JAMES S. GRIFFITH.

Improvement in Surface-Blow-Offs for Steam-Boilers

No. 114,551. Patented May 9, 1871.

Fig. 1

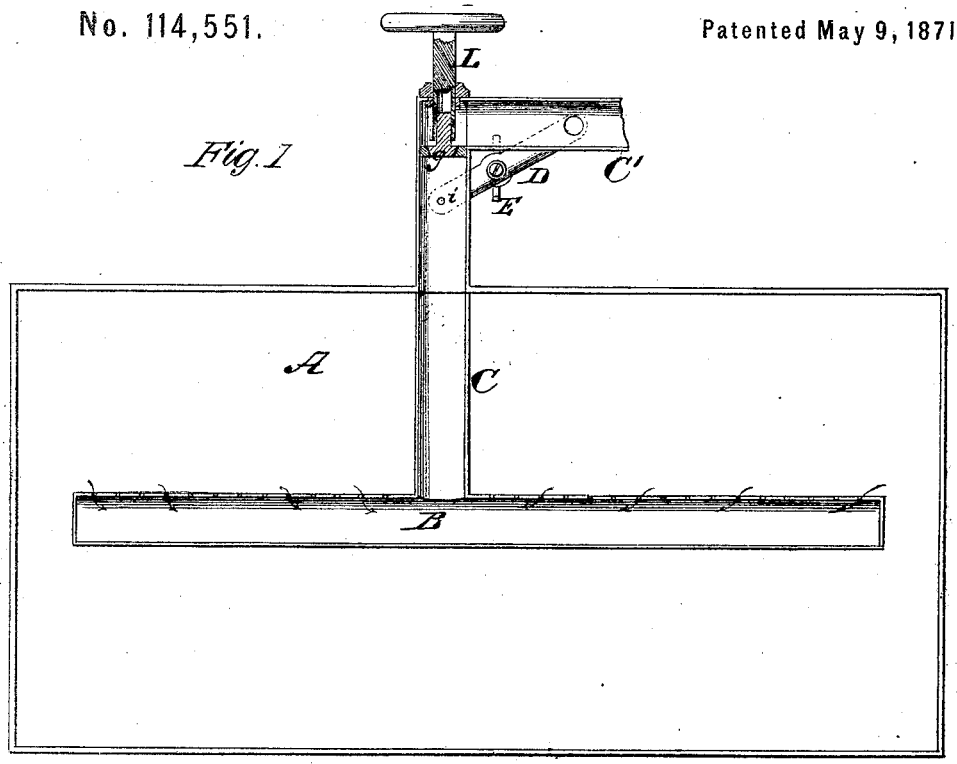
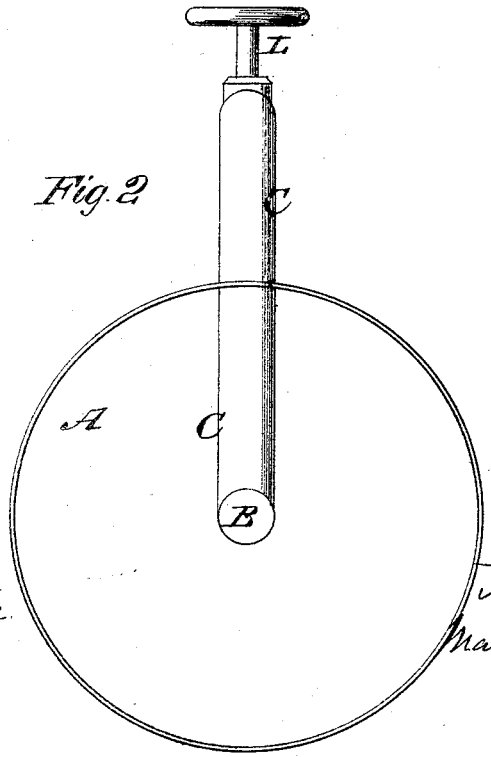


Fig. 2



Witnesses.
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JAMES S. GRIFFITH, OF ST. LOUIS, MISSOURI.

Letters Patent No. 114,551, dated May 9, 1871.

IMPROVEMENT IN SURFACE BLOW-OFFS FOR STEAM-BOILERS.

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

To all whom it may concern:

Be it known that I, JAMES S. GRIFFITH, of St. Louis, in the county of St. Louis and State of Missouri, have invented an Improved Surface Blow-Off for Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a section taken longitudinally and vertically through the center of a steam-boiler having my invention applied to it.

Figure 2 is a vertical section taken transversely through the boiler.

Similar letters of reference indicate corresponding parts in both figures.

The object of this invention is to provide a steam-boiler with a device which I denominate a circulating surface blow-off for carrying off the scum which collects upon the surface of the water during ebullition, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing—

A represents a steam-boiler, having arranged within it a pipe, B, through the upper side of which a number of fine perforations is made. This pipe is arranged longitudinally with respect to the length of the boiler, and also horizontally. It is connected at the middle of its length with a vertical pipe, C, which extends up through the boiler-shell, and is provided with a valve, *g*, opening upward. The stem of this valve *g* is fitted into a socket which is formed into the lower end of a screw-threaded stem L, carrying on its upper end a hand-wheel. By these means the valve *g* can be held down firmly upon its seat or allowed to rise therefrom as may be required.

A small pipe, D, extends diagonally across between the vertical portion of pipe C and the horizontal portion C′ thereof, and is provided with a valve, E. By means of this pipe D and its valve E steam and impurities can be allowed to escape from the boiler through the nozzle of pipe C when the valve *g* is shut, and this valve allows more or less escape from the boiler, as circumstances may require.

For extraordinary occasions the main valve *g* is opened, and steam, water, and impurities are allowed free escape; but, as it would not be practicable to allow steam to escape continuously through the opening which is closed by valve *g* on account of the steam and solid particles cutting out this valve-seat rapidly, I employ the supernumerary pipe D and a valve, E. The pipe D is smaller than pipe C, and at the point where it leads out of this pipe C a very small orifice, *i*, is made, which breaks the force of the solid particles escaping with steam from the boiler, and thus prevents a rapid destruction of the valve or cock E.

By thus providing for the outlet of steam and solid matters a continuous blow-off is obtained with very little waste of steam and with little or no wear on the valve E. This valve E is used to cut off the escape of steam, &c., when desired.

Having described my invention,

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

The supernumerary pipe D and its orifice *i*, and valve E combined with pipe C C′, and valve G, substantially as described.

JAMES S. GRIFFITH.

Witnesses:
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