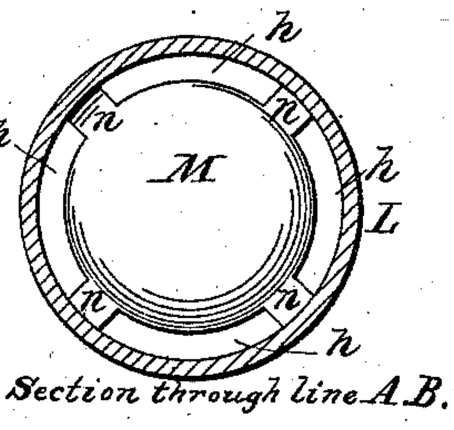
H. ANDERSON.

SAFETY VALVE.

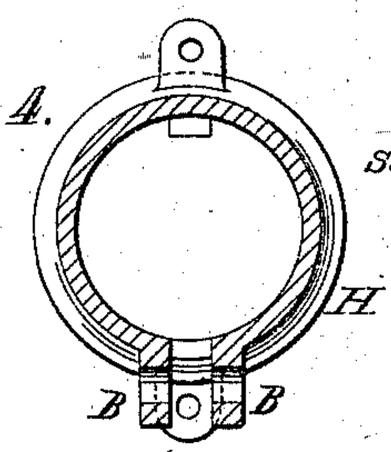
No. 74,480. Patented Feb. 18, 1868.

Fig. 3.



Section through line A.B.

Fig. 4.



Section through Line. C.D.

Fig. 1.

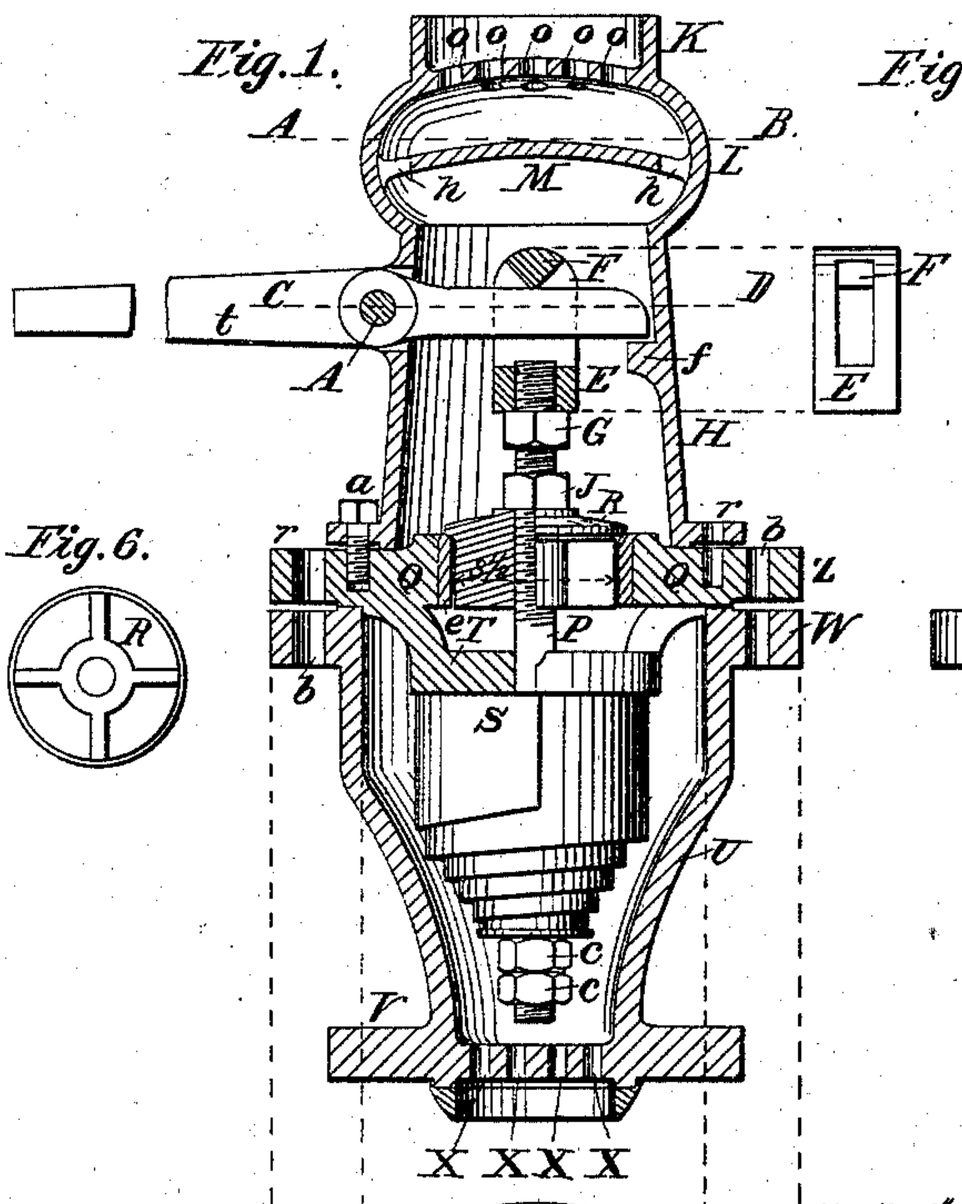


Fig. 2.

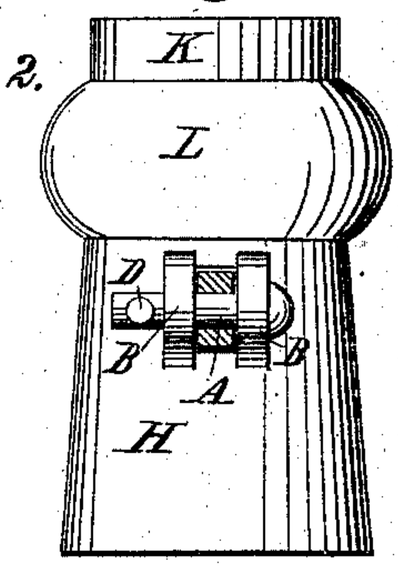
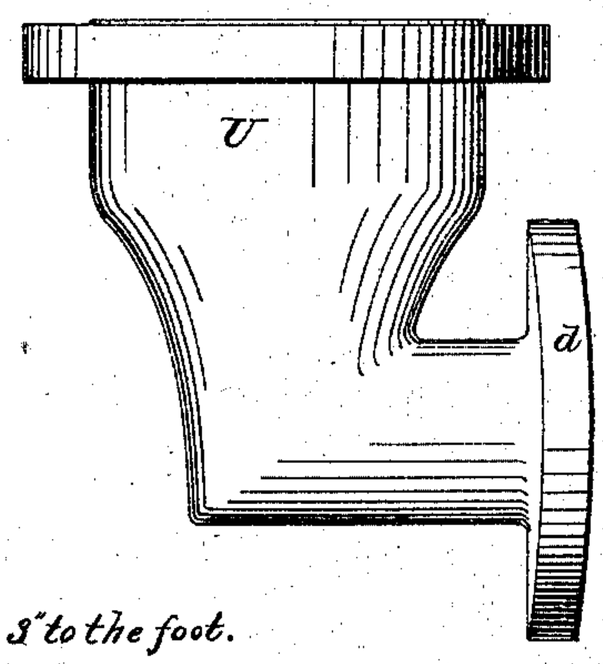
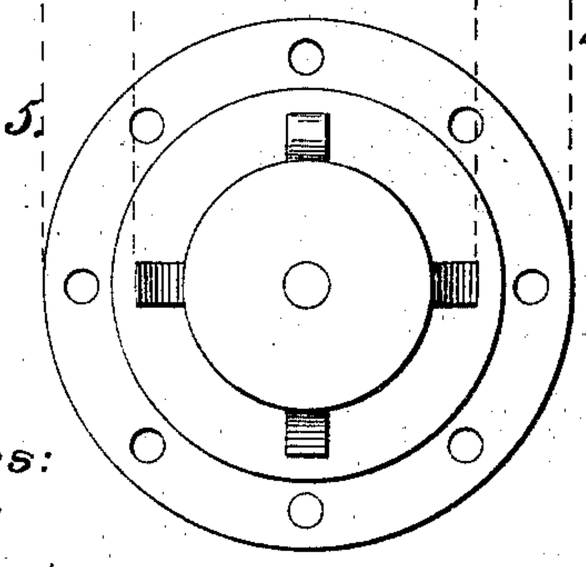


Fig. 6.



Scale 3" to the foot.

Fig. 5.



Witnesses:

A Hayward

G. L. Chapin.

Inventor:

Horatio Anderson

The drawing in this patent is not in print.

United States Patent Office.

HORATIO ANDERSON, OF CHICAGO, ILLINOIS.
Assignor to self and G. W. Cushing of the same place.

Letters Patent No. 74,480, *dated February* 18, 1868.

IMPROVEMENT IN 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, HORATIO ANDERSON, of Chicago, in the county of Cook, in the State of Illinois, have invented an Improved Steam-Generator Safety-Valve; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a vertical sectional elevation of my invention.

Figure 2, an elevation of the same, with the upper case removed, together with the valve-seat.

Figure 3, a horizontal section taken through fig. 1 at the line A B.

Figure 4, a horizontal section taken through the line D C, same figure.

Figure 5, a plan view of the invention with the lever detached.

Figure 6, a plan view of the valve removed from the seat.

The nature of my invention consists in the arrangement of a two-part case for enclosing the working parts of the valve, and having a series of holes in its top for the escape of steam and the attachment of a plate, with slots near its periphery, to said case and below the aforesaid holes, for the purpose of preventing the valve from being reached from the top and extra pressure of steam put thereon; also, in a series of holes through the bottom of the case for preventing the valve from being tampered with from the inside of the boiler; and, further, in a stop attached to the inside of the case, and used to prevent the lever from being set on the spindle and thus secure an over-pressure on the valve; and in making the spindle to pass through the valve, and the application of nuts on it for the purpose of holding the same in position after it has been adjusted to receive a required pressure of steam, a slotted pivot-top being screwed on the top of the spindle, and used in connection with a lever for testing the valve when pressure is not at a maximum, and for regulating the tension of a capsular spring without removing the lower part of the case from the boiler.

In order to give a correct understanding of my invention, I have marked corresponding parts with similar letters, and will now give a detailed description.

Valve R, seat *e*, flange Z, stand T, spring S, spindle P, and jamb-nuts *c c*, are described in a patent issued to Horatio Anderson, October 16, 1866, and are therefore not claimed in this specification. U, figs. 1 and 2, represents the lower part of a metal case, which encloses those parts of the invention attached to, and projecting inside of the boiler, and has a series of holes, X, through its bottom, sufficient for the passage of steam to the valve, but not large enough for the jamb-nuts *c c* to be turned from the inside of the boiler. It also supports a flange, *v*, arranged to be attached to the boiler in the usual manner, and a flange, *w*, for securing it to flange *z*, fig. 1. The upper part H of the case is made of metal, and with flanges *r r*, fig. 4, for securing it to the flange *z*, and with holes *o o*, &c., at the top for the escape of steam; and has attached to the inside of its dome L a plate, M, having projecting arms, *n*, between which are openings *h* for steam to escape. It will be seen at fig. 1 that the plate M has a greater diameter than the inside of the raised flange K, by which means a device, put through the holes *o*, cannot reach the working parts of the valve R. The spindle P has a screw-thread turned through the valve R as a nut, and the upper end is screwed in a pivot-top, F E, which, together with nuts G J, is used both to regulate the tension of the spring S and hold the spindle P in position when adjusted. B B, fig. 2, represent lugs rigidly attached to the part H of the case, and used to support a bolt, A, and lever, *t*. This bolt is arranged with a suitable hole, D, for receiving an inspector's lock, and the lever *t* to pass through the pivot-top F E and test the working condition of the valve R, a stop, *f*, being rigidly attached to the inside of the case, to prevent the lever from being set on the spindle P, and thus secure an over-pressure of steam.

Operation.

When the spring S is to have a greater tension, that part of the case H should be removed from the flange *z* (after the bolts *a* and A have been loosened) and the nut J slackened and the spindle P turned out of valve R by means of a wrench put on nut G. When a proper tension is secured, the nut J should be tightened and the nut G slackened, so as to turn pivot-top E F down to its first position relative to stop *f*.

Having described the construction and operation of my invention, I claim—

1. The case U H, arranged with holes *o x*, lugs B B, dome L, flange K, and stop *f*, substantially as and for the purpose herein described.
2. The holes *o*, in combination with the plate M, substantially as and for the purpose set forth.
3. The combination of lever *t*, pivot-top E F, and stop *f*, substantially as set forth.
4. The combination of the nuts G J, spindle P, valve R, and spring S, as and for the purpose set forth.

HORATIO ANDERSON.

Witnesses:

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