PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Pyrophoric Pocket Lighters

I, LUDWIG KARL ERWIN KRATZ, British Subject, of 2, Crewdson Road, Brixton, London, S.W.9, 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 pyrophoric pocket lighters of the type wherein a container, forming a reservoir for the fuel, is provided with means for accommodating a removable striking member which also forms a holder for a wick. Attached to the striking member is a pyrophoric or friction member so that when the striking member is withdrawn and brought into rubbing contact with a suitable surface on the container, sparks will be caused which will ignite the fuel contained in a projecting portion of the wick.

It has also been proposed, in a lighter of the above-mentioned type, to provide a projection on the striking member, which projection, on the striking member being withdrawn, engages with a member formed from cerium iron in order to produce sparks for the purpose of igniting a protruding portion of a wick contained in the striking member.

The object of the present invention is to provide a pocket lighter of the aforesaid type in which the usual absorbent material may be dispensed with, means being provided whereby the bulk of the fuel is not lost if the striker is withdrawn and the lighter is held in an inverted position.

According to the present invention I provide a pyrophoric pocket lighter of the type described wherein a striking member is housed within a sheath having one end thereof immersed in the fuel, the said end being provided with an orifice whereby the fuel may enter the sheath.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be described more fully, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a side elevation of a pocket lighter constructed according to the present invention, and

Figure 2 is a plan view thereof.

Figure 3 is a vertical sectional view on the line 3—3 of Figure 2.

Figure 4 is a side elevation of the striking member to an enlarged scale.

Figure 5 is an elevation of the closure viewed in the direction of the arrow A Figure 4.

Figure 6 is a side elevation of a pocket lighter according to the present invention, showing a modified form of construction,

Figure 7 is a transverse sectional view on the line 7—7 of Figure 6 drawn to an enlarged scale.

Figure 8 is a vertical sectional view of a pocket lighter according to the present invention, showing a further modified form of construction.

Figure 9 is a transverse sectional view on the line 9—9 of Figure 8, and

Figure 10 is a fragmentary side elevation to an enlarged scale of a modified form of striker for use with the pocket lighter shown in Figure 8.

In a preferred form of construction shown in Figures 1, 2 and 3, the improved lighter comprises a container 1 for petrol or like fuel, shown at 2, Figure 3. The container may be made from metal or any other suitable material, and is preferably of the form shown in Figures 1, 2 and 3. In order that the container may be securely held when in use, one end 3 is provided with a depression 4 to accommodate the thumb, whilst the other end 5 of the container is preferably shaped to form a loop 6 to permit of the insertion of a finger. At a convenient position on one, or more than one of the sides of the container, is, or are, secured in any desired manner, a strip, or strips of flint 7. In the preferred construction the strips are arranged as shown in Figures 1 and 2 and secured by the provision of lips or flanges 8 formed or provided on the container 1.

Preferably at a central position in the depressed end 3 of the container is an opening 9 which may be cruciform in

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shape. The opening 9 gives access to a sheath 10 which terminates with a bulbous enlargement 11 provided with a small orifice 12. The sheath is of similar shape in cross section to the opening 9 and is thus provided with four longitudinal recesses. The sheath may be made as a separate member and attached to the container or formed integral therewith. Removably mounted within the sheath 10 is a striking member 13 which comprises a rod 14 provided with an enlargement 15 of corresponding shape to the opening 9. The enlargement 15 provides a closure for the opening 9 and is preferably tapered in order that a close fit may be obtained in the opening 9 and the adjacent end of the sheath 10. This effect may be enhanced by suitably tapering the said end of the sheath.

The enlargement or closure, hereinafter called closure, may be made as a separate member and attached to the rod 14. In the preferred construction the closure is made from hard rubber and suitably secured to the rod 14. Although it is preferred that the sheath and opening should be of cruciform shape in cross section it may be of any other suitable form. In order that the striker may be withdrawn from the sheath the closure is provided with a projection 16 which may be of a decorative nature. At the end of the rod 14 and remote from the closure shown more particularly in Figure 4, is secured, in any suitable manner, a steel strip 17, the end 18 of which is bent as shown. In lieu of the steel strip the rod 14 may be made of steel and the said end formed to a similar shape to the steel strip 17 or alternatively, shaped in order to provide a resilient and aligned extension of the steel rod. On the side of the rod and opposite to the steel strip is secured in any suitable manner a spring clip 19 for the purpose of holding a wick 20, a portion of which is allowed to project beyond the rod 14, as shown at 21. It will be obvious that when the striking member is housed within the container the wick 20 will be immersed in the fuel which has entered the bulbous end 11 of the sheath from the container through the orifice 12 with the result that the wick becomes saturated. It will be seen that by providing a sheath constructed as described little or no fuel will be spilt if the lighter is inverted during the process of withdrawing the striker. If desired a cap may be formed integrally with or attached to the striker 13 so that on removal of the cap the striker is also withdrawn. It will be apparent that by providing a sheath of cruciform shape grooves are formed for housing the striker. In order to ascertain the particular groove in which the striker is housed an arrow 23, Figure 5, or any other suitable device may be provided on the closure.

When it is desired to use the lighter the striker is withdrawn and the steel strip brought into rubbing contact with a flint on the container in a similar manner in which an ordinary box of matches is used. The contact of the steel on the flint produces sparks which ignite the fuel in the wick.

In the modified form of construction shown in Figure 6, the lighter is formed as an octagonal cylinder. It will be understood, however, that any other suitable polygonal form would be employed as an alternative to that shown. One, or more than one of the sides 24 may comprise a flint, or flints, which may be secured to a container 25 in any suitable manner. Referring to Figure 7, it will be seen that the container 25 is suitably shaped as at 26 in order that flints 27 of substantially segmental form in cross section may be accommodated. The flints may be retained in position by means of lips or flanges 28 which may be formed integral with the container 25 or otherwise provided. The lighter may be fitted with a cap 27^1 in a similar manner to that previously described. The striker and sheath are similar to those described in the previous construction.

In a further modified form of construction shown in Figures 8 and 9, strips of flints are arranged within a casing 30. Referring to Figure 9 it will be seen that the flints 29 partly occupy the grooves provided by a sheath 31 of cruciform shape in cross section. It is preferred to use a number of flints of equal size, but a single flint may be used and the sheath adapted accordingly. The flints 29 may be held in position by flanges or projections 32 formed or provided on the sheath and arranged in such a manner that the flints incline slightly inwardly toward the top of the casing. The lower end of the sheath 31 is formd with a bulbous enlargement in a similar manner to that previously described. The striker 33 may be similar to that previously described with the exception that the steel strip 34 is perferably bent upwardly as shown at 35 Figure 10. If necessary an additional spring 36 may be provided in order to ensure that the tip of the steel part 35 will contact with a flint on withdrawal from the sheath. The casing may be provided with a cap 37 which may be conveniently attached to, or formed integral with, the striker 33. It will be

observed from the foregoing description that the removal of the cap 37 will result in the withdrawal of the striker in which process the tip of the steel part 35 will be brought into contact with one of the flints 29 and cause ignition of the wick. The cap 37 may bear a suitable indicating device such as a series of marks, letters or figures corresponding to the number of flints so that they may be used in succession thus equalising the wear.

In the constructions described, fuel may be introduced through the sheaths, but if it is desired, filling openings may be provided which may be closed by suitable caps. If desired, the containers or casings may be suitably slotted and the opening thus formed sealed with a glass or celluloid strip so that the level of the fuel may be gauged.

It will be appreciated that in the constructions described the flints may be superseded by roughened steel strips and one, or more than one, flint, or flints, secured to the striking member in any suitable manner in lieu of the steel strip.

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 pocket lighter of the type described wherein a striking member is housed within a sheath having one end thereof immersed in the fuel, the said end being provided with an orifice whereby the fuel may enter the sheath.

2. A pyrophoric pocket lighter according to claim 1 having one end thereof formed with a loop and the opposite end with a depression.

3. A pyrophoric pocket lighter according to either of the preceding claims, wherein the sheath is suitably formed in order to provide a plurality of longitudinal recesses.

4. A pyrophoric pocket lighter according to claim 3 in which a flint is accommodated in each recess.

5. A pyrophoric pocket lighter according to any of the preceding claims, wherein a closure member or cap provided on the striker or formed integral therewith for the purpose of sealing the fuel container, is provided with an indicating device whereby the position of a steel strip on the striker may be located with respect to the container.

6. A pyrophoric pocket lighter according to any of the preceding claims, wherein the lighter is provided with an opening, sealed with a transparent material, in order that the level of the fuel may be gauged.

7. A pyrophoric pocket lighter substantially as hereinbefore described with reference to the accompanying dawings.

Dated this 25th day of June, 1937.

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London,
Agents for the Applicant.

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

Fig. 1.

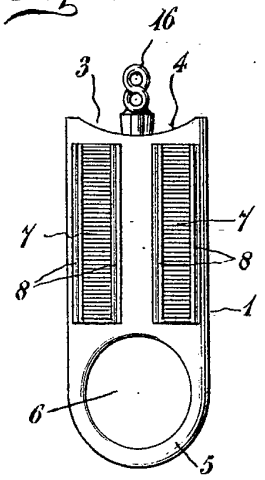
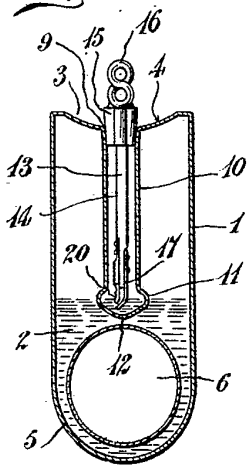


Fig. 3.



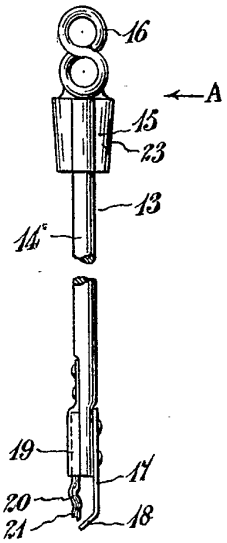


Fig. 4.

Fig. 2.

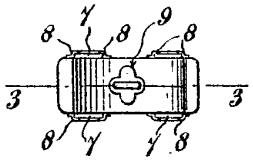


Fig. 5.

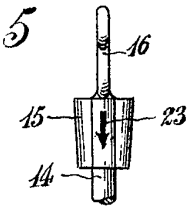


Fig. 10.

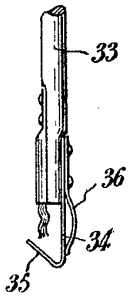


Fig. 6.

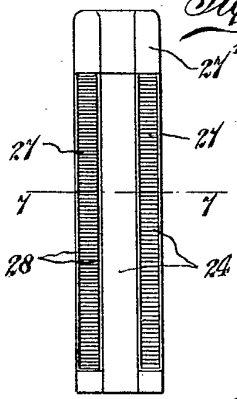


Fig. 8.

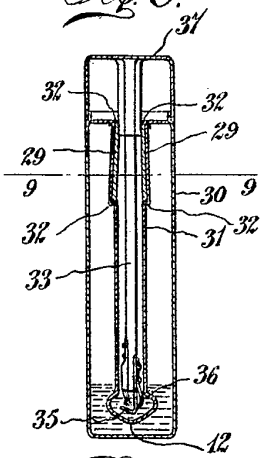


Fig. 7.

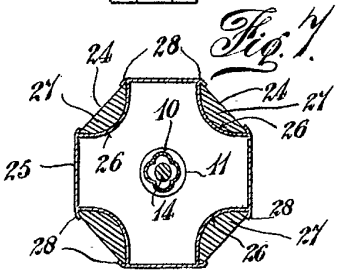
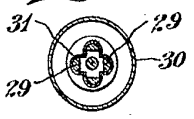


Fig. 9.



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