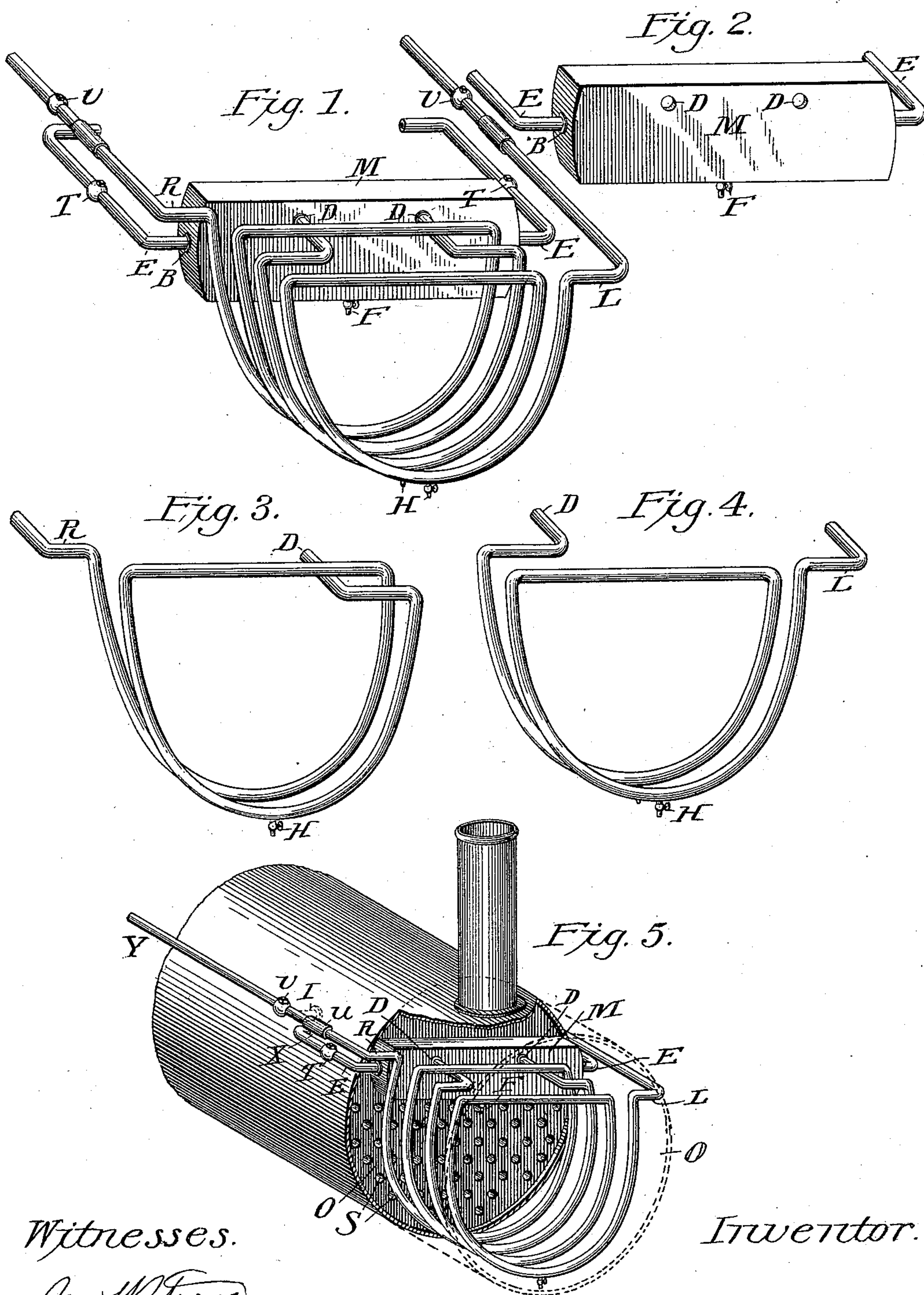


(No Model.)

C. W. ECCLESTON.
FEED WATER HEATER.

No. 557,260.

Patented Mar. 31, 1896.



Witnesses.

R. Watson
J. S. Eccleston

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UNITED STATES PATENT OFFICE.

CHARLES W. ECCLESTON, OF CENTRALIA, WASHINGTON.

FEED-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 557,260, dated March 31, 1896.

Application filed June 11, 1895. Serial No. 552,497. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. ECCLESTON, a citizen of the United States, residing at Centralia, in the county of Lewis and State of Washington, have invented a new and useful Heater for Supplying Locomotive-Boilers with Hot Water, of which the following is a specification.

My invention relates to a heater for keeping locomotive-boilers continually supplied with hot water by means of continuing the injector-pipes past the head of the boiler proper, then turning and passing into the smoke-chamber or front end extension of the locomotive, then coiling the pipe and connecting it with a water-box which is placed in front of the flues, and then passing from the water-box through a pipe at each end thereof out again into the boiler.

The objects of my invention are to have the water hot as it enters the boiler and to utilize the enormous heat that passes out through the flues. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of what I claim as my invention. Fig. 2 is an illustration of the water-box constructed of boiler-iron and bolted into the smoke-chamber directly in front of the head of the boiler proper immediately in front of the front end of the flues. Fig. 3 at R shows the right injector-pipe after it has passed through the side of the smoke-chamber, then making a coil in a circle and a half, ending at D, where it enters the water-box. Fig. 4 shows the left injector-pipe coming in in the same manner on the left side of the smoke-chamber and coiling in the same manner and entering the right end of the water-box at D. Fig. 5 illustrates the front or extension end of a locomotive-boiler, and O the extension or smoke chamber with the heater in position.

Similar letters refer to similar parts through the several views.

As shown in Fig. 5, the present method of

supplying water is through the injector-pipes Y Y, with the pipe turning and throwing the water directly into the boiler at I. My invention simply extends the injector-pipes by unions at *u u* and past the head of the boiler into the smoke-chamber at *n n*, then making the coils L R and entering the water-box at D D. The water flowing into the box M is heated by the fire and heat coming through the flues S S. The water is discharged, after being heated, from the water-box into the discharge-pipes E E, where it passes out of the smoke-box through said pipes and enters the boiler at X X. I also will have to connect the necessary valves and cocks to operate the heater. They are very few and simple, as shown in the drawings.

What I claim as my invention is—

1. The combination with the boiler and its smoke-chamber, of a water-box at the front end of the flues of said boiler, the injector-pipes extended past the head of the boiler into the smoke-chamber and extending in opposite directions, one within the other and coils connected with said water-box and discharge-pipes from said water-box and connected with the boiler, substantially as shown and described.

2. The combination with the boiler and the water-box at the end thereof, of the right and left injector-pipes formed into coils and reversely arranged and each connected at one end with the water-box, substantially as shown and described.

3. The combination with the boiler and the water-box at the end thereof, of the right and left injector-pipes formed into coils arranged at the end of the flues and reversely arranged and each connected at one end with the water-box, and an extension to said boiler forming a smoke-chamber around said coils, substantially as shown and described.

CHARLES W. ECCLESTON.

Witnesses:

J. S. ECCLESTON,

J. D. JACKSON.