(No Model.)

J. B. ATWOOD & S. H. HOWES.

GAGE COCK.

No. 338,215. Patented Mar. 16, 1886.

Fig. 1.

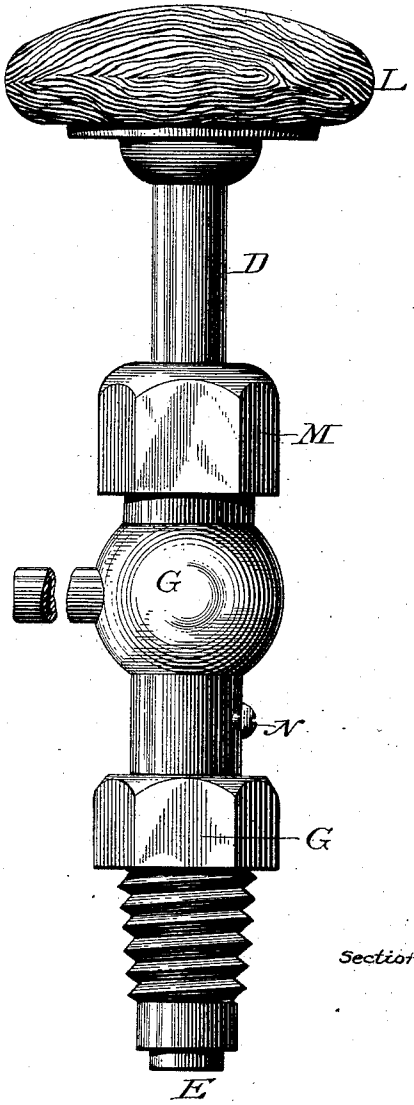
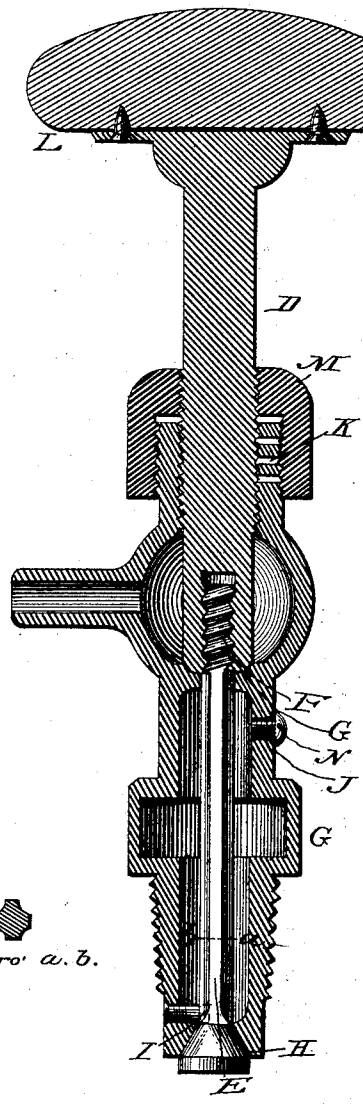


Fig. 2.



Section thro' a. b.

Witnesses.
Harrison Dunham.
George B. Perkins

Inventors.
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UNITED STATES PATENT OFFICE.

JAMES B. ATWOOD, OF BOSTON, AND SAMUEL H. HOWES, OF CHELSEA, MASS.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No 338,215, dated March 16, 1886.

Application filed August 20, 1885. Serial No. 174,918. (No model.)

To all whom it may concern:

Be it known that we, JAMES B. ATWOOD, of Boston, and SAMUEL H. HOWES, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Steam-Gage Cocks for Locomotive and other Steam Boilers, of which the following, taken in connection with the accompanying drawings, is a specification.

Our invention consists of a gage-cock with two valves, one valve being located at a point inside the boiler and the other at a point outside the boiler, and having in the body of the gage-cock two or more perforations, one of which may be closed with a screw, and the other or others may be closed by screwing down the packing-box that is used in connection with the body of the gage-cock, and also an internal flange or pin inside the body of the gage-cock, the two valves being subject to positive control in opening and closing by means of mechanism hereinafter described, all of which invention is described in this specification and the accompanying plate of drawings, in which—

Figure 1 is a sectional view showing the gage-cock and packing-box divided longitudinally and showing the interior thereof, and also a supplemental figure showing the shape in which we prefer to construct the body of spindle, to which reference is there made. Fig. 2 shows an external view of gage-cock and packing-box complete.

In the drawings, *a b* refer to the preferable shape of the body of the spindle E.

C represents the body of the gage-cock, having an interior screw-thread cut at or near the outer end, and also a valve-seat at point indicated by G, and a second valve-seat at point indicated by H; also, one or more perforations of such size as may be desirable, through from exterior to interior, at the point indicated by K, and an internal projecting pin or flange at point indicated by I.

M represents a packing-box, that screws down over the end of the body of the gage-cock C, and is used in connection therewith.

D represents a spindle with a handle, L, at its outer end, and having an external or male screw-thread cut on it at about a central point of its length, said external screw-thread corresponding to the internal screw-thread at or near the outer end of the body of gage-cock C, and, being inserted therein, may be made to travel downward toward the valve-seat G by a rotary motion of the handle L and close valve at that point, the end of spindle D being bored out about one-half its circumference at the point indicated by F, to such depth as may be necessary, and an internal screw-thread cut therein, as shown, the said internal screw-thread being coarser than the external screw-thread on the spindle D, before described, and bearing thereto in the number of turns to the inch the proportion of two to one.

E represents a second spindle having one or more annular grooves necessary to its proper construction—the drawings showing four, which number is preferred—this spindle E, having at one end a nib or button that may fit down and close the valve, as shown at H, and having at the other end an external or male screw-thread corresponding to and traveling in the before-described internal screw-thread in end of spindle D, as shown at point F. By this construction we are enabled to open the valve at G by a rotary motion of the spindle D, causing the spindle to travel backward from the seat. The spindle E, being prevented from rotary motion by the pin I playing in an annular groove, is, through or, more correctly, by the screw at F, forced by the rotary motion of the spindle D to travel in an opposite direction from that traveled by said spindle D, thereby opening the valve H simultaneously with the opening of the valve G.

The perforations K and J are intended to admit of the injection of oil or other liquids to cut the sediment that often gathers and hardens in the steam-gage cocks and prevents closing valves tightly. The perforations (one or more) at K are to be opened by withdrawing the packing-box M. The perforation J is closed by the screw N.

The object of a second valve at H is, first, to prevent the escape of steam when the perforation J is opened for the injection of oil, and, second, to prevent the escape of steam in case the gage-cock should by accident or otherwise be broken off at a point outside of the boiler.

One material object in having the valve at

H subject to positive control, rather than depending upon the internal steam-pressure to close it, as is the case with similarly-located valves in other gage-cocks, is that it cannot become inoperative through the deposit of sediment in the valve without the knowledge of the engineer.

We are aware that the packing-box M has long been in common use, and that gage-cocks with a valve operating substantially the same as valve G have also been used.

We therefore claim as our invention—

1. The gage-cock body C, constructed with the perforations J and K and perforations for pin I.

2. The spindle D, constructed with the bore and internal screw-thread at F, said thread being twice as coarse as the external thread near the center of said spindle, used in connection with and working upon the external screw-thread at end of spindle E, for the purpose of transmitting from the said spindle D to said spindle E a positive, equal, and simultaneous motion in a direction opposite to that traversed by the said spindle D, substantially as and for the purposes in our said specification described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses, on this 15th day of August, A. D. 1885.

JAMES B. ATWOOD.
SAMUEL H. HOWES.

Witnesses:
E. C. MITCHELL, Jr.,
FRANKLIN HEDGE.