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PATENT SPECIFICATION



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347,340

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PROVISIONAL SPECIFICATION.

Improvements in Lighters for Cigars, Cigarettes and the like.

I, GEORGE JAMES BROWN, of "Winona", Devonshire Avenue, Beeston, Nottinghamshire, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention comprises improvements in lighters for cigars, cigarettes and the like and has reference to automatic lighters wherein combustible material is electrically lighted by a spark device.

According to the present invention a lighter of the above type is provided embodying a stationary and a movable member, one of said members constituting a carrier for combustible material, an induction coil, and means whereby the displacement of said movable member from its normal position closes the primary circuit of said induction coil and produces in the secondary circuit of said coil a spark gap so as to ignite the combustible material by the resultant sparking.

The electric current for the device may be obtained from a battery or batteries located in a self-contained manner in a hollow base portion of the lighter, or such current may be obtained from an exterior source through a plug-in or other connection.

In a convenient manner of carrying out the invention the device is provided with a hollow base advantageously comprising a receptacle having a hinged cover which is screwed or otherwise secured in the closed position. Upon this cover is mounted a hollow metal upstanding post which may be of approximately U section secured to the aforesaid cover by a suitable plate, said post having at its upper end a laterally projecting portion, and having at its lower end two wing portions. Between these wing portions is pivoted a downwardly projecting arm or extension of a cylindrical or other suitably shaped receptacle for petrol or other inflammable fluid, said pivoted extension projecting down through a hole in the base cover. Within the petrol container is accommodated a suitable wick which projects upwardly through a tubular extension at the top of said container, said tubular extension normally terminating closely beneath the flat underface of the aforesaid lateral projection at the top of the upstanding post. A filler cap or plug is provided at the upper part of the petrol container.

To the lower end of the extension of the petrol container immediately beneath the cover of the base is pivotally connected the one end of a metal contact bar or the like having on its upper edge or part a cam projection, the opposite end of said bar having attached thereto a coiled spring which is in turn fixed by screw or otherwise to the base cover. This spring serves normally to retain the pivotally mounted petrol holder and wick tube in the upright position with the open end of said wick tube beneath the aforesaid lateral projection of the upstanding post.

Secured by staples or otherwise to the underside of the base covering so as to extend transversely above the contact bar between the upstanding cam projection thereof and the downward extension of the hinged petrol holder, is a metal wire, which wire extends to a suitable battery or batteries contained in the base of the device, and through said battery to the one end of the primary winding of a suitable induction coil also contained in said base, which coil includes a vibrator, the opposite end of the primary winding being suitably connected to the aforesaid spring which is connected to and exerts an influence upon the metal contact bar.

The secondary winding of the induction coil is connected to a heavily insulated wire which projects up within the upstanding post on the cover and terminates in a bare portion projecting downwardly from a hollow conical insulator inserted in the laterally projecting arm at the top of the post, said secondary winding being also connected by wire to a bolt or screw by which the metal base plate of the upstanding post is connected to the base cover.

In operation, the petrol container with wick tube is swung forwardly on its pivot by the depression of a forwardly projecting handle portion at the lower end of said container, and in doing so the cam projection on the aforesaid contact bar is moved into engagement with the trans-

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versely extending wire to close the primary circuit of the induction coil and set the vibrator in action. The energising of the primary winding induces current in the secondary winding of the induction coil, and said induced current passes through the insulated wire up the hollow post, leaps the gap between the bare end of said wire and the mouth of the wick tube when the latter is brought beneath said wire, and in so doing a series of sparks are produced which ignite the petrol soaked wick and produce a flame by means of which cigars, cigarettes and the like may be lighted. It will be appreciated that sparking is produced during the first portion only of the pivotal movement of the petrol container and wick tube, said sparking being discontinued

when said container and wick tube are moved fully forward. When pressure is released the petrol container and wick tube move back automatically under the influence of the aforesaid spring to the upright position and the flame is automatically extinguished by the lateral projection at the upper end of the upstanding post.

If desired, instead of obtaining the electric current from a battery contained in the base of the device, said current may be obtained from any exterior electric lighting system by the employment of a flexible connection, plug and switch.

Dated this 7th day of February, 1930.

ERIC POTTER,

Patent Agent,

London and Nottingham.

COMPLETE SPECIFICATION.

Improvements in Lighters for Cigars, Cigarettes and the like.

I, GEORGE JAMES BROWN, of "Winona", Devonshire Avenue, Beeston, Nottinghamshire, a British Subject, 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:—

This invention relates to improvements in lighters for cigars, cigarettes and the like and refers to that class of lighter including a fuel reservoir and a wick dipping therein and electrical means for igniting said wick when required, by means of a spark produced by the high tension circuit of an induction coil.

In a lighter of the class referred to it has already been proposed to mount the wick tube and the fuel reservoir therefor upon a pivotal support and to arrange that a metal part of the wick tube near one end thereof can come into contact with a brush, said brush being so connected that when the wick tube comes in contact therewith a low tension current is passed through the wick tube and through an ignition coil whilst on further displacement of the wick tube the latter moves away from the brush, whereupon a high tension spark is produced which serves to ignite the volatile material saturating the wick.

In accordance with the present invention a lighter for cigars, cigarettes and the like of the class referred to above is provided wherein the wick tube is mounted upon a pivot and is adapted for manual operation, contact elements being provided whereby on displacement of

said pivoted wick tube the low tension circuit of an induction coil is completed, the secondary or high tension winding of said coil serving to produce a spark between a sparking contact and the mouth of the wick tube so as to ignite the volatile material saturating the wick.

In a preferred construction the device according to the present invention comprises a box like structure on the upper face of which is mounted an upstanding post the upper end of which is turned over approximately at right angles, a pivotally mounted reservoir carrying a wick tube which in its inoperative position is located immediately below the turned over portion of the post and a high tension electric cable within said post, the arrangement being such that on displacement of the reservoir by a suitable hand lever a series of sparks is caused to pass between a sparking point at the extremity of the turned over end of the upright post and the wick tube to cause ignition of the wick within the latter, continued movement of the operating lever serving subsequently to put the sparking mechanism out of operation.

The electric current for the device may be obtained from a battery or batteries located in a self-contained manner in the box like structure, or such current may be obtained from an exterior source through a plug-in or other connection.

For the purpose of more fully describing the nature of this invention reference will now be made to the accompanying drawings, wherein:—

Figure 1 illustrates in sectional eleva-

tion a lighter in accordance with this invention with the electrical circuits shown diagrammatically.

Figure 2 illustrates diagrammatically means for obtaining electric current from a source exteriorly of the device.

In a convenient manner of carrying out the invention the device is provided with a hollow base 1 advantageously comprising a receptacle having a hinged cover 2 which is screwed or otherwise secured in the closed position. Upon this cover is mounted a hollow metal upstanding post 3 which may be of approximately U shape in horizontal cross section secured to the aforesaid cover by a suitable plate 4, said post 3 having at its upper end a laterally projecting portion 3a, and having at its lower end two wing portions 3b. Between these wing portions 3b is pivoted a downwardly projecting arm or extension 5 of a cylindrical or other suitably shaped receptacle 6 for petrol or other inflammable fluid, said pivoted extension 5 projecting down through a hole in the base cover 2. Within the petrol container 6 is accommodated a suitable wick 7 which projects upwardly through a tubular extension 6a at the top of said container 6, said tubular extension normally terminating closely beneath the flat underface of the aforesaid lateral projection 3a at the top of the upstanding post 3. A filler cap or plug 8 is provided at the upper part of the petrol container.

To the lower end of the extension of the petrol container 6 immediately beneath the cover of the base is pivotally connected the one end of a metal contact strip 9 or the like having on its upper edge or part a cam projection 9a, the opposite end of said strip having attached thereto a coiled spring 10 which is in turn fixed by screw or otherwise to the base cover 2. This spring serves normally to retain the pivotally mounted petrol holder and wick tube 6a in the upright position with the open end of said wick tube beneath the aforesaid lateral projection 3a of the upstanding post.

Secured by staples or otherwise to the underside of the base cover so as to extend transversely above the contact strip 9 between the upstanding cam projection 9a thereof and the downward extension 5 of the hinged petrol holder 6, is a metal wire 11 which is connected to a suitable battery or batteries 12 contained in the base 1 of the device, and through said battery to the one end of the primary winding of a suitable induction coil 13 also contained in said base, which coil includes a vibrator 14, the opposite end of the primary winding being suitably

connected through said vibrator to the aforesaid spring 10 which is connected to and exerts an influence upon the metal contact strip 9.

The secondary winding of the induction coil is connected to a heavily insulated wire 15 which projects up within the upstanding post 3 and terminates in a bare portion 15a projecting downwardly from a hollow conical insulator 16 inserted in the laterally projecting arm at the top of the post, said secondary winding being also connected by wire to a bolt or screw 17 by which the metal base plate 4 of the upstanding post 3 is connected to the base cover 2.

In operation, the petrol container 6 with wick tube is swung forwardly on its pivot by the depression of a forwardly projecting handle portion 6b at the lower end of said container, and in doing so the cam projection 9a on the aforesaid contact 9 is moved at first into engagement with the transversely extending wire 11 to close the primary circuit of the induction coil 13 and set the vibrator 14 in action. The energising of the primary winding induces current in the secondary winding of the induction coil, and said induced current passes through the insulated wire 15 up the hollow post 3, leaps the gap between the bare end 15a of said wire and the mouth of the wick tube 6a when the latter is brought beneath said wire, and in so doing a series of sparks are produced which ignite the petrol soaked wick 7 and produce a flame by means of which cigars, cigarettes and the like may be lighted. It will be appreciated that sparking is produced during the first portion only of the pivotal movement of the petrol container and wick tube, said sparking being discontinued when said container and wick tube are moved fully forward on account of the fact that the cam 9a has then moved past the said transverse wire 11, thus breaking the primary circuit of the coil 13. When pressure is released the petrol container and wick tube move back automatically under the influence of the aforesaid spring 10 to the upright position and the flame is automatically extinguished by the lateral projection at the upper end of the upstanding post.

If desired, instead of obtaining the electric current from a battery contained in the base of the device, said current may be obtained from any exterior electric lighting system by the employment of a flexible connection 18, plug 19 and switch 20, (see Figure 2).

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. A lighter for cigars, cigarettes and the like of the class referred to wherein the wick tube is mounted upon a pivot and is adapted for manual operation, contact elements being provided whereby on displacement of said pivoted wick tube the low tension circuit of an induction coil is completed, the secondary or high tension winding of said coil serving to produce a spark between a sparking contact and the mouth of the wick tube so as to ignite the volatile material saturating the wick.

2. A lighter for cigars, cigarettes and the like of the class referred to including a heavily insulated wire extending through an upright post having an overturned portion at the top, a pivoted fuel reservoir carrying a wick tube which lies closely under the overturned portion of the upright support in its inoperative position, contact mechanism carried below the fuel reservoir and operated on pivotal displacement thereof to close the primary circuit of an induction coil and produce a spark between a sparking contact located at the forward end of said overturned portion and the wick tube so as to ignite the wick contained in the wick tube substantially as described.

3. A lighter as set forth in either of

the foregoing claims wherein the wick tube and the sparking contact are carried on the upper surface of a box like structure containing an induction coil and a circuit interrupter and, if desired, an operating battery for the induction coil.

4. A lighter as set forth in the last preceding claim wherein a plug-in connection is provided exteriorly of the box by which connection may be made to an exterior power source.

5. In a lighter as set forth in any of claims 1 to 4 this feature, namely that during the displacement of the wick tube, the primary circuit of the induction coil is first energised to cause the passage of a spark at the sparking points and is broken on continued displacement of the wick tube after sufficient sparking has occurred for the wick to be ignited.

6. A lighter as claimed in claim 1 and in which the wick tube is movable from its normal inoperative position against spring resistance.

7. A lighter for cigars, cigarettes and the like constructed, arranged and operating substantially as hereinbefore described and with reference to the accompanying drawings.

Dated this 8th day of November, 1930.

ERIC POTTER,
Chartered Patent Agent,
London and Nottingham.

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

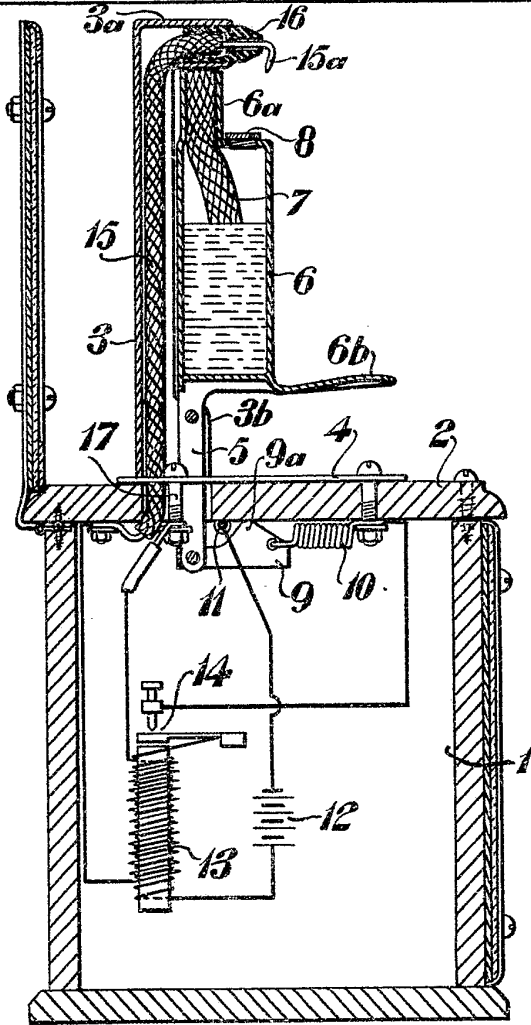


FIG. 1

