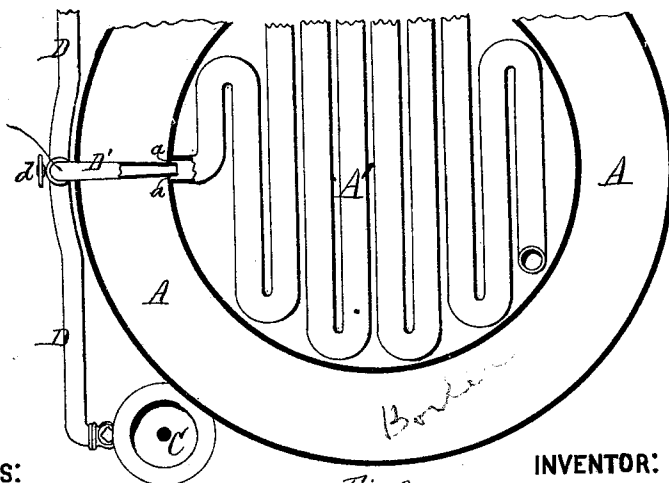
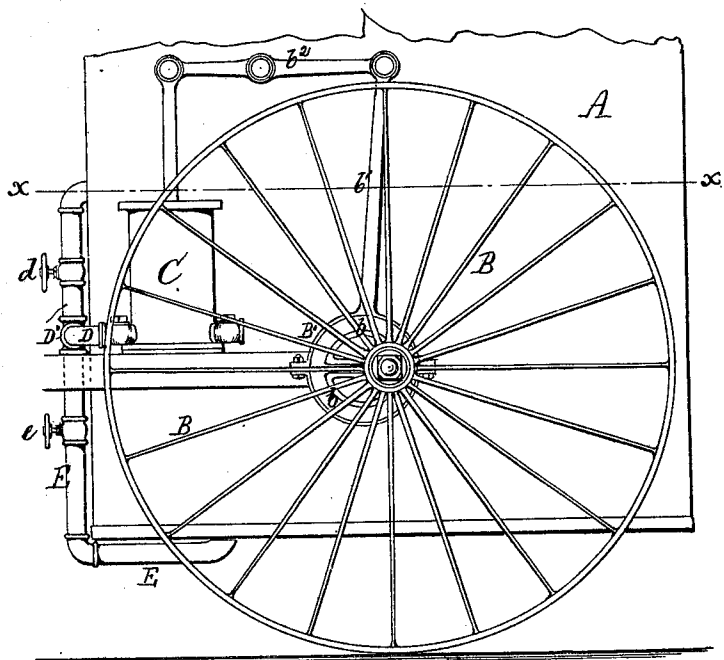


L. W. WERNER.

Improvement in Aerated-Steam Generators.

No. 126,600.

Patented May 7, 1872.



WITNESSES:

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J. M. Estlin.

INVENTOR:

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UNITED STATES PATENT OFFICE.

LOUIS W. WERNER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN AERATED STEAM-GENERATORS.

Specification forming part of Letters Patent No. 126,600, dated May 7, 1872.

To all whom it may concern:

Be it known that I, LOUIS W. WERNER, of St. Louis, in the county of St. Louis and State of Missouri, have made certain new and useful Improvements in Aero Steam-Generators; and I do hereby declare the following to be a full and true description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The object of this invention is to achieve a more ready and greater power to operate the pumps, chiefly of steam fire-engines; and the nature of this invention relates to the arrangement of air-pumps, in combination with the boiler; said air-pumps being operated by an eccentric attachment secured to the wheels of the engine, and by which atmospheric air is forced into the boiler through the heating and circulating pipes, in manner now to be more fully described.

To enable those herein skilled to make and use my said improvements I will now more fully describe the same, referring to—

Figure 1 as a side elevation, and Fig. 2 as a sectional plan at line *x x*.

The steam-boiler A having heating and circulating coils A', as usual, is properly supported on wheels B. The air-pumps C are arranged on both sides, and attached to the boiler, being supported by rubber or other suitable springs. To the wheels B are secured properly an eccentric attachment, B', consisting of the eccentric *b*, which communicates motion to the plunger of the pumps C by means of the connecting-rods *b*¹ and beams *b*², as shown in Fig. 1. Connected with pumps C is a discharge-pipe, D, which communicates with a branch-pipe, D'. The pipe D' passes through the outer shell of the boiler, and extends a short distance into the end of the coils A', an annular space, *a*, being left between the outer periphery of the pipe D' and the inner periphery of the coil A', as indicated in Fig. 2, the object of this manner of connection being to cause a quicker circulation of the water in the

coils, when the air is forced into same; and, further, when the air-supply is shut off the water can freely pass into the coils from the boiler. The pipe D has stop-cock *d* to "let on" or "shut off" the supply of air to the boiler. The blower-pipe E connected to the pipe D' passes down underneath the grate-bars of the boiler, the blowing-action of said pipes being regulated by a stop-cock, *e*.

The motion of the air-pumps, derived from the supporting-wheels of the engine, causes and forces with pressure the water through the coils of the boiler in a quicker manner, producing a better circulation than ordinarily achieved.

After arriving at the fire the pumps can be disconnected from the engine-wheels, and connected and operated by the cam or eccentric of the engine. A small engine can also be supplied and arranged, to which the pumps can be connected so as to operate during the fire, as required.

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

1. The arrangement of air-pump C, eccentric B', wheels B, pipes D D', as and for the purpose set forth.

2. The arrangement of air-pump C, eccentric B' *b b*¹, wheel B, pipes D E, as and for the purpose set forth.

3. The arrangement of air-pump C, eccentric attachment B', pipes D D' E, stop-cocks *d* and *e*, in combination with the boiler A, as and for the purpose set forth.

4. The nozzle or pipe D', formed tapering at its inner end, as shown, when arranged with coils A', pipe D, and air-pump connections, to operate as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

LOUIS W. WERNER.

In presence of—

WILLIAM W. HERTHEL,
ROBERT BURNS.