

B. C. NYE.

Blow-Off for Steam-Boilers.

No. 133,881.

Patented Dec. 10, 1872.

Fig. 1.

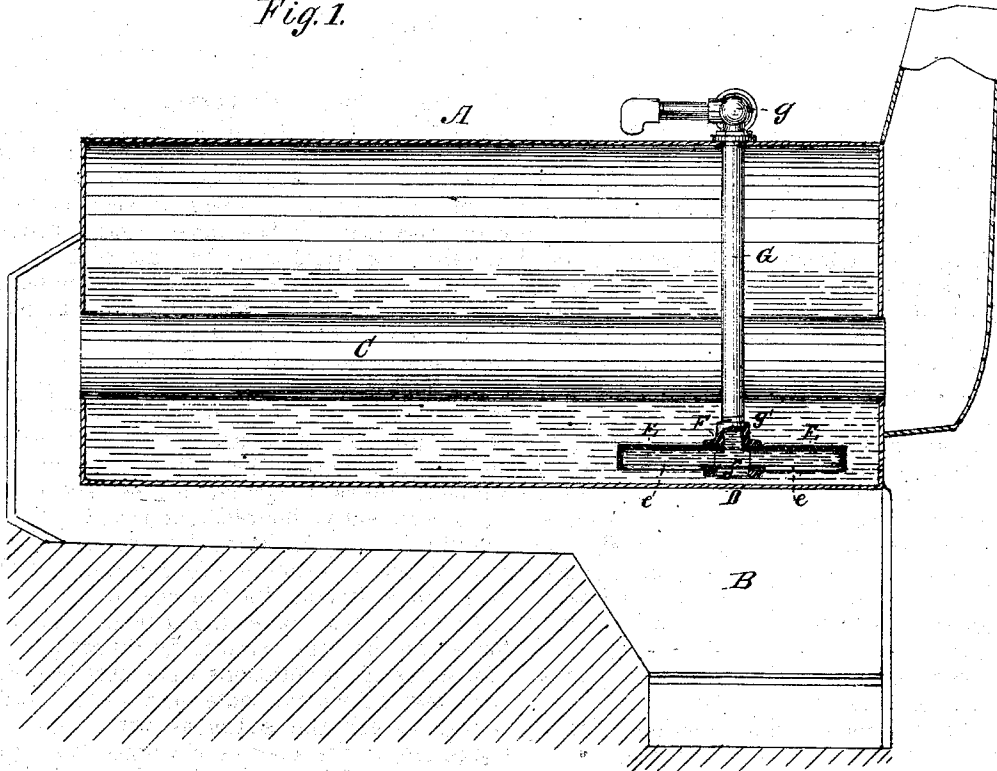
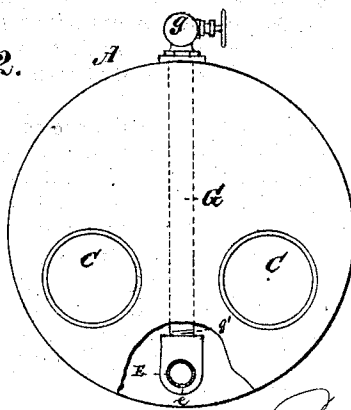


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

BUCKINGHAM C. NYE, OF POMEROY, OHIO, ASSIGNOR TO HIMSELF AND  
JAMES N. WILLIAMSON, OF SAME PLACE.

## IMPROVEMENT IN BLOW-OFFS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. 133,881, dated December 10, 1872.

*To all whom it may concern:*

Be it known that I, BUCKINGHAM C. NYE, of Pomeroy, in the county of Meigs and State of Ohio, have invented a Blow-Off for Steam-Boilers, of which the following is a specification:

The invention relates to that part of a boiler which is immediately above the fire, which is accustomed to become covered with scale and sediment, and which is thereby rendered liable to rapid oxidation, to diminution in strength, and to the production of explosions.

The usual construction of a horizontal blow-off pipe is to form perforations in the bottom or under side, and connect it with a vertical or other discharge-pipe at one of its ends. The disadvantages of this plan are, chiefly, the liability of the perforations to become clogged and the short distance from the discharge-pipe proper for which the sediment or scale is affected.

My invention has for its object to remedy the defects of such construction.

Figure 1 is a longitudinal section. Fig. 2 is a front view.

A represents a boiler; B, the fire-space; C, return-flues; and D, that part of boiler where the collection of scale and sediment is liable to promote oxidation and explosion. E E are two pipes, closed at one end, externally threaded at the other, and each having a slot, *e*, nearly its full length. These are screwed into a T-pipe, F, so that the slots *e e* shall be in line with a bottom slot, *f*, of the said T-pipe. G is a pipe having a shut-off cock, *g*, connecting with the T-pipe at *g'*, and extending to some point outside the boiler, where it discharges. When the cock *g* is turned off no egress is allowed to the water, but when turned on the pressure of the steam upon the water forces a current thereof up through each aperture or the bottom of pipes.

It is evident that the continuous slots *e* offer no obstruction upon or around which mud or other sediment can collect so as to clog or in

any way impede the passage of the water through the pipes E. It is equally apparent that there is no danger of clogging at the junction of said pipes with the pipe F, owing to the force of the current at that point at each discharge. Observation and reflection are alike confirmatory of the fact that the influence of the current which can be induced at any time through a vertical discharge-pipe, must be within a very short radius. Hence extension of the horizontal perforated pipe beyond such radius must be useless. In my invention I have connected the vertical discharge-pipe at the center of the horizontal slotted pipe, so that the radius of the circle in which an upward current can be established is, theoretically, doubled, and nearly so in practice; but to facilitate the action of a current is the function of the continuous slots, since the sediment, once carried upward into the pipes E, will travel along in the same till forced up into the vertical discharge-pipe G. If a series of perforations were used instead, each would form the center of a vortex which would disturb the sediment within its own range only; thus a series of vortices would be established, effecting a considerable commotion or disturbance in the water, but not causing a uniform action—*i. e.*, broad, unbroken lateral currents—as in the case of the continuous slots.

Therefore, while disclaiming, as foreign to my invention, the use of perforated pipes,

I do claim as new, and an improvement in blow-offs for steam-boilers—

The horizontal pipes E provided with the continuous slots *e e*, in combination with the pipe F *f* and vertical discharge-pipe G, said parts being connected so as to form an equal-armed T, as shown and described, for the purpose specified.

BUCKINGHAM C. NYE.

Witnesses:

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