No. 796,392. PATENTED AUG. 1, 1905.

J. W. BAILEY.

TRY COCK.

APPLICATION FILED APR. 30, 1904.

Fig. 1.

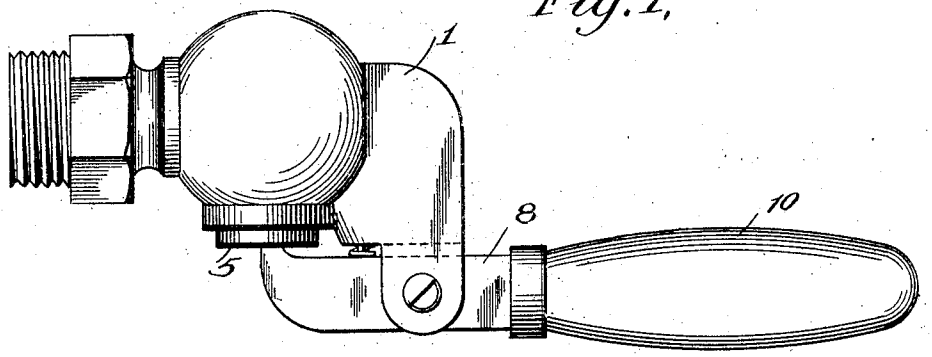


Fig. 2.

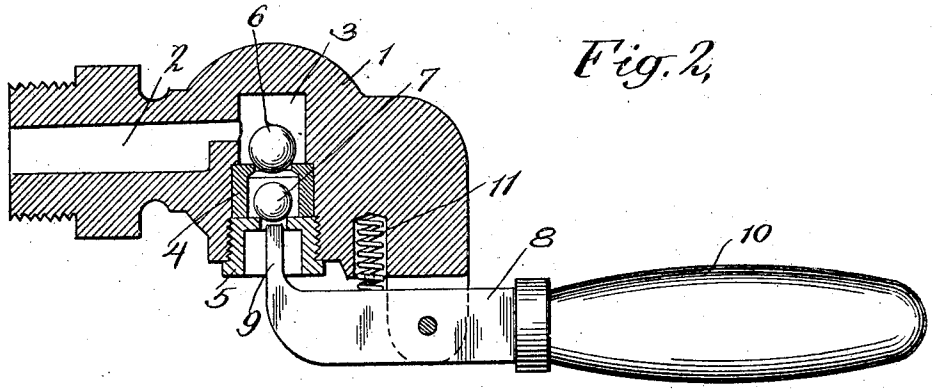
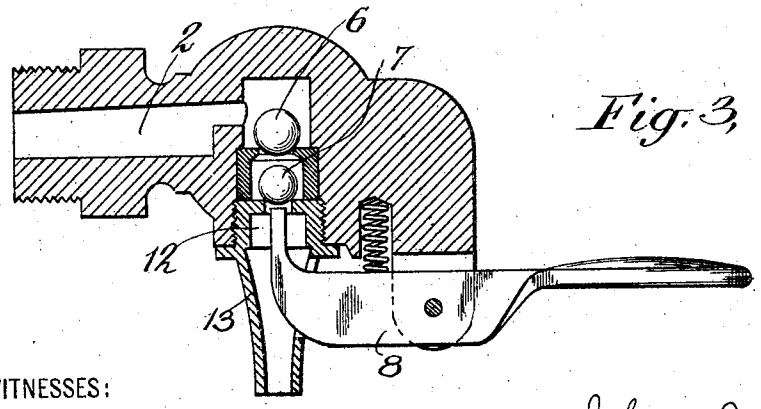


Fig. 3.



WITNESSES:

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TRY-COCK.

No. 796,392. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed April 30, 1904. Serial No. 205,664.

To all whom it may concern:

Be it known that I, JOHN W. BAILEY, a citizen of the United States, and resident of New York, in the county and State of New York, have invented a new and useful Improvement in Try-Cocks, of which the following is a specification.

My invention relates to try-cocks for ascertaining the level of the water in boilers, &c.

An object of the invention is to provide a valve of the character referred to which will not rapidly wear and develop a leak under the severe conditions of its use, also to provide a valve which is simple in construction and not easily broken or injured in use.

My invention consists in the novel parts, improvements, and combinations herein shown and described.

The accompanying drawings, which are referred to herein and form a part hereof, illustrate one embodiment of the invention together with a modification thereof and serve in connection with the description herein to explain the nature and principles of the invention.

Of the drawings, Figure 1 is a side elevation of a try-cock constructed in accordance with my invention. Fig. 2 is a vertical central section of the same, and Fig. 3 is a vertical central section showing a modification.

In accordance with the best embodiment of my invention a suitable valve-casing is provided, the same having a passage therethrough for the fluid and a plurality of valve-seats arranged in series in said passage. A plurality of valves are provided, one for each seat, said valves being adapted to be seated by the fluid-pressure in the passage. In accordance with the best construction the valves consist each of a ball, which is free to turn so that any part of its surface may come in contact with the corresponding valve-seat.

In accordance with the construction shown in the drawings the casing 1 of the valve is provided with a passage consisting of a horizontal inlet portion 2 and the vertical chambered outlet or discharge portion 3, in the chamber of which are removably confined two valve-seats 4 and 5. As shown, the inner seat 4 is firmly held in place against a shoulder in the casing by means of the seat 5, which is threaded into the discharge end of the vertical part or branch 3 of the passage. As shown, two ball-valves 6 and 7 are provided, the same being adapted to be seated by fluid-pressure upon the seats 4 and 5, respectively. In accordance with the best construction the valve-seats are provided with minute contact areas adapted to contact with the valves. Preferably and as shown the valve-seats have a mere line of contact formed by the conjunction of the horizontal upper walls of the seats and the vertical walls of the passages through the seats. By reason of this construction little or no surface is presented upon which articles of dirt may collect so as to prevent the proper seating of the valves, and if any foreign substance is caught between the valve and its seat the same will be crushed or displaced by the pressure between the valve and the limited contact area of its knife-like seat. In accordance with the best construction also the valves, as well as their seats, are made of a material which is hard and durable and at the same time non-corrosive, such as phosphor-bronze.

Any suitable means may be provided for forcing the valves from their seats to permit the flow of fluid therethrough. In accordance with one embodiment of my invention said means is constructed to act on one valve and through it to unseat the other valve. In accordance with the construction shown the means for forcing the valves from their seats consists of a lever 8, pivotally mounted on the casing 1 near the discharge end of the passage therethrough, said lever having a short end provided with a finger 9, adapted to enter the discharge end of the passage through the opening in the valve-seat 5 and engage the valve 7, so as to force the same from its seat and by a continued movement of the lever to force the valve 7 against the valve 6, so as to unseat the latter. Where the handle portion 10 of the operating-lever is sufficiently heavy to interfere with the proper seating of the valve by the pressure in the casing, means, such as the spring 11, may be provided to counterbalance the weight of the handle portion 10. As shown, the spring 11 is a compression-spring mounted in a suitable recess in the casing 1 to act on the short arm of the lever between the pivot and the finger 9.

By reason of the presence of the plurality of valves arranged in series the liability of leakage is reduced to a minimum. If a leak should be developed in one valve, the other or others, where more than two are used, will serve to prevent the escape of fluid. If a slight leak should be developed in both or all the valves, moreover, the amount of fluid which will escape therethrough as compared

with a similar leak in a single valve will be reduced to a fraction represented by one divided by the number of valves employed. Where two valves are employed, for instance, the leak through the two will be one-half of what it would be if only one valve were employed. While more than two valves may be employed, if desired, I have found that two are sufficient to meet the usual practical requirements. As to some of its features, however, my invention is not limited to the use of a plurality of valves. A try-cock provided with a single ball-valve constructed and seated as herein described will perform more effective service than any prior try-cock of which I am aware. The means shown and described for operating the valves, moreover, constitutes an important feature of my invention.

While my invention is particularly adapted for try-cocks, it may as to some of its features be applied to other uses. As shown in Fig. 3, for example, the construction shown in Figs. 1 and 2 and above described may be adapted for use as a water valve or faucet. In accordance with this construction the seat for the lower valve 7 may be in the form of a threaded plug 12, having a depending spout or nozzle 13, adapted to confine the water discharged through the valve and deliver it in a compact stream.

My invention in its broader aspects therefore is not limited to the precise constructions shown and described, as many changes may be made therein without departing from the main principles of the invention and without sacrificing its chief advantages.

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

1. In a try-cock, the combination of a suitable casing having a passage, a plurality of valve-seats arranged in series in said passage, a plurality of free-ball valves, one for each seat, said valves being adapted to be seated by fluid-pressure, and means for forcing said valves from their seats, substantially as described.

2. In a try-cock, the combination of a suitable casing having a chambered passage, a plurality of independently-removable valve-seats arranged in series in the chamber of said passage, a plurality of free-ball valves, one for each seat, said valves being adapted to be seated by fluid-pressure, and means acting on one of said valves for forcing said valves from their seats, substantially as described.

3. A try-cock comprising a suitable casing having a passage, a plurality of valve-seats arranged in series in said passage, a plurality of free-ball valves, one for each seat, said valves being adapted to be seated by fluid-pressure, and a lever pivoted near the discharge end of the passage and having a short end adapted to enter the discharge end of said passage to unseat one valve and through it the adjacent valve, substantially as described.

4. In a try-cock, the combination of a suitable casing having a passage, a plurality of valve-seats arranged in series in said passage, a plurality of free-ball valves, one for each seat, said valves being adapted to be seated by fluid-pressure and each of said seats presenting substantially a single line of contact for its ball, and means for forcing said valves from their seats, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. BAILEY.

Witnesses:
EDWIN SEGER,
JOHN O. GEMPLER.