

No. 626,247.

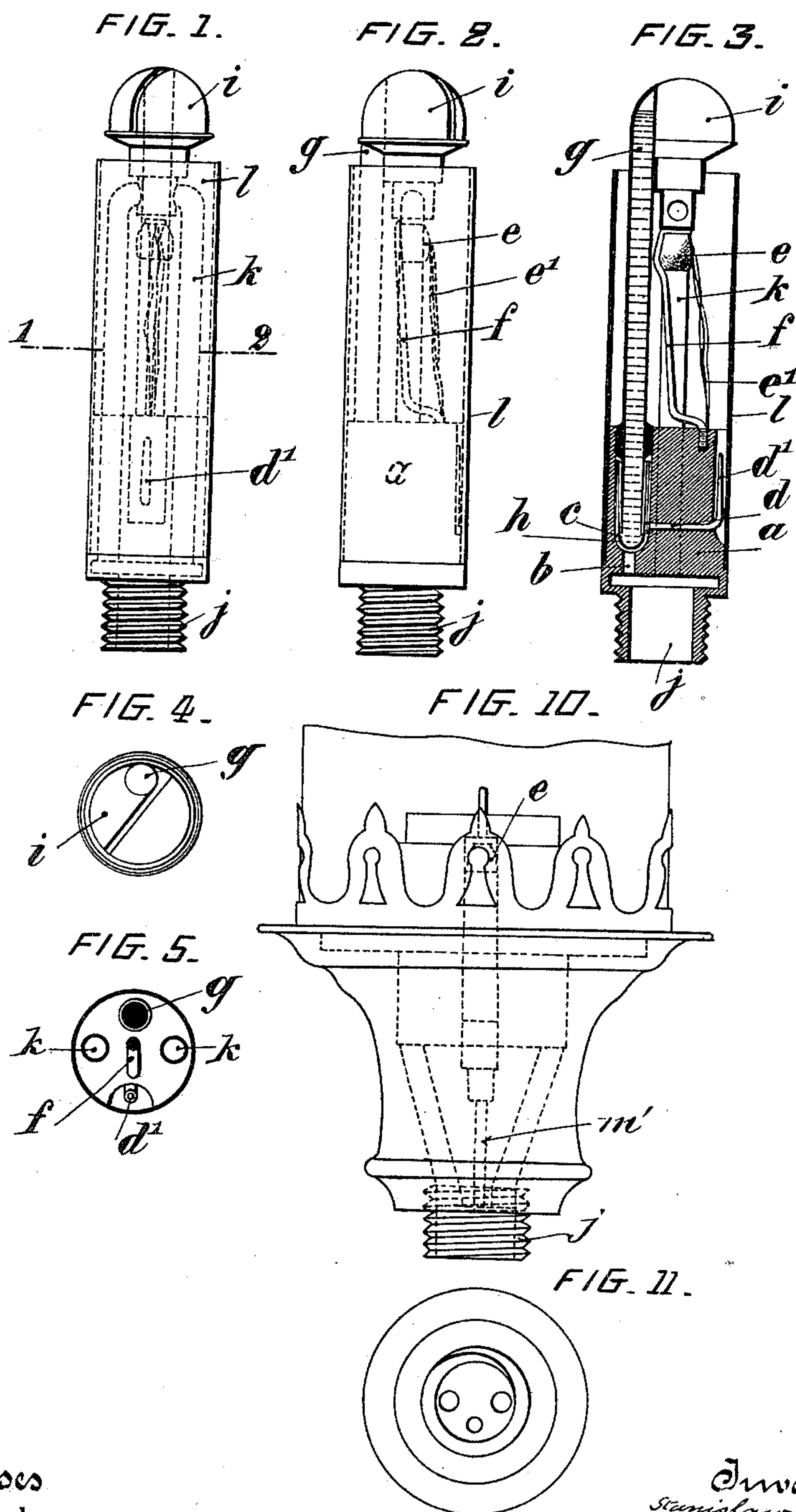
Patented June 6, 1899.

S. ROSINSKI & M. M. DUCRUIX.
AUTOMATIC GAS LIGHTING APPARATUS.

(Application filed Apr. 12, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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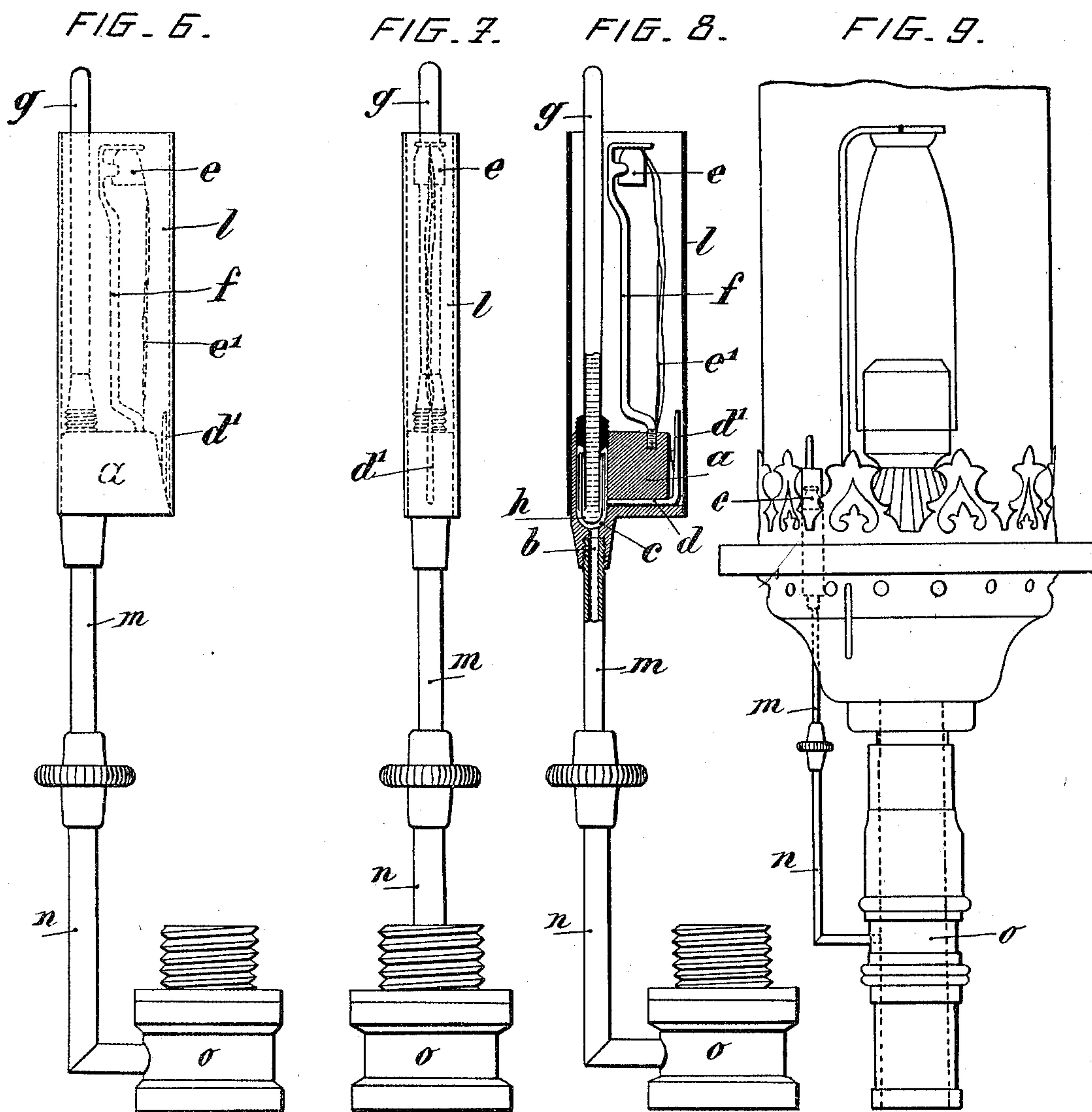
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UNITED STATES PATENT OFFICE.

STANISLAW ROSINSKI AND MARIE MARGUERITE DUCRUIX, OF PARIS,
FRANCE.

AUTOMATIC GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 626,247, dated June 6, 1899.

Application filed April 12, 1898. Serial No. 677,289. (No model.)

To all whom it may concern:

Be it known that we, STANISLAW ROSINSKI, civil engineer, of 95 Avenue de Versailles, and MARIE MARGUERITE DUCRUIX, widow of Ernest Ducruix, of 104^{bis} Boulevard Exelmans, Paris, France, have invented Improvements in Automatic Gas-Lighting Apparatus, of which the following is a full, clear, and exact description.

Our invention, which is applicable to gas-burners generally, relates to the automatic lighting of gas by the mere act of turning on the gas to the burner.

The invention consists, essentially, in means for effecting the automatic closure of the branch passage by the expansion of a fluid or any other expansible body acting upon an elastic bulb or partition in such manner as to cause the latter on the expansion of the fluid under the action of the heat of the burner to shut off the branch passage. This device consists, essentially, of a tube or receptacle having one end closed and the other open, but inclosed by an elastic cap or bulb of india-rubber, the said tube containing mercury and a certain volume of air which under the action of the heat of the lighted burner is caused to dilate and so expand the elastic cap or bulb which is applied to act as a valve to effect the closure of the passage of the gas through the branch passage. On the gas being turned off the air and mercury cool and contract, the elastic membrane resumes its original form, and the passage is opened in readiness for the turning on of the tap of the burner.

Our invention is illustrated in the accompanying drawings as applied to various known types of gas-burners.

Figures 1 to 5 show a device embodying our invention applied to a bat's-wing burner, Fig. 1 being an elevation of the device, Fig. 2 a side view thereof, Fig. 3 a vertical section thereof, Fig. 4 a plan view thereof, and Fig. 5 a horizontal section on line 12, Fig. 1. Figs. 6, 7, and 8 show front, side, and sectional views, respectively, of the device applied to an ordinary gas-burner. Fig. 9 shows the application of the device to an incandescent gas-burner. Fig. 10 shows an elevation, and

Fig. 11 an underneath view, of the device applied to a Bengel burner.

The same letters of reference indicate the same parts in all the figures.

In the figures, *a* is a metal block having a passage *b*, whose upper end forms a valve-seat and communicates with the gas-supply passage leading to the burner and with a chamber *c* of slightly larger diameter, from which leads a passage *d*, terminating in an upwardly-directed nozzle *d'*, by which the jet of gas admitted through *b* is directed onto the pellet of material *e*, capable of being rendered incandescent by the gas and preferably composed of gelatinous alumina steeped in a solution of platinum chlorid containing one gram of platinum chlorid to four grams of alcohol. The pellet *e*, which should be in proximity to the burner, is mounted on a support *f*, screwed to the block *a*, and in order to obtain a more extended incandescent surface a cluster of platinum wires *e'* extend down from the pellet *e* to the base of support *f*.

The device by which the gas is shut off from the nozzle *d'* when the gas is lighted consists of a suitable passage-closing device, here shown as comprising an upright straight rigid tube or receptacle *g*, screwed into the chamber *c*. This tube is closed at its upper end, and its open lower end is closed by a bulb or partition *h*, of elastic material, such as india-rubber, and the tube is filled with mercury and a certain volume of air. When the gas is lighted at the burner, the tube *g* becomes heated, the contained air and mercury become dilated, and the bulb *h* is expanded and closes the passage *b*.

To adapt the improved automatic lighter to a bat's-wing burner, the tip *i* is connected to the gas-inlet *j* by two or three tubes *k*, the channel *b* in this case branching directly from the gas-inlet *j*, as shown in Fig. 3, and the upper end of the mercury-tube *g* is rounded, so as to conform to the shape of said tip, through which it extends. The whole is inclosed in a casing *l*, open at its upper end, which casing serves to direct the gas from the tube *d'* to the automatic igniting device *e f*. Bat's-wing burners may thus be provided

with an automatic lighting device without altering their general form and be screwed onto existing gas-fittings, like ordinary burners.

The device shown in Figs. 6 to 8 is adapted when made of proper size for use on burners of all suitable kinds and dimensions. To enable the position of the pellet of incandescible material *e* to be adjusted relatively to the burner, the block *a* is mounted upon a tube *m*, connected with channel *b*, and fitted to slide in another tube *n*, branched upon a union-piece *o*, screwing onto the gas-supply pipe below the burner, as shown in Fig. 9, which illustrates the application of the device to an incandescence gas-burner. The tube *m* is clamped at any suitable height in tube *n* by any ordinary means. The device is inclosed in a protective and gas-directing casing *l*, as before.

Figs. 10 and 11 show the automatic lighting device as mounted upon a Bengel burner. In this case the tube *m'* screws into gas-inlet *j*.

Our improved automatic lighting device presents the great advantage of compactness and of being readily adaptable to existing apparatus. It is also of very simple construction and not liable to get out of order, thus insuring an efficient action.

We do not herein claim the incandescible body nor its application, as described herein, as the same forms the subject-matter of another application filed by us this day, Serial No. 677,290.

We claim—

1. In a device for automatically igniting gas by means of an auxiliary gas-supply act-

ing on an incandescible material, the combination of a main burner, a material capable of being rendered incandescent by the contact of gas therewith and in igniting proximity to the main burner, an auxiliary gas-supply passage for directing a flow of gas upon said material and a thermostatic passage-closing device comprising in its structure a straight rigid tube closed at its lower end by an elastic membrane and containing mercury and a volume of air, the said membrane being in operative proximity to the auxiliary gas-supply passage whereby upon dilation of the air and mercury the elastic membrane will be stretched and will contact with the auxiliary supply-passage thereby closing the same.

2. In a device of the character described, the combination of a gas-supply, a tube containing mercury and air and provided at its lower end with an expansible partition in operative proximity to the gas-supply whereby upon dilation of the mercury the elastic partition will contact with the gas-supply passage and thereby close the same and a casing *e* surrounding the gas-supply, mercury-tube and incandescible material for directing the gas upon the incandescible material.

The foregoing specification of our improvements in automatic gas-lighting apparatus signed by us this 31st day of March, 1898.

STANISLAW ROSINSKI.

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Witnesses:

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