E. E. GERALD.

AUTOMATIC GAS IGNITER AND SAFETY DEVICE.

APPLICATION FILED JAN. 22, 1910.

973,030. Patented Oct. 18, 1910.

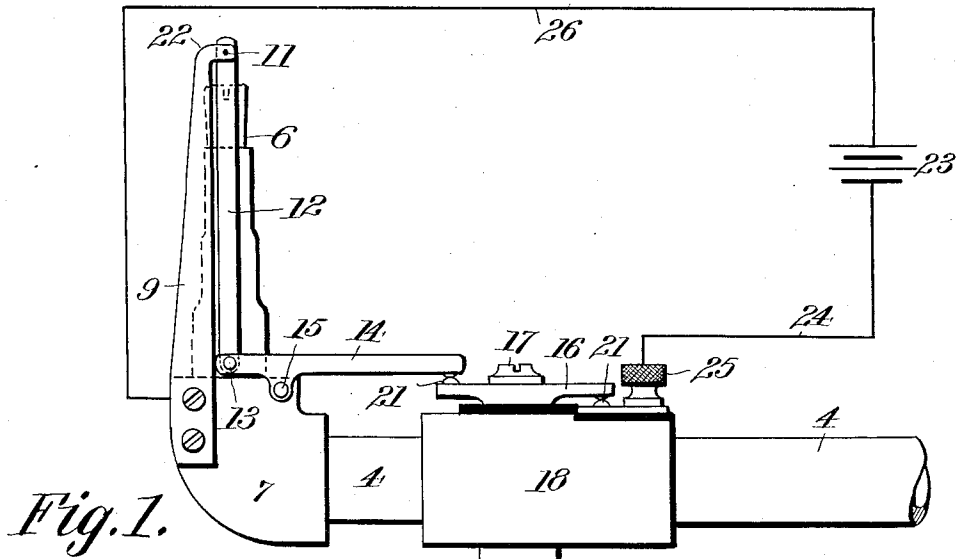

Fig. 1.

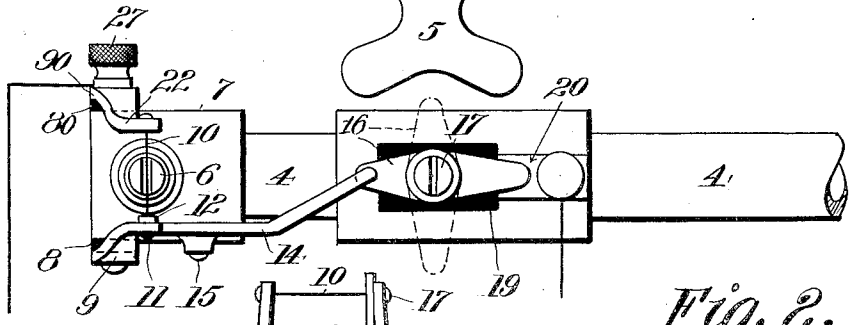

Fig. 2.

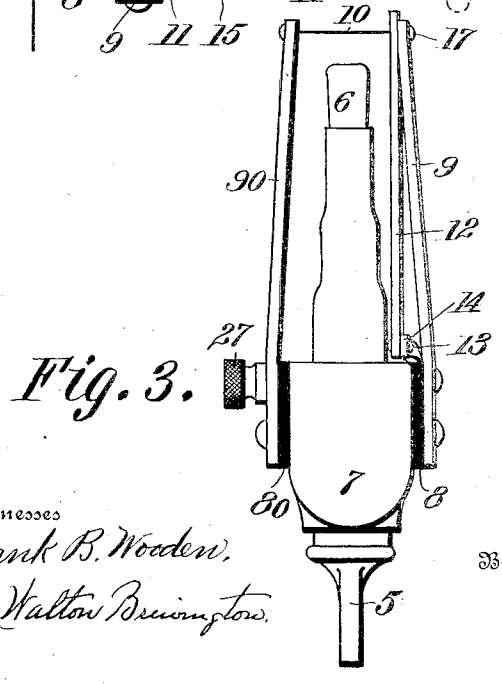

Fig. 3.

Witnesses
Frank B. Wooden.
E. Walton Brewington.

Inventor
Eugene E. Gerald,
By Henry J. Brewington.
Attorney

UNITED STATES PATENT OFFICE.

EUGENE E. GERALD, OF BALTIMORE, MARYLAND.

AUTOMATIC GAS-IGNITER AND SAFETY DEVICE.

973,030. Specification of Letters Patent. Patented Oct. 18, 1910.

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To all whom it may concern:

Be it known that I, EUGENE E. GERALD, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Automatic Gas-Igniters and Safety Devices, of which the following is a specification.

My invention relates to devices for igniting gas lights. It is extremely desirable in this class of devices that they be absolutely reliable in operation both when first lighting up, and that they automatically relight when accidentally extinguished by the wind or otherwise. It is also necessary for the practical success of a device of this class that it be of such simple construction as to be cheap to manufacture, not liable to easily get out of order, nor subject to excessive wear or deterioration in ordinary use.

The object of my invention is to provide an automatic lighter, and relighter possessing all of these desirable characteristics and with this object in view the invention consists in the improved construction, arrangement and combination of the parts hereinafter fully described and afterward specifically pointed out in the appended claims.

In order that the construction and operation of the invention may be readily understood, I have illustrated an embodiment thereof in the accompanying drawing in which—

Figure 1 represents a view in side elevation of one of my improved igniters attached to a burner. Fig. 2 represents a top plan view thereof, and Fig. 3 represents a view in front elevation.

Like reference characters mark the same parts in all of the figures of the drawing.

Referring specifically to the drawing, 4 indicates an ordinary gas supply pipe, 5 the cock or cut off valve, and 6 an ordinary burner, the latter being mounted upon an elbow 7 at the end of the pipe.

Mounted on opposite sides of the elbow 7, but separated therefrom by insulators 8, 80, are two metallic uprights 9, 90, connected together at the top above the upper or discharge end of the burner 6, by means of a wire 10 of a material, such as platinum, which will offer resistance to the passage of a current of electricity and thus be heated to incandescence by such passage.

Depending from the upper end of the upright 9, and pivotally connected thereto, at 11, is a metallic rod 12, the lower end of which is pivotally connected, at 13, to one arm of a metallic bar 14, pivoted, at 15, to the elbow 7, but suitably insulated therefrom, the other arm of said bar 14 normally resting upon, and in electric contact with, one end of a metallic button 16 secured upon the upper end of the stem of the valve 5, when the valve is open as shown in the drawing, by any ordinary means, such as a screw 17. The button 16 is separated from the metal of the casing 18 of the valve 5, by insulating material 19 and when the valve is open as shown, the opposite end of said button rests upon a metallic strip 20 secured upon, but suitably insulated from, the casing 18. Suitable contacts 21 are provided upon the bar 14, button 16 and strip 20 and the uprights 9 are bent at their upper ends, as shown at 22, so that the rod 12 will not be in contact with that one of said uprights to which it is pivoted.

At 23 is indicated a battery, or other suitable source of electricity from which one wire, as at 24, extends to and is connected with the strip 20 by a screw 25 and the other wire, as at 26, extends to and is connected with the upright 90 by a screw 27.

In Fig. 2 I have shown the button 16, in dotted lines, in the position it assumes when the valve is turned to cut off the flow of gas from the burner. In this position the button is out of contact with the strip 20 and bar 14 and the electric circuit is broken.

It being desired to light the gas, the valve is turned, in the usual manner, to the position shown in the drawing, in which one end is in contact with the bar 14 and the other with the strip 20. This completes the electric circuit from the battery 23 through wire 24, strip 20, button 16, bar 14, rod 12, upright 9, platinum wire 10, upright 90, and wire 26 back to the battery and the platinum wire 10 becoming heated by the current passing through it, the gas will be ignited. After the gas has burned a short time, the rod 12 will become heated and will expand longitudinally and press downwardly upon the short arm of the bar 14, thus raising the long arm of said bar off from and out of contact with the button 16, and breaking the electric circuit, said bar remaining raised, and the circuit broken, as long as the gas burns and the rod 12 remains heated. Should the gas be accidentally extinguished by any cause, such as the wind for instance,

the rod 12 will cool off, contract, and move the bar 14 again into contact with the button 16, thus closing the circuit and causing the current again to heat the platinum wire 10 and relight the gas, after which, by the heating of the rod 12, the circuit will again be broken, as before described, and remain broken as long as the gas burns. When it is desired to extinguish the flame, the valve is turned, in the usual manner, cutting off the supply of gas, and turning the button 16 to the position shown in dotted lines in Fig. 2, and breaking the electric circuit which will remain broken until the valve is again turned to again light up.

The advantages of my invention will be obvious and while I have specifically described the various parts of the illustrated embodiment of the invention, I do not limit myself to these exact constructions, many slight changes and variations being possible within the limit and scope of the invention.

Having described my invention, what I claim and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination of a burner, a gas supply pipe, a valve, a button carried by the stem of the valve, and an electric circuit adapted to be closed by the opening of the valve, comprising uprights on opposite sides of the burner, a resistance connecting the uprights above the burner in the path of the escaping gas, a pivoted bar normally in contact with the button when the valve is open, and a rod in position to be heated by the flame and pivotally connected at its ends with one of the uprights and the bar.

2. In a device of the character described, the combination of a burner, a gas supply pipe, a valve, a button carried by the stem of the valve, and an electric circuit adapted to be closed by the opening of the valve, comprising uprights on opposite sides of the burner, a resistance connecting the uprights above the burner in the path of the escaping gas, a pivoted bar normally in contact with the button when the valve is open, a rod in position to be heated by the flame and pivotally connected at its ends with one of the uprights and the bar, a metal strip secured to the valve casing and normally in contact with the button when the valve is open, and wires connecting the metal strip and one of the uprights with a source of electricity.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE E. GERALD.

Witnesses:
E. WALTON BREWINGTON,
MARY M. MAGRAW.