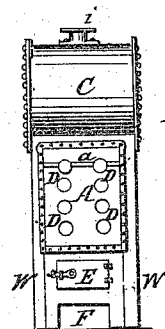
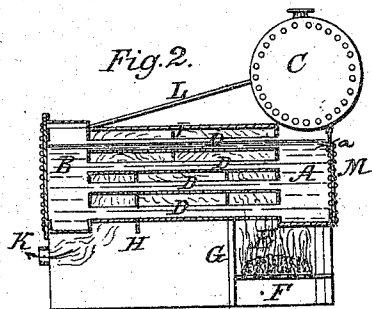
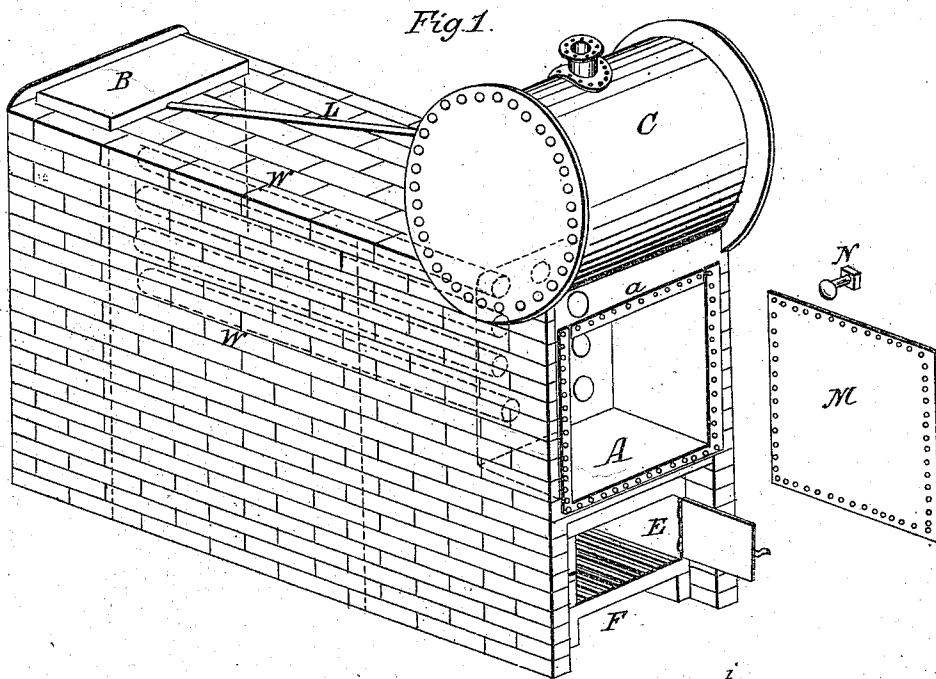


P. RILEY.
STEAM GENERATOR.

No. 103,081.

Patented May 17, 1870.



Witnesses.
W. B. Riley.
Jacob Stauffer.

Inventor.
Peter Riley.

United States Patent Office.

PETER RILEY, OF LANCASTER, PENNSYLVANIA.

Letters Patent No. 103,081, dated May 17, 1870.

IMPROVEMENT IN STEAM-GENERATORS.

The Schedule referred to in these Letters Patent and making part of the same

I, PETER RILEY, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Steam-Generators, of which the following is a specification.

Nature and Objects of the Invention.

My invention relates to the manner of combining two water-spaces by horizontal flues or tubes, when such tubes are provided with adjustable vertical diaphragms, so placed as to expose the greatest amount of surface to an increased or undulated action of the fire, and thereby save fuel.

Description of the Accompanying Drawings.

Figure 1 is a perspective view of the generator, to which my improvement is applied, surrounded by brick-work, with the cover to the front water-space removed.

Figure 2 is a side elevation.

Figure 3, a front elevation of the same.

General Description.

A is the water-space over the fire-grate E.

B is the other water water-space, over the flue K, in the rear.

D D' &c., the tubes that open into the water-spaces A and B.

G is a bridge wall, extending to the first range of tube D, and continued by a metallic plate to the third tier of flues.

I and H are adjustable diaphragms, fitting closely around the tubes D, but not attached, so that they can be slid back or forward, to adjust them. I descends centrally from the top downward, and H ascends from below the flue K to the third tier of tubes, as shown. The flame or heat is thus carried from the under side of the water-space A over the extended bridge wall

G, under I, over H, and down and beneath the water-space B to the flue K or stack.

F is the ash-pit.

C is the steam-drum.

L, a steam-pipe leading from the water-space B to the steam-drum C.

M is the door-plate. N, a headed screw-bolt and nut, for securing it, being made steam and water-tight. This opens directly to the straight and horizontal tubes. The rear water-space, B, may be closed in like manner, thus affording easy access for cleaning the tubes effectually. The top of the water-space A opens directly into the steam-drum C. The pipe L carries off the steam that may arise in the water-space B. Thus, both the water and steam has a free circulation, and the fire a prolonged action, by the interposition of the adjustable diaphragm, in the manner shown, extending across from one wall to the other.

a is an iron plate inside, across the water-space A, perforated for the bolts in the door-plate M.

I am aware that two water-spaces connected by tubes in an inclined or vertical position are used; also, that diaphragms, extending in a longitudinal direction through tubes, constructed with flanges at the ends; such I do not claim; nor do I broadly claim the two water-spaces combined by tubes; but

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

The perforated diaphragms H I of a horizontal tubular boiler, when made adjustable, as and for the purpose named.

PETER RILEY.

Witnesses:

WM. B. WILEY,
JACOB STAUFFER.