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PATENT SPECIFICATION



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486,269

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COMPLETE SPECIFICATION

Improvements in Electric Gas-Lighters

We, TELEFONAKTIEBOLAGET L. M. ERICSSON, a company registered under the Laws of Sweden, of Döbelnsgatan 18, Stockholm, Sweden, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to electric gas-lighters and relates more particularly to such electric gas-lighters for gas stoves or the like in which the gas is lighted upon actuation of a contact device, preferably by means of an electric spark generated in a spark-gap provided adjacent the burner.

According to the present invention there is provided an electric gas-lighter for gas stoves or the like, in which the gas is ignited on the actuation of a contact device under the control of the gas flowing to the burner and is characterised in that the contact device is arranged to be actuated periodically so long as gas continues to flow to the burner.

The periodic actuation of the contact device causes a resultant repetition of the electric igniting impulse spark or energizing of an ignition filament so long as gas continues to flow through the burner, the flowing gas itself being made to actuate the contact device, for instance through the intermediary of the counting mechanism of the ordinary gas meter. In case the gas-lighter is to be used for a plurality of burners provisions may be made according to the invention to have the various spark gaps or ignition filaments, which are allotted to the respective burners, connected into the ignition circuit consecutively and in unison with the periodically actuated contact device, thus avoiding the division of the electric energy available on several spark gaps or filaments simultaneously.

The invention will now be described more in detail, reference being had to the drawing forming part of this specification and illustrating diagrammatically a preferred embodiment.

The drawing illustrates an electric gas-lighter for two burners each provided with a spark gap 10 or 11 respectively

which with the aid of an appertaining auxiliary contact device 12 or 13 respectively can be connected to the secondary side of a transformer 14. Through the primary winding of the transformer is periodically discharged a condenser 15 which through the aid of a periodically operating contact device 16 is connected alternately to the direct current terminals of a rectifier bridge 18 and to the primary winding of the transformer, the rectifier bridge being permanently connected to an alternating current source in series with two ohmic resistances 17. The contact device 16 and the auxiliary contact devices 12 and 13 are controlled each by an appertaining cam 19, 20 and 21 respectively, said cams being provided on a common shaft 22 which is driven through a suitable gearing 23 from the counting mechanism of the gas meter 24.

The gas-lighter mechanism just described operates in the following manner. Whenever gas is flowing out through one or more of the burners the counting mechanism of the gas meter 24 will be moving and drive through the gearing 23 the shaft 22 at a speed which is proportional to the amount of gas supplied to the burners per unit of time. The cam 19 then brings the contact device 16 to connect the condenser 15 alternately to the rectifier bridge 18, the condenser being then charged comparatively slowly through the ohmic resistances 17, and to the primary winding of the transformer 14, the condenser just charged being then rapidly discharged through the latter. The discharge causes a high electromotive force to be induced in the secondary winding of the transformer. The cams 20 and 21 are so shaped that one of the spark gaps 10 and 11 will be connected to the secondary winding each time a discharge of the condenser takes place, so that the voltage induced in the secondary winding will cause a spark discharge alternately in the two spark gaps. Since the spark discharges are periodically repeated in this manner at all the burners, this will insure that a flame that happens to have become extinguished will be ignited anew before any considerable amount of gas has had

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time to flow out into the room.

Since in the shown embodiment there is never direct electric connection between the source of energy and the spark gaps the transmission of energy will cease completely when the gas meter stops irrespective of the position then occupied by the cam 19.

The shaft 22, of course, need not necessarily be actuated by the gas meter, although this is for the present considered to be the preferred arrangement, but it is also possible to drive the shaft from a suitable separate gas turbine which is included in the gas pipe leading to the gas burners. Furthermore, it is not essential for the invention whether the transmission of energy from the source of current to the ignition device is effected with the aid of a condenser as shown on the drawing or in some other manner, for example, by means of an induction coil. Furthermore, the contact devices included in the connection can be of any desired kind. Generally all such modifications of the described embodiment can be effected as fall within the scope of the appended claims.

Having now specifically described and ascertained the nature of our said invention and in what manner the same has to be performed, we declare that what we claim is:—

1. An electric gas-lighter for gas stoves or the like, in which the gas is ignited on the actuation of a contact device under the control of gas flowing to the burner, characterized in that the contact device is arranged to be actuated periodically so long as gas continues to flow to the burner.

2. An electric gas-lighter according to claim 1, characterized in that the contact device is arranged to be actuated by the gas meter for example through the intermedium of a shaft driven from the counting mechanism of the gas meter.

3. An electric gas-lighter according to claims 1 and 2 having ignition members, for example spark gaps, for a plurality of gas burners, characterized in that the ignition members allotted to the respective gas burners are arranged to be connected into the ignition circuit consecutively and in unison with the periodically actuated contact device with the aid of auxiliary contact devices.

4. An electric gas-lighter according to claim 3 in which the periodically actuated contact device is actuated through the intermedium of a rotating shaft, characterized in that the auxiliary contact devices allotted to the individual ignition members are also actuated by the same shaft preferably by means of cams which are angularly displaced mutually.

5. An electric gas-lighter according to any of the preceding claims, characterized in that the contact device actuated under the control of the gas is arranged to connect a condenser alternately to a current source and to an ignition member, the condenser being preferably arranged to be separated from the current source before it is connected to an ignition member.

6. An electric gas-lighter according to claim 5, characterized in that a transformer is connected between the contact device and the ignition member or ignition members.

7. An electric gas-lighter having its parts constructed arranged and adapted to operate substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 12th day of August, 1937.
For TELEFONAKTIEBOLAGET L. M.

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[This Drawing is a reproduction of the Original on a reduced scale.]

