

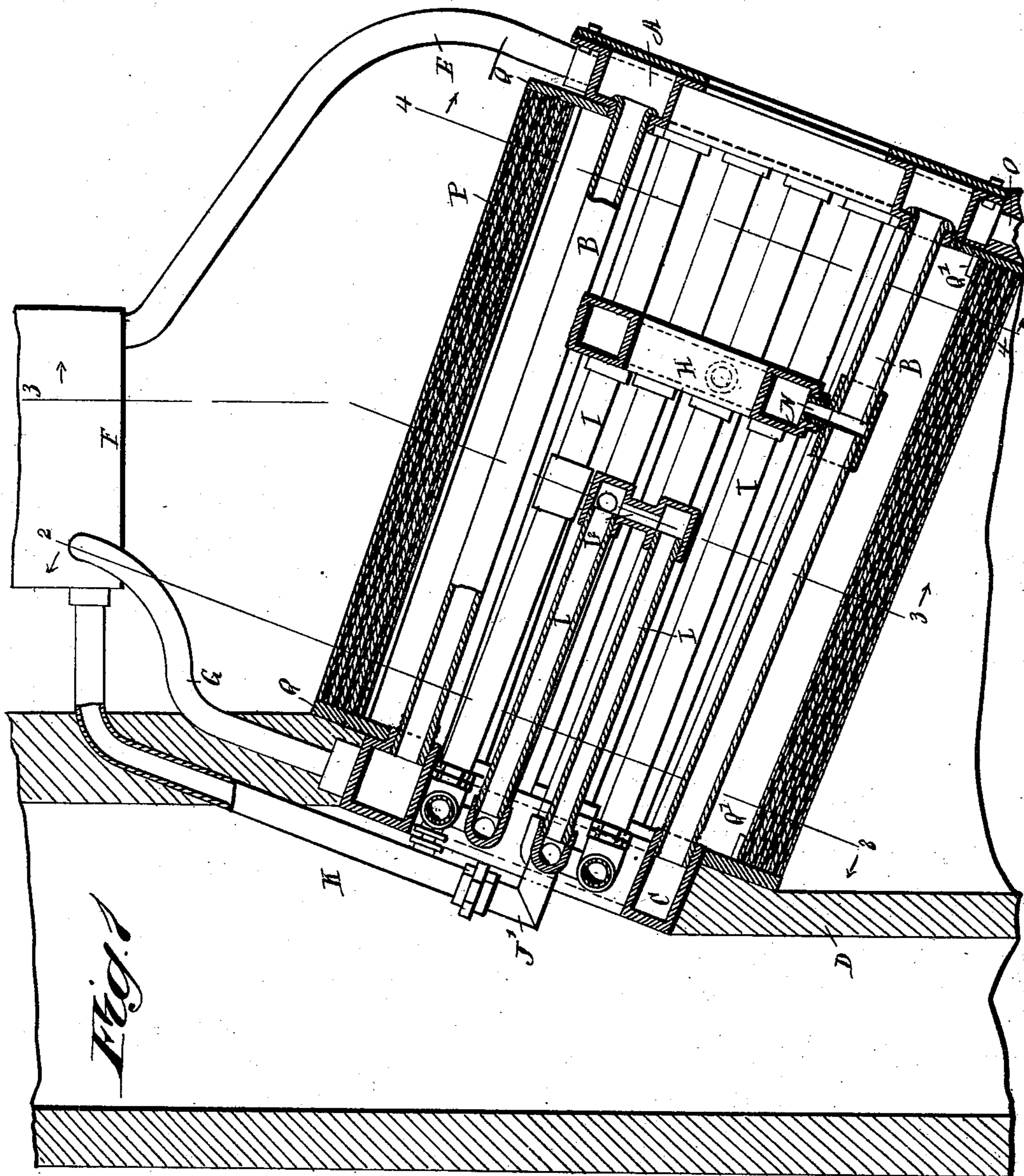
(No Model.)

3 Sheets—Sheet 1.

T. A. MYERS.  
BOILER.

No. 538,925.

Patented May 7, 1895.



WITNESSES:

*J. Mc Ardle*  
*Rev. J. K. Smith*

INVENTOR

*T. A. Myers*

BY

*Munn & Co*  
ATTORNEYS.

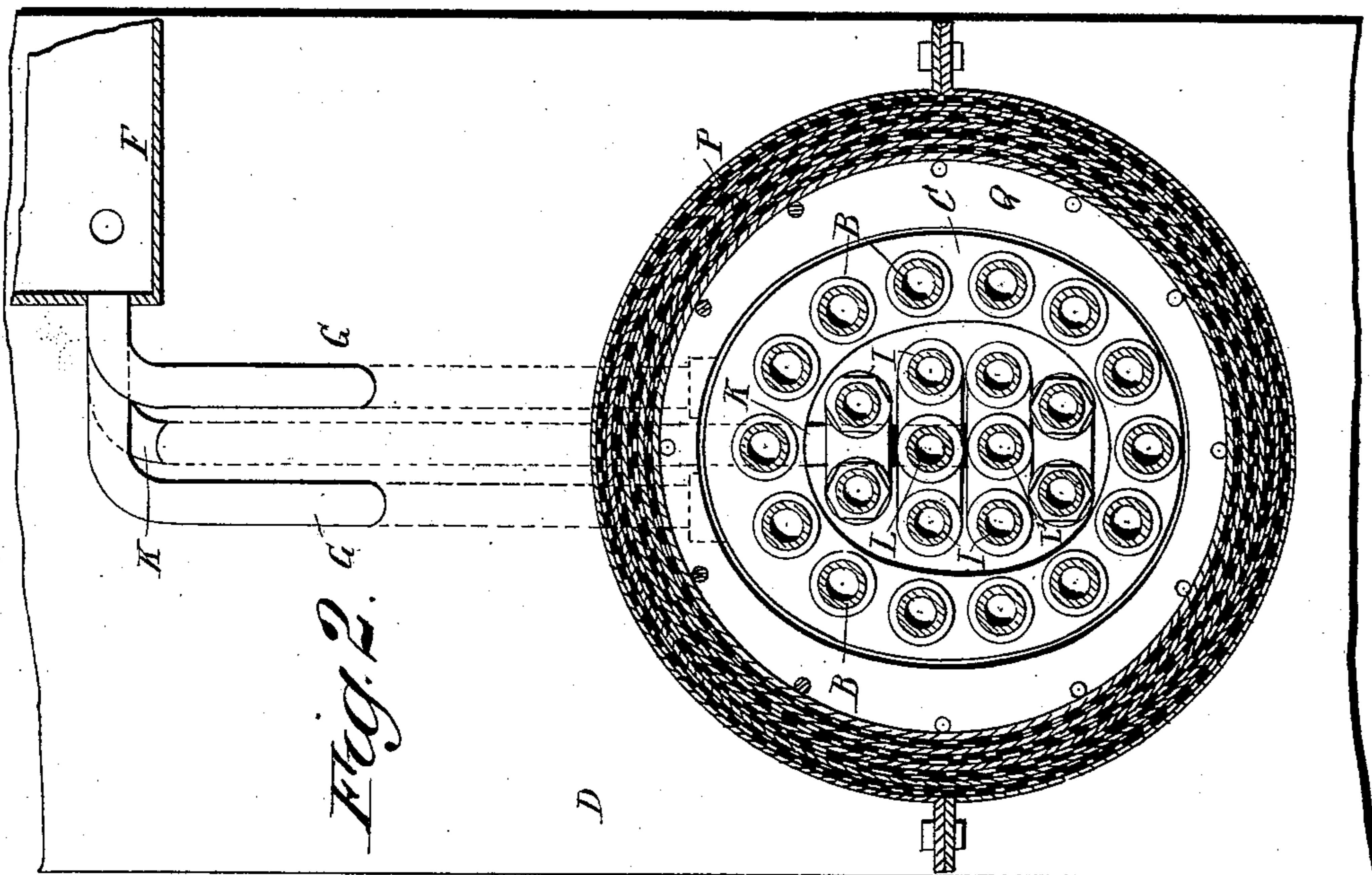
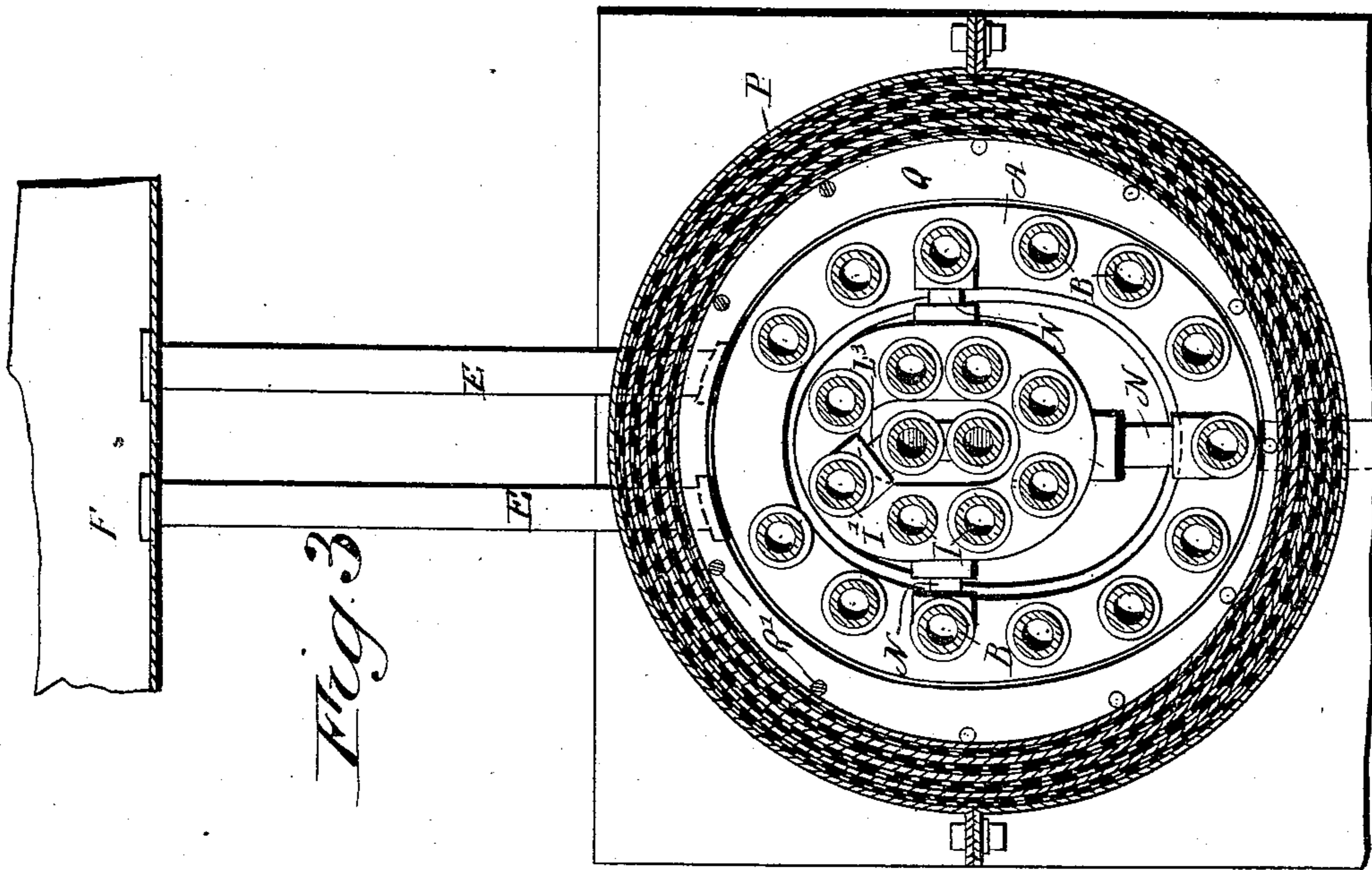
(No Model.)

3 Sheets—Sheet 2.

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WITNESSES:

*J. M. Arde.*  
*Thos. G. Foster,*

INVENTOR

*T. A. Myers*  
BY *Munn & Co*

ATTORNEYS.

(No Model.)

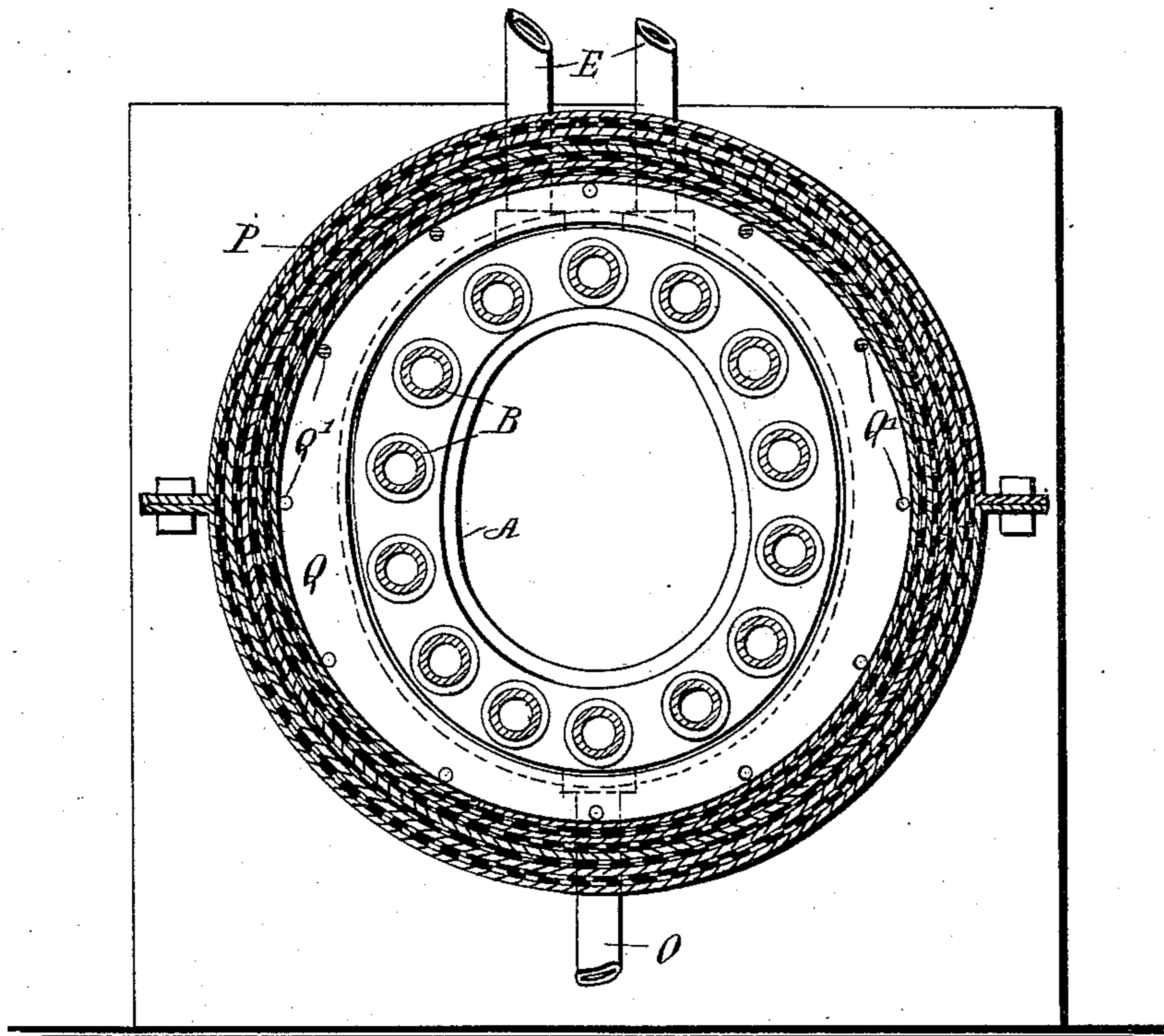
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T. A. MYERS.  
BOILER.

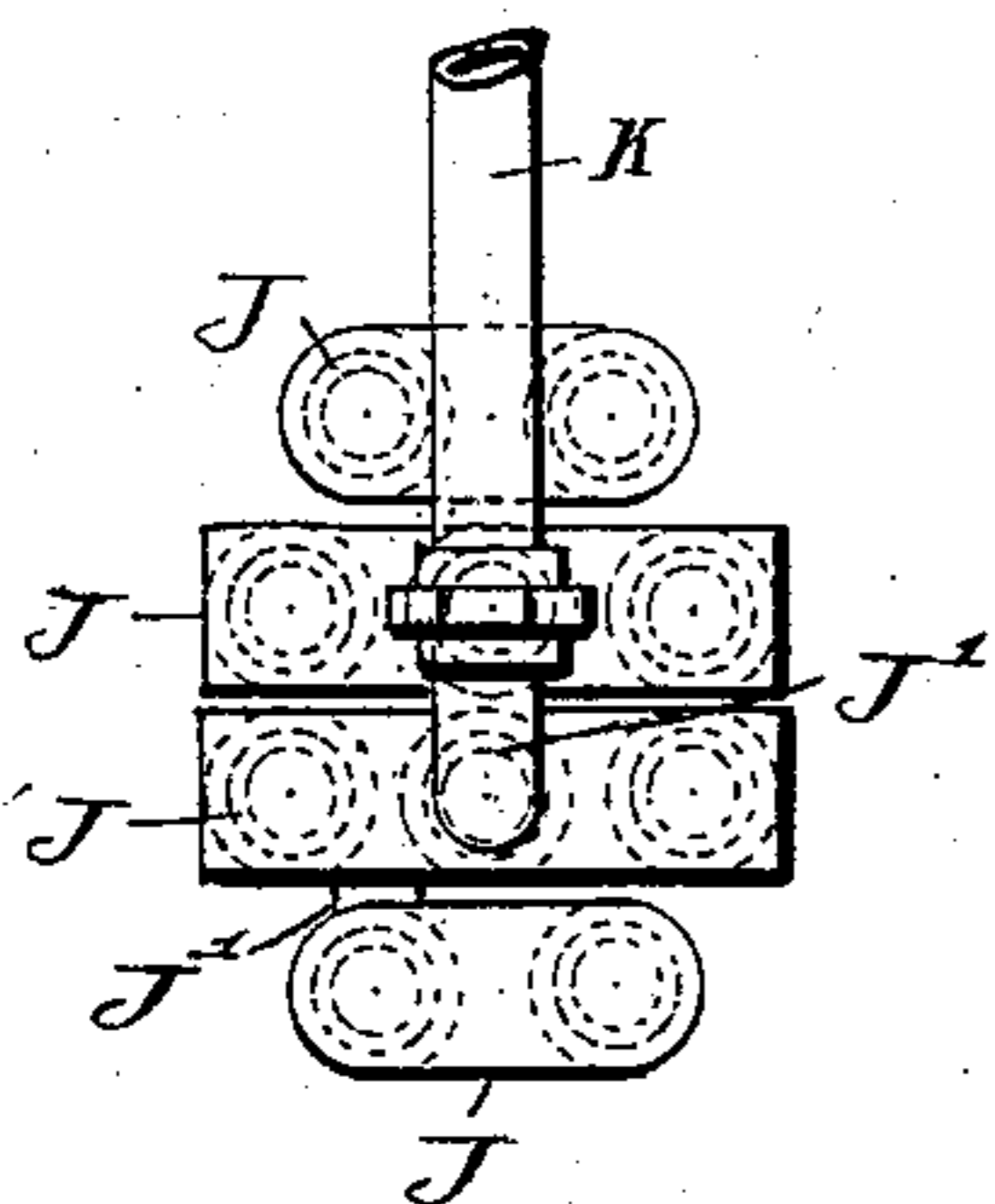
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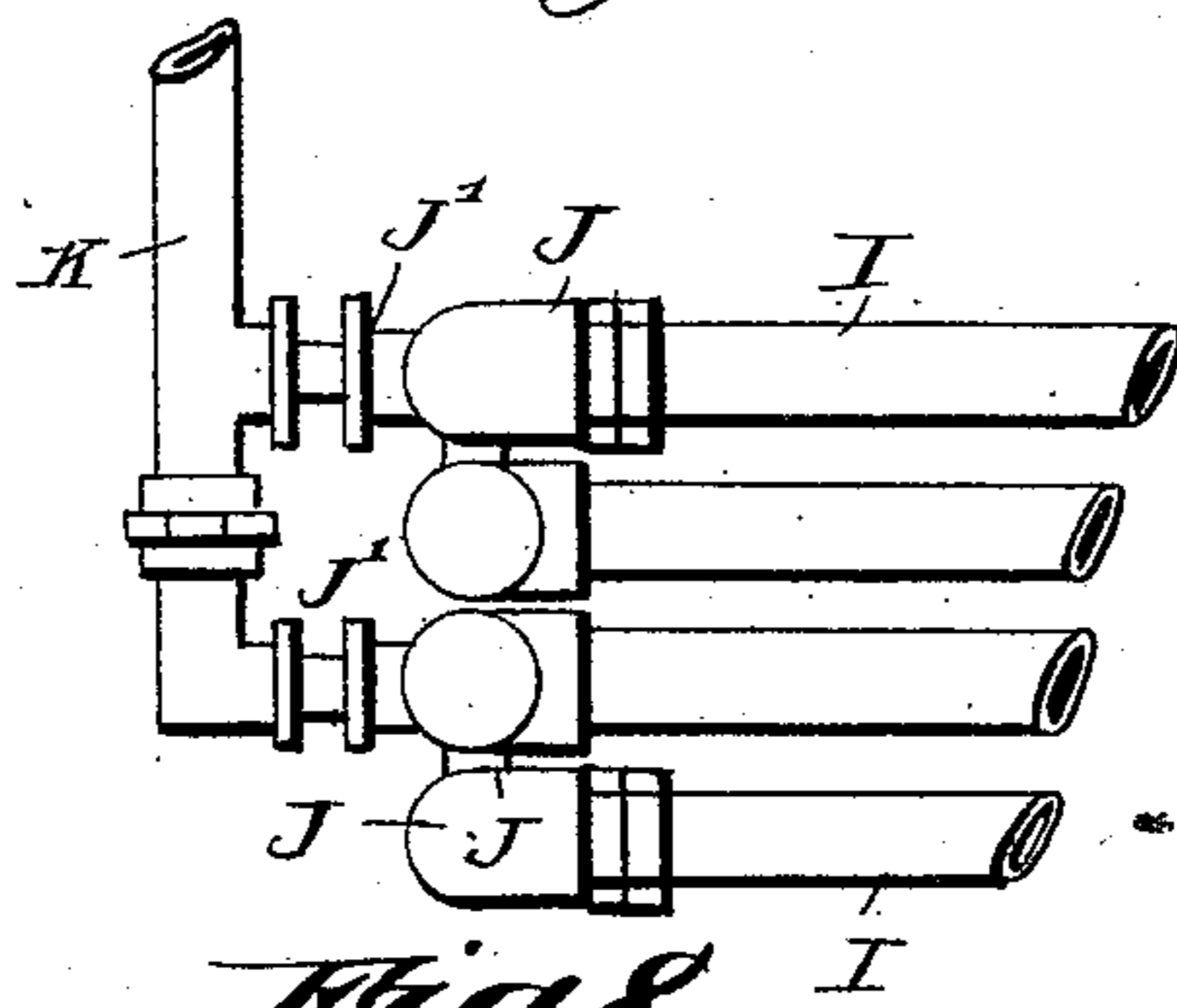
*Fig. 4*



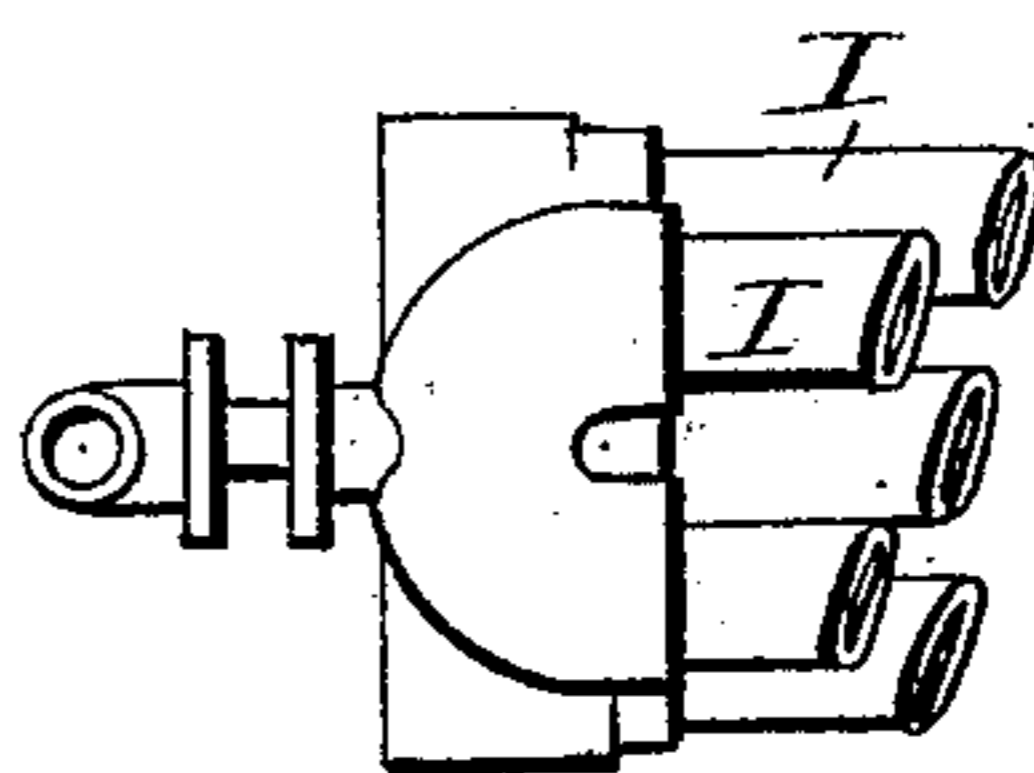
*Fig. 5*



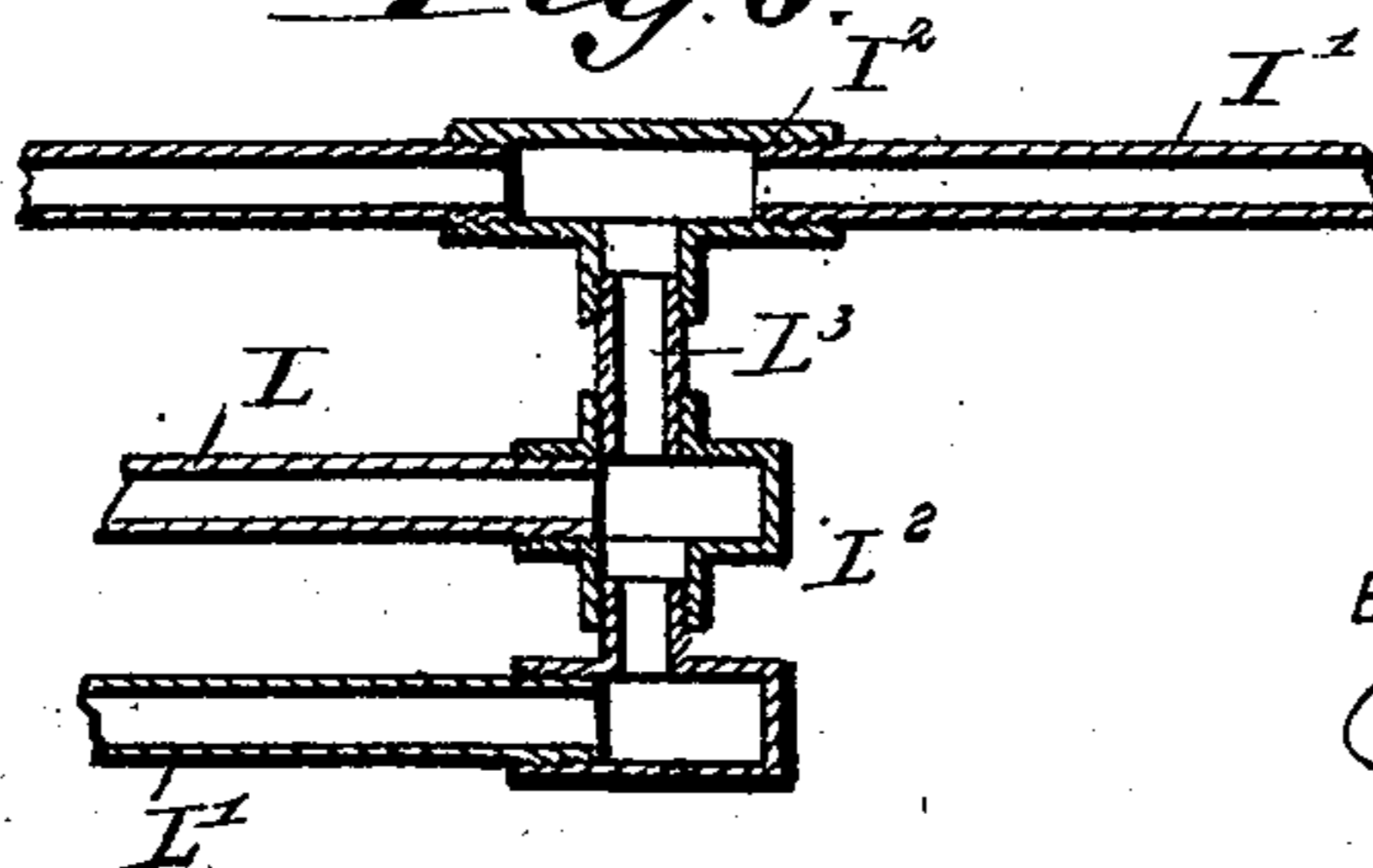
*Fig. 6*



*Fig. 7*



*Fig. 8*



WITNESSES:

*W. M. Andle*  
*Thos. G. Hoston*

INVENTOR

*T. A. Myers*

BY

*Munn & Co.*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

THOMAS A. MYERS, OF MENDON, NEW YORK.

## BOILER.

SPECIFICATION forming part of Letters Patent No. 538,925, dated May 7, 1895.

Application filed September 7, 1894. Serial No. 522,358. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ABSALOM MYERS, of Mendon, in the county of Monroe and State of New York, have invented a new and Improved Boiler, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved boiler, which is comparatively simple and durable in construction, and arranged to use the fuel to the greatest advantage to quickly generate steam.

The invention consists principally of a front and rear head connected with each other by pipes, and a head within and connected with some of the said pipes and from which leads a pipe connected with the steam drum, the latter being also connected by pipes with the said front and rear heads.

The invention also consists in certain parts and details, and combinations of the same, as will be 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 letters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1. Fig. 3 is a like view of the same on the line 3 3 of Fig. 1. Fig. 4 is a similar view of the same on the line 4 4 of Fig. 1. Fig. 5 is an end view of the middle set of pipes. Fig. 6 is a side elevation of the same. Fig. 7 is a plan view of the same, and Fig. 8 is a sectional plan view of the forward end of the same.

The improved steam boiler is provided with a front head A, made in the shape of a ring either oval or circular, and connected at its inner face by pipes B, with a rear head C, arranged in an angular position and parallel to the front head A, so that the pipes B are inclined upwardly and rearwardly from the front head A to the rear head C. The latter is preferably built in a chimney D of sheet iron, brickwork, or other material.

The pipes B are preferably beaded or expanded in the front head A, and screwed into the rear head C which is formed with a suitable chamber for holding the pipes in place in the said head C.

The head A is provided at its front face with a cover, which when removed gives access to the pipes B, to permit of conveniently cleaning the same.

The front head A is connected by one or more pipes E with a horizontally disposed steam dome F, located a suitable distance above the rear head C, which latter is also connected by one or more pipes G with the said steam dome.

Within the set of pipes B, and a short distance inward of the head A, is arranged a third head H, made in the form of an oval or a circular ring, the central opening of which permits the passage of the hot furnace gases rearward so that the centrally-arranged pipes at the rear may be heated and this head H is connected at its inner face with pipes I, extending rearwardly into the opening of the head C. The pipes I, are parallel to the pipes B, and have their rear ends connected with each other by cross pipes J, from which lead branch pipes J', to a common pipe K extending upwardly and connecting with the steam drum F. (See Fig. 1.) Within this set of pipes I, are arranged two pipes, L and L', extending within a short distance of the head H, and connected with each other at their forward ends by a branch pipe L<sup>2</sup>, supported on a pipe L<sup>3</sup> connected with a coupling I<sup>2</sup> in the pipe I', forming one of the pipes I. (See Figs. 3 and 8.) Thus the pipes L L' are supported from one of the pipes I, at their forward ends, while their rear ends connect with the cross pipes J, so that water can circulate from the pipe I' through the pipes L to finally pass into the pipe K, together with the water or steam from the rear ends of the pipes L.

The head H is connected by branch pipes N with some of the pipes B, so that water can pass from the pipes B to and through the head H. See Figs. 1 and 3. Into the bottom of the front head A discharges a pipe O, connected with a suitable source of water supply, so that the boiler is supplied with the water to be converted into steam.

On the inner faces of the heads A, C, are secured or supported ring-shaped plates Q, supporting a shell P, surrounding the pipes B in such a manner as to leave a suitable heating space between the pipes and the in-

ner wall of the shell. The shell P is preferably made of alternate layers of sheet metal, asbestos and wire netting, so that all the heat generated within the shell is retained therein and utilized in heating the water passing through the several pipes. Pins Q' projecting inwardly from the plates Q, engage the sheet metal of the shell P, to hold the latter in position.

When the boiler is filled with water it extends in the pipes E, N, G and K, to the bottom of the steam drum F, it being understood that all the heads and pipes are filled with water.

It will further be seen that a fire box is formed between the heads A and H, and the fuel burned in this fire box readily heats the pipes and heads, to cause a circulation of the water through the heads and pipes and a generation of steam which accumulates in the steam drum F. The smoke and gases can escape through the opening in the head C to the chimney D.

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

1. A boiler, comprising a front and rear head made ring-shaped and connected with each other by pipes, and a ring-shaped inner head arranged within and connected with some of the said pipes and located a suitable distance from the front head, to form a fire box with the latter the central opening of said ring shaped inner head, being adapted to permit the rearward passage of the hot furnace gases, the said inner head being provided with pipes

extending into the opening of the rear head, substantially as shown and described.

2. A boiler, comprising a front and rear head made ring-shaped and connected with each other by pipes, and an inner head arranged within and connected with some of the said pipes and located a suitable distance from the front head, to form a fire box with the latter, the said inner head being provided with pipes extending into the opening of the rear head, and a steam drum arranged above the said pipes and connected with the latter by pipes and also with the said pipes of the inner head, substantially as shown and described.

3. A boiler, comprising a front and rear head arranged in an inclined position, inclined pipes connecting the heads with each other, ring-shaped plates held on the said heads, and a shell supported on the said plates and surrounding the heads, substantially as shown and described.

4. A boiler, comprising a front and rear head made ring-shaped and connected with each other by pipes, an inner head arranged within the said pipes and located a suitable distance from the front head, to form a fire box with the latter, the said inner head being provided with pipes extending into the opening of the rear head, and a set of pipes connected with the said inner head pipes at their front and rear ends, substantially as shown and described.

THOMAS A. MYERS.

Witnesses:

JAMES SCHOLES,  
EMILY T. SCHOLES.