PATENT SPECIFICATION

Application Date: Feb. 18, 1929. No. 5408/29. 329,042

Complete Left: Nov. 18, 1929.

Complete Accepted: May 15, 1930.

PROVISIONAL SPECIFICATION.

Benzine-pocket-lighter.

I, ADOLF KINZINGER, of No. 39, Jahnstrasse, Pforzheim, Germany, of German Nationality, do hereby declare the nature of this invention to be as follows:—

This invention relates to benzine pocket lighters in which the ignition sparks are produced by a friction wheel rotated on a cerium iron stone.

It is known to provide lighters of this kind with a wick cap carried by an oscillatable arm and which is lifted from the wick by the depression of a lever.

It is further known to utilize the oscillation of the arm carrying the wick cap for simultaneously effecting the rotating of the friction wheel. In this case the transmission of the oscillating movement of the arm to the wheel is effected by means of a controlling mechanism so that the friction wheel is only rotated at the lifting of the wick cap, whereas it remains stationary when the wick cap is being closed.

It is further known, to transmit the movement of the pressure lever by gear wheels to the oscillatable arm carrying the wick cap. The arrangement of the gear wheels is such that the pressure lever and the oscillatable arm have the same direction of rotation, and this necessitates that the axle of these two oscillatable parts are lying close together and in proximity to the longitudinal axis of the lighter body. This construction however is open to the objection that the wick cap mounted on the free end of the oscillatable arm and therefore also the point at which the wick projects must be arranged near one end of the top plate of the lighter body.

If a pocket lighter of this kind is to be provided with a wind screen the flame will be quite near a short side wall of this screen which will become considerably heated and may easily lead to the burning of the fingers. Moreover the flame cannot simultaneously receive air from all sides and consequently it is forced by the current of air coming from the wind screen entirely against the side wall of the air screen causing this wall to be still further heated. The flowing of air to the flame from one side only has the further disadvantage that the flame does not burn steadily but flickers and smokes.

The main advantage of this invention consists in that it does not require the wick projecting at one of the ends of the top cover of the lighter body but permits of its being approximately in the centre thereof. Therefore all the above mentioned disadvantages are done away with when a wind screen is provided. The wick sleeve and therefore the flame are situated in the centre of the air space of this cap between the axles of the pressure lever and of the oscillatable arm of the wick cap. Combustion air can flow freely to the flame from all sides and it no longer flickers and smokes.

The invention consists in that the two oscillatable parts, viz. the pressure lever and the arm of the wick cap, turn in opposite directions. The turning axles are no longer close together. That of the oscillatable arm for the wick cap is near the end of the top cover of the lighter body where the mouth of the wick tube was formerly situated and this mouth approximately at the point where the axle of the pressure lever for the wick cap was formerly arranged.

The fitting of a wind screen on the lighter no longer forms an obstruction and the wind cap can advantageously form the bearings for the revolving axles, for which in all known lighters of this kind, special flaps on the top cover plate of the lighter body had to be provided.

An embodiment of the invention is shown in the accompanying drawing, in which:

Fig. 1 shows a front elevation of the lighter, the wind screen being removed, so that the gear wheels transmitting the movement of the pressure lever to the oscillatable arm of the wick cap, is visible.

Fig. 2 shows a rear elevation of Fig. 1, the wind screen being removed, so that the control mechanism transmitting the rotation of the oscillatable arm of the wick cap to the friction wheel is visible.

Fig. 3 is a side elevation of Fig. 1 from the side where the pressure lever is situated.

Fig. 4 is a similar front elevation to Fig. 1 the wick cap being however lifted.

[Price 1/-]

Fig. 5 shows a plan view of Fig. 4 and Fig. 6 a top plan view of Fig. 1.

On the top cover *a* of the body *b* of the pocket lighter the wind screen *d* is removably mounted by means of a screw *c*. Under the wind screen the wick sleeve *e* and the guide sleeve *f* of the ignition pin *g* project upwardly. The wind screen *d* forms the bearings for the turning axles *h* and *i* of the pressure lever *k* and of the oscillatable arm *l* of the wick cap *m*. The movable parts *k*, *l*, *m* can therefore be removed with the wind screen *d* from the lighter body *b* so that the wick sleeve *e* is entirely exposed for cleaning and the like. The pressure lever *k* has two arms and carries on the arm projecting into the wind screen *d* a toothed portion k^1. The oscillatable arm *l* is provided with a toothed portion l^1 in engagement with the toothed portion k^1 of the pressure lever *k*. By depressing the pressure lever *k* in the direction A (Fig. 4) it performs a turning movement in the direction B. This causes the oscillatable arm *l* to turn in the opposite direction C whereby this latter assumes a position in the wind screen *d* so that the wick cap *m* is lifted clear of the wick e^1. This opening oscillation which is limited by a stop bar d^1 mounted on the wind screen *d*, also causes the rotation of the friction wheel *n* through a detent *o* (Fig. 2) oscillatably mounted on the oscillatable arm *l* which engages in and rotates the ratchet wheel *p* secured to the friction wheel *n* thereby producing the ignition sparks which ignite the benzine gas emitted from the wick e^1. On the pressure A decreasing, the spring *q* comes into operation and forces the pressure lever *k* into the inoperative position shown in Figs. 1, 2, 3 and 6. By this oscillation the wick cap *m* is also again placed over the wick sleeve *e*. The closing oscillation of these two oscillatable elements *k* and *l* is thereby limited and the wick cap *m*, under the pressure transmitted from the spring *q* through the toothed portions k^1, l^1 onto the packing plate e^2, sits on the wick sleeve *e* and tightly encloses the same preventing evaporation of the fuel. Owing to this closing oscillation of the oscillatable arm *l* the detent *o* slides back over the teeth of the ratchet wheel *p* without engaging with the same. Consequently the friction wheel *n* does not rotate during the closing oscillation of the oscillatable arm *l*.

It will be seen from the drawings that the wick sleeve *e* is situated near the longitudinal central axis of the lighter body *b* and therefore within the air space of the wind screen *d*. The turning axle *i* of the friction wheel *n* of the oscillating arm *l* is moved away from the centre towards one end of the top cover of the lighter body.

Dated this 18th day of February, 1929.
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COMPLETE SPECIFICATION.

Benzine-pocket-lighter.

I, ADOLF KINZINGER, of No. 39, Jahnstrasse, Pforzheim, Germany, of German Nationality, 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 benzine pocket lighters of the type wherein a pressure lever is connected through toothed gearing with an oscillatable arm carrying an extinguishing cap, in such a manner that when the pressure lever is depressed, the extinguishing cap is raised from the wick and the pyrophoric igniting device is operated to ignite the wick.

According to the invention in a lighter of the above kind one arm of a two-armed pressure lever is formed as a toothed segment and engages a similar segment, formed on the oscillatable arm carrying the wick cap, in such a manner that the pressure lever and the oscillatable arm rotate in opposite directions.

Preferably the wick is arranged in the centre of an air space enclosed by a windscreen, the sides of said windscreen forming bearings for the pivot axles of the pressure lever and oscillatable arm, so that the windscreen, pressure lever and oscillatable arm can be removed together from the body of the lighter.

An embodiment of the invention is shown in the drawing filed with the provisional specification in which:

Fig. 1 shows a front elevation of the lighter, the wind screen being shown in section, so that the gear wheels transmitting the movement of the pressure lever to the oscillatable arm of the wick cap is visible.

Fig. 2 shows a rear elevation of Fig. 1.

the wind screen being shown in section, so that the control mechanism transmitting the rotation of the oscillatable arm of the wick cap to the friction wheel is visible.

Fig. 3 is a side elevation of Fig. 1 from the side where the pressure lever is situated.

Fig. 4 is a similar front elevation to Fig. 1 the wick cap being however lifted.

Fig. 5 shows a plan view of Fig. 4 and Fig. 6 a top plan view of Fig. 1.

On the top cover *a* of the body *b* of the pocket lighter the wind screen *d* is removably mounted by means of a screw *c*. Through the bottom of the wind screen the wick sleeve *e* and the guide sleeve *f* of the ignition pin *g* project upwardly. The wind screen *d* forms the bearings for the turning axles *h* and *i* of the pressure lever *k* and of the oscillatable arm *l* of the wick cap *m*. The movable parts *k*, *l*, *m* can therefore be removed with the wind screen *d* from the lighter body *b* so that the wick sleeve *e* is entirely exposed for cleaning and the like. The pressure lever *k* has two arms and carries on the arm projecting into the wind screen *d* a toothed portion k_1. The oscillatable arm *l* is provided with a toothed portion l_1 in engagement with the toothed portion k_1 of the pressure lever *k*. By depressing the pressure lever *k* in the direction A (Fig. 4) it performs a turning movement in the direction B. This causes the oscillatable arm *l* to turn in the opposite direction C whereby this latter assumes a position in the wind screen *d* so that the wick cap *m* is lifted clear of the wick e_1. This opening oscillation, which is limited by a stop bar d_1 mounted on the wind screen *d*, also causes the rotation of the friction wheel *n* through a detent *o* (Fig. 2) oscillatably mounted on the oscillatable arm *l* which engages in and rotates the ratchet wheel *p* secured to the friction wheel *n*, thereby producing the ignition sparks which ignite the benzine gas emitted from the wick e_1. On the pressure A decreasing, the spring *q* comes into operation and forces the pressure lever *k* into the inoperative position shown in Figs. 1, 2, 3 and 6. By this oscillation the wick cap *m* is also again placed over the wick sleeve *e*. The closing oscillation of these two oscillatable elements *k* and *l* is thereby limited and the wick cap *m*, under the pressure transmitted from the spring *q* through the toothed portions k_1, l_1 onto the packing plate e_2, sits on the wick sleeve *e* and tightly encloses the same preventing evaporation of the fuel. Owing to this closing oscillation of the oscillatable arm *l* the detent *o* slides back over the teeth of the ratchet wheel *p* without engaging with the same. Consequently the friction wheel *n* does not rotate during the closing oscillation of the oscillatable arm *l*.

It will be seen from the drawings that the wick sleeve *e* is situated near the longitudinal central axis of the lighter body *b* and therefore within the air space of the wind screen *d*, and also, that the pressure lever and wick cap arm are so shaped that in the closed position they form a cover for the windscreen.

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 benzine pocket lighter of the type referred to, characterised in that the one arm of the two armed pressure lever (*k*) forms a toothed segment (k_1) and engages with a similar segment (l_1) of the oscillatable arm *l* of the wick cap (*m*) in such a manner that the pressure lever (*k*) and the oscillatable arm (*l*) of the wick cap (*m*) rotate in opposite directions (B and C).

2. A benzine pocket lighter as claimed in claim 1 with wick sleeve situated between the pivot axle of the pressure lever and that of the oscillatable arm of the wick cap, characterized in that the wick sleeve (*e*) is arranged in the middle of the free air-space of a wind screen forming the bearings for said pivot axles (*h* and *i*), said wind screen being removable from the body of the lighter together with the pressure lever (*k*) and the oscillatable arm (*l*).

3. A benzine pocket lighter as claimed in claims 1 and 2, characterized in that the pressure lever and the wick cap arm are shaped so that in closed position they form a cover for the wind screen.

Dated this 18th day of November, 1929.

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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1930.

Fig. 1.

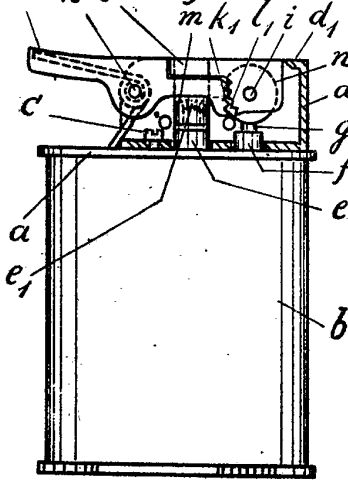


Fig. 3.

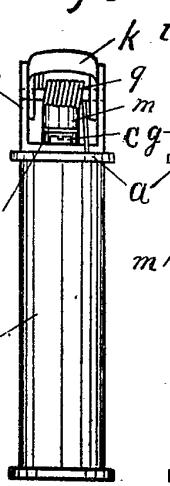


Fig. 2.

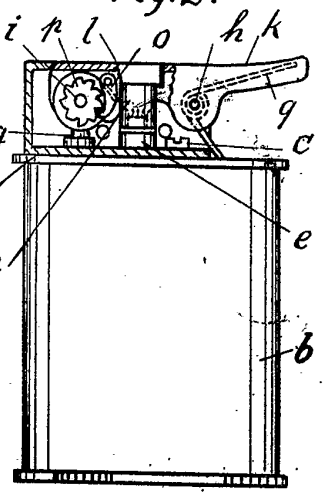


Fig. 4.

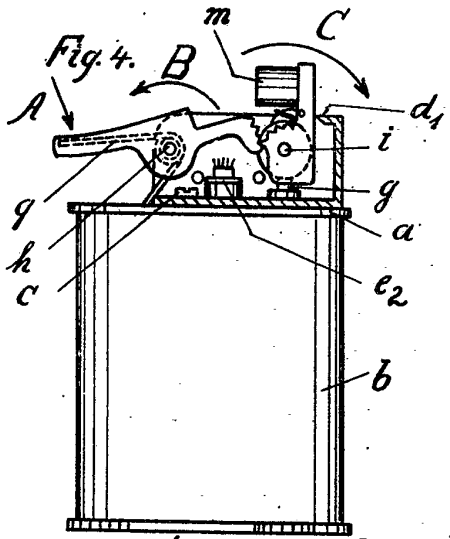


Fig. 5.

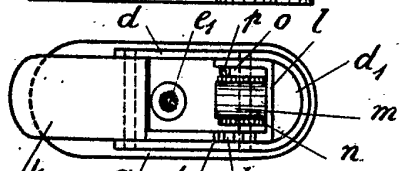
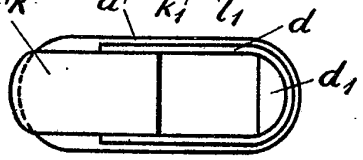


Fig. 6.



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