

No. 757,218.

PATENTED APR. 12, 1904.

G. OBERLAENDER.  
SELF IGNITING BURNER.  
APPLICATION FILED JULY 22, 1903.

NO MODEL.

Fig: 1.

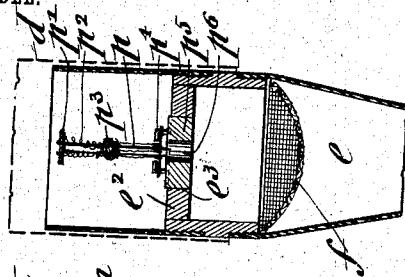


Fig: 5.

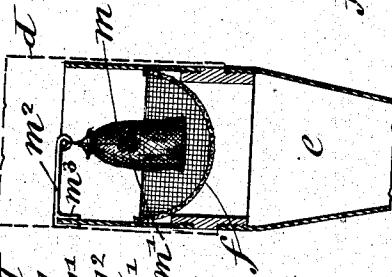


Fig: 3.

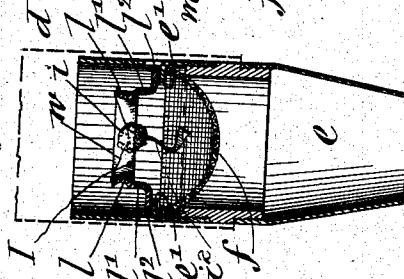


Fig: 2.

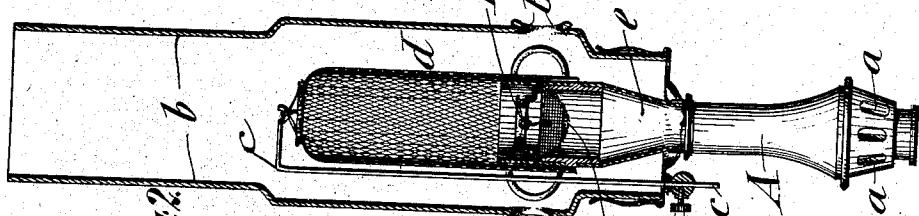


Fig: 4.

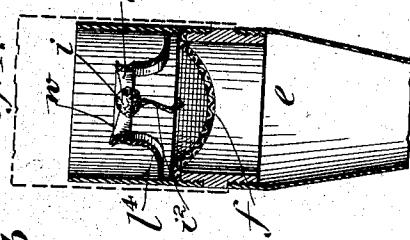


Fig: 8.

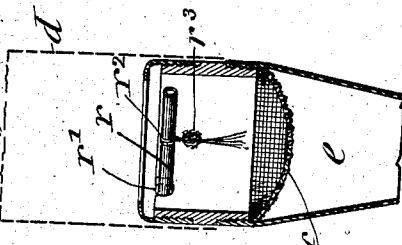
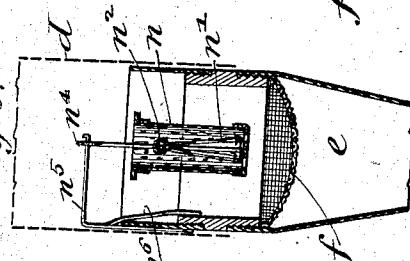


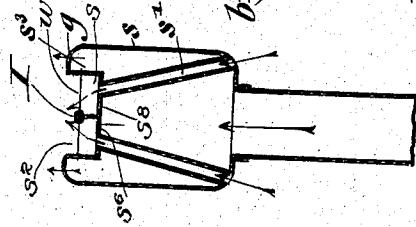
Fig: 6.



WITNESSES

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Fig: 9.



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## UNITED STATES PATENT OFFICE.

GUSTAV OBERLAENDER, OF NEW YORK, N. Y.

## SELF-IGNITING BURNER.

SPECIFICATION forming part of Letters Patent No. 757,218, dated April 12, 1904.

Application filed July 22, 1903. Serial No. 166,576. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV OBERLAENDER, a citizen of the Empire of Germany, residing in New York, borough of Bronx, and State of New York, have invented certain new and useful Improvements in Self-Igniting Burners, of which the following is a specification.

It is well known that when a current of combustible gas impinges against platinum sponge the sponge is brought to incandescence and the gas ignited thereby. It has been proposed to arrange such platinum sponge in the central part of the incandescent mantle; but it has been found that with such an arrangement some time elapses before ignition takes place and that a considerable quantity of gas gathers in the upper and lower parts of the mantles, which when the sponge is brought to incandescence explodes, whereby the attendant concussion accompanying the ignition of the gas causes an appreciable decrease in the life of the incandescent mantle, and so aggravates the main objection—frequent renewal—of the same.

This invention relates to self-igniting burners in which it is only necessary to turn the cock of the burner, and so permit a current of gas to impinge against a platinum sponge suitably arranged in the tubular part of the burner, and in this manner ignite the gas as soon as it leaves the burner without the objectionable explosion.

The object of this invention is to obviate the objections above referred to by providing a device which is simple to manufacture and which is commendable for general adoption.

For this purpose the invention consists in a self-igniting burner comprising a burner-tube, a foraminated wall in said burner-tube arranged transversely thereto, and means supported within said burner-tube adapted to be brought to incandescence when impinged by a current of combustible gas for igniting the same, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved self-igniting burner, showing the same as used with an incandescent mantle. Fig. 2 is a cen-

tral section of Fig. 1, showing the location of the igniter. Fig. 3 shows in detail the igniter shown in Fig. 2. Fig. 4 shows the igniter provided with spring-legs, whereby it may be sprung into place in the upper part of the burner and retained in position by the spring action. Figs. 5 to 9 are modifications of the igniter, in which Fig. 5 shows a small incandescent mantle provided with a platinum sponge. Fig. 6 shows a lantern-shaped igniter consisting of a perforated cylinder in which is supported a platinum sponge. Fig. 7 shows an igniter consisting of a platinum sponge supported by a gallows-shaped support. Fig. 8 shows an igniter consisting of a rod supporting a platinum sponge arranged transversely to the burner, and Fig. 9 shows a different form of burner provided with an igniter.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a gas-burner which is provided at its lower part with the usual air-openings *a* and with a chimney *b*, provided with openings *b'* at its lower part. The burner is also provided with a mantle-supporting rod *c*, which is vertically adjustable by means of a screw *c'*, which supports an incandescent mantle *d*. In the upper part *e* of the burner A is arranged the usual screen *f*. On the top of the burner is arranged an igniter I, consisting of a ring-shaped part *l*, provided with legs *l'* and radial legs *l''*, bent at right angles to the legs *l'*, which legs *l''* rest on lugs *e'* of the part *e*. By the ring-shaped part *l* is supported a platinum wire *w*, which supports a platinum sponge *i*, provided with a piece of platinum *i'*.

For preventing the igniter I from being displaced or removed by the force of the gas-current the legs *l'* of the igniter, as shown in Fig. 4, are given a spring action, by means of which they may be compressed and inserted in the upper part *e* of the burner, so that when the pressure is released they are maintained in the upper part of the burner.

In using my improved burner it is only necessary to turn the cock of the same, and so permit the combustible gas to impinge against

the platinum sponge, whereby the gas passing through the burner will come in contact with the platinum sponge, and so readily and quickly ignite the same. The igniter being placed in the burner-tube itself must necessarily be impinged by gas, and so a gradual and yet rapid ignition of the same takes place without the objectionable explosion, as heretofore, which is so detrimental to the life of incandescent mantles. When the gas is ignited, a flame is formed on the upper part of the burner, whereby the igniter is prevented from being subjected to continual incandescence.

15 Instead of the simple igniter shown in Figs. 3 and 4, different forms may be used, as shown in Figs. 5 to 9, in which Fig. 5 shows a small incandescent mantle  $m$ , provided at its interior with a platinum sponge  $m'$ , which is supported by a rod  $m^2$ , provided with a slotted part  $m^3$ , whereby it is saddled on the tubular part of the burner. In Fig. 6 is shown a perforated cylinder  $n$ , provided with a diametrically-arranged frame  $n'$ , which supports a platinum sponge  $n^3$  and which is provided with an eyelet  $n^4$  at its upper end, through which passes a supporting-rod  $n^5$ , which is provided with a spring-clasp  $n^6$ , saddled on the tubular upper part of the burner. In Fig. 7 is shown an upright  $p$ , provided with a part  $p'$ , bent at right angles to the same, which supports a platinum wire  $p^2$ , to which is fixed a platinum sponge  $p^3$ , the lower end of the platinum wire  $p^2$  being connected with a part  $p^4$ . The upright rod  $p$  is supported by a disk  $p^5$ , which also supports the part  $p^4$  and which is provided with one or more perforations  $p^6$  for the passage of the gas. The burner shown in Fig. 7 is for the adaptation of this special kind of igniter provided with 40 a part  $e^2$ , having an opening  $e^3$ , in which the disk  $p^5$  is seated. In Fig. 8 the upper part  $e$  of the burner is provided with sockets  $r'$ , in which is supported a transversely-arranged rod  $r$ , which supports the platinum wires  $r^2$ , to which is fixed a platinum sponge  $r^3$ . In Fig. 9 a further modification of the igniter is shown as applied to a different kind of burner  $s$ , which is provided with air-openings  $s'$ , terminating in a mixing-chamber  $s^2$ . The upper 45 part  $s^3$  of the burner  $s$  is provided with gas-outlet openings  $g$  and a circular cavity  $s^4$ , the bottom  $s^5$  of which is foraminated, while the walls  $s^6$  support the ends of a transverse wire  $w$ , to which an igniter  $i$  is attached. The gas emanating from the perforations  $s^5$  of the bottom  $s^6$  serve to bring the igniter to incandescence, whereby a flame is formed on the up-

per part of the burner, which is fed from gas emanating from the openings  $g$ .

Instead of the different forms of igniters shown many others may be substituted, the main feature of the invention being in the arrangement of the igniter in the upper part of the burner proper, whereby the current of gas of the burner comes in contact with the platinum sponge, which immediately yet gradually ignites the gas.

The great disadvantage of gas-burners which has caused many to adopt the electric light—namely, the use of matches—is overcome by my improved self-igniting burner, as it is only necessary by the use thereof to turn the cock of the burner. Matches are not only very often a source of inconvenience, but are also objectionable on account of the danger of fire attendant the use of the same. Furthermore, when the gas-jet of the improved igniter is accidentally left open the gas emanating from the burner will immediately ignite, whereby the flame produced will give knowledge of the fact. The ignition of the gas will have the further advantage that the gas will be ignited and burned while emanating from the burner, and so remove the danger of gas asphyxiation. When applied to gas-burners provided with incandescent mantles, the absence of explosions with attendant concussions insures a longer life to the same, no matches are required for its ignition, and all injury caused by falling matches is obviated.

The improved igniter may be applied to any burner by any one without requiring any changes in the same and may be, due to its simplicity, manufactured at a low cost, giving thus ample reason for general adoption.

I claim as new and desire to secure by Letters Patent—

A self-supporting burner, comprising a burner-tube, a foraminated wall in said burner-tube arranged transversely thereto, and means supported within said burner-tube below the upper edge of the same and above the foraminated wall, adapted to be brought to incandescence when impinged by a current of combustible gas, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV OBERLAENDER

Witnesses:

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C. P. GOEPEL.