

## PATENT SPECIFICATION

462,948

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### COMPLETE SPECIFICATION

#### Improvements in and relating to Pyrophoric Lighters

I, JOSÉ FERNANDEZ, a citizen of the Republic of Spain, of 17, rue Berthon, Paris, Manufacturer, 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 in which the serrated friction wheel is turned by pressure of the operator's finger on an operating member mounted on a support arranged to rock about the pivotal axis of the serrated friction wheel, said operating member being adapted to turn said friction wheel by engaging a toothed wheel rigidly coupled to it.

The object of the present invention is to provide an improved lighter of the above type and this is effected by providing the operating member with one or more tooth-like projections which are held normally out of engagement with the toothed wheel, engagement being effected by and at the first pressure of the operator's finger on the operating member.

Broadly the present invention consists of a pyrophoric lighter of the first mentioned type in which actuation of the serrated friction wheel by the rocking movement imparted to the support by the pressure of the operator's finger on an operating member carried thereby is effected through an interengagement between one or more normally disengaged tooth-like projections on the operating member and a toothed wheel on the side of the serrated wheel, the first pressure of the operator's finger on the operating member serving to effect such engagement and continued pressure serving to rock the support and to cause the serrated friction wheel positively to be turned when the support is rocked.

The operating member on the support can be pivoted or resiliently mounted on the support or it can be a resilient member fixed at one end on said support. If desired the operating member, when it is pivoted on the support constitutes an element for locking the lighter when it is closed owing to the action of a spring which tends to cause disengagement

between the teeth of the operating member and the toothed portion of the serrated wheel.

The extinguisher can be resiliently mounted on the support.

This invention also relates to the combination in a single unit of a lighter as previously characterised and of a cigarette case preferably constituted by a tubular part of rectangular cross section in which can be inserted a packet of cigarettes.

The lighter can be combined with a lip stick.

In order that the invention may be clearly understood and carried into effect an embodiment of the same will be described with reference to the accompanying drawings in which:—

Fig. 1 is a general elevation, on an enlarged scale, and in partial section, of a lighter made according to the invention.

Fig. 2 is a section made according to line II—II of the preceding figure.

Fig. 3 is a partial view corresponding to fig. 1 and on an enlarged scale, showing a constructional modification of the driving sets of teeth.

Fig. 4 is a sectional view made substantially according to line IV—IV of fig. 1, showing a constructional modification comprising a resiliently mounted extinguisher.

Fig. 5 is a perspective view of a cigarette case combined with a lighter illustrated in fig. 1.

Fig. 6 is a partial section of the cigarette case.

Fig. 7 is a perspective view of a lip stick combined with a lighter illustrated in fig. 1.

Fig. 8 is an elevation of a modification.

The lighter, illustrated in fig. 1, comprises a reservoir 1 in which is placed cotton or like material soaked with gasoline, the reservoir being filled up through an orifice normally closed by a stopper 2. A ferro-cerium pellet, on which acts by friction a serrated wheel 3, is resiliently held against the latter in the usual manner, by a spring 4 and a screw 5.

According to the invention, on the pin 6 is pivoted a support 7 on which is

mounted an operating member 8 the part 8a of which constitutes the driving element and the part 8b the element for locking the lighter in closed position.

- 5 In the example shown in fig. 1, the member 8 is pivoted about a pin 9, rigid with the support 7, a spring 10 partially wound about this pin 9 acting on member 8 for constantly urging it in position for  
10 locking the element 8b, that is to say in the direction of the arrow  $F_{11}$ . The free end of part 8a has a tooth 12 which engages with teeth 14 rigid with wheel 3, when the part 8a acted upon in the  
15 direction of the arrow  $F_{15}$ . This action causes member 8 to become angularly rigid with wheel 3 by engagement of tooth 12 with the teeth 14 and, at the same time, the unlocking of a locking  
20 member 16 rigid with part 8b. A tangential displacement of the finger, on part 8a and in the direction of the arrow  $F_{15}$ , finally causes a rotation of wheel 3 for ensuring the lighting of the wick 17.  
25 The unit, constituted by the support 7 and the member 8 mounted on the latter, can be restored manually or through the medium of a spring device (not shown).

It will be noted that the displacement  
30 of the serrated wheel 3 can be large (of the order of 150 degrees), the member 8 being instantaneously rendered rigid with the wheel 3 as soon as part 8a is acted upon.

- 35 In a further arrangement the operating member 8 on the pivoted pin 9 can be replaced by a resiliently distortable member connected at the point 9 to a support 7 and provided with a resilient  
40 actuating part 8a as in the previous arrangement and a resilient locking part 8b. With this arrangement disengagement of the catch 16 may be effected manually by the finger of the user or if  
45 the part 8b is made of sufficiently resilient material the pull applied thereto when the member 8a is operated will cause disengagement of the catch 16.

A plurality of driving teeth 12 might  
50 be provided on member 8 as illustrated in particular in Fig. 3.

The extinguisher 18 can be rigidly mounted on the support 7, as illustrated in Fig. 1, or it can be resiliently mounted  
55 on this support through the medium of suitable means such as a small rubber strip 19 or any means capable of fulfilling the same function.

The lighter made as indicated above is  
60 of very small section and which permits of the combination with a cigarette case or with a lip stick as will be explained hereafter.

Fig. 5 shows an embodiment in which  
65 the lighter 1 is combined with a case 20

preferably having a tubular shape for receiving a packet of cigarettes.

A resiliently distortable blade or spring  
21 can be laterally provided (fig. 6) for  
70 correctly holding the packet of cigarettes, or for holding stationary packets of different dimensions.

The tubular portion can have the shape of a receptacle for directly receiving  
75 cigarettes.

Fig. 7 illustrates another embodiment in which the wall of the body 1 of the lighter is extended for constituting a case for a lip stick 22.

In the example of fig. 8, the screw 5 is  
80 placed at the end of the lighter in order to avoid the oblique arrangement necessary in fig. 7. In fig. 8 the lip stick 22 occupies only a portion of the width of the lighter.  
85

It is obvious that the forms of construction described and illustrated are given herein by way of indication only and not in a limiting sense. All changes or modifications which do not alter in any way  
90 the main features above set forth and the desired result, remain included in the scope of the present invention.

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

1. A pyrophoric lighter of the type specified in which actuation of the  
100 serrated friction wheel by the rocking movement imparted to the support by the pressure of the operator's finger on an operating member carried thereby is effected through an interengagement  
105 between one or more normally disengaged tooth-like projections on the operating member and a toothed wheel on the side of the serrated friction wheel, the first pressure of the operator's finger on the  
110 operating member serving to effect such engagement and continued pressure serving to rock the support and to cause the serrated friction wheel positively to be turned when the support is rocked.  
115

2. Improved lighter according to claim 1 characterised in that the operating member may be pivoted or resiliently mounted on the support or is a resilient member fixed at one end on said support.  
120

3. Improved lighter according to claim 1 characterised in that the operating member is provided with an element for locking the lighter in the closed position, the operating member being submitted to  
125 the action of a spring which normally retains the tooth like projections thereon out of engagement with the toothed wheel and the locking element in the locking position.  
130

4. Device for smokers constituted by the combination in a single article of an improved lighter according to the preceding claims and of a cigarette case preferably constituted by a tubular part in which may be inserted a packet of cigarettes or such part may receive the cigarettes without the packet.
5. Device for smokers according to claim 4 characterised in that a spring is disposed in the interior of the tubular part for maintaining packets of cigarettes of different width therein.
6. Device constituted by the combination of a lighter according to the claims 1 and 3 and of a lipstick such as a stick of rouge the casing of the lighter being adapted to from a case for the said lipstick.
7. The improved lighter, substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 26th day of June, 1936.

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46, Bedford Row, London, W.C.1,

For the Applicant.

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

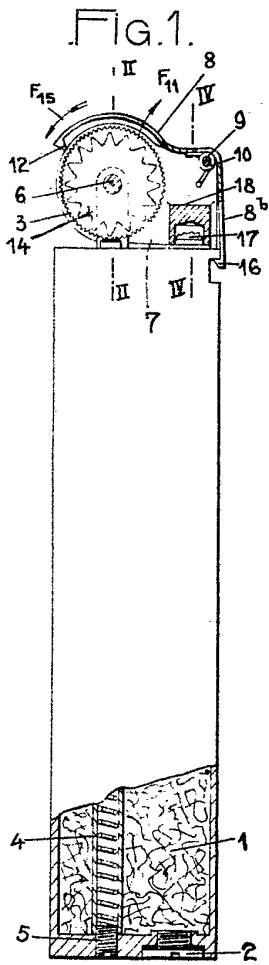


Fig. 1.

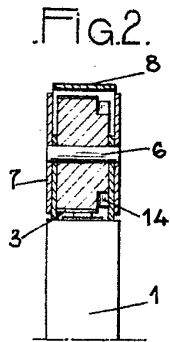


Fig. 2.

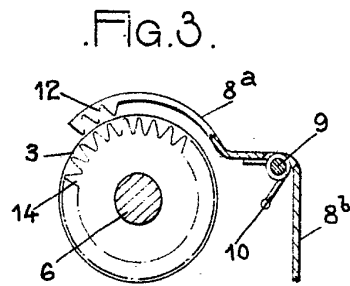


Fig. 3.

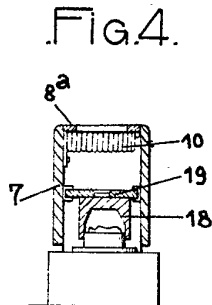


Fig. 4.

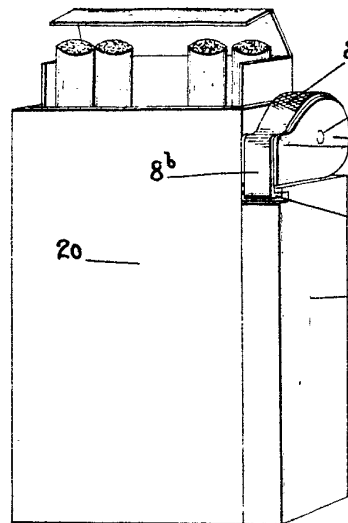
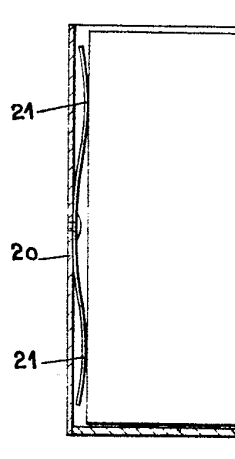


Fig. 6.

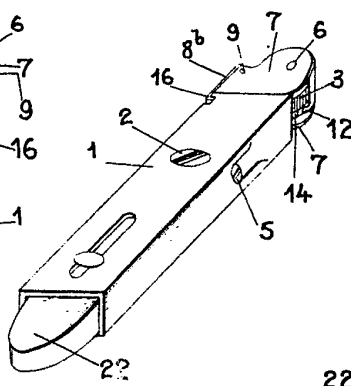
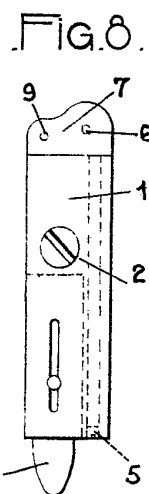


Fig. 7.

Fig. 8.