(No Model.)

J. D. MITCHELL.

GAGE COCK.

No. 490,157. Patented Jan. 17, 1893.

Fig. 1.

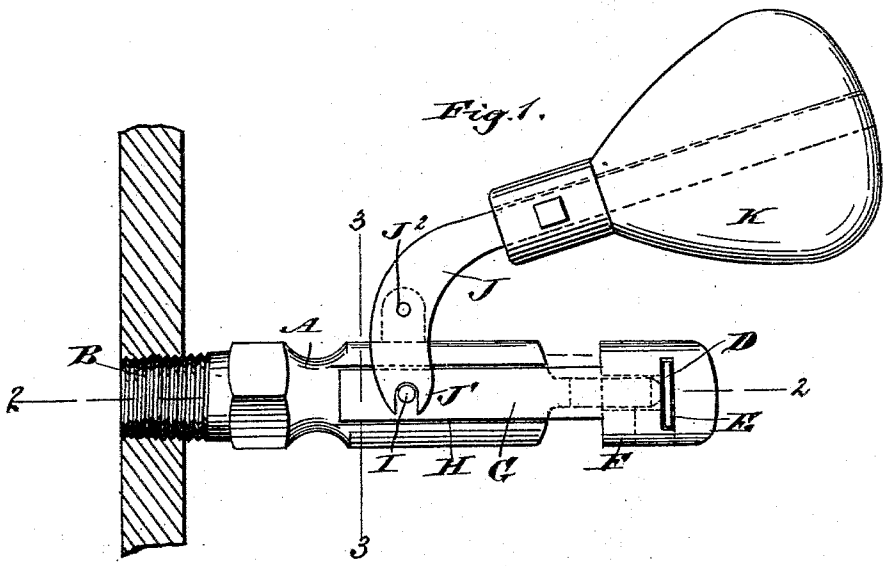


Fig. 2.

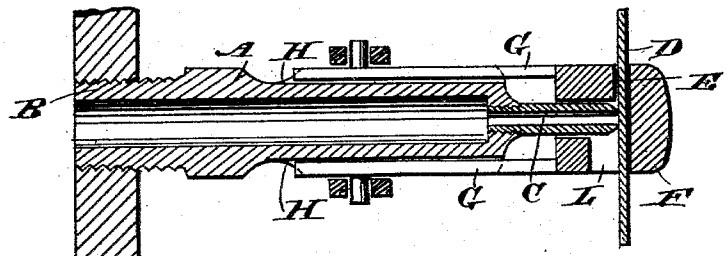
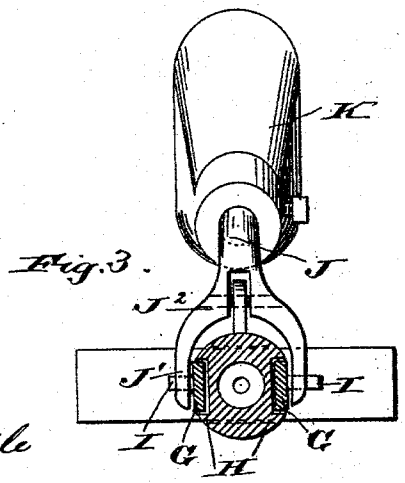


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES D. MITCHELL, OF MARINE CITY, MICHIGAN.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 490,157, dated January 17, 1893.

Application filed April 26, 1892. Serial No. 430,760. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. MITCHELL, of Marine City, in the county of St. Clair and State of Michigan, have invented a new and Improved Gage-Cock, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gage cock which is simple and durable in construction, very effective in operation, not liable to get out of order, and can be readily applied to any boiler, being, however, more especially designed for use on high pressure boilers.

The invention consists of a nozzle fixed on the valve body and adapted to be closed by a metallic plate held in a head fitted to slide on the valve body.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement; Fig. 2 is a sectional plan view of the same on the line 2—2 of Fig. 1; and Fig. 3 is a transverse section of the same on the line 3—3 of Fig. 1.

The improved gage cock is provided with a valve body A formed at its inner end with a screw thread B, for screwing the valve body into the boiler shell in the usual manner. On the outer end of the valve body A is attached or formed a nozzle C, having its opening somewhat less in diameter than the bore of the valve body A, as is plainly shown in Fig. 2. The outer end of the nozzle C is slightly tapered, so as to form a sharp circular edge adapted to abut on one face of a plate D made of copper or other suitable material, said plate being held in a transversely extending aperture E formed in the head F provided with rearwardly extending arms G fitted to slide longitudinally in guideways H formed or secured on the outside of the valve body A. On the guide arms G are secured the pins I engaged by the forked ends J′ of a lever J, fulcrumed at J^2 on top of the valve body A, as is plainly shown in the drawings. The lever J is preferably made with two arms standing at right angles, of which the lower one connects with the pins I, as described, while the other arm carries a weight K held adjustably on its arm and serving to hold the arms G and the head F in an innermost position, so as to close the nozzle C by moving the plate D in contact with the circular, sharp edge of the nozzle.

When the device is in a normal position, as shown in Figs. 1 and 2, the weight K of the lever J presses the metallic plate D in firm contact with the outer, sharp edge of the nozzle C, so that the gage cock is closed.

When it is desired to open the gage cock the operator moves the weight K upward, whereby the forked end of the said lever pushes on the pins I, thus moving the arms G and the head F forward, and the bolt D away from the sharp, circular edge of the nozzle C, whereby the latter is opened and steam or water can escape from the said nozzle. In the bottom of the head F, directly below the aperture into which passes the nozzle end, is formed an outlet opening L, through which steam or water can readily escape when the cock is opened, as above described.

It will be seen that the pressure with which the plate D is held against the nozzle C can be increased or diminished by shifting the weight K outward or inward on its arm of the lever J. It will further be seen that when the operator, after having opened the gage cock, as above described, by swinging the lever J and weight K upward, releases the latter, then the gage cock will automatically close, by the weight K and lever J swinging back to their normal position by their own weight.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent;—

1. In a gage cock, the combination with a valve body carrying a nozzle, of a metallic plate adapted to close the end of the said nozzle, and a head carrying the said plate and fitted to slide on the said valve body, substantially as shown and described.

2. In a gage cock, the combination with a

valve body carrying a nozzle, of a metallic plate adapted to close the end of the said nozzle, a head carrying the said plate and fitted to slide on the said valve body, and a weighted lever for holding the said head in an innermost position to press the said plate against the end of the nozzle, substantially as shown and described.

3. In a gage cock, the combination with a valve body formed with guide-ways and carrying a nozzle, of a metallic plate adapted to engage the end of the said nozzle, a head formed with a transverse aperture through which extends the said plate, guide arms extending from the said head and fitting into the guideways on the said valve body, and a weighted lever pivoted on the said valve body and connected with the said guide arms, substantially as shown and described.

JAMES D. MITCHELL.

Witnesses:
JAY T. JOHNSON,
JOHN FRITZ.