

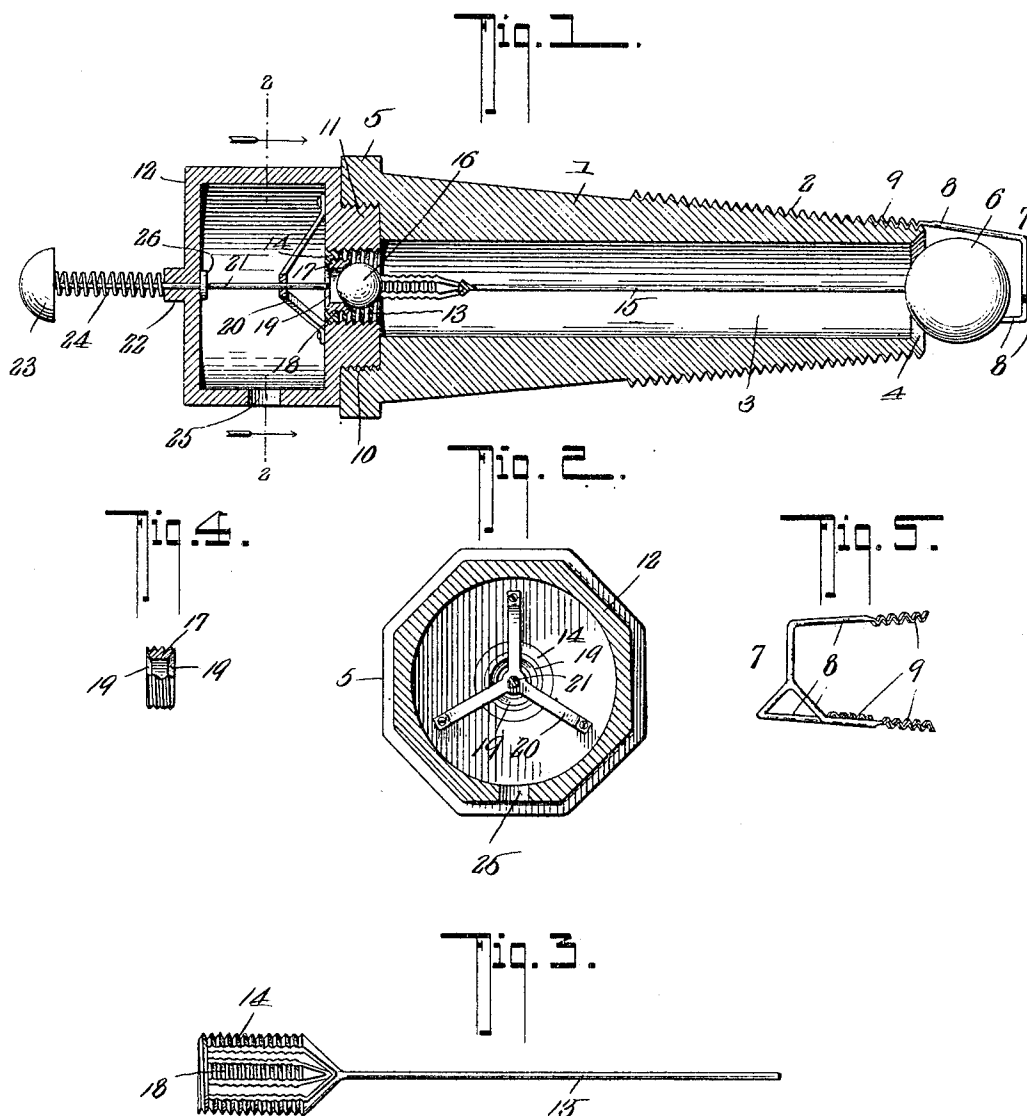
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R. B. SWINNY.

GAGE COCK.

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Witnesses:
R. M. Elliott
R. M. Elliott

Ross B. Swinny,
 Inventor,
 by *C. A. Snow & Co.*
 Attorneys.

UNITED STATES PATENT OFFICE.

ROSS B. SWINNY, OF BELPRE, OHIO, ASSIGNOR OF ONE-HALF TO JACOB
HENRY SHAW, OF BELPRE, OHIO.

GAGE-COCK.

No. 799,202.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROSS B. SWINNY, a citizen of the United States, residing at Belpre, in the county of Washington and State of Ohio, have invented a new and useful Gage-Cock, of which the following is a specification.

This invention relates to gage-cocks for steam-boilers.

The object of the invention is to provide a gage-cock in which clogging of the operative parts thereof shall be positively precluded; in which there will at all times be afforded a free passage for water and steam exteriorly of the cock; in which the main valve will always be caused to seat itself with absolute accuracy, thereby to insure positive cutting off of the escape of steam or water; in which the operative parts may be removed while steam is on the boiler without danger of scalding the operator, and in which all the parts are so constructed and combined as to insure high efficiency in use with the minimum danger of derangement.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a gage-cock, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in longitudinal section through a gage-cock constructed in accordance with the present invention. Fig. 2 is a view in transverse section, taken on the line 2 2, Fig. 1, and looking in the direction of the arrow thereon. Fig. 3 is a detached detail view of the check or supplemental valve unseating member. Fig. 4 is a detail view, partly in section, of a reversible valve-seat used in combination with the main valve. Fig. 5 is a perspective detail view of a gage employed for holding the check-valve combined with the gage-cock.

The cock embodies in its construction a shank 1, which is exteriorly tapered and provided near one end with threads 2 to engage a suitable opening in the boiler. (Not necessary to be shown.) The shank is provided with a longitudinal bore 3, which is preferably of the same diameter throughout, and one end of the shank is furnished with a valve-seat 4 and the other end with a polygonal

wrench-face 5 to facilitate the positioning of the shank upon the boiler. The valve-seat 4 is engaged by a ball-valve 6, which constitutes a check or supplemental valve and is held combined with the shank through the medium of a cage, (designated generally 7,) the same comprising in this instance three arms 8, the free terminals of which are threaded or provided with corrugations 9 to engage the threads 2 of the shank. The larger or outer end of the shank is provided with a socket having threaded walls 10, which are engaged by a threaded extension 11 of a head 12, the exterior of which, as shown in cross-section in Fig. 2, is polygonal to present wrench-faces. The extension 11 is provided with a centrally-disposed threaded orifice 13, which communicates with the bore 3 of the shank and is engaged by a nipple 14 in the nature of a cage, with which is combined a rod 15, the cage and rod constituting a check-valve-unseating member, as it will be seen by reference to Fig. 1 that when the parts of the cock are assembled the rod bears against the check-valve 6 and keeps it normally out of engagement with its seat 4.

Arranged within the nipple 14 is the main valve 16, which is also of the ball type and is held in place therein by an annulus 17, exteriorly threaded to engage with interior threads 18, provided in the nipple 14 for the purpose, the annulus 17 being provided with double valve-seats 19, with one of which the valve 16 is always in engagement when steam-pressure is on the boiler. By the provision of the double valve-seats the annulus may be reversed and its utility thus doubly prolonged.

Secured to one of the inner walls of the head, preferably that one carrying the extension 11, is a spider 20, through which projects one end of a push-rod 21, that extends outward through an orifice in the outer wall of the head and in a boss 22 thereon, and carries at its free end a detachable head 23, between which and the boss is disposed a coiled spring 24, surrounding the rod and operating normally to hold it out of engagement with the main valve. When the level of the water in the boiler is to be ascertained, the rod 21 is pushed in, thereby unseating the valve 16, whereupon either steam or water, as the case may be, will rush past the valve and into the head and thence escape through a downward-opening orifice 25, formed in its lower wall, and upon

pressure being released from the rod it will resume its normal position, leaving the valve 16 free to be again seated by the steam or water pressure of the boiler. In order to
 5 limit the outward movement of the rod 21, there is combined therewith a stop 26, which will engage with one of the inner walls of the head, as clearly shown in Fig. 1.

As above stated, it is one of the objects of
 10 the invention to combine the parts in such manner as to permit separation therefrom of the main valve and its accessories while steam is upon the boiler, and this object is secured by the provision of the rod 15, it being seen
 15 that as soon as the head is rotated in the direction necessary to detach it from the shank the check-valve 6 will start to seat itself, and before the head is entirely detached the check-valve will have seated itself entirely,
 20 thereby cutting off the escape of steam or water. The head with its combined parts may then be removed and any necessary repairs made, such as the replacement of an annulus for one that is worn out or the supply-
 25 ing of a new main valve, should this be necessary, or for any other purpose.

It will be seen from the foregoing description that in the gage-cock of this invention there are absolutely no parts which can corrode
 30 and become rust-locked, and, further, by reason that the main valve is always rotated slightly when unseated in testing the water-level in the boiler it will be constantly seeking a new seat, so that leakage between the said valve
 35 and its seat will positively be precluded.

Having thus described the invention, what is claimed is—

1. A gage-cock comprising a shank, a cage

combined with one end thereof, a check-valve disposed within the cage, a cage-nipple com-
 40 bined with the other end of the shank and having an extension to engage with the check-valve to hold it normally unseated, a main valve arranged within the nipple-cage, and
 45 means for unseating the latter valve.

2. A gage-cock comprising a shank, a normally unseated check-valve arranged at one end thereof, a head combined with the other end of the shank, a nipple-cage combined with the head and having an extension normally
 50 in engagement with the check-valve, a main valve arranged within the nipple-cage, a valve-seat carried by the cage and with which the main valve coacts, and a spring-pressed rod carried by the head and adapted for unseat-
 55 ing the main valve.

3. A gage-cock comprising a shank having a check-valve combined with one end thereof, a head combined with the other end and provided with an escape-port, a nipple-cage com-
 60 bined with the head and having an extension normally in engagement with the check-valve to hold the same unseated, a main valve arranged within the nipple-cage, a double-faced valve-seat combined with the cage, a spider
 65 combined with the interior of the head, and a spring-pressed rod extending through one wall of the head and through the spider and operating to unseat the main valve.

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

ROSS B. SWINNY.

Witnesses:

JNO. S. WARNICK,
 J. B. WATERMAN.