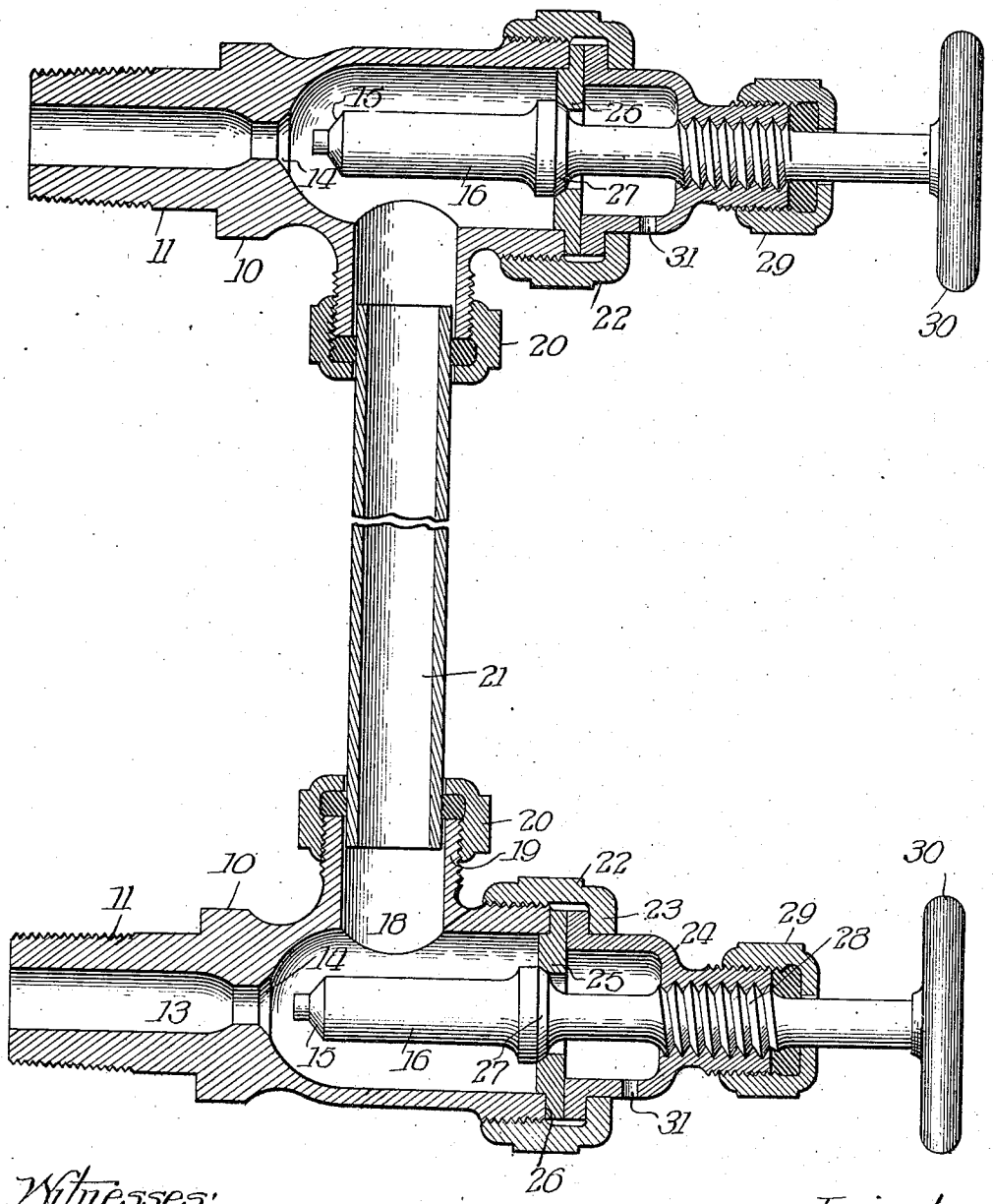
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SAFETY WATER GAGE COCK.

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1,156,933.

Patented Oct. 19, 1915.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM N. ROWE, OF HIBBING, MINNESOTA.

SAFETY WATER-GAGE COCK.

1,156,933. Specification of Letters Patent. Patented Oct. 19, 1915.

Application filed December 6, 1912. Serial No. 735,228.

To all whom it may concern:

Be it known that I, WILLIAM N. ROWE, a citizen of the United States, residing at Hibbing, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Safety Water-Gage Cocks, of which the following is a specification.

My invention relates to water gages and has particular reference to a safety cock by means of which the water in the gage may not be trapped and erroneously indicate a supply of water in the boiler.

In the operation of steam boilers it not infrequently happens that through inadvertence or negligence, one or both of the water gage cocks are closed while the boiler is under steam. In such event water is trapped in the glass gage and as a consequence the water tender is deceived as to the water level in the boiler. This is one of the most fruitful causes of accidents in boiler practice and consequently many explosions have occurred.

With my construction, if the cocks are closed the water drains from the glass through the hole in the bonnet of the lower cock. In case the upper cock is closed and the lower open, then the hole in the bonnet of the upper cock will blow water. If the lower cock were closed and the upper one open, then the hole in the lower cock would blow steam. If both are closed no water can remain in the glass.

Another advantage of this cock is in that in the mid-position, steam or water blows out the hole, thus making it certain that the shank of the cock is free and not filled with mud, as sometimes happens.

Another advantage of this cock is that the upper and lower cocks are identical in construction and that the bonnet which contains the hole and is secured in place by a union nut, may be turned so that the hole may blow upward or downward, as desired. In practice it is desirable that the water glass should be blown out occasionally, and this is usually accomplished by putting a pet cock upon the lower water gage cock. To blow out this water gage all that is necessary to do is to close the lower cock, leaving the upper one open.

A further advantage is in that the valve seat in the bonnet of the valve is made removable. This is so constructed in order that it may be ground in. As ordinarily constructed these valves cannot be ground for the obvious reason that a rotary motion cannot be secured with the valve in contact with the seat. In this construction by loosening the union nut which holds the bonnet on the body of the valve, the seat controlling the passage through the shank can be ground in. Likewise by removing the bonnet it is possible to rotate the valve seat and grind it in. This feature is important in that the construction may be kept tight at all times without the use of gaskets.

The invention will be more readily understood by reference to the accompanying drawings, wherein, the figure is a vertical section through a pair of gage cocks in service on a boiler.

Referring more particularly to the drawings, it will be seen that the two valve bodies 10, indentical in construction, are provided with threaded shanks 11, suitably secured in the boiler sheet (not shown). Inasmuch as the upper and lower cocks are duplicates, I will describe but one thereof. The body 10 of the valve is provided with the usual aperture 13, providing communication with the boiler, this aperture having a restricted portion and a seat 14, against which the end 15 of the valve member 16 is adapted to seat. Outside of the restricted portion of the aperture I provide an enlarged opening 17, communicating with which is a duct 18, extending through a threaded boss 19, within which is secured by a suitable nut 20, the usual gage glass 21.

The outer end of the valve body 10 is threaded and accommodates a nut 22, having an annular, inwardly extending flange 23. A bonnet, 24, having an exterior annular flange, is held by the nut 22, a valve seat 25 being clamped between the two parts. This valve seat is not threaded and is provided with a shoulder 26, fitting the squared end of the valve body 10. The member 25 is provided with a valve seat with which the valve 27, formed as an enlargement of the valve member 16, may coöperate. The interior of the bonnet 24 is threaded, coöperating with threads 28 on the shank of the valve member. The exterior is also threaded and accommodates a union nut 29 as shown. A hand-wheel 30, secured to the shank of the valve member, provides means for rotation as required. It will be understood that the bonnet 24 is provided with a drain opening 31.

It will be seen that the construction shown

provides many advantages. The valves and their seats may be readily ground in, the bonnet may be turned as desired, to present the drain opening in any direction. The most important advantage, however, is in that the cocks cannot be closed and water be trapped, thus erroneously showing an incorrect height of water in the boiler.

It is obvious that modifications may be made in the structure herein shown, and such modifications as are within the scope of my claims I consider within the spirit of my invention.

I claim:

1. In a device of the class described, the combination of upper and lower gage cocks having a gage glass therebetween, each cock comprising a casing having an inner valve seat, a separable member provided with a second valve seat, valves controlled by a single stem and adapted to act upon said valve seats singly, and a vented bonnet secured to each casing, substantially as described.

2. In a device of the class described, the combination of upper and lower cocks having a gage glass therebetween, each cock including a casing forming a chamber and provided with a valve seat at one end, a closure for the opposite end of said chamber, said closure having a second valve seat, means for clamping said closure in position, and a valve stem carrying valve members adapted to coöperate with said seats alternately, substantially as described.

3. In a device of the class described, the combination of upper and lower gage cocks and a gage glass located therebetween, each cock including a chambered casing having an inner valve seat at one end a disk closing the opposite end of said casing and providing an outer valve seat, a bonnet outside of said disk, a clamping nut for holding said disk and said bonnet in engagement with said casing, and a stem provided with valves adapted to coöperate with said seats in succession, substantially as described.

WILLIAM N. ROWE.

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