(No Model.)

L. V. LEWITZKI.

ELECTRIC LIGHTER FOR GAS BURNERS.

No. 601,351. Patented Mar. 29, 1898.

Fig 1.

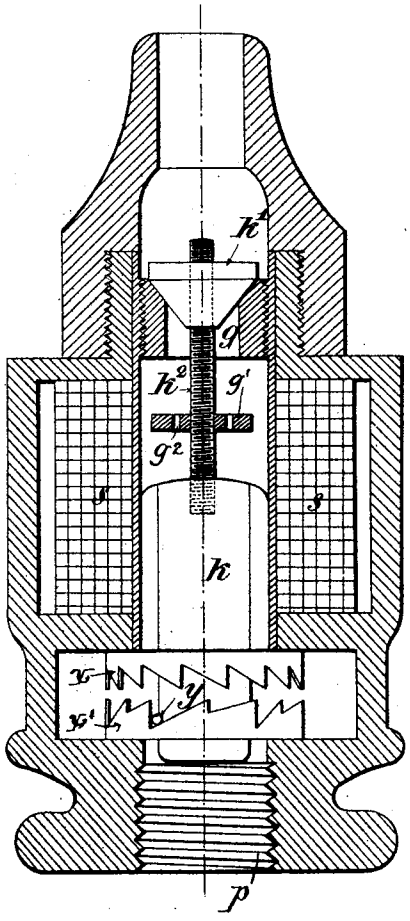
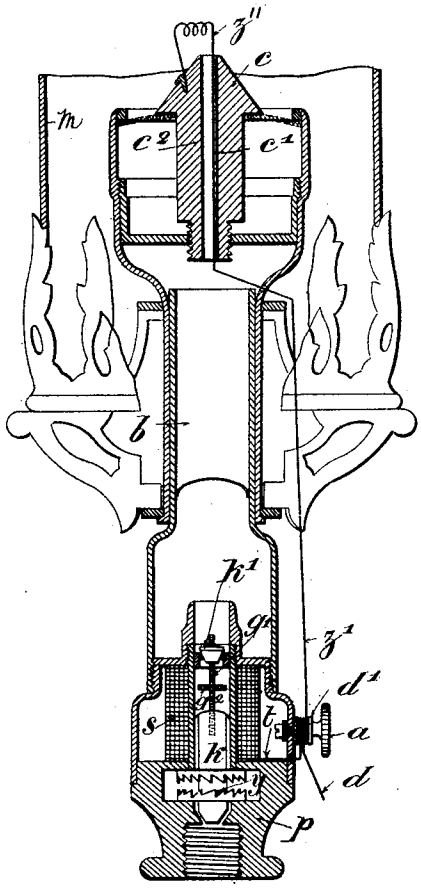


Fig 2.



WITNESSES:

Ruth Lowe

W. R. Edelen.

INVENTOR

Ladislas V. Lewitzki

BY

Howard Mann

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LADISLAS VICTOR LEWITZKI, OF BRUSSELS, BELGIUM, ASSIGNOR TO THE COMPAGNIE INTERNATIONALE POUR L'ALLUMAGE ET L'EXTINCTION INSTANTANÉE DU GAZ, OF SAME PLACE.

ELECTRIC LIGHTER FOR GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 601,351, dated March 29, 1898.

Application filed April 15, 1897. Serial No. 632,336. (No model.)

To all whom it may concern:

Be it known that I, LADISLAS VICTOR LEWITZKI, of Brussels, Belgium, have invented certain new and useful Improvements in Electric Lighters for Gas-Burners, which improvement is fully described in the following specification.

The invention relates to electrically-operated igniters for gas-burners, and the improvements forming the subject-matter of the present application are particularly applicable to incandescent gas-burners, such as the Welsbach. These improvements and the advantageous results thereof will be explained in connection with the accompanying drawings, in which—

Figure 1 illustrates in vertical section, partly in elevation, the lower part of the apparatus, the appliances for operating the igniter being omitted. Fig. 2 is a view similar to Fig. 1 on a smaller scale, showing the burner complete.

In the drawings, s represents the exciting-coil of the solenoid, inclosed in a suitable casing, and k is the core of the solenoid. In the interior of the magnet is a gas-chamber communicating with the supply-pipe by the inlet p and having the outlet g at the top. This outlet is provided with an inverted-cone valve k', connected by a screw with core k, so that the valve closes downwardly by gravity. In a chamber of the casing beneath the magnet are the devices for opening and closing valve k', consisting of two rings x x', having their opposing faces notched, as shown. These devices are such as have been heretofore employed and a brief description of the operation will suffice. Core k has a projecting pin y, which engages in the indentations of the lower ring x'. In this ring a shallow indentation alternates with a deep one. When pin y rests in a deep notch, as shown, the valve is closed, and when in a shallow one the valve will be open. When the circuit of coils s is closed and the core consequently raised, pin y strikes against the inclined edge of one of the upper teeth, partly rotating it, (and also core k,) so that when the circuit is broken it falls into the next indentation of the lower ring. Consequently successive closings of the circuit alternately open and close the valve k'.

As shown in Fig. 2, the electric current for operating the lighter arrives by conductor d, leading to binding-post a, from which a conductor t leads to coil s and conductor z' to the platinum igniting-coil z''. Conductor z' passes through the bore of the metallic crown c of the burner, whose walls c' c^2 are of insulating material. The igniting-spiral z'' is located in the cold zone of the Bunsen flame and is connected with the metallic crown c. The latter is in electric contact with the metal casing, which thereby serves as a return-conductor. Whenever the circuit-closer is operated to excite coil s, a current flows through the derived circuit z', rendering the platinum coil z'' incandescent. As soon as the circuit is again opened this coil ceases to be incandescent. Thus the igniter is rendered operative simultaneously with the excitation of the operating-magnet to turn on the gas.

It is desirable that the igniter should act upon a very small current of gas and thus create an initial flame, which ignites the main current. To this end the valve-stem k^2 is provided with a disk g', having a small aperture or apertures g^2, this disk constituting an auxiliary valve and being so located that when the core k is raised by the magnet to its full height it will close the gas-outlet g, so that so long as the electric circuit is closed (and consequently so long as coil z'' is incandescent) only so much gas can issue as can pass through the apertures g^2. When the solenoid falls back and is arrested by the engagement of pin y in one of the shallow notches, the gas-outlet will be fully opened and so remains during the time the burner is lighted. By these means the lighting is effected in a gradual manner and explosions are avoided.

In Fig. 2, b indicates the base of a Bunsen burner, and m a refractory mantle, which becomes incandescent during the time the burner is lighted.

It will be understood that in lieu of a platinum resistance-coil other equivalent igniters, such as a sparking device, may be employed.

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

1. In a gas-lighter, the combination with the burner, of a magnet, a valve for admitting gas to the burner, means actuated by said magnet for opening and closing the valve, an electric igniter for the burner, an electric circuit including the magnet and the igniter so that the latter is energized only while the circuit of the magnet is closed, and an auxiliary valve connected to and operating with, but in opposition to, the main valve, for reducing the area of the passage opened by the latter while the circuit is closed and thereby diminishing the flow of gas to the burner during said period, substantially as described.

2. In a gas-lighter, the combination with the burner, of a solenoid, a core therefor, a valve-seat, a valve-stem on the core, a main and an auxiliary valve carried by said valve-stem and located on and operating against opposite sides of the valve-seat for controlling the flow of gas to the burner, an electric igniter, an electric circuit including the solenoid and igniter, and means, such as indented rings and a pin on the core, for moving the valve to an open or a closed position upon movement of the solenoid-core, substantially as described.

3. In a gas-lighter, the combination with the burner, of a solenoid, a core therefor, a valve-seat, a screw-threaded valve-stem on the core, a main and an auxiliary valve engaging and adjustable upon said screw-threaded valve-stem and located on and operating against opposite sides of the valve-seat for controlling the flow of gas to the burner, an electric igniter, an electric circuit including the solenoid and igniter, and means, such as indented rings and a pin on the core, for moving the valve to an open or a closed position upon movement of the solenoid-core, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LADISLAS VICTOR LEWITZKI.

Witnesses:

H. HAWTHORN,

GREGORY PHELAN.