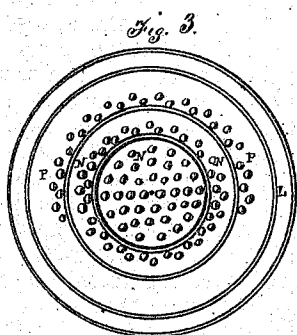
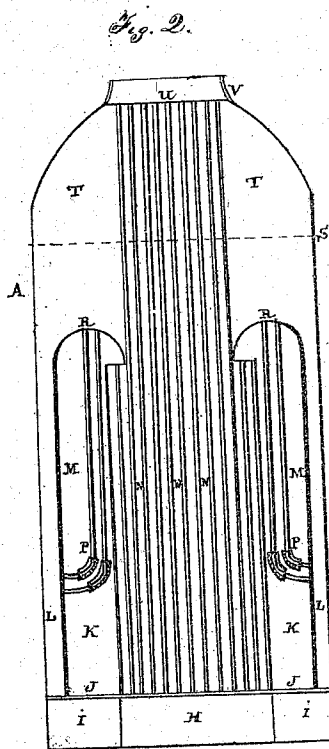
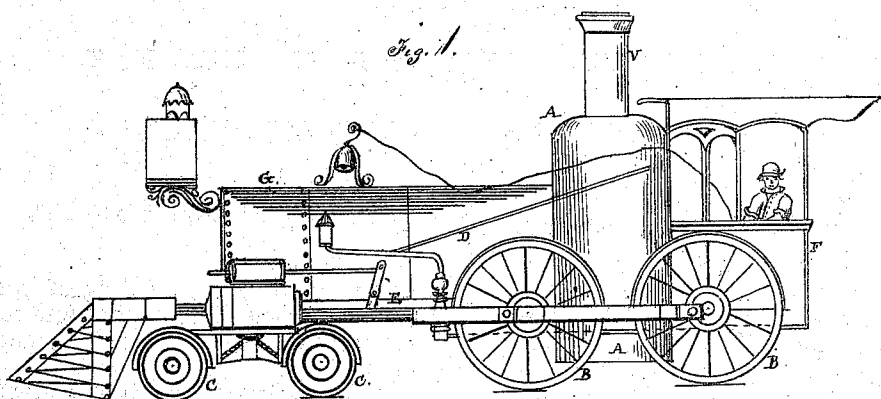


H. WHITAKER.

Improvement in Locomotives.

No. 129,701.

Patented July 23, 1872.



Witnesses.

Edw. F. Brown.
Wm. G. Anderson

Harry Whitaker

By his Atty. S. F. Ruggert

UNITED STATES PATENT OFFICE.

HARRY WHITAKER, OF NEW YORK, N. Y.

IMPROVEMENT IN LOCOMOTIVES.

Specification forming part of Letters Patent No. 129,701, dated July 23, 1872.

To all whom it may concern:

Be it known that I, HARRY WHITAKER, of the city of New York, State of New York, have invented Improvements in and Mode of Applying Superheating Steam-Boilers to Locomotives; and I do hereby declare the following to be an exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification, in which—

Figure 1 represents the mode of applying my "improved superheating steam-boiler" to a locomotive, exhibiting a side elevation, and showing the superheating-boiler placed between the driving-wheels, connecting the steam-pipe (now in use) on the horizontal boiler with the steam-dome of my vertical boiler, for the purpose of heating the feed-water. The fire-box of the old boiler is cut off to make room for my vertical or upright boiler, which is about ten feet six inches in height, and less in height than the dome of the old boiler. The tubes are taken out of the old horizontal boiler that is to be used as a water-tender. Fig. 2 represents a vertical section of the boiler, and Fig. 3 a cross-section of the same.

My invention consists in the combination of my "improved superheating steam-boiler" to locomotives; the boiler being placed in a vertical position between the driving-wheels, and the ordinary locomotive horizontal steam-boiler to be used as a water-tender, the shell and all parts of the locomotive (forward of my upright boiler) to be the same now in use, leaving out the tubes from the boiler, by which I gain great advantages: it saves fuel;

saves the cost and hauling of a tender; is safer, stronger, and requires less repairs than other locomotives; and adds traction to the rails.

A represents the upright boiler; B B, the driving-wheels of the locomotive; C C, the front wheels; D, the steam connecting-pipe; E, the piston; F, the engineer's house; G, the shell of the common horizontal boiler that I use as a water-tender, with the fire and water tubes left out; H, the smoke-box; I, the ash-pit; J, the grate; K, the fire-box; L, the water-jacket; M, the combustion-chamber; N, the fire-tubes; P, the water-tubes; R, the crown-plate—that is, a circular dome, into which the water-tubes P extend. S is the water-line. T is the steam-space. U is the tube-sheet, and V the smoke-pipe.

This boiler can be used successfully on city railroads, because it consumes its smoke and sparks, and coal is to be used instead of wood. It superheats its own steam, and effectually burns the gases of the coal, and, because of the greater height of the fire-box, gives room to introduce the fire-tubes through the water-jacket above the grate.

What I claim as my invention, and desire to secure by Letters Patent, is—

The superheating steam-boiler A, placed in a vertical position between the driving-wheels B B, in combination with the ordinary locomotive steam-boiler G, to be used as a water-tender, when constructed and operating as herein described, and for the purposes set forth.

HARRY WHITAKER.

Witnesses:

J. FRANKLIN REIGART,
EDM. F. BROWN.