

(No Model.)

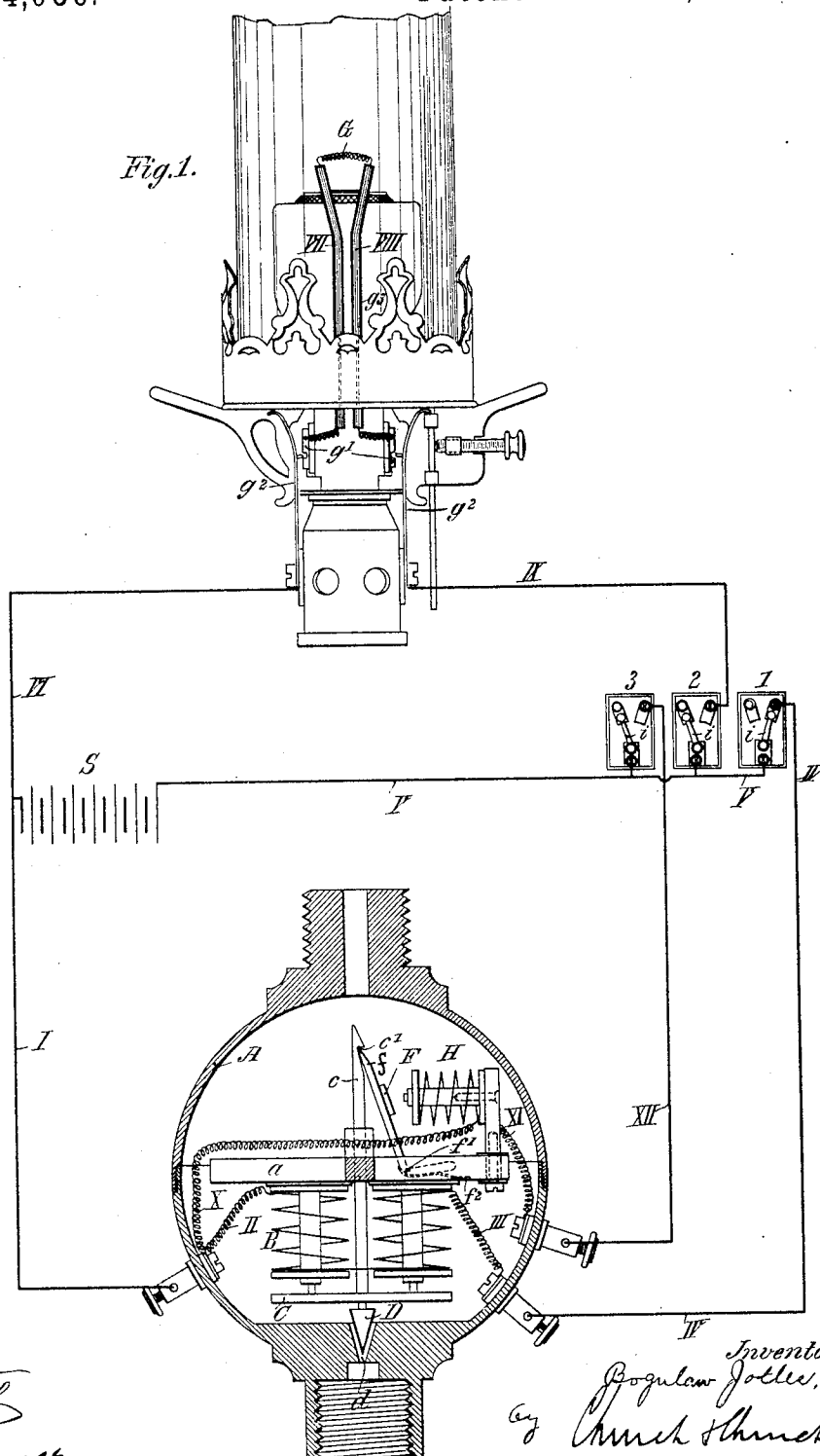
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B. JOLLES.
IGNITING DEVICE.

No. 584,056.

Patented June 8, 1897.

Fig. 1.



Witnesses:

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his Atty

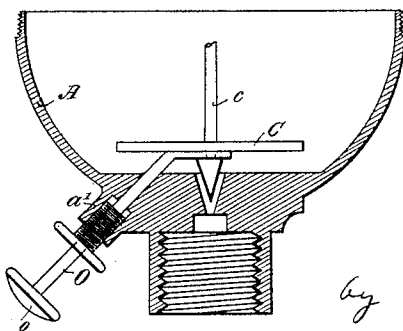
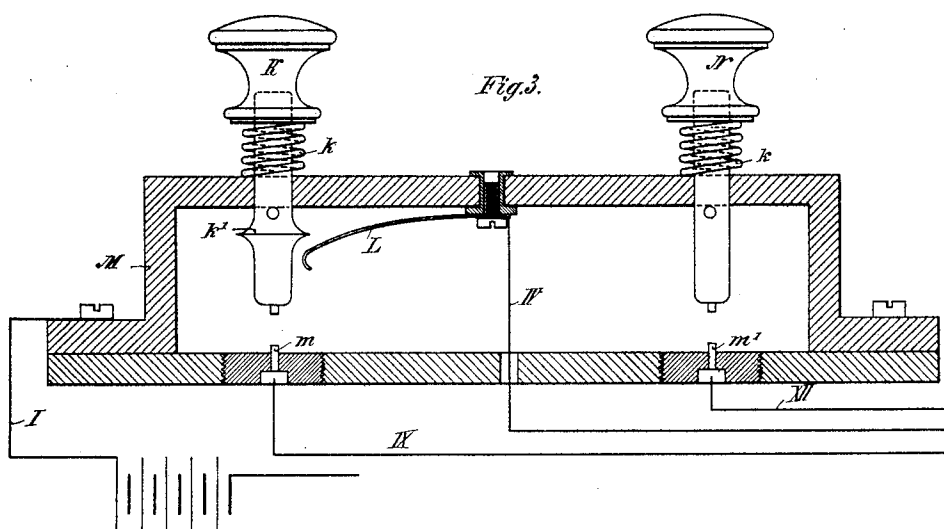
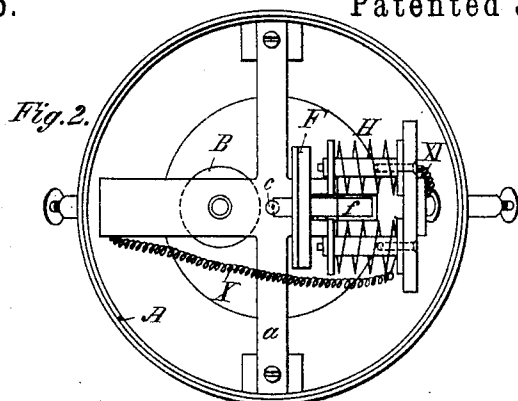
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2 Sheets—Sheet 2.

B. JOLLES.
IGNITING DEVICE.

No. 584,056.

Patented June 8, 1897.



Witnesses:

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UNITED STATES PATENT OFFICE.

BOGULAW JOLLES, OF VIENNA, AUSTRIA-HUNGARY.

IGNITING DEVICE.

SPECIFICATION forming part of Letters Patent No. 584,056, dated June 8, 1897.

Application filed February 1, 1897. Serial No. 621,537. (No model.)

To all whom it may concern:

Be it known that I, BOGULAW JOLLES, a subject of the Emperor of Germany, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in or Relating to Devices for Supplying Gas to Lighting and Extinguishing Gas-Burners and the Like, of which the following is a specification.

The present invention has for its object to enable gas-burners (not only those for lighting) to be lighted or extinguished from a place situated at any desired distance from the burner.

The characteristic feature of the device is that the valve for admission of gas is opened by an electromagnet and is held open by means of a pawl device till the latter is operated to release the valve by another electromagnet placed in an independent circuit. The opening and closing of the gas-supply is effected in this manner, and the lighting of the gas escaping from the burner is effected in the usual manner by an incandescent igniting device (platinum wire or spongy platinum) or by a spark-igniter which is placed in an (third) independent circuit.

In the accompanying drawings is illustrated a construction of the device according to the present invention applied to an incandescent gas-burner.

Figure 1 shows the burner in elevation, the main part of the device in longitudinal section, and the conductors and switch in a diagrammatic form. Fig. 2 shows the lower half of said main part in plan; Fig. 3, a key arrangement which may be used instead of switch in longitudinal section, and Fig. 4 shows again the lower half of the main part only in longitudinal section and with a device for operating the valve by hand in case of an accident to the circuit.

The main part of the device is constituted by a globe A, which may be connected directly to the burner, and which, according to Fig. 1, consists of two halves screwed together. In this globe are arranged on the plate *a*, secured to the lower half, the coils of an electromagnet B. Said coils are connected by conductors I II III IV, switch 1, and conductor V with the source of electricity (battery) S. A bar or rod *c* is vertically adjustable in

the plate *s* and carries at its lower end a transverse bar C, forming the armature for the electromagnet, and is formed at its extreme end as a conical valve D. The weight of *c* C D, which is supplemented (or may be replaced in case of a reverse arrangement) by a spring, applies the valve D against the valve-seat *d* at the inlet or outlet of A. It is preferable to arrange it at the outlet, as in such case the pressure of gas helps to close the valve.

When the described circuit is closed and the electromagnet B excited, the armature C, being attracted, opens the valve, which up to that time had been closed. Then the pawl *f*, pivoted at *f'* and placed under the influence of a spring *f''*, engages with a notch *c'* on the rod *c*, thus holding the valve in its open position. Fig. 1 illustrates the open position. A short electrical impulse is therefore sufficient to open the valve, which remains open in spite of the current being again interrupted.

The igniting device shown in Fig. 1 is arranged in the burner itself and consists of a fine platinum wire G, which is placed inside or outside the burner in the path of the escaping gas. The conductors VI VII VIII IX, the switch 2, and the conductor V form a second circuit for the platinum wire, which circuit, however, may have the battery S and the return-wire V in common with the first circuit. As the upper part of the incandescent burner, together with the gallery, may be removed from the lower part (the mixing-chamber and pipe) it is advisable to insert in the wires VII and VIII detachable contacts. They are preferably formed of metal plates *g'*, attached to a convenient part of the burner, spring-blades *g''*, provided with pins attached to the other (lower) part, which engage with said plates *g'*. The plates and the spring-blades are insulated from the burner, but are electrically connected with the part of the wires VII and VIII which are to be connected. The wires VII and VIII must of course be properly insulated from the burner. Where they are subjected to the heat of the flame, the insulation is effected by a refractory (asbestos) covering or by soapstone or porcelain tubes *g'''*. The platinum-wire igniter G may be replaced by an

equivalent body made of platinum sheet or spongy platinum or the like. Instead of an incandescent igniter a spark-igniter may be employed, such as two points placed at a suitable distance from each other and connected, respectively, with the wires VII and VIII, so that a spark passes between them when the circuit is closed. Such devices are sufficiently known. In any case as soon as the second circuit is closed after valve has been opened by the first switch the escaping gas is ignited by the incandescent wire or by the passage of the spark. For this purpose, as well as for opening the valve only, a short closing of the circuit is necessary.

The extinguishing of the flame is effected by closing the valve D *d*. For this purpose there is arranged on *a* a second electromagnet H, Figs. 1 and 2, the armature F of which is secured to the pawl *f*. The coils form a part of a third circuit formed by the wires I X XI XII, the switch 3, and the return-wire V. When the circuit is closed and the electromagnet H attracts its armature F, the pawl *f* is released from its engagement with the rod *c*, the weight of *c* C D (or the spring mentioned) becomes operative, and D is pressed against its seat *d*.

In the arrangement described many details may be varied. For instance, the earth may be used in the well-known manner as a return for each circuit by connecting the wires II VII X to a gas-pipe. Any suitable devices may be used for closing or interrupting the circuits. Thus instead of switches 1 2 3, the levers *i i i* of which are preferably withdrawn from the closed positions by springs, may be replaced, say, by keys. The so-called "cock-switch," of well-known construction, is especially suitable for controlling all the three circuits by a single switch, in which by turning the handle one circuit after another is successively closed and in which there is always an "open" position between two "closed" positions.

Fig. 3 illustrates a key, which by a single pressure successively closes the two first circuits, (for opening the valve and for igniting the gas.)

K is the key raised by the spring *k*, the stem of which key is provided with an enlarged portion *k'*. When lowered, *k'* touches the spring L before its end or point touches the fixed contact *m*. With L is connected the wire IV and with *m* the wire IX, whereas the wire I connects the battery with the conducting-frame M of the key and thus with the metallic key itself. A second key N may be arranged in the same frame for the third circuit, (for extinguishing the flame,) said key N coöperating with a fixed contact *m'*,

the latter being connected with the wire XII to the electromagnet.

In order to enable the flame to be lighted, even when the electric current does not for some reason act, means may be provided to enable the valve D *d* to be opened by hand. A simple and suitable arrangement is the one shown in Fig. 4. In a stuffing-box *a'* on the casing A is an adjustable pin O, which is bifurcated in front and surrounds the rod *c* under the armature C. If the knob *c* is pressed at O, the part *c* C D is raised and the valve opened and a reverse movement effects the closure of the valve.

I claim—

1. In a device for lighting the gas of gas-burners, the combination with a casing, a plate or support within the casing, the valve-stem working through said plate, having a notch near its upper end and formed at its lower end as a conical valve, the electromagnet secured to the under side of the plate or support, the armature carried by the valve-stem for operating the valve as described, a pawl pivotally mounted on the upper side of the plate or support, for engaging the notch or recess in the valve-stem to hold it in open position, the spring for pressing the pawl forward into the path of the valve-stem, the electromagnet also carried by the plate, the armature carried by or forming part of the pawl, whereby the pawl may be attached and the valve-stem released; substantially as described.

2. An electric device for lighting the gas of gas-burners consisting of a battery-switch and conductors spring-arms *g*² provided with pins, attached to the lower part of the burner and contact-plates *g'* attached to the upper part insulated conductors VII and VIII and an igniting-coil of platinum wire or the like G substantially as described.

3. A device for operating the supply-valve lighting and extinguishing the gas of gas-burners consisting of a casing A containing a gas inlet and outlet valve D valve-stem *c* carrying an armature C of an electromagnet B, on support *a*, pivoted armature and pawl F, S electromagnet H and electric conductors I II III IV V X, XI, XII, switches 1 and 3, battery S, electric igniting device *g*², *g'*, G and conductors V, VI, VII, VIII, IX, and switch 2 substantially as described.

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

BOGULAW JOLLES.

Witnesses:

EUGEN R. V. NOLLENDORF,
HARRY BELMONT.