

(No Model.)

T. B. KEIM.

GAGE COCK.

No. 340,582.

Patented Apr. 27, 1886.

Fig. 1.

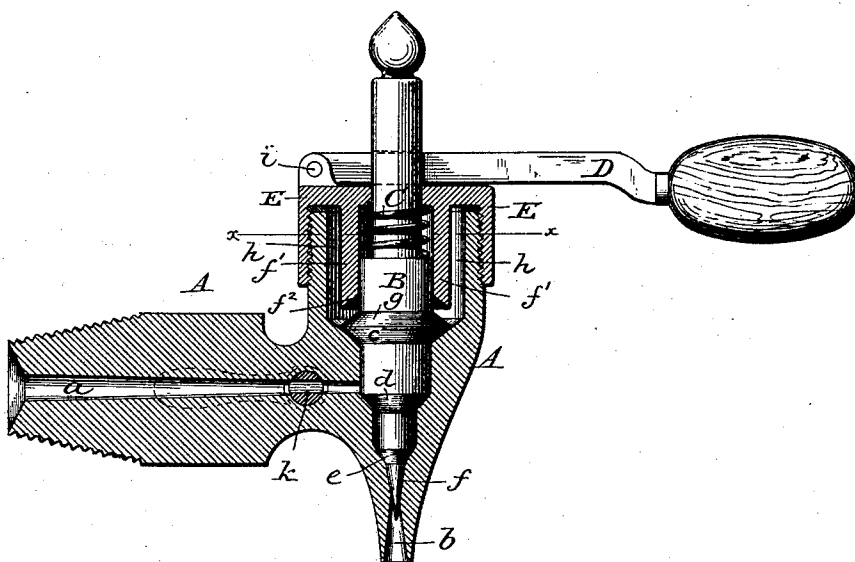
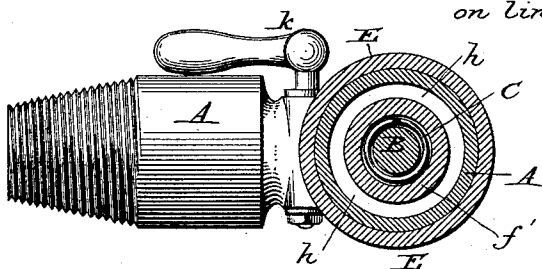


Fig. 2
on line x-x



Attest

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GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 340,582, dated April 27, 1896.

Application filed February 16, 1896. Serial No. 192,141. (No model.)

To all whom it may concern:

Be it known that I, T. BEVERLEY KEIM, of Reading, in the county of Berks and State of Pennsylvania, have invented certain Improvements in Gage-Cocks, of which the following is a specification.

Figure 1 is a longitudinal vertical section of my improved gage-cock. Fig. 2 is a horizontal section of the same on the line *x x*.

In the drawings, A represents the body of my valve; B, the spindle or valve proper; C, a spiral spring by which the vertical spindle is forced downward to its seat, and D a horizontal lever by which it is lifted.

The body A, which may be made in the form represented in the drawings or in any equivalent form, is formed with a horizontal passage or bore, *a*, leading from the inner end to a point near the front, and there communicating with the discharge-orifice *b*, which leads downward, as shown.

The spindle B, which I prefer to construct of Babbitt metal or other non-corrosive material, plays vertically in a suitable opening in the body. It is formed, as shown, with four annular beveled bearing-faces, *c*, *d*, *e*, and *f*, which seat themselves against corresponding bearings formed on the interior of the body when the spindle is depressed. It will be observed that the bearing *c* is above and the other bearings below the bore or passage *a*, thus effectually preventing the passage of the steam from the bore *a*, either upward or downward. That portion of the spindle between the bearings *c* and *d* is made of cylindrical or substantially cylindrical form, and fitted closely within the body, so that when the spindle is depressed it fits closely against the mouth of the bore *a*, thus assisting to confine the steam.

The spindle is inserted through an opening in the top of the body, and confined by means of an annular cap or nut, E, secured thereon. This cap has an internal annular flange, *f'*, which extends downward within the top, its lower edge being beveled, as shown at *f''*, to encounter an annular bearing-face, *g*, formed on the spindle, so that when the spindle is lifted the contact of these surfaces will prevent the escape of the steam in an upward direction around the spindle. In this manner the necessity of a gland or packing is avoided.

An annular passage, *h*, surrounds the flange *f'*, and when the spindle is lifted the beveled bearing *c* directs the steam outward beyond the flange *f'* into this passage. In consequence of this action the steam has less tendency than it would otherwise have to find its way upward around the surface of the spindle.

The closing-spring C, which surrounds the spindle, bears at its lower end on an annular shoulder thereon, being confined in place by the cap E, which bears upon its upper end. The opening-lever D passes through a hole in the spindle, and is pivoted at *i* to an ear on the cap E. At its free end the spindle should be provided with a wooden or other non-conducting handle.

For the purpose of shutting off the steam when the operative parts of the valve require to be examined or separated, I propose to insert a cock, K, of any suitable character in the body.

While I prefer to provide the spindle with the three seats *d*, *e*, and *f*, it is to be understood that either one may be used alone.

Having thus described my invention, what I claim is—

1. In a gage-cock, the body having the passage *a b* therethrough and the valve-spindle movable across the mouth of passage *a*, the conical bearings *d* and *g* on the spindle above and below the passage, respectively, and the corresponding seats in the body to receive the two bearings alternately.

2. In a gage-cock, the combination of the body having the fluid-passage *a b* therethrough and the vertically-movable spindle having a bearing-surface to close the passage *a*, and a separate bearing-surface to close the passage *b*.

3. In a gage-cock, the body having the passages *a b*, in combination with the spindle having a bearing-surface, *c*, above the passage *a*, and the bearings *d e* below said passage.

4. In a gage-cock, the body having the fluid-passage therethrough, in combination with the vertical spindle having bearings to close said passage, and having also, above said fluid-passage, bearings *c* and *f''*, adapted and arranged to seat themselves against corresponding bearings in the body when the spindle is raised and lowered.

5. In a gage-cock, the body having the fluid-

passage therethrough, in combination with the spindle B, having the bearing-surface *f* to close the same, and also bearing-surfaces *c* and *f'*, to co-operate with corresponding surfaces 5 in the upper part of the body, whereby the passage of fluid through the top of the body is prevented both when the valve is closed and when it is opened.

6. The body having the fluid-passage there-
10 through and the flange *f'* therein, in combination with the spindle adapted to close said

passage, and provided with bearings *g* to act against the flange, and the actuating-spring inclosed within and protected by the flange, as described.

In testimony whereof I hereunto set my hand 15
this 4th day of February, 1886, in the presence
of two attesting witnesses.

T. BEVERLEY KEIM.

Witnesses:

GEORGE W. SEIP,
E. B. WEIGAND.