontal partition might be employed instead of the curved partition illustrated. The induction-pipe 12, by means of which hot water is supplied to the section 10, enters the chamber A, as shown, while the eduction or discharge pipe 13 is arranged in connection with the chamber B, both of the said pipes entering the radiator-section at the same end.

In connection with the section above described I employ an auxiliary section 14, which, through the medium of a connecting pipe or tube 15, communicates with the chamber A of the section 10, and which, through the medium of a tube 16, communicates with

the chamber B of said section. The tube 15 connects the upper part of the chamber A of the section 10 with the upper part of the auxiliary section 14, and the tube 16 connects the lower part of the auxiliary section 14 with the lower part of the chamber B of the section 10. As many other sections—such as the ones shown at 14^a—as may be necessary may be connected, as shown and indicated in Fig. 3, and in order that the radiating-surface of the sections may be increased I form them with interlocking projections *b*, these projections being ribs which extend horizontally or vertically, as shown in the drawings; or they may be simple pins extending from the side walls of the sections. The coupling-openings of the last of the sections 14^a are closed by plugs 17.

In order that heating-flues may be established between the radiator-sections, I form said sections with flanges 18. These flanges serve as supports for sheet-metal closing-shields 19, that are bent so that their edges overlap the flanges 18, the arrangement being such that all air entering the lower portion of the flues between the radiator-sections must pass upward and out of the top of said flues.

In operation the water enters the chamber A of section 10 through pipe 12, passes up to the top of the chamber, through the tube 15 into the top of the auxiliary section 14, thence down to the bottom of the said section, through the tube 16 to the chamber B of the section 10, and from said chamber it passes out through pipe 13.

By my construction the water is made to pass from the top of the main section to and through the tops of the auxiliary sections to the last one, thence down the same to the bottom thereof and back through the bottoms of the several sections. Of course it will be understood that a small portion of the water in its passage through the several sections will fall to the bottom of each section. By causing the water to pass through the tops of the several sections the radiator will be more thoroughly heated than when made to pass up and down the several sections. By my construction, also, the capacity of the radiator can be increased or diminished without disturbing the supply and discharge pipes. The

heater-sections should be placed on a base frame or plate, which may be of any suitable form.

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

1. The combination, with a main radiator-section divided into a receiving and discharging chamber and provided with an inlet and outlet at the same end, of an auxiliary section
10 having a single chamber, and tubes connecting the sections, one tube connecting the upper part of the receiving-chamber of the main section with the upper part of the auxiliary section, and the other tube connecting the

lower part of the auxiliary section with the
15 discharging-chamber of the said main section, substantially as herein shown and described.

2. The combination, with the connected radiator-sections 10 and 14, arranged side by side in close proximity and having the end
20 flanges 18, of the tube-like shields 19, having their edges projecting between the flanges of the sections and engaging the said flanges, substantially as and for the purpose set forth.

JOHN T. BREADNER.

Witnesses:

F. S. ATWELL,
C. S. JUDD.