W. H. Low.

Safety Valve.

No. 86,168. Patented Jan. 26, 1869.

Fig. 1.

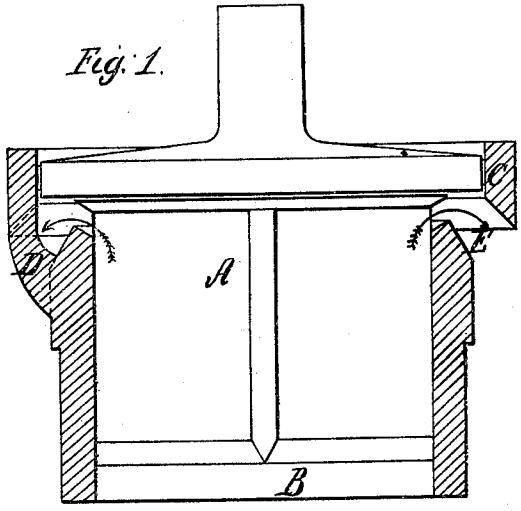
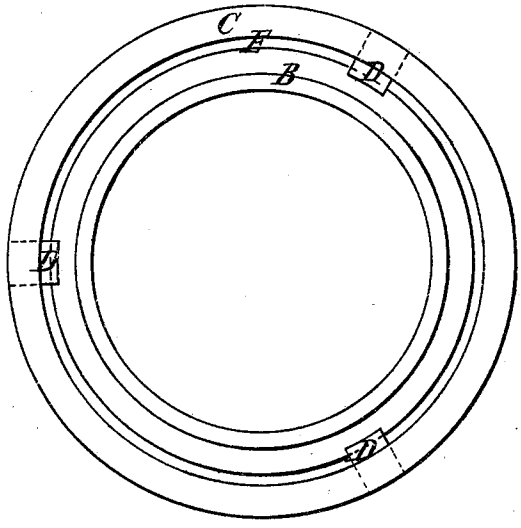


Fig. 2.



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WILLIAM H. LOW, OF NEW YORK, N. Y.

Letters Patent No. 86,168, *dated January* 26, 1869.

IMPROVEMENT IN STEAM SAFETY-VALVES.

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, WILLIAM H. LOW, of the city, county, and State of New York, have invented a new and useful Improvement on Safety-Valves; and I hereby declare the following to be a full and exact description of the same, reference being had to accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of the valve, showing a longitudinal section of the valve-seat, from which the valve is raised, as when "blowing off."

Figure 2 is a plan view of the valve-seat.

The nature of my invention relates to the construction of safety-valves having an overhanging projection, whereby a greatly-increased surface is exposed to the action of the steam when the valve is raised, and in surrounding the projection by a rim attached to the valve-seat, whereby an annular opening for the downward discharge of the steam is secured, these conditions being most desirable in safety-valves controlled by means of springs, as they insure a more reliable action of the valve in opening and closing.

The following description will enable others skilled in the art to make and use my invention.

The valve A has its disk made of sufficient diameter to project beyond its bevelled face, where it rests upon its seat.

The valve-seat B is provided with an outer rim, C, bored out large enough to allow the enlarged disk of the valve to move in it freely in a vertical direction.

The arms, D D D, hold the rim C in its position in relation to the valve-seat B.

The annular opening, E, is formed by cutting away the outer upper edge of the valve-seat B, and the inner lower edge of the rim C, as shown.

The course of the steam, when the valve is "blowing off," is shown by the arrows.

When the valve is closed, the operation of this valve is like that of the ordinary safety-valve, but, when the pressure of steam upon the exposed surface of the valve overcomes the resistance of the spring, causing the valve to rise, the escaping steam, acting on the overhanging projection of the valve, overcomes the increased resistance the spring has obtained by being compressed, forces the valve still further open, insuring a decrease in the pressure of steam below the point required.

When this has been obtained, the effect of the downward current of the discharged steam through the annular opening E is to cause a rapid closing of the valve, produced by means of a partial vacuum formed under the overhanging projection.

Among the advantages of this valve are, its simplicity, its rapid action, and its reliability.

I am aware that valves having an overhanging projection have been long known and used; therefore I do not claim them broadly; but

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

The construction of the valve-seat B with the rim C and annular opening E, as set forth.

WILLIAM H. LOW.

Witnesses:

JAMES A. GREIG,

G. D. BURTON.