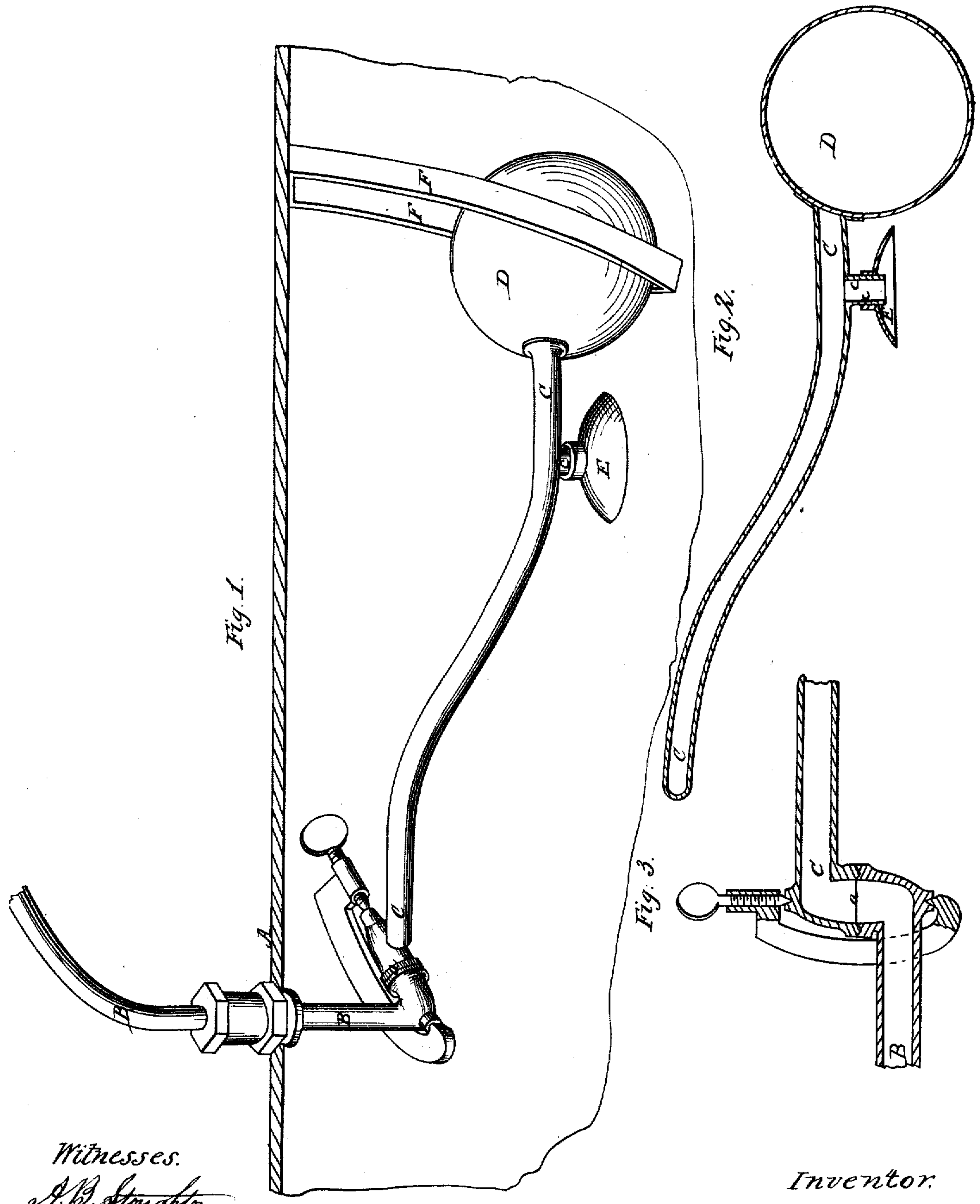


*J. H. Washington,
Steam-Boiler Cleaner.*

No 22,757.

Patented Jan. 25, 1859.



*Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES H. WASHINGTON, OF BALTIMORE, MARYLAND.

IMPROVED METHOD OF BLOWING OFF STEAM-BOILERS.

Specification forming part of Letters Patent No. 22,757, dated January 25, 1859.

To all whom it may concern:

Be it known that I, JAMES H. WASHINGTON, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in the Manner of Blowing Off from the Surface of Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the apparatus as arranged in the interior of a steam-boiler. Fig. 2 represents a longitudinal and vertical section through a portion thereof, and Fig. 3 represents a horizontal section through the steam joint or hinge that connects the float and its pipe to the stationary steam-pipe.

Similar letters of reference where they occur in the several figures denote like parts of the apparatus in all the figures.

I am aware that attempts have been made to blow off boilers at the surface; but in these attempts the blow-off pipe did not follow and accommodate itself to the constantly-varying height of the water in the boiler, so that sometimes it would blow off from below the surface, and again blow off steam.

The nature of my invention consists in making a joint or hinge in the blow-off pipe, and connecting with said hinged pipe a float that will keep the blow-off opening always at a fixed position with regard to the surface of the water in the boiler, however much that surface may vary.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

In sea-going steamers the crystals of salt first form at or near the surface of the water, and so of other mineral matter held in solution in the water, or of its natural impurities—they first rise to the surface and afterward form a scale on the inside of the boiler, which causes the boilers to burn out. My object is to avoid this scaling by constantly blowing off the crystals or sediment at the surface or just below the surface; and I do it as follows:

A, in red lines, may represent the shell of the boiler, and B is a pipe leading from the

inside to the outside of the boiler and rigidly held to the boiler. To the inside end of this stationary pipe B, I attach, by a steam or water tight hinge or joint, *a*, of any of the known kinds, a second pipe, C, which has upon its extreme end a float, D. Near the end of the pipe C there is a small branch pipe, *c*, over which is slipped an inverted funnel, E, so that the funnel can be raised or lowered to adjust it to or just below the surface of the water in the boiler, to which it is held by the float D; and thus, as the float is always on the surface, the funnel will also maintain its position with regard to the surface also.

F F are guides between which the float may play; and at a point below which it would be dangerous to ever allow the water to fall in the boiler the float will be caught and held, and then steam will escape through the funnel E and pipes CB, and to give an alarm a steam-whistle may be attached to the end of the pipe B, which will signal when the water is too low. The water when blowing off would not sound the whistle; but a careful engineer will never require a whistle to notify him that there is danger, as he will take the precaution to prevent it. Any steam-joint that will allow the float to be at the surface of the water will serve the purpose of keeping the funnel there also; and two or more of these contrivances may be connected to one blow-off pipe, or to one boiler, the object being to continuously blow off the sediment at the surface, which surface is constantly varying in height, and thus prevent what is termed "scaling" and a consequent burning out of the boilers.

Having thus fully described the nature and object of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

Connecting the pipe C by an elastic or yielding joint to the stationary pipe B, and furnishing its opposite end with a float, D, that will keep the inlet into said pipe C at or a little below the surface of the water in the boiler, so as to blow off sediment, &c., at the surface, however much it may rise or fall or vary, substantially as described.

JAMES H. WASHINGTON.

Witnesses:

A. B. STOUGHTON,
E. COHEN.