

No. 684,620.

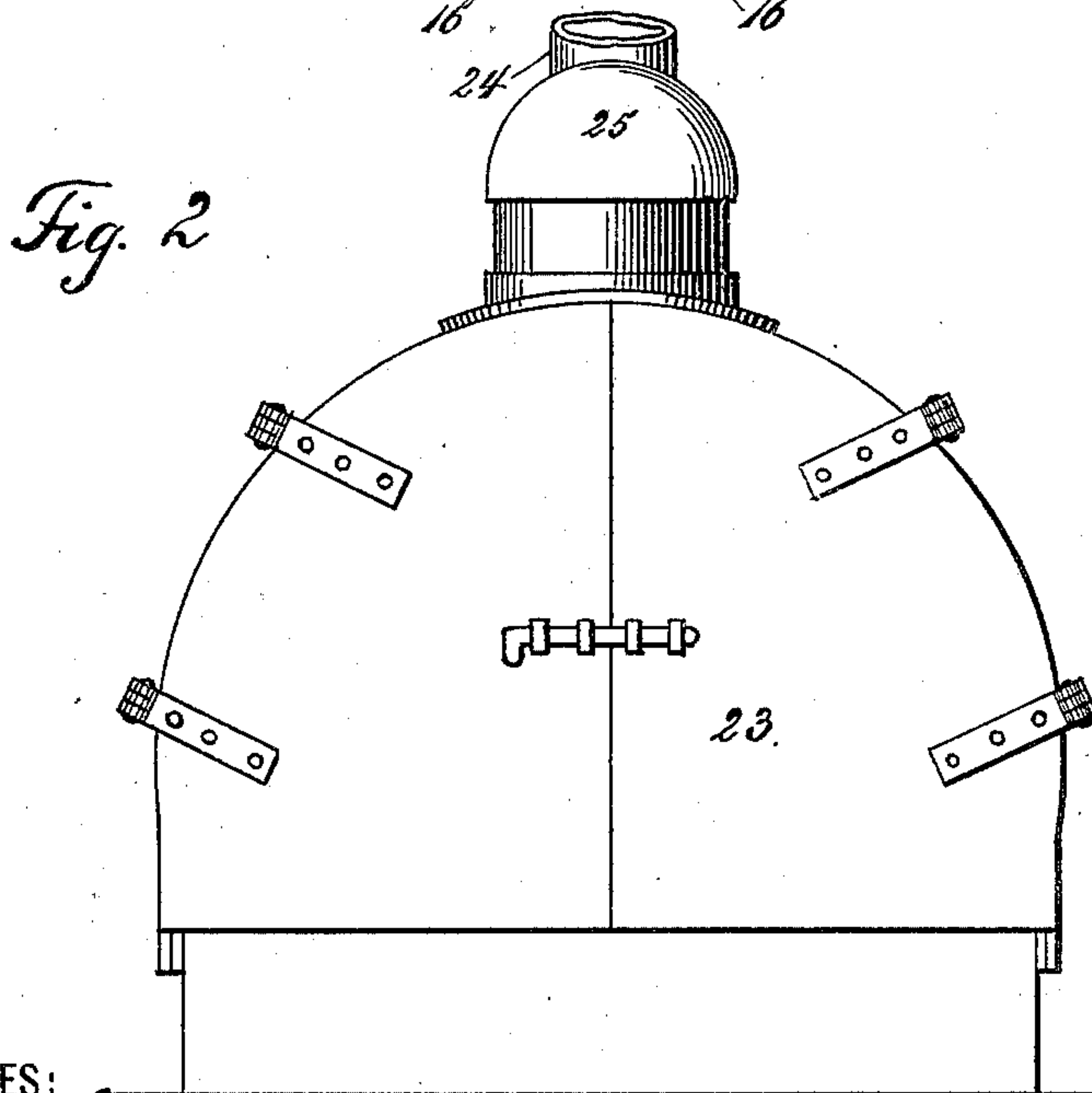
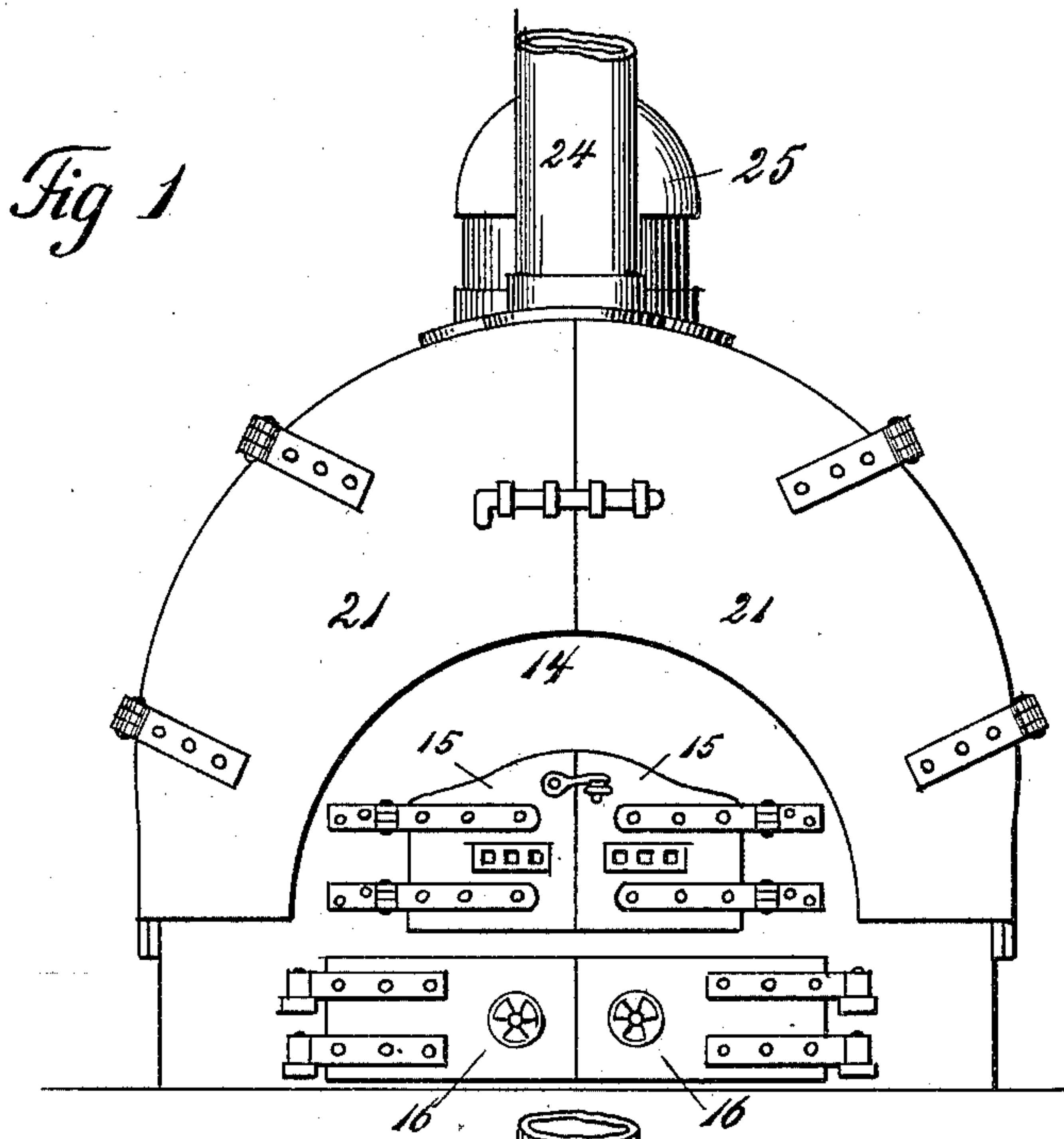
Patented Oct. 15, 1901.

J. SNYDER.
BOILER.

(Application filed Mar. 26, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

L. A. Stewart
A. F. Keller

INVENTOR

Joseph Snyder
BY
Edgar Tate
ATTORNEYS

No. 684,620.

Patented Oct. 15, 1901.

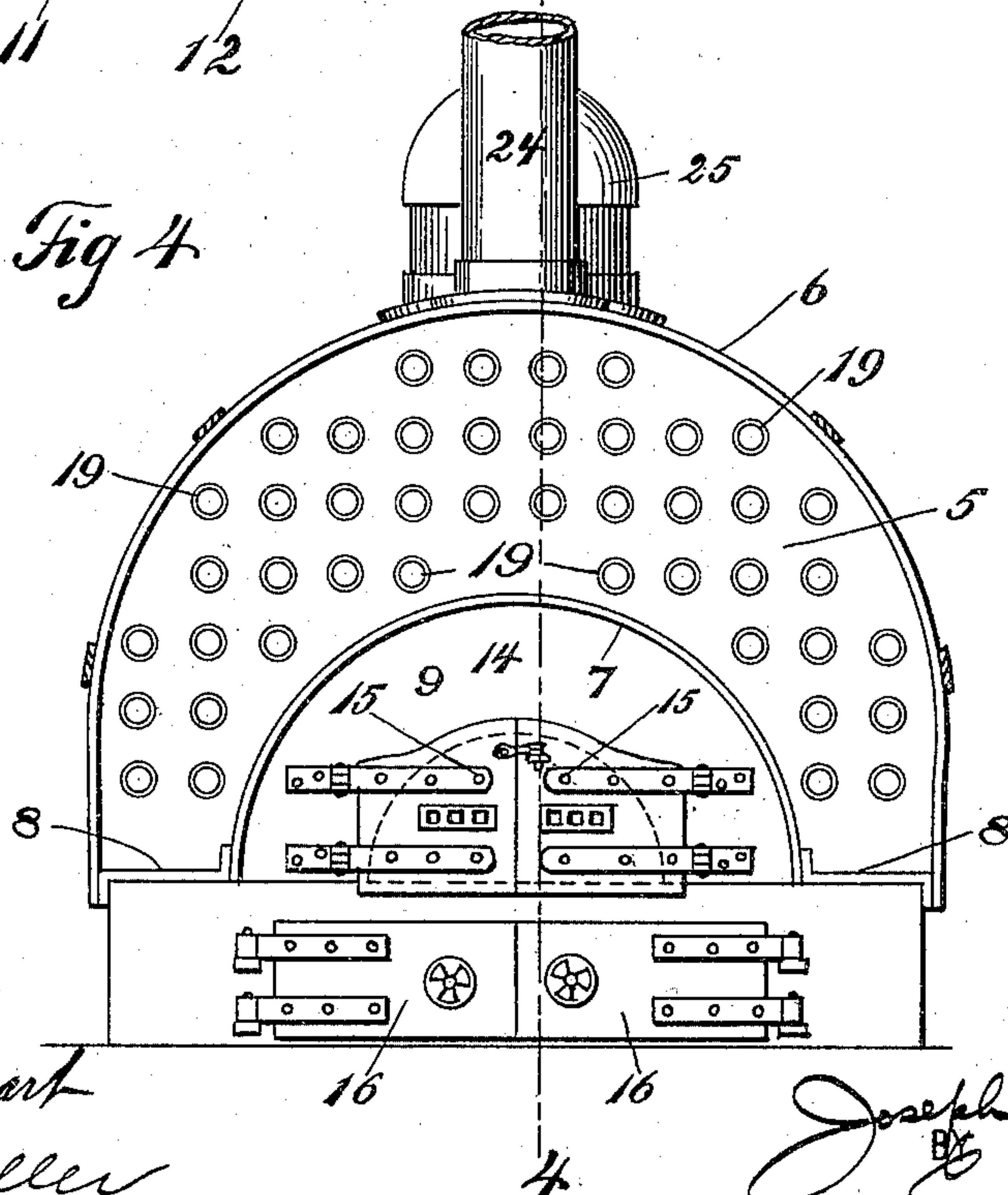
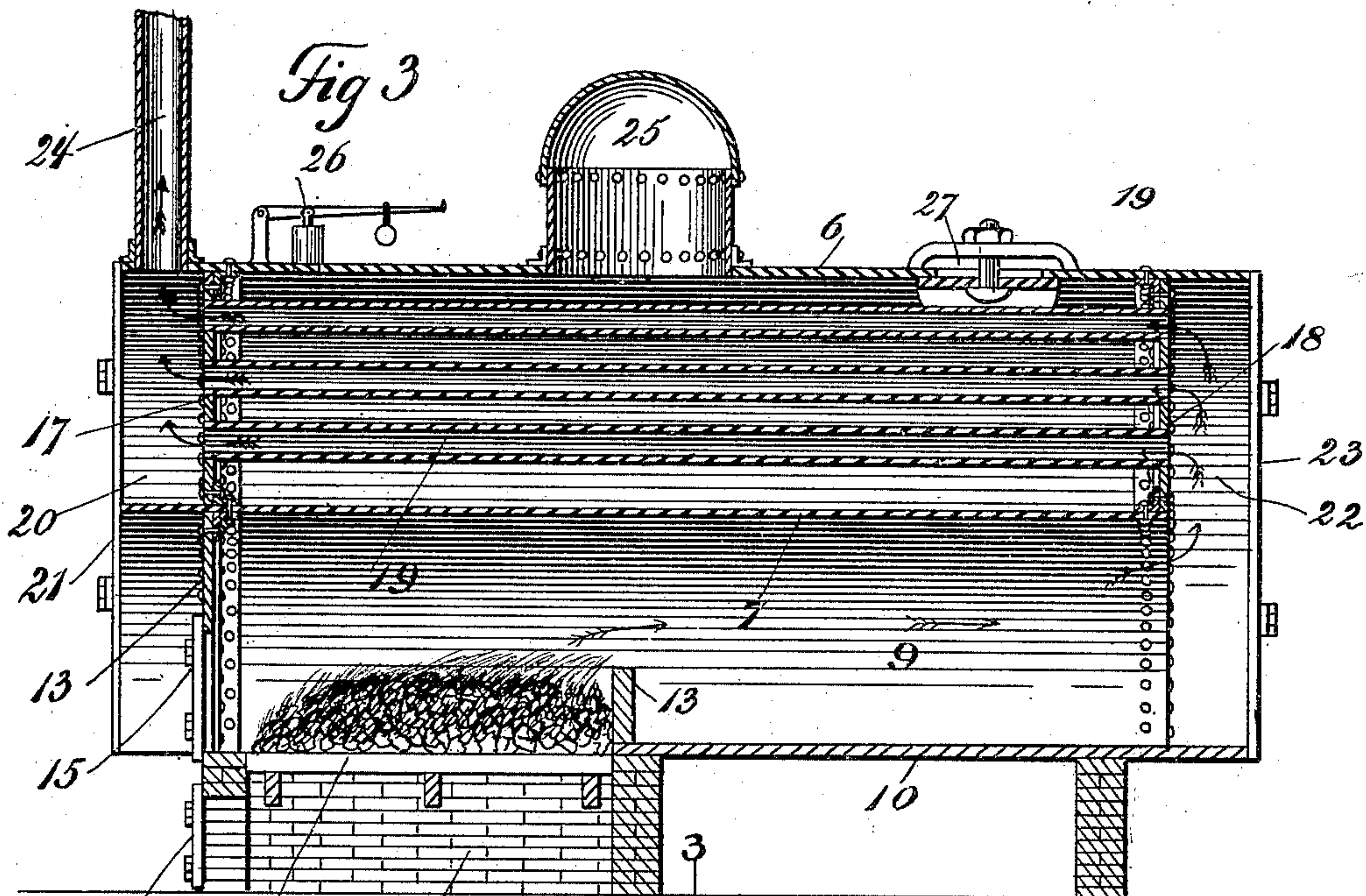
J. SNYDER.

BOILER.

(Application filed Mar. 26, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

H. A. Stewart
C. A. Peeler

INVENTOR

Joseph Snyder
Edgar Tate
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH SNYDER, OF BROOKLYN, NEW YORK.

BOILER.

SPECIFICATION forming part of Letters Patent No. 684,620, dated October 15, 1901.

Application filed March 26, 1901. Serial No. 52,886. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SNYDER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Boilers, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a steam-boiler of improved form and construction and which possesses a maximum steam-generating capacity in proportion to the amount of fuel consumed and which may be readily cleaned and repaired whenever desired.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a front end view of my improved boiler; Fig. 2, a rear end view thereof; Fig. 3, a longitudinal section on the line 3 3 of Fig. 4, and Fig. 4 a front end view with the end plates or doors of the boiler removed.

In the practice of my invention I provide a boiler 5, which is arch-shaped in cross-section and which comprises an outer arch-shaped plate 6 and a similar inner arch-shaped plate 7, which are connected at their bottom edges at each side by a horizontal plate 8, and by means of this construction there is formed in the bottom of the boiler a longitudinal arch-shaped space 9, open at both ends and the rear bottom portion of which is provided with any suitable closure 10, and at the front bottom portion of which is placed the grate 11, below which is the ash-pit 12, and rearwardly of the grate 11 the longitudinal arch-shaped space 9 is provided with a transverse wall 13, the height of which is preferably about one-third the height of said longitudinal arch-shaped space 9.

At the front end of the grate 11 the longitudinal arch-shaped space 9 is closed by a transverse partition or wall 14, in which are placed the furnace-doors 15, and below the furnace-doors 15 are the ash-pit doors 16.

The front and rear ends of the boiler proper are formed, respectively, by plates 17 and 18,

which are secured between the arch-shaped plates 6 and 7, and said boiler proper is also arch-shaped in cross-section and is provided with tubes 19, any desired number of which may be employed.

At the front end of the boiler proper is an arch-shaped space 20, closed by doors 21, and at the rear end of said boiler proper is a corresponding space 22, closed by doors 23, and the doors 23 also close the end of the longitudinal arch-shaped space 9 in the bottom of the boiler which communicates with and forms a part of the space 22. As thus constructed, it will be seen that the hot gases and other products of combustion pass backwardly through the longitudinal arch-shaped space 9 into the space or chamber 22, then forwardly through the tubes 19 into the space or chamber 20, from which they pass to an ordinary smoke-stack or flue 24. The boiler is provided with the usual steam-drum 25, a safety-valve 26, and a manhole 27. As thus constructed, it will be seen that the sides of the boiler extend downwardly to the bottom of the furnace or to the top of the grate and the bottom of the boiler forms an arch over the furnace or over the grate-space, and by means of this construction and the tubes 19 I provide the greatest possible heating-surface, and by providing the spaces 20 and 22, which are closed by the doors 21 and 23, I provide means whereby the boiler and all the parts thereof, including the furnace-chamber or longitudinal arch-shaped space 9, may be thoroughly and easily cleaned at all times.

It will be observed that the sides of the arch-shaped plate 7 do not converge at the bottom, and by employing the horizontal bottom plates 8 at each side of the boiler I increase the capacity of the boiler and secure the greatest possible strength, and by reason of the form of the arch-shaped plate 7 before referred to I also increase the grate-surface, and by separating the inner and outer arch-shaped plates 6 and 7, by means of the bottom plates 8, I also provide more room or space for the tubes 19.

My improved boiler does not require any special mounting and does not require to be bricked or walled in, all that is necessary in this connection being to provide any suitable support for the boiler and to provide an outer

covering of asbestos or similar material, if such be required.

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

1. A boiler composed of top and bottom plates arch-shaped in cross-section and between which is an arch-shaped space, end plates secured between said top and bottom plates at a predetermined distance from the ends thereof, tubes passing through the boiler proper and through said end plates, spaces or chambers at the ends of the boiler proper closed by hinged doors, the space or chamber at the front end of the boiler being in communication with an escape-flue and a grate and ash-pit placed in the front end of the arch-shaped chamber formed by the bottom plate or boiler, substantially as shown and described.

2. A boiler composed of top and bottom plates 6 and 7, arch-shaped in cross-section

and connected at their bottom edges by horizontal plates 8 and between which is an arch-shaped space, end plates secured between said top and bottom plates, at a predetermined distance from the ends thereof, tubes passing longitudinally through the boiler proper and through said end plates, spaces or chambers at the ends of said boiler proper closed by hinged doors, the space at the front end of the boiler being in communication with the escape-flue, and a grate and ash-pit placed in the front end of the arch-shaped chamber formed by the bottom plate of the boiler, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 23d day of March, 1901.

JOSEPH SNYDER.

Witnesses:

JAMES MURPHY,

ALEXANDER DUNCAN, Jr.