

No. 740,941.

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H. B. SOUDERS, C. C. COTTER & C. S. WILSON.

GAGE COCK.

APPLICATION FILED JUNE 23, 1903.

NO MODEL.

Fig. 1.

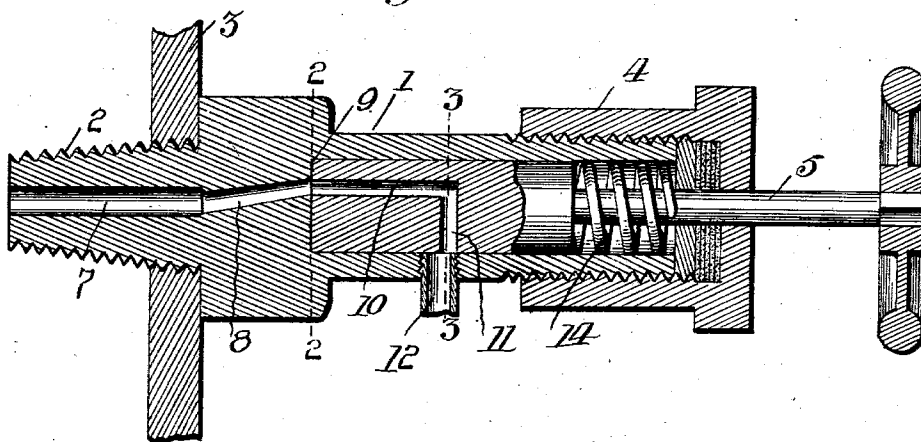


Fig. 2.

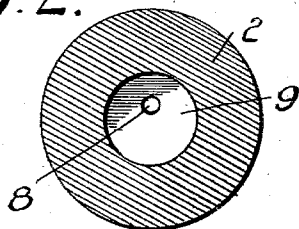
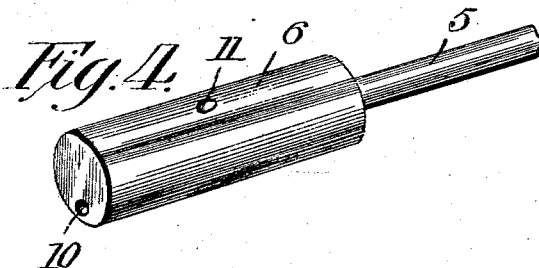
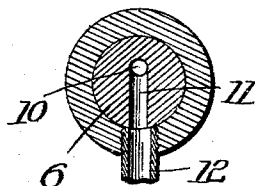


Fig. 3.



Witnesses:
J. H. Butler.
E. C. Potter.

Inventors
H. B. Souders,
C. C. Cotter -
By C. S. Wilson
H. C. Everett & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

HUNTER B. SOUDERS, CURTIS C. COTTER, AND CHARLES S. WILSON, OF
McKEES ROCKS, PENNSYLVANIA.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 740,941, dated October 6, 1903.

Application filed June 23, 1903. Serial No. 162,761. (No model.)

To all whom it may concern:

Be it known that we, HUNTER B. SOUDERS, CURTIS C. COTTER, and CHARLES S. WILSON, citizens of the United States of America, residing at McKees Rocks, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gage-Cocks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in gage-cocks such as are employed on locomotive and other boilers to indicate the varying level of the water contained in the boiler.

The object of the invention is to construct a gage-cock in a manner whereby any grinding down of the valve-seat will not interfere with the proper working of the gage-cock, thus materially increasing the life and effectiveness of the same.

In the gage-cocks generally employed, especially those employed on locomotive-boilers, in which a disk valve is forced against a valve-seat, the valve rapidly becomes worn, necessitating the regrinding of the seat in order to render the device effective. The present invention aims to overcome this difficulty by providing a substantially cylindrical valve eccentrically ported with a transverse port establishing communication between the eccentric port in the valve and the outlet. In connection with the cylindrical valve is employed a barrel or casing which is screwed into the boiler-shell in the ordinary manner and has an inlet-port terminating eccentrically, whereby in one position of the cylindrical valve to register with the eccentric port therein and establish communication to the outlet.

Other details of construction are embodied in the invention, and these, as well as the construction enumerated above, will be hereinafter more specifically described and then particularly pointed out in the claim, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this application, and wherein like numerals of reference will be employed for designating like parts throughout the different views, in which—

Figure 1 is a longitudinal sectional view of our improved gage-cock, showing same in position in the boiler-shell. Fig. 2 is a transverse vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a like view taken on the line 3 3 of Fig. 1; and Fig. 4 is a detached detail perspective view of the cylindrical valve, showing the stem broken away.

To put our invention into practice, we provide a body or casing 1, provided on its inner end with the threaded plug 2 for engagement into the boiler-shell 3. It is preferable to construct the body or casing (or "barrel," as this is sometimes termed in the trade) with the enlargement to seat against the boiler-shell in order to hold the device more securely in position. The hollow body or casing is threaded at its outer end to receive the cap-nut 4, through which extends the valve-stem 5 of the cylindrical valve 6, the stem 5 being provided on its outer end with a suitable operating-handle, such as a wheel, as shown, or other suitable form of device. The threaded plug 2 is provided with a concentric bore or port 7, communicating with a port 8 in the enlargement of the barrel or body, which port 8 extends at a slight angle, whereby it terminates in the valve-seat 9 eccentrically thereof. The inner end of the cylindrical valve 6 is adapted to seat against this valve-seat 9, and this cylindrical valve 6 is provided with an eccentric port 10, extending into the same for some distance, at least half its length, and branching off at right angles into the port 11, which communicates with the outlet-tube 12, secured in the barrel or body 4. A spring 14 is arranged on the stem 5 between the end of the valve 6 and the cap-nut, whereby to hold the valve normally against its seat. The diameter of the outlet tube or nipple 12 is considerably greater than the diameter of the port 11, whereby a considerable wearing of the valve 6 at its seat may take place and still permit the ports to register when the valve is so positioned as to cause such registry.

The operation of the device will, it is thought, be readily apparent to those skilled in the art by reference to the accompanying drawings, as it will be apparent that when the valve is rotated so as to move port 10 out

of registry with port 8 the outlet for the water is closed, and vice versa. By this construction of valve it will be evident that a wearing-surface of considerable area is provided, so that any slight wearing on the face of the valve will not effect the perfect seating of the same or the effectiveness of the device, the spring-back of the valve keeping the same normally forced into engagement with the seat therefor. It is to provide for this wearing of the valve without effecting the operation of the gage-cock that we preferably construct the same as shown in Fig. 1, wherein the port 11 is shown as projecting slightly beyond the outlet-port. It will be observed that by this construction it will require the valve to wear off at its seating end for a considerable distance before ports 11 and 12 would be out of registry when the valve is turned, so as to register the same.

While we have herein shown and described the invention in detail as it has been practiced by us, yet it will be evident that various changes may be made in the details of construction without departing from the general spirit of the invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

30 A gage-cock comprising a casing provided at one end with a tapered screw-threaded

plug, and having a reduced, hollow portion at its other end, the plug having a bore therein, said casing having an angularly-disposed bore therein communicating with that of the plug and the upper portion of the hollow part of the casing, an outlet-port formed in the last-named portion of the casing, said port being internally screw-threaded and of a greater diameter than the said bores, and a valve rotatably mounted in the hollow of said casing, provided with an eccentrically-disposed bore adapted to communicate with the said angularly-disposed bore, and with a bore at right angles thereto adapted to register with the said outlet-port, said last-named bore being so arranged as to extend beyond the wall of said outlet-port in the opening position of the valve when all the bores are in communication whereby registry is insured upon wear of the parts, means for operating said valve, and means for closing the outer end of the casing, substantially as described.

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

HUNTER B. SOUDERS.
CURTIS C. COTTER.
CHAS. S. WILSON.

Witnesses:

R. J. FRICKER,
K. H. BUTLER.