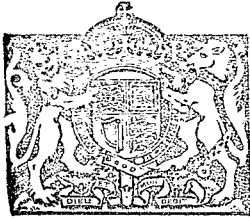


## PATENT SPECIFICATION



Application Date: April 21, 1931. No. 11,844/31.

371,601

Complete Left: Sept. 14, 1931.

Complete Accepted: April 28, 1932.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Pyrophoric Lighters.

(A Communication from KREMER & BAYER, a German Firm, of Offenbach, Germany.)

We, W. M. CURWEN & COMPANY LIMITED, a British Company, of 6 and 8, Emerald Street, London, W.C.1, do hereby declare the nature of this invention to be as follows:—

This invention is for improvements in or relating to pyrophoric lighters of the type comprising a flint mounted in a holder, a friction element (e.g. a notched wheel) movable over the flint to cause sparking, and adjustable means for moving the flint against the friction element to compensate for wear. Hitherto in lighters of this kind the flint has usually been held in a tube (sometimes itself let into the body of the lighter e.g. into the fuel container on a petrol lighter) which is threaded internally to receive an adjusting screw, a compression spring being interposed between the end of the screw and the flint. In order to take up wear, the screw is screwed farther into the tube and it will be appreciated that either the screw must project initially some distance out from the end of the tube (and such a projection is by no means desirable) or if the outer end of the screw is initially flush with the end of the tube, then as wear is taken up the screw is screwed completely into the tube and a point is reached at which in order to screw it further a special tool which will enter the end of the tube is necessary. The present invention has for its chief object to obviate this disability.

Accordingly this invention provides a lighter of the kind specified above, having means for taking up wear of the flint comprising a body portion provided with a screw thread and adapted to be screwed along the length of the flint holder, and an adjuster capable of being rotated by the operator to screw the body portion as aforesaid but located against movement along the holder. Preferably the holder is threaded internally and the body portion is correspondingly threaded on its exterior, and there is a sliding key connection between the adjuster and the body portion. Alternatively, however, the

body portion may be threaded internally and the adjuster provided with a projecting screwed portion to engage said thread, and a sliding keyed connection is provided between the body portion and the flint holder.

In a preferred construction according to this invention, the lighter consists of a flat rectangular container of the usual form to contain petrol or other volatile fuel, having a notched wheel mounted at one end of the container. The wheel is covered by a hood which is pivoted for movement about the axis of the wheel. This hood also serves to cover the wick. The construction of the hood and the manner in which the friction wheel is rotated is described in co-pending Application for British Letters Patent No. 37,603/30 (Serial No. 364,306). The flint is mounted directly beneath the friction wheel in a tube or holder which extends through the container from one end to the other. This tube is threaded in its interior and in it a small cylinder (the body portion aforesaid) is screwed, and a compression spring extends between this cylinder and the flint. The cylinder is hollow and at its end remote from the flint is perforated with a square aperture. An adjuster which consists of a squared shaft and a circular head cut with a screw-driver slot is located with the head in a sunk recess at the end of the container and with the squared shaft extending through the square hole in the cylinder aforesaid. A small screw having an enlarged head which lies within the hollow cylinder, and between the head of this screw and the squared end of the cylinder a compression spring is located. The end of the cylinder which is nearest the flint is closed by a screwed plug having a projecting stub which serves to locate that compression spring which extends between the cylinder and the flint. The operation of this device is as follows:—

The end of the adjuster (which is exposed at one end of the container) is rotated by the operator for example with a coin, the slot being so formed that a small coin may be used for this purpose.

The rotation is transmitted by the squared shaft to the cylinder (or body portion) which is thus screwed along the interior of the tube to force the flint by means of the compression spring against the friction wheel. As it is screwed along the interior of the tube, the cylinder slides along the squared shaft. It will be appreciated that irrespective of the amount of adjustment the head of the adjuster is always readily accessible.

In an alternative construction, the adjuster is constituted by a screw which screws into the interior of the cylinder or body portion, and there is a sliding keyed connection of any suitable kind between the cylinder and the tube.

This invention also includes a pyro-

phoric lighter in which the flint is placed at one end of a tube extending through the fuel container and is adjustable from the opposite end of said tube characterised in that the flint adjusting means comprises a two-part device whereof one part located at the base of the fuel container is rotatable but constrained against endwise movement and the other part, operable on the flint, is so arranged within the flint tube as to have movement along said tube imparted to it by rotation of the first part.

Dated this 21st day of April, 1931.

BOULT, WADE & TENNANT,  
111 & 112, Hatton Garden, London,  
E.C.1,

Chartered Patent Agents.

## COMPLETE SPECIFICATION.

### Improvements in or relating to Pyrophoric Lighters.

We, W. M. CURWEN & COMPANY LIMITED, a British Company, of 6 and 8, Emerald Street, London, W.C.1, 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 is for improvements in or relating to pyrophoric lighters of the type comprising a flint mounted in a holder, a friction element (e.g. a notched wheel) movable over the flint to cause sparking, and adjustable means for moving the flint against the friction element to compensate for wear, which adjustable means comprises a two-part device whereof one part is rotatable but constrained against endwise movement and the other part, operable on the flint, is so arranged within the flint holder as to have movement along said holder imparted to it by rotation of the first part. Pyrophoric lighters of this type are described, for example, in British Specifications Nos. 278,332, 302,843 and 358,801.

The present invention has for its object to improve lighters of the aforesaid type.

Accordingly this invention provides a lighter of the type specified above wherein that part of the two-part device for taking up wear of the flint which is operable on the flint comprises a body portion having a hollow cylindrical part which is closed at one end, and the other part of said device is a rotatable adjuster provided with a shaft which extends into the interior of said cylindrical part through its closed end and which has an enlarged head on its inner end, with a compression spring encircling the shaft between said

head and the closed end of the said cylindrical part and a screw-threaded connection between said body-portion and the flint holder and a sliding keyed connection between the body portion and the adjuster.

One construction according to the present invention will now be described in detail by way of example with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of the lighter,

Figure 2 is a section through the lighter, and

Figure 3 is a part section taken on the axis of the friction wheel showing the flint adjusting mechanism.

In this construction the lighter consists of a flat rectangular container 10 of the usual form to contain petrol or other volatile fuel, having a notched wheel 11 mounted at one end of the container. The wheel is covered by a cap 12 which is pivoted for movement about the axis 13 of the wheel. This cap 12 also serves to cover the wick. The construction of the cap and the manner in which the friction wheel is rotated is described in co-pending Application for British Letters Patent No. 37,603/30 (Serial No. 364,306). The flint 14 is mounted directly beneath the friction wheel 11 in a tube 15 or holder which extends through the container from one end to the other. This tube is threaded in its interior and in it a small cylinder 16 (the body portion aforesaid) is screwed, and a compression spring 17 extends between this cylinder and the flint 14. The cylinder is hollow and at its end 18 remote from the flint is per-

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forated with a square aperture. An adjuster which consists of a squared shaft 19 and a circular head 20 cut with a screw-driver slot 21 is located with the head in a sunk recess 22 at the end of the container and with the squared shaft 19 extending through the square hole in the cylinder 16 aforesaid. A small screw 23 having an enlarged head 24 is screwed into that end 25 of the squared shaft 19 which lies within the hollow cylinder 16, and between the head 24 of this screw and the squared end 18 of the cylinder 16 a compression spring 26 is located. The end 27 of the cylinder 16 which is nearest the flint 14 is closed by a screwed plug 28 having a projecting stud 29 which serves to locate that compression spring 17 which extends between the cylinder and the flint. The operation of this device is as follows:—

The head 20 of the adjuster (which is exposed at one end of the container) is rotated by the operator, for example with a coin, the slot 21 being so formed that a small coin may be used for this purpose. The rotation is transmitted by the squared shaft 19 to the cylinder 16 (or body portion) which is thus screwed along the interior of the tube 15 to force the flint 14 by means of the compression spring 17 against the friction wheel 11. As it is screwed along the interior of the tube 15, the cylinder 16 slides along the squared shaft 19. It will be appreciated that irrespective of the amount of adjustment the head 20 of the adjuster is always readily accessible.

Having now particularly described and ascertained the nature of the said inven-

tion and in what manner the same is to be performed, as communicated to us by our foreign correspondents, we declare that what we claim is:—

1. A lighter of the type specified, wherein that part of the two-part device for taking up wear of the flint which is operable on the flint comprises a body portion having a hollow cylindrical part which is closed at one end, and the other part of said device is a rotatable adjuster provided with a shaft which extends into the interior of said cylindrical part through its closed end and which has an enlarged head on its inner end, with a compression spring encircling the shaft between said head and the closed end of the said cylindrical part and a screw-threaded connection between said body portion and the flint holder and a sliding keyed connection between the body portion and the adjuster.

2. A lighter according to Claim 1, wherein the closed end of said cylindrical part is provided with a polygonal hole, the said shaft is polygonal, and the said body portion is screw-threaded on its exterior and engages a corresponding screw-thread on the interior of the flint holder.

3. A pyrophoric lighter of the type specified, having flint adjusting means substantially as described herein or substantially as shown in the accompanying drawings.

Dated this 4th day of September, 1931.  
BOULT, WADE & TENNANT,  
111 & 112, Hatton Garden, London,  
E.C.1,  
Chartered Patent Agents.

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

Fig. 1.

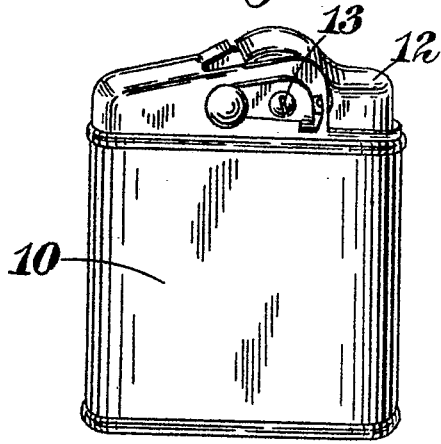


Fig. 2.

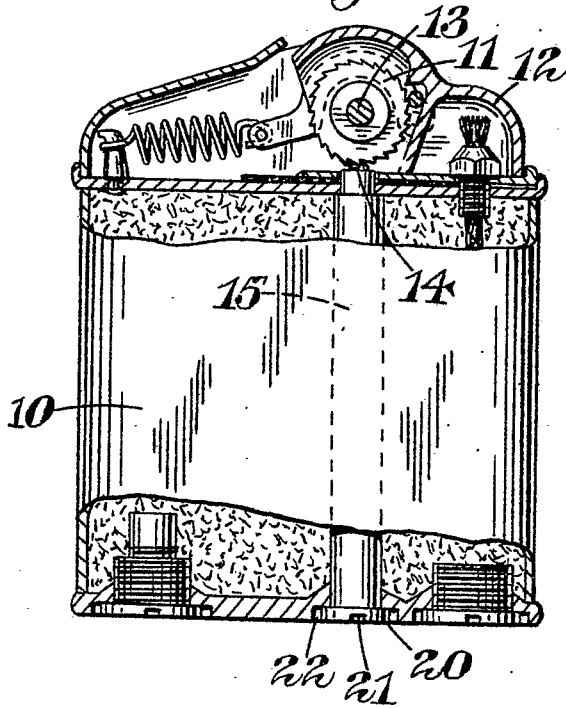


Fig. 3.

