E. COE.

Automatically Operated Gas-Cock.

No. 164,146. Patented June 8, 1875.

fig. 2

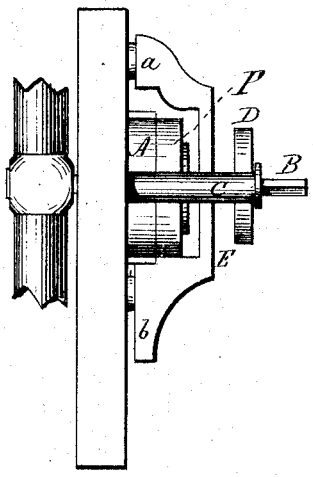


fig. 1

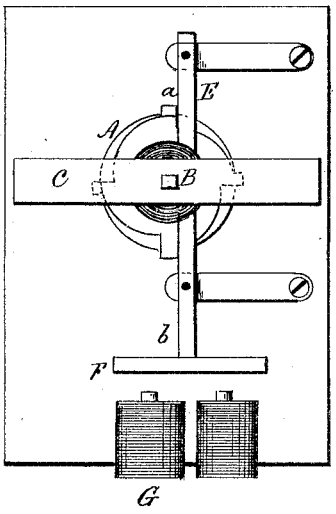


fig. 3

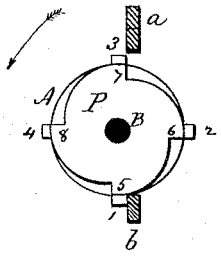
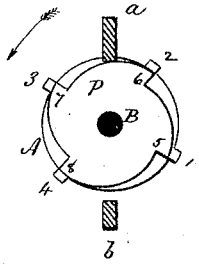


fig. 4



Witnesses.
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UNITED STATES PATENT OFFICE.

EDWARD COE, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN AUTOMATICALLY-OPERATED GAS-COCKS.

Specification forming part of Letters Patent No. **164,146**, dated June 8, 1875; application filed November 14, 1874.

To all whom it may concern:

Be it known that I, EDWARD COE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Automatic Device for Opening and Closing Stop-Cocks; and do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, side view; Fig. 2, front view; Figs. 3 and 4, detached views.

This invention relates to an improvement in the device for which Letters Patent were granted to myself and Homer W. Fiske, September 29, 1874. In that patent a spring is employed to raise the armature when the circuit is broken; consequently the power of the magnet must overcome this spring in drawing the armature to it when the circuit is closed. To avoid the necessity of this spring is the object of this invention; and it consists in combining with the toothed wheel a cam which will turn with the said wheel by the power of the mainspring. The said cam, in turning after each break in the circuit, raises the armature to engage with one of the teeth on the wheel, as more fully hereinafter described.

The general construction of the device is the same as in the patent before referred to, and which may be described in the same words as follows: A is the wheel, attached to the shaft B, and provided with four teeth or arms, 1 2 3 4. The shaft B is supported in a suitable frame, C, and provided with a spring, D, similar to a common clock mechanism. The usual provision is made for winding the spring, and the tendency of the spring is to turn the wheel in the direction denoted by the arrow. E is a vertical bar, substantially parallel with the face of the wheel A, with an arm, *a*, above the wheel and an arm, *b*, below, the distance between these arms being a little less than the full diameter of the wheel A, including the arms. To the lower end of this bar the armature F is attached, and below this the magnet G. The closing of the circuit will draw the bar E down, and the opening will free the bar, so that in our original patent a spring was applied to draw the bar E up to raise the upper arm *a* from its tooth. Instead of that spring, and to insure the proper rise of the bar, I arrange a cam, P, on the shaft of the wheel A, with offsets 5 6 7 8, corresponding to the teeth of the wheel A, as seen in Fig. 3, the periphery of the cam between the offsets inclined substantially as shown; hence, when the bar is drawn down the upper arm will strike the lower surface of the cam or forward of one offset; then, when the circuit is broken, the cam turns with the wheel, and the incline on the cam raises the bar until it is brought to its highest position; then a tooth on the under side of the wheel A engages the lower arm of the bar, and when the circuit is again closed the bar will be drawn down; the upper arm, escaping the offset on the cam, comes upon the periphery of the cam forward of the next offset, and bears there with sufficient force to hold the wheel until the circuit is again broken; then the wheel and cam turn together, and the bar is raised as before.

I claim—

The combination of the shaft B, spring D, toothed wheel A, cam P, and reciprocating bar E, provided with an arm, *a*, above, and an arm, *b*, below, the wheel and cam, the said arms arranged relatively to each other, and to the teeth of the wheel and cam, substantially as described.

EDWARD COE.

Witnesses:

JOHN E. EARLE,

C. V. FORBES.