

No. 638,178.

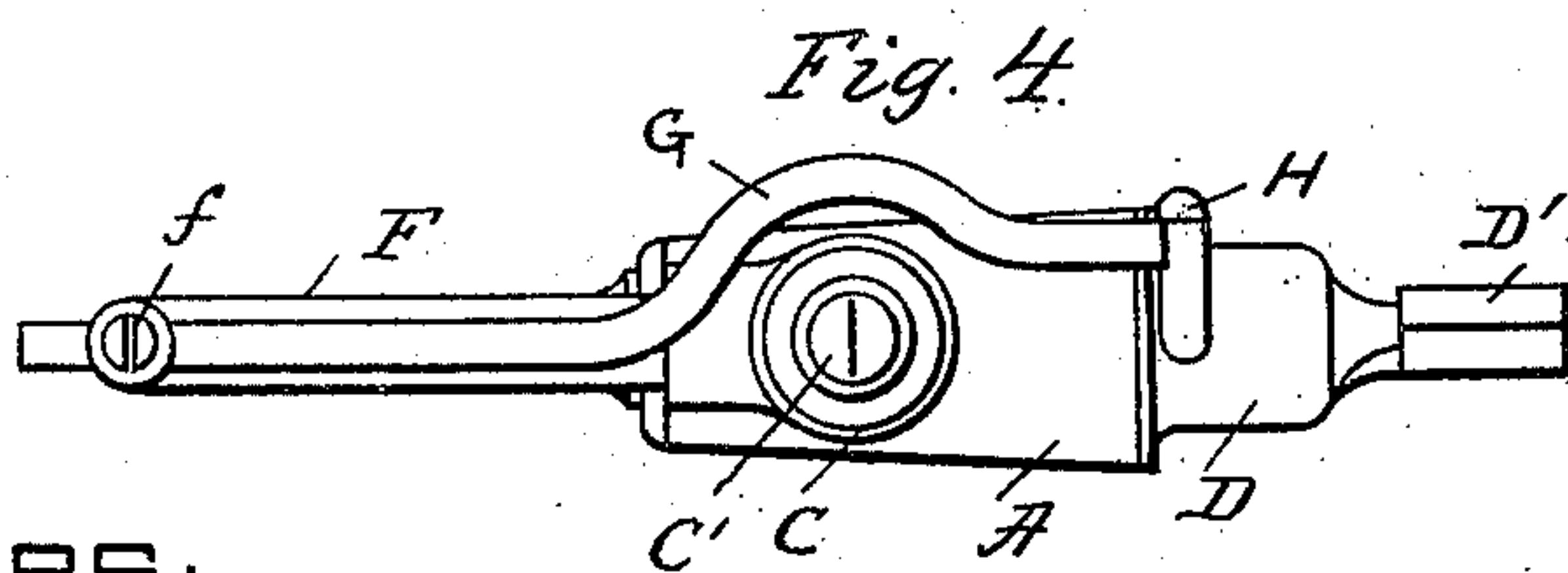
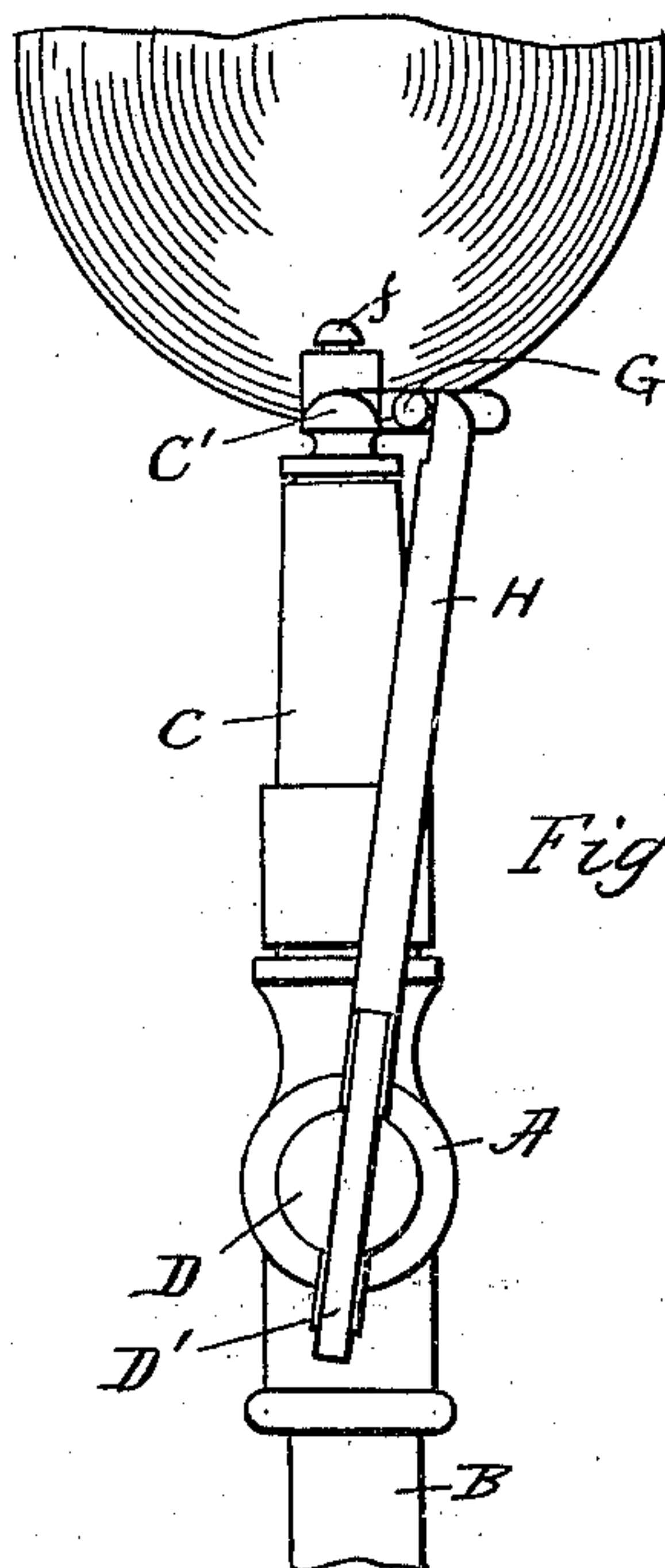
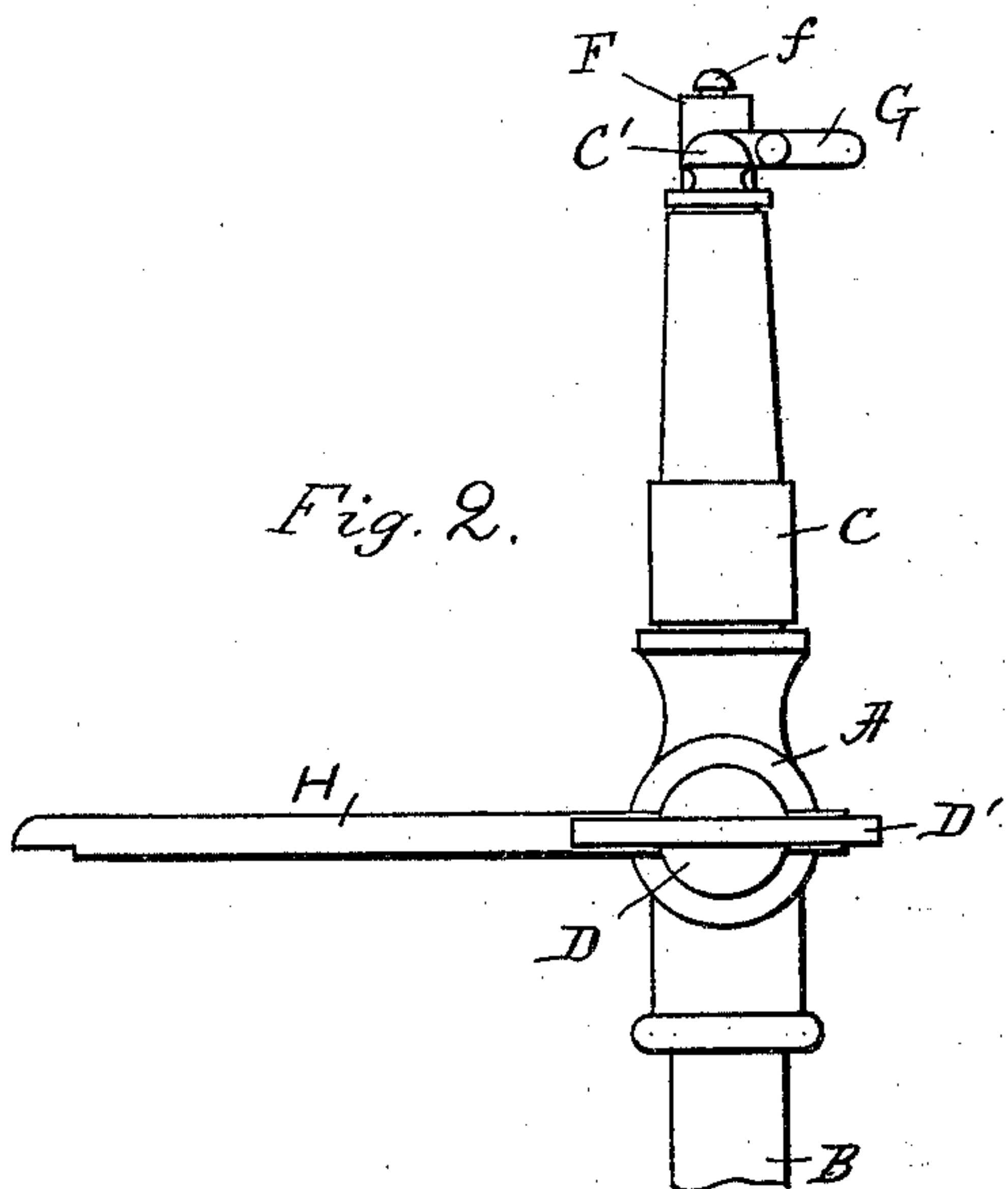
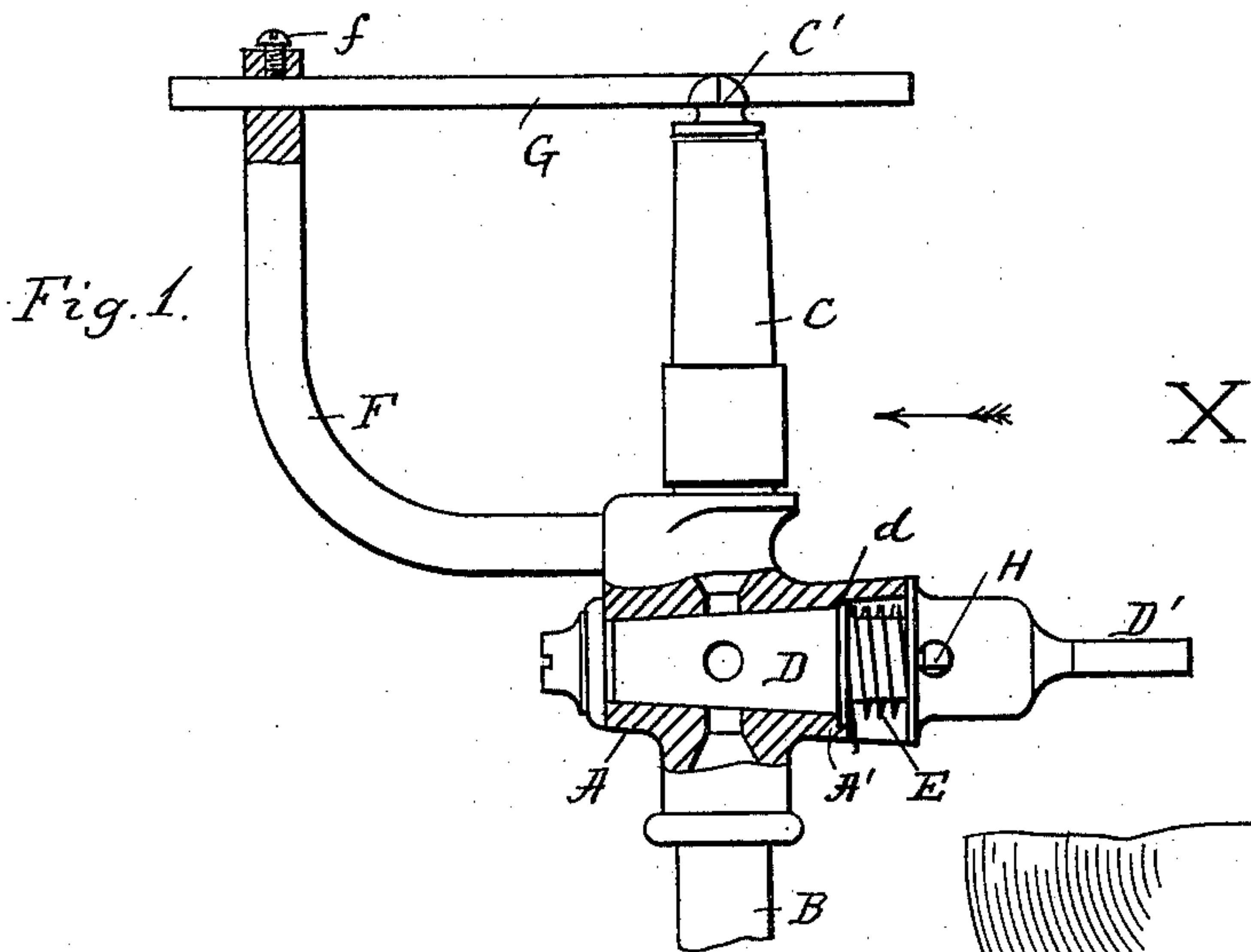
Patented Nov. 28, 1899.

J. A. ERICKSON & F. W. YOUNG.

SELF CLOSING GAS COCK.

(Application filed Mar. 18, 1899.)

(No Model.)



Witnesses.

Lauritz N. Möller.  
Thomas Tolson

Inventors

John A. Erickson  
and Frans W. Young.  
by *Wm. Kudrie* their atty.



# UNITED STATES PATENT OFFICE.

JOHN A. ERICKSON, AND FRANS W. YOUNG, OF MALDEN, MASSACHUSETTS.

## SELF-CLOSING GAS-COCK.

SPECIFICATION forming part of Letters Patent No. 638,178, dated November 28, 1899.

Application filed March 18, 1899. Serial No. 709,655. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN A. ERICKSON and FRANS W. YOUNG, citizens of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Self-Closing Gas-Cocks, of which the following is a specification.

This invention relates to self-closing gas-cocks having burners provided with tips; and it has for its object to provide novel, simple, and efficient means for closing the cock when the gas-flame is accidentally extinguished or is blown out while the plug or valve of the cock is in its open position. This object is accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a side elevation of the self-closing gas-cock, partly shown in section and showing the cock in its normal closed position. Fig. 2 represents an end view seen from X in Fig. 1. Fig. 3 represents a similar end view showing the cock held in its open position, and Fig. 4 represents a top plan view of Fig. 3.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In the drawings, A represents a gas-cock, as usual, to the lower portion of which is attached the gas-supply pipe B.

C is the gas-burner attached to the upper portion of the cock and provided with a suitable tip C', as is common in devices of this kind.

D represents the plug or cut-off, preferably made slightly conical and adapted to fit the interior of the shell or case A and provided with a fastening-screw, as is usual in gas-cocks.

D' represents the handle or knob on the outer end of the plug D, as usual.

The cock is a self-closing one and is for this purpose provided with a coiled spring E, housed within the case or shell A of the cock and having one end secured to the plug D and the other end to the case or shell, so as to normally hold the cock in a closed position, as represented in Figs. 1 and 2. In practice we prefer to make on the larger end of the plug

D a collar d, adapted to fit against an annular shoulder A' within the shell A, as shown in Fig. 1, so as to prevent the plug from being forced too far into the shell, and thus avoiding the sticking of the plug within its bearing.

To the gas-cock A is secured in a suitable manner a metal bracket or upwardly-projecting rod or tube F, to the upper end of which is adjustably secured, preferably by means of a set-screw f, an expansive metal bar or tube G, arranged relative to the burner-tip C' in such a manner that a portion of it will be heated by the flame of the ignited gas, as shown in Fig. 3.

To the outer end of the plug D is secured a metal rod H, the upper end of which is adapted to be held locked against the free end of the expansive bar or tube G when the plug of the cock is turned open and the said bar G expanded by the heat of the flame from the burner-tip.

The operation is as follows: In lighting the gas the operator turns the plug D from the closed position (shown in Figs. 1 and 2) to the open position (shown in Figs. 3 and 4) and in so doing winds up the spring E, and the upper end of the locking-rod H is moved slightly beyond the free end of the releasing-rod G. The operator holds the plug in such open position against the influence of the spring E until the gas is ignited and the rod G sufficiently expanded by the flame to cause its free end to act as a stop against the plug-rod H, as shown in Figs. 3 and 4, in which locked position it will remain as long as the gas is burning. If from any cause the flame should be accidentally extinguished or blown out, the rod G will quickly cool off and contract sufficiently to release the rod H, when the spring E will immediately turn the plug D from open to closed position, thus preventing the escape of gas into the room.

The invention is automatic in its action, and by its means escape of gas, except when ignited, is absolutely impossible, thus preventing gas poisoning caused by escape of gas and the accidental leaving of the gas-cock open, as is frequently the case when using ordinary gas-cocks. The cock is normally held closed by the influence of its spring, and it is impossible to leave the cock in an



open position unless the gas from the burner has first been ignited. Should the cock be partially turned without igniting the gas, the cock will automatically be closed as soon as  
5 the operator lets go the handle of the plug.

What we wish to secure by Letters Patent and claim is—

1. The combination with a gas-cock having a plug and a burner, and a spring for turning the plug to its closed position, of an upwardly-projecting bracket secured to the case or shell of the cock, an expansible and contractible metal bar carried at one end by said bracket and having its free end arranged in  
15 juxtaposition to the burner-tip, and an upwardly-projecting rod secured to the plug and having its upper end held by said bar when the gas is ignited, substantially as and for the purpose described.

20 2. The combination with a gas-cock having a plug and a burner, of a coiled spring arranged

on the plug and having one end secured thereto and the other end secured to the case or shell of the cock, a bracket mounted on the latter and projecting upward, an ex- 25  
pansible and contractible metal bar carried at one end by the top part of said bracket and having the other end arranged in juxtaposition to the burner-tip, and a vertical rod secured to the plug and held at its upper end 30  
by said bar when the gas is ignited, to hold the plug in its open position, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing 35  
witnesses.

JOHN A. ERICKSON.  
FRANS W. YOUNG.

Witnesses:

ALBAN ANDRÉN,  
KARL A. ANDRÉN.