To all whom it may concern:

Be it known that I, Paul Benard, a citizen of France, residing at No. 8 Place Auban-Moët, Epernay, Marne, France, have invented new and useful improvements in Devices for Lighting by Electricity Reversed Gas-Burners, of which the following is a specification.

This invention has for its object improvements in devices for lighting reversed gas-burners, in which a platinum coil brought to a red heat by the passage of an electric current is employed for the purpose of lighting the burner. These improvements consist in placing the platinum coil outside the caloric focus formed by the light-burner, so as to protect it therefrom though the gases are concentrated in the space in which said coil is arranged as soon as the burner is opened, whereby the lighting is insured under normal conditions. By these means the rapid spoiling and wearing of the lighting-coil is avoided.

The annexed drawings show a form of construction of the improvements embodying this invention:

Figure 1 is an elevation view of a reversed burner provided with the lighting device and seen from the side of said device. Fig. 2 is a side view of the burner, Fig. 3 is a plan view of the supporting-plate on which the coil-holder is fixed. Figs. 4 and 5 represent in front and side views the coil-holder.

The reversed burner comprises a Bunsen a, arranged at the upper part, a porcelain reversed cone b in the central part, and an outlet gas-nozzle c, arranged at the lower part. A metal plate d, provided with a central opening o, is fixed between the Bunsen and the body of the burner. To this plate are attached arms f, which support downward a ring g concentric with the burner. The platinum coil s is arranged between two arms 1 and 2 of the coil-holder 3, and the latter is secured to the plate d by means of lugs h and i, cut from said plate and which are raised up to form hooks. A wire-gauze covering k is placed about the burner on the side of the coil, as shown in the drawings. The covering 7, which is arranged vertically, extends only up to the top of the plate d, to which it is hooked by means of the tongue l of said plate, which is turned down and engaged in the opening m of the covering. Downward the covering extends to the ring g, on which it rests, and sidewise it extends to two adjacent arms f. A sort of a chamber limited by the plate d and the covering k is thus formed, and it is in this chamber that is hung the coil s. A second plate or screen p, placed over the burner, is arranged obliquely above the lower openings of said burner, so as to force in all cases the gas coming out from these openings when the burner is opened to gather in the chamber where the coil is hung.

Finally, a wire-gauze r surrounds for a large part the Bunsen, so as to prevent the flame produced during the lighting from firing the Bunsen itself. With this construction it is possible of arranging the reversed burner more or less inclined to the vertical or quite vertical, and in all cases when the gas-cock will be opened almost all the gas escaping from the burner will be concentrated in the chamber where the platinum coil is placed. If at this moment the electric current has been opened, the coil being brought to a red heat in the mass itself of the gas the lighting will be insured.

It will be understood that as soon as the lighting is effected the coil s, placed toward the top of the apparatus and behind the protecting-cap formed by the cone, will be in no way subjected to the flame or to the strong heat of the burner, so that one will have no rapid wearing to fear.

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

1. A device for lighting by electricity reversed gas-burners, comprising in combination with a Bunsen and a reversed cone of porcelain placed between the Bunsen and the lower outlet gas-openings, a metal plate d fixed between the Bunsen and the body of the burner, a support 3 fixed on said plate, two current-conductors 1 and 2 carried by said plate, a platinum coil s fixed at the lower end of the two conductors between the plate d and the reversed cone, a wire-gauze covering k placed about the burner on the side of the coil, outside the latter, and extending upward to the plate d, substantially as described and for the purpose set forth.

2. A device for lighting by electricity reversed gas-burners, comprising in combination with a Bunsen and a reversed cone of porcelain placed between the Bunsen and the lower outlet gas-openings, a metal plate d fixed between the Bunsen and the body of the burner, a support 3 fixed on said plate, two current-conductors 1 and 2 carried by said plate, a platinum coil s fixed at the lower
end of the two conductors between the plate $d$ and the reversed cone, a wire-gauze covering $k$ placed about the burner on the side of the coil, outside the latter, and extending upward to the plate $d$, and a screen $p$ arranged obliquely on the burner above the lower outlet gas-openings, and the upper edge of which is on the side of the covering $k$, substantially as described and for the purpose set forth.

3. A device for lighting by electricity reversed gas-burners, comprising in combination with a Bunsen and a reversed cone of porcelain placed between the Bunsen and the lower outlet gas-openings, a metal plate $d$ fixed between the Bunsen and the body of the burner, a support $3$ fixed on said plate, two current-conductors $1$ and $2$ carried by said plate, a platinum coil $s$ fixed at the lower end of the two conductors between the plate $d$ and the reversed cone, a wire-gauze covering $k$ placed about the burner on the side of the coil, outside the latter, and extending upward to the plate $d$, a screen $p$ arranged obliquely on the burner above the lower outlet gas-openings, and the upper edge of which is on the side of the covering $k$, and a second wire-gauze $r$ placed about the Bunsen, substantially as described and for the purpose set forth.

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

PAUL BENARD.

Witnesses:
L'bon Louis Bur,
August Vouce.