No. 620,557. Patented Feb. 28, 1899.

M. SPIER.

GAS LIGHTING DEVICE.

(Application filed Feb. 19, 1898.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

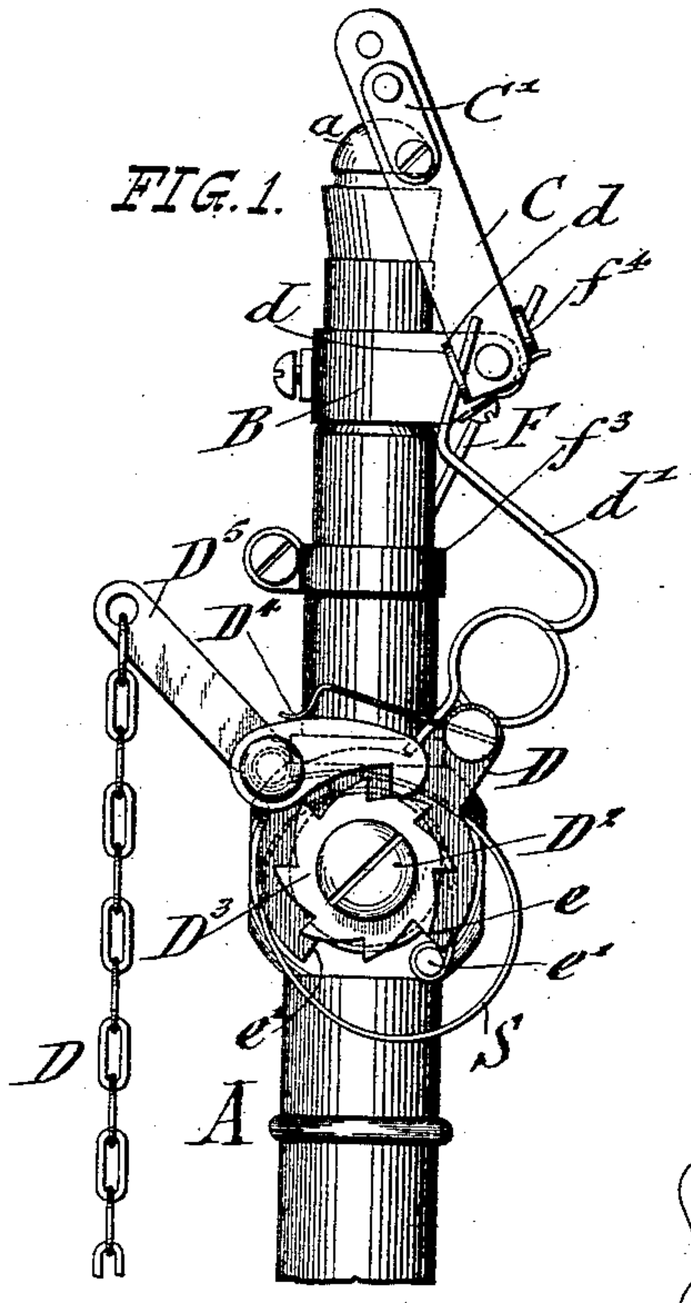


FIG. 2.

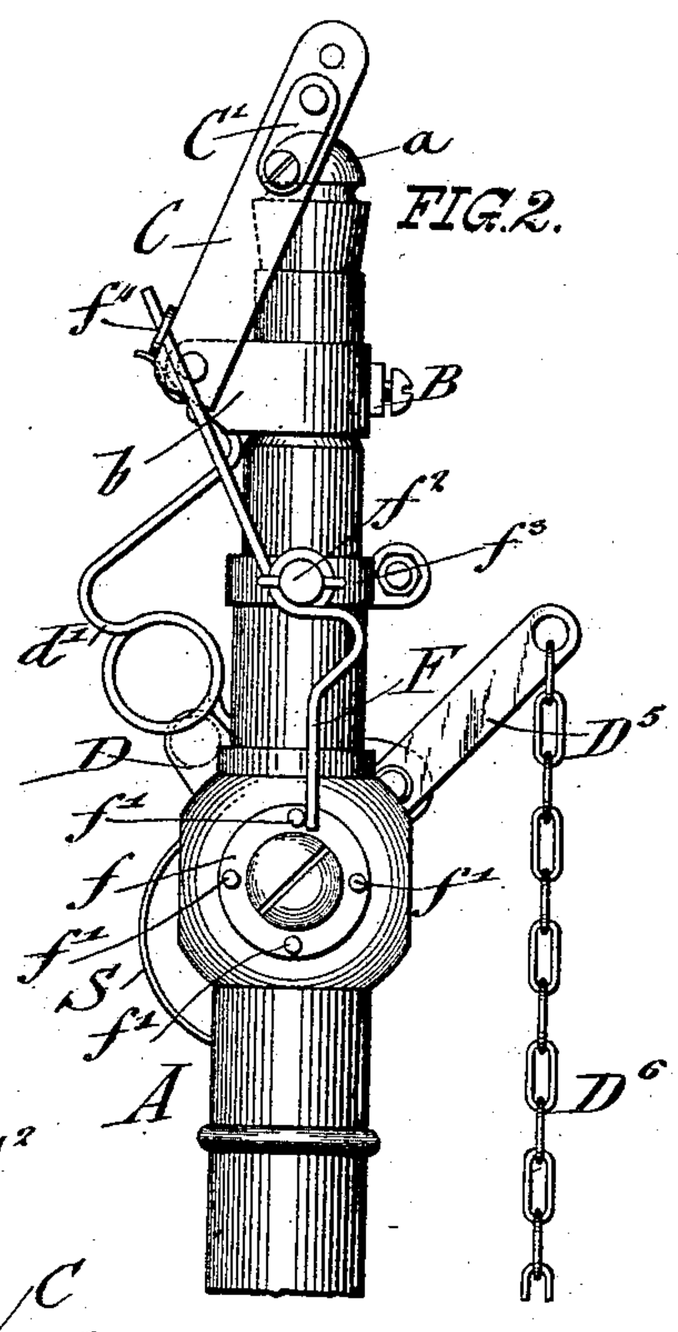


FIG. 3.

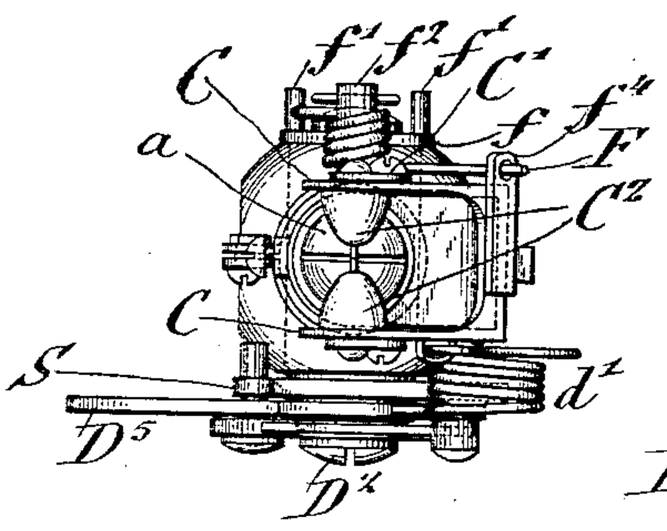


FIG. 4.

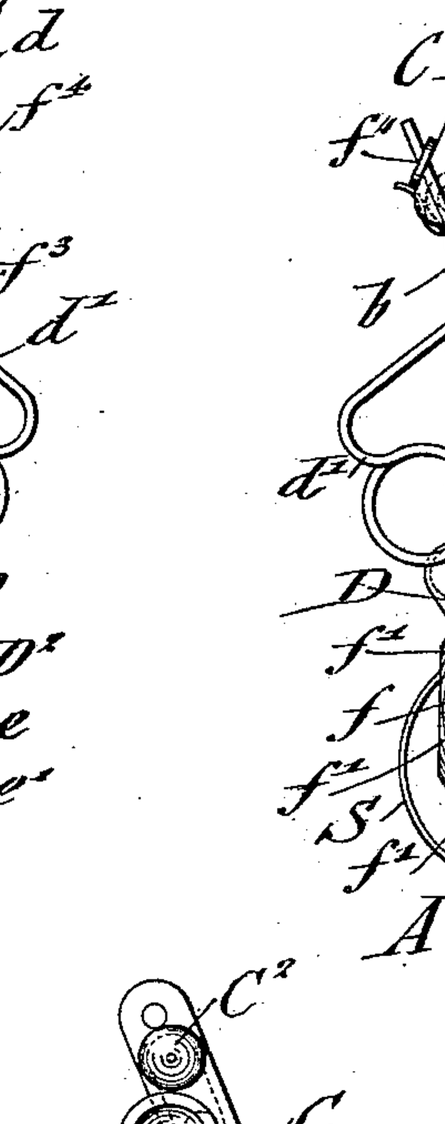
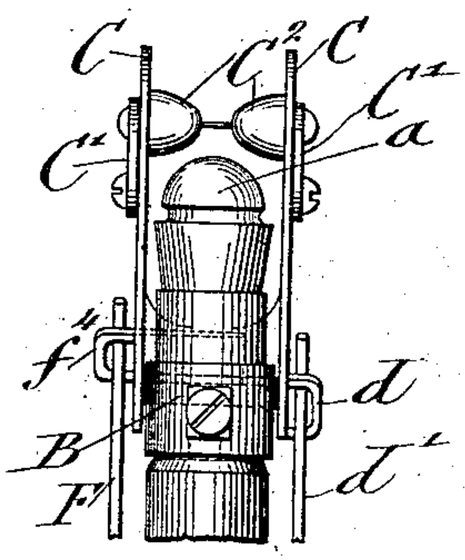


FIG. 5.



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(Application filed Feb. 19, 1898.)

(No Model.) 2 Sheets—Sheet 2.

FIG. 6.

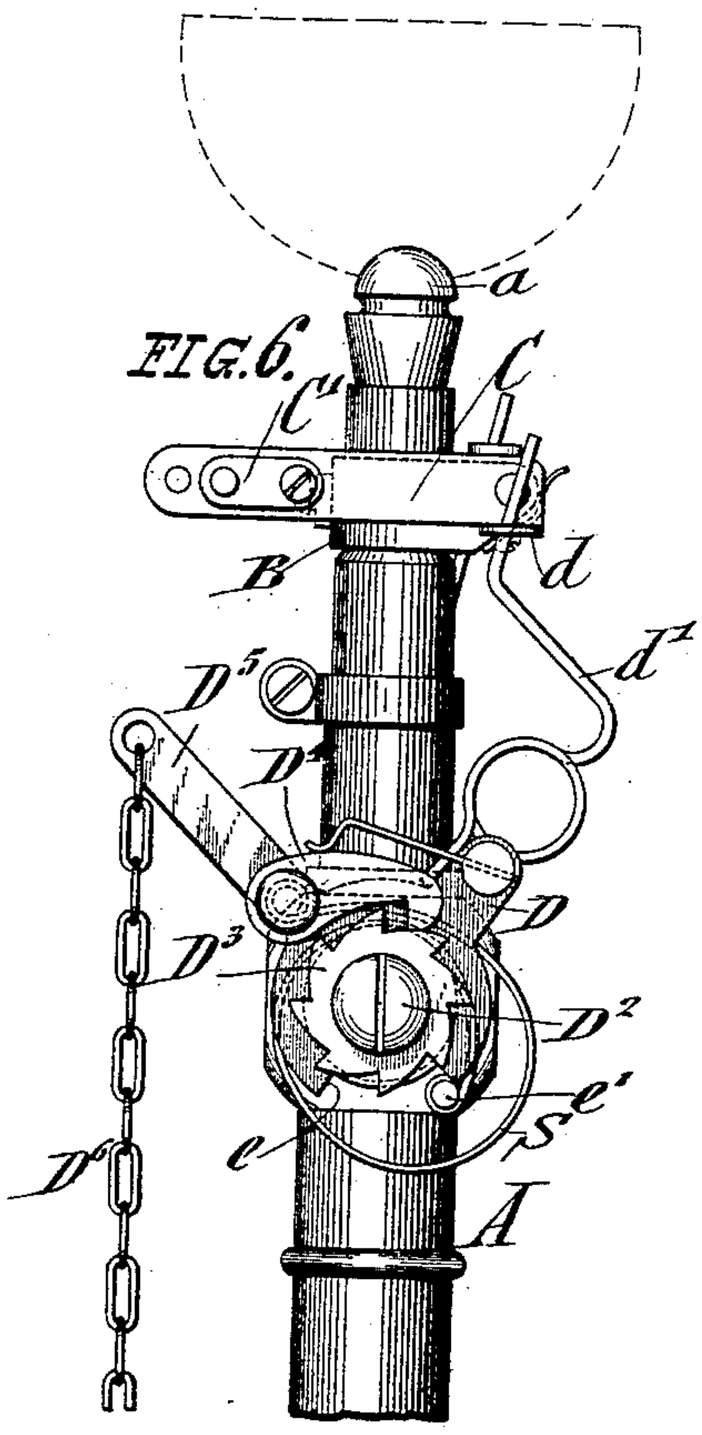


FIG. 7.

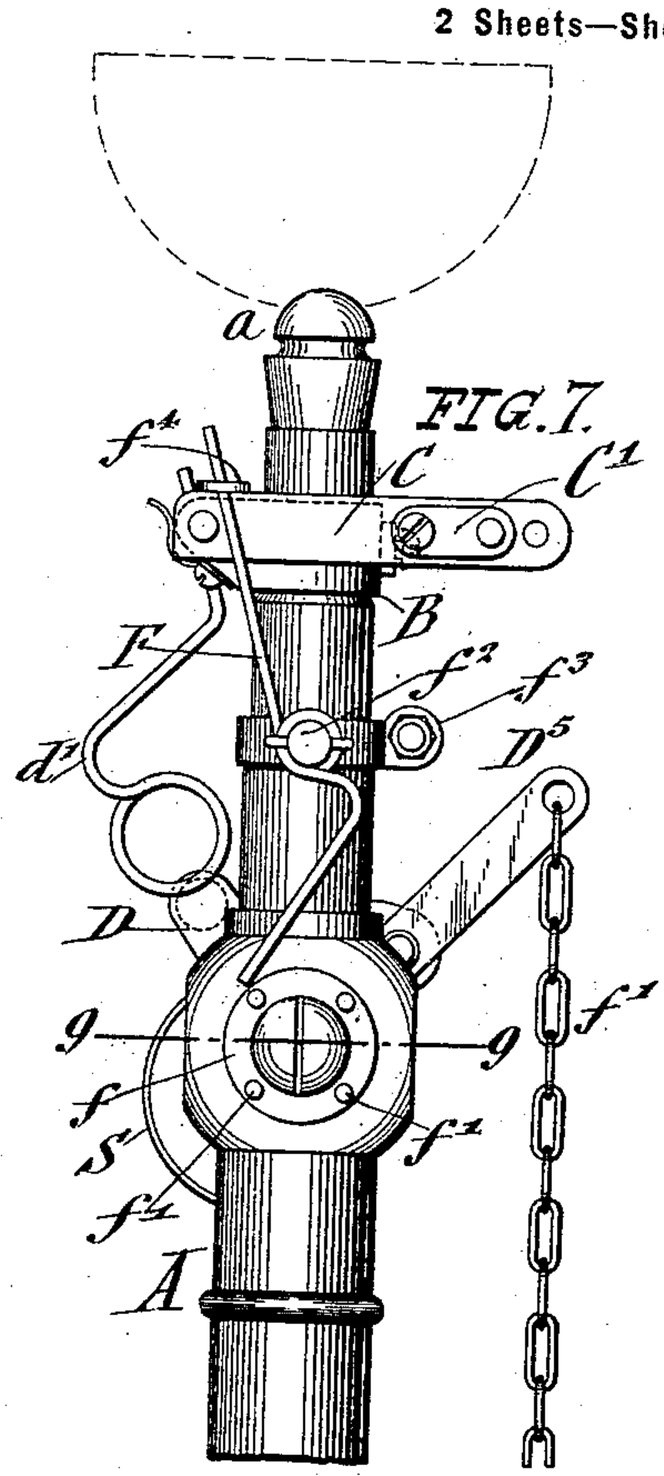


FIG. 8.

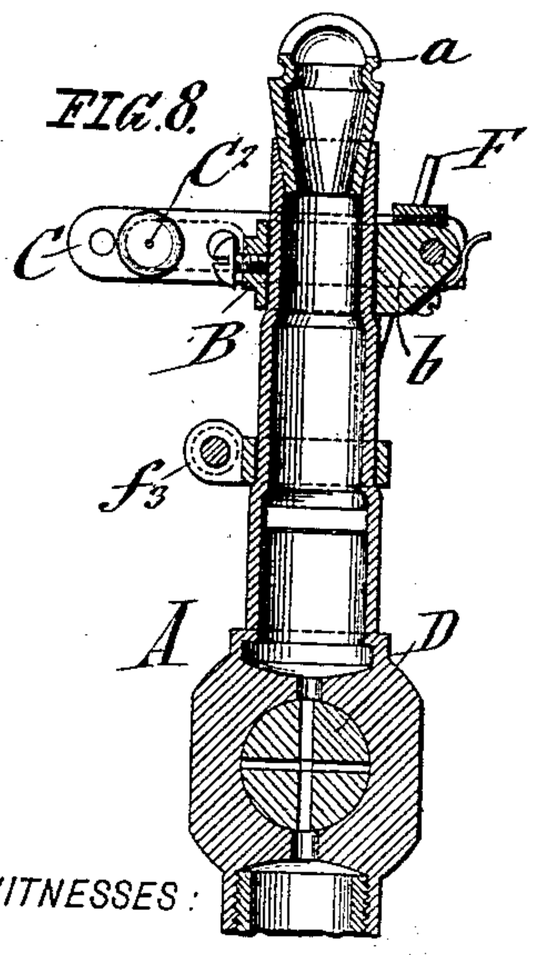
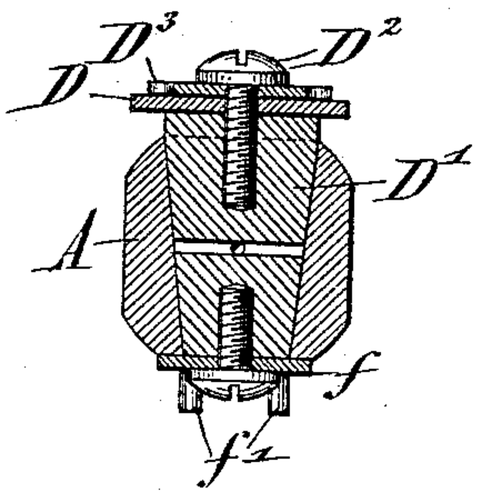


FIG. 9.



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UNITED STATES PATENT OFFICE.

MAX SPIER, OF NEW YORK, N. Y., ASSIGNOR TO EMANUEL S. ULLMANN, TRUSTEE, OF SAME PLACE.

GAS-LIGHTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 620,557, dated February 28, 1899.

Application filed February 19, 1898. Serial No. 670,879. (No model.)

To all whom it may concern:

Be it known that I, MAX SPIER, a citizen of the United States, residing at New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Gas-Lighting Devices, of which the following is a specification.

This invention relates to an improved device for lighting gas-burners in connection with igniters that have the property of becoming incandescent when placed in contact with escaping gas, said igniting device being operated after the gas-cock is opened and so constructed that the igniter is moved in close proximity with the burner-tip and in the path of the escaping gas; and the invention consists of a lighting device for gas-burners which comprises a holder pivoted to the burner-tube below the tip, igniters carried by said holder, means for raising said holder so as to bring the igniters over the tip, means for retaining the holder in said position, and means for returning it into its normal position, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are respectively front and rear elevations of my improved lighting device for gas-burners in normal position, showing the igniter ready to light the burner. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a vertical central section of the device. Fig. 5 is a side view of the upper part of the same. Figs. 6 and 7 are also, respectively, a front and a rear elevation of my improved lighting device, showing the igniter in position when the gas is burning. Fig. 8 is a vertical section with the attachment in same position as in Fig. 6; and Fig. 9 is a horizontal section on line 9 9, Fig. 7.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an ordinary gas-burner, and *a* the tip of the same. The burner-tube is provided below the tip with a clip B, which is tightly screwed to the tube and which projects at one side, so as to form a bracket *b*. To the bracket *b* is pivoted a U-shaped holder C, which is provided with holes at its outer end and with short pivoted retaining-plates C′ for the igniters C^2, which are inserted into the openings of the holder, so as to project toward each other.

The igniters are formed of suitable porous material and impregnated with finely-divided metallic platinum and palladium, which have the property of being heated to red heat when placed in contact with escaping illuminating-gas. The point of each igniter is provided with a platinum or palladium wire, which wires preferably cross each other or are close to each other and which are heated to incandescence by the glowing of the porous bodies when the igniters are placed over the tip of the burner in the path of the escaping gas.

The holder B is provided at one side with a slotted lug *d*, which is engaged by a bent wire spring-finger *d′* of a spring-actuated arm D, the lower part of which is placed loosely on a screw D^2, fixed to one end of the rotary gas-plug D′. The said arm is under the influence of actuating-spring S, coiled around the plug and having its ends fixed to the burner and said arm. To the screw D^2 is attached a ratchet-wheel D^3, which is engaged by a spring-actuated pawl D^4, pivoted to an arm D^5, that extends from the lower part of the spring-actuated arm D and is provided with a chain, cord, or other operating device D^6, so as to actuate the ratchet device and the arm D and produce thereby the raising or lowering of the holder C. The lower end of the arm D is provided with a recess, so as to form shoulders *e*, said recesses being of sufficient size to define the rotary axial motion of the plug in connection with the stop-pin *e′* on the tube A.

To the opposite end of the plug D′ is attached a plate *f*, which is provided with four equidistant pins *f′*, which pins operate a spring-arm F, that is coiled around a stationary pin f^2, which is supported by a band or clip f^3 on the gas-tube below the holder B, as shown in Figs. 2 and 4. The upper end of the spring-arm F passes through a slotted keeper f^4 at the side of the holder opposite from that to which the keeper *d* is applied, said arm being engaged by one of the pins *f′* when the holder is placed in upwardly-inclined position, so as to bring the igniters above the burner-tip, in which position the

spring-arm F retains the holder and the igniters in position, so that the escaping gas impinges against the igniters and produces, by the contact of the gas with them, the incandescence of the platinum and palladium wires, so as to ignite the gas. When the gas is lighted by the igniters, the lever is pulled again, so that the holder is returned into lowered position as the spring-arm F is released from its pin f' and permits thereby the return of the holder.

When the gas is turned off, the igniters are in position above the burner-tip a, as clearly shown in Fig. 4, in which position one of the pins f' will be in engagement with the lower end of the spring-arm F, so as to cause the upper end to exert a spring action on the holder C and to press the same back and support the igniters above the said burner-tip. In this position the upper end of the spring-finger d' exerts no substantial pressure on the holder C.

To light the burner, a downward pull is exerted on the pull-chain D^6, which rotates the plug D' by engaging the pawl D^4 with one of the teeth of the ratchet-wheel D^3. This movement permits the gas to pass through the burner and causes the engaged pin f' to clear the lower end of the spring-arm F, so that it is free and inert and has no effect on the holder. During the period of time which the arm D^5 is held down the igniters will still be maintained above the burner, so that they will be rendered incandescent by the escaping gas and the burner lighted. When the arm D^5 is permitted to rise under the action of the spring S, the spring-finger d' will at the end of its movement press the holder down into the position shown in Fig. 8, thus removing the igniters away from the prolonged and harmful influence of the flame. To extinguish the light, the pull-chain D^6 is again pulled down and the spring-finger d' will raise the igniter-holder into the position shown in Fig. 1. This same movement also places the spring-arm F under tension by the engagement of one of the pins f' with its lower end. (See Fig. 2.) In this manner the gas-burner can be lighted in a quick and reliable manner by the physical change which takes place in the igniters under the influence of the escaping gas, so that no explosive pellets and electric appliances are necessary. As the igniters are supported below the flame, they can be used for years before they have to be replaced by new igniters. When in course of time they should lose their property of glowing by the gradual settlement of carbon particles on the same, they can be readily replaced by removing the spent igniters and replacing them with new ones. In this manner the lighting of gas-burners is greatly facilitated and produced by the direct action of the escaping gas without any mechanical, electrical, or other lighting appliances. The burner and the normal position of the igniters prevent any accidental escape of gas as the burners would be lighted by leaving the gas-cock in open position, so that accidents from this source are entirely obviated.

Having thus described my invention, what I claim is—

1. The combination, with a gas-burner, provided with a gas-plug, of a pivoted holder, an igniter carried thereby and supported normally close to the tip of the burner, and means for rotating said plug to turn on the gas, and having a suitable connection with said holder whereby the latter and the igniter are lowered after the gas has been turned on, substantially as set forth.

2. The combination, with a gas-burner, of a pivoted holder, an igniter carried by the same, means for supporting the igniter in raised position close by the burner-tip, and means for turning on the gas, and having a suitable connection with said holder whereby the latter and the igniter are lowered after the gas has been turned on, substantially as set forth.

3. The combination, with a gas-burner, provided with a rotary gas-plug, of a pivoted holder, an igniter carried thereby, means for supporting the igniter in raised position close to the burner-tip, mechanism for rotating said gas-plug to turn on the gas, and a spring connection between said mechanism and the holder, whereby after the gas is turned on, said holder and igniter are automatically lowered, substantially as set forth.

4. The combination, with a gas-burner, of a pivoted holder, an igniter supported by said holder, said igniter having the property of becoming incandescent when placed in contact with escaping gas, suitable mechanism connected with said holder, and adapted to raise and lower the same, a spring-arm also connected with said holder, and means for operating said spring-arm simultaneously with the said raising and lowering mechanism so as to retain the holder in raised position when lighting the burner, and release the same when returning it to its lower position, substantially as set forth.

5. The combination, with a gas-burner, of a pivoted holder, an igniter carried by said holder, a pawl-and-ratchet mechanism connected with said holder, for raising and lowering the same, a spring-arm also connected with said holder, and means for operating said spring-arm simultaneously with the said pawl-and-ratchet mechanism so as to retain the holder in raised position when lighting the burner, and release it when returning it to its lower position, substantially as set forth.

6. The combination, with a gas-burner, of a pivoted holder provided with an igniter, said igniter having the property of becoming incandescent by contact with escaping gas, a pawl-and-ratchet mechanism located on the burner, a lever for operating said pawl-and-ratchet mechanism, a spring-arm connecting said actuating-lever with the holder, a second

spring-arm also connected with the holder, and pins applied to the pivot of the pawl-and-ratchet mechanism, said pins releasing or engaging the second spring-arm so as to retain the holder in raised position or permit it to return into lowered position, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MAX SPIER.

Witnesses:
GEO. W. JAEKEL,
PAUL GOEPEL.