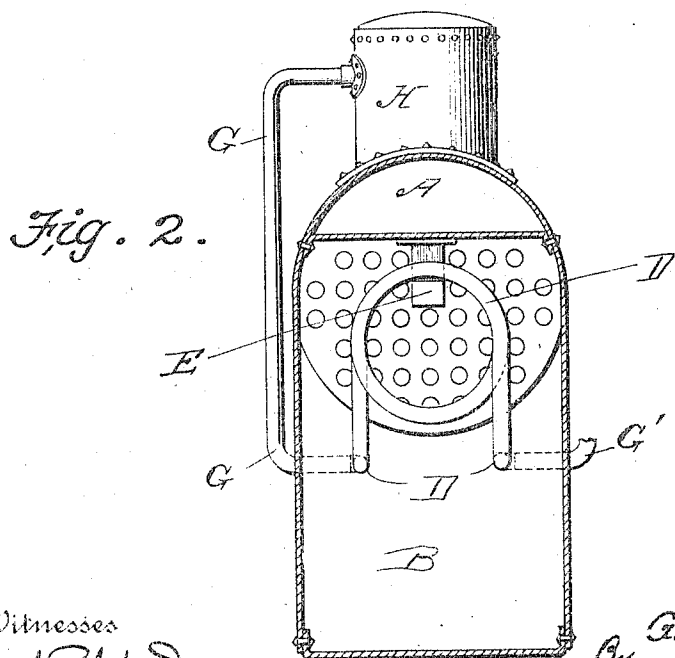
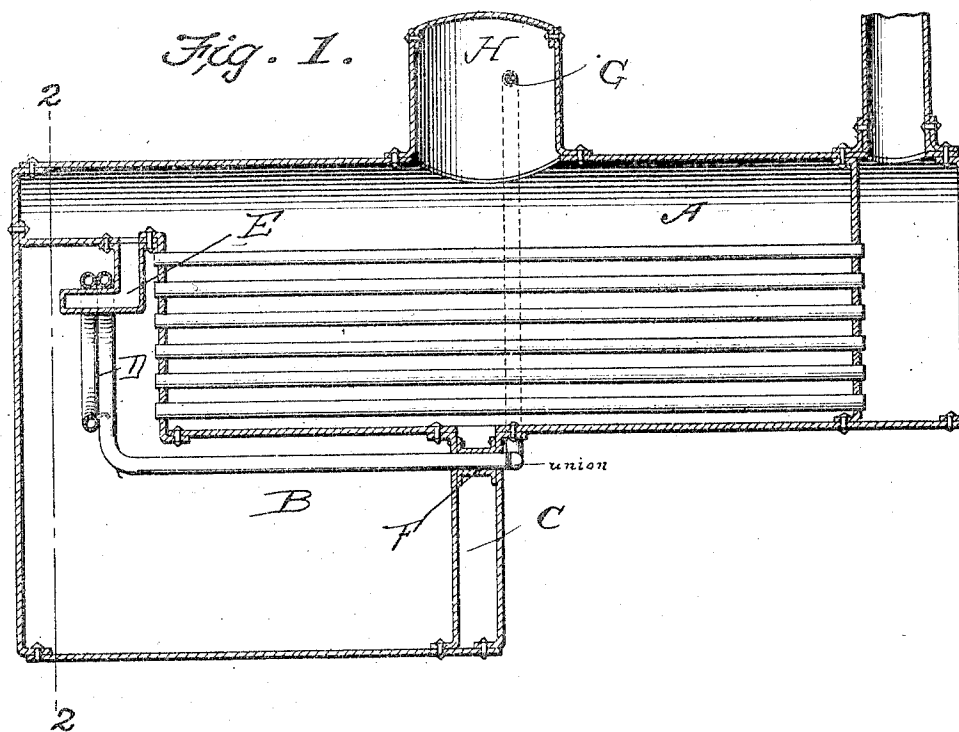


No. 821,662.

PATENTED MAY 29, 1906.

G. D. MILLER.
SUPERHEATER FOR BOILER FIRE BOXES.

APPLICATION FILED NOV. 10, 1904.



Witnesses

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UNITED STATES PATENT OFFICE.

GIDEON D. MILLER, OF SPRINGS, PENNSYLVANIA.

SUPERHEATER FOR BOILER FIRE-BOXES.

No. 821,862.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed November 10, 1904. Serial No. 232,168.

To all whom it may concern:

Be it known that I, GIDEON D. MILLER, a citizen of the United States, residing at Springs, in the county of Somerset and State of Pennsylvania, have invented a new and useful Superheater for Boiler Fire-Boxes, of which the following is a specification.

This invention relates generally to steam-boilers, and more particularly to boilers to be used in connection with traction-engines, though it will be understood that the invention is applicable to all classes of tubular boilers.

The object of the invention is to increase the efficiency of the fire-box by utilizing a portion of the heat units for the purpose of superheating steam.

The invention consists in the novel features of construction and combination hereinafter fully described, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a longitudinal section of a boiler provided with my improvement, and Fig. 2 is a sectional view on the line 2 2 of Fig. 1.

Referring to the drawings, A indicates a tubular boiler, and B the fire-box, said box being of unusual length and terminates at the rear end in a depending water-leg C. At the forward end the fire-box extends upwardly in front of the fire-tubes of the boilers, thereby greatly increasing the efficiency of the boiler. The excessive length of the fire-box and also its excessive height at the forward end are very material features of construction.

For the purpose of superheating the steam I employ a pipe D, which is coiled one or more times and is arranged in the elevated portion of the fire-box in advance of the fire-tubes and is supported by a depending hollow bracket E, which depends from the crown-sheet of the fire-box and contains water, so that it will not readily burn away. The ends of the pipe D are carried rearwardly in parallel order beneath the end of the boiler and are passed through thimbles F, arranged in the depending water-leg C, and to the rear of the said leg one end of the pipe D

is connected to a pipe G, which extends downwardly from the steam-dome H. The steam will pass through the pipes D and G and will be thoroughly superheated in the coil and will pass to the engine through the pipe G'. In case it is desired to remove the pipe D the ends are disconnected from the pipes G and G', and the pipe D can then be lifted from the water-bracket E and the ends of the pipe drawn through the thimbles F.

A boiler fire-box constructed as herein shown and described has been found to materially increase the efficiency of the boiler as a whole.

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

1. In a steam-boiler, a fire-box, terminating in a depending water-leg, in combination with a superheating-pipe arranged in the fire-box, and passing through the said water-leg, and a depending water-bracket for supporting said pipe.

2. In a steam-boiler, the combination with a fire-box terminating in a depending water-leg, and extending upwardly in advance of the fire-tubes, at its forward end, of a superheating-pipe arranged in said fire-box, and having the ends passed through the depending water-leg, a pipe connecting the superheating-pipe with the steam-dome, a pipe leading to the engine and a depending water-bracket for supporting said pipe in the elevated portion of the fire-box.

3. In a steam-boiler, the combination with a fire-box, terminating in a depending water-leg, and extending upwardly in advance of the fire-tube at its forward end, of a superheating coil-pipe supported in an elevated position in the fire-box, by a depending water-bracket, the ends of the coil passing out through thimbles arranged in the water-leg, a pipe connecting one of these ends with the steam-dome, and a pipe connected to the other end of the coil leading to the engine, for the purpose described.

GIDEON D. MILLER.

Witnesses:

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