

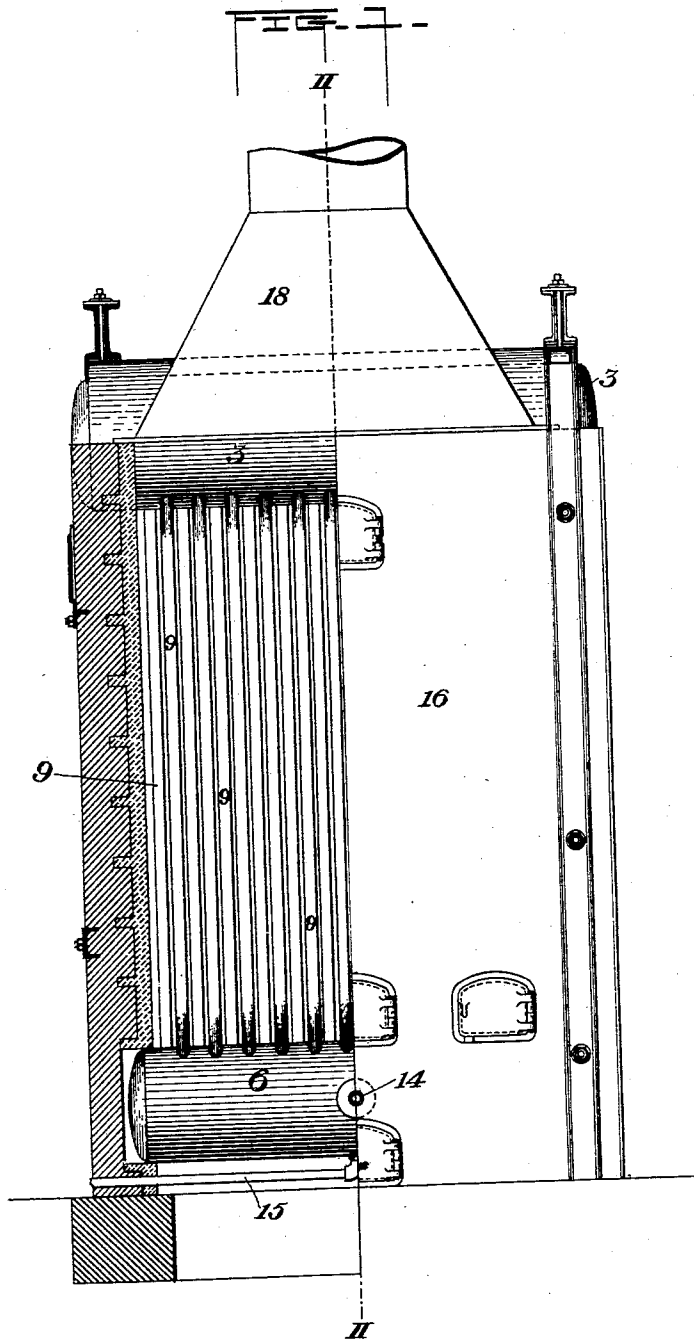
(No Model.)

2 Sheets—Sheet 1.

J. PIERPOINT.
STEAM BOILER.

No. 580,219.

Patented Apr. 6, 1897.



Witnesses
H. M. Corwin
C. J. Byrnes.

Inventor
James Pierpoint
by *W. Baxendell & Co.*
Attorneys

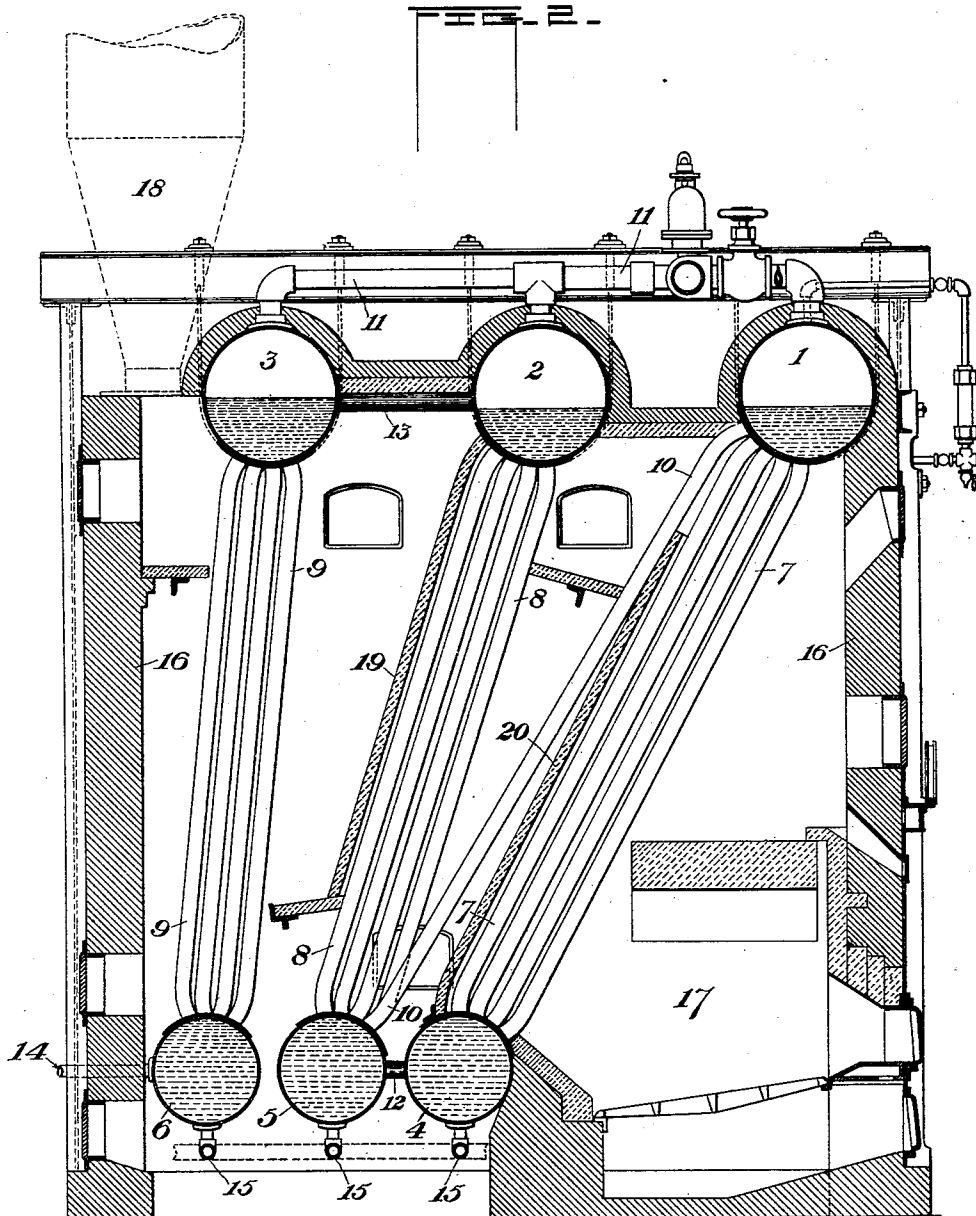
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UNITED STATES PATENT OFFICE.

JAMES PIERPOINT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE
STIRLING COMPANY, OF CHICAGO, ILLINOIS.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 580,219, dated April 6, 1897.

Application filed June 9, 1893. Serial No. 477,048. (No model.)

To all whom it may concern:

Be it known that I, JAMES PIERPOINT, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Steam-Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows my improved boiler in rear elevation, part of the furnace-wall being broken away to reveal the construction of the rear bank of tubes. Fig. 2 is a vertical longitudinal central section of the boiler on the line II II of Fig. 1.

The object of my invention is to provide a steam-boiler which shall be simple in construction and which shall provide very efficient means for insuring proper circulation of the water, and for preserving a nearly constant water-level in the various parts of the boiler.

In the drawings, 1 2 3 represent the steam and water drums or cylinders of the boiler, and 4, 5, and 6 lower drums or cylinders, which serve as mud-drums. The upper and lower drums are connected, respectively, by banks of tubes 7 8 9. The upper drum 1 is also connected with the lower drum 5 by pipes 10, the drums 4 and 5 are connected by pipes or nipples 12, the steam-spaces of the upper drums communicate with a steam-pipe 11, and the drums 2 and 3 are connected by overflow-pipes 13 situate at or above the normal water-line.

14 is the feed-water pipe, which enters the lower drum 6, and 15 15 are valve-controlled outlet-pipes, through which sediment may be removed from the lower drums.

16 16 are the walls of the boiler-furnace.

17 is the combustion-chamber, 18 the stack-flue, and 19 and 20 are partitions arranged between the banks of tubes and adapted to cause the flame and hot gases to travel up and down along the tubes on their way to the stack.

The pipes 10 are preferably arranged on an opposite side of the wall 20 from the tubes 7, or in some other part of the furnace cooler than that which contains the tubes 7. The water is therefore caused to circulate up-

wardly from the drum 4 through the tubes 7 into the drum 1, and thence downwardly through the pipes 10 to the drum 5.

The feed-water enters the drum 6 through the pipe 14, and rising through the tubes 9 to the drum 3 overflows through the pipes 13 into the drum 2, whence it passes to the general circulation of the boiler. By reason of this arrangement the precipitation of sediment into the drum 6 is well provided for, and the water is prevented from being drawn down to a lower level in the rear upper drum than in the others by reason of greater heat, which may be communicated to the banks of tubes 7 and 8 by forced firing of the boiler.

Within the scope of my invention as defined in the claims I may modify the construction and arrangement of the parts in various particulars. For example, in combination with the overflow-pipe 13 the drums 4 and 5 may be merged into one drum, and the tubes 7 8 and the drums may be arranged otherwise than as above described. These and other modifications will be suggested by the foregoing description to those skilled in the art.

I claim—

1. A tubular boiler having forward tubes and drums, a rear steam-and-water drum and bank of tubes unconnected at the bottom with the forward tubes and drums, and an overflow water-pipe connecting the forward tubes and drums with the rear steam-and-water drum at the water-level of the latter; substantially as described.

2. A tubular boiler having forward tubes and drums, a rear steam-and-water drum and bank of tubes unconnected at the bottom with the forward tubes and drums, an overflow water-pipe connecting the forward tubes and drums with the rear steam-and-water drum at the water-level of the latter, and a feed-water supply entering the rear portion of the boiler; substantially as described.

In testimony whereof I have hereunto set my hand.

JAMES PIERPOINT.

Witnesses:

W. P. POTTER,
H. M. CORWIN.