

(No Model.)

G. TETLEY.
WATER FRONT FOR BOILERS.

No. 563,990.

Patented July 14, 1896.

Fig. 2.

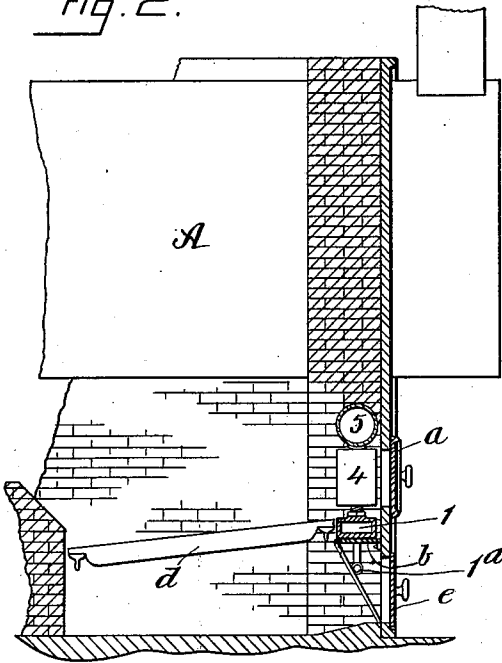


Fig. 1.

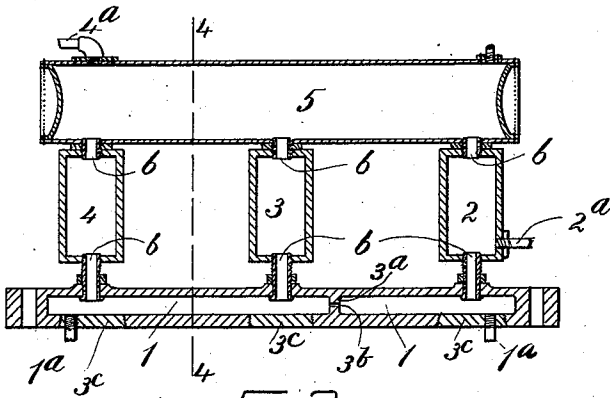
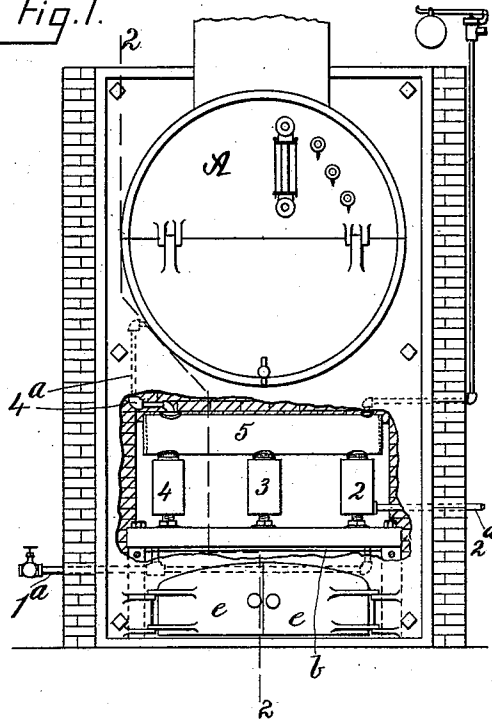


Fig. 3.

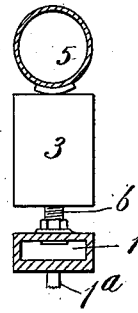


Fig. 4.

WITNESSES:

H. P. Killo.
John R. Snow.

INVENTOR:

George Tetley,
BY
Maynard & Mitchell,
ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE TETLEY, OF VALLEY FALLS, RHODE ISLAND.

WATER-FRONT FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 563,990, dated July 14, 1896.

Application filed November 15, 1895. Serial No. 569,100. (No model.)

To all whom it may concern:

Be it known that I, GEORGE TETLEY, of Valley Falls, in the county of Providence and State of Rhode Island, have invented a new and useful Water-Front for Steam-Boilers, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a boiler with the front broken away to show water-front in place. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a central longitudinal section of my water-front. Fig. 4 is a section on line 4 4 of Fig. 3. Figs. 3 and 4 are enlarged for clearness.

My invention is a water-front for steam-boilers so constructed that the necessary alterations of the relations of the parts of the water-front, the one to the other, caused by variations of heat and pressure, and the consequent shrinkings and expansions of the parts of the water-front, shall not cause breakage and leakage.

One of the difficulties experienced in using a horizontal boiler, especially of the high-pressure type, in which an intense heat is generated in the furnace, has been that the front parts of the furnace adjacent to the furnace-doors have burned out and become defective and useless at such short intervals of time as to be a serious item of expense. This difficulty has been met by providing protection to these parts by covering them with water, contained in a suitable receptacle, this receptacle being connected upon the one hand with the boiler and upon the other with a supply of water, so that not only has the heat been prevented from doing harm, but it has been utilized for heating the water before its admission to the boiler; but these receptacles, being subjected to great variations of heat and pressure, have heretofore not proved long lived.

The construction of my water-front is such that the sudden variations of heat to which water-fronts are subjected do not produce evil effects, by cracks or leaks, as in the common construction of water-fronts, while the water-front may be placed in position in the fur-

nace-mouth, owing to its sectional construction, through the furnace-doors, or, if necessary, a worn-out part may be removed and replaced in the same manner, these operations being attended with the minimum of disturbance and loss of time. The connection of legs 2, 3, and 4 to chambers 1 and 5 by means of connections 6 gives to the whole structure a certain flexibility which allows of variations in the amount of expansion of the upper and lower parts without any resulting injurious strain, leading to leakages or breakages.

In the drawings, A is a boiler; *a*, the door of the furnace of the boiler; *b*, the dead-plate within and below the furnace-doors; *c*, the grate-bars of the furnace, and *e* the ash-pit doors.

1 is the hollow base of the water-front.

2, 3, and 4 are respectively hollow legs opening at the bottom into the hollow base and at the top into the hollow top 5. The partition 3^a, through which there is preferably a small hole 3^b, serves to check the direct flow of water through the hollow base. Water is forced into leg 2 through pipe 2^a and finds its way through pipe 4^a to the boiler.

1^a 1^a are blow-off pipes, through which any sediment collecting in hollow base 1 may be discharged.

The connection between the base-plate 1, top 5, and hollow legs is by screw-threaded connections 6, and screw-plugs 3^c are arranged in the bottom of base-plate 1 to facilitate making the connection.

What I claim is—

1. In a water-front for boilers, the combination of top 5 and hollow legs by connections 6, substantially as and for the purposes described.

2. In combination base-plate 1; top 5; hollow legs; and connections 6, substantially as shown and described.

3. In combination base-plate 1 having plugs 3^c; hollow legs; top 5 and connections 6, substantially as shown and described.

GEORGE TETLEY.

Witnesses:

H. P. GUILLO,
JOHN R. SNOW.