

PATENT SPECIFICATION

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305,233

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COMPLETE SPECIFICATION.

Improvements in or relating to Pyrophoric Lighters.

We, MARTIN GRÜNSTEIN, and LOUIS MÜLLER, both German Nationals, trading in co-partnership as the firm MÜLLER & GRÜNSTEIN, Elgersburger Feuerzeugfabrik, of Elgersburg, Thuringia, Germany, 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 present invention has reference to pyrophoric lighters of the type in which an extinguishing cap is rotatably mounted upon the body of the lighter and has pivotally connected to it an actuating arm which upon transverse pressure being applied downwardly to it, is adapted to simultaneously open the extinguishing cap and to bring the ignition device into action.

The invention has for its object to provide improvements in the construction of lighters of this type.

According to the invention the actuating arm is rigidly connected to a depressable rod so as to form therewith a unitary body or yoke which is connected with the extinguishing cap by means of a pin and slot, so that on pressing down the depressable yoke at the point of articulation the said pin slides within the said slot with which it is associated, whilst at the same time the cap is opened and the friction member rotated as in lighters of the type already mentioned.

With a lighter of this construction the reliability of its operation depends upon the friction wheel (which upon pressure upon the depressable yoke is caused to rotate at the same time as the extinguishing cap) receiving a very sudden, powerful and effective impulse or movement. It has been found, as a further feature of the invention, that this is facilitated by providing the depressable yoke with a device or member offering a certain amount of resistance to its displacement. Such a member or device can, for example, consist of a spring attached to the depressable rod of the yoke and opposing to a requisite extent its displacement.

The improved lighter is illustrated in the accompanying drawings, Figures 1

[Price 1/-]

and 2 being lateral elevations with the extinguishing cap in the open and closed position respectively, whilst Figure 3 is a plan view. Figure 4 is a lateral elevation of the operating mechanism withdrawn from the body or fuel receptacle of the lighter.

The letter *a* indicates the body of the lighter, serving as the receptacle for the fuel, through the cover plate of which the wick *b* projects. In the receptacle *a* there are mounted two sleeves *c* and *d* the first of which serves to receive a tubular body *e* on which the extinguishing cap *h* is pivoted and in which there is accommodated the pyrophoric flint or other ignition element *f* which bears against the friction wheel *g*. The wheel *g* rubs against the element *f* as soon as the extinguishing cap is rotated in opening it and for this purpose therefore the wheel is arranged to rotate with the cap. The extinguishing cap *h* is articulated by means of the pin *i* to the arm *k* of a depressable yoke the rod of which is marked *l*. This rod is adapted to pass into the sleeve *d* in the body of the lighter. The articulate connection between the pin *i* of the cap and the arm *k* of the yoke is so effected as to provide for the curvilinear path of the pin *i*, this being done by providing a slot *m* in the arm *k* of the yoke.

Upon the rod *l* of the yoke there is secured, as may be seen more clearly in the detailed view, Figure 3, a spring *n* which bears against the sleeve *d* such-wise as to offer resistance to the depression of the yoke, the result being that the latter can only be depressed by a comparatively powerful jerk. By this means a reliable spark formation is secured due to the sudden and rapid movement of the friction wheel *g* over the flint *f*. The flint tube *e* and the rod *l* are simply inserted in the sleeves *c*, *d*, and can be drawn out by gripping and pulling the arm *k*.

p is a pivoted locking lever which can be pushed into either of two incisions *o*, *o'* in the plunger *l* to hold the operating mechanism in the opened or closed position.

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We are aware that sliding means for the actuation of the extinguishing cap and ignition device form an essential element in a cigar lighter construction already

5 known. Therefore this feature is now claimed only in connection with an actuating arm forming a part of said sliding means which is articulated to the extinguishing cap by a pin and slot connection
10 in substitution for a rack member of the known construction.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to
15 be performed, we declare that what we claim is:—

1. A pyrophoric lighter with a rotatably mounted extinguishing cap and an actuating arm which upon transverse pressure
20 being applied downwardly thereto, at the same time opens the extinguishing cap and operates the ignition device, characterised by the fact that the actuating arm is articulated to the extinguishing cap by
25 a pin and slot connection and forms a

portion of a depressable yoke the plunger of which upon application of the operative pressure is pushed into the body of the lighter.

2. A pyrophoric lighter according to claim 1, characterized by the fact that
30 upon the depressable rod of the yoke there is provided a resistance body formed preferably of a spring and which necessitates a vigorous thrust or pushing movement being given to the yoke whereby the
35 reliability of the formation of sparks is ensured.

3. A pyrophoric lighter having its parts constructed, arranged, and adapted
40 to operate substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 1st day of February, 1929.

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28, Southampton Buildings, London,
England, and
19—25, West 44th Street, New York,
U.S.A.,
Agents for the Applicants.

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

Fig. 1.

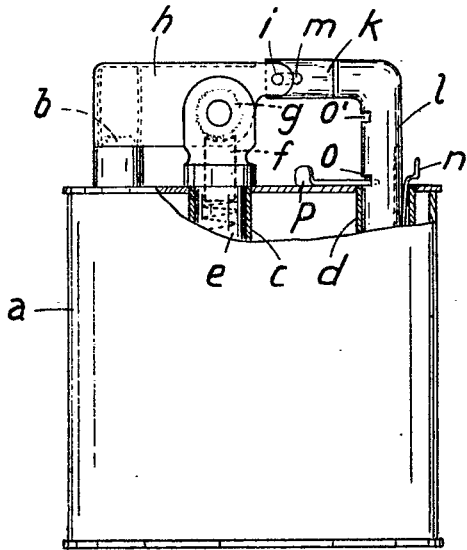


Fig. 2.

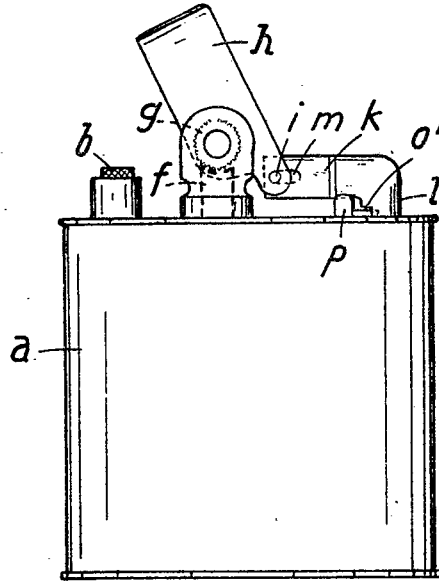


Fig. 3.

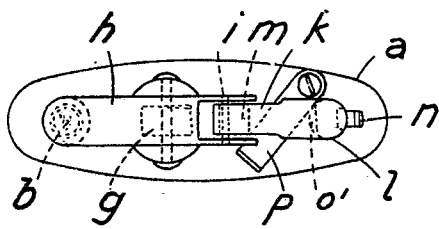


Fig. 4.

