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PROVISIONAL SPECIFICATION

An Improved Electric Lighter for Cigarettes and the like

I, ERIC BUTLER CARTER, Lieutenant Commander (E), Royal Navy, of 1, Devon Court, Villa Road, Nottingham, England, British Subject, do hereby declare the nature of this invention to be as follows:—

This invention has reference to an improved electric lighter for cigarettes, cigars and the like and is more particularly concerned with the provision of a lighter for use on a table or public counter or like supporting surface.

The lighter of the present invention comprises a small magneto-electric generator having a fixed armature and a rotatable field magnet casing or housing mounted for rotation about a vertical axis, the generator being mounted on a suitable base and being surmounted by a petrol lamp, the burner of which is conductively connected to one of the current leads and is disposed in close proximity to an ignition pin or like member which is conductively connected to the other current lead. My invention also includes the provision of a snuffer slidably mounted on the ignition pin and movable thereon to extinguish the burner flame.

According to one feature of my invention the spark gap between the burner and the ignition pin is located in the vertical rotational axis of the generator so that on ignition of the burner by rotation of the field magnet housing to produce a spark at the spark gap, the burner flame is unaffected by continued rotation of the generator.

According to a further feature, the ignition pin is horizontal and is radially disposed with respect to the rotational axis of the generator, and the snuffer is freely slidable on the ignition pin, with the result that the snuffer is urged radially outwards by centrifugal action on rotation of the generator, thereby exposing the spark gap and burner flame.

My invention further contemplates the use of an ignition magneto as the generator, thus producing a high tension spark, and enabling discarded motor vehicle magnetos to be used in the construction of lighters according to the

invention.

In carrying out my invention the magneto-electric generator, which may be any known type of ignition magneto, is arranged with its rotational axis in a vertical position and the lower end of the armature spindle is secured to a base which may be provided with a slip-preventing under surface of felt, cloth, rubber or other suitable material to enable the generator to stand upon a table, counter or other flat surface. Alternatively, the base may be weighted or it may be fixed to the supporting surface. Mounted upon the upper end of the generator and conductively connected to one of the current leads is a fuel chamber for petrol or like liquid fuel, a burner tube extending up from said chamber and terminating in a horizontally and radially directed burner head. For example, the fuel chamber may be mounted on the contact breaker cam ring. A wick of suitable form passes through the burner tube into the fuel chamber which may be packed with absorbent material. The burner head terminates in or close to the rotational axis of the generator opposite a radially adjustable ignition pin which is mounted upon the rotatable field magnet housing of the generator and is conductively connected to the other current lead or collector ring of the magneto. Freely slidable on the ignition pin is a snuffer tube which, when moved radially inwards by hand, closes over the spark gap and over the extremity of the burner head, and may abut against an external flange or conical ring on the burner head. The field magnet housing may be provided with one or more knobs or hand grips for enabling it to be rotated to generate a spark between the ignition pin and the burner head. The rotation of the field magnet housing causes the snuffer tube to move radially outwards on the ignition pin by centrifugal action, thus exposing the burner flame, which may be extinguished by moving the snuffer tube radially inwards over the burner head.

It will be understood that any suitable magneto-electric machine which is

[Price 1/-]

adapted to be hand-driven may be used in place of the ignition magneto, and that the parts should be insulated where necessary to avoid short-circuiting of the current.

Dated this 26th day of June, 1942.

JOHNSONS,
Chartered Patent Agents,
10, Stafford Street, Edinburgh, 3.

COMPLETE SPECIFICATION

An Improved Electric Lighter for Cigarettes and the like

I, ERIC BUTLER CARTER, Lieutenant Commander (E), Royal Navy, of 1, Devon Court, Villa Road, Nottingham, England, British Subject, do hereby
10 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:—

15 This invention has reference to an improved electric lighter for cigarettes, cigars and the like and is more particularly concerned with the provision of an improved form of magneto-electric lighter
20 for use on a table or public counter or like supporting surface.

The lighter of the present invention comprises a magneto-electric generator or ignition magneto mounted on a suitable
25 base with its rotational axis vertically disposed, the generator supporting a petrol or like liquid fuel lamp, the burner of which is located in or in close proximity to the rotational axis of the generator and arranged in the generator
30 circuit in close proximity to an ignition pin or ignition member also arranged in the generator circuit, to provide a spark gap between the burner and the ignition
35 pin. The lighter preferably also includes a snuffer mounted on the ignition pin and movable to extinguish the burner flame.

40 According to one feature of my invention the burner and the ignition member are so positioned that the spark crosses the vertical rotational axis of the generator so that on ignition of the burner by rotation of the generator to produce a spark
45 at the spark gap, the burner flame is unaffected by continued rotation of the generator.

50 According to a further feature, the ignition pin is horizontal and is radially disposed with respect to the rotational axis of the generator, and the snuffer is freely slidable on the ignition pin and movable radially outwards to expose the burner.

55 My invention further contemplates the use of a high tension ignition magneto as the generator, thus producing a high tension spark, and enabling discarded

motor vehicle magnetos to be used in the construction of lighters according to the
60 invention.

According to the preferred manner of carrying out my invention an ignition magneto, preferably of the known high
65 tension type, is arranged with its rotational axis in a vertical position and the lower end of the armature spindle is secured to a base which may be provided with a slip-preventing under-surface of felt, cloth, rubber or other suitable
70 material to enable the generator to stand upon a table, counter or other flat surface, or the base may be weighted or fixed to the supporting surface. Mounted upon the generator is a fuel chamber for
75 petrol or like liquid fuel, a burner tube extending up from said chamber and terminating in a horizontally and radially directed burner head. For example, the fuel chamber may be mounted on the
80 contact breaker cam ring. A wick of suitable form passes through the burner tube into the fuel chamber which may be packed with absorbent material. The burner head terminates in or close to the
85 rotational axis of the generator opposite a radially adjustable ignition pin which is mounted upon the rotatable field magnet housing of the generator, the burner head and ignition pin being arranged in
90 the high tension circuit of the magneto. Freely slidable on the ignition pin is a snuffer tube which, when moved radially inwards by hand, closes over the spark gap between the burner head and the
95 ignition pin and over the extremity of the burner head, and may abut against an external flange or conical ring on the burner head. The field magnet housing may be provided with one or more knobs
100 or hand grips for enabling it to be rotated to generate a spark between the ignition pin and the burner head. The rotation of the field magnet housing automatically causes the snuffer tube to move
105 radially outwards on the ignition pin by centrifugal action, thus exposing the burner flame, which may be extinguished by moving the snuffer tube radially
110 inwards over the burner head.

It will be understood that any suit-

able magneto-electric machine which is adapted to be hand-driven may be used in place of the ignition magneto, and that the parts should be insulated where necessary to avoid short-circuiting of the current.

According to an alternative form of my invention the generator or ignition magneto, arranged with its rotational axis vertically disposed, has a stationary field magnet housing and the armature is rotatable by hand. In this case the lamp and ignition pin are stationarily mounted or attached to the stationary field magnet housing and the snuffer is slidable on the ignition pin and insulated therefrom. The burner of the lamp and the ignition pin are arranged in the circuit of the generator or magneto so that the action of rotating the armature by hand generates a spark between the lamp burner and the ignition pin, the spark gap being enclosed by the snuffer. The resulting explosion of the vapour within the snuffer will automatically force the latter into an open position in which it uncovers the burner flame until the snuffer is returned by hand to its closed position.

In order that the invention may be more clearly understood, reference is hereinafter made to the accompanying explanatory drawing illustrating the preferred form of my improved lighter.

In the construction shown, a magneto 1 of known type is arranged so that its armature spindle 2 is vertical and the driving pinion 3 on the armature spindle 2 is fixed into a base 4 of wood or other suitable material. The distributor of the magneto is removed and the spark is formed between an ignition pin 5 and the lip of a burner tube 6. For this purpose the ignition pin 5 is connected to the high tension cable 7 of the magneto and the burner tube 6 is fixed to a metallic cap 8 covering a fuel chamber 9 which rests on the cam ring or contact breaker casing 10 of the magneto. The base 11 of the fuel chamber provides an air space 12 above the contact breaker mechanism. Passing through the burner tube 6 is a wick 13 in which it is an advantage to include a strand of asbestos to reduce the adjustments required. The tip of the wick should lie on the centre line of rotation 14—14 of the generator.

The field magnet housing 15 of the generator is closed by a cover plate 16 through which the high tension cable 7 is passed, the latter passing also through the usual timing lever 17 provided for adjusting the timing of the magneto spark. Mounted on the lever 17 is an insulated post 18 through which passes

an adjusting screw 19 carrying the ignition pin 5 adjustable by the provision of a knurled knob 20 and locking nut 21. The high tension cable 7 may be secured to the screw 19 by the locking nut 21. Slidable on the ignition pin 5 is a tubular snuffer 22 shown in full lines in its open position. The dotted lines show the closed position of the snuffer, which then abuts against a conical ring 23 secured on the burner tube 6. A knob 24 or a plurality of equally spaced knobs attached to the field magnet housing 15 enables the latter to be rotated about the stationary armature.

It will be apparent that rotation of the housing 15 will automatically cause the snuffer 22 to move into its open position by centrifugal action and will at the same time generate an ignition spark between the ignition pin 5 and the tip of the burner tube, thus igniting the burner. The snuffer 22 can be moved by hand into its closed position to extinguish the burner flame. The fuel chamber 9 may be filled by lifting the cap 8 or by providing a filling orifice on the cap 8.

The clearance between the snuffer 22 and the cap 8 must be greater than the length of the spark gap, in order to prevent short-circuiting, or insulation may be provided between the snuffer 22 and cap 8.

The base 4 may be fixed to a supporting surface or its under-surface may be covered with a non-slip material.

I am aware that a hand-driven magneto-electric lighter mounted on a base has previously been proposed with a horizontal rotational generator axis, and with the burner of the lamp positioned well clear of the said rotational axis and in the generator circuit in close proximity to a movable contact member in the generator circuit, the contact member being arranged to separate from the burner to produce a spark only during the last effective revolution of the generator armature, when the current has attained its greatest strength and after a snuffer has automatically uncovered the burner.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electric lighter comprising a magneto-electric generator or ignition magneto mounted on a base and having its rotational axis vertically disposed, a liquid fuel lamp carried by the generator or magneto, the burner of said lamp

- being located in or in close proximity to the rotational axis of the generator or magneto, and an ignition pin or ignition member arranged in close proximity to the burner of the lamp, said ignition member and burner being arranged in the generator circuit and providing a spark gap between them.
2. An electric lighter according to claim 1 including a snuffer mounted on the ignition pin or ignition member.
3. An electric lighter according to claim 1 or 2 in which the burner and ignition member are so positioned that the spark crosses the rotational axis of the generator or magneto.
4. An electric lighter according to claim 2 or 3 in which the ignition member is horizontal and is radially disposed with respect to the rotational axis of the generator, and the snuffer is movable radially on the ignition member.
5. An electric lighter according to any preceding claim in which the armature of the generator is fixed and the field magnet housing is rotatable.
6. An electric lighter according to claim 5 in which the lamp and burner are mounted above the armature and the ignition member is carried by the field magnet housing.
7. An electric lighter according to claims 5 and 6 and having the features of claim 4 and in which the burner tube terminates in a horizontal and radially directed burner head.
8. An electric lighter according to claim 6 having the fuel chamber of the lamp mounted on the contact breaker casing or cam ring of the contact breaker mechanism.
9. An electric lighter according to claim 7 having a flange or ring on the burner head to provide an abutment for the snuffer in its closed position.
10. An electric lighter comprising a high tension ignition magneto supporting an ignition pin and fuel burner in the high tension circuit of the magneto substantially as herein described and illustrated by the accompanying drawing.

Dated this 23rd day of October, 1942.

JOHNSONS,

Chartered Patent Agents.

10, Stafford Street, Edinburgh, 3.

This drawing is a reproduction of the Original on a reduced scale.

