

P. McGRATH.

Gauge Cock.

117,907.

Patented August 8, 1871.

Fig. 1.

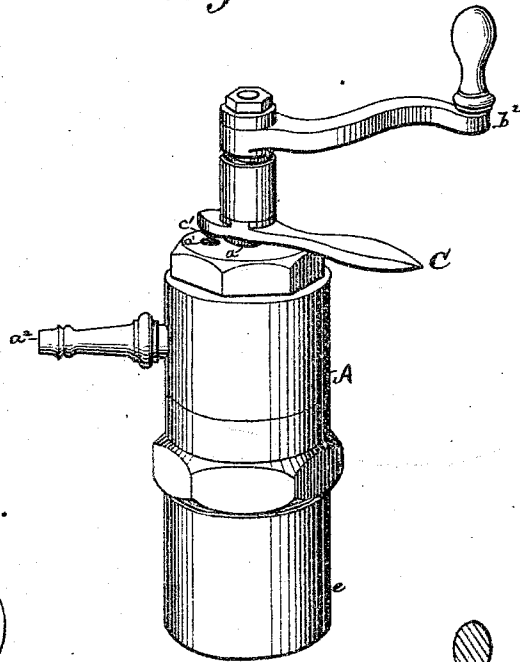


Fig. 3.

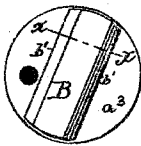
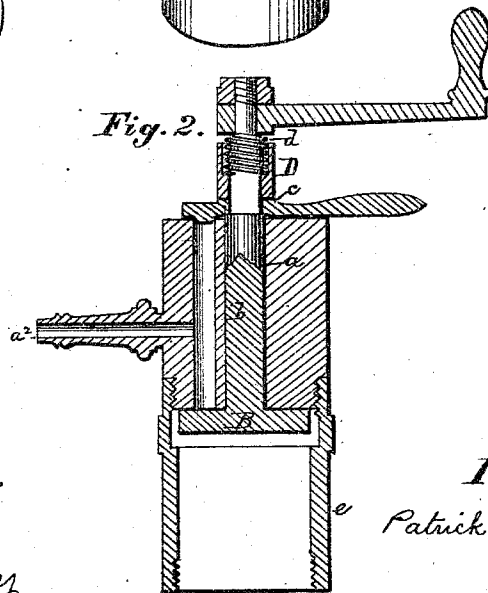


Fig. 4.



Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

PATRICK McGRATH, OF PLATTSBURG, NEW YORK.

IMPROVEMENT IN GAUGE-COCKS.

Specification forming part of Letters Patent No. 117,907, dated August 8, 1871.

To all whom it may concern:

Be it known that I, PATRICK McGRATH, of Plattsburg, in the county of Clinton and State of New York, have invented a new and useful Improvement in Gauge-Cocks; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention has for its object the production of a gauge-cock which, from its peculiar construction, shall obviate many difficulties incidental to the ordinary forms, and possess marked advantages over them; and consists in certain details of construction, which will be fully described hereinafter.

In the drawing, Figure 1 represents a perspective view of my improved gauge-cock; Fig. 2, a central sectional elevation; and Figs. 3 and 4, views of the valve.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and operation.

A represents a metallic cylinder, which is provided with a longitudinal central bore, *a*, for the reception of the valve-rod *b*, and also with the smaller steam-passage *a'*, located upon one side of the longitudinal center line, as shown. This passage *a'* is connected at about the center of its length with a discharge-tube, *a''*, as shown. The end of the cylinder *A* is suitably threaded, in order that it may be removably attached to the tube *x* secured to the boiler, and the other end suitably formed to receive a wrench, by which means it is readily attached or detached. *B* represents the valve, constructed preferably of a suitable block of metal, quadrangular in form, and having inclined sides *b'* *b''*, as shown. This valve is revolved upon the valve-seat *a'''* of the cylinder *A* for the purpose of covering or uncovering the opening of the steam-passage *a* by means of the valve-rod *b*, which extends through the central bore *a* of the cylinder, and is provided with a crank, *b''*, rigidly attached thereto, as shown. *C* represents a lever, provided with an opening, *c*, by means of which it is slipped over the valve-rod *B*, which lever is further pro-

vided, also, upon its short arm, with a short stud, *c'*, which latter, when in place, projects into and closes the outer end of the steam-passage *a'*. *D* represents a collar located upon the valve-rod between the lever *C* and the crank *b'*, which is provided with a socket for the reception of a short spiral spring, *d*, which rests thereon, and bears against the crank-arm, as shown.

The operation is as follows: The crank-arm is operated in the usual manner to use the cock. By its movement the valve is revolved to cover or uncover, as may be desired, the inner opening of the steam-passage *a'*, by which means steam or water, as the case may be, is permitted to pass out through the steam-discharge tube *a''*, or is cut off therefrom. The outer end of the passage *a*, it will be observed, is closed by the stud of the lever *C*. From the peculiar construction herein described it is impossible for obstructions to get between the valve and its seat, and, consequently, the valve is always tight, being kept in place not only by the pressure of the steam, but also by the action of the spiral spring *d*. By means of this latter, also, the necessary expansion and contraction of the metals under the influence of the heat are permitted. If an obstruction should remain projecting from the steam-passage as the valve closes, the projecting portion of it will be severed by the sharp edge formed by the inclined side of the valve, and, being forced away as the valve revolves, no damage can result from it.

If the steam-passage should become clogged from any cause the obstruction may be removed by uncovering the outer end of the steam-passage *a'* by withdrawing the stud of the lever *C* from the outer spring of the passage, this operation being easily permitted by the yielding of the spring *d*, and by inserting a suitable rod or wire to remove the obstruction.

The described gauge-cock is very simple in its construction, and exceedingly effective in its operation. If desired, substantially the same construction may be used for faucets.

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

1. The combination of a spring-lever with an independent steam-passage, as described.
2. The combination of the cylinder A, lever C, and spring *d*, as set forth.
3. The gauge-cock described, consisting of the cylinder A, valve B, with rod *b* and arm *b*², lever C, and spring *d*, constructed and arranged as described.

This specification signed and witnessed this
24th day of June, 1871.

PATRICK McGRATH.

Witnesses:

CORNELIUS HALSEY,
ALFRED ROGERS.