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AMENDED SPECIFICATION

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PATENT SPECIFICATION

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455,113

Application Date (in United Kingdom): Nov. 29, 1935. No. 33205/35.

Complete Specification Accepted: Oct. 14, 1937.



COMPLETE SPECIFICATION

Improvements in or relating to Cigarette Lighters

I, IRVING FLOMAN, a citizen of the United States of America, of 800, Riverside Drive, and Box 336, Grand Central Annex, New York, New York, United States of America, 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 improvements in and relating to pyrophoric lighters for cigars or cigarettes and more particularly to pyrophoric lighters of the flint-wheel type, and has for its object to provide an improved lighter which is of simple yet robust construction and which is simple and sure in operation.

According to this invention in a pyrophoric lighter having a flint-wheel spark producing mechanism including a spring tensionable on the movement of an operating member, the said mechanism being held stationary during a substantial part of the movement of said operating member by means of a latch member and then released for operation by the spring, the operating member is formed as a complete hinged lid of the lighter and the spring is in the form of a spiral spring, one end of which is attached to the inside of the lid and the other end to the spark producing mechanism.

When the lid is closed, the spring preferably occupies a position adjacent the top of the said lid above the flint-wheel. The spark-producing mechanism may advantageously carry a cap or snuffer for the wick and preferably includes a yoke pivoted to the friction or flint wheel spindle and being formed with an extension to which one end of the said spiral spring is attached.

The latch member may be pivoted to the hinge pin of the lid and carry a pin normally resiliently urged into engagement with a shoulder or recess formed in

the yoke member.

When the lid is moved in an opening direction, it first tensions the spiral spring, whereupon a pin carried thereby strikes the free end of the latch and causes it to release the spark producing mechanism which is thereupon free to move under the action of the spring so as to actuate the flint wheel.

The spark producing mechanism and the lid may be eccentrically mounted so that, when the lid is moved in a closing direction after use, the front wall thereof engages the front of the snuffer member and forces it downwardly to approximately closing position, whereupon the said parts become free and a pin on the lid to which one end of the spring is attached engages with the spark producing mechanism and completes the return operation, the latch member being automatically snapped into locking position.

In order that the invention may be fully understood, I shall now describe one embodiment thereof, by way of example, by reference to the accompanying drawing, in which:—

Figure 1 shows in side elevation a lighter according to my invention with the cover partly raised by the hand of the user.

Figure 2 is a front view of the lighter in open or ignited position.

Figure 3 is a side view with parts broken away of the upper portion of the lighter with the cover closed, and

Figure 4 is a cross section on the line 4—4 of Figure 2.

Referring to the drawing, the lighter comprises a body portion or casing 2 forming a reservoir or fuel chamber, this being filled with some absorbent material 4 such as cotton. This reservoir may be filled from the bottom through a fuel plug 6. In the top wall 8 of the lighter body is a tube 10 for receiving a wick 12 which

[Price 1/-]

extends downwardly through the tube into the cotton within the body 2. A flint tube 14 closed at the bottom by a plug 16 also extends upwardly through the body, 5 and is provided with a spring 18 so as to hold a piece of flint 20 in position in the top wall of the casing.

On either side of the flint, ears 22 extend upwardly from the top wall 8, these 10 ears being spaced inwardly a slight distance from the outer surfaces of the side walls. A cover 24 is pivotally mounted at the lower rear corner of the ears 22, on a pin 26.

In the ears 22 is mounted a transverse shaft 28. A flint wheel 30 is rotatably mounted on said shaft in a position to engage the flint 20. The invention provides means whereby the raising of the 20 cover will cause such flint wheel to turn and strike sparks from the flint onto the wick thereby igniting the same.

Pivoted on the shaft 28 is a snuffer member 32 having a snuffing portion 34 25 arranged at such a distance from the shaft 28 as to cover the wick when the snuffer member is depressed. The snuffer member has leg or bearing portions 36 on each side of the flint wheel 30 which bear on the shaft 28. On the inner face of one 30 of these members 36 is arranged a spring tooth 38 which is adapted to cooperate with ratchet teeth 40 on the adjacent side wall of the flint wheel 30. This forms a 35 one-way connection between the snuffer member and the flint wheel, so that when the snuffer member is raised it will impart motion to the flint wheel, while during its movement toward covering position the 40 flint wheel may remain stationary.

In order to impart motion to the snuffer member when the cover is raised, it is provided with an upstanding portion 42 to which is attached a coil spring 44 the 45 other end of which is connected to a rod or pin 46 mounted adjacent the top of the cover 24. However, the snuffer member is normally held against movement by a shoulder or notch 48 provided in one of 50 the members 36 and which may be engaged by a pin 50 on a latch member 52 pivoted on pin 26. A spring 56 normally holds this latch member in such a position that the pin 50 engages beneath the shoulder 55 48 and thus locks the snuffer member against movement towards uncovering or raised position.

The latch member 52 also has an upward extension 58 which lies in the path 60 of movement of a pin or post 60 mounted on the inside wall of the cover 24.

The operation of this device is as follows:—When the user wishes to ignite the wick, he pushes the cover upwardly 65 with his thumb in the general manner

shown in Fig. 1 in the direction of the arrow. As the cover rises, the spring 44 is placed under tension because the pin 46 moves away from the portion 42 of the snuffer member. The snuffer member is 70 held down because the pin 50 of the latch 52 is engaged beneath the shoulder 48. When the cover reaches or approaches open position, the pin 60 strikes the upward extension of latch 52 and pushes pin 75 50 out of engagement with shoulder 48. The snuffer member is now free to rise, and the spring 44 will pull it to uncovering position. As the snuffer member moves upwardly, because of its one-way 80 connection with the flint wheel it imparts a sudden spinning motion to the flint wheel which throws sparks against the wick and ignites the same.

When the user wishes to extinguish the 85 flame and restore the lighter to a condition for further operation, the cover is depressed. As the cover begins to move downwardly, the front wall engages the front wall of the snuffing portion 34 and 90 pushes the same downwardly. As the cover and snuffer approach closed position, the snuffing portion 34 swings out of the path of the front wall of the cover, but at the same time pin 46 engages upward extension 47 of the snuffer member 95 and forces the same downwardly into the position shown in Fig. 3. The tension of spring 44 is now sufficient to hold the cover closed, since latch member 52 has 100 moved under the action of its spring and the pin 50 has again engaged beneath shoulder 48 to lock the snuffer member in place.

From the above description, it is 105 evident that in order to operate the lighter all that is necessary is to hold the body of the lighter in the hand and raise the cover with the thumb in the manner indicated in Fig. 1. In order to extinguish 110 the lighter the cover is moved back, for example with the forefinger, to closed position. The tension of the spring will hold the lighter closed, until pressure is again exerted by the thumb to open it. 115

While I have described herein one embodiment of my invention, I wish it to be understood that I do not intend to limit myself thereby except within the scope of the appended claims. 120

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that I make no claim to a construction wherein the hinged lid 125 of the lighter carries a depending snuffer for the wick as claimed in my Patent Specification No. 460,115 but what I claim is:—

1. A pyrophoric lighter having a flint 130

- wheel spark producing mechanism including a spring tensionable on the movement of an operating member, the said mechanism being held stationary during a substantial part of the movement of said operating member by means of a latch member and then released for operation by the spring, wherein the operating member is formed as a complete hinged lid of the lighter and the spring is in the form of a spiral spring, one end of which is attached to the inside of the lid and the other end to the spark producing mechanism.
2. A pyrophoric lighter as claimed in claim 1, wherein, when the lid is closed, the spring occupies a position adjacent the top of the said lid above the flint wheel.
3. A pyrophoric lighter as claimed in either of the preceding claims, wherein the spark producing mechanism carries a cap or snuffer member for the wick.
4. A pyrophoric lighter as claimed in any of the preceding claims, wherein the spark producing mechanism includes a yoke pivoted to the friction wheel spindle and having an extension to which one end of the said spiral spring is attached.
5. A pyrophoric lighter as claimed in claim 4, wherein the latch member is pivoted preferably on the hinge pin of the lid, and carries a pin normally resiliently urged into engagement with a shoulder or recess formed in the yoke member.
6. A pyrophoric lighter as claimed in any of the preceding claims wherein the lid, on being moved in an opening direction, first tensions the spring, whereupon a pin thereon strikes the free end of the latch and causes it to release the spark producing mechanism which is thereupon free to move under the action of the spring to actuate the flint wheel.
7. A pyrophoric lighter as claimed in any of the preceding claims 3 to 6, wherein the spark producing mechanism and the lid of the lighter are eccentrically mounted, whereby when the lid is moved in a closing direction, the front wall thereof engages the front of the snuffer member and forces it downwardly to approximately closing position, whereupon the said parts become free and a pin on the lid to which one end of the spring is attached engages with said mechanism and completes the return operation, the latch member being automatically snapped into locking position.
8. A pyrophoric lighter as claimed in any of the preceding claims, wherein the flintwheel is formed with ratchet teeth on the periphery at one side thereof, with which engages a member carried by the actuating mechanism therefor, whereby said flint wheel will be actuated in one direction only.
9. The improved pyrophoric lighter, constructed and arranged substantially as hereinbefore described and shown in the accompanying drawing.

Dated the 29th day of November, 1935.
 S. SOKAL,
 1, Great James Street,
 Bedford Row, London, W.C.,
 Chartered Patent Agent.

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

Fig. 1.

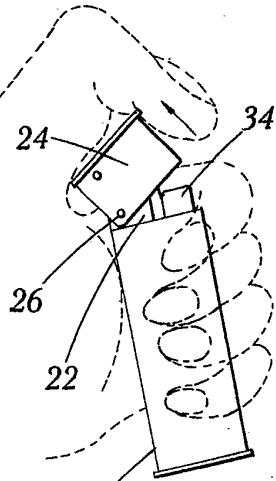


Fig. 3.

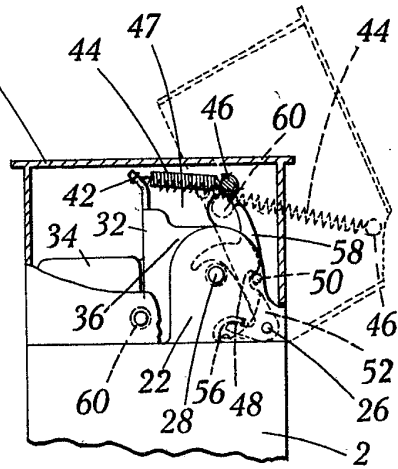


Fig. 2.

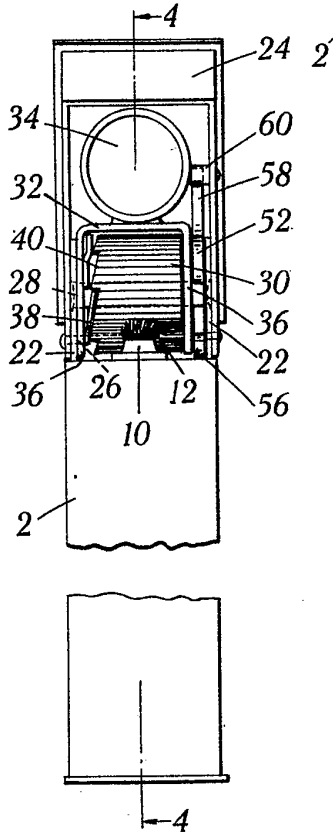


Fig. 4.

