

(No Model.)

F. O. PLUMMER.
ELECTRIC GAS LIGHTING APPARATUS.

No. 562,850.

Patented June 30, 1896.

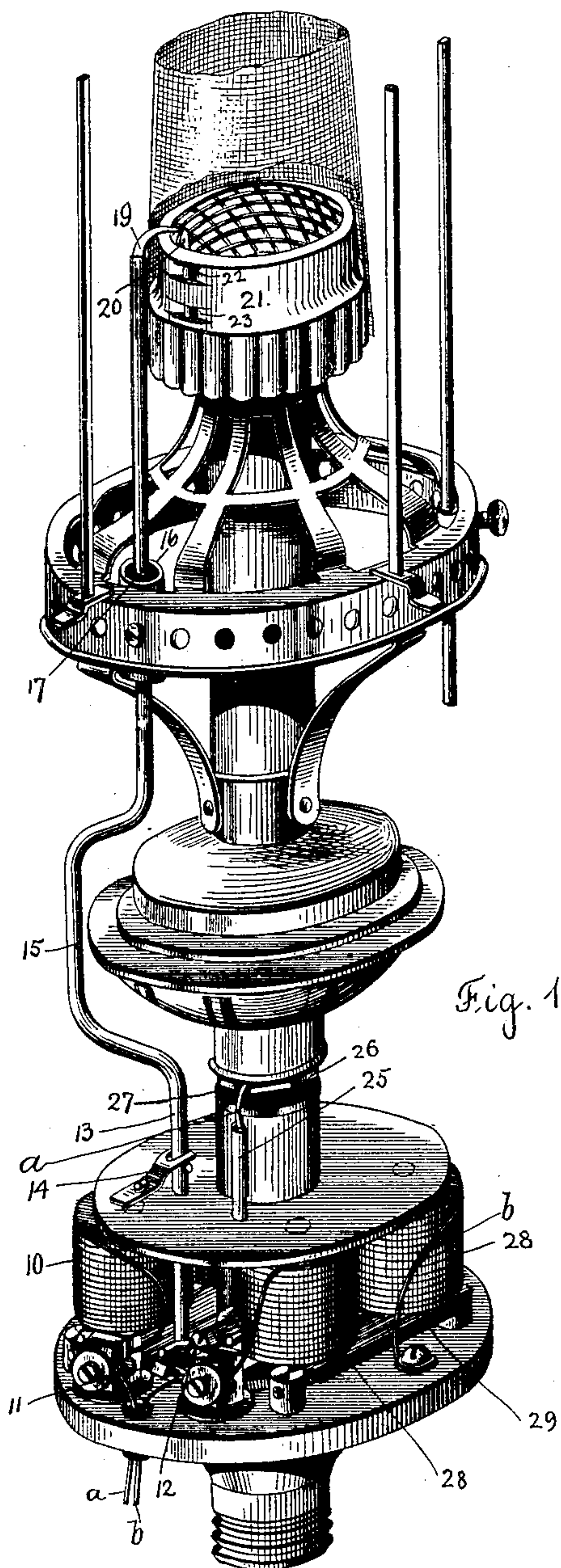


Fig. 1.

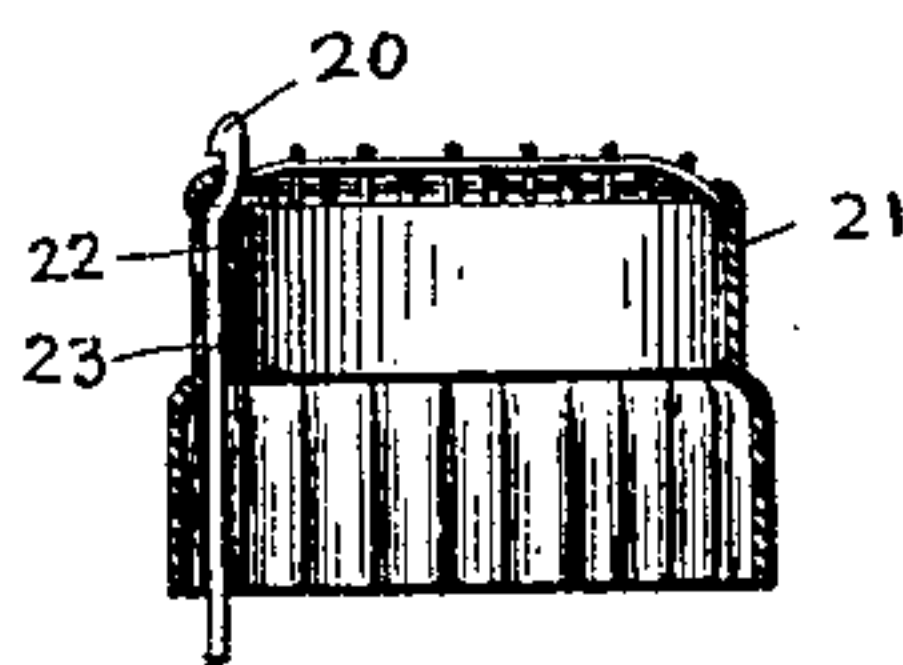


Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK O. PLUMMER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
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ELECTRIC GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 562,850, dated June 30, 1896.

Application filed August 16, 1895. Serial No. 559,457. (No model.)

To all whom it may concern:

Be it known that I, FRANK O. PLUMMER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Electric Gas-Lighting Apparatus, of which the following is a specification.

My invention relates to an improved gas-lighting apparatus, and the object of my invention is to provide an incandescent gas-burner which is combined with simple and efficient means for automatically turning on, lighting, or cutting off the supply of gas.

To these ends my invention consists of the parts and combinations of parts as hereinafter described, and more particularly pointed out in the claim at the end of this specification.

In the accompanying drawings, Figure 1 is a perspective view of an incandescent gas-burner and a gas-lighting apparatus constructed according to my invention, and Fig. 2 is a detail sectional view illustrating the means which I preferably employ for securing one of the platinum terminals in the burner-cap.

In the use of the ordinary incandescent gas-burners, such, for example, as are employed in the Welsbach system, it has heretofore ordinarily been the custom either to light the separate burners by hand, or to regulate the valve of the burner so as to leave a small constantly-burning flame.

The first method of lighting incandescent gas-lamps is objectionable, as the mixture of air and gas which is employed will cause a slight explosion or concussion whenever a burner is lighted, and these explosions frequently break or shatter the burner-hood, which is ordinarily constructed of refractory materials which are extremely fragile.

The practice of employing a small, constantly-burning flame is objectionable, as the flame is liable either to be blown out or to be extinguished by fluctuations in the gas-pressure.

The object of my invention is to provide an automatic electric apparatus for turning on, lighting, or shutting off the supply of gas employed in an incandescent gas-lamp. To ac-

complish these purposes, I insulate the burner or lamp, and employ said burner to form part of the electric circuit.

In ordinary gas-lighting apparatus, the platinum lighting-terminals are located at one side of the flame.

In lighting an incandescent gas-burner, it is necessary that the gas should be ignited inside of the burner-hood, and in practice I preferably cut away the burner-hood and locate the platinum terminals inside of the same. As thus located, the lighting-terminals are exposed to a considerable degree of heat, and in order to secure one of the terminals to the burner-cap, I preferably form sockets in the burner-cap by stamping in integral straps, and support the terminal by means of these sockets. The other platinum terminal is carried by a rod supported in a suitable insulated bearing, and operated by magnets to make and break the circuit.

Referring to the drawings and in detail, 10 designates the lighting-magnets, which are arranged to cooperate with a pivoted armature 11, said armature 11 being arranged to engage with and turn the valve-stem 12 by means of projecting inner arms. From the lighter-magnets 10, the lighting-wire *a* is carried through an insulating-bushing 25, and is connected to the body of the gas-burner by means of a check-nut 26, which is threaded onto the stem of the burner. The stem of the burner is supported and threaded into an insulating-bushing 27. Resting upon and actuated by the pivoted armature 11 is an operating-rod 13, which is normally held in its lowest position by means of a spring 14. The operating-rod 13 is offset, as at 15, and passes through an insulating-bushing 17, carried in a cylindrical casing 16, riveted to the gallery or shade-support of the burner, as shown. At its upper end, the rod 13 is provided with a platinum terminal 19, which extends through a cut-away portion in the burner-hood *h*. The second platinum terminal 20 is secured in the burner-cap 21, and I preferably stamp or force in sections of the burner-cap, as at 22 and 23, to form sockets for supporting the terminal 20, and I prefer this construction, as I have found in practice that when solder is employed, the parts are liable to become de-

tached. The shut-off magnets 28 are secured in position to coöperate with a pivoted armature 29, which is arranged to operate upon the valve-stem 12, and to shut off the supply
5 of gas by means of wire arms, as shown.

With a gas-lighting apparatus as thus organized, when the circuit is closed through the lighting-wire *a*, the current is passed through the lighter-magnets 10, through the
10 insulating-bushing 25, through the body of the lamp, through the terminals 20 and 19, back through the operating-rod 13, and thence to the gas-pipe in the ordinary manner.

When the lighter-magnets are energized,
15 the gas will be turned on, the terminals 19 and 20 will be separated, breaking the current and causing a spark, and this current-breaking action will be maintained as long as the circuit is closed through the wire *a*.

20 When a circuit is closed through the shut-off wire *b*, the shut-off magnets 28 will be energized, and the valve will be turned to cut off the supply of gas.

I am aware that slight changes may be made
25 in the construction of electric gas-lighting apparatus without departing from the scope of my invention as expressed in the claim. I

do not wish, therefore, to be limited to the exact form which I have shown and described; but, 30

What I do claim, and desire to secure by Letters Patent of the United States, is—

In an electric gas-lighting apparatus, the combination of an incandescent gas-burner, a bushing supporting and insulating said gas-
35 burner, a check-nut threaded onto the shank of said burner and adapted to connect a lighting-wire thereto, platinum terminals located on the inside of the burner-hood, one of said terminals being rigidly fastened in sockets 40 formed in the burner-cap, an operating-rod for the other terminal, an insulated bearing for said rod, a lighter-magnet connected to turn on the gas and actuate said rod, and a shut-off magnet arranged to cut off the sup- 45 ply of gas, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK O. PLUMMER.

Witnesses:

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