May 17, 1938. W. L. MORRIS 2,117,976

POCKET LIGHTER AND FLASHLIGHT

Filed Jan. 26, 1937

Fig. 1.

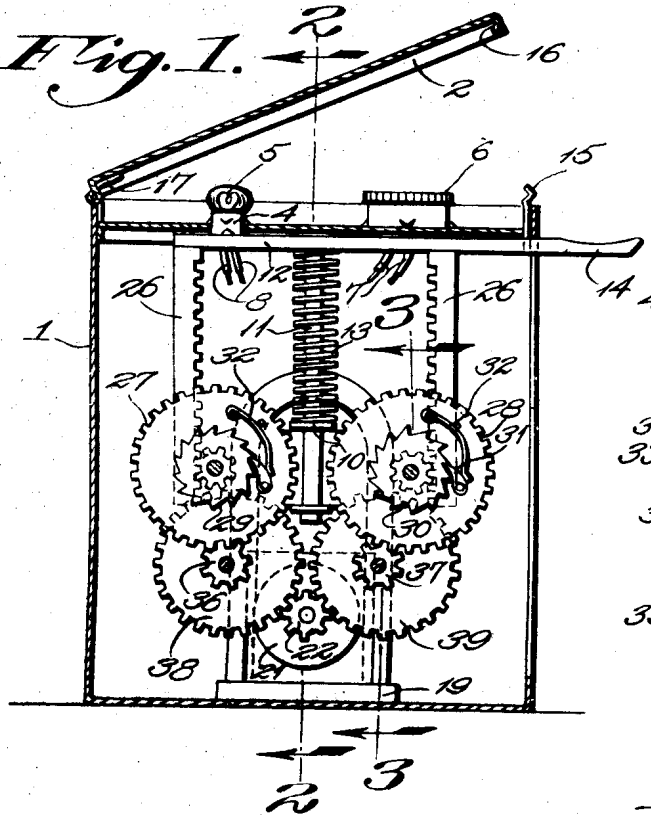


Fig. 2.

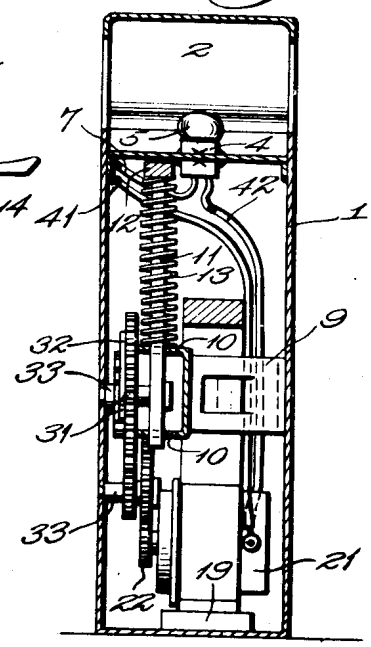


Fig. 3.

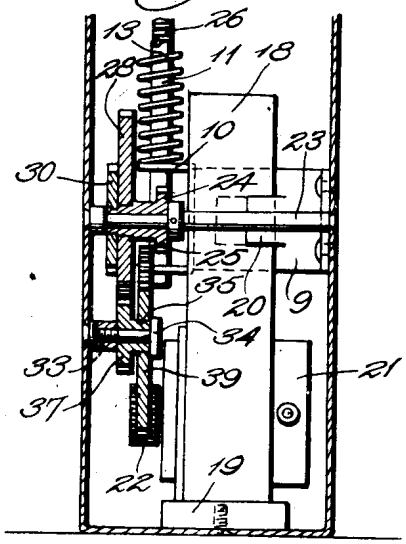


Fig. 4.

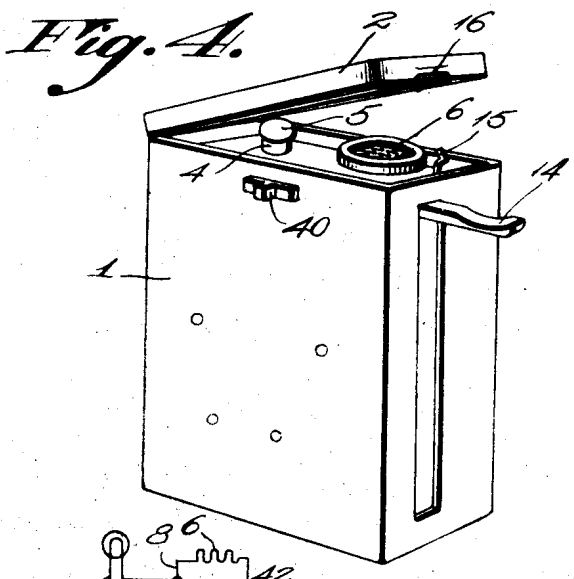
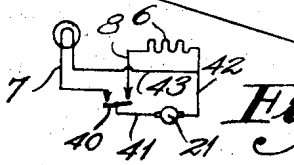


Fig. 5.



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WITNESS

Patented May 17, 1938 2,117,976

UNITED STATES PATENT OFFICE

2,117,976

POCKET LIGHTER AND FLASHLIGHT

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Application January 26, 1937, Serial No. 122,429

2 Claims. (Cl. 219—32)

This invention relates to pocket lighters, and flash lights, and its general object is to provide a combined device of that character which includes a manually operated generator for supplying electric current for illumination and heating purposes.

A further object is to provide a combined pocket lighter and flash light, that includes current producing means and manually actuating means therefor, all housed together in compact form, so as to be conveniently carried in the pocket of the user, and the device can be easily and expeditiously operated, to provide ample illumination and efficient heat for readily lighting cigars, cigarettes and the like.

Another object is to provide a device of the character set forth, that includes switch means for controlling the current to either the illuminating means or heating means.

A still further object is to provide a combined lighter and flash light, in a single unit, to receive current from a single source, and which is simple in construction, inexpensive to manufacture and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a vertical, longitudinal sectional view taken through the casing of the device which forms the subject matter of the present invention, with parts in elevation.

Figure 2 is a sectional view taken approximately on line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a sectional view taken approximately on line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a perspective view of the device in its entirety.

Figure 5 is a diagrammatic view of the circuit used with my device.

Referring to the drawing in detail, the reference numeral 1 indicates a casing which as shown is of rectangular configuration and is provided with an open upper end which is closed by a spring pressed cover or lid 2, the latter being flanged as shown, with the edge of the flange engaging the upper edge of the open end of the casing when the lid is closed. Secured in the casing adjacent to its upper end is a plate 3 which has mounted thereon and extending therethrough a lamp socket 4 for receiving a lamp bulb 5, and the plate likewise has mounted thereon a heating element 6 which has electrically connected thereto conductors 7, while connected to the socket 4 are conductors 8.

The casing of course, includes front, rear and side walls, as well as a bottom wall, and secured to the rear wall to extend forwardly therefrom is a substantially U-shaped bracket 9 that has formed on and extending forwardly from the bight portion thereof, ears 10 disposed in superimposed relation with respect to each other, and the ears are provided with registering openings.

Mounted for vertical movement in the openings of the ears 10 is a rod 11 which is preferably square in cross section for fitting association with the openings, and the rod is secured to and depends from a lever 12 which is held in normal position as shown in Figure 1, by a coil spring 13 which surrounds the rod 11 and has its end convolutions engaging the lever 12 and the uppermost ear 10, as clearly shown in Figure 1. The lever is of a length to extend through a slot in one side wall of the casing and terminates at its outer end into a handle 14. Secured to and rising from the lever is a latch arm 15 having a hooked upper end to be received in a notch 16 providing a keeper for the latch arm which of course is for the purpose of securing a cover 2 in closed position, but upon downward movement of the lever, it will be obvious that the cover is released and is moved to open position through the instrumentality of the spring 17.

The generator in the form as shown includes a horseshoe magnet 18 that is provided with a base 19 which is preferably fixed to the bottom wall, and the magnet is further held by lugs 20 formed on and extending laterally from the arms of the U-shaped bracket 9, the lugs being preferably L-shape with their outer ends directed forwardly to contact the outer sides of the poles of the magnet which are disposed between the arms of the bracket and the lugs. The armature of the generator is indicated by the reference numeral 21 and fixed to the shaft thereof is a pinion 22.

Bridging the front and rear walls of the casing as well as fixed therein, is a pair of parallel disposed shafts 23 having mounted thereon for rotation hubs 24, the hubs having formed thereon or otherwise fixed thereto rack gears 25, and

secured to and depending from the lever 12 in spaced parallel relation with respect to each other are rack bars 26 that have their teeth disposed on the confronting faces thereof to mesh with the rack gears 25, as clearly shown in Figure 1.

Loosely mounted on the hubs 24 for rotation, are gears 27 and 28, and fixed to the outer ends of the hubs are ratchet gears 29 and 30. The gears 27 and 28 have pivotally secured thereto pawls or dogs 31 which are held in engagement with the teeth of the ratchet gears thereof, by leaf springs 32.

Secured to and extending inwardly from the front wall of the casing 1 are supporting collars 33 which have threaded therein, headed stub shafts 34, and journaled on the stub shafts 34 are hubs 35 which have formed thereon pinions 36 and 37, and fixed to the hubs 35 are gears 38 and 39, the latter meshing with the pinion 22, while the gears 27 and 28 mesh with the pinions 36 and 37 respectively, as clearly shown in Figure 1.

In order to control the current from the generator to either the lamp bulb 5 or heating element 6, I employ a switch 40 which is slidably mounted for that purpose, and the switch is shown in Figure 4 as being mounted on the front wall of the casing.

Referring to Figure 5, it will be noted that one of the conductors 7 of the lamp and one of the conductors 8 of the heating element extend to the stationary contacts of the switch 40, while the slidable contact has connected thereto a conductor 41 extending to one side of the armature, and a conductor 42 extends from the opposite side to the heating element, the conductor 42 having connected therewith a conductor 43 that extends to the lamp, consequently it will be obvious that current is supplied from the generator to either the lamp or the heating element and the current is controlled accordingly by the switch.

From the above description and disclosure of the drawing, it will be obvious that the application of power to the armature of the generator is constant, as such is brought about by the arrangement of the gears and the pawls. The lever is of course manually moved downwardly through the instrumentality of the handle 14 and is moved upwardly by the spring 13. Upon downward movement of the lever, power is applied to the gear 28 due to the fact that the ratchet gear 30 acts upon the pawl 31 of the gear 28 for rotating the latter in a clockwise direction, and the ratchet gear 29 slips by the pawl of the gear 27. Upon upward movement of the lever, the reverse action is true, in that power is applied from the gear 27 that likewise rotates in a clockwise direction and the pawl of the gear 28 slips by the ratchet gear 30.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A current generating device for flash lights and lighters, comprising a casing, a spring pressed cover for said casing, a generator mounted in said casing, a gear train for actuating the generator, manual means for putting the gear train in motion and including a normally horizontally arranged spring pressed handled lever guided in said casing for reciprocatory movement and extending through the casing for disposal of its handle exteriorly thereof, latching means for the cover and automatically operable upon closing of the cover to hold the latter in closed position, said latching means carried by the cover and lever respectively for releasing the cover for movement thereof in open position by its spring upon initial movement of the lever, parallel rack bars depending from the lever, and said gear train including pawl and ratchet means actuated by the rack bar to apply constant uninterrupted power through the train to the generator during movement of the lever.

2. A current generating device for flash lights and lighters, comprising a casing, a substantially U-shaped bracket mounted in the casing, lugs formed on the arms of the U-shaped bracket and extending laterally therefrom, superimposed ears formed on the bight portion of the bracket, a generator mounted in the casing and held by the lugs, manual means including a handled lever, a rod depending from the lever and slidably mounted in the ears for guiding the lever for reciprocatory movement, a coil spring surrounding the rod and engaged with the lever between its end and the upper ear respectively for urging the lever to its normal position, parallel rack bars depending from the lever, a gear train for actuating the generator and including pawl and ratchet means actuated by the rack bars to apply constant uninterrupted power through the train to the generator during movement of the lever.

WILBERT LEWIS MORRIS.