

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in or relating to Pyrophoric Lighters.

We, LOUIS MULLER and MARTIN GRUNSTEIN, both citizens of the Republic of Germany, and trading in partnership as MULLER & GRUNSTEIN, of Elgersburger Lighter Works, Elgersburg, Thuringia, Germany, and VINCENT KASSAPIAN, a citizen of the Republic of Turkey, of 26A, Kurfurstendamm, Berlin, W. 15, Germany, (the said LOUIS MULLER and MARTIN GRUNSTEIN, trading in partnership as the firm MULLER & GRUNSTEIN, are the Assignees in part of the said VINCENT KASSAPIAN), 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 pyrophoric lighters of the kind wherein a combustible medium receptacle provided with a wick is fitted with a rotatably mounted extinguishing cap for enclosing the upper end of the wick and with an igniting device capable of being operated for igniting the wick by the removal of the cap therefrom. With reference to the lighters of this character it has been previously proposed to arrange the pyrophoric element of the ignition device in connection with the cap and to resiliently support the friction member thereof on the receptacle.

According to the invention, the rotatably mounted extinguishing cap has pivotally connected to it an actuating arm which is adapted to simultaneously remove the cap from the wick and to operate the ignition device upon transverse pressure being applied to the actuating arm. In thus arranging the cap and the ignition device the construction and operation of the lighter is simplified. Preferably the actuating arm and the extinguishing cap are so arranged as to constitute a toggle lever system in which the lever point of the arm is variable. To this end the arm is longitudinally movable in relation to a support on which it is pivotally mounted and its movement is controlled by a spring. The friction member is preferably arranged in the upper wall of the receptacle beneath the pyrophoric element carried by the extinguishing cap.

In order that the said invention may be [Price 1/-]

clearly understood and readily carried into effect, the same will now be more fully described, by way of example, in connection with the accompanying drawings, in which:—

Figure 1 is a front elevation partly in section and to an enlarged scale of the lighter capable of being carried in the pocket.

Figures 2 and 3 are respectively a side elevation and a plan view of Figure 1.

Figure 4 is a detail view of a modification hereinafter described.

Referring to Figures 1, 2 and 3, the extinguishing cap *a* is mounted on a pivot pin *b* about which it is adapted to be moved by lateral movement of the rod *c* which is pivotally connected at one end by a pin *d* to the cap *a* and at the other end is slidably mounted in a block *e* rotatably supported by pins *f* in the support *g*. In thus mounting the rod *c* it is capable of oscillatory movement about the common centre of the pins *f* and of reciprocatory movement in the block *e* and is thereby able to co-act with the cap *a* in its movements to and from the closed and open positions. On the rod *c* is mounted a spring *h* which abuts against the support *g* and bears against the upper part of the cap *a* and tends to prevent movement of such upper part towards the support *g*. Thus, when the rod *c* is pressed in the direction of the arrow *z*, the said upper end and pivotal connection *d* move towards the support *g* until the connection *d* comes into alignment with the pivot pin *b* and the centre of the block *e*. Further movement of the rod *c* in the same direction causes it to pass beyond the position of alignment whereupon the spring *h* is free to assert itself and complete the movement of the cap *a* to the full open position in which the upper end of the wick disposed in the tube *j* is exposed. In passing from the closed to the open position or vice versa, the cap *a* moves through an angle of about 95°. In its movement to the open position the cap *a* moves the pyrophoric element *k* in contact with the stationary friction plate *l* and the necessary sparks are produced for igniting the exposed wick. The simul-

5 taneous movement with the cap *a* of the
 element *k* is due to the latter being
 mounted in a part of the cap in such a
 position as to permit access thereto with-
 10 out dismantling any part of the lighter
 for this purpose. Such arrangement of
 the cap and element renders unnecessary
 the employment of any intermediate parts
 or means for effecting such simultaneous
 15 operation. The friction plate *l* is res-
 iliently supported in position by the
 plate spring *m* attached to the upper plate
n of the receptacle *o* to enable the plate *l*
 to give or move during the travel of the
 20 element thereover. To the said upper
 plate is also attached the support *g* of the
 block *e*, the support *p* whereby the
 pivotal pin *b* of the cap *a* is supported in
 position, and the wick tube *j*. The cap *a*
 is moved to the closed position by pressure
 on the cap itself.

25 The modification shown in Figure 4
 concerns the rod connected with the said
 cap and consists of a slotted end *q* on the
 rod *c*¹ riding on the pin *f*¹ and a plate
 spring *r* attached to the upper plate *n* of
 the receptacle and bearing against the
 end of the slotted rod *c*¹ which in this con-
 30 struction is flat instead of round as is the
 case in the arrangement shown in Figures
 1, 2 and 3.

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

1. A pyrophoric lighter of the kind

referred to, wherein the rotatably
 mounted extinguishing cap has pivotally
 40 connected to it an actuating arm which
 is adapted to simultaneously remove the
 cap from the wick and to operate the
 ignition device upon transverse pressure
 being applied to the actuating arm.

2. A pyrophoric lighter as in Claim 1, 45
 wherein the actuating arm and the extin-
 guishing cap are so arranged as to con-
 stitute a toggle lever system in which the
 lever point of the arm is variable.

3. A pyrophoric lighter as in Claim 1 or 50
 2, wherein the actuating arm is longi-
 tudinally movable in relation to a support
 on which it is pivotally mounted and its
 movement is controlled by a spring.

4. A pyrophoric lighter as in Claim 1, 55
 2 or 3, wherein the ignition device com-
 prises a friction member which is
 arranged in the upper wall of the combus-
 tion medium receptacle beneath the pyro-
 phoric element carried by the cap. 60

5. A pyrophoric lighter having its part
 constructed, arranged and adapted to
 operate substantially as hereinbefore
 described with reference to either of the
 65 examples illustrated in the accompanying
 drawings for the purpose specified.

Dated this 12th day of December, 1927.

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

