E. E. GERALD.

AUTOMATIC GAS IGNITER.

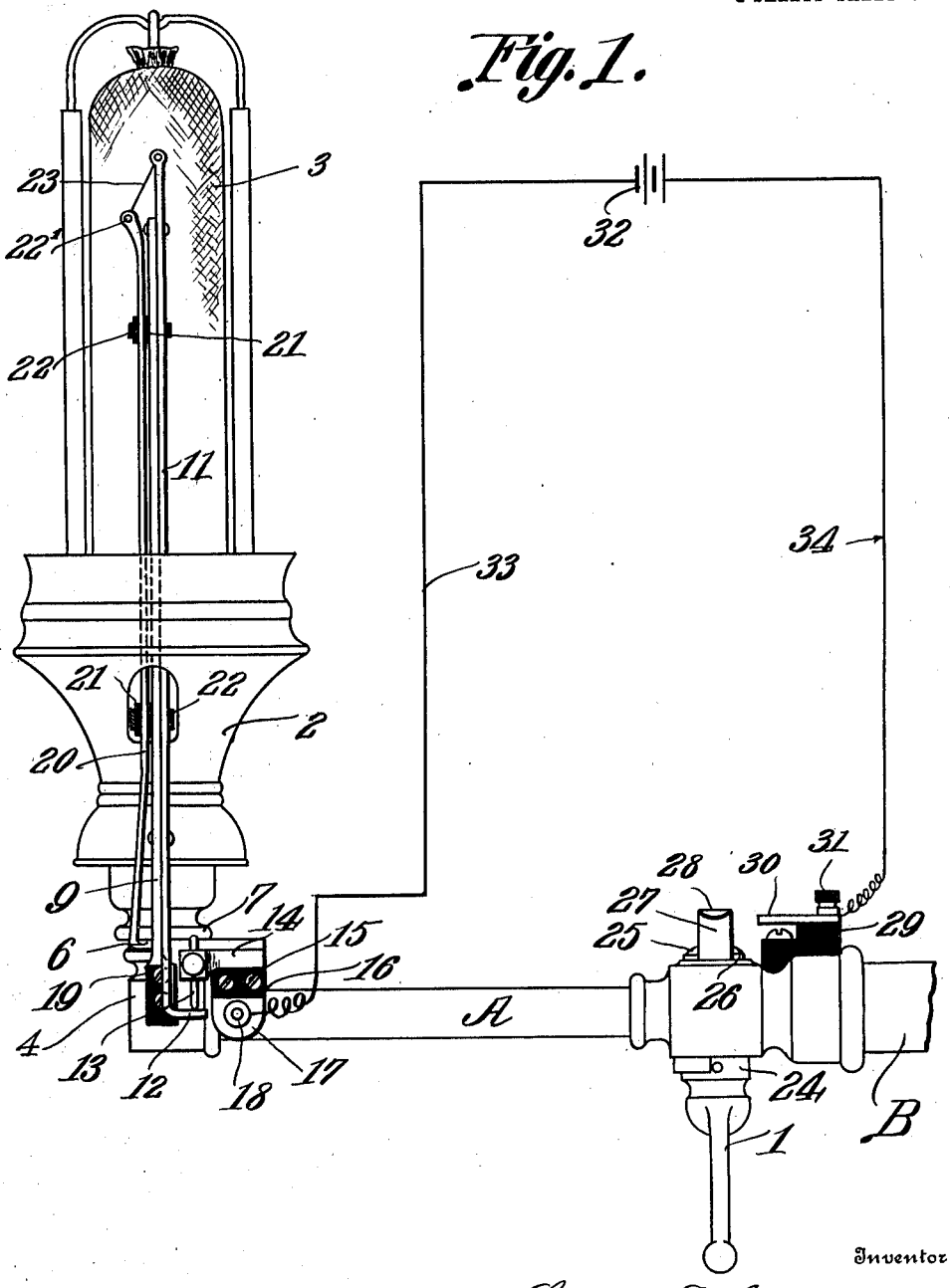
APPLICATION FILED MAR. 23, 1910.

974,565.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



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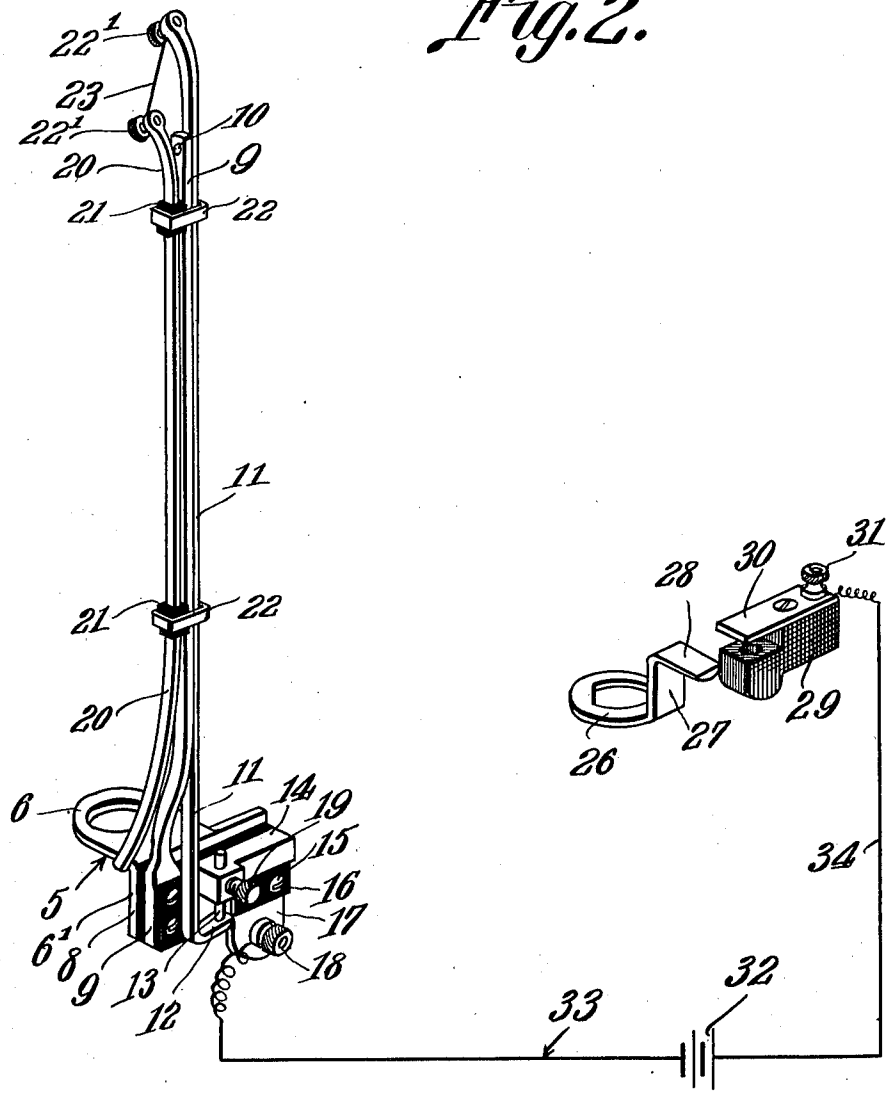
2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC GAS-IGNITER.

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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, of which the following is a specification.

This invention relates to an improvement in devices for automatically igniting gas lights, and has for its object to automatically light a gas burner without the use of matches, or the like, requiring only the turning of the gas cock permitting the gas to flow through the burner.

It also has for a further object to automatically ignite the gas, in cases where the gas burner has been inadvertently turned on, and where the gas light has become extinguished without the gas being turned off, and thereby prevent asphyxiation of persons under circumstances which might otherwise endanger human life.

It is extremely desirable in this class of devices that they be reliable and simple in operation, 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 character that it be of such simple construction as to be cheap to manufacture, and not liable to easily get out of order, nor subject to excessive wear or deterioration in ordinary use.

The object of this invention is to provire an automatic igniter, possessing all of these desirable characteristics, and with this object in view the invention consists in certain novel features of construction, arrangement and combinations of parts which will be hereinafter described and pointed out in the claim.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in elevation of the device applied to a gas burner and fixture, and Fig. 2 is a perspective view of the attachment removed from the burner.

Referring to the drawings, A indicates an ordinary gas fixture, connected to an ordinary gas supply pipe B, 1 the cock of cut-off valve, 2 an ordinary burner provided with a mantle 3, the object of the mantle being too well known as to demand no further description here, the burner 2 being mounted upon an elbow 4 at the end of the fixture.

5 indicates a bracket, provided with a ring shaped extension 6, secured on the elbow 4, by being interposed between the elbow 4 and the base 7 of the burner 2, the bracket also being provided with an extension 6′, bent downwardly at right angles to the extension 6.

Mounted on the extension 6′ of the bracket and insulated therefrom by insulating material 8, is a metallic upright 9. Depending from the upper end of the upright 9, and pivotally connected thereto at 10 is a thermostatic rod 11 made of metal greater expansible by heat than that of the said upright, provided with an extension 12 on the lower end thereof bent at right angles thereto, which extension normally rests against a contact pin 13, carried by a holder 14, which is secured on the bracket 5 by means of the screws 15 and insulated therefrom by the insulating material 16. The holder being provided with an extension 17, into which is secured a binding post 18, the purpose of which will be hereinafter described. The contact pin 13 being adjustably secured in the holder with relation to the extension 12 by means of a set screw 19. Secured to the bracket 5, is another metallic upright 20, extended parallel to the thermostatic rod 11 a distance short of its length, with the upright 9 interposed therein between, and insulated therefrom by the insulating material 21, the uprights and rod being slidably secured together by means of the bands 22.

Connecting the upper ends of the depending rod 11, and the upright 20 just described, by means of the screws 22′, is a wire 23, of a material, preferably platinum, which will offer resistance to the passage of an electric current and thus become heated to incandescence by reason of such passage.

Secured on the upper end of the valve stem 24 of the valve 1, by means of a screw 25, is a metallic washer plate 26, provided with a vertical extension 27 and transverse extension forming a contact point 28. Secured on the fixture A, adjacent to the valve 1, and insulated from the fixture by the insulating material 29, is a contact plate 30 into which is secured a binding post 31.

At 32 is indicated a battery or other suitable source of electricity from which a wire 33 extends and is connected with the binding post 18, on the extension 17 of the holder 14; extending from the battery is another wire 34, which connects with the binding post 31 in the contact plate 30.

In Fig. 1 is shown the cock 1 in the position it assumes when the valve is turned to cut off the flow of gas from the burner. In this position the contact plate carried on the valve stem 24, carrying the contact point 28 is out of contact with the plate 30, and the electric circuit is broken.

It being desired to light the gas, the cock 1 is turned in the usual manner to a position reversed to that shown in Fig. 1 in the drawing, in which the contact point 28 is brought into contact with the plate 30. This completes the circuit from the battery 32 through the wire 34, binding post 31, plate 30, contact point 28, fixture A, bracket 5, upright 20, wire 23, rod 11, extension 12, contact pin 13, extension on the bracket 17, binding post 18, wire 33, back to the battery 32, the wire 23 becoming heated to incandescence by the current passing through it will light the gas at the burner 2.

After the gas has burned a short time, the thermostatic rod 11 will become heated and will expand longitudinally thereby forcing the extension 12 thereon away from the contact pin 13, thereby breaking the electric circuit, said extension 12 remaining lowered and away from the contact pin 13, and the circuit broken, as long as the gas burns and the thermostatic rod 11 remains heated.

Should the gas be accidentally extinguished by any cause, the thermostatic rod 11 will cool off, contract, and raise the extension 12 again into contact with the pin 13, thus closing the circuit and causing the current to again heat the wire 23 and relight the gas, after which, by the heating of the rod 11, 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 cock is turned in the usual manner, thereby cutting off the supply of gas, and turning the contact point 28 away from the plate 30, as in the position shown in Fig. 1, thereby breaking the electric circuit, which will remain broken until the cock is again turned to permit the flow of gas to the burner, when the circuit is again closed by reason of the contact point 28 being again brought in contact with the plate 30, and the gas made to ignite at the burner as has previously been described.

The advantages of this invention will be obvious, and while I have specifically described the various parts of the illustrated embodiment of the invention, I am aware that slight changes and alterations might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but

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

A device of the character described comprising a bracket adapted to be attached to a burner, uprights insulated from each other mounted upon said bracket, a thermostatic rod, having its lower end bent angularly, secured to the top of one of the uprights, an adjustable contact pin to engage said bent end, mounted on said bracket and insulated therefrom, a resistance wire connecting one of the uprights and the thermostatic rod.

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

EUGENE E. GERALD.

Witnesses:
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