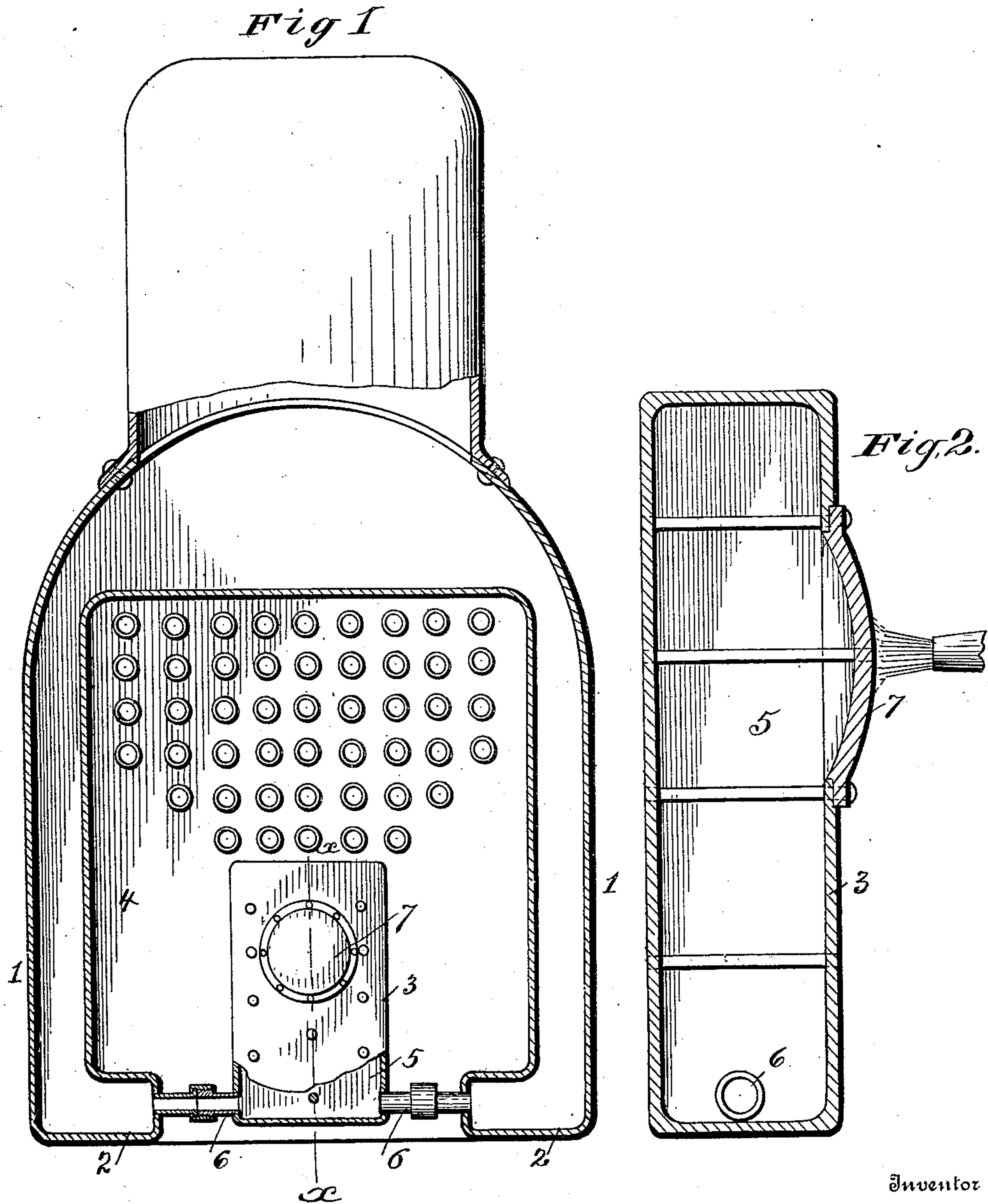


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 BAFFLE FOR OIL BURNING FURNACES IN STEAM ENGINES.
 APPLICATION FILED SEPT. 17, 1907.

898,662.

Patented Sept. 15, 1908.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSHUA LIMERICK, OF WEST MEDFORD, MASSACHUSETTS.

BAFFLE FOR OIL-BURNING FURNACES IN STEAM-ENGINES.

No. 898,662.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed September 17, 1907. Serial No. 393,296.

To all whom it may concern:

Be it known that I, JOSHUA LIMERICK, citizen of the United States, residing at West Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Baffles for Oil-Burning Furnaces for Steam-Engines, of which the following is a specification.

In the utilization of liquid fuel as means for converting water into steam a target is generally used for spreading the flame and equalizing the heat throughout the combustion chamber of a steam boiler furnace. Such targets have here-to-fore been constructed of fire brick and are either destroyed or rendered unserviceable when moving a furnace or making repairs of boiler tubes. This adds materially to the running expenses of a furnace in the course of a year besides increasing the period of inactivity of the furnace when making repairs, the length of time being prolonged by the reconstruction of the target and allowing for the setting and hardening of joints.

The present invention provides a target which is practically indestructible and which is included in the circulation of the water, thereby greatly lessening the time required for the heating of the water when starting the boiler after a period of rest.

In accordance with this invention the target is hollow and constructed of metal and has communication with the water legs, mud-sills or other water space of the boiler and insures circulation of the water therethrough.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a transverse section of a steam boiler furnace showing the application of the invention. Fig. 2 is a vertical transverse section of the target on the line X—X of Fig. 1.

The steam boiler furnace illustrated may

be of any construction and is of the horizontal or locomotive type and comprises water legs 1 and mud sills 2. A target 3 is located within the inner lower portion of the combustion chamber 4 and is hollow and is strengthened by means of struts or stay bolts 5, the same extending between the front and rear walls thereof. Coupling ends 6 project from opposite edges of the target near the lower end thereof and are adapted to be connected with the mud sills 2 of the boiler furnace or other convenient part so as to insure a circulation of the water through the target.

As illustrated the target is of rectangular shape in elevation and is provided near its upper end with a spherically convex portion adapted to receive direct impact of the jet or flame issuing from the fuel burner. The spherically convex portion 7 is reinforced or made thicker than the remaining portion of the front side of the target so as to resist the action of the heat centralized thereon. The target may be constructed in any manner, that is, it may be cast in one piece, or composed of boiler plate, or cast metal sections riveted or bolted together. The latter construction is preferred as it admits of repairs being cheaply effected and the struts or stay bolts being conveniently placed in position besides enabling the target to be more economically manufactured.

The target is adapted to replace the like device here-to-fore constructed of fire brick and is designed to be placed in the combustion chamber of a steam boiler furnace so as to receive the direct action of the flame to effect deflection or spreading thereof throughout the combustion chamber so as to insure equalization of the heat. The target is so placed that the convex portion 7 receives the direct action of the flame so as to initially spread the same and compensate in a measure for expansion due to the unequal heating of the front wall or side of the target. It is also observed that the target has direct connection with the furnace and is movable therewith and included in the circulation, hence repairs may be made without disturbing the target and in operation the water circulates through the target and comes within range of direct action of the flame, with the result that the initial heating of the water is accomplished in a comparatively

short length of time and in the running of the furnace a great saving of heat and fuel is accomplished.

Having thus described the invention, what
5 is claimed as new is:

1. A target for use in connection with a liquid fuel burner, said target having a part of its wall made spherically convex to receive the direct action of the flame and
10 spread the same in all directions, said spherically convex portion being thicker than the remaining portion of the wall, substantially as and for the purpose set forth.

2. A target for use in connection with a liquid fuel burner, said target having an opening in a wall thereof, a spherically-convex flame spreader fitted in said opening in the wall of the target, and struts bracing opposite walls of the target. 15

In testimony whereof I affix my signature
in presence of two witnesses. 20

JOSHUA LIMERICK. [L. s.]

Witnesses:

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JOHN HAMILTON.