

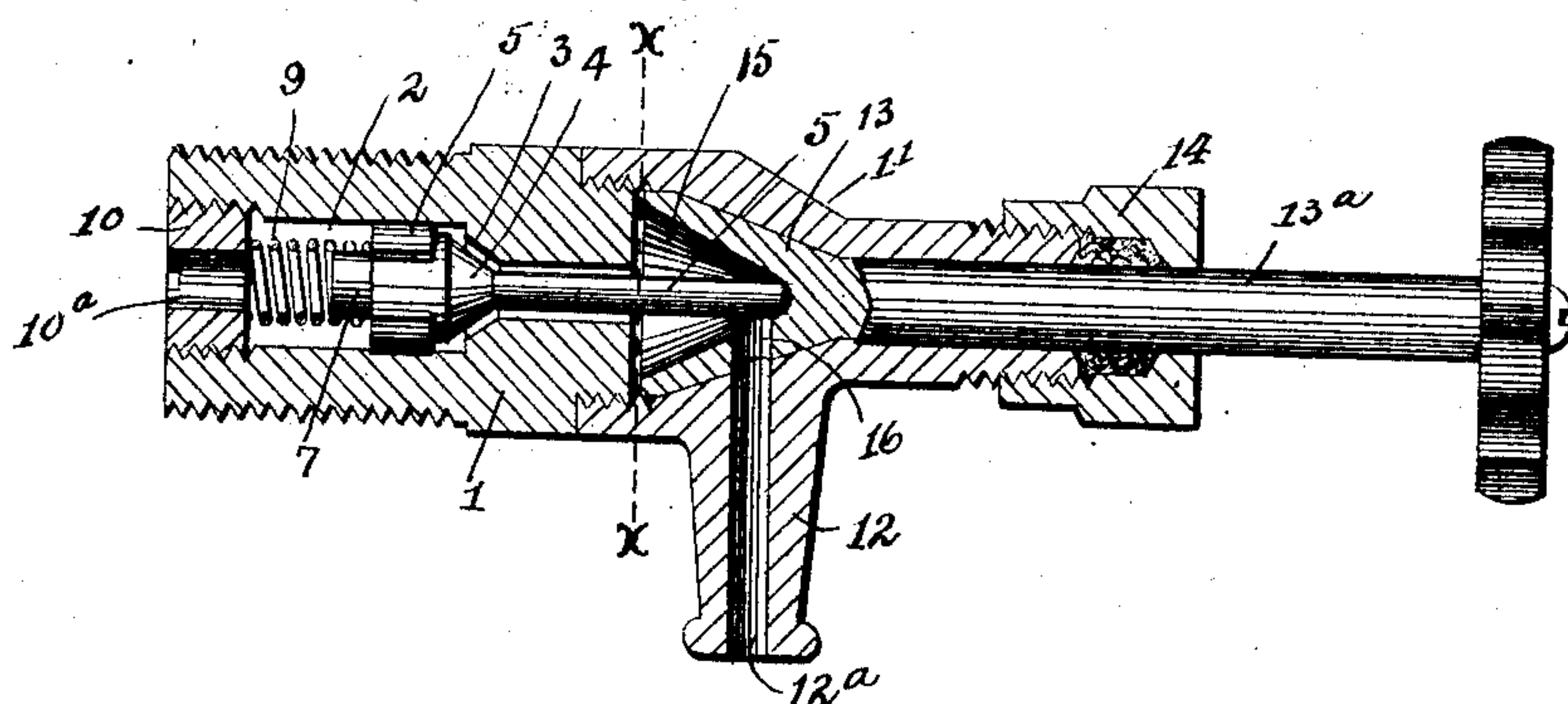
No. 829,632.

PATENTED AUG. 28, 1906.

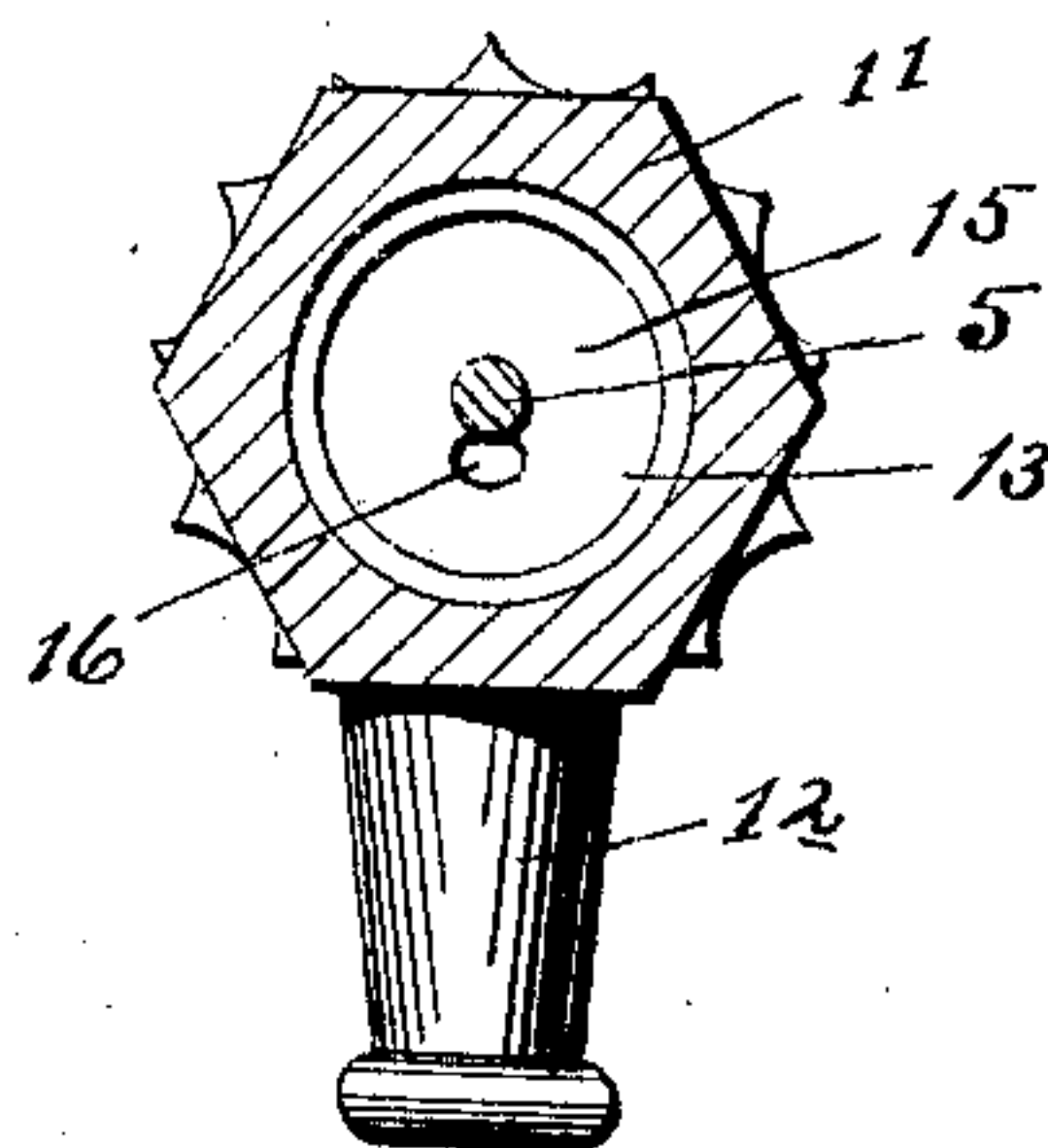
J. P. CULLISON.

**GAGE COCK.**

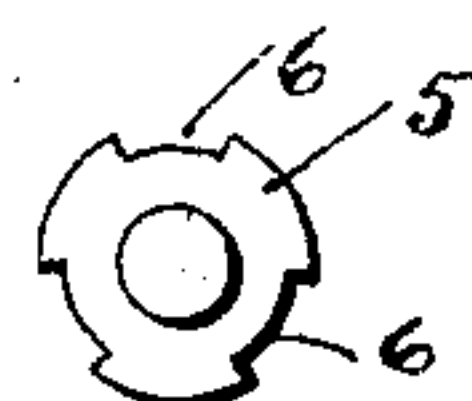
APPLICATION FILED MAR. 5, 1906.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

**WITNESSES**

Carl Stoughton  
A. L. Phelps

INVENTOR

INVENTOR  
*John P. Cullison*

BY

BY  
*Shepherd & Barker*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOHN P. CULLISON, OF COLUMBUS, OHIO.

## GAGE-COCK.

No. 829,632.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed March 5, 1906. Serial No. 304,201.

*To all whom it may concern:*

Be it known that I, JOHN P. CULLISON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Gage-Cocks, of which the following is a specification.

My invention relates to the improvement of gage-cocks or valves, and has particular relation to that class of gage-cocks which are adapted to be used in connection with locomotive-boilers.

The objects of my invention are to provide an improved sectional gage-cock of such construction as to admit of the outer section thereof being removed for the purposes of repairing or correcting any difficulties with the outlet-valve and at the same time automatically closing the steam or water outlet from the boiler, thus obviating the necessity of withdrawing the steam from the boiler before removing the outer section of the gage, to provide within said outlet-section a valve construction which will tend to prevent the valve from becoming inoperative through the deposit of accumulation of lime or other foreign substance on the valve-seat, and to produce other improvements the details of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section of my improved gage-cock. Fig. 2 is a sectional view on line *xx* of Fig. 1, and Fig. 3 is an end view of the valve employed in that section of the gage-cock which is directly connected with the boiler.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention I employ a gage-cock section 1, which is in the nature of a tubular plug, the externally-threaded outer end portion of which is adapted to be screwed into a boiler in the usual manner. The central bore or passage 2 of the section 1 is reduced in size toward its outer end, the mouth of this reduced portion of the passage being formed flaring, as shown at 3, to provide a seat for a conical valve-body 4, which is formed on the inner portion of a plunger or stem 5, which extends loosely through said reduced passage and beyond the outer end of the section 1. The valve-body 4 is provided on the inner side of its conical portion with an enlargement 5, which is adapted to fit and

slide within the larger portion of the passage 2 and which, as indicated more clearly at 6 in Fig. 3 of the drawings, has its periphery recessed at intervals to prevent the obstruction of a free flow of steam or water past the same. On the inner side of the head or enlargement 5 said valve is provided with a short extension 7, which is embraced by one end of a coiled spring 9, the remaining end of the latter bearing against the face of an end filling-piece 10, which, as shown in the drawings, is screwed into the end of the section 1 and is provided with a central opening or passage 10<sup>a</sup>.

11 represents the outer section of my improved gage-cock, which is in the nature of a valve-casing and is provided with an outlet-arm 12, extending at right angles with the body 11, said arm having a central passage 12<sup>a</sup> therethrough. The inner end of this passage communicates with the enlarged inner end portion of the central longitudinal passage of the section 11, this enlarged portion of the passage being flaring or conical to form a seat for a correspondingly-shaped valve-body 13, the stem 13<sup>a</sup> of which extends outward through the section 11 and preferably through a suitable packing-nut 14, which may be screwed on the outer end of said section, as shown. The conical head or valve 13 has formed in its inner and larger end portion a conical recess 15, within which the valve stem or plunger 5 projects, said stem normally abutting against the valve 13 at the inner end of its recess 15. Formed through the wall of the valve-body 13 adjacent to the inner end of the recess 15 is a port 16, which is adapted by the rotation of said valve to be made to register or communicate with the passage 12<sup>a</sup> of the outlet-arm 12. It will be observed that when the section 11 is in its normal position—that is, screwed upon the outer end of the section 1—the contact of the valve-stem 5 with the valve 13 results in the valve-body 4 being forced off its seat 3 and in a compression of the spring 9. It will thus be seen that when the gage-cock is intact or when the two sections are connected one with the other in operative position a free flow of steam or water may be had from the boiler through the passage 10<sup>a</sup>, valve-recesses 6, passage 2, recess 15, port 16, and passage 12<sup>a</sup>, when the valve 13 is so turned as to open communication through the latter passage. In case, however, it should become desirable from the choking of the port 16 or the failure



of the valve 13 to work properly to remove the section 11 and permit of the trouble being remedied it is obvious that the releasing of the contact of the stem 5 from the valve 13 will permit the spring 9 to act and close the valve 4 against its seat 3, thus cutting off communication with the boiler, and thereby obviating the necessity of withdrawing the steam from the boiler before removing the section 11.

It will also be observed that, owing to the conical form of the valve 13 and the fitting of its conical surface against the inner correspondingly-shaped wall of the section 11, the compression of the valve 13 will not be interfered with by the accumulation on its surface of lime or other deposits, there being no opportunity for the water which passes through these sections coming into contact with the bearing-surface of said valve 13, thus obviating the necessity of frequently grinding the valve to insure a perfect seating of the same.

It will be understood that while I have described my improved device as particularly adapted for use as a gage-cock or valve for steam-boilers it will be evident that the same will be of great utility as a valve for other purposes where it is desirable to cut off communication with a source of steam or water supply while the valve is being repaired.

It will be observed that the construction herein described is simple and inexpensive.

What I claim is—

1. A gage-cock comprising a casing-section, a spring-actuated valve slidably disposed in said casing-section and having a stem which extends beyond said casing-section, a detachable casing-section having a flaring opening formed therein, a conical valve seat-

ed in said flaring opening and having a stem which extends to the exterior of the detachable casing-section, said conical valve also having a flaring opening formed therein against the base of which the end of the first-named valve-stem bears, said conical valve having an opening formed in the wall thereof and said detachable casing-section having a discharge-opening leading therefrom, said port being adapted to establish communication between said discharge-opening and the flaring opening of the valve.

2. A device of the character described comprising a casing-section having a bore formed therethrough, the forward portion of which is reduced, a spring-actuated valve slidably disposed in said bore and having a portion of equal diameter with said bore, said portion being longitudinally channeled for the passage of steam or water thereby, a valve-stem projecting from said valve through the reduced portion of said bore, a detachable casing-section, a valve located in said casing-section and adapted to bear against the end of the valve-stem when said detachable casing-section is screwed into place, said detachable casing-section having a discharge-port leading therefrom, and a port formed through the valve adapted to establish communication between the discharge-opening and the reduced portion of the bore of the first-named casing-section.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. CULLISON.

Witnesses:

A. L. PHELPS,  
CARL STOUGHTON.