

June 17, 1941.

J. KOHN

2,245,926

PYROPHORIC LIGHTER

Filed Dec. 22, 1939

2 Sheets-Sheet 1

Fig. 1.

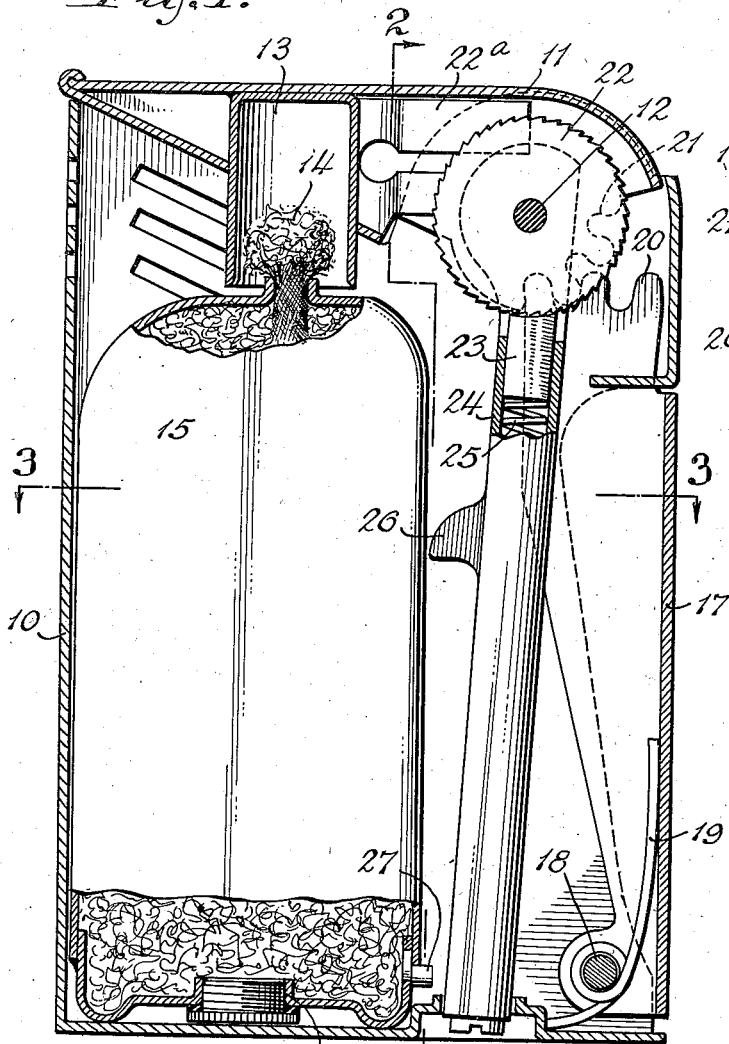


Fig. 2.

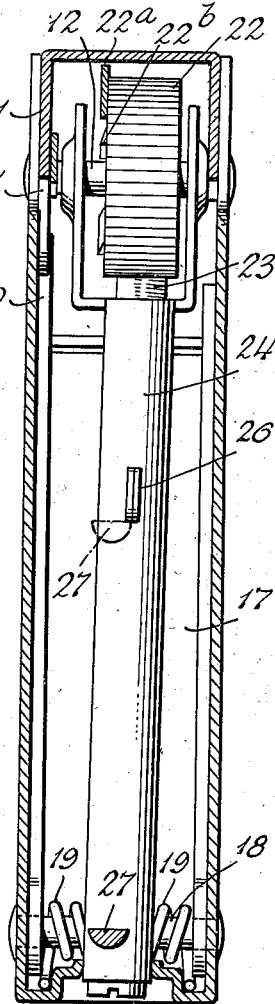
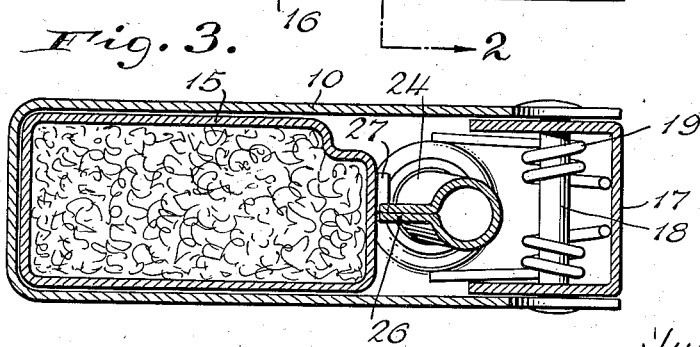


Fig. 3.



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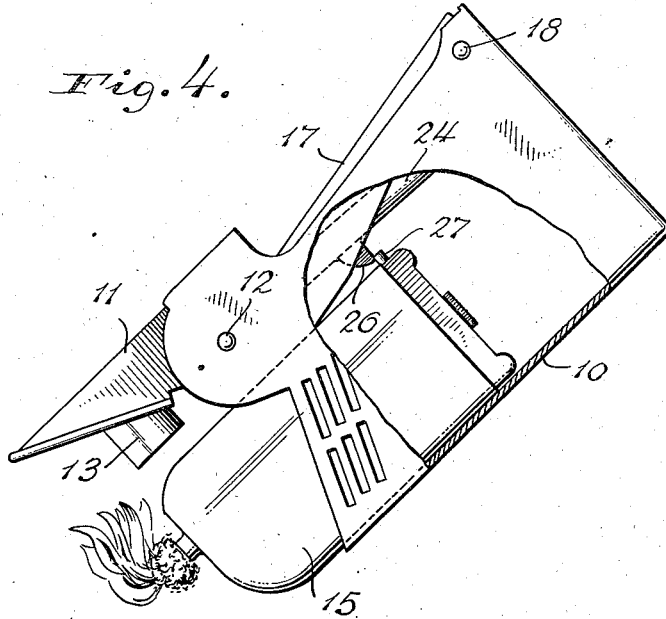


Fig. 5.

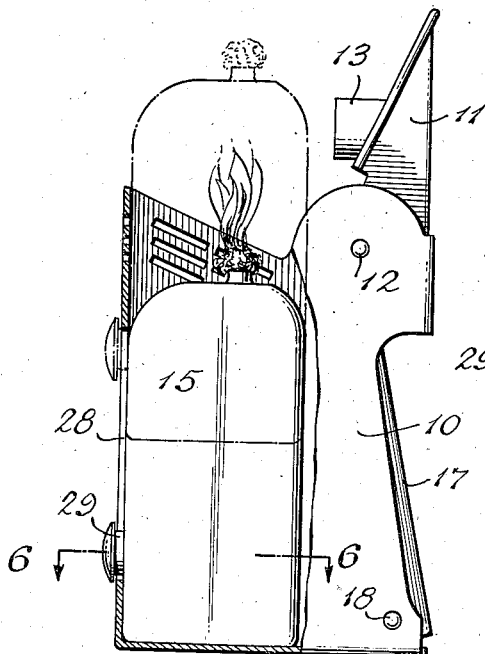
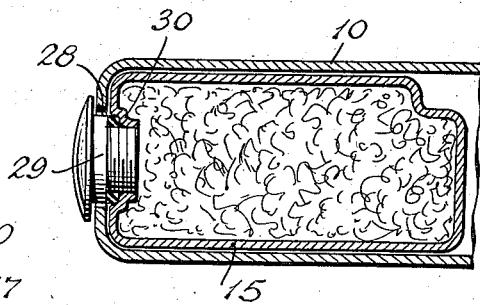


Fig. 6.



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PYROPHORIC LIGHTER

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1 Claim. (Cl. 67-7.1)

This invention relates to improvements in pyrophoric lighters and has particular reference to a fuel reservoir and mounting therefor.

In various types of lighters now in general use, the reservoir, with its ignitable wick, is fixed within the casing of the lighter and, as a consequence, when the wick is ignited and the lighter at least partially inverted, as must be done when attempting to light a smoking pipe, the flame from the wick will impinge upon some portion of the lighter casing and, aside from the carbon deposit thus formed on the casing, will sometimes heat the casing to such an extent, before the light can be obtained, that the lighter cannot be conveniently held in the hand without possible injury.

The present invention is designed to overcome the above difficulty by providing a simple and practical construction wherein the fuel reservoir is movably mounted within the casing of the lighter in such manner that said reservoir may be adjusted from a position in which it is enclosed within said casing to one wherein the wick of the reservoir is projected outwardly beyond said casing, thus making it convenient to tilt the lighter to obtain a light for a smoking pipe without injurious effect.

The inventive idea involved is capable of receiving a variety of mechanical expressions some of which, for purposes of illustration, are shown in the accompanying drawings wherein:

Figure 1 is a vertical longitudinal section through a lighter constructed in accordance with the invention.

Figure 2 is a transverse sectional view taken on the line 2-2 of Figure 1.

Figure 3 is a horizontal section taken on the line 3-3 of Figure 1.

Figure 4 is a perspective view, partly broken away and shown in section, showing the reservoir of the lighter projected partially from the casing and in position to light a smoking pipe.

Figure 5 is a side elevation, partly in section, illustrating another form of the invention with the closure of the lighter in open position, the dotted lines indicating the projected position of the reservoir, and

Figure 6 is a section on the line 6-6 of Figure 5.

Referring more particularly to Figures 1 to 4, the lighter is shown as comprising a casing 10 having a closure 11 for its open upper end, which closure is pivotally movable about the stub shaft 12. Said closure 11 carries a snuffer or wick cap 13 adapted to engage over the wick 14 ex-

tending from the upper end of the fuel reservoir 15, when the closure 11 is in closing position. The reservoir 15 is provided in its bottom with a customary fuel inlet 16, and, in accordance with the present invention, is slidably mounted within the casing so that it may be partially projected from the casing to a lighting position, shown in Figure 4, or it may be entirely removed from the casing, as will later appear, in order to replenish the supply of fuel in the reservoir.

Operating means for the closure 11 and igniting means for the wick 14 are cooperatively arranged within the casing so that when said operating means is manipulated to open the closure 11 the wick is, at the same time, ignited. Said operating means comprises the depressible member 17 pivotally mounted at 18 near the rear end of the bottom of the casing, with the member extending upwardly within an opening formed in the rear wall of said casing and yieldably held in its normal position of Figure 1 by means of a spring 19 coiled about the pivot 18, with one end of said spring engaging the bottom of the casing and the other end contacting the depressible operating member 17 so as to force the same outwardly to the limit of its movement to normal position. The upper end of the member 17, within the casing 10, terminates in a rack segment 20 the teeth of which are engageable with a toothed disc 21 formed as a part of the closure 11. With this construction, it will be apparent that when the member 17 is depressed inwardly into the casing about its pivot 18, the segment 20 will rotate the closure 11 about the shaft 12 to the open position shown in Figure 4. At the same time that the closure is being opened, the wick 14 is also ignited. This is accomplished by means of a friction disc 22 having the shaft 12 as its axis so that the pawl 22a on the closure 11 will engage one of the teeth 22b on the disc 22 to turn the latter when the closure 11 is opened. Said disc 22 is in constant engagement with a pyrophoric element 23 mounted in the upper end of a fixed tube 24 within the casing and held in constant engagement with the disc 22 by means of the coil spring 25 within said tube.

For purposes of the present invention, the tube 24 is disposed within the casing in a vertically inclined position and, at a point intermediate the ends thereof, said tube is provided with a lateral stop member 26 extending toward the adjacent wall of the reservoir 15. This stop member is provided for the purpose of limiting the outward

sliding movement of the reservoir when the casing is tilted or partially inverted, as in Figure 4, after the wick 14 has been ignited by the opening of the closure 11. Cooperating with the stop member 26 and adapted to contact the same when the reservoir has reached the limit of its outward movement, is a pin 27 extending from the reservoir adjacent the bottom thereof. When the reservoir is slid outwardly, said pin 27 contacts the stop 26, as best shown in Figure 2. Due to the inclination of the tube 24, the pin 27 assumes a partially offset position relative to the stop 26, as shown in the dotted line position of Figure 2. This is done for the purpose of permitting the pin 27 to be shifted laterally with respect to the stop 26 to entirely clear said stop and thus enable the reservoir 15 to be completely withdrawn from the casing when it is desired to replenish the fuel supply. Such lateral shifting of the pin 27 is made possible by reducing the width of the reservoir 15 to slightly less than the interior width of the casing 10, as shown in Figure 3, so as to give the reservoir, in its partially projected position, sufficient play within the casing 10 to enable the pin 27 to be cleared of the stop 26, after which the reservoir can be completely extracted from the casing.

In the form of the invention shown in Figures 5 and 6, the operating means for the closure 11 and the igniting means for the wick are of the same construction as previously described and the casing is likewise the same with the exception that in the present embodiment the front wall thereof is provided with an elongated slot 28. Projecting through this slot is the headed closure member 29 for the fuel inlet 30 of the reservoir 15,

said inlet being formed in the front wall of the reservoir instead of in the bottom thereof as in the first described embodiment. With this arrangement, the closure or plug 29 acts as a stop which engages the upper end of the slot 28 to limit the outward movement of the reservoir to the dotted line position when the lighter is tilted. Also, with the closure 29 in the front wall of the reservoir, and projecting through the slot 28, it will be apparent that said closure may be readily removed and fuel injected into the reservoir through the slot 28 of the casing, thus avoiding the necessity of removing the reservoir of the casing when refilling.

What is claimed is:

In a pyrophoric lighter, an invertible casing having side walls, a reservoir having a wick and gravitationally slidable within said casing and also having lateral movement therein relative to said side walls, an igniting means for said wick including a pyrophoric element and a support therefor, said support comprising a tube arranged in said casing so as to incline toward one of said walls, a stop on said tube intermediate its ends, and a stop adjacent the lower end of said reservoir partially offset in a vertical plane relative to the first named stop but engageable therewith to limit the outward movement of said reservoir when said casing is inverted to project said wick beyond the casing, the lateral movement of said reservoir within said casing being such as to permit the stop on said reservoir to be completely offset relative to the stop on said tube so that said reservoir can be entirely withdrawn from within said casing.

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