(Model.)

H. R. FRISBIE.

GAGE COCK.

No. 544,033. Patented Aug. 6, 1895.

Fig. 1.

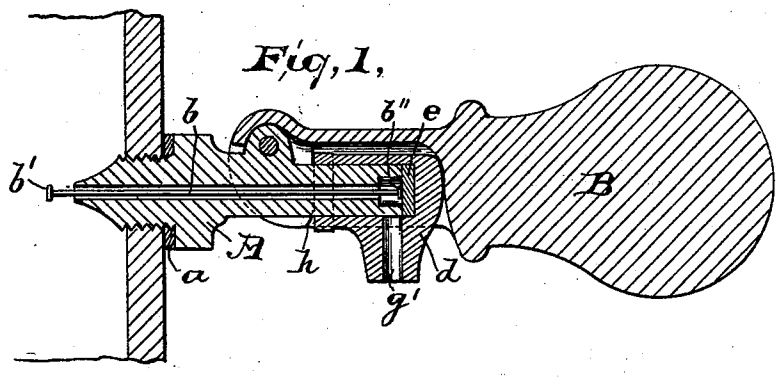


Fig. 2.

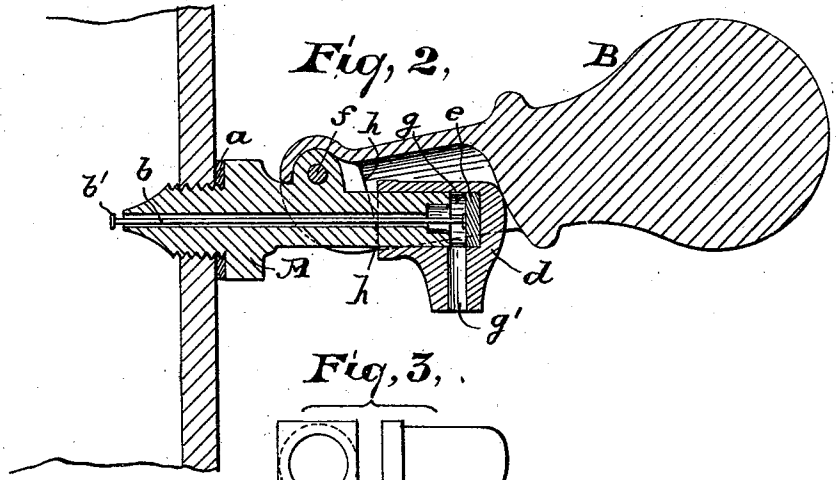
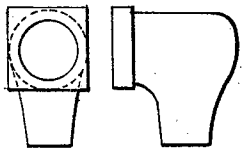


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY R. FRISBIE, OF NEWARK, ASSIGNOR TO THE EASTWOOD WIRE MANUFACTURING COMPANY, OF BELLEVILLE, NEW JERSEY.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 544,033, dated August 6, 1895.

Application filed April 18, 1895. Serial No. 546,177. (Model.)

To all whom it may concern:

Be it known that I, HENRY R. FRISBIE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Gage-Cocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to enable an engineer to test the amount of water or steam contained in the boiler; to automatically free and keep the gage-cock free from scale, grit, and dirt; to cause the gage to close automatically, and to secure other advantages, hereinafter referred to.

The invention consists in the improved gage-cock and in the combination and arrangement of the parts thereof, as hereinafter set forth, and finally pointed out in the claims.

Referring to the accompanying drawings, in which similar letters of reference designate corresponding parts where they occur, Figure 1 represents a central transverse longitudinal section of a gage-cock embodying my improvements attached to the head of the boiler as it appears when the said gage-cock is closed. Fig. 2 is a similar view showing a gage-cock as it appears when it is open; and Fig. 3 is a detail in elevation and plan of a certain automatically adjustable and removable cap.

In carrying out my invention I employ a tubular shank A, which is provided with a threaded end, to be inserted into the head of the boiler, provision being made for a packing *a*, to render it more tight. The extremity of the threaded portion of the shank projecting inside of the boiler is tapered nearly to a point, in order to prevent, as far as possible, scale, grit, or dirt from forming a lodgment thereon. Extending throughout the length of said shank is a plunger *b*, having a shoulder or button *b'* on the inner end somewhat larger than the bore of the shank, and also a button or shoulder *b''* on the outer end to limit the movement of said plunger. Upon the outer extremity of said shank is nicely adjusted an L-shaped tubular cap *d*, capable of a slight longitudinal movement on said shank, in the crown of which is a packing *e*, and the end of the shank which abuts against said packing is cored or chambered out, the purpose of which will be stated hereinafter. Pivotally adjusted upon said shank at *f* is a weighted lever B. This lever is cored or chambered out, in order to receive and work upon said cap, the rear end of said chamber being tapered, forming a bearing against which the end of the cap abuts and works, as shown. In order to test the condition of the water or steam in the boiler it is only necessary to raise the weighted lever, as indicated in Fig. 2, whereupon the pressure of the steam or water will force the cap outward, thereby leaving a space *g* between the end of the shank and the packing in the cap, which coincides with a bore *g'* in said cap and immediately indicates by the exit or non-exit of steam or water the condition of the water or steam in the boiler, if there be any, as will be readily understood.

The cap is prevented from being forced entirely off from the shank by its engagement with the tapered end or bottom of the chamber in the weighted lever, as will be understood upon reference to said Fig. 2. Should there be no pressure in the boiler of water or steam, the cap will still be forced outward by means of cam-shoulders *h*, which engage with the inner end of the cap, as indicated in the drawings, and the fact of there being, or not being, sufficient water or steam will be indicated just as certainly as in the former case.

It will be understood that the inner end of the cap is square or angular, and thereby, when coming in contact with the sides or walls of the chamber, will be prevented from turning and always be kept in its proper position.

Upon releasing the weighted lever it is caused to fall automatically by gravity, and thereby to close the gage-cock, as will be understood upon reference to the drawings.

By means of the cam-shoulders *h* at the mouth of the chamber in the weighted lever the cap is always kept in working condition, as without them the cap might become so

stuck fast to the end of the shank as that it would not be moved by a slight pressure from within the boiler, and so fail to indicate the condition of the contents thereof.

The longitudinal movement of the plunger *b* in the bore of the shank as the gage-cock is opened or closed serves to keep said bore free from obstructions, as will be readily understood.

Another feature of the improvement is that the weighted lever is limited in its upward movement by a shoulder *m* on the end thereof, which comes in contact with the surface of the shank, so that the end of the cap will not be freed from the tapered end of the chamber in said lever, thus rendering it impossible to be blown off, as will be understood.

If at any time it be necessary to cleanse or repair in any way the gage-cock, the pivot *f*, which is screwed into position, can be readily backed out and the weighted lever removed, and the parts separated from one another for the purpose.

The chambered outer end of the shank above referred to is to afford means for increased pressure by the steam or water upon the cap when the weighted lever is raised to force it outward, as will be understood.

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

1. In a gage cock, the combination with the tubular shank thereof, of a plunger working therein, a valve-cap carried by said shank, engaging with said plunger and having an exit flue, a weighted lever pivotally mounted upon said shank and having a chamber in which said cap works, and adapted when raised to open said gage cock and when released to close the same automatically and to move said plunger as and for the purposes set forth.

2. In a gage cock, the combination with the tubular shank thereof, of a valve cap, carried thereby, having an exit flue, a weighted lever, pivotally mounted upon said shank, having a chamber in which said cap works means to limit its movement to prevent the cap from being accidentally blown off said shank, said lever being adapted when raised to open said gage cock and when released to automatically close the same, as described, and for the purposes set forth.

3. In a gage cock, the combination with the tubular shank thereof, of a plunger working therein, and a weighted lever pivoted upon said shank and adapted to automatically operate said plunger, as described, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of April, 1895.

HENRY R. FRISBIE.

Witnesses:
OLIVER DRAKE,
ROBERT SOLLBERGER.