

PATENT SPECIFICATION

341,396

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PROVISIONAL SPECIFICATION.

Improvements in Pyrophoric Lighters.



I, ERNEST ROBERT BENEX, of 3, Spenser Street, Victoria Street, Westminster, London, S.W. 1, a British subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in pyrophoric lighters and in particular provides a novel form of casing having a reservoir for an inflammable liquid and a ferro-cerium strip arranged in combination therewith in an appropriate manner, the whole providing a form of lighter which can conveniently be carried in the pocket of the user.

The said casing may be advantageously made substantially in the form and size of a match-box and, for a purpose hereinafter mentioned, the reservoir is mounted to slide within the casing by pressure applied thereto by a finger of the user inserted for example through an aperture in one end of the casing. The sliding reservoir, in the direction in which it is movable, is of less length than the outer casing and is so mounted as to be movable therein without protruding therefrom. The usual striker and wick carrier, forming a stopper for the reservoir and removable therefrom, in one position of the reservoir, is within the casing, but the reservoir can be moved to a position in which the said striker protrudes through an aperture in the casing so that it can be conveniently grasped and removed from the reservoir in order that it can be rubbed against a strip of ferro-cerium or like material which is inserted in a groove or channel opening through one side of the casing. Whilst the casing has been referred to as being advantageously of match-box form and size, it may be made of any other suitable form and size.

In a convenient constructional form in accordance with this invention the outer casing is of a rectangular or box-like form with rounded edges or corners preferably of a size substantially equal to that of a match or vesta box intended to be carried in the waistcoat pocket of the user.

A reservoir of suitable size is arranged to slide within the outer casing without protruding therefrom and at one end the reservoir is provided with a short neck in

which a stopper can be inserted, the stopper being held in the neck by frictional engagement therewith, by screw threads, by pins engaging in slots or in any other convenient manner. The stopper is made such a size that when in position closing the neck of the reservoir, when the latter is in one position within the casing, the said stopper does not project therefrom. The stopper carries an extension serving as a striker and wick carrier which is enclosed within the reservoir when the stopper is in position therein.

With this arrangement, by sliding the reservoir within the casing, the stopper is caused to project through an opening in the casing and can readily be grasped to remove the same for use.

A channel or groove to receive a strip of ferro-cerium is provided on the inside of one of the walls of the casing, in which a slot is provided so that the striker can be drawn along the wall of the casing in contact with the ferro-cerium to produce a spark. At one end of the channel or groove above mentioned an aperture is provided through which the lighted wick carried on the striker can be inserted into the space within the casing not occupied by the reservoir, this space providing a wind shield for the said wick, and if desired suitable draft apertures can be provided in the casing to ensure a sufficient supply of air to support combustion. When the stopper is returned to its position in the neck of the reservoir, by exerting pressure on the stopper, the reservoir can be moved so that the stopper no longer projects from the casing.

A spring, a leather packing or the like may be provided within the casing to press upon the reservoir and prevent the same from moving too readily within the casing. Or a spring may be provided to move the reservoir to a position in which the stopper projects from the casing, and a latch provided to hold the reservoir against the thrust of the spring with the stopper inside the casing. In a further arrangement the spring is arranged to hold the reservoir in position with the stopper within the casing, the said spring

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holding the reservoir firmly so that there is no rattling of the reservoir when the casing is shaken.

There is thus provided a pocket form of pyrophoric lighter which has no projecting parts, but which allows the striker to be readily grasped on imparting a sliding movement to the reservoir similar to the movement of the inner part of an ordinary match box within the outer part. As will be understood the reservoir can be packed with a suitable absorbent packing which can be saturated with an

inflammable spirit and the striker can be made of steel and provided with means for carrying a wick in such a position that the latter can be ignited by sparks produced by drawing the striker along the ferro-cerium or other material serving as a flint.

Dated this 10th day of September, 1929.

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COMPLETE SPECIFICATION.

Improvements in Pyrophoric Lighters.

I, ERNEST ROBERT BENEY, of 3, Spenser Street, Victoria Street, Westminster, London, S.W. 1, 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 pyrophoric lighters of the kind comprising a reservoir or receptacle containing an absorbent material saturated with an inflammable liquid and a stopper terminating in a rod which can be inserted through a hole in the receptacle to take a charge of liquid upon a wick or pad of absorbent material attached to the rod so that when the rod is removed from the receptacle and an iron tip provided on the rod rubbed against a piece of ferro-cerium or like material, the vapour given off from the wick on the rod becomes ignited.

The object of this invention is to provide a novel form of casing having the reservoir for an inflammable liquid and the ferro-cerium strip arranged in combination therewith in an appropriate manner, the whole providing a form of lighter which can conveniently be carried in the pocket of the user.

According to this invention the reservoir is slidably mounted in a casing whereby the stopper associated with the reservoir may be located within or project out of the casing.

The said casing may be advantageously made substantially in the form and size of a match-box and, for a purpose hereinafter mentioned, the reservoir is mounted to slide within the casing by pressure applied thereto by a finger of the user inserted for example through an aperture in one end of the casing. The sliding reservoir, in the direction in which it is movable, is of less length than the outer

casing and is so mounted as to be movable therein without protruding therefrom. The usual striker and wick carrier, forming a stopper for the reservoir and removable therefrom, in one position of the reservoir, is within the casing, but the reservoir can be moved to a position in which the said striker protrudes through an aperture in the casing so that it can be conveniently grasped and removed from the reservoir in order that it can be rubbed against a strip of ferro-cerium or like material which is inserted in a groove or channel opening through one side of the casing. Whilst the casing has been referred to as being advantageously of match-box form and size, it may be made of any other suitable form and size.

In the accompanying drawing which illustrates two convenient constructional forms of lighter in accordance with this invention:—

Figure 1 is a sectional view of a lighter with the striker plug in a position to be withdrawn from the reservoir.

Figure 2 is a sectional view of the lighter with the striker plug retained in an inaccessible position, and

Figure 3 is a sectional view of a modified construction of lighter.

As shown in Figures 1 and 2 of the drawing a lighter comprises an outer casing 1 of a rectangular or box-like form with rounded edges or corners preferably of a size substantially equal to that of a match or vesta box intended to be carried in the waistcoat pocket of the user. A reservoir 2 of suitable size is arranged to slide within the outer casing without protruding therefrom and at one end the reservoir is provided with a short neck 3 in which a stopper 4 can be inserted, the stopper being held in the neck by frictional engagement therewith, by screw threads, by pins engaging in slots or in

any other convenient manner. The stopper carries an extension serving as a striker and wick carrier which is enclosed within the reservoir when the stopper is in position therein.

A spring 5 moves the reservoir to the position shown in Figure 1 and retains it in such position that the stopper projects through an opening 6 in the casing 1 and can be grasped and withdrawn from the reservoir. After insertion of the stopper into the neck 3 of the reservoir, pressure upon the top of the stopper causes a downward movement of the reservoir against the action of the spring 5 until a spring catch 7 secured to the reservoir engages an aperture 8 in the casing (Figure 2) in which position the stopper does not project out of the casing. Stops 9 may also be provided upon the reservoir. Upon depressing the catch 7 out of engagement with the aperture 8 the spring 5 moves the reservoir to the position shown in Figure 1.

The reservoir is guided in its sliding movements by a channelled or grooved member 10 against which it is pressed by the spring catch 7 that is in contact with one side wall of the casing 1. A strip of ferro-cerium 11 is arranged within the channelled or grooved member 10 which is secured within the casing in register with a slot 12 in said casing by brazing, rivetting or by any other suitable means.

In the arrangement shown in Figure 3, a spring 13 is arranged to hold the reservoir in position with the stopper within the casing, the spring holding the casing so that there is no rattling of the reservoir when the casing is shaken. The reservoir is moved to the position shown by a user's finger or the like inserted through an opening 14 in the base of the lighter, and is held in such position by a spring latch 15 which engages an aperture 16 in the casing 1. At one end of the channel or groove in which the ferro-cerium strip 11 is arranged, an aperture 17 is provided through which the lighted wick carried on the striker can be inserted into a space 18 within the casing not occupied by the reservoir when it is moved to a position in which the stopper projects out of the casing, this space 18 providing a wind shield for the said wick. A cigarette or other article to which the lighted wick is to be applied may be inserted into the space 18 through the opening 14 whilst suitable draught apertures can be provided in the casing to ensure a sufficient supply of air to support combustion. If desired, however, an opening 19 may be provided in a side wall of the casing for the insertion of a cigarette or the like.

A spring, a leather packing or the like may be provided within the casing to press upon the reservoir and prevent the same from moving too readily within the casing.

There is thus provided a pocket form of pyrophoric lighter which has no projecting parts, but which allows the striker to be readily grasped on imparting a sliding movement to the reservoir similar to the movement of the inner part of an ordinary match box within the outer part.

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 pyrophoric lighter of the kind comprising a reservoir for inflammable liquid slidably mounted in a casing, wherein a stopper associated with the reservoir and terminating in an iron tip or striker is located within or projects out of the casing, according to the position of the reservoir within the said casing.
2. A pyrophoric lighter as claimed in Claim 1, wherein a spring is provided to move the reservoir to a position in which the stopper projects out of the casing.
3. A pyrophoric lighter as claimed in Claim 1, wherein a spring latch is provided to retain the reservoir in a position in which the stopper is located within the casing.
4. A pyrophoric lighter as claimed in Claim 1, Claim 2, or Claim 3, wherein the reservoir is guided in its sliding movements by a channelled or grooved member secured within the casing, and is pressed against this channelled or grooved member by a spring latch.
5. A pyrophoric lighter as claimed in Claim 4, wherein a strip of ferro-cerium or the like is arranged in the channelled or grooved member.
6. A pyrophoric lighter as claimed in Claim 4, wherein an aperture is provided at one end of the channelled or grooved member for the purpose specified.
7. A pyrophoric lighter as claimed in Claim 1, wherein a space is provided within the casing to serve as a wind shield.
8. A pyrophoric lighter of the kind set forth, constructed, arranged and operating substantially as described with reference to the accompanying drawing.

Dated this 10th day of June, 1930.

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

Fig. 1.

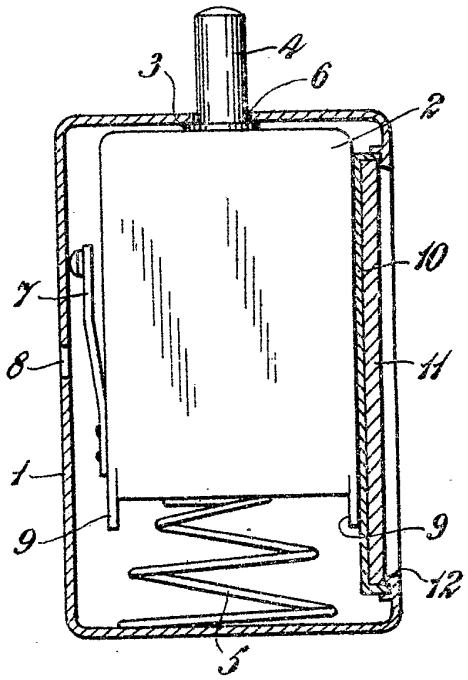


Fig. 2.

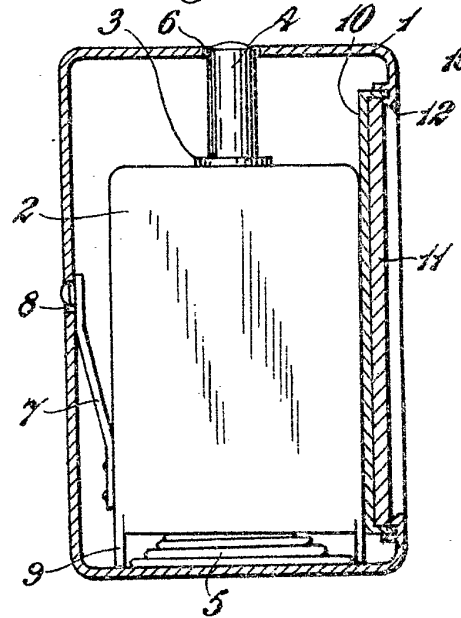


Fig. 3.

