

## PATENT SPECIFICATION

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## COMPLETE SPECIFICATION

## Improvements in Pyrophoric Lighters

We, CHARLES BERNHARDT, of 181, Golders Green Road, Golders Green, London, N.W.11, formerly as Austrian Citizen but now Stateless, ALBERT MAURICE REDMAN, of 29, The Highway, Sutton, Surrey, and GEORGE GARDINER REES, of 1, Gloucester Road, Hampton, Middlesex, both British Subjects, 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 lighters and has for its object to produce a lighter of a comparatively simple construction and one that can be readily manufactured with a minimum of working operations. Furthermore, the invention provides a lighter which can be readily assembled and in which the constituent components thereof can be easily replaced or renewed when desirable.

According to this invention we provide a casing and a petrol container provided with a closure member arranged in the casing and a friction wheel disc adapted to contact and strike a flint, the said closure member and friction disc being mounted on a common pivot and independently turnable about said pivot both the closure member and friction disc being manually operable simultaneously, the closure member being formed integrally with or attached to a pair of ears provided one on each side of the friction wheel, and characterised in that the flint tube is provided with a spring, the upper end of which engages the said ears when the closure member is in the closed position.

According to one form the closure member and ears are provided with a finger piece so as to assist in the operation of the lighter.

The invention is illustrated in the accompanying drawings, wherein:—

Fig. 1 is a sectional side elevation of the lighter;

Fig. 2 is a sectional front elevation of the lighter shown in Fig. 1;

Fig. 3 is a side elevation of a modification showing the flint tube and closure member in the closed position but removed

from the lighter;

Fig. 4 is a similar figure to Figure 3 showing the closure member in the open position; and

Fig. 5 is a front elevation of the flint tube shown in Figs. 3 and 4.

Referring to Figs. 1 and 2 of the drawings the lighter comprises a casing 1 having a petrol container 2 which can either be bodily removed from the container as shown in the drawing or can be fixed into the casing 1 permanently. The petrol container is provided with a closure member 3, the said container being filled with the usual wadding 4 and replenished with fuel from time to time. Arranged beside the petrol container 2 inside the casing 1 is the flint tube 5 which is screw-threaded at its lower end to receive a small screw 6 which bears on a coil spring 7 inside the tube 5, the upper end of the spring 7 presses the flint 8 into contact with the friction wheel 9. The petrol container 2 terminates below the top edge of the outer casing 1 whereby the upper part of the wall of the casing provides a wind guard for the wick 10 extending out of the petrol container 2. The wind guard is suitably perforated as indicated at 11. The friction wheel 9 is mounted on a pivot 12 extending transversely to the casing 1 and immediately above that part of the casing which receives the flint tube 5, the friction wheel 9 being mounted between a pair of toothed discs 13 which are of slightly greater diameter than the friction wheel 9 and are pinned thereto so that the finger in turning the friction wheel 9 contacts with the aforesaid toothed discs 13. Between each toothed disc 13 and the adjacent wall of the casing one of a pair of ears 14 is arranged, said ears being also partly toothed as indicated at 15 and connected to a box-like closure member 16 which fits between the upper edges of the wall of the casing 1, the arrangement being such that when pressure is applied to the toothed discs 13 the ears 14 are also moved around the pivot 12 to raise the closure 16 out of the casing 1 and to expose the wick 10, which will be ignited by rubbing contact of the friction wheel 9 with the flint 8. After use the closure 16 is pushed back into place by the finger. The underside of the closure 16 is pro-

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vided with a snuffer 17 which forms a seal with the top of the petrol container 2 and encloses the wick 10.

The two walls of the casing 1 between 5 which has friction wheel 9 is mounted are curved in profile to correspond with the friction wheel 9, toothed discs 13 and ears 14.

The casing 1 is stamped from sheet 10 metal and bent to the required shape and united along one of the narrower walls by a tenon joint. The petrol container 2 is preferably stamped in one piece and the cap 3 therefor which forms the base 15 of the petrol container is provided with a flange 18 which fits within the walls of the petrol container 2. The flint tube 5 is anchored at its base at the bottom of the casing 1 in a pair of flanges 20 which are intumed from the sides of the casing 1 and have an aperture to provide a suitable seating for the bottom of the tube 5. The top of the flint tube 5 (or a sleeve secured thereto) terminates in a pair of 25 lugs 21 which are drilled to fit the pivot pin 12. The ears 14 of the closure 16, the toothed discs 13 and friction wheel 9 are all mounted on the pin 12 so that the whole may be bodily removed as a single 30 component by unscrewing the pivot pin 12. The flint tube 5 is provided with a wire spring 22 which extends downwardly along the flange 23 projecting laterally from the tube 5 and upwardly along the 35 other side of the flange 23 and terminates in a hook or turned over end 24 which bears on the edge 14a of one of the ears 14 when the closure member 16 is in position closing the top of the container 1; 40 the closure member 16 thereby being held in that position.

A modified form of the flint tube and closure member is shown in Figs. 3, 4 and 5. The flint tube 5 terminates at its 45 upper end in a pair of lugs 28 which are provided with apertures 29 to receive the pivot pin 30 which passes through ears 31 provided on the closure member 16. The ears 31 are joined by a finger piece 32 to 50 assist in operating the lighter. Formed integrally with the lugs 28 is a depending plate 33 provided with recesses 34, the end of the plate 33 being intumed so as to bear on the tube 5. The spring 35 is 55 threaded in and out of the recesses 34, the lower end of the spring 35 being anchored in the lowest recess 34. The upper end of the spring 35 is free so as to engage the portion 36 of the ears 31 when the 60 closure member 16 is in the position

shown in Fig. 3 whereby the closure member is normally held in this position. When the closure member takes up the position shown in Fig. 4 the upper end of the spring becomes disengaged from the portion 36 of the ears 31. 65

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 70 claim is:

1. Pyrophoric lighter comprising a casing and a petrol container provided with a closure member arranged in the casing and a friction disc adapted to contact and 75 strike a flint, the said closure member and friction disc being mounted on a common pivot and independently turnable about said pivot both the closure member and friction disc being manually operable 80 simultaneously, the closure member being formed integrally with or attached to a pair of ears provided one on each side of the friction wheel, characterised in that the flint tube is provided with a spring, 85 the upper end of which engages the said ears when the closure member is in the closed position.

2. Pyrophoric lighter according to claim 1 wherein the said spring is a wire 90 spring anchored to the flint tube and is provided with a turned over end adapted to engage the said ears.

3. Pyrophoric lighter according to claim 1 wherein the said spring is a leaf 95 spring anchored to a plate depending from ears mounted on the flint tube.

4. Pyrophoric lighter according to claim 1, 2 or 3 wherein the said ears are 100 joined by a finger piece.

5. The construction form of pyrophoric lighter illustrated in Figs. 1 and 2 of the accompanying drawings and described with reference thereto.

6. The constructional form of pyro- 105 phoric lighter according to claim 5, modified as illustrated in Figs. 3, 4 and 5 of the accompanying drawings, and described with reference thereto.

7. Pyrophoric lighter constructed, 110 arranged, and adapted to operate, substantially as described.

Dated this 4th day of January, 1944.

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

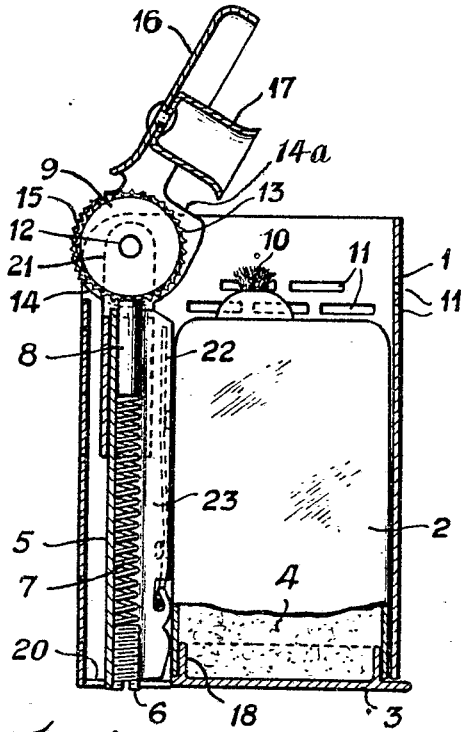


Fig. 1.

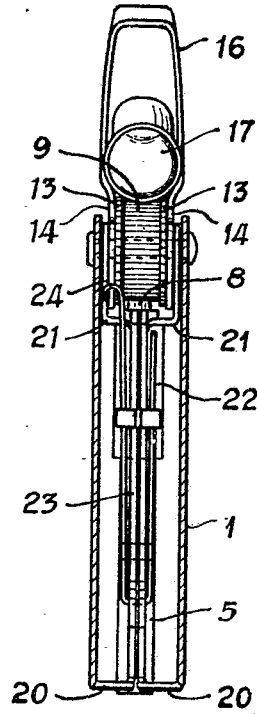


Fig. 2.

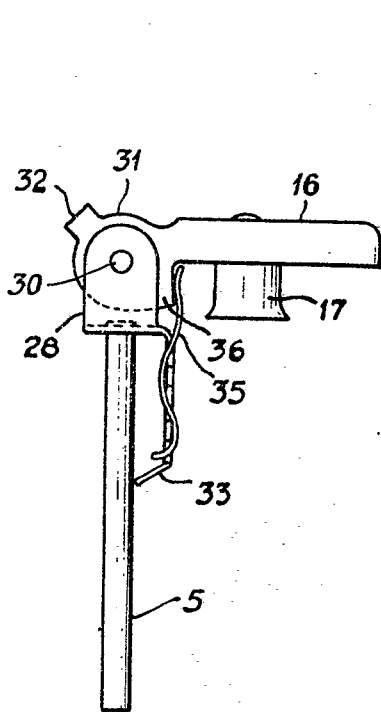


Fig. 3.

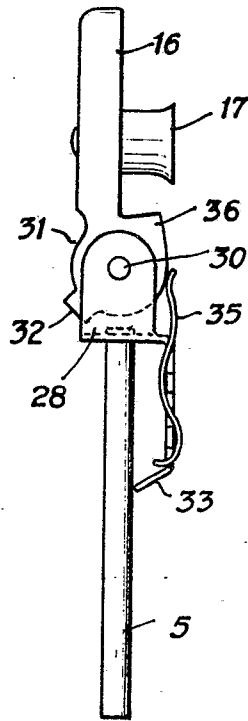


Fig. 4.

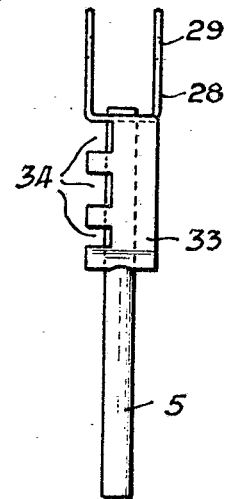


Fig. 5.