

G. R. PIERCE

Automatic Gas-Extinguisher and Cut-Off.

No. 130,940.

Patented Aug. 27, 1872.

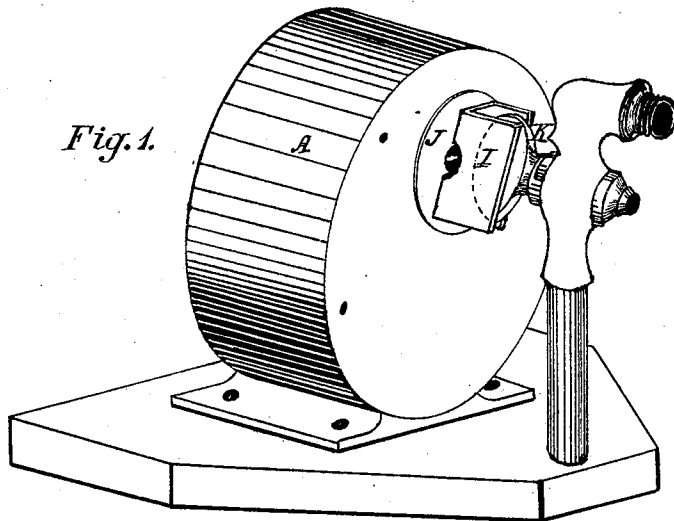


Fig. 1.

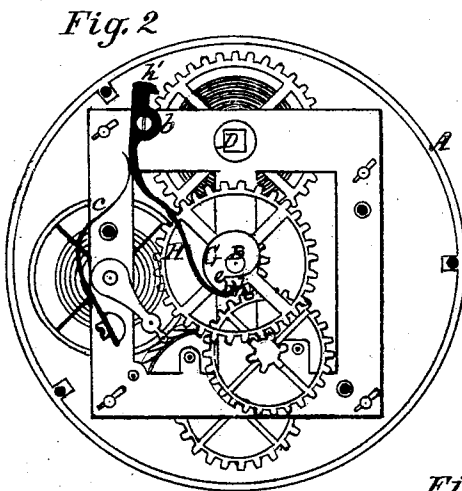


Fig. 2

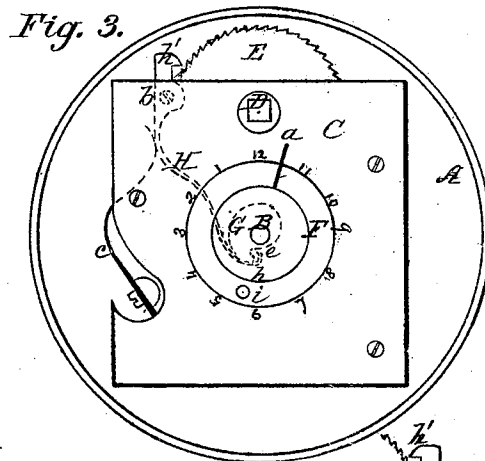


Fig. 3.

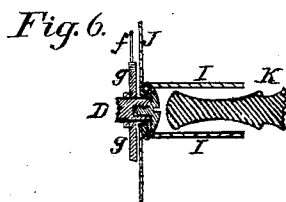


Fig. 6. 

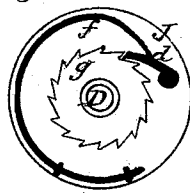


Fig. 5.

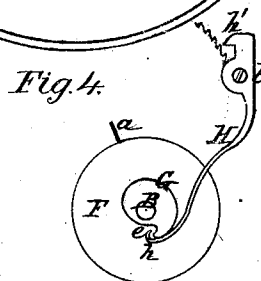


Fig. 4.

Witnesses:

R. H. Whittlesby
J. Williams

Inventor:

George R. Pierce

By

Johnson, Klauke & Co
his Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE R. PIERCE, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN AUTOMATIC GAS-EXTINGUISHERS AND CUT-OFFS.

Specification forming part of Letters Patent No. 130,940, dated August 27, 1872.

To all whom it may concern:

Be it known that I, GEORGE R. PIERCE, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Automatic Gas-Extinguishers and Cut-Offs for Fluids, of which the following is a specification:

My invention relates to devices for extinguishing gas at a given time; and the improvement which I have made for accomplishing this object consists in arranging the embracing-hand for the gas-cock directly upon the winding arbor of a cut-off mechanism, whereby the device may be applied without having any fixed connection with the cock, and thus adapt the cut-off to any gas-cock in use without in any way interfering with the turning of the gas-cock or requiring its alteration to adapt it to the cut-off devices. My invention further consists in combining with the cut off or hand which embraces the handle of the cock, a clutch upon the winding arbor for the purpose of utilizing the said embracing-hand as a means for winding up the time mechanism, thus dispensing with a key for that purpose; and my invention likewise consists in combining a spring-pawl and ratchet-wheel on the winding arbor, with a cut-off cam on the hour-arbor or spindle of the dial, whereby the said spring-pawl is thrown out of lock with the ratchet-wheel at the moment the dial-pointer is set for that purpose, and in combining with a dial cut-off or cam and spring-pawl, arranged to interlock with a ratchet-wheel on the winding-arbor, an embracing clutch-hand for the gas-cock, whereby I produce a time cut-off device which may be easily and readily applied to any gas-cock in use.

In the accompanying drawing, Figure 1 represents a view, in perspective, of a time cut-off device embracing my improvements as applied to the handle of a common gas-cock. Fig. 2 represents an elevation of the time mechanism, showing the spring ratchet-pawl and the cam cut-off of the hour-arbor. Fig. 3 represents an elevation of the same, showing the dial-plate, ratchet-pawl, and the ratchet-wheel with which it engages, these parts occupying the positions when the cam and spring-pawl have effected the cut-off. Fig. 4 represents an inside view of the spring-pawl and cut-off cam. Fig. 5 represents an inside view of the clutch of the embracing

cut-off hand; and Fig. 6 represents a sectional view, showing the embracing cut-off hand with its clutch, disk, and gas-cock handle.

The time mechanism may be of any suitable construction for the purpose, inclosed within a cylindrical case, A, which may be conveniently attached to a lamp-post or a bracket of any gas-fixture. Concentric with the hour-arbor B the dial-plate C is secured; and upon the winding-arbor D a ratchet-wheel, E, is fixed. To the inner end of a sleeve of the pointer-plate F a cut-off cam, G, is secured, so as to turn with the pointer *a*, and upon this cam G the bent end *h* of the spring ratchet-pawl H is arranged to bear. This ratchet-pawl H is pivoted at *b* to the frame of the mechanism, so that its upper end *h'* will take into the teeth of the ratchet-wheel, E, a spring, *c*, being arranged to constantly hold the ratchet-pawl H in contact with the cut-off cam G, while the latter has a depression or recess, *e*, to allow the pawl to fall into its other end *h*, and disengage its other end *h* from the teeth of the ratchet-wheel E at the moment it is desired to turn the cock to cut off the gas; the dial F and cam G being set to accomplish this at the time desired, which releasing movement of the pawl must take place whenever its end *h* is forced into the depression or recess *e* in the cut-off cam. The end of the winding-arbor D, upon which the ratchet-wheel E is secured, projects outside of the inclosing-case A and carries an embracing-hand, I, consisting of plates secured to a disk, J, for the purpose of embracing the flat handle of the gas-cock K, so as to turn the latter to extinguish the light. This renders the device of easy attachment and removal, and requires no change whatever either in the gas-fixture or cock, and in this respect is of great convenience and advantage in the application and use of the device, while, at the same time, its position to operate the gas-cock to either cut-off or turn on the gas is rendered permanent. For this purpose I combine with the said embracing-hand I a clutch device, consisting of a pawl, *d*, and spring *f* secured to the inner face of the disk J of said hand to operate in connection with a small ratchet-wheel, *g*, fixed to the projecting end of the winding-arbor D, by which arrangement the clasp-hand I is made to turn with the arbor D to turn the cock to cut off the gas, and to turn freely upon the arbor

D in the opposite direction to let on the gas. From this arrangement of clutch-hand it will also be seen that the embracing hand I of the gas-cock K may also be used as a means for winding up the spring instead of a key by turning said hand back and forth by means of the clutch, the usual stop on the gas-cock limiting such movement. This may be done quickly, so that very little gas may escape during the operation of winding the spring. A key, however, may be used, if deemed necessary. It will be readily understood that the indicating-hand plate F, with its cut-off cam G, may be set so as to extinguish the light at any time desired by simply turning the indicating-hand plate with its cam upon the hour-arbor B, so as to bring the notch *e* in said cam at the point to receive the end *h* of the spring-pawl H, corresponding with the hour at which it is set to be cut off. For this purpose the indicating-hand plate F is provided with a knob, *i*, by which the pointer *a* may be set with respect to the dial. For example, the cut-off having been effected, as indicated by dotted lines in Fig. 3, if it be desired to again set the device to be cut off in, say, six hours for street lamps, the pointer *a* is brought to the numeral 6, and in six hours it will have reached the numeral 12, when the cut-off is again effected, as heretofore described.

It is obvious that my invention may be used for cutting off the flow of any fluid at stated periods.

Having described my invention, I claim—

1. The embracing-hand for the gas-cock, arranged directly upon the winding-arbor D, as described, whereby the cut-off apparatus may be applied to any gas-cock in use without alteration, as set forth.

2. In combination with the cut-off embracing-hand I of a gas-cock, I claim the clutch device J and winding-arbor D, arranged to form an integral part of said embracing-hand, whereby the gas may be turned on or the spring wound up without removing said cut-off hand from the gas-cock, substantially as described.

3. The combination of the ratchet spring-pawl H with the cut-off cam G of the hour-arbor B and the ratchet-wheel E of the winding-arbor D, arranged to operate to cut off the gas, as described.

4. In combination with the cut-off cam G, spring-pawl H, and ratchet-wheel E, the embracing-hand I for the gas-cock, arranged upon the winding-arbor to operate as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses this 27th day of May, A. D. 1872.

GEORGE R. PIERCE.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.