PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION.

Improvements in and relating to Lighters suitable for Cigarettes, Cigars, Pipes and other Purposes.

We, WALTER REGINALD BRADLEY, of 6, Duke's House, Vincent Street, London, S.W.1, and HENRY WILLIAM BENTLEY, of 4, Cavendish Road, London, W.4, both subjects of the King of Great Britain, do hereby declare the nature of this invention to be as follows:—

Our invention relates to lighters, and is especially applicable to such as are used for cigarettes, cigars and pipes.

The objects of our invention is to provide an improved lighter which is of simple construction and is capable of being constructed at a comparatively small cost.

Our invention consists in a lighter in which an electrically heated filament is adapted to ignite inflammable vapour stored in the lighter, the filament being mounted in such a manner as to protect it from shocks, vibrations and the like.

Our invention further consists in the improved lighters to be hereinafter described.

In carrying our invention into effect, according to one form, and as applied by way of example to a pocket lighter for cigarettes, we form the casing of the lighter by attaching two lengths of metal tube to one another by welding, brazing, soldering or in any other suitable manner. The tubes are preferably of the same length and diameter and when attached, are arranged side by side.

The lower ends of the tubes are closed by metal end-pieces which are fixed in position in the lower ends of the tubes by soldering or brazing. On the inner face of each end-piece, an insulated disc with a metal stud is arranged. These metal studs are electrically connected to one another but are insulated from the end-pieces and the tubes. The end pieces, in some cases, may be formed as caps which are pressed over the ends of the tubes.

The upper end of one of the tubes is closed by an end-piece which forms a tight push fit with the tube, and in this end-piece, a spring-mounted push-stud is slidably mounted. This stud projects outwards from the upper face of the end piece, which as well as the push-stud is in electrical connection with the tube. In this tube, a dry battery is located one of the poles of which is in electrical connection by contact with the stud arranged on the insulated disc in the lower end of the tube, while the other pole of the battery, on the spring-mounted push-stud being pressed inwards, is adapted to contact therewith and thus be in electrical connection with the tube.

In the other tube, a mount of wood, porcelain or other suitable insulating material is arranged. This mount is cylindrical in form and is provided with a V-shaped notch in its upper end, in the bottom of which notch, the filament is arranged. The diameter of the filament mount is less than that of the tube in which it is located and in the annular space between the mount and the tube, cotton wick or other suitable absorbent material is arranged so as to surround the filament mount. The filament is preferably formed of fine platinum wire and when in position, is disposed at the bottom of a cavity formed by the absorbent material which projects beyond the upper end of the filament mount.

One end of the filament is in electrical connection with the stud which projects from the insulated disc in the lower end of tube in which it is located, while the other end of the filament is in electrical connection with the tube which houses it.

On the upper end of the filament tube, a spring-hinged cap is provided which closes the upper end of this tube, while this cap is also arranged so as to protect the push-stud on the battery tube from being depressed when the cap is in the closed position. One construction for effecting this is to attach a cap to the hinged cap, the former cap in the closed position of the latter cap being arranged to cover the push-stud.

The absorbent material in the filament tube is saturated with methylated spirits or other suitable inflammable liquid, the surplus fluid being emptied out of the tube.

When it is desired to use the lighter, the hinged cap is opened and the push-stud on the battery tube pressed inwards.

[*Price* 1/-]

This causes the circuit through the filament and battery to be completed with the result that the filament becomes more or less incandescent and ignites the absorbent material.

On closure of the hinged cap, the flame is extinguished.

Instead of supporting the filament on its mount in the manner above described, in some cases, the filament may be partially embedded in its mount, or partially cemented thereto by any suitable heat-resisting cement.

The filament may preferably be formed as a spiral of small diameter but it may be formed in any other desired manner.

By means of our invention, an improved type of lighter is provided which is reliable in its operation and is capable of being constructed at a small cost.

Although we have described our invention as applied by way of example to a pocket lighter for cigarettes, its use is not limited to this application, as it may be applied to a stand lighter or incorporated in any other suitable manner.

Dated the 29th day of June, 1932.
WILLIAM BRYSON,
Chartered Patent Agent,
29, Southampton Buildings, London,
W.C.2.

COMPLETE SPECIFICATION.

Improvements in and relating to Lighters suitable for Cigarettes, Cigars, Pipes and other Purposes.

We, WALTER REGINALD BRADLEY, of 6, Duke's House, Vincent Street, London, S.W.1, and HENRY WILLIAM BENTLEY, of 4, Cavendish Road, London, W.4, both subjects of the King of Great Britain, 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:—

Our invention relates to electric lighters such as are used, for example, for cigarettes, cigars and tobacco pipes, and to the type of such lighters having two casings arranged side by side, in one of which a dry battery is disposed, while in the other, absorbent material treated with an inflammable liquid is arranged and also the igniting filament which is connected in a controlled circuit with the battery.

In lighters of the above type, as hitherto proposed, one of the poles of the battery was in permanent connection with its casing, and the electrical connection between this pole and the corresponding end of the filament was effected through the above casing and the filament casing, while the electrical connection between the other pole of the battery and the other end of the filament was effected through a movable contact member mounted on a sleeve arranged on, and insulated from, the battery casing and interconnected electrically with a similar sleeve arranged on, and insulated from, the filament casing.

The object of our invention is to provide an inproved and simplified construction of lighter of the type indicated above.

Our invention consists in an arrangement of lighter of the type indicated, in which both poles of the battery are insulated from the casing containing it, and the battery and filament casings together with the movable contact member are all electrically connected together, one end of the igniting filament being connected by means of an insulated conductor with one pole of the battery while the other end of the filament is connected with its casing and by the latter with the movable contact member which co-acts with the other pole of the battery.

Our invention further consists in the improved electric lighters to be hereinafter described.

Referring now to the accompanying drawings,

Figure 1, shows a sectional elevation of a pocket lighter constructed according to our invention, while

Figure 2, shows a plan of same.

In carrying the invention into effect, according to one form, and as applied by way of example to a pocket lighter for cigarettes, cigars and tobacco pipes, we form the casing of the lighter by attaching two tubes, 1 and 2, to one another by welding, brazing or soldering. The lower ends of the tubes, 1 and 2, are closed by metal caps, 3 and 4, which form tight push-fits with the tubes, the cap, 3, being provided with an insulated disc, 5, having a metal contact stud, 6.

The upper end of the tube, 1, is closed by a cap, 7, which forms a tight push-fit with the tube, and in this cap, a push-stud, 8, is slidably mounted. The push-stud, 8, is provided with a tension spring, 8*a*, so that it normally projects above the

outer face of the cap, 7, and by means of this cap, the push-stud, 8, is in electrical connection with the tube, 1. In the tube, 1, a dry battery, 9, is disposed, the pole, 10, of which is in electrical contact with the stud, 6, on the insulated disc, 5, while the pole, 11, of the battery, is adapted to make contact with the push-stud, 8, when the latter is pressed inwards.

In the tube, 2, is arranged a mount, 12, of insulating material, such as wood treated with paraffin wax. The mount, 12, is cylindrical in form and is provided with a V-notch, 13, at its upper end, across which notch, the filament, 14, extends as shown. In the annular space between the mount, 12, and the tube, 2, a ring, 15, of cotton wick or other suitable absorbent material is arranged so as to surround the mount, 12, while between this ring and the mount, 12, cotton wool, 16, is packed.

The filament, 14, is preferably formed of fine platinum wire and when in position is disposed within the cavity, 17, the peripheral wall of which is formed by the ring, 15, while the bottom of the cavity is formed by the cotton wool, 16. The cavity, 17, should be of such dimensions as to ensure the necessary amount of air to be present to secure ignition. The mount, 12, at its lower end is secured in a metal disc, 18, which is soldered to the tube, 2.

The filament, 14, at one of its ends, is united to an insulated lead, 19, which is connected to the contact stud, 6, on the insulated disc, 5, while the other end of the filament is united to an insulated lead, 20, which is connected to the disc, 18, and is thus in electrical connection with the tube, 2. The leads, 19 and 20, are pressed into slits, 12*a*, in the mount, 12, as shown.

The upper end of the tube, 2, is provided with a spring-hinged cap, 21, the rim of which diminishes in depth towards the hinge, and this cap is arranged to protect the push-stud, 8, from being depressed when the cap, 21, is in the closed position. One construction for effecting this is shown in figures 1 and 2, In this construction, a guard, 22, is attached to the hinged cap, 21, so that when the cap is closed, the guard, 22, encloses the push-stud, 8, and prevents it from being depressed.

The absorbent material in the tube, 2, is saturated with methylated spirits or other suitable inflammable liquid, the surplus liquid being emptied out of the tube.

When it is desired to use the lighter, the hinged cap, 21, is opened so that the push-stud, 8, is uncovered by the guard, 22. The push-stud, 8, is then depressed and contacts with the pole, 11, of the battery, 9, so that a circuit is completed by way of the push-stud, 8, tubes, 1 and 2, disc, 18, lead, 20, filament, 14, lead, 19, stud, 6, pole, 10, battery, 9 and pole, 11, with the result that the filament becomes more or less incandescent and ignites the ring, 15.

On closure of the hinged cap, 21, the flame is extinguished.

Instead of forming the mount, 12, of wood, it may be formed of porcelain or any other suitable insulating material, Also, the filament, 14, in some cases, may rest on the bottom of the notch, 13, or it may be partially embedded in its mount or cemented thereto by any suitable heat-resisting material. The filament, 14, may be formed as a spiral or in any other suitable manner.

By means of our invention, an improved form of lighter is provided which is reliable in its operation and is capable of being constructed at a relatively small cost. Also, the filament is supported in such a manner as to enable it to resist breakage by shocks, vibrations or the like.

Although we have described our invention as applied by way of example to a pocket lighter for cigarettes, cigars and tobacco pipes, its use is not limited to this application, as it may be applied to a stand lighter or incorporated in any other suitable manner.

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

1. An arrangement of lighter of the type indicated, in which both poles of the battery are insulated from the casing containing it, and the battery and filament casings together with the movable contact member are all electrically connected together, one end of the igniting filament being connected by means of an insulated conductor with one pole of the battery, while the other end of the filament is connected with its casing and by the latter with the movable contact member which co-acts with the other pole of the battery.

2. A lighter as claimed in claim 1, in which the igniting filament is supported in its casing by a notched support of insulating material.

3. Improved electric lighters substantially as hereinbefore described and as illustrated by the accompanying drawings.

Dated the 11th day of November, 1932.

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Fig. 1.

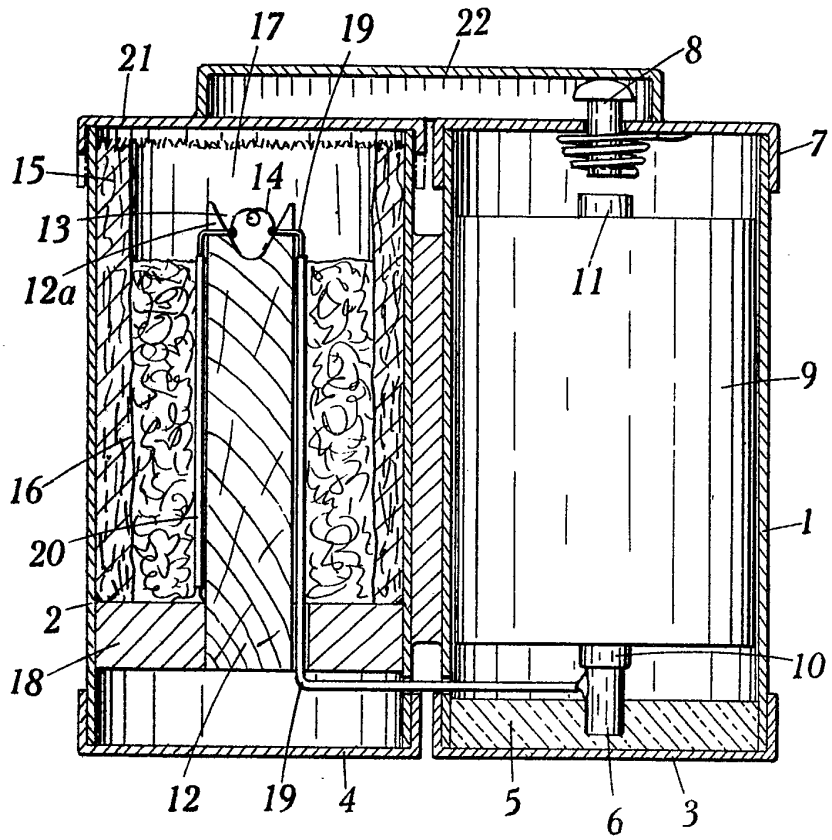
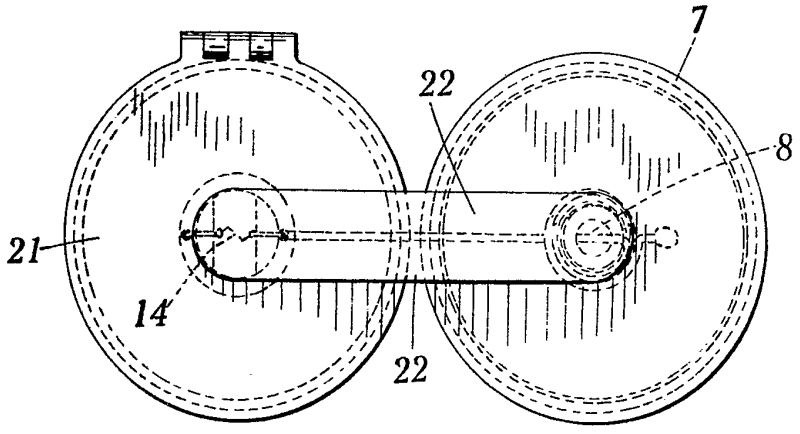


Fig. 2.



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