W. H. STANDEFORD.

Improvement in Feed-Water Heaters for Locomotives.

No. 130,759. Patented Aug. 20, 1872.

Fig. 1.

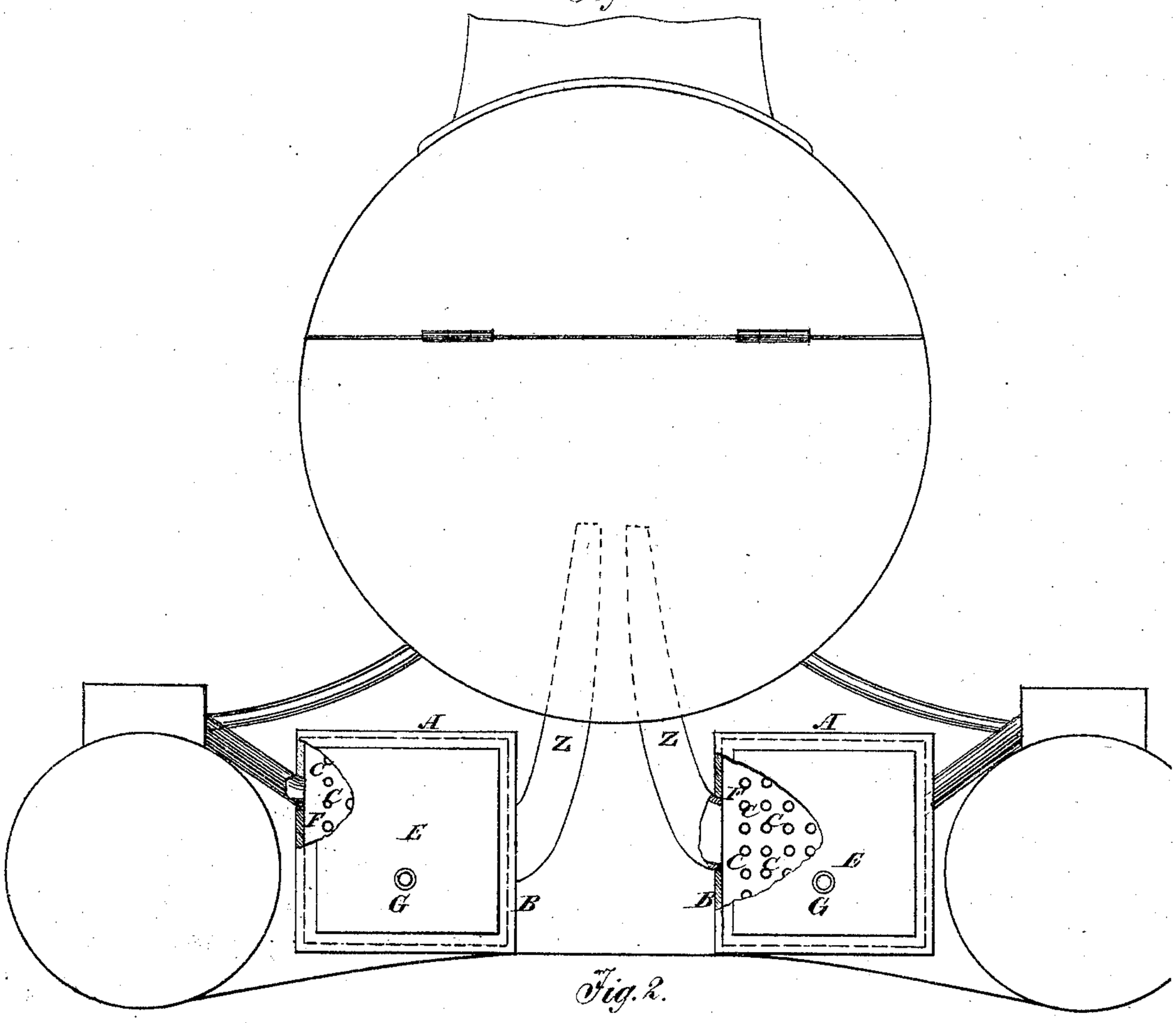
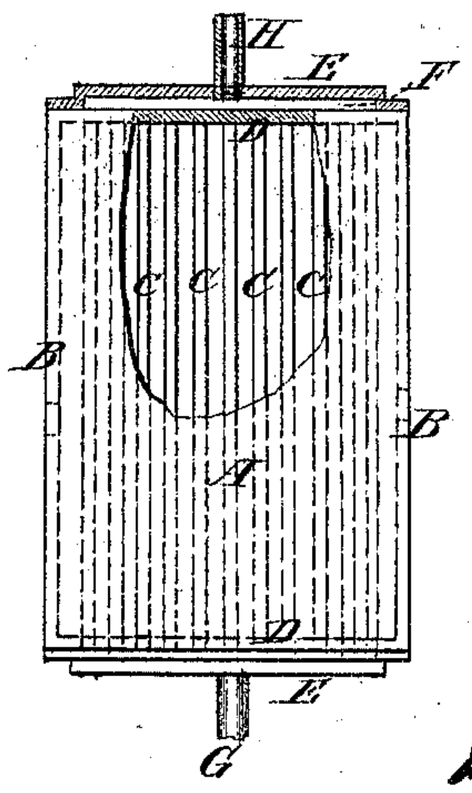


Fig. 2.



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WILLIAM H. STANDEFORD, OF STEWARTSVILLE, MISSOURI.

IMPROVEMENT IN FEED-WATER HEATERS FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. **130,759**, dated August 20, 1872.

Specification describing a new and useful Improvement in Feed-Water Heaters for Locomotives, invented by WILLIAM H. STANDEFORD, of Stewartsville, in the county of De Kalb and State of Missouri.

My invention consists in arranging feed-water heaters constructed in a manner to specially adapt them for their functions and connections with relation to the engines or cylinders and the smoke-stack of a locomotive, so that the water and exhaust steam shall pass through the said heaters to reach the boiler and smoke-stack, respectively, as hereinafter described.

In the accompanying drawing, Figure 1 represents a front view of a locomotive, showing the ends of the engines and boiler and my improved feed-water heaters connected therewith. Fig. 2 is a view, partly in section, of the heater detached.

Similar letters of reference indicate corresponding parts.

A represents the heaters, two of which are seen in the drawing, one for each engine of the locomotive. B is the casing or chest of the heater, which may be in any form and of any size and proportions. C represents the tubes, which are made fast and steam-tight in the heads D D of the case B. More or less in number of these tubes may be used, and of any suitable diameter. The casing may be made of either cast or wrought iron, or of the two combined. On two opposite ends or sides of the casing, and covering the ends of the water-tubes C, is a plate, E, so constructed or so connected with the heads D D that a space or chamber, F, is left between it and the ends of the tubes. The feed-water is introduced into one of these spaces or chambers and discharged from the other, the induction and eduction apertures being marked G and H. The exhaust steam from the engine is introduced by the exhaust-pipe Z into one side of the casing and discharged directly through the exhaust-nozzle from the other, so that the tubes are enveloped in the exhaust steam of the engine, so as to accelerate the draft in the usual way.

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

The combined steam smoke-blast, and feed-water heater, formed by the steam-exhaust pipe Z having the steam-heater B with its water-tubes, and the exhaust-nozzle at the base of the smoke-stack, all the said parts being constructed and arranged substantially as specified.

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