

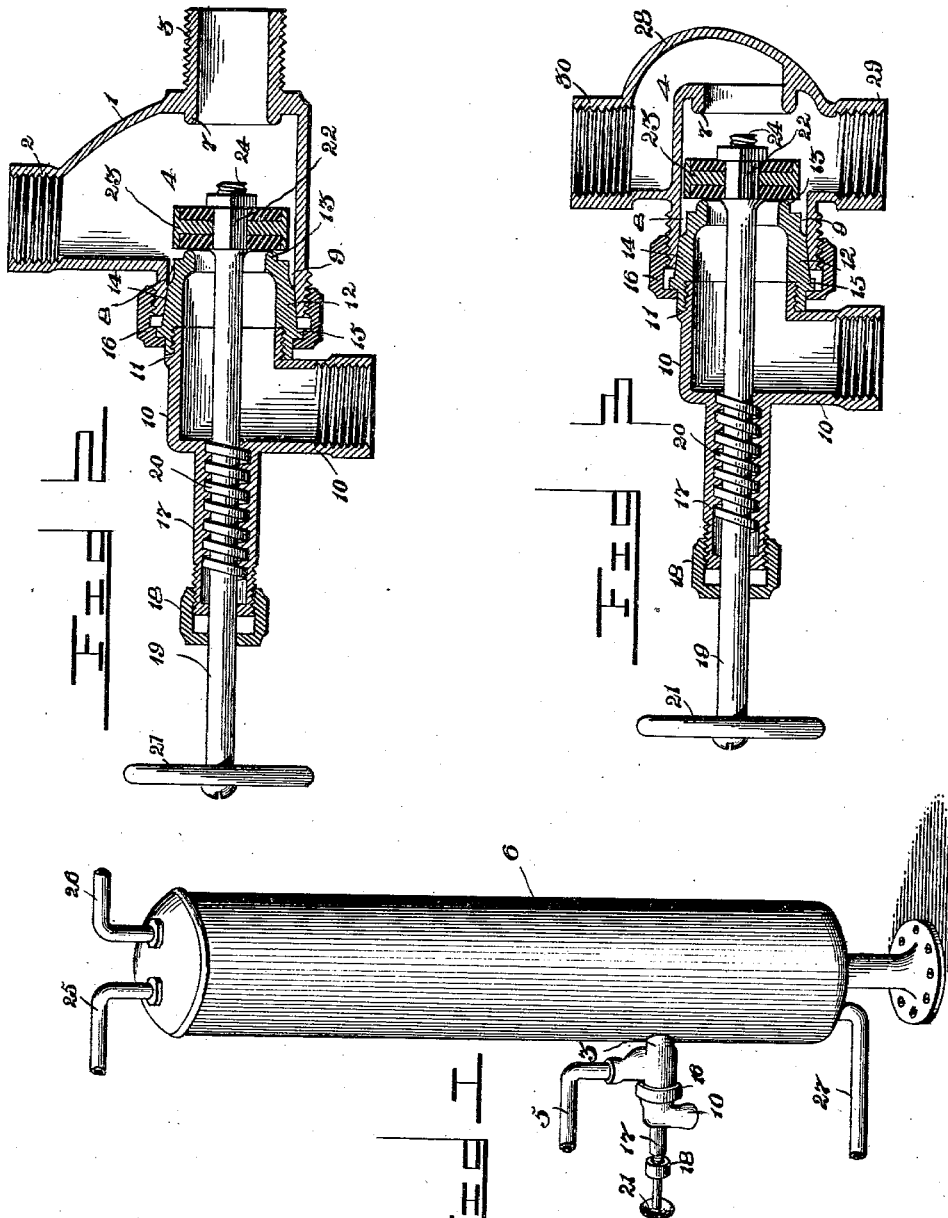
No. 645,696.

Patented Mar. 20, 1900.

C. H. TOPP.  
BLOW-OFF VALVE.

(Application filed July 10, 1899.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

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## BLOW-OFF VALVE.

SPECIFICATION forming part of Letters Patent No. 645,696, dated March 20, 1900.

Application filed July 10, 1899. Serial No. 723,375. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES HENRY TOPP, a citizen of the United States, residing at Huntington, in the county of Cabell and State of West Virginia, have invented a new and useful Blow-Off Valve, of which the following is a specification.

This invention relates to three-way blow-off valves, and is especially designed for use in connection with range-boilers, so as to conveniently clean out the latter, the water-back in the range, and the pipe connections therebetween.

A further object is to provide a sectional structure whereby the valve-casing may be taken apart, so as to replace the valve when worn and also to change the relative arrangement of the branches, thereby accommodating the valve for use in connection with various other pipe-line systems.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and the minor details of construction may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a perspective view of a range-boiler having the present blow-off valve applied thereto. Fig. 2 is a longitudinal sectional view of the valve. Fig. 3 is a similar view showing a modified form of valve-casing.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring particularly to Fig. 2 of the drawings, it will be seen that the valve comprises a substantially L-shaped casing 1, having the inlet-passage 2 and the discharge-passage 3 arranged at substantially right angles and forming a valve-chamber 4, located between said passages. The inlet-passage is preferably internally threaded, so as to receive the return-pipe 5 from the water-back, as best shown in Fig. 1 of the drawings, and the discharge-passage 3 is preferably externally

threaded so as to be fitted into the boiler 6, although this relative arrangement may be changed so as to accommodate the valve to the position in which it is placed. The discharge branch is provided at its inner end with a valve-seat 7, projecting into the interior of the casing 1, and alined transversely opposite said discharge branch is another discharge-opening 8, surrounded by an outwardly-projecting externally-threaded flange or collar 9.

Communicating with the discharge-opening 8 is a substantially L-shaped discharge branch 10, having its inner end externally threaded and provided with an annular shoulder 11. Removably fitted to the inner threaded end of the branch 10 is a gland 12, having its inner end formed into a valve-seat 13. The exterior of this gland is tapered or inclined toward the inner end thereof, thereby giving the gland a substantially-conical form, so as to be wedged firmly against the similarly inclined or beveled interior walls 14 of the collar 9. Located near the outer end of the gland 12 is an outer annular shoulder or flange 15, to which is swiveled a coupling-ring 16, which embraces the gland and the collar 9 and is in threaded engagement with the latter, so as to hold the gland in position and wedge the same within the discharge-opening 8. Thus it will be seen that the gland and the branch 10 are removably connected to the casing 1, and by loosening the coupling-ring 16 said branch may be turned axially, so as to change the relation of its outer discharge end with respect to the branches 2 and 3.

Projecting outward from the branch 10 and alined with the valve-seats 7 and 13 is an internally-threaded housing or extension 17, provided at its outer end with a suitable stuffing-box 18 and receives a valve-stem 19, having the external threads 20 fitting the internally-threaded portion of the extension and a hand-wheel 21, located at the outer end of the stem. The inner end of the stem is normally located intermediate of the valve-seats 7 and 13 and is provided with an angular portion 22, to which is fitted a suitable valve 23, so as to prevent turning of the latter upon the stem, and the valve is held upon the stem by means of a nut 24 in the common or usual manner. Thus it will be seen that the valve

23 may be seated upon either of the valve-seats 7 or 13, so as to open or close the respective discharge-passages 3 and 10.

To illustrate the application of the present valve, I have shown in Fig. 1 a common or ordinary boiler 6, having at its upper end the usual cold-water-inlet pipe 25 and the hot-water-discharge pipe 26. Connected to the lower end of the boiler is the usual supply-pipe 27, which communicates with the water-back of the range, from which latter the hot water is returned into the boiler through the usual pipe 5. The discharge branch 3 of the valve is fitted into one side of the boiler, and the hot-water-return pipe 5 is fitted to the inlet branch 2, and the valve 23 being normally seated against the valve-seat 13 there is a continuous passage from the boiler through the lower pipe 27 to the water-back and returning through the pipe 5, the inlet branch 2, and the discharge branch 3 into the boiler. When it is desired to clean out the boiler, the water-back, and the pipe connections therebetween, the valve-stem is screwed inward, so as to seat the valve 23 upon the valve-seat 7, thereby closing the discharge branch 3 and opening communication between the branches 2 and 10, whereby instead of returning into the boiler the water will discharge through the branch 10, from which it may be conveyed to any desired point.

In Fig. 3 there has been illustrated the usual globe-valve form of casing 28, having the inlet-passage 29 alined with the discharge-passage 30, so that the valve is accommodated for use in connection with a single length of pipe, and is therefore not restricted to an angular connection. Otherwise this latter form of valve is a duplicate of the former and permits of the discharge branch 10 being adjusted in the manner hereinbefore described.

What I claim is—

1. A valve, comprising a casing having an

inlet and an outlet passage, a removable gland having a valve-seat at its inner end, and detachably fitted within the outlet-passage, a coupling-ring swiveled upon the gland, and having a screw-threaded connection with the outlet-passage, and a substantially L-shaped discharge branch removably connected to the outer end of the gland, substantially as and for the purpose set forth.

2. A valve, comprising a casing having an inlet and an outlet passage, a substantially-conical gland having a smooth exterior and fitting the smooth interior of the outlet-passage, a coupling-ring swiveled upon the outer end of the gland, and having a screw-threaded connection with the exterior of the outlet-passage, and a substantially L-shaped discharge branch detachably connected to the outer end of the gland, substantially as and for the purpose set forth.

3. In a valve, the combination with a casing having an inlet and an outlet passage, of a gland detachably fitted within the outlet-passage, and having a valve-seat at its inner end, a coupling-ring swiveled upon the outer end of the gland, and having a screw-threaded connection with the outer end of the outlet-passage, a substantially L-shaped discharge branch removably connected to the outer end of the gland, and provided with an interiorly-threaded extension alined axially with the valve-seat, a valve-stem fitted within the extension, and a valve carried by the stem, located within the casing, and adapted to be seated upon the valve-seat, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES HENRY TOPP.

Witnesses:

J. B. HAGAN,

C. B. HAGAN.