DANIEL SULLIVAN.

Improvement in Steam-Boilers.

No. 114,876. Patented May 16, 1871.

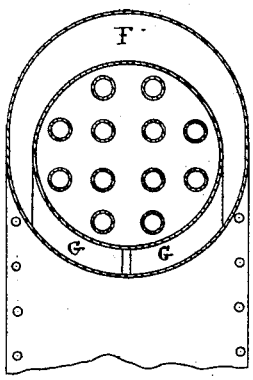


Fig. 3.

Fig. 1.

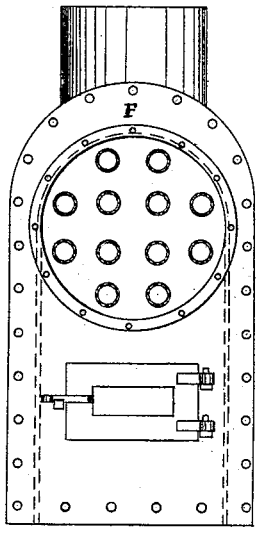
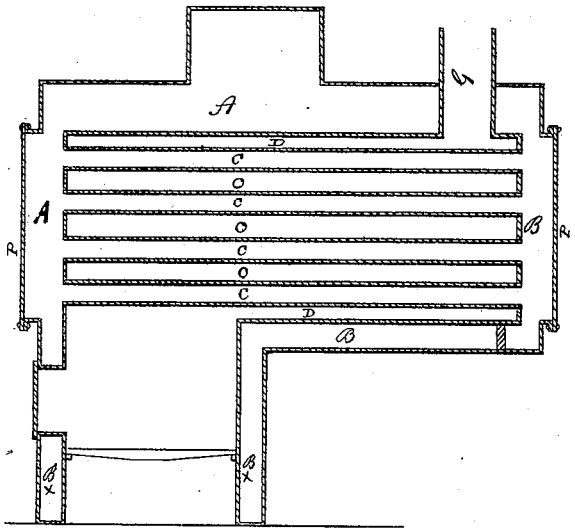


Fig. 2.



Witness
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United States Patent Office.

DANIEL SULLIVAN, OF BANGOR, MAINE.

Letters Patent No. 114,876, dated May 16, 1871.

IMPROVEMENT IN STEAM-BOILERS.

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

I, DANIEL SULLIVAN, of Bangor, in the county of Penobscot and State of Maine, have invented certain Improvements in Steam-Boilers made on the Locomotive Principle or Form, of which the following is a specification.

The nature and object of my invention are the improvement in the construction of steam-boilers on the locomotive principle, by which the draught is increased and makes steam more rapidly and with less fuel than the usual form or make of such boilers, thereby increasing the horse-power, and by their construction made more durable and with greater facilities in cleaning out scale and sediment.

Description of Accompanying Drawing.

Figure 1 is a perspective view of the fire-front of the boiler and steam-dome, with the face-plate off, and showing the position of the water-tubes in the water or steam-space.

Figure 2 is a side view, showing the arrangement or location of the water-tubes running the entire length of boiler and through the intense heat of the fire-box, thereby increasing the heating surface one-third more than in the usual way of constructing locomotive-boilers, showing the fire-space all around the inner cylinder and around the outside of the tubes, instead of through them, as made in the common form.

Figure 3 shows the back end of the boiler with the face-plate out of the water-space, and also the arrangement of the double cylinder with a small water-space between outside and inside cylinders, running the whole length of the boiler, and also forms a water-back end when the face-plate is on, as shown.

General Description.

F, in fig. 1, shows steam-space over top of inner cylinder.

F, in fig. 3, shows the same on the back end of the boiler.

G G show water-spaces between both cylinders.

A, in fig. 2, shows steam-space and steam-dome on top of boiler.

B B B show water-space on front, back, sides, and between cylinders.

B^{x} B^{x} show water-space in legs of boilers.

C C C C show water-tubes.

D D show top and bottom of inner cylinders.

O O O show fire-space between tubes.

P P show front and back water-plates, forming water-spaces B B, and are taken off and put on as occasion requires.

G is the smoke-outlet or chimney.

I claim as my invention—

The within-described arrangement, in a steam-boiler, of the straight water-tubes, running the entire length of the boiler and through the intense heat of the fire, the double cylinders forming the water-space, as described, the broad removable front and back plates, and the smoke-stack, riveted to the inner and outer cylinder, all arranged with reference to each other, as herein set forth, for the purposes specified.

DANIEL SULLIVAN.

Witnesses:
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