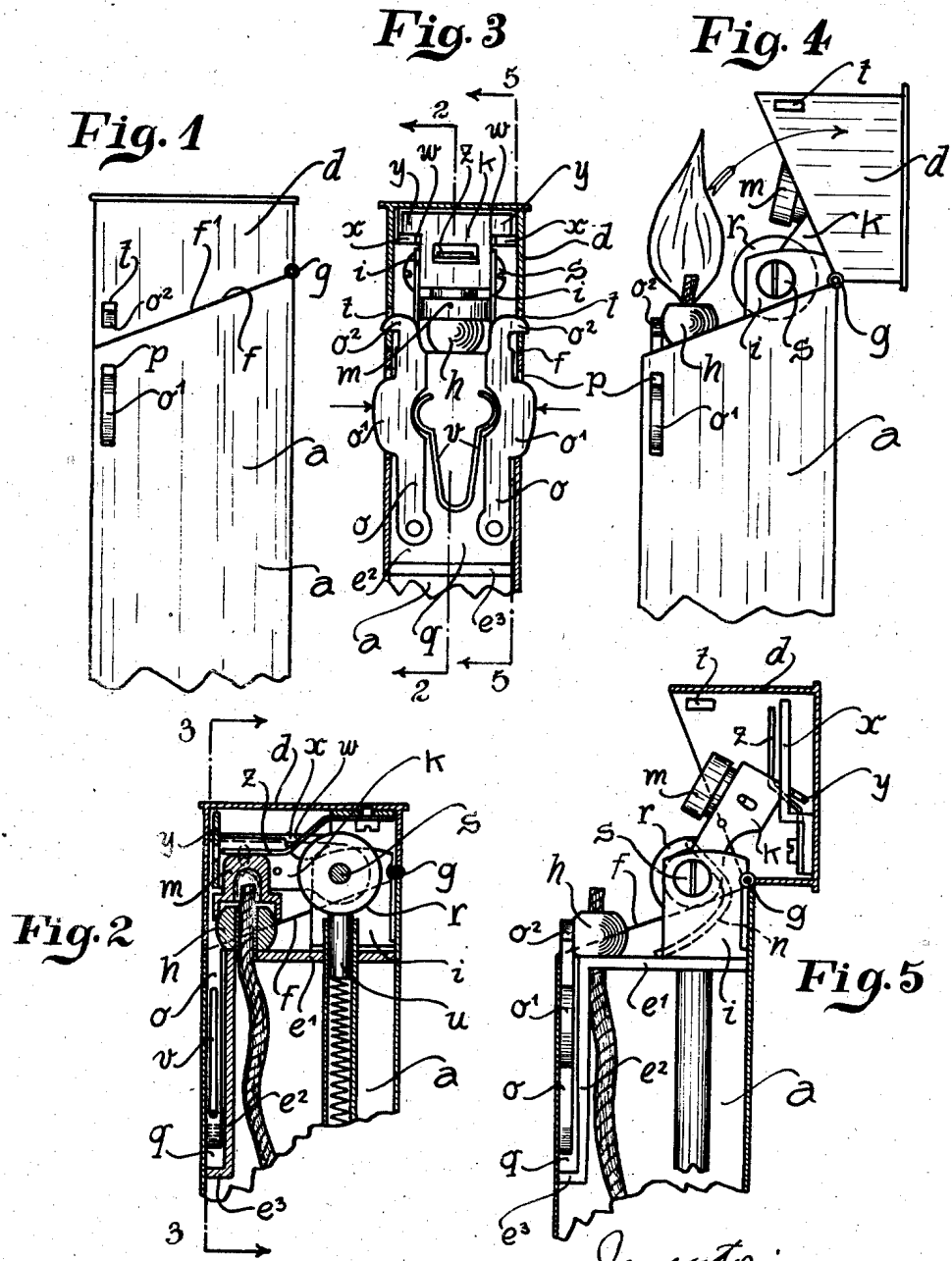


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H. MALTNER  
POCKET LIGHTER

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Inventor:  
Heinrich Maltner  
by David Rines  
Attorney

# UNITED STATES PATENT OFFICE

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## POCKET LIGHTER

Heinrich Maltner, Offenbach-on-the-Main, Germany, assignor, by mesne assignments, to Heinrich Maltner Kom. Ges., Offenbach-on-the-Main, Germany

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2 Claims. (Cl. 67-7.1)

The object of the invention is to solve the problem to enable rod-shaped lighters with spring-controlled cover to be provided with the spark-producing gears as used in connection with flat lighters and consisting of an arm carrying the extinguishing cap the arm being pivoted on a pin bearing a friction wheel and to be thrown up. As the limited dimensions of the lid of the rod-shaped fuel reservoir do not offer any possibility to place therein such a spark-producing gear it is a characteristic of the invention that the fuel reservoir is cut off obliquely so that the inclined face of it gets greater dimensions. Thereby the cover gets an inclined seat face too and must therefore be thrown up to furnish a wide open mouth permitting the insertion of a cigar, cigarette or the like to be lighted. By the force of the spring needed therefor the hinge with which the cover is suspended at the reservoir will be loosened in course of time so that the cover in its open position will oscillate. On the other hand, the very strong throwing up spring might be easily released from its locking so that the lighter in carrying it in the waistcoat pocket may open accidentally and the wick be lighted. It is therefore a further characteristic of the invention that the lighter is provided with a positive coupling between the arm carrying the extinguishing cap and the spring-controlled cover which coupling secures the cover in its vertical open position. On account of the strong force of the spring for its throwing up action a strong locking of the cover is required and therefore a stronger gripping of the hand for holding the lighter. Therefore, the locking of the cover is doubled and consequently affords a higher security against accidental releasing.

An embodiment of the novel lighter with spring-controlled cover is illustrated in the accompanying drawing as an example and in a larger scale.

Fig. 1 is a side elevation of the upper end of a closed pocket lighter embodying the present invention;

Fig. 2 is a vertical section of the same taken on the line 2-2 of Fig. 3, looking in the direction of the arrows;

Fig. 3 is a similar section taken on the line 3-3 of Fig. 2, looking in the direction of the arrows;

Fig. 4 is a side elevation similar to Fig. 1, with the cover of the pocket lighter open; and

Fig. 5 is a vertical section taken on the line 5-5 of Fig. 3, looking in the direction of the

arrows but with the cover in the open position, as in Fig. 4.

The fuel reservoir *a* of flat rod shape has as top edge a surface *f* downwardly inclined and the hook-like cover *d* hinged at the back of the reservoir at *g* has an equally incined seat *f*<sup>1</sup> leaning in closed position adjacent the inclined surface *f*. A sheet metal plate *e*<sup>1</sup>, *e*<sup>2</sup>, *e*<sup>3</sup>, bent twice at right angles is inserted in the reservoir and provides an upper closure for it. The horizontal top portion *e*<sup>1</sup> of this sheet carries the wick tube *h* and the cheeks *i* with an axle *s* for the friction wheel *r* and the carrier *k* of the extinguishing cap *m*. The arm *k* is controlled in known manner by a spring *n* throwing it up. In the compartment *q* formed by the vertical and short horizontal shanks *e*<sup>2</sup>, *e*<sup>3</sup> of the sheet and the front plate of the reservoir *a* two arms *o*, *o* are pivotally mounted and shaped the one as the original and the other as its mirror-image, each arm having a projection *o*<sup>1</sup>, *o*<sup>1</sup> projecting each through a slit *p* in the corresponding side wall of the reservoir to serve as finger piece. The upper end of each arm *o* is bent outwards to form a hook *o*<sup>2</sup>. These hooks *o*<sup>2</sup> are spread by the action of a spring *v* (Fig. 3) into slots *t* of the cover *d* when this cover is in the closing position. On the inside of the top plate of cover *d* a guide plate *x* is fixed having an aperture *w* through which angular projections *y* on the top end of arm *k* extend, the horizontal shanks of the projections engaging behind the plate. In this way a coupling between this arm *k* and the cover *d* is provided. Arm *k* carries an extinguishing cap *m* at its free end. A bent blade spring *z* fixed on guide plate *x* acts upon cap *m* to force the same tightly on to the top end of the wick tube *h* when the cover *d* is closed. The cap *m* is suspended swivelling between the shanks of the fork-shaped end of arm *k* so that it can slide in vertical direction.

By pressing the curved projections *o*<sup>1</sup> together by means of the index and thumb of the closed hand gripping the reservoir *a* the hooks *o*<sup>2</sup> are removed from the slots *t* of the cover. The spring *n* acting upon the arm carrying the extinguishing cap *m* can then exert the force imparted to it by the closing of the cover so that this arm *k* is suddenly thrown upwards. By this sudden movement the arm *k* lifts the cover *d* and oscillates the same around hinge pin *g* and the friction wheel *r* rubbing on the cerium stone *u* produces the spark.

To prevent the cover from exceeding the vertical position and to securely hold it in this posi-

tion, the forked arm *k* is coupled with the cover. During the simultaneous turning of the arm *k* and of the cover *d* around two different axles, the hook-shaped projections *y* of the arm *k* slide in the slot *w* of guide plate *x* and securely hold the cover in the upright position. As the top face of the reservoir and the bottom face of the cover are downwardly inclined from the back of the reservoir, a wide open mouth is formed between the open cover and the reservoir permitting the insertion of, e. g., even a very big cigar.

I claim:

1. A pyrophoric pocket lighter comprising a rod-shaped casing having a fuel reservoir, a cover hinged at the back of said casing and provided with a pair of oppositely disposed hook-receiving elements, spark-producing means on the top of the casing, a wick holder on the lid of the casing, and a pair of oppositely disposed locking elements for holding the cover closed, the locking elements each having a hook, the hooks being adapted to be received in the respective hook-receiving elements, means for yieldingly maintaining the hooks in the hook-receiving elements, and the locking elements having also oppositely disposed portions that are actuatable simultaneously toward each other from outside the casing in opposition to the force exerted by the yielding-maintaining means to effect actuation of the hooks out of the hook-receiving means to permit the cover to become opened, a movable arm, an

apertured guide plate disposed in the cover, the arm having projections protruding through the aperture of the guide plate and engaging behind the same so that the coupling produced thereby securely holds the cover in the upright position when opened, and a spring on the inner side of the top plate of the cover and extending between the projections of the arm carrying the extinguishing cap, said spring bearing on the top of said cap.

2. A pyrophoric pocket lighter comprising a casing having a fuel reservoir and provided with a pivot at its upper end and a pair of oppositely disposed hook-receiving elements, spark-producing means comprising a friction wheel pivoted about the pivot, an arm pivotally movable upwardly about the pivot, an extinguishing cap loosely carried by the arm, a cover hinged at the back of the upper end of the casing and provided with a seating surface contacting with the upper end of the casing when the cover is closed, an apertured guide plate disposed in the cover, the arm being provided with projections protruding through the aperture in the guide plate and engaging behind the guide plate to couple the arm to the cover and to limit the opening movement of the cover, and a spring disposed on the inner side of the top plate of the cover between the projections and bearing on the top of said extinguisher cap.

HEINRICH MALTNER.