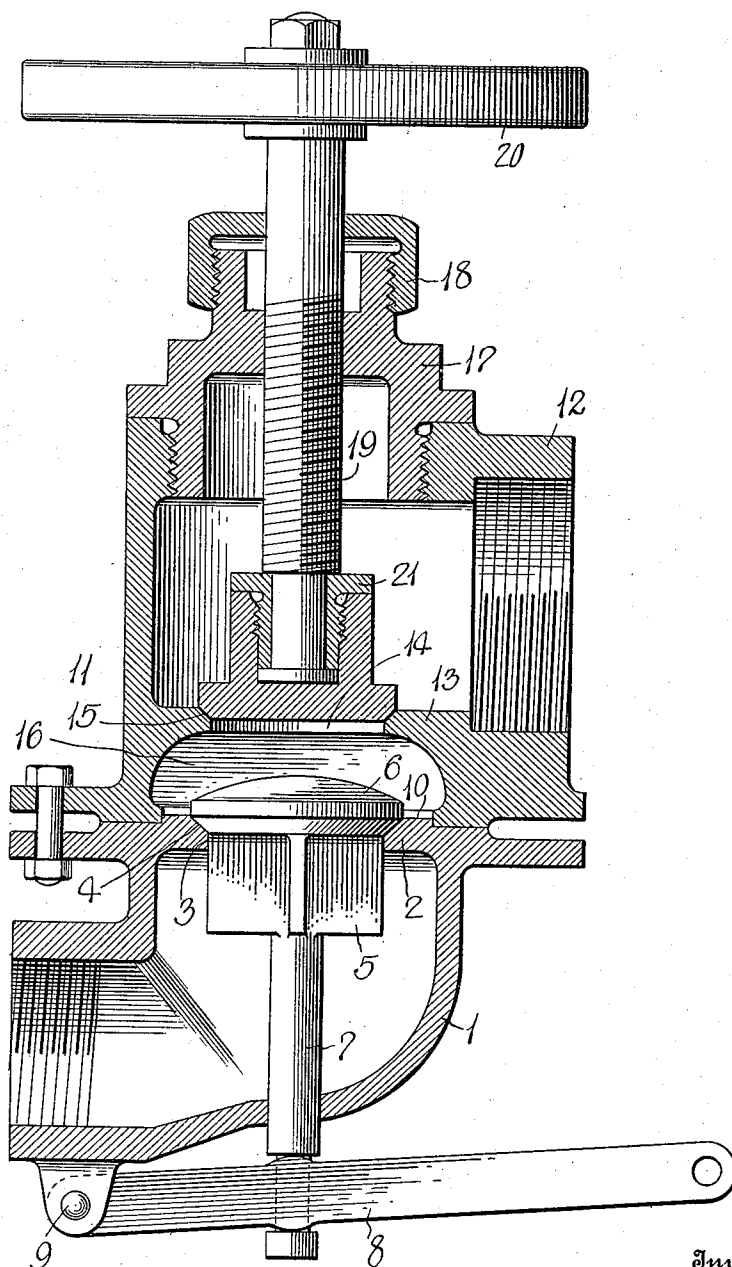


C. HOBBS & J. C. RAE.
BLOW-OFF COCK.
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1,160,285.

Patented Nov. 16, 1915.



Witnesses

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UNITED STATES PATENT OFFICE.

CLEMENT HOBBS AND JOHN C. RAE, OF OWOSSO, MICHIGAN.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CLEMENT HOBBS and JOHN C. RAE, citizens of the United States of America, residing at Owosso, in the county of Shiawassee and State of Michigan, have invented certain new and useful Improvements in Blow-Off Cocks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a blow-off cock for boilers, and the principal object is to provide simple and effective means, in a manner as hereinafter set forth for shutting off boiler pressure from an operating valve in order that the valve can be quickly repaired, without removing water from a boiler, said means preventing a boiler failure should foreign matter become lodged in the operating valve.

Another object of this invention is to combine an emergency valve with an operating valve to form a novel blow-off cock, the emergency valve permitting of the operating valve being removed for cleansing or repair purposes while steam pressure is maintained in a boiler.

A further object of this invention is to accomplish the above result by a simple, durable and inexpensive mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing wherein there is illustrated a vertical sectional view of a blow-off cock in accordance with this invention.

A blow-off cock in accordance with our invention comprises an elbow 1 which is vertically disposed and has the upper end thereof closed by a top plate 2 provided with a central inlet port 3 surrounded by a valve seat 4. Slidable in the inlet port 3 are the wings 5 of a valve 6 normally engaging the seat 4, said valve having a stem 7 extending through the bottom of the elbow 1 and adapted to be actuated by an operating lever 8, pivotally connected, as at 9 to the outlet end of the elbow 1. Any suitable means can be employed for moving the operating lever 8 and said lever is adapted to unseat the valve 6 to admit steam or fluid to the elbow 1 to exhaust to the atmosphere.

The valve seat 4 is partially formed in an annular raised portion 10 on the top plate 2 and this raised portion centers an emergency valve body 11 upon the top plate, whereby

the emergency valve can be suitably connected to said plate to cooperate with valve 6 constituting an operating valve.

The valve body 11 has a connection 12 adapted to communicate with a boiler to receive steam under pressure and within the valve body 11 is a horizontally disposed partition 13 provided with a port 14 and a valve seat 15. The partition 13 is spaced from the lower end of the valve body 11 to cooperate with the top plate 2 of the operating valve in forming a chamber 16, which provides clearance for the valve 6 as the same is raised from its seat.

The upper end of the valve body 11 has a conventional form of cap 17 and a stuffing box 18 for a rotatable valve stem 19, said stem having the upper end thereof provided with an ordinary hand wheel 20 and the lower end thereof with a valve 21 free to revolve relative to the stem 19 and adapted to engage the seat 15 of the partition 13.

The combined valves can be easily and quickly installed in connection with a boiler and in operation the valve 21 is normally unseated, whereby the operating valve can be opened from time to time to reduce boiler pressure. Should the operating valve be impaired by foreign matter lodging upon the seat 4 or should the valve 6 need regrinding, the emergency valve 21 is closed, thereby shutting off the boiler pressure of steam to the operating valve and it is possible to disconnect the elbow 1 whereby easy access is had to the valve 6. After the valve has been repaired or renewed and again connected to the emergency valve said valve can be opened and the blow-off cock is ready for use.

We attach considerable importance to the fact that the combined valves provide a unitary structure and that the operating valve as shown cannot be used without the emergency valve and vice versa. Throughout the construction of the blow-off cock the parts are assembled to insure accuracy of operation and easy access for repair purposes, and while in the drawing there is illustrated a valve as actually constructed and used, we desire it to be understood that the structural elements are susceptible to such changes as fall within the scope of the appended claims.

What we claim is:—

1. A blow-off cock comprising an elbow having a top plate provided with a valve

seat, a valve body connected to the top plate of said elbow and having an inlet in a direction opposite the outlet of said elbow, a valve seat in said valve body in alinement with the valve seat of the top plate of said elbow and providing a chamber above the valve seat of said top plate, a valve in said valve body movable to and from the seat thereof, a valve normally on the valve seat of said top plate and having wings adapted to guide said valve into the chamber between said valve seats, and means below said elbow adapted to facilitate moving said valve.

2. A blow-off cock comprising an elbow having an end thereof provided with a valve seat, an emergency valve connected to the same end of said elbow and providing a chamber above the valve seat of said elbow with an inlet connection in an opposite direction from the outlet of said elbow, a valve in the longitudinal axis of said emergency valve normally on the seat of said elbow, and means below said elbow adapted to facilitate unseating said valve.

3. A blow-off cock comprising an elbow having a top plate provided with a valve seat, an emergency valve body connected to the top plate of said elbow and having a connection at right angles to the longitudinal axis of said valve body and in a direction opposite that of the outlet of said elbow and adapted for communication with a boiler to receive steam therefrom, a valve carried by said emergency valve body and movable longitudinally thereof and adapted to control the admission of steam to said elbow, a valve carried by said elbow in a longitudinal axis of said valve body and normally engaging the seat in said top plate, and means below said elbow adapted to facilitate moving said valve to and from said top plate.

In testimony whereof we affix our signatures in presence of two witnesses.

CLEMENT HOBBS.
JOHN C. RAE.

Witnesses:

SETH Q. PULVER,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."