

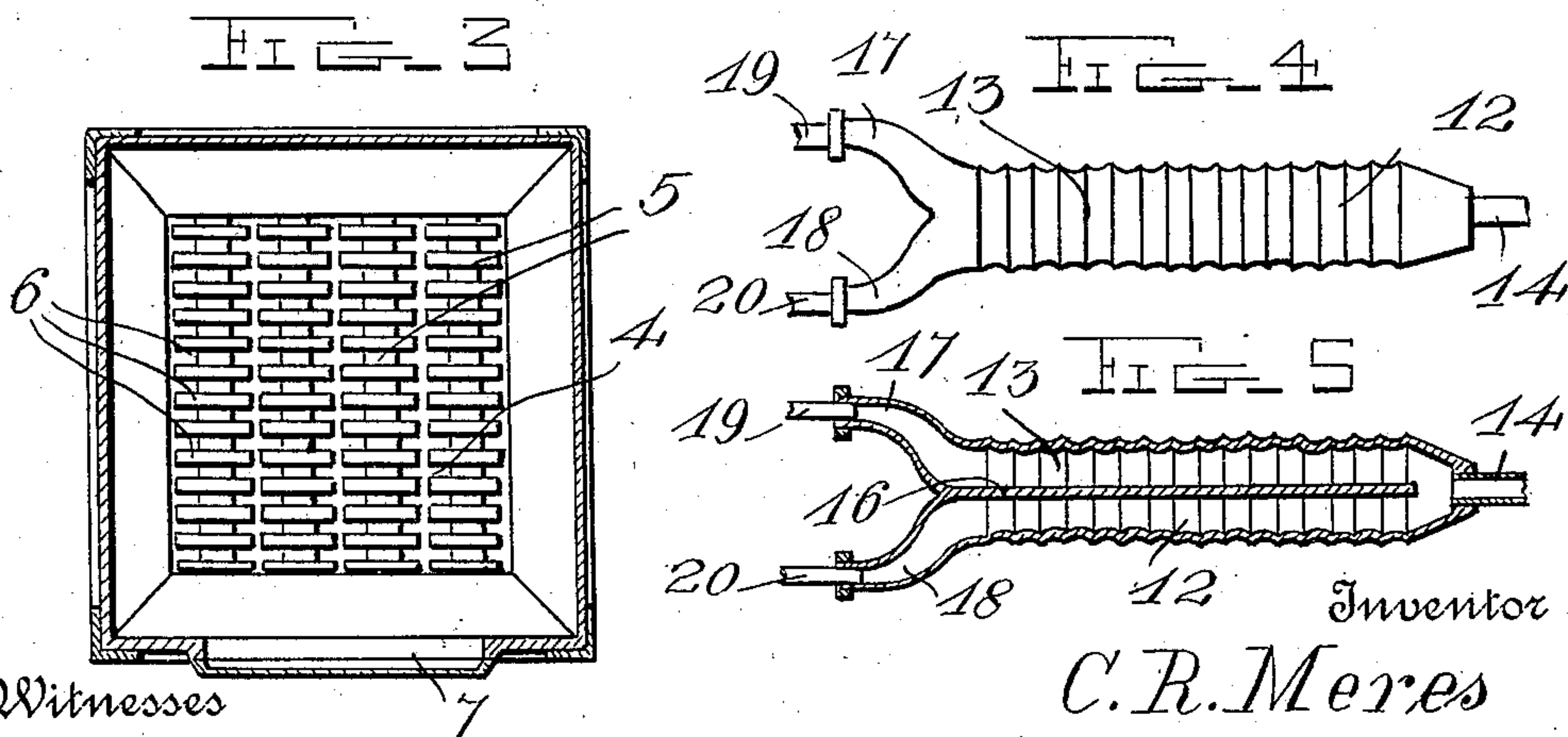
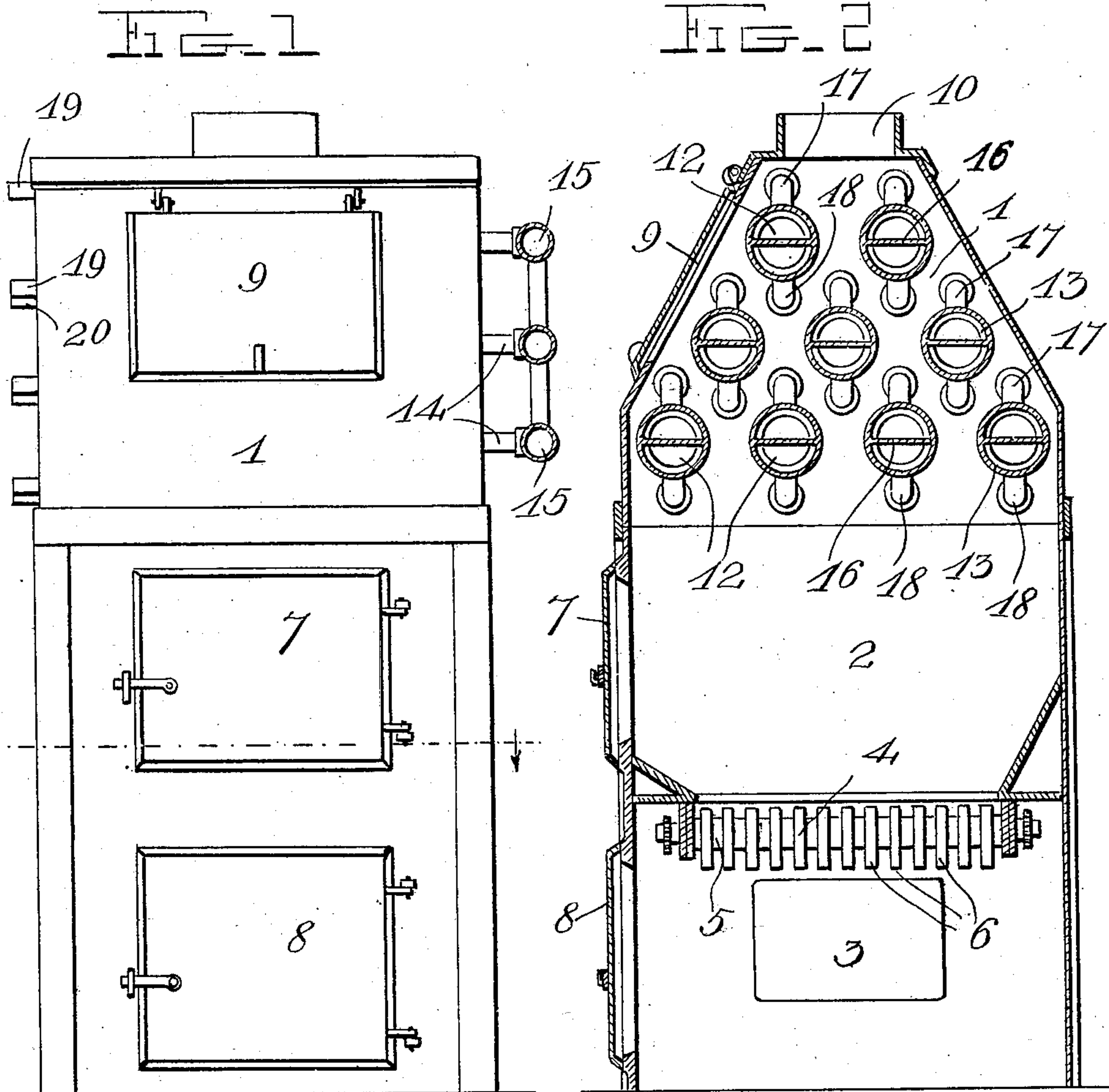
C. R. MERES.

BOILER.

APPLICATION FILED JAN. 4, 1906.

899,314.

Patented Sept. 22, 1908.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES R. MERES, OF LORAIN, OHIO, ASSIGNOR OF ONE-HALF TO JOHN MAITLAND AND ONE-HALF TO JOHN F. WILLIAMS, OF LORAIN, OHIO.

BOILER.

No. 899,314.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed January 4, 1906. Serial No. 294,674.

To all whom it may concern:

Be it known that I, CHARLES R. MERES, a citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in boilers.

The object of the invention is to provide a steam or hot water boiler, each of the tubes of which is adapted to be individually connected with a radiator.

A further object is to provide means whereby water will be circulated through the tubes of the furnace and radiators.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a front view of the boiler and furnace; Fig. 2 is a vertical longitudinal sectional view through the same; Fig. 3 is a horizontal sectional view, taken above the grate of the furnace; Fig. 4 is a detail side view of one of the heating tubes, showing the same removed from the boiler; and Fig. 5 is a vertical longitudinal sectional view of the same.

Referring more particularly to the drawings, 1 denotes the furnace, having a fire box 2 and an ash pit 3. Below the fire box 2 is arranged a grate 4 which is here shown and is preferably constructed of a series of longitudinally disposed bars 5, each of which is provided with parallel transversely disposed flanges 6. The grate bars 5 are supported in a suitable frame, in which they are adapted to be rocked. In the front of the furnace and communicating with the fire box and ash pit are doors 7, 8, and in the upper part of the furnace is arranged a cleaner door 9 and a smoke discharge opening 10.

Arranged in the upper portion of the furnace is a series of transversely disposed water-tubes 12. These tubes are preferably arranged in horizontal rows; said rows may, however, be arranged in any desired position, the tubes in each row alternating with or being staggered with respect to the tubes of the next adjacent rows. The tubes 12

each consist of a main body portion 13 which is preferably corrugated transversely, as shown. The inlet ends of the tubes are reduced and in said reduced ends are secured short connecting pipes 14, by means of which the tubes 12 are connected to water supply tubes or drums 15. Within the body portion 13 of the tubes 12 is arranged a horizontal longitudinally disposed partition 16 which extends to near the supply end of the tube, as shown, thereby separating said main body portion into two parts or passages. The discharge ends of the tubes 12 are bifurcated or formed into branched pipes 17 and 18. The branch pipes of each of the tubes 12 are adapted to be connected to the radiator by supply and return pipes 19 and 20, by means of which the steam or hot water from the tubes 12 is circulated through the radiator.

By providing a separate heating tube for each radiator and connecting the tube directly thereto much better results and a more perfect heat will be provided than is produced in the common form of boilers, in which the radiators are all connected to a single system of pipes.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended claims.

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

1. A boiler having arranged therein above the fire box a series of horizontal independent water-tubes, open at both ends, each having one end connected to a water supply pipe and its opposite end terminating in extended branches connected to return and discharge pipes, said branches having their meeting portions terminating in, and forming a partition subdividing said water-tube longitudinally and stopping at one end a short distance from the inlet end of said tube, said water-tubes also being reduced at their receiving ends and having transversely corrugated surfaces.

2. A boiler having arranged therein above the fire box a series of horizontal independent water chambers, a feed pipe connected to one end of each of the chambers, a pair of separated couplings secured respectively to the upper and lower sides of said chamber at its opposite end, a radiator supply pipe connected to the upper couplings, a radiator return pipe connected to the lower couplings, and a

partition dividing the chamber into communicating compartments. 19

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES R. MERES.

Witnesses:

G. A. RESEK,
MABEL GIBSON.