

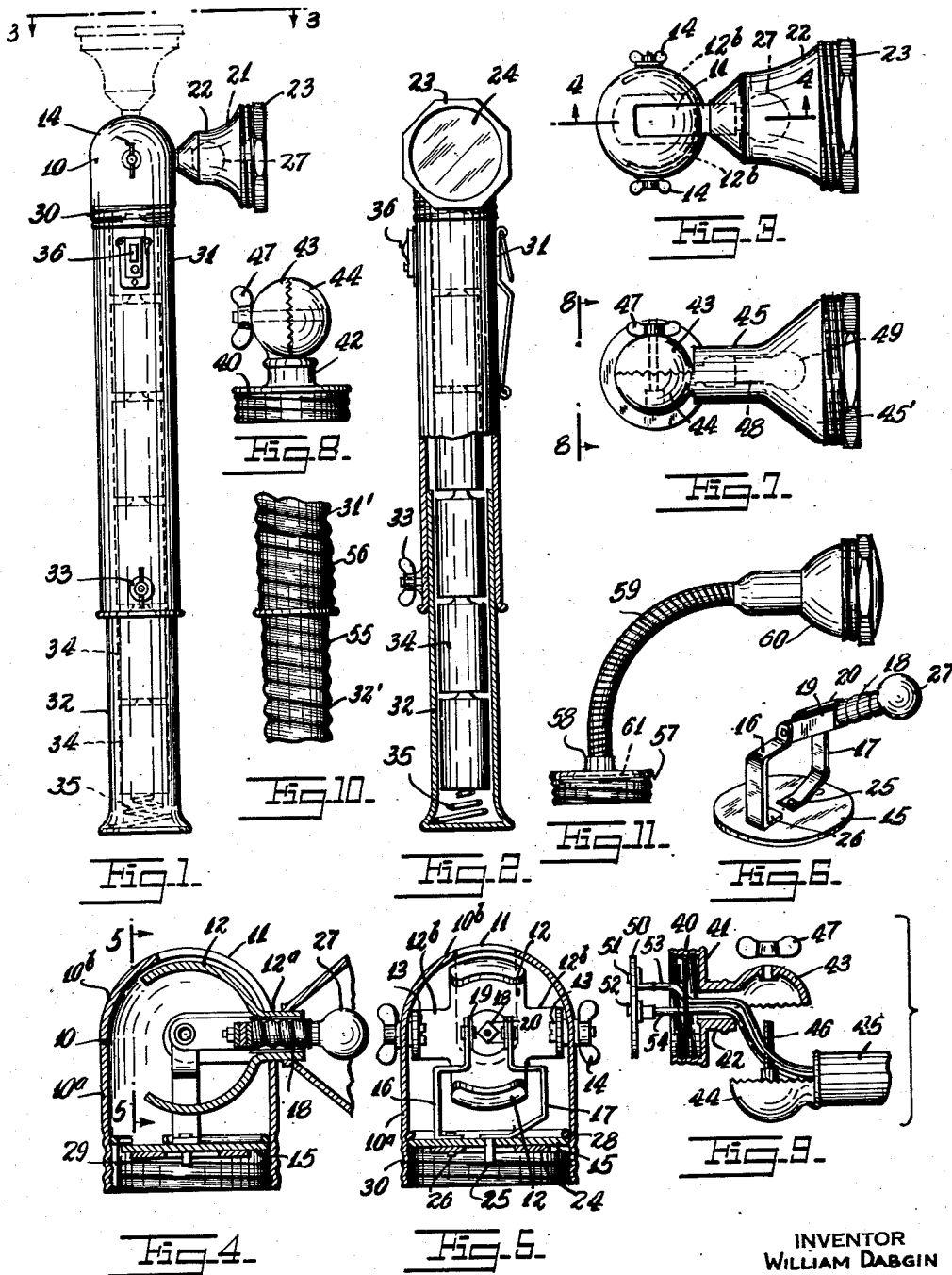
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ADJUSTABLE HEAD FOR FLASHLIGHTS

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## ADJUSTABLE HEAD FOR FLASHLIGHTS

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6 Claims. (Cl. 240—10.67)

This invention relates to new and useful improvements in adjustable heads for flashlights.

The invention has for an object the construction of a flashlight head which is adapted to be swivelled through substantially 90° in a plane, and modifications thereof adapted to be universally swivelled.

More particularly, the invention has specific reference to a novel construction of the head by which the swivelling is attained, and in which the construction is efficient as regards the electrical connections necessary for the illumination of the lamp thereof.

More particularly, the invention contemplates the construction of the head in which there is a casing having a cylindrical lower portion and a semi-spherical shell top portion formed with an elongated opening on a great circle thereof extending from the top to the side, and housing a shutter extending over said elongated opening and having a tubular opening engaging through the opening for supporting a lamp socket and the reflector and casing therewith.

Another one of the objects of this invention resides in the novel pivoting of the shutter upon the casing on an axis passing through the center of the semi-spherical shell top portion and at right angles to a plane longitudinally through said longitudinal opening.

Still further the invention proposes the provision of an insulation disc adapted to be mounted transversely in the open end of the cylindrical portion and supporting elements upon which members are mounted, which members support the lamp socket in its position extended through said tubular portion.

Furthermore, the invention contemplates another form wherein there is a casing with a cylindrical portion having a closed end supporting a tubular portion terminating in a hollow semi-sphere coactible with a complementary hollow semi-sphere on a tubular lamp support and a novel means for the passage of the wires necessary for the current of the lamp.

Still further the invention proposes several novel features upon the body of the flashlight, one of which is the construction of the body of telescopic parts so that the device is capable of holding a varied number of battery cells.

Another object of the invention is the construction of a device as mentioned which is simple and durable and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a side elevational view of a device constructed according to this invention.

Fig. 2 is a front elevational view of Fig. 1 seen looking from the right hand end, with a portion thereof broken away to disclose interior parts.

Fig. 3 is an elevational view looking in the direction of the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary enlarged sectional view as though taken on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view as though taken on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the insulation disc, the elements and the members for supporting the socket.

Fig. 7 is a plan view of a device constructed according to another embodiment of the invention.

Fig. 8 is a fragmentary elevational view looking in the direction of the line 8—8 of Fig. 7.

Fig. 9 is a fragmentary sectional view of the device shown in Figs. 7 and 8 disclosing the interior construction.

Fig. 10 is a fragmentary elevational view of a portion of the body of a device constructed according to a modification of this invention.

Fig. 11 is a side elevational view of an adjustable head constructed according to a still further modification.

The adjustable head for a flashlight, according to this invention, comprises a casing 10 having a cylindrical lower portion 10<sup>a</sup> and a semi-spherical shell top portion 10<sup>b</sup> formed with an elongated opening 11 on a great circle extending from the top thereof to one side. A shutter 12 is arranged within the casing 10 for extending across said elongated opening, and has a tubular portion 12<sup>a</sup> engaging through the elongated opening. This shutter 12 is pivotally mounted upon the casing 10 on an axis passing through the center of the said semi-spherical portion and at right angles to a plane longitudinally through said opening 11. More particularly, side arms 12<sup>b</sup> project from the sides of the shutter 12 and terminate on the axis stated. Screws 13 pass through the side arms upon said axis, and through the casing 10 to the exterior.

Wing nuts 14 are engaged upon the screws 13 and may be clamped tight for the purpose of holding the shutter 12 in various pivotally fixed

positions. In place of the screw and wing nut arrangement, any other means of tightening may be used such as rivets, eyelets, etc.

An insulation disc 15 is mounted transversely in the open end of the cylindrical portion 10<sup>a</sup> of the casing and supports elements 16 and 17 which extend upwards to the axis previously mentioned. A lamp socket 18 is mounted through the tubular portion 12<sup>a</sup>. Members 19 and 20 pivotally connect with the ends of the elements 16 and 17 at the axis previously mentioned and connect with the lamp socket to support the lamp socket in such a manner that an electric circuit exists for the illumination of the lamp.

A reflector 21 is mounted within a reflector casing 22 which is engaged upon the tubular portion 12. This reflector support casing is provided with a removable end 23 which is provided with a lens 24. The casing 22 may pivot to various positions from the position shown in full lines in Fig. 1 to the dot and dash line position.

An annular contact ring 24 is attached upon the side of the insulation disc 15. A central contact 25 is mounted through the center of the insulation disc 15. The element 16 is connected by a rivet 26 with the annular contact ring 24. The central contact 25 is in the form of a rivet and connects with the end of the element 17 so as to hold the element in an upright position. The elements 16 and 17 are connected with the members 19 and 20 by pivot rivets, as clearly shown in Fig. 5. The member 20 connects with the end contact 18' of the socket 18. The member 19 connects with the shell contact of the socket 18. A removable lamp 27 is mounted within the socket 18.

The construction is such that an electric circuit exists from the central contact of the lamp socket 18, through the lamp 27, to the shell contact of the socket, and hence to the ring contact 26. The disc 16 rests against a restraining ring 28 fixed within the cylindrical portion 10<sup>a</sup> so as to limit its insertion to the corrected position so that the pivots of the elements 16 and 17 with the members 19 and 20 are upon the axis previously defined. The disc 15 is held against any possible rotation by reason of a key 29 fixed longitudinally within the casing portion 10<sup>a</sup> and engaging in a key slot formed in the disc 15.

The lower end of the cylindrical portion 10<sup>b</sup> is formed with threads 30 by which it may be threadedly engaged upon the upper end of a tubular body 31. This tubular body has an open bottom end into which a small tubular body 32 telescopically engages. A clamping screw 33 mounted upon one of the bodies engages the other for holding the bodies in fixed positions.

A plurality of cells 34 are stacked one upon the other in series within the bodies 31, 32. A spring 35 within the bottom of the body 32 engages the bottom cell of a series of the cells so that the central contact of the uppermost cell is forced against an element (not shown on the drawing) of a switch 36 connected with the central contact 25. The spring 35 furthermore serves to ground the container portions of the battery cells. The container portions of the cells are grounded either by being in intimate contact with the walls of the bodies 31, 32 or by means of leaf springs (not shown on the drawing) mounted upon the walls and in engagement therewith.

The electric switch 36 is mounted upon the tubular body 31 and is adapted to control the connection between the central contact 25 and the central contact of the uppermost cell. The

construction and operation of the switch will not be given in detail in this specification since similar switches are well known, and the construction forms no part of this invention.

In Figs. 7-9 inclusive a modified form of the invention has been disclosed in which there is a casing having a cylindrical portion 40 with a closed end 41 from which a tubular portion 42 projects. This tubular portion terminates in a hollow semi-sphere 43 adapted to coact with a hollow semi-sphere 44 upon the end of a tubular portion 45. The contacting edges of the semi-spheres 43 and 44 are serrated so that the parts may maintain numerous rotatively adjusted positions. A stud 46 from one of the semi-spheres is adapted to pass through an opening in the other semi-sphere and supports a wing nut 47 by which the parts may be locked in adjusted positions. The tubular member 45 connects with a reflector casing 45' in which a reflector, lens, removable socket 48, and lamp 49 is mounted.

An insulation disc 50 is adapted to be forced transversely into the cylindrical portion 40 and maintains its position. An annular contact ring 51 is mounted upon the outer face of the disc 50. A central contact 52 is mounted through the disc 50. The annular ring 51 connects with a lead 53 adapted to connect with one contact of the socket 48, and a lead 54 connects with the central contact 52 and is adapted to connect with the other contact of the socket. The leads 53 and 54 pass through the tubular portion 42 and the tube 45.

In Fig. 10 another embodiment of the invention has been disclosed in which a modified arrangement is shown for adjustably connecting the handle sections 31' and 32'. More particularly, the adjacent ends are formed with threads 55 and 56 adapted to threadedly engage each other. The threads may extend up to the switch in telescopic case 31' and through the entire length of handle section 32'.

In Fig. 11 a further modified form of the invention has been disclosed in which there is a casing consisting of a cylindrical portion 57 connected with a tubular portion 58. A flexible goose neck 59 extends from the tubular portion 58 and connects with a lamp unit 60. Leads from the lamp unit extend through the flexible goose neck 59 and connect with contacts upon an insulation disc 61 mounted in the cylindrical portion 57. In other respects this form of the invention is the same as in the previous forms.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:—

1. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion 65 and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinally through said opening, an insulation disc mounted trans-

versely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion, and members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket.

2. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinal through said opening, an insulation disc mounted transversely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion, and members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket, said shutters having side arms extending to said axis, and clamp screws through said side arms and through the casing for holding the shutters in various pivoted positions.

3. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinal through said opening, an insulation disc mounted transversely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion, members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket, an annular contact ring mounted on the outer side of said insulation disc, a central contact mounted through said disc, and a circuit for the lamp socket comprising one of said elements and one of said members connected respectively between said ring and the shell of the socket, and the other of said elements and the other of said members connected respectively with the central contact and with the central contact of the socket.

4. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said

elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinal through said opening, an insulation disc mounted transversely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion, and members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket, and a body for supporting said flashlight head comprising telescopic tubular members and means for holding said members adjusted.

5. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinal through said opening, an insulation disc mounted transversely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion, and members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket, and a body for supporting said flashlight head comprising telescopic tubular members and means for holding said members adjusted, comprising a clamp screw on one member engaging the other.

6. An adjustable head for a flashlight, comprising a casing having a cylindrical lower portion and a semi-sphere shell top portion formed with an elongated opening on a great circle extending from the top thereof to one side, a shutter within said casing and extending across said elongated opening and having a tubular portion engaging through said elongated opening, and pivotally mounted upon said casing on an axis passing through the center of said semi-sphere and at right angles to a plane longitudinal through said opening, an insulation disc mounted transversely in the open end of said cylindrical portion of the casing, elements mounted on said disc and extending to the vicinity of said axis, a lamp socket mounted through said tubular portion and members pivotally connected with said element at said axis and connected with the lamp socket to support the lamp socket, and a body for supporting said flashlight head comprising telescopic tubular members and means for holding said members adjusted, comprising a threaded connection.

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