

(No Model.)

C. A. G. WINTHER.
GAGE COCK.

No. 542,126.

Patented July 2, 1895.

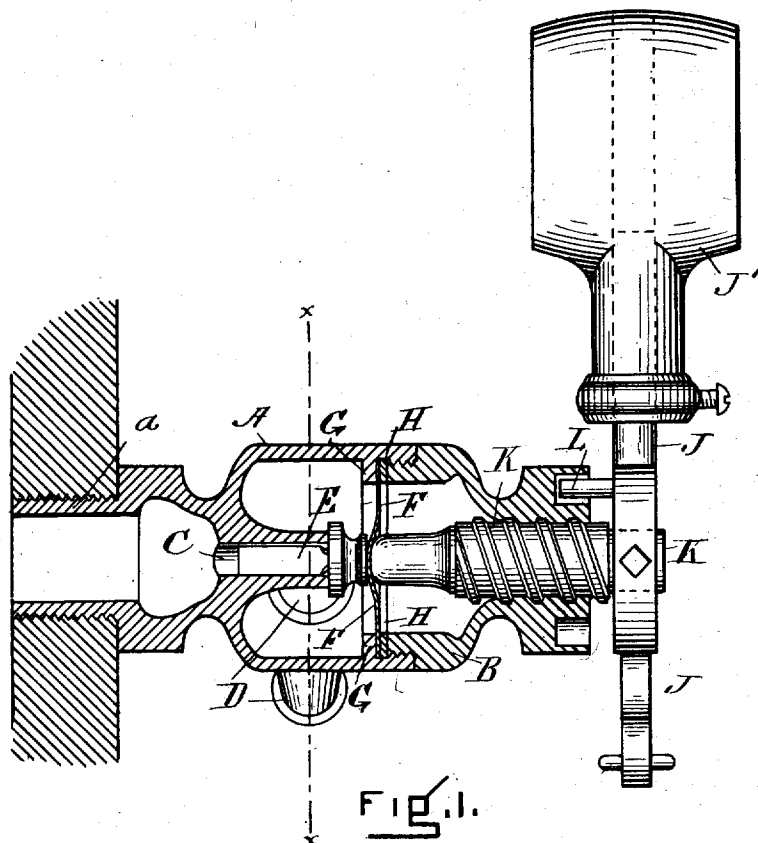


Fig. 1.

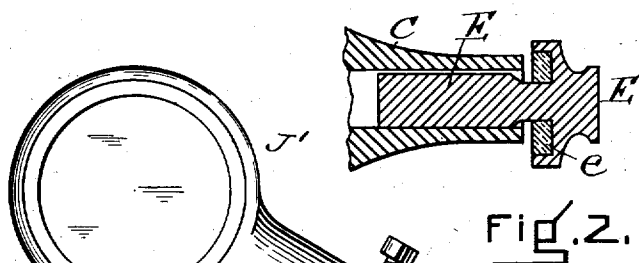


Fig. 2.

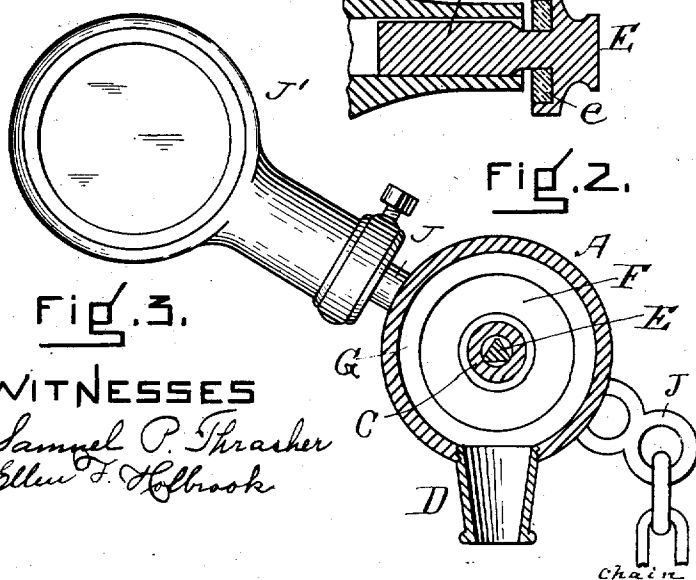


Fig. 3.

WITNESSES

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CHARLES A. G. WINTHER, OF SOMERVILLE, MASSACHUSETTS.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 542,126, dated July 2, 1895.

Application filed November 24, 1894. Serial No. 529,803. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. G. WINTHER, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Gage-Cocks, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to provide for steam-boilers and like uses a gage-cock of improved construction and great simplicity, not liable to be opened by the direct steam-pressure, and absolutely secure against leakage of steam under any amount of pressure.

The characteristic feature of my invention is a valve mounted upon the steam-inlet tube and a flexible transverse partition across the internal chamber of the gage-cock, between the valve and its actuating means, such partition being preferably of elastic sheet metal secured marginally between a fixed shoulder in the walls of the chamber and the blunt inner end of the outermost section of said chamber.

My improvement is embodied in a gage-cock having an internal chamber with a reduced axial inlet-tube and a valve having its supporting-stem movable within said tube, an outlet for escape of steam when the valve is opened, and a yielding transverse diaphragm across said chamber, aiding to hold the valve upon its seat.

My invention also includes a chambered gage-cock body having an intermediate flexible diaphragm, with the steam-inlet tube, the independent valve, and the outlet on one side of said diaphragm, in combination with a valve-closer on the opposite side of said diaphragm, and consisting of a weighted lever having a threaded lateral fulcrum moving axially from and toward the valve-seat when the lever is vibrated in testing the steam or water by the cock. The tip of this fulcrum bears normally against the center of the diaphragm, thereby pressing the valve against its seat.

My improved valve is also of novel construction and arrangement. It has an angular stem fitting loosely into the axial steam-inlet and is furnished with a broad head having a lead or Babbitt-metal filling, which is held closely against the annular end of the steam-inlet by the pressure of the valve-closer and

diaphragm against the outer end of the valve. Relaxing this pressure by vibrating the weighted lever permits the valve to open and the steam or water to escape. 55

In the drawings, Figure 1 is a top plan of the lever and valve, with the remainder of the device in longitudinal section. Fig. 2 is an enlarged section of the valve and its seat, 60 shown in the open position. Fig. 3 is a transverse section on line *x x*, Fig. 1.

A and B are the two parts of the body of the cock, united by terminal screw-threads, as shown. The inner part A has a threaded stem 65 *a* to screw into the boiler-head or the vertical water column connected thereto and is furnished with a hexagon neck to receive a wrench.

C is the tubular steam-inlet, integral with the part A and forming at its tip the axial valve-seat to receive a suitable valve. 70

D is a lateral tubular outlet from the chamber A.

I have devised a valve E of novel construction well adapted for use with my other improvements. It has an angular stem fitting loosely into the bore of the inlet C and a broad head covering the annular valve-seat. This head is shown as a shell filled with Babbitt 80 metal or like material *e*, which is pressed into close contact with the end of the tubular inlet, making a close fit which years of use will not cause to leak.

Another novel feature is a transverse diaphragm F, preferably of hard spring brass or copper of No. 36 gage, which divides the interior of the cock-body into two chambers and forms a barrier beyond which the steam or water cannot possibly pass. The diaphragm 85 is held fast marginally between an internal shoulder G of the part A and the annular end of the part B, a metallic packing-ring H being interposed. The diaphragm is somewhat crowning and bears centrally against the flat head of the valve E, with which it has a yielding movement. 90 95

The valve is actuated by a weighted lever J, having a coarsely-threaded lateral fulcrum K, which works in the threaded outer end of the part B of the cock-body. Vibration of the lever gives to such fulcrum a limited axial movement, its tip pressing the center of the diaphragm against the valve and holding it nor- 100

mally closed. When the short arm of the lever is pulled downwardly in testing the steam, the partial oscillation of the threaded fulcrum involves its outward movement to an extent
5 sufficient to allow the steam to escape by pressing back the valve E and diaphragm F; but these are instantly restored to their closed positions when the weight J' is allowed to drop. A stop-pin L in the lever J works at its tip in
10 a recess in the cap of body B, preventing extreme movement either way.

I claim as my invention—

1. In a gage-cock, the body having an internal chamber with a reduced axial inlet tube
15 extending therein, a valve mounted upon said inlet tube, and an outlet for the escape of steam when the valve is opened, in combination with a yielding transverse diaphragm and suitable means for supporting the valve and dia-

phragm against the steam pressure, substantially as set forth.

2. In a gage-cock, the chambered body having an intermediate flexible metallic diaphragm, an axial inlet tube, an outlet tube, and a metallic valve mounted on the inlet tube,
2 independent of such diaphragm, in combination with a valve-closer on the other side thereof, comprising a weighted lever having a threaded lateral fulcrum adapted to move axially from and toward the inlet or valve seat,
3 substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. A. G. WINTHER.

Witnesses:

A. H. SPENCER,
CHARLES D. KEYES.