

# RESERVE COPY

## PATENT SPECIFICATION



Application Date: Nov. 11, 1935. No. 31163/35. **465,663**  
(Patent of Addition to No. 364,306; Dated Dec. 12, 1930).  
Complete Specification Left: May 12, 1936.  
Complete Specification Accepted: May 11, 1937.

### PROVISIONAL SPECIFICATION

#### Improvements in or relating to One-hand Pyrophoric Pocket Lighters

(As a communication from KREMER & BAYER, a German firm, of Offenbach, Germany).

We, W. M. CURWEN & COMPANY LIMITED, a British Company, of 260, Gray's Inn Road, London, W.C.1, do hereby declare the nature of this invention to be as follows:—

The invention relates to one-hand pyrophoric pocket lighters of the kind described and claimed in Patent No. 364,306 and having a common spindle for the friction wheel and for the hinged cap and a snap-action spring for continuing opening movement of the cap initiated by, for example, a hand lever.

According to the invention a pyrophoric pocket lighter as described above is characterised in that the spring operates under compression and is supported on a guide member pivoted to the cap at the rear end thereof at a position which is above and behind the spindle when the cap is closed but which moves past a dead-centre position of the guide to a position below the spindle. According to a feature of the invention, the boundary walls of the lighter casing, at the rearward part of the latter, are extended beyond the fuel container cover and form, together with the box-like hood and cap, in the closed position of the latter, a flat and perfectly smoothed-wall body, which is closed on all sides. A hand lever is preferably fixed laterally to the cap as operating member for the latter and is preferably guided on the corresponding external wall of the lighter casing. Bearing brackets for the friction wheel spindle and an abutment for the spring may be mounted on a common base plate which may rest on the cover of the fuel container and be supported in the casing together with the spring abutment and a slide bearing for the guide member, and be fixed on the cover of the fuel container only by the burner head.

A constructional example of the invention is shown in the accompanying drawings, wherein:

Figure 1 shows the lighter and its igniting device in longitudinal section, the cap being open.

Figure 2 shows the same in end elevation and

Figure 3 with the cap closed, with the casing wall partly broken away and a section through the rearward guiding and springing means for the cap.

At *a* is shown the cap which carries an internal cap for the wick and is constructed as a box-shaped lid, mounted on the friction wheel spindle *b* and connected to the friction wheel by a suitable coupling ratchet (not shown). Hinged to the said cap by means of a pivot *c* is a sliding pin *e*, which is under the action of a thrust spring *d* and which has its free end guided in the rearwardly widened bore *f* of a slide bearing and abutment *g*. The helical spring *d* coiled round the sliding pin *e* bears by one end against the slide bearing and abutment *g*, while its other end engages the sliding pin *e* in the vicinity of the pivot or joint of the said sliding pin.

The bearing bracket *h* for the spindle *b* of the friction wheel and cap, and the slide bearing and abutment *g* are combined on a base plate *i* which carries all the elements pertaining to the ignition device. During assembly, this ignition device is inserted as a whole into the box-like cavity of the lighter casing formed by the lateral walls projecting above the cover of the fuel container. The slide bearing and abutment *g* is supported in this cavity against the boundary walls thereof and its attachment to the cover of the fuel container is then effected merely by screwing the burner head *k* on to the projecting end of the wick tube.

When opening the lighter or when using the same, the cap *a* must first be raised against the action of the spring *d* by means of the operating lever *l*, which is rigidly connected to the said cap, until the pivotal point of engagement of the sliding pin *e* has passed the dead centre position. Further opening movement of

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the cap is then effected by the spring which forces the cap upward with a jerk.

In the closed position, the spring *d* forcibly shuts the cap *a* by means of the sliding pin *e* and presses the cap firmly on the burner head. The lateral walls of the cap, which is made in the form of a box-like lid are bounded by circular edges towards the rearward open end thereof, and the boundary edges of the said lateral walls slide in corresponding cut-out recesses of the lateral boundary walls of

the casing, the said recesses serving as guiding tracks.

In this way, the cap is provided with additional guiding means which relieve the spindle *b* of load, and the entire lighter is given the form of a closed, smooth faced and flat box.

Dated this 11th day of November, 1935.

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

## COMPLETE SPECIFICATION

### Improvements in or relating to One-hand Pyrophoric Pocket Lighters

20 We, W. M. CURWEN & COMPANY LIMITED, a British Company, of 260, Gray's Inn Road, 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:—

The invention relates to one-hand pyrophoric pocket lighters of the kind described and claimed in Patent No. 364,306 and of the kind having a common spindle for the friction wheel and for the hinged cap supported in a bearing bracket and a snap-action compression spring for continuing opening movement of the cap initiated by, for example, a hand lever, the spring being supported on a guide member one end of which is supported for sliding movement in a bearing which also forms an abutment for the spring and the other end of which is pivotted to the cap at the rear end thereof at a position which is above and behind the spindle when the cap is closed but which during opening of the cap moves past a dead-centre position of the guide to a position below the spindle.

50 According to the invention a pyrophoric pocket lighter as described above is characterised in that the cap, the bearing bracket for the common spindle and the bearing for the guide member, are all mounted on a common base plate separable as a unit from the body of the lighter and fixed on the top of the fuel container only by the burner head. According to a feature of the invention the boundary walls of the lighter casing, at the rearward part of the latter, are extended beyond the fuel container top to form a box-like hood so shaped that the casing and the cap, in the closed position of the latter, form a closed body having

smooth flat walls. A hand lever is preferably fixed to the side of the cap as operating member for the latter and is guided on the corresponding external wall of the lighter casing. 65

A constructional example of the invention will now be described with reference to the drawings accompanying the provisional specification wherein: 70

Figure 1 shows the lighter and its igniting device in longitudinal section, the cap being open. 75

Figure 2 shows the same in end elevation and

Figure 3 with the cap closed, with the casing wall partly broken away and a section through the rearward guiding and springing means for the cap. 80

At *a* is shown the cap which carries an internal cap for the wick and is constructed as a box-shaped lid, mounted on the friction wheel spindle *b* and connected to the friction wheel by a suitable coupling ratchet not shown. Hinged to the said cap by means of a pivot *c* is a sliding pin *e* which is under the action of a thrust spring *d* and which has its free end guided in the rearwardly widened bore *f* of a slide bearing and abutment *g*. The helical spring *d* coiled round the sliding pin *e* bears by one end against the slide bearing and abutment *g*, while its other end engages the sliding pin *e* in the vicinity of the pivot or joint of the said sliding pin. 85 90 95

The bearing bracket *h* for the spindle *b* of the friction wheel and cap, and the slide bearing and abutment *g* are combined on a base plate *i* which carries all the elements pertaining to the ignition device. During assembly, this ignition device is inserted as a whole into the box-like cavity of the lighter casing formed by the lateral walls projecting above the top of the fuel container. The slide bear- 100 105

ing and abutment *g* is supported in this cavity against the boundary walls thereof and the attachment of the box plate and associated parts to the top of the fuel container is then effected merely by screwing the burner head *k* on to the projecting end of the wick tube.

When opening the lighter or when using the same, the cap *a* must first be raised against the action of the spring *d* by means of the operating lever *l*, which is rigidly connected to the said cap, until the pivotal point of engagement of the sliding pin *e* has passed the dead centre position. Further opening movement of the cap is then effected by the spring which forces the cap upward with a jerk.

In the closed position, the spring *d* forcibly shuts the cap *a* by means of the sliding pin *e* and presses the internal cap firmly on the burner head. The lateral walls of the cap, which is made in the form of a box-like lid are bounded by circular edges towards the rearward open end thereof, and the boundary edges of the said lateral walls slide in corresponding cut-out recesses of the lateral boundary walls of the casing, the said recesses serving as guiding tracks.

In this way, the cap is provided with additional guiding means which relieve the spindle *b* of load, and the entire lighter is given the form of a closed, smooth faced and flat box.

Having now particularly described and ascertained the nature of the said invention 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 one-hand pyrophoric pocket lighter as claimed in Patent No. 364,306 and of the kind having a common spindle for the friction wheel and for the hinged

cap supported in a bearing bracket and a snap-action compression spring for continuing opening movement of the cap initiated by, for example, a hand lever, the spring being supported on a guide member one end of which is supported for sliding movement in a bearing which also forms an abutment for the spring and the other end of which is pivotted to the cap at the rear end thereof at a position which is above and behind the spindle when the cap is closed but which during opening of the cap moves past a dead-centre position of the guide to a position below the spindle characterised in that the cap, the bearing bracket for the common spindle and the bearing for the guide member, are all mounted on a common base plate separable as a unit from the body of the lighter and fixed on the top of the fuel container only by the burner head.

2. A pocket lighter as claimed in claim 1 in which the boundary walls of the lighter casing, at the rearward part of the latter, are extended beyond the fuel container top to form a box-like hood so shaped that the casing and the cap, in the closed position of the latter, form a closed body having smooth flat walls.

3. A pocket lighter as claimed in claim 1 or claim 2 and having a hand lever fixed to the side of the cap as operating member therefor and guided on the corresponding external wall of the lighter casing.

4. A pocket lighter substantially as described with reference to the drawings accompanying the provisional specification.

Dated this 12th day of May, 1936.

BOULT, WADE & TENNANT,

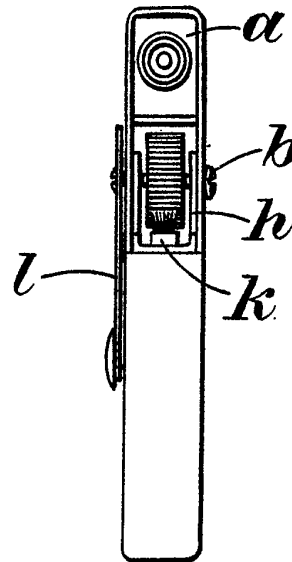
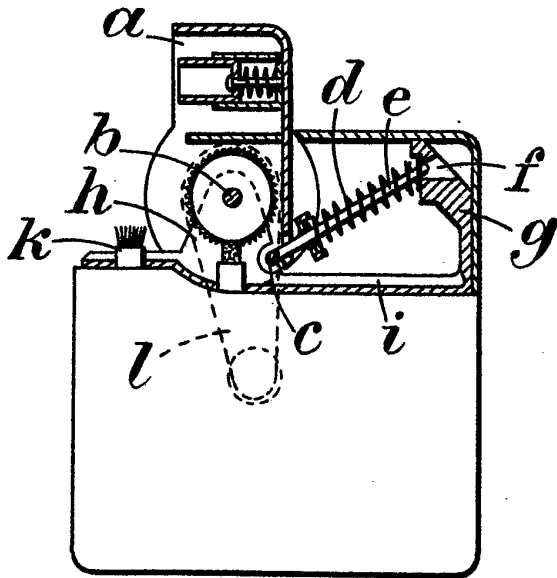
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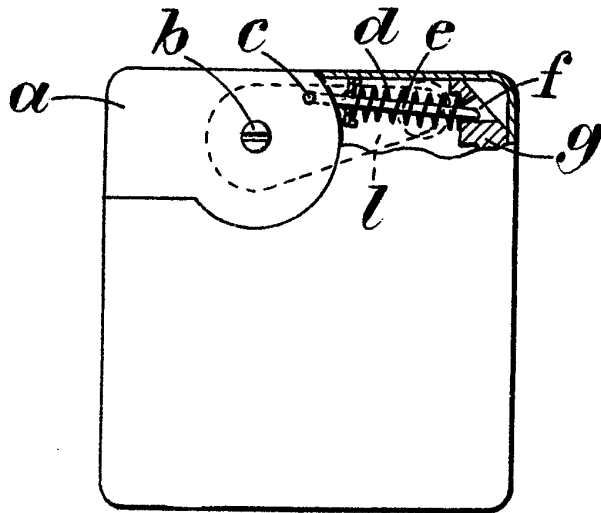
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*Fig. 1.*

*Fig. 2.*



*Fig. 3.*



*[This Drawing is a full-size reproduction of the Original.]*