

No. 689,531.

Patented Dec. 24, 1901.

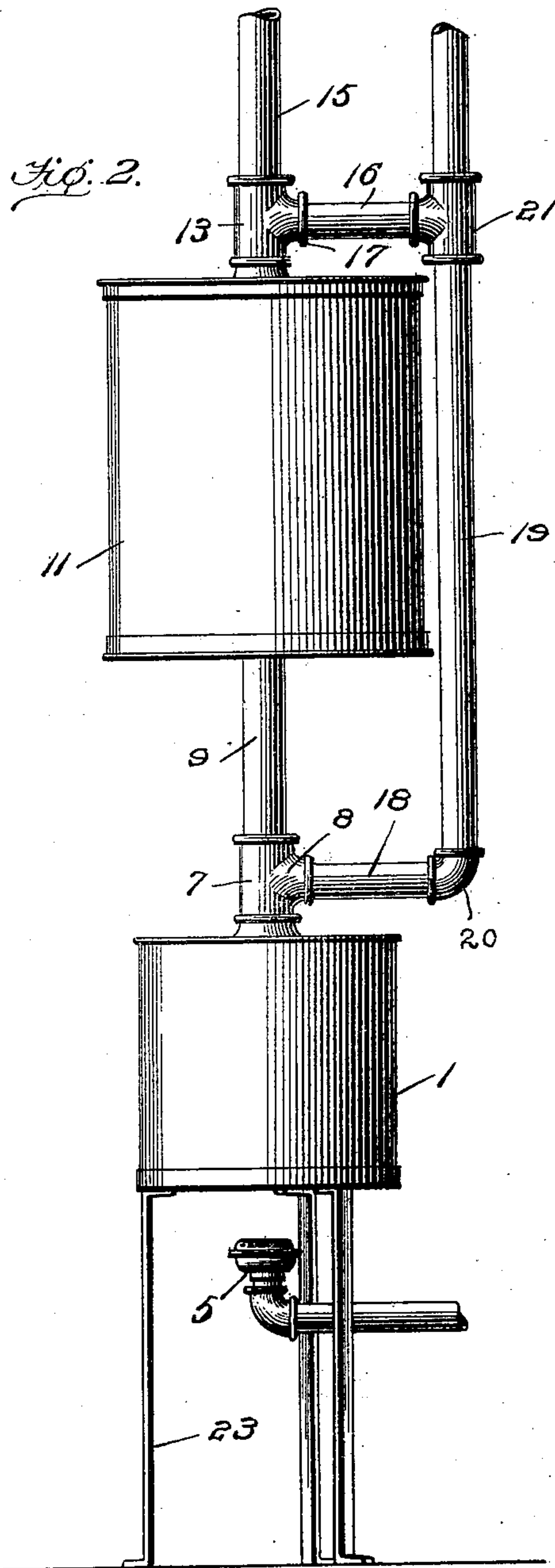
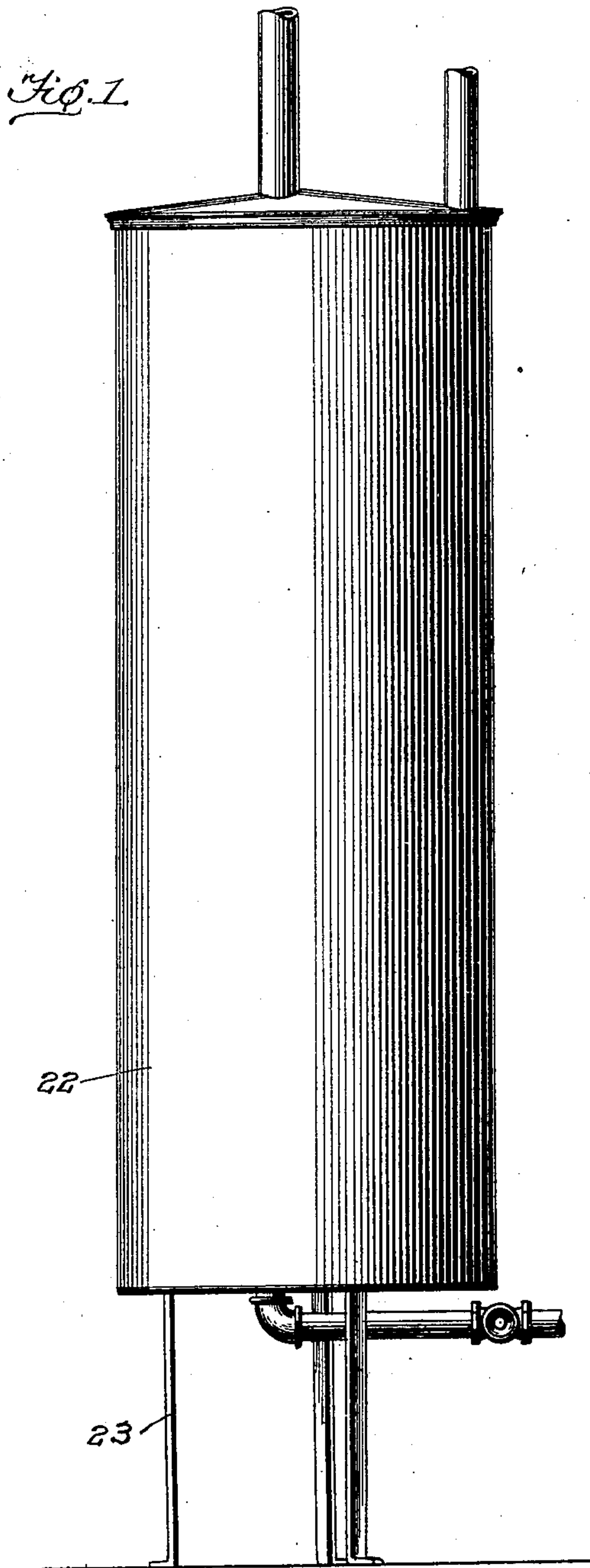
M. L. ALLPRESS & W. A. BLAKESLEE.

WATER HEATER.

(Application filed May 9, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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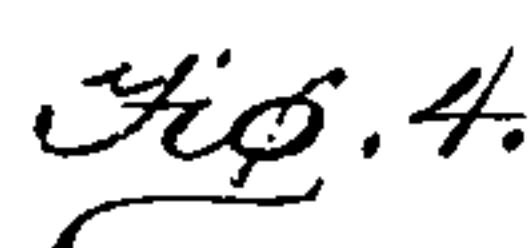
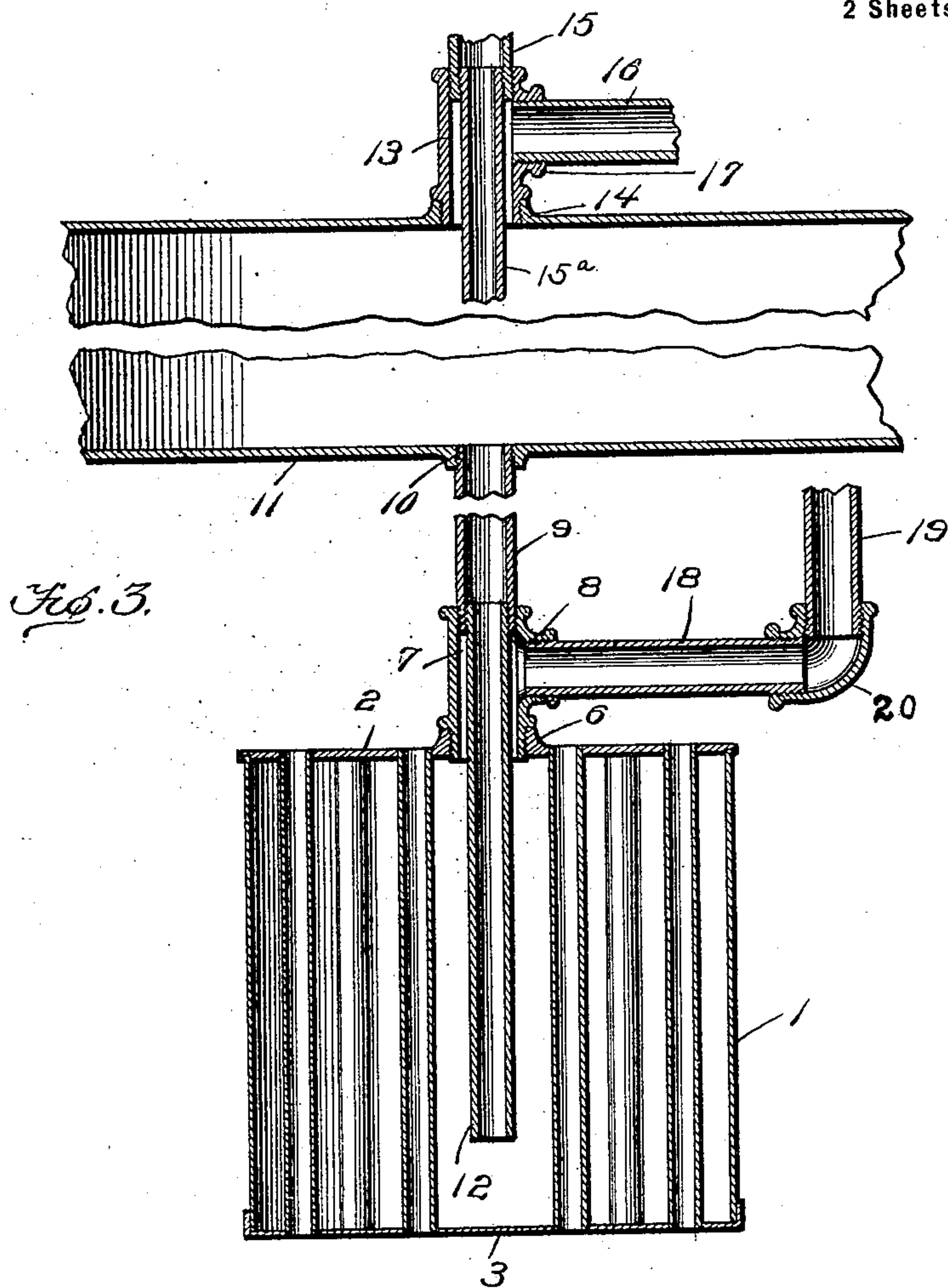
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

MARTIN L. ALLPRESS AND WILLIAM A. BLAKESLEE, OF WESTFIELD, MASSACHUSETTS; SAID ALLPRESS ASSIGNOR TO SAID BLAKESLEE.

WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 689,531, dated December 24, 1901.

Application filed May 9, 1901. Serial No. 59,507. (No model.)

To all whom it may concern:

Be it known that we, MARTIN L. ALLPRESS and WILLIAM A. BLAKESLEE, citizens of the United States, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Water-Heaters, of which the following is a specification.

Our invention relates to water-heaters; and its object is to provide an effective and inexpensive apparatus for heating water quickly and with the minimum expenditure of fuel.

A further object of the invention is to so combine a boiler and heater as to insure an extensive heating-surface and a free circulation of water with a very simple arrangement of pipe connections.

The construction of the improved apparatus will be fully described hereinafter in connection with the accompanying drawings, which form part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a side elevation of the apparatus inclosed within a protecting cylindrical jacket or casing. Fig. 2 is a similar view with the casing removed. Fig. 3 is a central longitudinal section of the apparatus, and Fig. 4 is a plan view of the heater.

The reference-numeral 1 designates the heater, which is preferably of the cylindrical form shown and closed by a top 2 and bottom 3. Within the heater are arranged a series of vertically-disposed pipes 4, which extend through the bottom and top of the cylinder, as shown in Fig. 3, and constitute flues for the passage of heat from any suitable burner 5, located below the heater-cylinder. As shown in Fig. 4, these tubes or flues 4 are preferably arranged in concentric rows, and the larger the number of tubes employed the greater will be the heat-radiating surface. The top 2 of the cylinder is formed with a central opening, from which projects an internally-threaded socket 6 to receive the lower threaded end of a coupling 7, formed with a laterally-projecting branch 8. Within the upper end of the coupling 7 is secured the lower end of a water-supply pipe 9, the upper end of which communicates with an in-

ternally-threaded socket 10, depending from a boiler 11.

Secured to the lower end of the supply-pipe 9 and extending down within the coupling 7 is a pipe 12, which delivers the water to a point within the heater-cylinder near the bottom thereof.

13 designates a coupling fitting within a socket 14, projecting from the upper side of the boiler, a pipe 15 connecting with said coupling and a pipe 16 entering the side branch 17 of the coupling 13. Secured to the lower end of the pipe 15 and extending down into the boiler is a pipe 15^a, which delivers water to the boiler. This pipe 16 communicates with a corresponding pipe 18, fitted to the branch 8 of the coupling 7, through a vertical pipe 19, connected to said pipe 18 by an elbow-coupling 20 and to the pipe 16 by a coupling 21.

Cold water is supplied to the boiler 11 through the pipe 15^a and through the pipe 12 to the cylinder, and the circulation of the water in contact with the heated flues 4 quickly heats it. As the heated water rises it passes between the inlet-pipe 12 and the coupling 7 and thence through the pipes 18, 19, and 16 and the coupling 13 to the boiler.

We preferably incase the boiler and heater-cylinder within a cylindrical jacket 22, which extends down to a point below the burner, as shown in Fig. 1, and the heater-cylinder is supported upon legs or standards 23.

It will be apparent that the fittings and pipe connections are few and inexpensive and that we obtain a thorough circulation and an extended radiating-surface within small compass.

We claim—

1. A water-heater comprising a heating-chamber provided with a series of pipes extending through the top and bottom of the chamber; a boiler above the heating-chamber; a coupling communicating with the heating-chamber and with a pipe leading from the boiler; a water-supply pipe within the coupling and pipe connections between said coupling and boiler through which hot water is fed to the boiler.

2. A water-heater comprising a heating-chamber having a series of vertically-dis-

posed pipes extending therethrough; a boiler
above the heating-chamber; a coupling pro-
jecting above the heating-chamber; a water-
supply pipe connecting said coupling and
5 boiler; a pipe extending down within said
coupling; a hot-water-circulating pipe com-
municating with a branch of said coupling;
and connections between said circulating-
pipe and the boiler.
10 3. The combination with a boiler and heat-
er; of a burner arranged below the heater;
a series of vertical flues extending through
the heater; a coupling rising from the heater
and connected to the boiler by a pipe con-
15 nection; a pipe extending down through said

coupling into the heater; a coupling project-
ing from the upper portion of the boiler; a
pipe within said coupling; and hot-water-cir-
culating pipes connecting said couplings.

In testimony whereof we affix our signa- 20
tures in presence of two witnesses.

MARTIN L. ALLPRESS.
WILLIAM A. BLAKESLEE.

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