

May 1, 1962

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3,032,647

CAP OR HAT LIGHT

Filed Jan. 22, 1959

2 Sheets-Sheet 1

FIG. 1

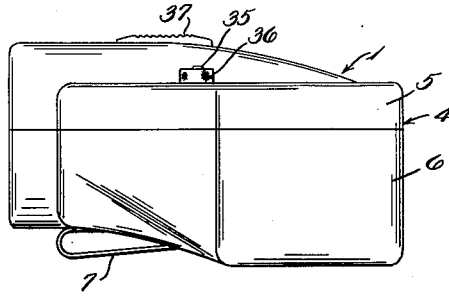
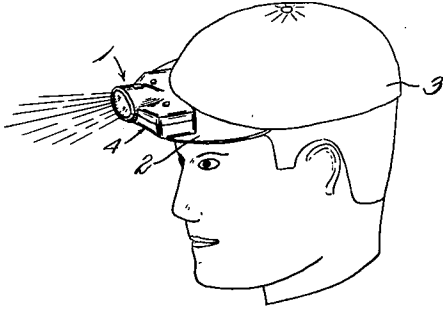


FIG. 2

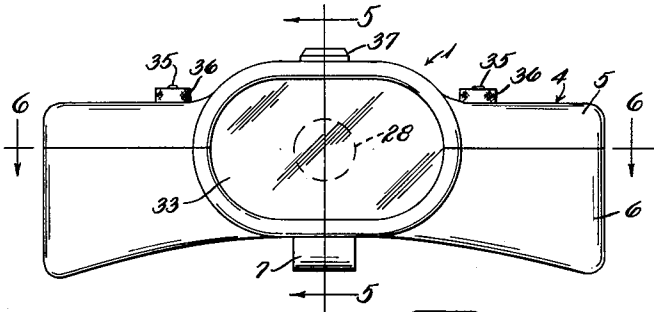


FIG. 3

FIG. 4

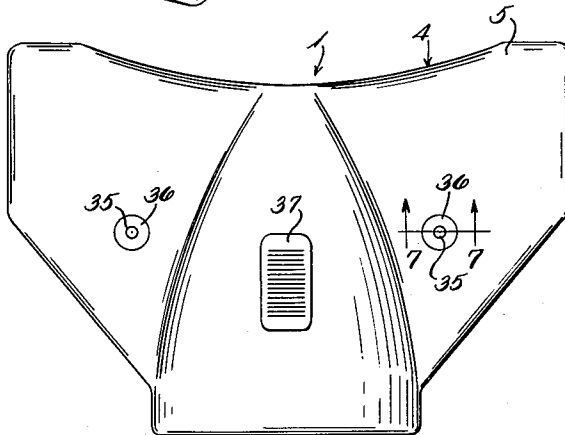
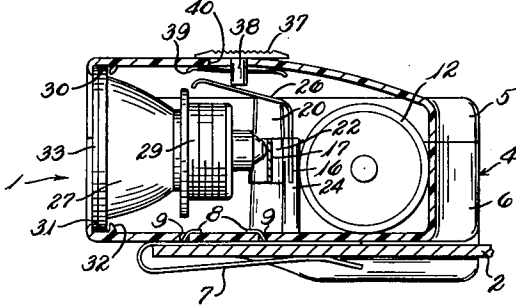


FIG. 5



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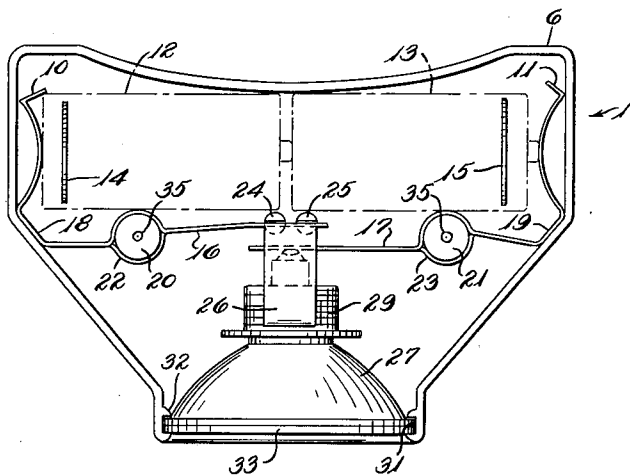


FIG. 6

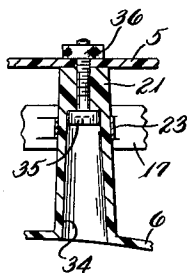


FIG. 7

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3,032,647

CAP OR HAT LIGHT

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6 Claims. (Cl. 240-10.65)

The present invention relates to small, compact flashlights, and especially to a flashlight particularly adapted to be attached to the visor of a cap, hat, or the like.

Heretofore there have been many different styles of flashlights provided and some of such flashlights have been adapted to be hooked onto a person's belt or be otherwise secured to, carried by, or used by a person. Several different styles of cap lights have been provided heretofore for use by miners and such lights have, insofar as we are aware, always required some type of separate battery means carried by the person and where the light and reflector unit only would be attached to the visor of the cap of a person using the flashlight. In general, all of such cap lights have been relatively bulky, expensive, and heavy.

Yet another problem that exists with many different styles of flashlights made today is that the contacts and switch means therein are not accessible. Thus, if the contacts become coated with foreign material, or if the contacts or controls of the flashlight become stuck, it usually is very difficult, if not impossible to repair the flashlight and usually a flashlight is discarded if it becomes out of order.

The general object of the present invention is to avoid and overcome the foregoing problems and difficulties with present styles of flashlights, and to provide a novel flashlight characterized by the relatively broad, but short in depth size of the flashlight which is contoured for attachment to the visor of a cap or similar article.

Another object of the invention is to provide a flashlight of the class described where the flashlight case is made from separable top and bottom sections whereby the contacts and all controls in the flashlight are readily accessible for inspection, or repair.

Another object of the invention is to provide a lightweight flashlight, the bottom portion of which is of concave shape to fit on the visor of a cap or the like and wherein the battery means received in the flashlight are provided with their longitudinal axes extending transversely to the depth axis of the flashlight.

A further object of the invention is to provide a flashlight for attachment to a cap or the like wherein the flashlight has a pair of spring contact arms secured therein for receiving battery means therebetween, and wherein vertically extending posts are provided in the flashlight case and the contact arms or means are secured thereto and positioned thereby.

Another object of the invention is to provide a flashlight made from a two-part case wherein a reflector member is positioned by and received between contoured abutting edge portions of the two-part case so that the reflector member and the case sections are held together by certain securing means extending between the sections of the case.

A further object of the invention is to provide a flashlight substantially of generally rectangular construction where a majority of the weight in the flashlight means is provided adjacent the back portion thereof whereby when such flashlight is attached to a cap visor, a relatively low turning moment or load is placed on the cap visor by the flashlight.

The foregoing and other objects and advantages of the present invention will be made more apparent as the specification proceeds.

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Attention now is particularly directed to the accompanying drawings wherein:

FIG. 1 is a perspective view of a flashlight embodying the principles of the invention showing it operatively assembled on the visor of a cap;

FIG. 2 is an enlarged left side elevation of the flashlight of FIG. 1;

FIG. 3 is an enlarged front elevation of the flashlight of FIG. 1;

FIG. 4 is an enlarged top plan of the flashlight shown in FIG. 1;

FIG. 5 is a vertical section taken on line 5-5 of FIG. 3;

FIG. 6 is a horizontal section taken on line 6-6 of FIG. 3; and

FIG. 7 is a detail vertical section taken on line 7-7 of FIG. 4.

In general, the present invention relates to a small flashlight adapted to be attached to the visor of a cap or similar article, and which flashlight comprises a wide case of generally rectangular shape and of short depth, which case has a concave bottom for enabling it to seat snugly on a cap visor, clip means on the bottom of the case for engaging a cap visor, contact means positioned within the case in spaced relation on opposite sides thereof for receiving battery means therebetween with its longitudinal axis extending transversely of the case, and circuit completion means normally engaging one of the contact means and including a light bulb are positioned in the case, which circuit completion means also include a switch carried by the case for removably contacting the other contact means for closing an energization circuit in the flashlight.

Referring now to the details of the construction shown in the accompanying drawings, a flashlight of the invention is indicated as a whole by the numeral 1. This flashlight is shown secured to the visor 2 of a cap 3, which cap is shown as worn by a person in FIG. 1.

The flashlight 1 includes a sectional carrier case, or case 4, that has a bottom section 6 and a top section 5 provided therein. Vertically extending side portions or edges of these top and bottom sections 5 and 6 are abutted to form an enclosure in which the operative components of the flashlight 1 are positioned, or on which portions of the flashlight are operatively received. In order to affix the case 4 to the visor 2, a suitable leaf spring 7 is secured to the bottom section 6 as by means of lugs 8, integral with the leaf spring 7, that extend up through holes 9 provided in the bottom section 6 to engage therewith for securing the leaf spring in operative association with the outer or lower surface of the bottom section 6.

In the flashlight of the invention, suitable contact means are provided adjacent opposed portions of the case 4 on the inner surface thereof, and thus a pair of contact arms 10 and 11 are positioned adjacent opposite sides of the case 4 so as to receive suitable battery means, such as a pair of flashlight cells 12 and 13 therebetween. FIG. 3 best shows that the bottom surface of the bottom section 6 is of concave shape in a transverse direction. In order to hold these battery cells 12 and 13 in desired aligned relation, a pair of battery supports 14 and 15 are provided with one of such supports being adjacent each lateral margin of the case 4 for engaging opposite ends of the two cells 12 and 13 to hold them in substantially horizontal positions within the case 4. The opposite and adjacent ends of the battery cells 12 and 13 normally are supported on the top inner portion of the bottom section 6, as indicated in FIG. 5.

FIG. 6 of the drawings shows that the contact arms 10 and 11 each have longitudinally extending sections 16 and 17, respectively, which overlap in the flashlight case and with the contact arms 10 and 11 also having offset sec-

tions 18 and 19, respectively, therein that abut against converging portions of the bottom case section 6 to aid in holding the contact arms 10 in given positions. Usually the actual battery engaging portions of the contact arms 10 and 11 are curved inwardly of the case 4 to aid in providing resilient engagement between the contact arms and the battery means.

Positive positioning of the contact arms 10 and 11 in the case 4 is provided by means of integral, vertically extending posts 20 and 21 formed, preferably, on the bottom section 6 and extending up to and abutting against the inner surface of the top section 5. The longitudinally extending sections 16 and 17 of the contact arms have two or more opposed straps or loops 22 and 23, respectively, provided therein, with each of the contact arms having the loops 22 and 23 formed therein shaped to and of a size for engaging opposite portions of the posts 20 and 21 to secure the contact arms in position. Usually these posts 20 and 21 are of conical shape and gradually widen towards the lower surface of the bottom section 6 of the case so that the loops 22 and 23 wedge into good seating engagement with the posts at desired vertical positions thereon.

As another feature of the flashlight 1 of the invention, the bottom section 6 of the case has a vertically extending contact positioning member therein, in this instance comprising a pair of positionings pins 24 and 25 formed at the center portion of the bottom section 6 and extending upwardly from the inner surface of such bottom case section. The upper ends of these positioning pins are bifurcated to receive the end of the longitudinal section 16 of the contact arm 10 to fixedly position such section of the contact arm 10 in the flashlight. A contact finger or bar 26, FIG. 5, is secured, as by welding, soldering or brazing, to the end of the contact arm 10 and extends forwardly in the case 4 to form a resilient connector or contact member for engaging the light bulb positioning means in the flashlight. Such positioning means include a reflector 27 of generally rectangular shape that is provided at the front of the flashlight 1. The reflector 27 is of greater width than height. The reflector 27 has a light bulb 28 positioned therein in any conventional manner and in this instance, the reflector 27 is made from a plastic material that may have any suitable reflective metal coating provided on the operative surface thereof. In this embodiment of the invention, a metal reflector base 29 is in threaded engagement with the back section of the reflector 27 and the base of the bulb 28 extends therethrough. Usually a spring (not shown) is provided intermediate a portion of the reflector base 29 and a flange (not shown) on the light bulb 28 for resiliently urging such light bulb 28 forwardly of the reflector member 28 for seating against a positioning flange therein.

As a further feature of the present invention, the adjacent surfaces or edge portions of the top and bottom sections 5 and 6 of the case 4 adjacent the reflector 27 are contoured for snug engagement therewith and have a recess or seat 30 and 31, respectively, provided therein. FIG. 5 shows that an edge flange 32 is provided on the reflector 27 and is positioned in the reflector recess or seat 30 and 31. A suitable transparent cover 33 also is received in such grooves or seats 30 and 31 whereby the reflector 27, and the cover 33 are retained in operative engagement with the flashlight by means of the top and bottom sections 5 and 6 of the case when such sections are secured together, as hereinafter described.

FIG. 7 of the drawings best brings out the fact that the posts 20 and 21 have apertures or recesses 34 extending thereinto from the outer surface of the case section on which such posts are formed. Thus members, such as screws 35 can be received in these recesses 34 to secure the case sections together. The screws 35 extend axially beyond the ends of the posts 20 and 21 and can be self threading to cut their way through the posts 20 and 21, or be received in reduced diameter bores provided in the

top end parts of the posts, as desired. In all events, nuts 36 engage the screws 35 for securing the top section 5 to the bottom section 6 and thus retain the components of the case 4 in operative engagement.

From the foregoing, it will be seen that the contact arms 10 and 11 and all portions thereof are exposed for inspection, cleaning or repair, as desired, when the components of the case 4 are disassembled. Likewise the final control member of the circuit completion means, comprising a switch or slide 37 operatively engaged with the top section 5 of the case, can also be inspected at such time. This slide 37 has a downwardly extending pin 38 forming a part thereof and extending through a suitable slot 40 formed in the top case section 5 so that such pin 38 will engage the contact finger 26 and force it into engagement with the associated metal reflector base 29 adjacent which such contact finger normally extends but is normally spaced therefrom. Any suitable member, such as a leaf nut 39, engages the pin 38 of the slide 37 and the top case section 5 to retain the slide in movable engagement with the top case section 5.

From the foregoing it will be seen that the heaviest portion in the flashlight 1, comprising the battery cells 12 and 13, are positioned adjacent the back or rear portion of the case 4. It also will be seen that nearly all of the components of the case can be made from any desired type of a plastic material which aids in forming a lightweight, but sturdy flashlight case. The contact arms in the flashlight are resilient and are made from any conventional material such as copper, bronze or other equivalent material, as in the metal reflector base 29.

The contact arms in the flashlight are securely positioned in the case and resiliently engage the battery means therein. FIG. 5 shows that the contact arm section 17 is continually engaged with the base terminal of the light bulb 28. The circuit completion means and the light bulb positioning means may be of conventional construction and include the metal reflector base 29 that completes a circuit to the other terminal of the light bulb 28.

It should be understood that the leaf spring 7 can be of any desired size and it will serve to secure the flashlight 1 to the brim of a person's belt, or other positions, as desired, but normally the flashlight 1 is best positioned upon the visor of the wearer's cap so that the wearer can have both hands free for any desired action and the lightweight flashlight 1 will not interfere in any way with the work or other activities of the person wearing the flashlight. Good visibility is provided automatically wherever the person turns his head to aid materially in providing light as desired in a desired place. Thus it is believed that the objects of the invention have been achieved.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. A flashlight comprising a non-conducting sectional carrier case having top and bottom sections, leaf clip means secured to the bottom of said case on the outer surface thereof and extending depthwise thereof for securing the flashlight to a support, spaced spring contact arms positioned within said case and adapted to receive battery means therebetween, vertically extending tapered post formed with one section of said carrier case and extending in the direction of between the bottom and top thereof, said contact arms having sections extending to adjacent positions in said case, means securing said case sections together, said contact arms having loop means thereon individually engaging different ones of said posts to be positioned thereby at a desired position between the top and bottom of said case, circuit completion means in said case and including a light bulb in the circuit thereof, said circuit completion means engaging one of said contact arms, and a contact member positioned on said

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case and engaging the other of said contact arms to move it into engagement with said circuit completion means and operate the flashlight.

2. A small lightweight flashlight adapted to be attached to a visor of a cap or the like, which flashlight comprises a case of generally rectangular shape and which has a converging front portion, a pair of contact means positioned within said case adjacent opposite sides thereof and abutting on parts of said converging front portion for receiving therebetween battery means with their longitudinal axes extending transversely of said case, battery means received in said case being partly positioned by engaging a rear wall of said case, said case having upwardly extending tapered posts therein, said contact means including opposed loops therein telescoped over said posts to position said contact means, and circuit completion means normally engaging one of said contact means and including a light bulb, said circuit completion means also including a switch member slidably carried by said case for removably contacting said other contact means to close an energization circuit for the flashlight.

3. A flashlight as in claim 2 where said case has a transversely concave bottom and a pair of battery cells are received in said case, said case having an upwardly extending battery support on the bottom part of said case adjacent each lateral margin thereof, adjacent inner ends of said battery cells being supported on said case bottom and transversely outer ends of said battery cells being individually supported by said battery supports.

4. A flashlight comprising a non-conducting carrier case having ends and a top and bottom, said case being of generally rectangular shape and having a converging front portion, leaf clip means secured to the bottom of said case and extending depthwise thereof for securing the flashlight to a support, spring contact arms extending along the ends of and within said case, said contact arms having inwardly bowed sections to receive battery means therebetween and resiliently engage such battery means, said contact arms having sections abutting on said converging front portion of said case to be partly positioned thereby, said case having posts extending between the bottom and top thereof, said contact arms having sections extending transversely of said case and including opposed loop portions extending along the longitudinal axis of said contact arms and engaging opposite portions of said posts to be positioned thereby by being telescoped thereover, a bulb and bulb socket in contact with one of said contact arms, said case having an upwardly extending member with a bifurcated upper end provided on the bottom of said case on the inner surface thereof, an end portion of the other of said contact arms being received in the bifurcated upper end of said member to be fixedly positioned thereby, an extension contact arm secured to said other contact arm on said end portion thereof to extend to a point adjacent said bulb and bulb socket, and a contact member positioned on said case and engaging the other of said contact arms to move it into engagement with said bulb and bulb socket to complete a circuit and operate the flashlight.

5. A flashlight comprising a non-conducting carrier case having ends and a top and bottom, said case being of generally rectangular shape and having a converging front

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portion, leaf clip means secured to the bottom of said case and extending depthwise thereof for securing the flashlight to a support, spring contact arms extending along the ends of and within said case, said contact arms having sections abutting on said converging front portion of said case to be partly positioned thereby, said case having posts extending between the bottom and top thereof, said contact arms having sections extending transversely of said case and including opposed loop portions extending longitudinally of said contact arms and engaging opposite portions of said posts to be positioned thereby, a bulb and bulb socket means in contact with one of said contact arms, said case having an upwardly extending member provided on the bottom of said case on the inner surface thereof, an end portion of the other of said contact arms engaging said member to be fixedly positioned thereby, an extension contact arm secured to said other contact arm on said end portion thereof to extend to a point adjacent said bulb and bulb socket means, and a contact member positioned on said case and engaging the other of said contact arms to move it into engagement with said bulb and bulb socket means to complete a circuit and operate the flashlight.

6. A flashlight comprising a non-conducting two-part horizontally divided carrier case having ends and a top and bottom and having a front aperture outlined by a groove, said case being of generally rectangular shape and having a converging front portion, leaf clip means secured to the bottom of said case and extending depthwise thereof for securing the flashlight to a support, spring contact arms extending along the ends of and within said case, said contact arms having sections abutting on said converging front portion of said case to be partly positioned thereby, said case having posts extending between the bottom and top thereof, said contact arms including opposed loop portions extending transversely of said case and engaging opposite portions of said posts to be positioned thereby, a bulb and bulb socket means including a reflector in contact with one of said contact arms, said case having an upwardly extending member with a bifurcated upper end provided on the bottom of said case on the inner surface thereof, an end portion of the other of said contact arms being received in the bifurcated upper end of said member to be fixedly positioned thereby, a cover for said reflector, said reflector and said cover being positioned by being seated in said groove in said carrier case, an extension contact arm secured to said other contact arm on said end portion thereof to extend to a point adjacent said bulb and bulb socket means, and a contact member positioned on said case and engaging the other of said contact arms to move it into engagement with said bulb and bulb socket means to complete a circuit and operate the flashlight.

References Cited in the file of this patent

UNITED STATES PATENTS

2,234,995	Waechter	Mar. 18, 1941
2,524,881	Chambers	Oct. 10, 1950
2,805,326	Schwartz	Sept. 3, 1957

FOREIGN PATENTS

66,844	Norway	Oct. 4, 1943
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