

No. 780,473.

PATENTED JAN. 17, 1905.

G. H. BARRUS.
STEAM BOILER.

APPLICATION FILED APR. 23, 1904.

Fig. 1.

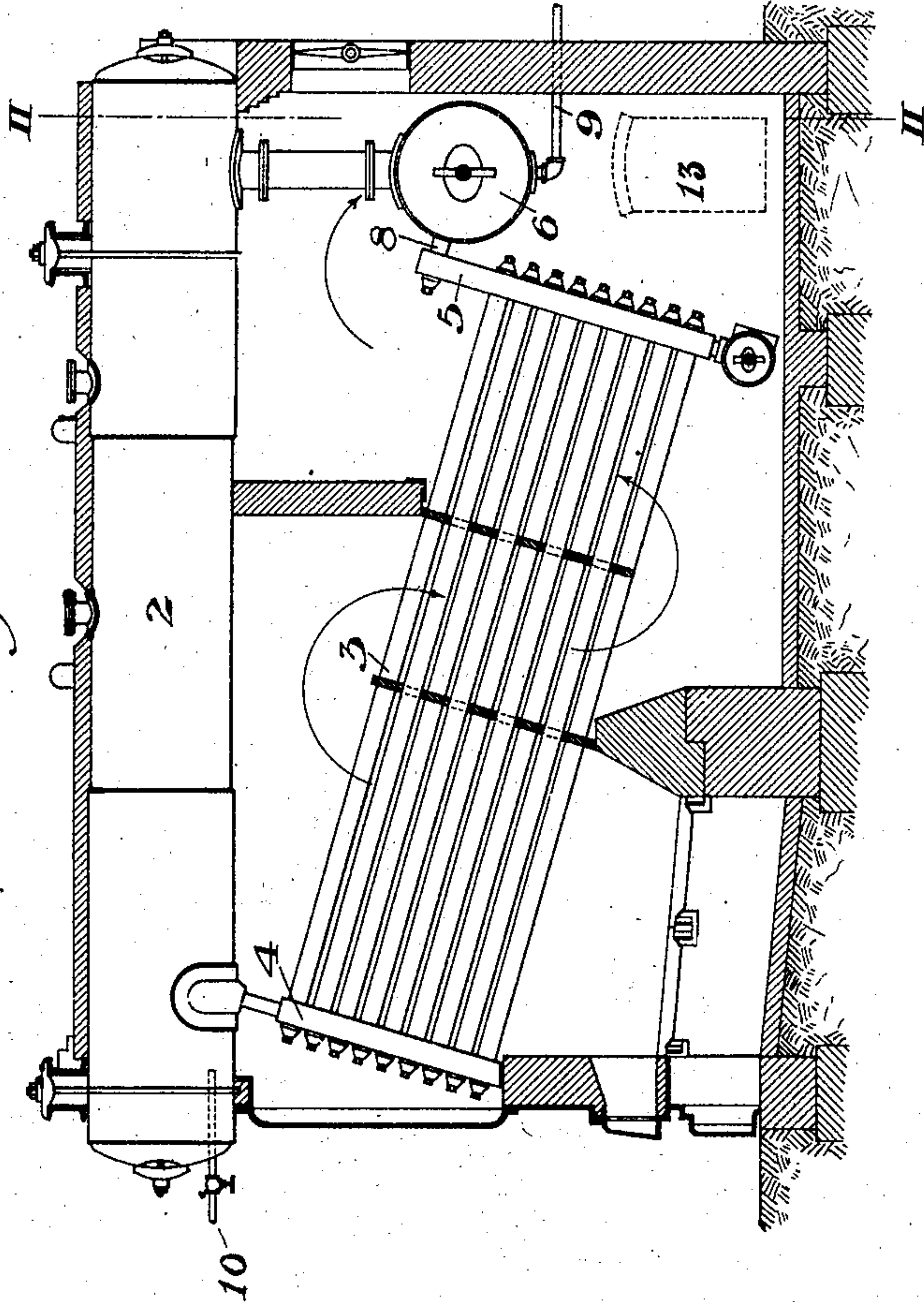
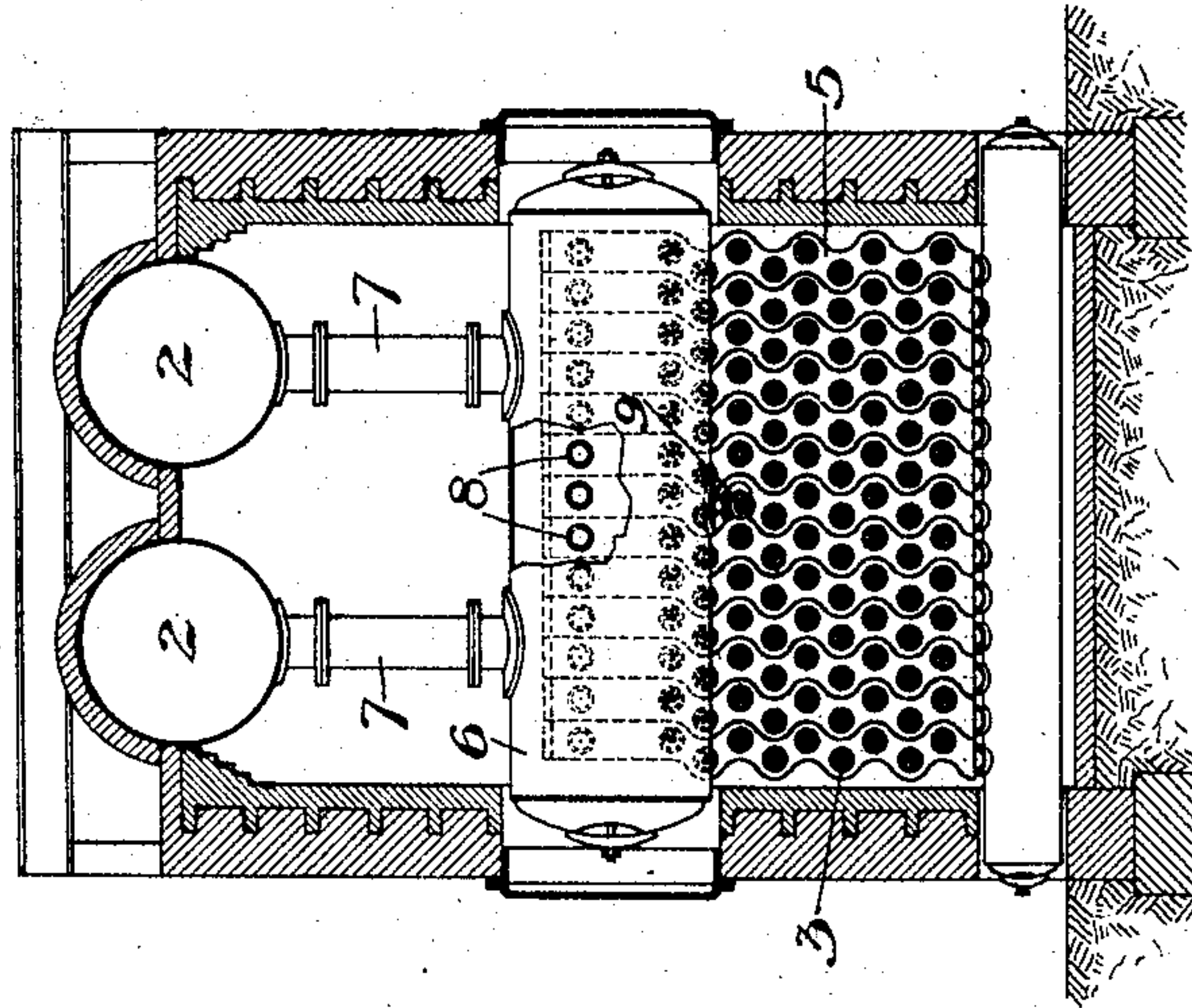


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE H. BARRUS, OF BROOKLINE, MASSACHUSETTS.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 780,473, dated January 17, 1905.

Application filed April 23, 1904. Serial No. 204,651.

To all whom it may concern:

Be it known that I, GEORGE H. BARRUS, of Brookline, Norfolk county, Massachusetts, have invented a new and useful Steam-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—

Figure 1 shows in vertical section a steam-boiler constructed in accordance with my invention. Fig. 2 is a rear elevation showing the boiler-setting in vertical section on the line II II of Fig. 1.

In the drawings, 2 represents a horizontal steam and water drum, and 3 a bank of parallel inclined and relatively staggered tubes arranged below the drum 2 and connected at the front and rear ends by headers 4 5, the front headers 4 being connected with the steam and water drum 2, or with the steam and water drums when more than one such drum is employed. At the rear end of the boiler-setting and above the rear end of the bank of tubes is a transverse settling-drum 6, interposed in the water circulation between the steam and water drum or drums and the rear headers, being connected at its upper portion with the steam and water drum by a pipe or pipes 7 and with the rear headers by pipes 8, which are above the level of the bottom of the settling-drum.

9 is a blow-off pipe through which the settling-drum is emptied of sediment and impurities.

The feed-water is supplied through a pipe 10, attached to the front end of the steam and water drum.

11 and 12 represent two flame-plates arranged to direct the flame and gases over the tubes as indicated by the arrows of Fig. 1.

13 indicates a door on one side opening into the space below the settling-chamber.

As the settling-drum is the sole water connection between the rear headers and the steam and water drum or drums, the whole body of water in circulation, including the feed-water, must pass through the settling-drum before reaching the tubes. The settling-drum is of sufficient capacity to retard greatly

the velocity of the water passing therethrough and to precipitate the impurities.

My invention has important advantages. It affords an efficient means of removing the solid matter from the boiler before it reaches the tubes, thereby preventing serious incrustation, rendering unnecessary frequent cleaning and enhancing the efficiency and durability of the boiler.

I claim—

1. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front ends and themselves connected with the steam and water drum or drums, a transverse settling-drum placed below the steam and water drum and connected thereto at its upper portion, and headers connecting the tubes at the rear ends, said settling-drum being also connected with the headers at a level above its bottom; substantially as described.

2. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front ends and themselves connected with the steam and water drum or drums, a transverse settling-drum placed below the steam and water drum and connected thereto and placed above the rear ends of the tubes, and headers connecting the tubes at the rear ends, said settling-drum being connected with the headers at a level above its bottom and constituting the sole water connection between the steam and water drums and the rear headers, whereby the whole body of water in circulation including the feed-water passes through the settling-chamber before reaching the tubes, said settling-drum being of sufficient capacity to retard greatly the velocity of the water passing therethrough and to precipitate the impurities contained in the water; substantially as described.

In testimony whereof I have hereunto set my hand.

GEORGE H. BARRUS.

Witnesses:

M. L. FISH,
J. E. DAVIS.