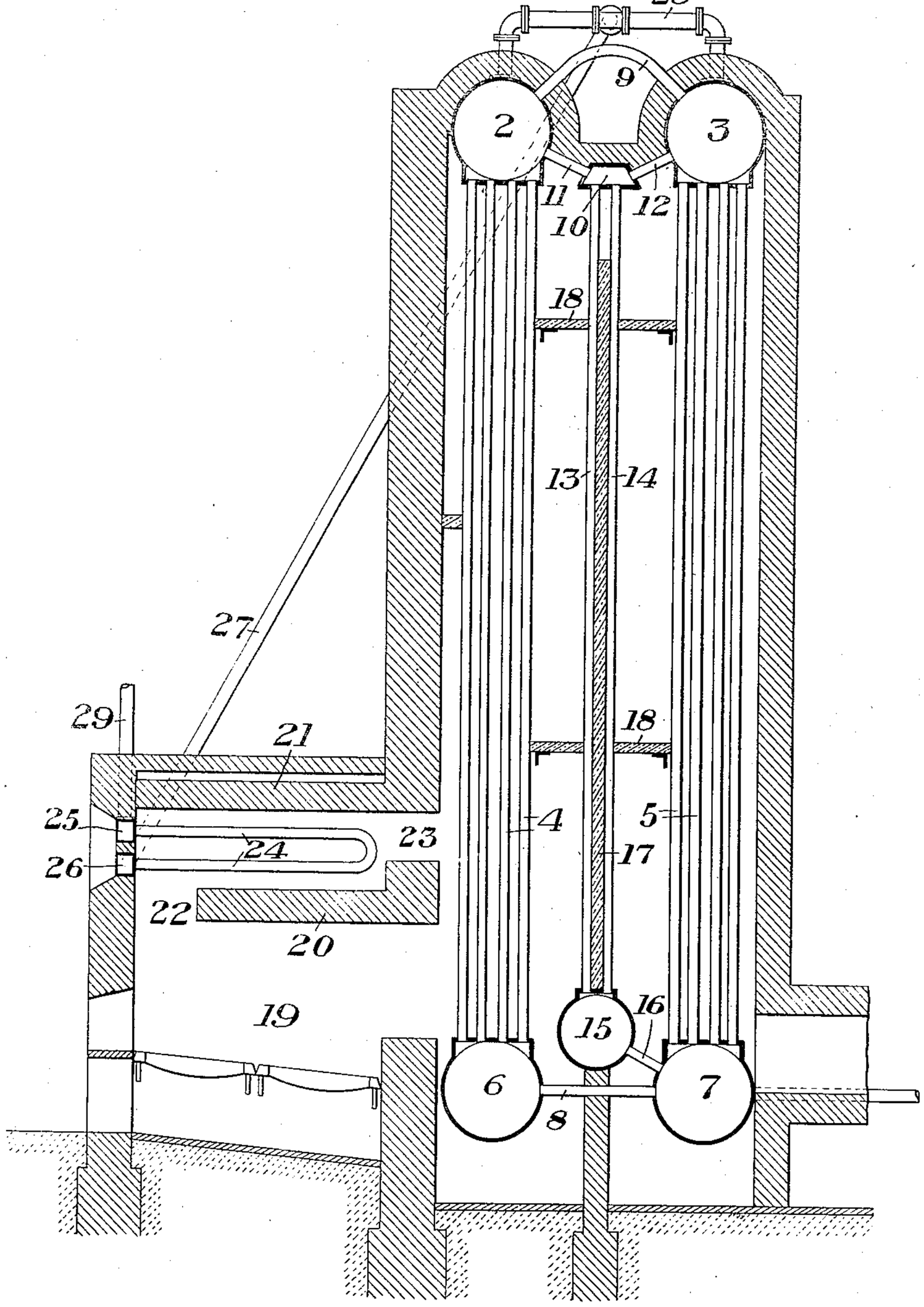
J. E. BELL.

SUPERHEATER BOILER.

APPLICATION FILED JUNE 3, 1907.

925,076.

Patented June 15, 1909.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN E. BELL, OF NEW YORK, N. Y., ASSIGNOR TO THE BABCOCK & WILCOX COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

SUPERHEATER-BOILER.

No. 925,076. Specification of Letters Patent. Patented June 15, 1909.

Application filed June 3, 1907. Serial No. 376,903.

To all whom it may concern:

Be it known that I, JOHN E. BELL, of New York city, in the county and State of New York, have invented a new and useful Superheater-Boiler, 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 the figure is a sectional side elevation showing one form of my improved super-heater boiler.

My invention relates to the class of multiple-bank serial-pass water-tube boilers having superheaters within the boiler structure.

The object of the invention is to provide a simple and efficient boiler of this character.

In the drawings, 2 and 3 represent horizontal transverse steam and water drums connected by banks of straight tubes 4 and 5 with mud drums 6 and 7. The mud drums are connected by pipes 8 and the steam spaces of the upper drums are connected by the pipes 9. Between and below the drums 2 and 3 are a series of headers 10, connected by water tubes 11 and 12 with the water spaces of the drums 2 and 3. From these headers two rows of tubes 13 and 14 lead down to the supplemental water drum 15 which is connected by pipes 16 with one of the mud drums, in this case the rear mud drum. Between the rows of tubes 13 and 14 is a transverse baffle 17 having shelves 18.

The furnace 19 for the boiler is of the external type projecting in front of the boiler setting, and contains the arch 20 extending over the combustion chamber. I make this arch hollow and provide a space between it and the roof 21 of the furnace, this space opening at its front end into the combustion chamber through the port 22, and also opening through port 23 at its rear end into the chamber containing the front bank of tubes. In this hollow space I place the superheater which I have shown as consisting of U-shaped tubes 24 connected to boxes 25 and 26 set in the front wall. To one of these boxes shown as 26 steam is lead through pipe 27 connected to the pipe 28 which is tapped into both steam and water drums near their ends.

29 indicates the outlet for superheated steam from the superheater.

The advantages of my invention result from the location of the superheater over the arch and with a by-pass to allow a small portion of the products of combustion to pass through the space and over the superheating tubes. The amount of superheat may be easily regulated by varying the inlet and outlet ports for the gases.

The form of the superheater may be widely varied, and the form of boiler may be changed so long as it is of the transverse-drum, multiple-bank, serial-pass type.

I claim:—

1. A superheater boiler having transverse steam and water drums connected by banks of tubes to a lower transverse mud drum or drums, a single furnace in front of the boiler having an arch, and a superheater over the arch located in a by-pass for the gases; substantially as described.

2. A superheater boiler having transverse steam and water drums connected by banks of tubes to a lower transverse mud drum or drums, a single furnace in front of the boiler having an arch, and a superheater over the arch located in a by-pass for the gases, said superheater consisting of U-shaped tubes joined to front boxes; substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN E. BELL.

Witnesses:

ESTHER B. KLUG,

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