C. J. ELLIOTT.
Gage-Cock.

No. 202,639. Patented April 23, 1878.

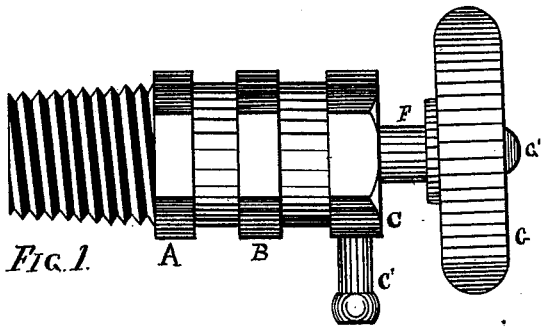

FIG. 1.

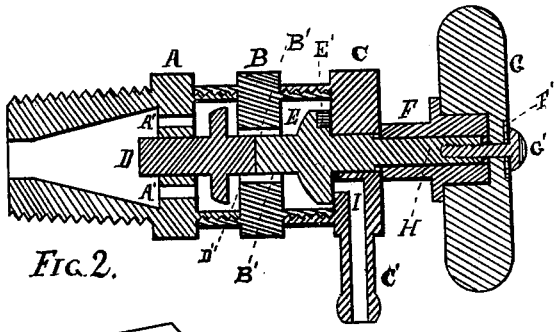

FIG. 2.

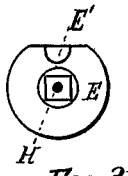

FIG. 3.

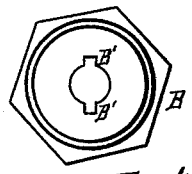

FIG. 4.

ATTEST:

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CHARLES J. ELLIOTT, OF POTTSVILLE, PENNSYLVANIA.

IMPROVEMENT IN GAGE-COCKS.

Specification forming part of Letters Patent No. **202,639**, dated April 23, 1878; application filed January 15, 1878.

To all whom it may concern:

Be it known that I, CHARLES J. ELLIOTT, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in Gage-Cocks, of which the following is a specification:

The invention relates to cocks for steam-boilers used for determining the amount or height of water in the boiler.

Gage-cocks heretofore have usually been constructed in such a manner that, when operated, the steam or water from the boiler touches the whole of the bearing-surfaces of the valves and their seatings, which allows opportunity for the deposit of grit or sediment thereon, which is more destructive to the valves than constant usage of them would be.

Again, the gage-cocks heretofore made do not in a simple and effective manner provide for the repairing of the valve while the boiler is filled with steam, and they, to a very great extent, require a nicety and exactness in the fitting of the valves, which is troublesome and expensive.

The valves of the gage-cocks, as heretofore made, soon lose or wear away their bearing-surfaces, thus entailing the expense of repairs or replacement.

The object of my invention is to provide a gage-cock that is inexpensive, easily made and kept in order, and that will allow of the repairing or replacement of the operating-valve while the boiler contains steam.

The invention consists in the arrangement of two valves with stems in a gage-cock composed of three sections joined together by male and female screw-threads, and having passage-ways for steam or water, the back valve acting automatically, and the front or operating valve being operated by a wheel or handle, to be more fully described hereinafter.

In the accompanying drawing, in which similar letters of reference indicate like parts, Figure 1 is a full view of a gage-cock embodying my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is an end view of the front or operating valve, and Fig. 4 is an end view of the middle section of the gage-cock body.

I construct my gage-cock body of three sections, A, B, and C, which are connected together by means of screw-threads. The section A has a cored-out cavity, with two or more outlets, A′ A′, for the passage of steam or water leading out of it. The section B is made with two or more outlets or passages, B′ B′, for steam or water, so that when the stems of the valves D and E are in the hole which is bored in the center of the section, the passages B′ B′ are open. The section C is constructed with an outlet or passage, I, which may extend through a nozzle or spout, C′. The valve D fits between the sections A B, and the valve E fits between B and C. The stems of both valves rest in the holes or bearings bored out for them in the sections, which arrangement brings both valves and sections in a direct line. The face of the valve E bears against the inside face of the section C, which forms its seating. The face of the valve D is made to fit against the inside surface of the section B, next to it, but the valve is held midway between A and B by the back stem of the valve E.

The valve E is made with a flat bearing-surface, as shown in Fig. 3, and has a portion of the face cut out at E′, and a portion of the top cut off, the face showing a little less than a circle. Part of the front stem of the valve E, at H, is made square, which square shank fits into a sleeve or socket, F, which, in turn, fits into a wooden wheel or handle, G. The screw G′, having a washer, F′, under its head, is screwed into the square shank H, and thus secures the parts together. As the valve E wears away, the screw G′ is tightened up, which takes up all loose motion and holds the valve firmly to its seat.

Its mode of operation is simple and effective. The steam passes from the boiler into the cavity in A, and from there, through the passages A′ A′, past the valve D, and through the passages B′ B′. Here the pressure of the steam exerts itself against the back of the valve E, pressing it more firmly to its seating. When the wheel G is turned, the valve E rotates until the top, having the cavity or passage-way E′, is opposite to the outlet I, when the steam or water has a free passage through the cock, a single half-turn of the wheel thus opening or closing the cock.

If at any time it becomes necessary to re-

pair or replace the front or operating valve, the section C is unscrewed and taken off. At the same time the valve D is forced, by the pressure of the steam against its seating, on section B, and no steam can escape from the boiler. The valve D, being used only while the valve E is removed from the cock, wears but little, and will last a very long time.

As the steam and water do not have access to the whole of the seating of the valve E, or to the face of the valve, there is but slight danger of corrosion or collection of grit or sediment, and the valves, being flat and protected, will wear their own bearings or seatings, saving the necessity and expense of grinding them in.

From the foregoing it will be seen that my invention forms a cheap, compact, and effective gage-cock, requiring no packing, operating easily without any screw-stems, and having protected self-fitting valve-faces.

What I claim is—

1. A gage-cock consisting of the sections A, B, and C, having the valves D and E, the outlets A′ A′, B′ B′, and I, the sleeve F, handle G, and screw G′, substantially as described.

2. The valve E, having a flat face bearing on a flat metal seating, and having the passageway E′, as herein shown and described.

CHARLES J. ELLIOTT.

Witnesses:
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