

L. P. R. BLANCHARD.
Steam-Generators.

No. 154,783.

Patented Sept. 8, 1874.

Fig. 1.

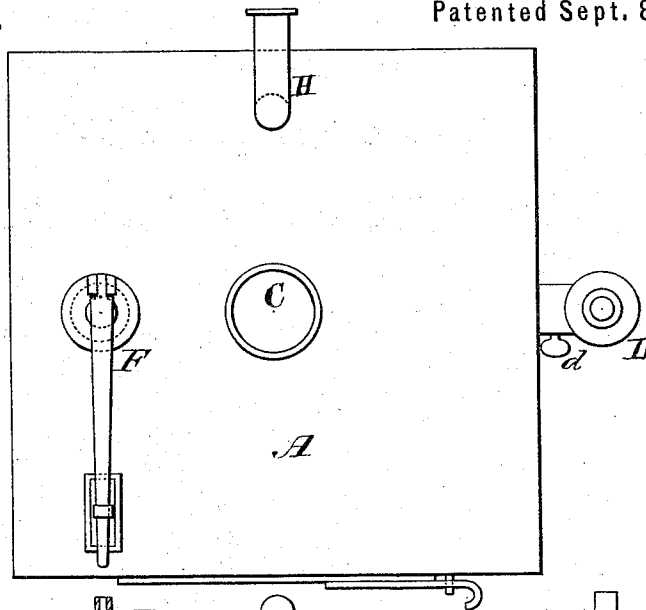
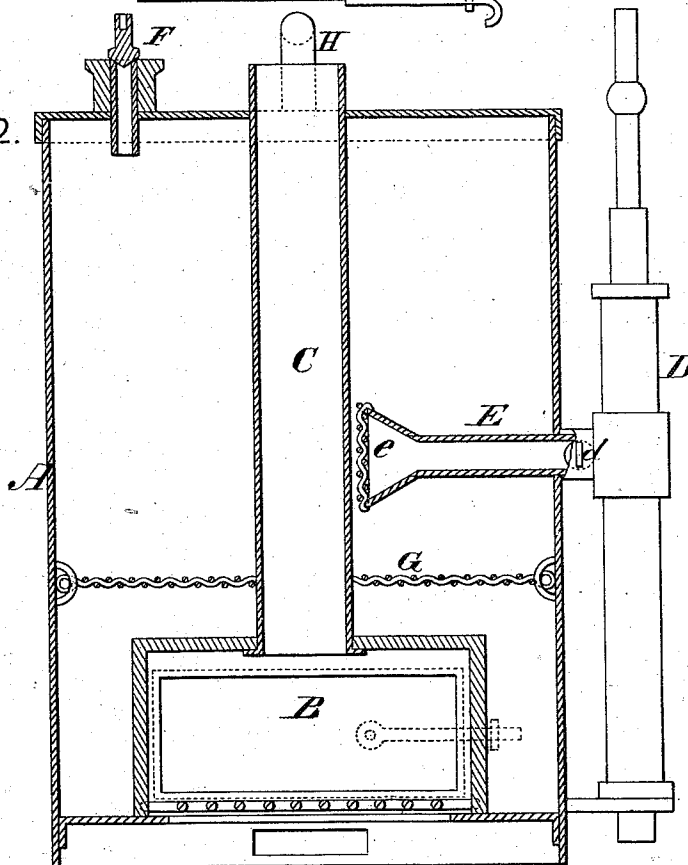


Fig. 2.



WITNESSES.

Villette Anderson.
George E. Uhlman.

INVENTOR.

L. P. Reneault Blanchard
Chipman & Sonner & Co
Attorneys

UNITED STATES PATENT OFFICE.

L. P. RENEULT BLANCHARD, OF ST. HYACINTHE, CANADA.

IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. **154,783**, dated September 8, 1874; application filed August 24, 1874.

To all whom it may concern:

Be it known that I, L. P. RENEULT BLANCHARD, land-surveyor and civil engineer, of the city of St. Hyacinthe, in the county of St. Hyacinthe, Province of Quebec, Canada, have invented a new and valuable Improvement in Steam-Generators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my steam-generator. Fig. 2 is a sectional view of the same.

This invention has relation to steam-generators, wherein the water is suddenly converted into "spheroidal" or superheated steam by injecting it in the form of fine spray upon highly-heated plates. The nature of my invention consists in the construction and arrangement of the parts, as will be hereinafter described and claimed.

The following is a description of my improvement:

In the annexed drawings, A represents the shell of the generator, which incloses the walls of a furnace, B. C designates a smoke-flue leading out of the furnace B through the shell of the generator, as shown in Fig. 2. D is a force-pump for supplying the generator with water through a pipe, E, which terminates in a nozzle, *e*, and which is finely perforated for injecting the water in fine spray. This nozzle is provided with a valve-cock, *d*, for the purpose of regulating the amount of water pumped into the generator. F represents a safety-valve, which may be constructed in the usual or most improved manner, and H represents the pipe for conducting steam to the engine. Below the jetting-nozzle *e*, I arrange in the generator-shell, a finely-perforated plate, G, which is, preferably, inclined at an angle of about thirty degrees, but which may be arranged horizontally, as shown in Fig. 2. If desirable, another finely-perforated plate may

be applied in the generator below the plate G, and arranged in close relation to the furnace-walls, but this is only necessary in generators which are of such capacity that the feed-water would strike the furnace-plates before it is converted into vapor.

The operation of my generator commences with the heating of the furnace-plates to a high temperature, and when this is accomplished the force-pump is set in motion by hand, and the cock *d* is opened to allow a proper quantity of water to be injected into the generator. This first injection of water is immediately converted into "high steam," which starts the engine with which the steam-pipe H is connected, after which the pump is actuated by the engine by properly connecting it to the piston-rod of this pump, the valve *d* being adjusted to supply such a quantity of water as will, when converted into steam, keep the engine properly supplied.

It will be seen from the above description, that water is first injected into the generator in fine spray, which is highly heated and converted into vapory particles. This vapor falls upon the perforated plate G, and in passing through it is still further attenuated, after which the steam is superheated by the furnace-plates.

I do not claim, broadly, a perforated distributing-plate within and surrounding a feed-water injector.

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

The combination of the perforated plate B, injecting-nozzle *e* of the induction-pipe E, furnace B, and smoke-flue C, all arranged within the shell A, substantially as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

L. P. RENEULT BLANCHARD.

Witnesses:

T. P. BOURGEOIS,
T. BOCHOU.