June 10, 1941. L. SIBAL 2,245,015

COMBINED FLASHLIGHT AND FAN

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Fig. 1

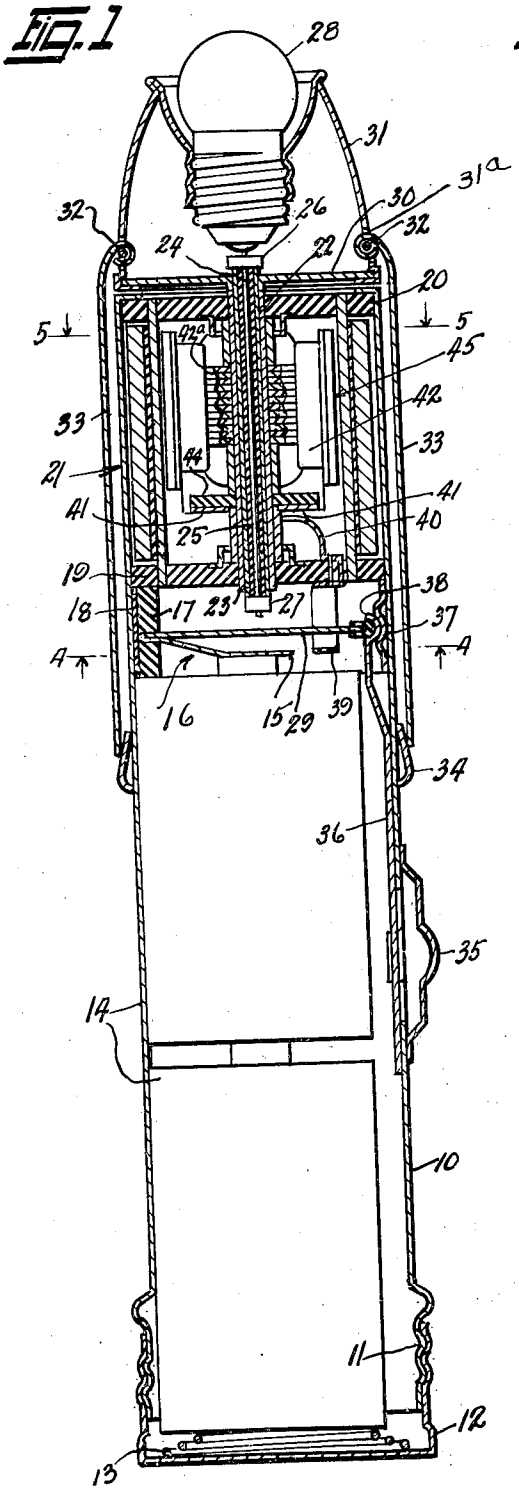
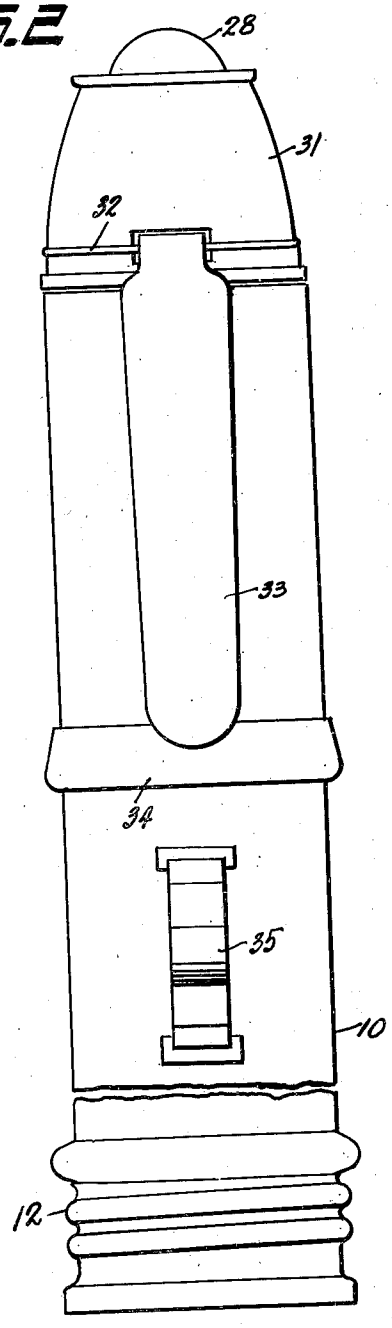


Fig. 2



INVENTOR.
Ludvik Sibal
BY Maurice Block
ATTORNEY.

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FIG. 3

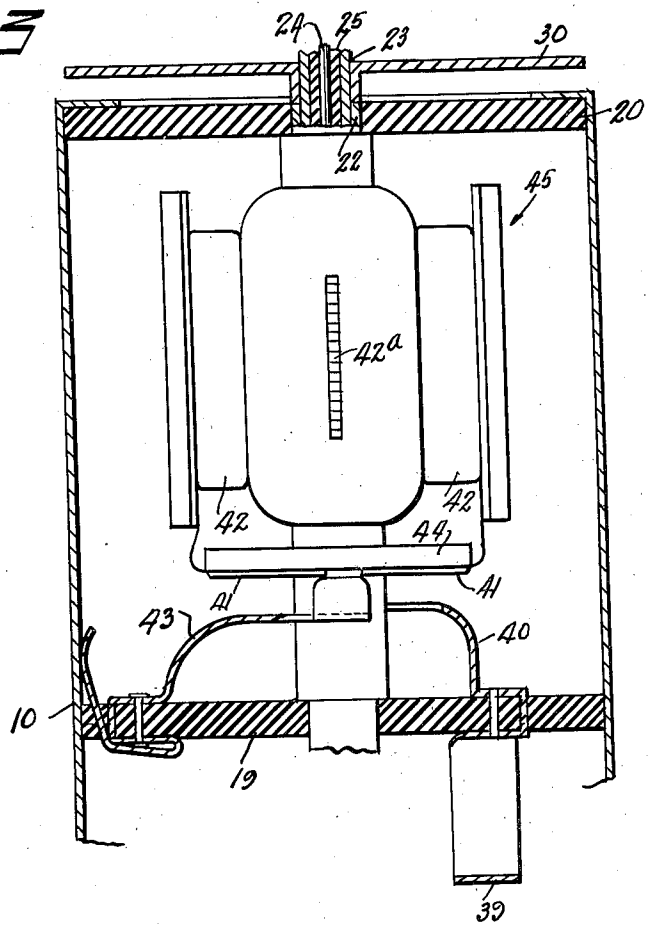


FIG. 4

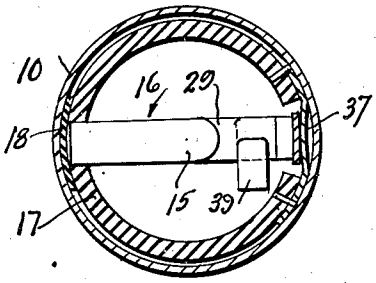
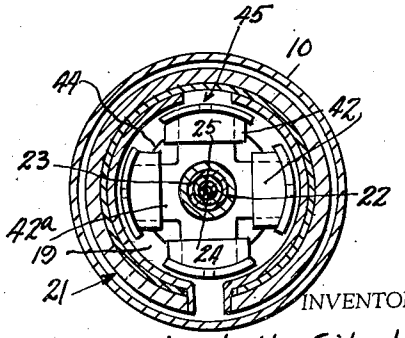


FIG. 5



INVENTOR.
Ludvik Sibal
BY
ATTORNEY.

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FIG. 6

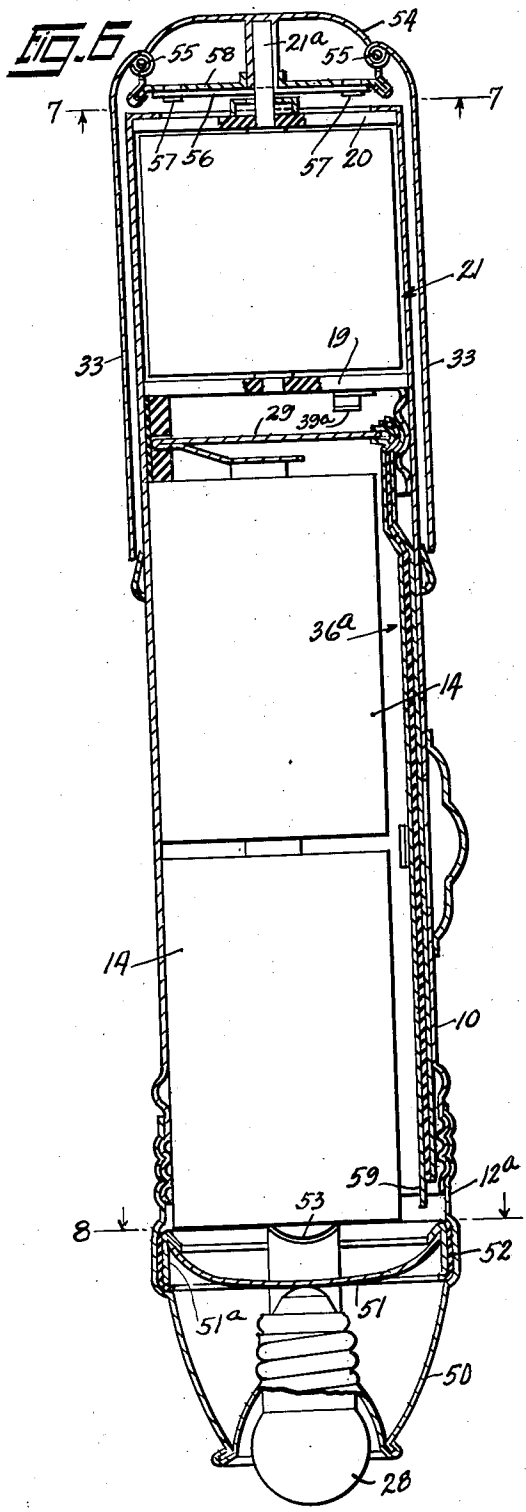


FIG. 7

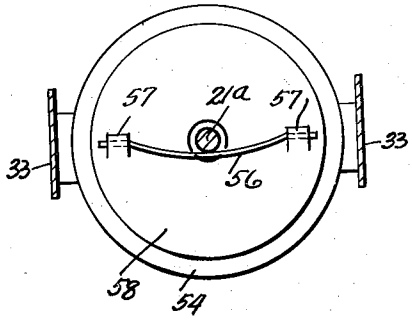
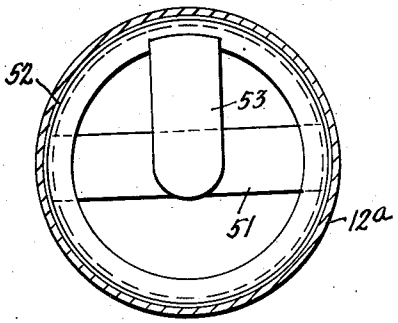


FIG. 8



INVENTOR.
Ludvik Sibal
BY
ATTORNEY.

Patented June 10, 1941 2,245,015

UNITED STATES PATENT OFFICE

2,245,015

COMBINED FLASHLIGHT AND FAN

Ludvik Sibal, Long Island City, N. Y.

Application December 2, 1939, Serial No. 307,252

5 Claims. (Cl. 230—249.5)

This invention relates to combined flashlights and electric fans and has for one of its objects the provision of a device of this nature comprising the usual flashlight casing in which are housed a plurality of dry batteries, an electric flashlight bulb, a motor for operating the fan and switch mechanism for directing electric current to either the flashlight or motor.

Another object of the invention is the provision of such a portable combined flashlight and fan which may be readily carried in the pocket, both the fan and flashlight being operated from a common source of electric current.

A further object of the invention is to provide a motor driven hub, said hub carrying a pair of fan blades which are normally folded against the casing but which will, when the hub is rotated, spread out into fan formation due to the centrifugal force of such rotation of the hub by the motor.

A still further object of the invention is the provision of magnetic means for normally maintaining the said fan blades in folded position.

Another object is to produce a device of the character described in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and co-relation of parts herein fully described and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

In the drawings forming a part of this application:

Figure 1 is a longitudinal sectional view through my improved combined flashlight and fan;

Fig. 2 is a side elevation thereof;

Fig. 3 is a fragmental sectional view of the device showing the rotor portion of the motor in elevation;

Fig. 4 is a cross sectional view taken on line 4—4 Fig. 1;

Fig. 5 is a cross sectional view taken on line 5—5 Fig. 1;

Fig. 6 is a view similar to Fig. 1, of a modified form of the invention;

Fig. 7 is a cross sectional view taken on line 7—7 Fig. 6 and

Fig. 8 is a cross sectional view taken on line 8—8 Fig. 6.

Referring now to Figs. 1 to 5 of the drawings in detail 10 indicates a metal casing having at the bottom thereof a threaded portion 11 for receiving a removable threaded hollow cap 12 for normally closing the bottom of said casing. The cap 12 may be provided with the usual flashlight spring 13 which presses against the bottom of the lowermost of a pair of batteries 14 to maintain the said batteries in electrical contact with the lower blade 15 of a two bladed switch 16 maintained in a ring 17 made of any suitable insulating material, a strip of insulating material 18 maintaining the end of the switch 16 out of contact with the casing 10.

Directly above the ring 17 and shown resting thereon (see Fig. 1) is an insulating plate or disk 19 between which and an upper similar disk 20 is mounted an electric motor 21 having a tubular axle 22 in which there may be frictionally maintained a sleeve 23 through which there passes a rod or wire 24 covered by insulating material 25. A collar 26 at the top and a similar collar 27 at the bottom maintain the rod or wire 24 within the sleeve 23, the top of the said wire forming an electric contact for a flashlight bulb 28 and the lower end of the said wire forming an electric contact for the upper blade 29 of the switch 16.

Soldered or otherwise secured to the sleeve 23 is a plate or disk 30 which carries a shell or hub 31 which may carry a preferably spring wire loop or ring 32 for swingably supporting a pair of fan blades 33 at their upper ends, the said upper ends being positioned in cut-outs 31a in the hub 31 and which at their bottom ends are in contact with a magnetized ring 34 for normally maintaining them in depending folded position.

If it is desired to light the bulb 28 the finger piece 35 is pushed or slid upwardly causing a switch lever 36 which is connected thereto to move upwardly and carry the switch blade 29 from its neutral position shown in Fig. 1 to its upper or wire 24 contacting position and permit electric current from one terminal of the batteries to pass through the lamp or bulb 28 and thence through the hub 31 and casing 10 to the

other terminal of the batteries. A corrugated plate 37 forms a detent for the upper end 38 of the shift lever 36 for maintaining same in either neutral or shifted positions.

To operate the fan the switch arm 29 is pulled down by the shift lever 36 until it contacts the ledge 39 forming a part of a brush 40 in contact with any of the four collector plates 41. The electric current from the batteries will then pass through the wire coils 42 wound on the laminated core 42a and back to the batteries 14 through a brush 43 which is in contact with the plates 41 and the casing 10 which is grounded to the exterior of the said batteries 14. It will be understood that the plates 41 are approximately quadrants which are spaced apart and secured to an insulating disk 44. The contacting of the switch arm 29 with the ledge or contact arm 39 will cause the rotor 45 to revolve and carry with it the hub 31, during such rotation the fan blades 33 will fly away from the ring 34 due to the centrifugal force of such rotation and act to churn the air and act as a fan.

From the foregoing it will be seen that I have provided a combined flashlight and fan contained within a single casing each adapted to be operated from a single source of electric supply contained within the said casing.

It will also be seen that when the device is in neutral position the fan blades will lie parallel to the casing against the magnetic ring 34 so that same may be compact and carried in a pocket. It will further be seen that due to my improved construction the combined fan and flashlight may be shipped without occupying an undue amount of space.

In the form of my invention shown in Figs. 6 to 8, I have shown the electric bulb 28 mounted in a shell 50 forming a part of the lower closure cap 12a which is screw threadedly secured to the lower threaded end of the casing 10. The said bulb 28 is normally in contact with a contact strip 51 which spans across a metal ring 51a to which it is suitably connected, the said ring being insulated from the cap 12a by means of an insulating ring 52. A second contact strip 53 made of resilient metal is directly secured to housing or shell 50 and is adapted to contact with the bottom of the lowermost battery 14.

As in the form of my invention described above the motor 21 is mounted between the two insulating plates 19 and 20 and carries a dome like shell or hub 54 provided with a wire ring 55 upon which the fan blades 33 are swingably mounted. The shell 54 is frictionally maintained on the motor by means of a spring strip 56 in frictional engagement with the motor shaft 21a and anchored in a pair of spaced apart ears or clips 57 struck up from a plate 58 carried by the shell 54.

In this form of my invention the motor is operated by moving the switch shifting lever 36a so that the switch arm or blade 29 contacts the ledge 39a of one of the motor brushes and closes the electrical circuit. To operate the light 28 the switch shifting lever is moved downwardly until the circuit is closed by the contacting of the lever strip 59 with the strip 51 supporting ring 51a.

Having described by invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the nature described, a casing, an electric motor rotatably mounted therein, a shell hub carried by the motor and rotatable therewith, the said hub having a pair of cutouts therein, a spring wire ring frictionally carried by the said hub, and a pair of fan blades swingably mounted on the said ring at the hub cutouts.

2. In a device of the nature described, a casing, an electric motor rotatably mounted therein, a shell hub carried by the motor and rotatable therewith, the said hub having a pair of cutouts therein, a spring wire ring frictionally carried by the said hub, a pair of fan blades swingably mounted on the said ring at the hub cutouts, and means for magnetically holding the blades in folded position, against the sides of the casing when the motor is at rest.

3. In a motor driven electric fan, a casing for housing the motor, a hub driven by the motor, the said hub comprising a shell having a pair of cutouts, a spring wire ring maintained on the shell, and a pair of fan blades pivotally supported at their upper ends on the said ring, the said upper blade ends extending inwardly of the shell through the said cut outs.

4. In a device of the nature described, a casing, a battery containing section at one end of the casing, a motor above the battery section, a tubular axle on the motor, a sleeve frictionally maintained in the tubular axle, a disk supported at the upper end of the sleeve above the motor, a shell above the disk and carried thereby, an electric bulb carrying socket formed coaxially with the disk, pivotally mounted fan blades carried by the shell, the said shell forming a common carrier for the socket and fan blades, a two bladed switch, one of the said blades being in contact with one pole of the battery, a movable arm in contact with the other of the said switch arms, an electric current conducting member passing through the sleeve and normally in contact at one end with the bulb and also adapted to be contacted at the lower end by the second switch arm when actuated by the movable arm when the arm is moved in one direction, and a second electric current conducting member connected to the motor, and adapted to be contacted by the said second switch arm when actuated by the movable arm when being moved in the opposite direction.

5. In a device of the nature described, a casing, a battery containing section at one end of the casing, a motor driven hub above the casing, the said hub comprising a disk, a shell secured to the said disk, an electric bulb carrying socket carried by the shell, pivotally mounted fan blades carried by the shell, the said shell forming a common carrier for the socket and fan blades, a sleeve secured to the plate, an electric current conductor passing through the sleeve for normal engagement at its upper end with the electric bulb, a two bladed switch below the said conductor, one of the said blades being in contact with one pole of the battery, a movable arm in engagement with the other switch blade, and an electric current conductor for the motor, both of the said electric current conductors being adapted to be contacted by the other of said switch arms when actuated by the movable arm to either light the bulb or rotate the fan blade carrying shell.

LUDVIK SIBAL.