(No Model.)

C. RATH.

AUTOMATIC CUT-OFF FOR GAS BURNERS.

No. 488,949. Patented Dec. 27, 1892.

Fig. 1.

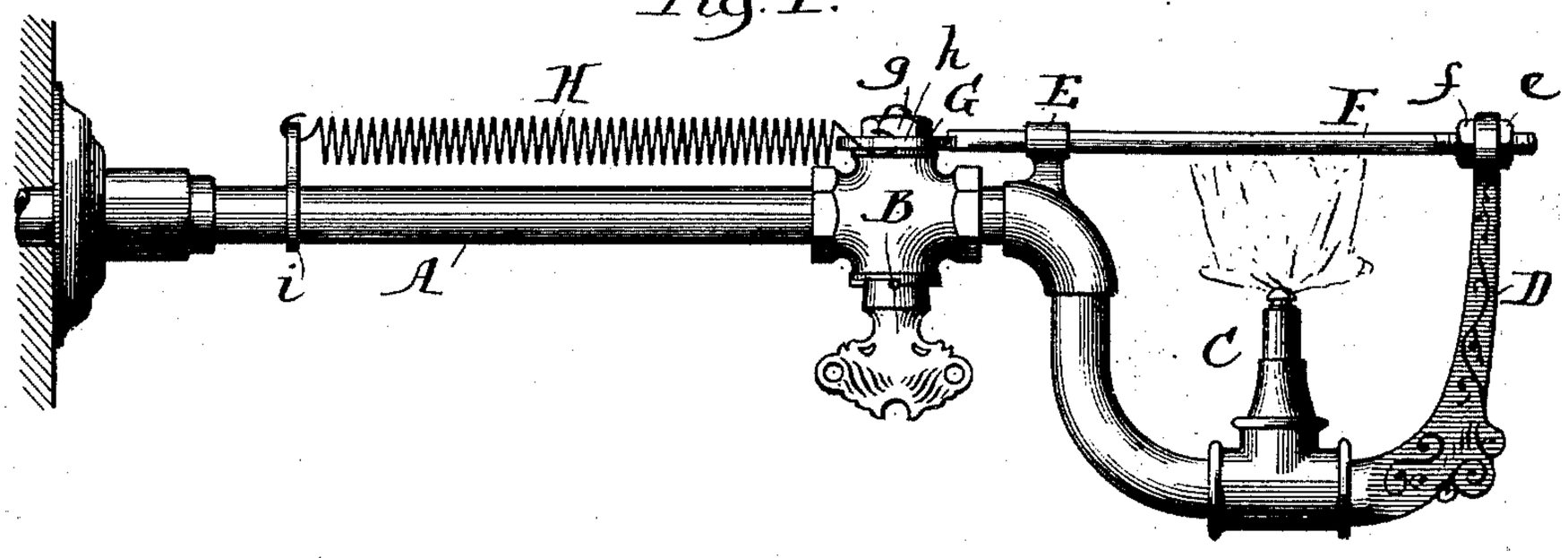


Fig. 2.

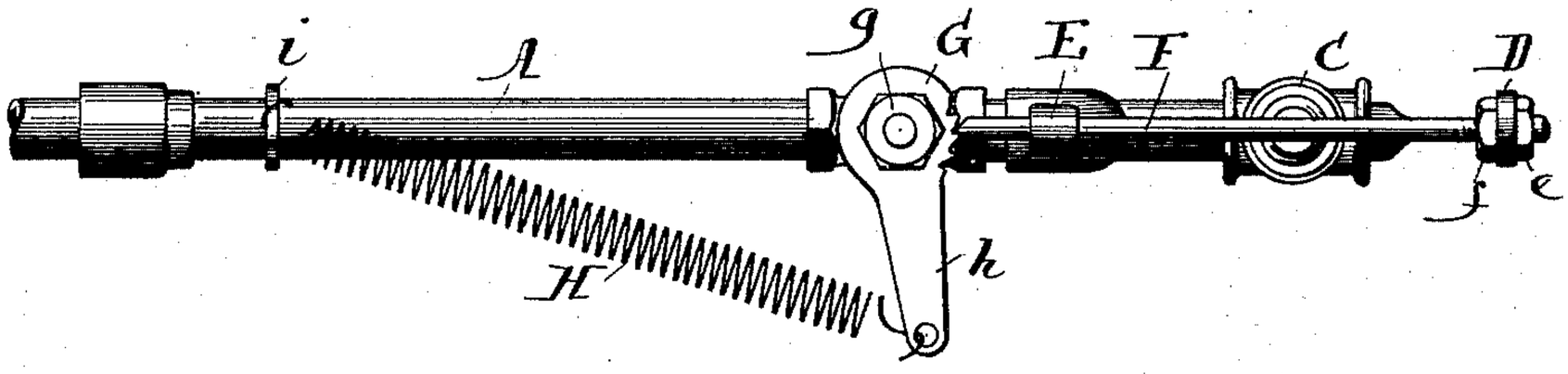
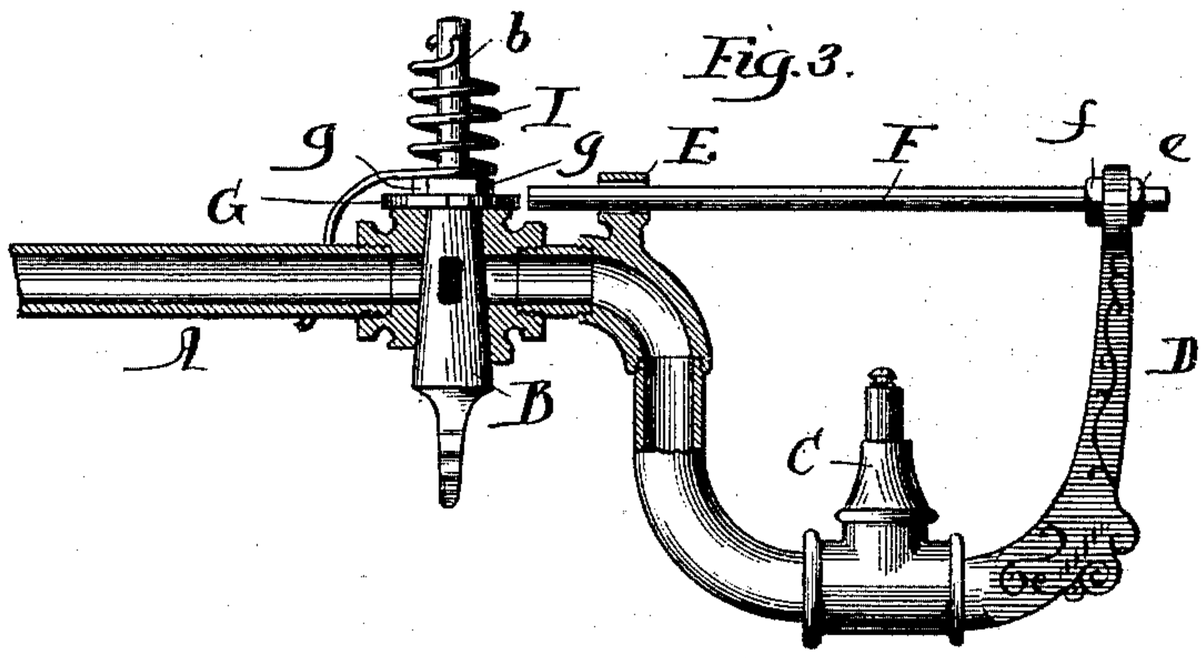


Fig. 3.



Witnesses:
Fred Gerlach
I. C. Carpenter

Inventor:
Charles Rath
By Brice & Fisher
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES RATH, OF CHICAGO, ILLINOIS.

AUTOMATIC CUT-OFF FOR GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 488,949, dated December 27, 1892.

Application filed April 18, 1892. Serial No. 429,589. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RATH, of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Automatic Cut-Offs for Gas-Cocks, of which the following is hereby declared to be a full, clear, and exact description, sufficient to enable others skilled in the art to which such invention appertains to make and use the same.

My invention designs to provide an automatic cut-off in connection with the stop-cock of a gas service pipe, the purpose being to close the cock if for any reason the lighted jet should be blown out. To such end the flame of the burning jet is directed against a metal or other like rod, comparatively indestructible and which expands under influence of the heat and dogs the gas-cock to keep it open. When the flame is accidentally extinguished, the rod quickly contracts from dogging position thus releasing the cock and allowing the same to be closed automatically by a suitable actuator then in play. The further escape of gas at the jet is thereby prevented and the dangers and objections from an accumulation of unburned gas in basements, ware-houses or like situations are entirely prevented.

The exact nature of the improvements will appear from the description following and be thereafter pointed out by claim at the conclusion thereof.

In the accompanying drawings forming part of the specification like features of structure are denoted by like designation throughout.

Figure 1 is a view in side elevation and Fig. 2 a plan view of a gas cock provided with an automatic cut off in accordance with the invention. Fig. 3 is a view in side elevation (with parts in section) showing modified form of the improvement.

Within the service pipe A is set the gas cock B of usual structure and designed to control the escape of gas from the ordinary jet C. The service pipe A may be conveniently furnished with a bracket like terminal D which in connection with the support E serves to sustain the rod F in near proximity to the flame of the jet C. The rod F is of brass or other material easily expanded by heat and is adjusted at desired position through the eyes of the bracket D and support E by means of the set nuts *e f*. At its opposite or free end the rod F can be caused to extend into one of the series of notches occurring at intervals about the rim of the radius plate G.

As appears from the drawings (Figs. 1—2) the plate G is fitted to the stem-like terminal of the barrel of gas cock B and is there firmly held by means of the set nut *g*. A spring H extends as shown between the lever end *h* of the radius plate G and a collar *i* conveniently secured to the service pipe A. By turning the gas cock B to open position, against the stress of the spring H and lighting the jet C, the flame quickly expands the rod F causing the free end thereof to project into the path of the notched radius plate G, and serving thus to dog the plate and with it the gas cock B in open position. The notches upon the radius plate G permit the gas cock to be set and held either at "full feed" position or for lesser supply of gas as may be desired. Should the flame at the jet C be extinguished for any reason, thus allowing the escape of unburned gas, into the apartment, the rod F quickly contracts, and is withdrawn from its dogging engagement with the radius plate G. Thereupon the spring H comes into play, shifting the lever end *h* of the radius plate and with it also the gas cock B, which latter closes completely, and prevents the further escape of gas at the jet C.

As appears from Fig. 3, the barrel of the gas cock B can be extended to form a stem-like terminal *b* about which the spring I is arranged in coil, being secured at its ends respectively to the stem *b* and to the service pipe A, or to the housing of the gas cock. The plate G is secured as before by nut *g* in fixed position upon the barrel of the gas cock B and is notched to receive the dogging end of the thermostatic rod F. Except for the minor change noted in the arrangement of the coil spring, the organization and operation of the parts remain substantially unchanged. The flame at the jet C acts upon the rod F and by expansion thereof (while the key of the cock is held temporarily open) causes the free terminal of the rod to dog the opposite notch in the plate G and thereby keeps the gas cock open while the flame continues. If it is blown out the rod F speedily contracts, thus releas-

ing the notched plate G and allowing the spring I to turn the gas cock B and shut off the supply.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:—

The combination with the feed-pipe and jet, and with the spring-actuated cock to close said pipe, of the notch plate or disk rigidly secured to the cock plug, and a thermostatic rod mounted in position above said jet and having its free terminal directly dogging a notch of said plate whereby the plug is held adjustably open against the stress of its spring while the gas is burning, substantially as described.

CHARLES RATH.

Witnesses:
ANTHONY ATWOOD CUMMINS,
HENRY BOWEN.