

Nov. 5, 1957

F. LENNEIS ET AL
SAFETY LOCKS FOR LIGHTERS

2,812,202

Filed Nov. 1, 1955

Fig.1

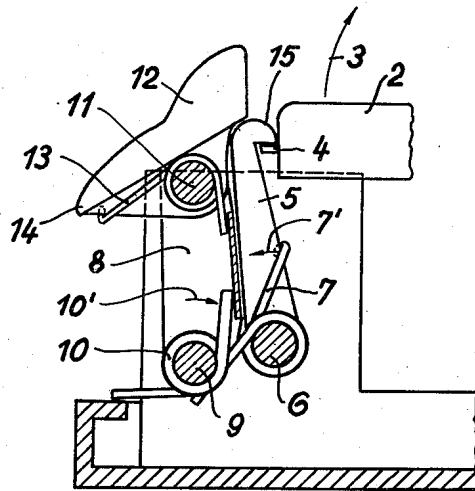


Fig.2

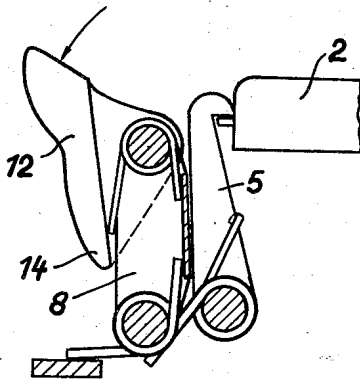
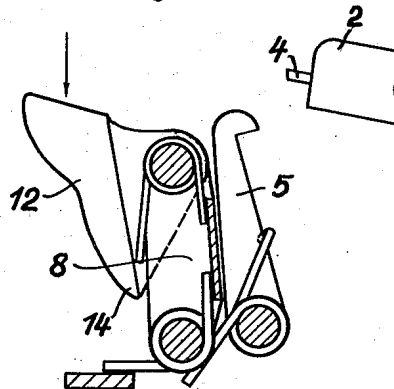


Fig.3



INVENTORS

Franz Lenneis and Erich
Körner

BY

Henri Montagne

ATTORNEY

1

2,812,202

SAFETY LOCKS FOR LIGHTERS

Franz Lenneis and Erich Körner, Vienna, Austria

Application November 1, 1955, Serial No. 544,148

Claims priority, application Austria November 2, 1954

3 Claims. (Cl. 292—129)

The present invention relates to semi-automatic lighters, and more particularly to lighters in which the cover pivoted to the casing is held in its closed position against the action of a spring by a locking means whereas it assumes its open position, upon releasing the locking means by means of a manually operated member. During the opening movement of the cover, the latter drives a friction wheel, thereby causing igniting sparks from a cerium-iron alloy rod.

Such lighters are in widespread use and very popular, because the lighter, held in one hand, can be conveniently operated merely by thumb pressure.

It is one object of the present invention to provide a safety lock for semi-automatic lighters which has a simple and appropriate construction and which has a single actuating member, which can be operated by a single finger, e. g., the thumb, and in a very simple manner, since the operation takes place in one and the same direction, whereby an absolute safety is provided against an unintended opening of the lighter when carried in a pocket, because the opening movement takes place in two phases, the first of which consists of a preliminary pivotal movement effected against a slight resistance and through a relatively large angle, exceeding 60 degrees, whereas the second phase consists of a final pivotal movement in the same direction through a small angle but against a much stronger resistance. The preliminary pivotal movement through an angle of more than 60 degrees without opening the cover ensures full safety against unintended opening thereof, because any pressure in the pocket can cause a pivotal movement of 60 degrees at the most, but not through a larger angle, since a movement beyond this angle would require a substantial change in the direction of the pressure exerted on the actuating member.

It is another object of the present invention to provide a safety lock for semi-automatic lighters, in which, in order to achieve the effects aimed at by the present invention, the latch cooperating with the spring-loaded cover, is subjected to the action of a first spring, which tends to move the latch to a position in which the latter releases the spring-biased cover; an intermediate member which is pivoted to the casing on an axis parallel to the pivotal axis of the latch is caused to engage the latch by a second spring, which is stronger than and acts opposite to the first spring so as to prevent the release of the spring-biased cover from its closed position; the intermediate member carries an operating member, which can be moved pivotally against the action of a third spring initially without any effect and which upon a continued pivotal movement in the same direction will cause the intermediate member to perform a movement against the action of its spring, whereby the latch is released for its opening movement.

With these and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

2

Figure 1 is an elevation partly in section showing the opening mechanism in its inoperative position;

Fig. 2 is a similar fragmentary elevation showing the mechanism in an intermediate position; and

Fig. 3 is a similar fragmentary elevation showing the mechanism in open position.

Referring now to the drawing, the spring-biased cover 2 is pivoted to the casing 1 on a shaft (not shown), which is disposed at the right and extends at right angles to the plane of the drawing. The cover 2 can be swung open in the direction of the arrow 3 (Fig. 1) by the action of a spring (not shown). A nose 4 projects from the end face of the cover 2, which nose 4 cooperates with the hook-shaped latch 5. The latter is pivotally mounted on the shaft 6 and is subjected to the action of a spring 7, which tends to move the latch 5 in a direction away from the nose 4, as is indicated by the arrow 7'. This opening movement is prevented at first, however by an intermediate member 8, which is pivoted to the casing 1 on the shaft 9 disposed parallel to the shaft 6, and which is subjected to the action of a spring 10 of a strength greater than that of the spring 7, which spring 10 urges the intermediate member 8 against the latch 5, as is indicated by the arrow 10'. Thus the spring 7 remains practically ineffective. The intermediate member 8 carries at its top end a pivot pin 11, which carries the actuating member or trigger 12, which extends out of the casing 1 and is also subjected to the action of a spring 13, which is much weaker than the two other springs 7 and 10 and tends to turn the trigger 12 in clockwise direction upon the pivot pin 11.

When it is desired to open the lighter the trigger 12 is turned by means of the thumb of the user against the action of the spring 13 until the lower end 14 of the trigger 12 engages the intermediate member 8 (Fig. 2). Upon further turning of the trigger 12 against the force of the spring 10, the trigger 12 will drive the intermediate member 8 counteracting the force of the spring 10. Thus the latch 5 can now turn in the direction urged thereupon by its spring 7 and thus release the nose 4 of the spring-biased cover, which is now free for its opening movement (Fig. 3). Upon release of the trigger 12 by the thumb of the user, the parts 5, 8 and 12 of the mechanism will return to their initial position disclosed in Fig. 1, by operation of the respective springs 7, 10 and 13. When the spring-biased cover 2 is returned to its closing position, the nose 4 slides down on the inclined top face 15 of the latch 5 to be locked again in its original locking position.

While we have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the claims.

What is claimed is:

1. In a latch mechanism release means adapted for use with a latch for a spring-biased lighter cover, said latch mechanism release means comprising a latch pivotally mounted in a casing and adapted to retain said lighter cover in its closing position, a first spring means tending to move said latch into cover releasing position, an intermediate member disposed substantially parallel to and adjacent said latch and pivotally mounted in said casing for turning upon an axis parallel to the axis of the pivot of said latch, a second spring means of a strength greater than that of said first spring means and tending to move said intermediate member into engagement with said latch, thereby overcoming the effect of said first spring means and retaining said latch in its cover closing position, and an actuating member pivotally mounted on said intermediate member oppositely to the pivot of the latter and projecting outside of said casing for manual opera-

3

tion of said actuating member, and a third spring means tending to move said actuating member out of engagement with said intermediate member, said actuating member being adapted to be turned by one finger of the user into engagement with said intermediate member against the action of said third spring means, so that upon continued pressure upon said actuating member against the action of said second spring means, said first spring means is rendered effective for operation of said latch so as to release said cover.

2. The latch mechanism, as set forth in claim 1, in which the pivots of said latch, of said intermediate member and of said actuating member are disposed along axes which are parallel to each other.

4

3. The latch mechanism, as set forth in claim 1, in which said actuating member pivots through an angle of more than 60 degrees before engagement with said intermediate member, in order to prevent an unintended release of said cover.

5**10**

References Cited in the file of this patent

UNITED STATES PATENTS

2,479,917	Feurer	Aug. 23, 1949
2,637,577	Wiessner	May 5, 1953