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T. W. GRIFFIN & C. J. RATHERS.

GAGE COCK.

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1,070,453. Patented Aug. 19, 1913.

Fig. 1.

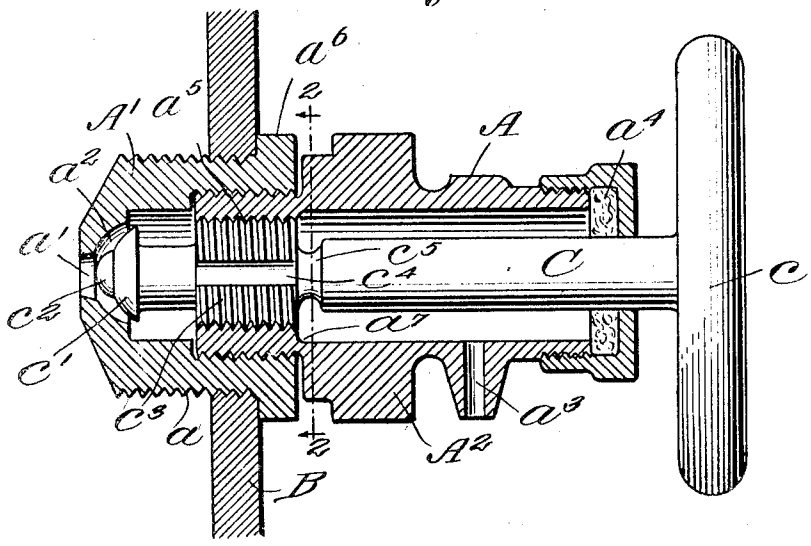
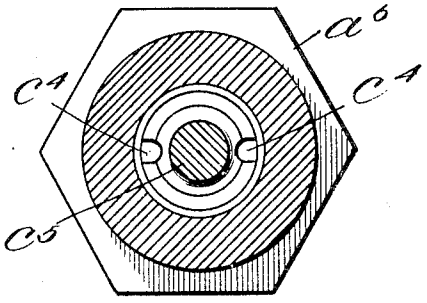


Fig. 2.



WITNESSES

S. E. Wade.

Myron G. Clear.

INVENTORS

Thomas W. Griffin

Curtis J. Rathers

BY Munn & Co.

ATTORNEYS

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UNITED STATES PATENT OFFICE.

THOMAS W. GRIFFIN, OF SPRINGFIELD, MISSOURI, AND CURTIS J. RATHERS, OF SAPULPA, OKLAHOMA.

GAGE-COCK

1,070,453. Specification of Letters Patent. Patented Aug. 19, 1913.

Application filed November 11, 1912. Serial No. 730,664.

To all whom it may concern:

Be it known that we, THOMAS W. GRIFFIN and CURTIS J. RATHERS, citizens of the United States, and residents, respectively, of Springfield, in the county of Greene and State of Missouri, and Sapulpa, in the county of Creek and State of Oklahoma, have invented an Improvement in Gage-Cocks, of which the following is a specification.

Our present invention relates to gage cocks, and our object is to provide a gage cock which, when associated with a boiler in operative position, may have its entire outer portion broken away without disturbing the valve upon its seat. Our invention is therefore especially applicable to use in connection with locomotives where accidents of numerous characters are likely to break off gage cocks which would ordinarily result in the escape of scalding steam into the locomotive cab.

Broadly our invention comprises a gage cock consisting of a shell having a valve seat at its inner end and a stem carrying a valve member at its inner end and having a threaded connection within the shell at a point adjacent the inner end of these parts, whereby their entire outer portions may be struck off and the valve still remain seated inasmuch as this is its normal position.

In the accompanying drawing forming a part of this specification Figure 1 is a central longitudinal section through a gage cock constructed in accordance with our invention and illustrating its practical application, and Fig. 2 is a cross section taken therethrough substantially on the line 2—2 of Fig. 1.

Referring now to these figures and considering the shell or casing A as a whole, it is provided with exterior threads a adjacent its inner end by which it may be connected within a threaded aperture formed in a boiler plate or the like indicated at B in Fig. 1, the extreme inner end of the said shell or casing being provided with an aperture a' and with an internal valve seat a^2 at the inner end of the said aperture.

The shell or casing A is provided with an outlet a^3 at a point adjacent the stuffing box a^4 which is located at its outer end around the outer portion of the valve stem C which, as usual, is provided with an outer hand wheel c. The valve c' which is located at the inner end of the stem C is formed to snugly fit the seat a^2 with which it cooperates, and we preferably provide the said valve c' with a central rounded extension c^2 which, when the valve is seated, is adapted to extend into the opening a' of the shell or casing in order to effectually exclude steam or boiler fluid from the valve seat in this, the normal position of the valve, whereby to guard these parts against corrosion. It will be further seen that the shell or casing A is provided at a point adjacent its inner end with an internally threaded portion a^5 with which coöperates an enlarged threaded portion c^3 of the valve stem, this portion of the valve stem being also provided with longitudinal service channels c^4 by which communication may be had between the opening at the inner end of the shell and the outlet opening a^3 when the valve is open.

For economic purposes, the shell or casing A is constructed in two sections, an inner section A′ on which are located the threads a and which is adapted to be screwed within the boiler plate by means of its nut a^6, and an outer section A² at the inner end of which is a reduced threaded extension which screws within the inner section A′ and which is provided with the internal threads a^5 coöperating with the threaded portion of the valve stem. From this, and by particular reference to Fig. 1, it will be seen that the outer surface of the inner casing or shell portion A′ extends only slightly beyond the outer surface of the boiler plate within which it is mounted, and to this end the outer shell or casing section is provided with a circular weakened portion a^7 which is substantially in line with a weakened portion c^5 of the valve stem C when the valve is closed, both of these weakened portions being substantially flush with the outer surface of the inner shell or casing section A′. Thus in view of the fact that the threaded connection between the valve stem and the shell or casing is at a point between the seated valve and the weakened portions of both the stem and the shell or casing, any considerable blow upon the outer or exposed portion of the gage cock, for instance, as the result of accident, will remove the entire outer portion of the gage cock without disturbing the seated valve. Thus if such an accident occurs to a locomotive supplied with our

improved gage cock, all danger of escaping steam and boiler water within the cab will be eliminated.

We claim:—

1. A gage cock comprising a shell having a valve seat at its inner end, and a stem carrying a valve member at its inner end and having a threaded connection with the shell at a point adjacent the said inner ends of these parts, for the purpose described.

2. A gage cock comprising a shell having a valve seat at its inner end, and an internally threaded portion adjacent said inner end, said shell also having an outlet adjacent its outer end, a stem within the casing having a threaded portion adjacent its inner end for engagement with the threaded portion of the shell, and provided with longitudinal channels in said threaded portion, and a valve carried by the inner end of the stem for engagement with the valve seat.

3. A gage cock comprising a shell, a valve stem working in the shell, said shell and said stem having weakened portions at points intermediate their ends, a valve seat adjacent the inner end of the shell, a valve carried by the inner end of the stem, and a threaded connection between the stem and shell at a point between their inner ends and their said weakened portions whereby the outer portions of the valve stem and shell may be broken off without affecting the valve upon its seat.

4. A gage cock comprising a shell having an inlet opening at its inner end and an internal valve seat at the inner end of said opening, a valve stem working within the shell, and a valve upon the inner end of said stem and formed to snugly fit upon the said seat, said valve having a central extension adapted to project into and snugly fit within the said inlet opening when the valve is seated, whereby to effectually protect the valve and seat from corrosion.

5. A gage cock comprising a shell having an inner externally threaded portion provided with an inlet opening and an internal valve seat surrounding the said opening, and an outer portion having a threaded connection with the said inner portion and provided with internal threads adjacent its inner end and within the limits of the inner shell portion when the said inner and outer portions are coupled, a valve stem extending through the outer portion of the shell and having an enlarged threaded portion coöperating with the internal threads of the outer shell portion and also provided with a longitudinal channel whereby to establish communication between the inner and outer shell portions, the said valve stem and outer shell portion being provided with weakened portions at points outwardly of the coöperating threaded portions of the stem and outer shell portion, and a valve carried by the inner end of the stem for engagement upon the said seat.

THOMAS W. GRIFFIN.
CURTIS J. RATHERS.

Witnesses as to the signature of Thomas W. Griffin:

C. A. WALTERHOUSE,
J. HARRY GRIFFITH.

Witnesses as to the signature of Curtis J. Rathers:

HARRISON ARNOLD,
P. F. RUSKOSKI.