(No Model.) 2 Sheets—Sheet 1.

J. VANDERCAR.

SAFETY VALVE.

No. 301,938. Patented July 15, 1884.

Fig. 1.

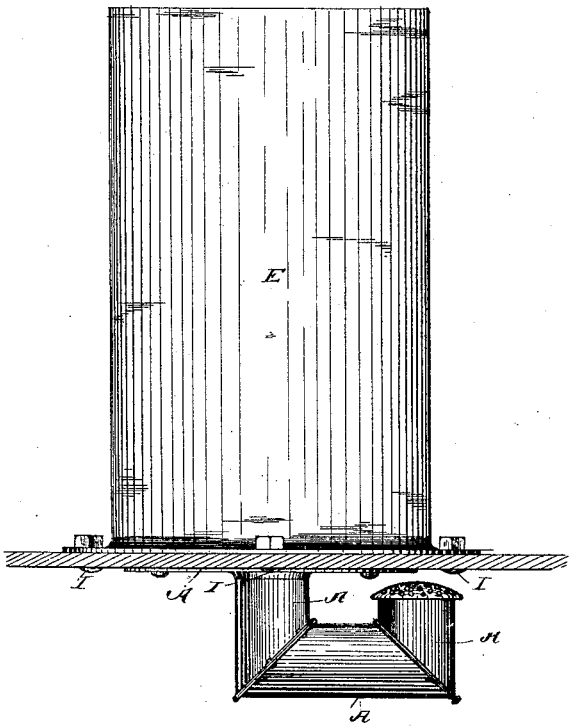
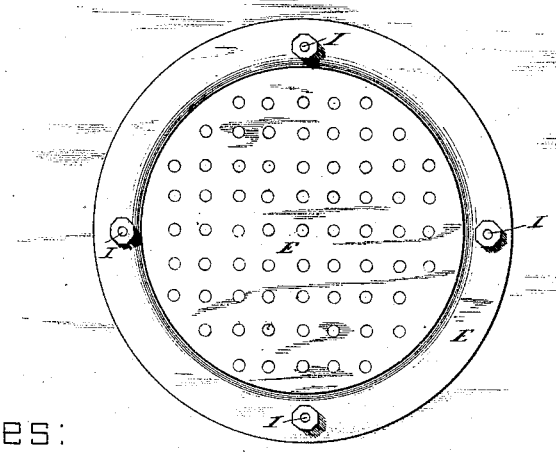


Fig. 2.



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Edward Webster.

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

J. VANDERCAR.

SAFETY VALVE.

No. 301,938. Patented July 15, 1884.

Fig. 4.

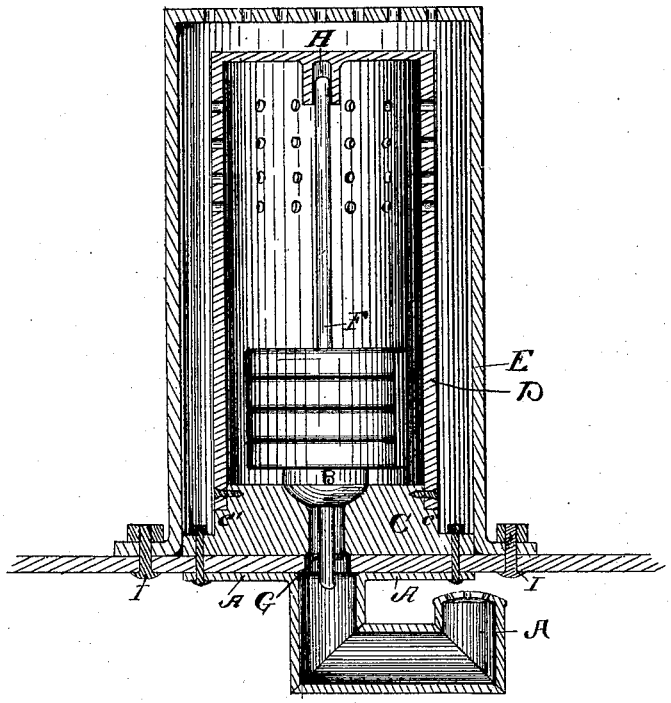
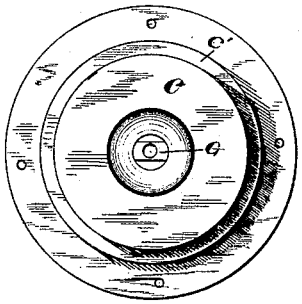


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN VANDERCAR, OF WEST TROY, NEW YORK, ASSIGNOR TO ROBERT F. SILLIMAN, OF SAME PLACE.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 301,938, dated July 15, 1884.

Application filed December 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN VANDERCAR, of West Troy, county of Albany, and State of New York, have invented a new and useful Improvement in Safety-Valves; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in steam safety-valves in which the valve and valve-weights are incased; and the objects of my invention are, first, to keep the valve closed by a direct and unvarying pressure; second, to prevent the weights upon the pressure-rod being increased or diminished at will; third, to keep the valve clean and free from dirt and dust. I attain these objects by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation showing the steam-duct to the valve. Fig. 2 is a plan view showing perforations in top of casing. Fig. 3 is a detail of valve-seat. Fig. 4 is a sectional elevation of my invention.

The steam is directed by means of the duct A to the valve B in the valve-seat C, which is a cylindrical flanged piece, the flange C′ forming a seat for the casing D, as shown in drawings, Fig. 4. Upon the valve are piled the weights, held in position by means of the rod F, which moves in the guide G in the valve-seat, and the guide H, forming a part of the casing D. The casing, which is cylindrical in shape, is seated upon the flange C′, and is attached to the valve-seat by means of screws. Near the top of the cylinder are perforations to release the steam. Outside of and inclosing the casing D is the casing E, which is also cylindrical, the top being perforated, and the bottom flanged around the lower edge to receive the screw-bolts I. The bolts I are headed on the inside of the boiler, the threaded part protruding up through the flange of the casing, and upon this thread the nut is screwed and then sealed by the inspector. This prevents tampering with or increasing the weights, because the seals have to be broken before the casing can be lifted. The seat is bolted to the boiler through the flange on the duct A, as shown in the drawings. Packing is placed between the seat and boiler and the boiler and flange, to preserve an air-tight joint.

In the side of the casing D and in the top of the casing E are perforations, as shown in the drawings. The perforations are placed in this way in the top of one casing and side of the other, to allow the steam to escape, but not to allow any impurities—as sand—to gain entrance to the valve-seat. By this means, also, the engineer is prevented from inserting any long thin instrument to bear upon the weights, and thus increase the weight upon the valve. The valve and weight are put on and covered by the casings D and E, which are fastened to the boiler, as shown, and then the whole thing inspected. When the inspector is fully satisfied, he places his stamp on the bolts I I, which then cannot be removed without breaking the seal. Thus the seal acts as a detective.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a safety-valve, the casings D and E, having perforations in their side and top, respectively, substantially as and for the purpose set forth and described.

2. The combination of the steam-duct A, the valve-seat C, the valve B, and the casing D, substantially as set forth and described.

In testimony that I claim the foregoing I append my signature.

JOHN VANDERCAR.

Witnesses:
GEO. H. MORRISON,
T. T. TRIMBLE.