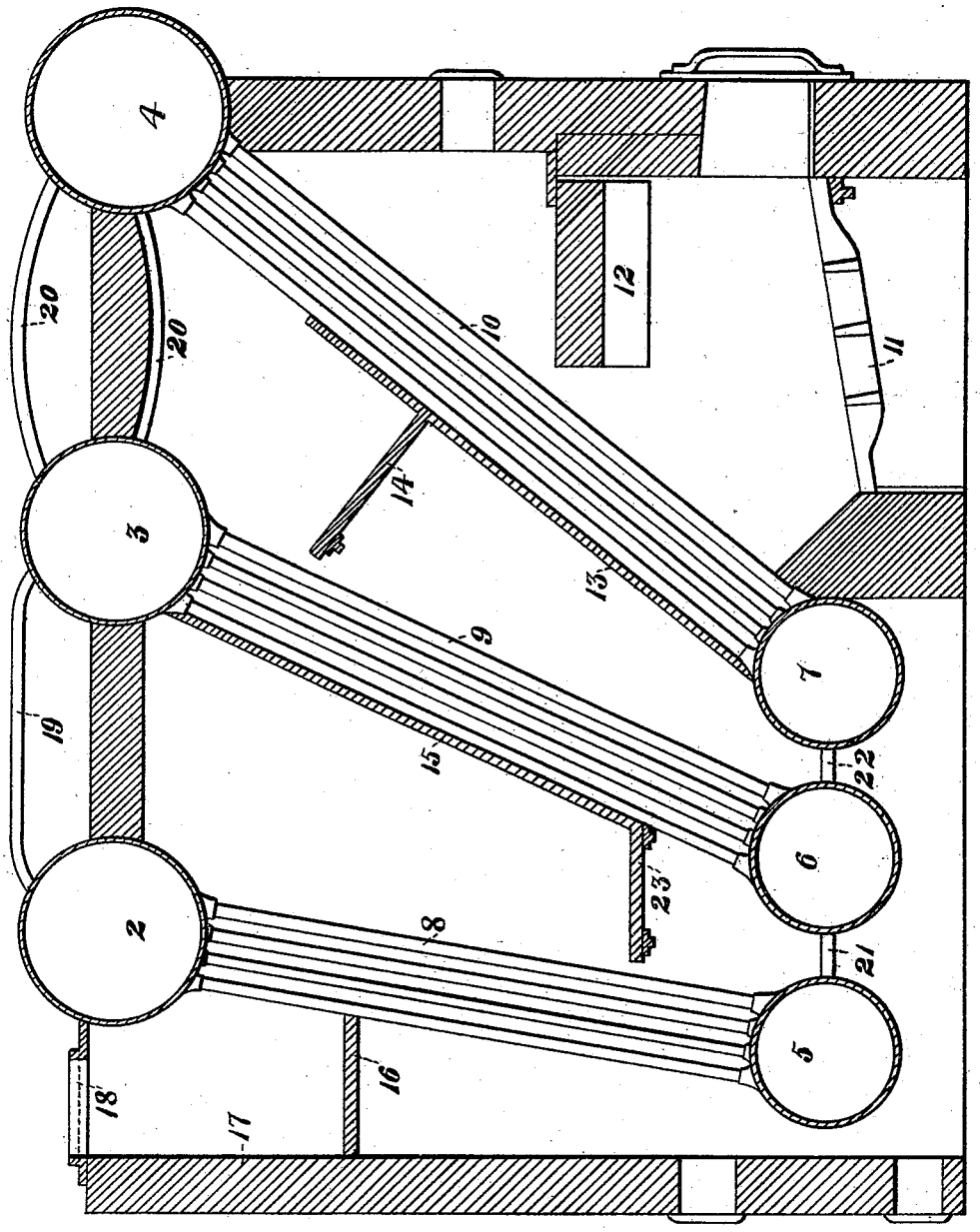
(No Model.)

J. PIERPOINT.

WATER TUBE BOILER.

No. 492,556. Patented Feb. 28, 1893.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES PIERPOINT, OF PITTSBURG, PENNSYLVANIA.

WATER-TUBE BOILER.

SPECIFICATION forming part of Letters Patent No. 492,556, dated February 28, 1893.

Application filed March 21, 1892. Serial No. 425,713. (No model.)

To all whom it may concern:

Be it known that I, JAMES PIERPOINT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Water-Tube Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which represents a vertical longitudinal section of my improved boiler.

My invention relates to water tube boilers, and it consists in an improved boiler having three steam and water drums and a similar number of mud-drums connected thereto by tubes, the mud-drums connecting with each other as well as the steam drums.

In the drawing, 2, 3, 4, indicate the steam and water drums, and 5, 6 and 7 the mud-drums, whereby each mud-drum has a single set of tubes connected thereto, the drums 2 and 5 having the connecting series 8, the drums 3 and 6 the series 9, and the drums 4 and 7 a similar series 10. These drums and tubes are suitably built into the walls of the furnace, and there being the same number of mud and steam drums, the tubes are more nearly vertical than formerly. Above the grate 11 is placed the arch 12, which deflects the heat currents against the tubes 10, while the shield or partition wall 13 prevents these currents from passing directly to the series 9 and compels them to traverse the length of the tubes 10 and impinge upon the steam drums 3 and 4, the angular extension 14 throwing the heat against the drum 3 and tubes 9, while the shield or partition-wall 15 drives the products down the length of the tubes 9. They then pass through the interstices of these tubes and are deflected by the extension 23 against the tubes 8 and pass up in contact therewith and impinge against the drum 2, the shelf 16 projecting from the rear wall 17 and preventing the products passing directly to the outlet-flue 18. The steam and water-drums are connected by pipes 19 and 20 as shown, and the mud-drums may also have connecting pipes 21 and 22.

The water being admitted to the drum 2 passes thence to the mud-drums 5, 6 and 7, and by the tubes 9 and 10 to the drums 3 and 4, and by this circulation and the location of the drums, the sediment in the water is deposited in the mud-drums before the water passes to the drums 3 and 4, which are heated to the greatest extent. By this system the sediment is more fully deposited than in former constructions, and moreover there is a greater and more regular amount of heat imparted to the water in the tubes and drums.

I claim as my invention—

1. A water-tube boiler, comprising three steam and water drums connecting by sets of tubes with three mud-drums located beneath the same, and deflecting partition walls located in the rear of the two front sets of tubes; substantially as and for the purposes described.

2. A water-tube boiler, comprising three connecting steam and water drums, three connecting mud-drums beneath the same, sets of tubes connecting the steam and the mud-drums, and deflecting walls having angular extensions and located in the rear of the two front sets of upright tubes; substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 16th day of March, A. D. 1892.

JAMES PIERPOINT.

Witnesses:
C. BYRNES,
H. M. CORWIN.