April 30, 1946. C. SABIERS 2,399,511

FLASHLIGHT

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Fig. 1.

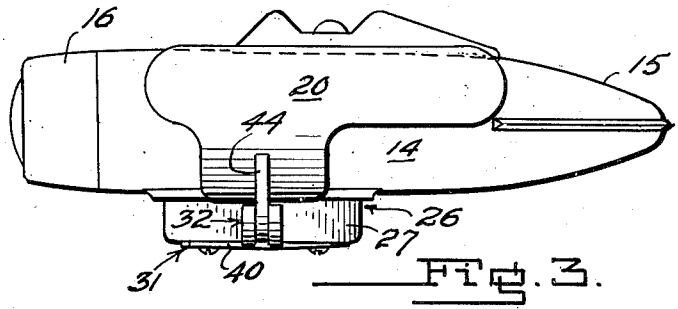


Fig. 2.

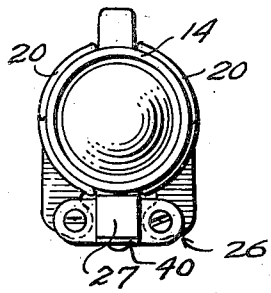


Fig. 3.

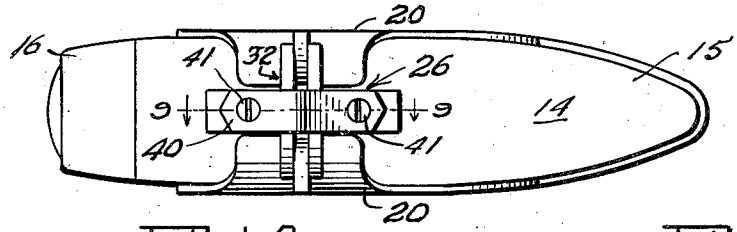


Fig. 4.

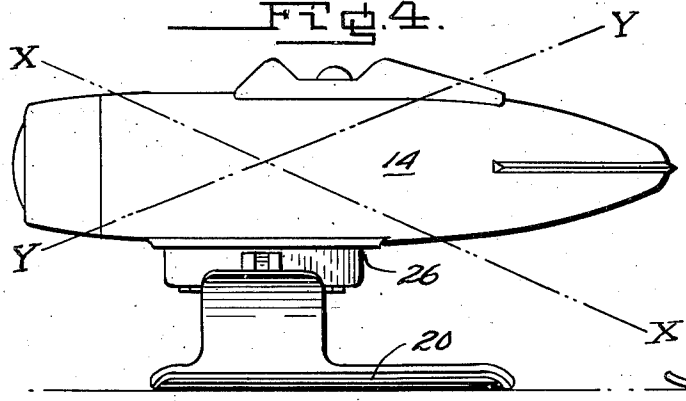


Fig. 5.

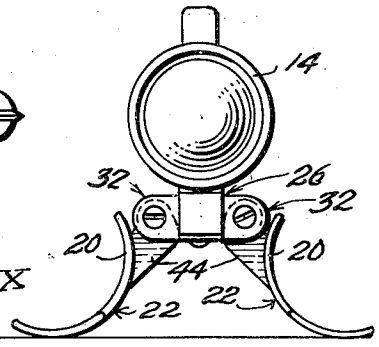
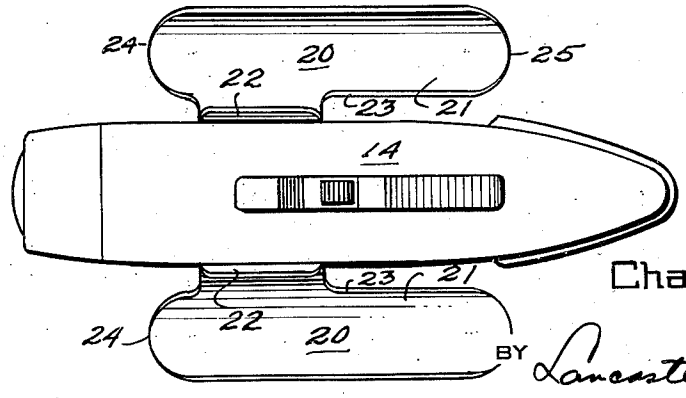


Fig. 6.



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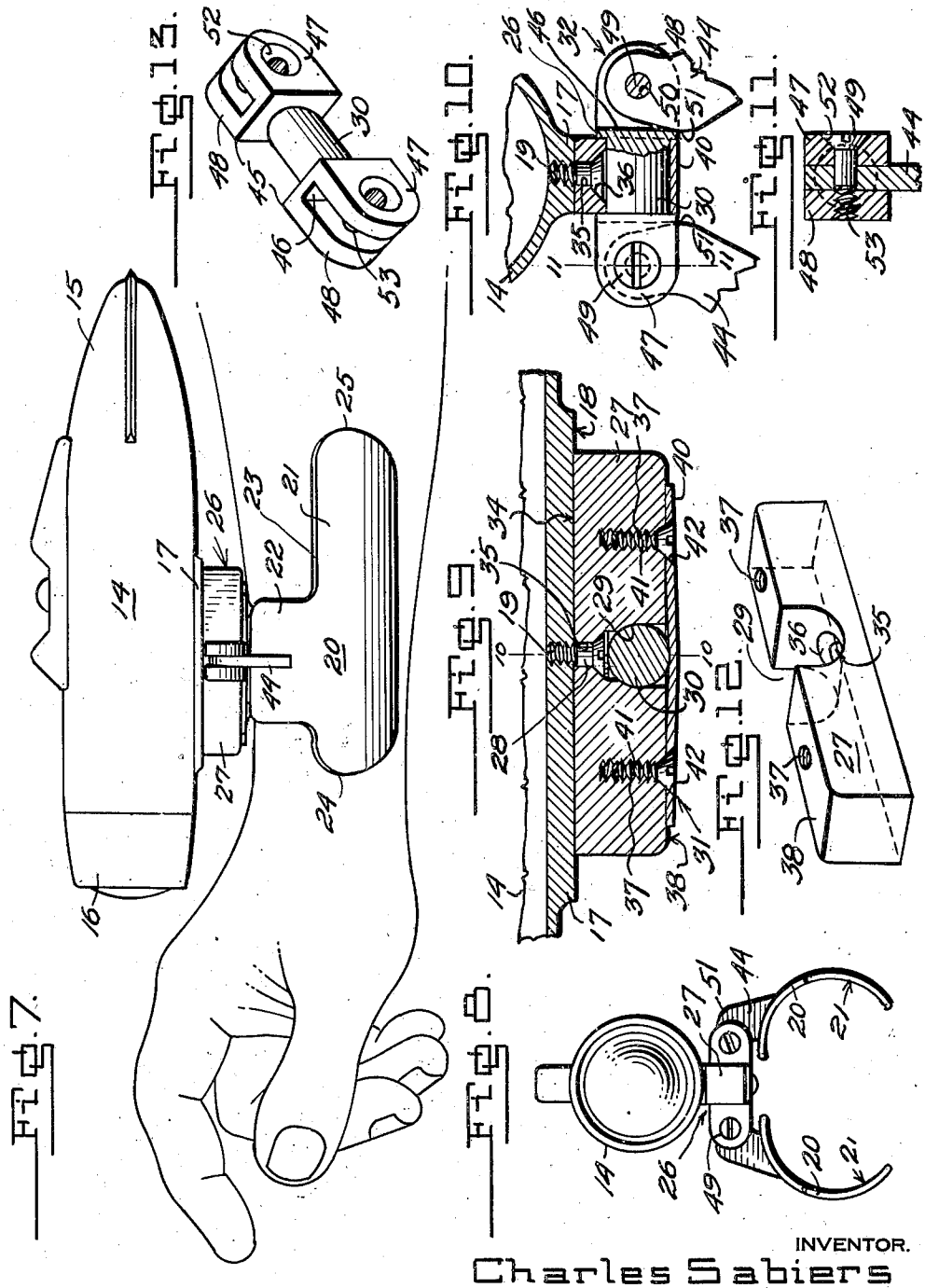
BY Lancaster, Allwine & Rommel

ATTORNEYS.

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FLASHLIGHT

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Patented Apr. 30, 1946 2,399,511

UNITED STATES PATENT OFFICE

2,399,511

FLASHLIGHT

Charles Sabiers, Amherst, Ohio

Application August 24, 1944, Serial No. 550,985

4 Claims. (Cl. 248—359)

This invention relates to improvements in flash lights. It is particularly adapted for use in connection with flash lights which are portable and have elongated tubular casings from the ends of which light rays are adapted to be projected.

The principal objects of the invention are to provide flash lights of the kind described which are simple, compact, inexpensive, durable, not likely to get out of order and which may be conveniently carried and held in different positions in the hands of users, may be supported upon surfaces in either horizontal or inclined positions or may be clamped to the arms of the users or other objects in a manner to permit the casings to be tilted or swing from side to side so as to permit the light rays to be directed to the desired objects.

The invention contemplates the provision of a pair of wing-like members for the flash light casing, which, in one zone are in contact with or closely adjacent the casing so as to not render it cumbersome when transported, stored or carried about as a hand lantern; in a second zone are adapted to support the casing upon a surface, such as a table, the ground or the like; and, in a third zone are adapted to act like the paws of a clamp whereby the casing may be supported by an inert object, such as a rod or pipe, or a movable object, such as the human arm.

Another object of the invention is to provide means for connecting the wing-like members to the casing in a manner that the tension or frictional engagement of parts may be regulated to enable a person to readily make adjustments for locating the wing-like members in these various zones, and yet not have the parts so loose that incidental vibration, shocks or forces imparted to the casing or parts will permit them to move from the positions selected by the user.

Other objects and advantages will appear in the following detailed description of the preferred embodiment of the invention, taken in connection with the accompanying drawings, forming a part of this specification and in which drawings:

Fig. 1 is a side elevation of a flash light with the wing-like members folded into contact with or closely adjacent the casing.

Fig. 2 is a front elevation thereof.

Fig. 3 is a bottom plan view thereof.

Fig. 4 is a side elevation of the flash light with the wing-like members moved to a second zone so as to support the casing upon a surface.

Figs. 5 and 6 are a front elevation and a top plan view, respectively of the parts in the position shown in Fig. 4.

Fig. 7 is a side elevation of the flash light with the wing-like members in a third zone, embracing the arm of a person.

Fig. 8 is a front elevation of the parts as shown in Fig. 7.

Fig. 9 is an enlarged sectional view on the line 9—9 of Fig. 3.

Fig. 10 is a sectional view on the line 10—10 of Fig. 9.

Fig. 11 is a sectional view on the line 11—11 of Fig. 10.

Fig. 12 is a perspective view of a support block forming a part of the preferred construction, the block being shown in an inverted position.

Fig. 13 is a perspective view of a shaft adapted to be carried by the block shown in Fig. 12 and including a part of means for pivotally connecting the wing-like members to the ends of the shaft.

In the drawings I have shown a tubular casing 14 having a tapered rear portion 15 and a lense and reflector mount 16 at the forward end which may also be slightly tapered, but this is merely by way of example. Such casing is particularly well adapted to be clamped to the arm of the user, as shown in Fig. 7 and not likely to interfere with free movement of the arm and hand. The casing may be made of any suitable material such as metal or a plastic composition and in the example shown is provided with a rib 17 at its underside having a flat under face 18 and a screw threaded bore 19 midway of its sides and ends, the axis of the bore being normal to the longitudinal axis of the casing. The rib 17 is preferably located nearer the end of the casing where the mount 16 is located than its rear end 15, for a purpose to be subsequently set forth.

Wing-like members 20 are provided for the purpose previously set forth, there being a pair of such members. Each is preferably elongated in shape and concavo-convex in cross section so as to present a concave face 21 and a convex face 22, the concave face to conform to the contour of the casing 14, when in a folded position, as shown in Figs. 1, 2 and 3, and to conform somewhat to the shape of the arm of a person when disposed in a zone with the concave faces 21 of the pair of members confronting one another as shown in Figs. 7 and 8. To conserve material and yet enable the wing-like members 20 to function efficiently as a support when engaging a flat surface as in Figs. 4 and 5, or a round surface as

in Fig. 7 I prefer to form each member 20 with a major elongated portion 21 and a minor portion 22 forming a continuation of the major portion at one of its longitudinal margins 23, and preferably located near the forward end 24, than the rear end 25 of the major portion 21. The ends of the major portion are preferably rounded so as to present no sharp corners in engagement with flesh when applied to the users arm, as shown in Fig. 7. This formation of the members 20 also enables the user to firmly clamp the flash light to the arm without the members 20 engaging the wrist, yet disposes the lense near the hand.

The members 20 are preferably secured to the casing by a universal coupling 26 whereby they may be disposed in the various zones referred to. This coupling preferably comprises a supporting member 27 which in the example shown is in the form of an elongated supporting block pivotally secured to the casing 14, as by screw 28, the member or block having a transverse shaft receiving bearing or recess 29; a shaft 30 rotatable in the bearing or recess; means 31 for increasing or diminishing the frictional engagement of the shaft in the bearing; and means 32 pivotally connecting the members 20, one to each end of the shaft 30.

In the example shown the supporting member or block 27 has a flat upper face 34 for frictional engagement with the face 18 of rib 17; a way 35 for accommodating the shank of screw 28, and a countersink 36 for the head of the screw 28, the way 35 aligning with the bore 19, and the countersink 36 being open to the bearing or recess 29; and two screw threaded bores 37 open to the lower face 38 of the block at each side of the bearing or recess 29. In order to render the means 31 simple and inexpensive, the transverse recess 29 is of a depth slightly less than the diameter of shaft 30, so that when the shaft is in place, it projects slightly beyond the plane of the lower face of the block, as shown in Fig. 9.

The means 31 comprises a normally flat strip 40 of springy material and screws 41 the heads of which are accommodated in countersink holes 42 adjacent the ends of the strip and the shanks in the threaded bores 37. The intermediate portion of strip 40 engages the shaft 30, and by tightening or loosening the screws 41 a person may increase or diminish the frictional engagement of the shaft 30 in the bearing 29.

The means 32 preferably comprises an arm 44 secured to its respective member 20; clevis-like terminal 45 on the end of the shaft 30, comprising a base portion 46 and spaced ears 47 and 48; and a screw 49. The arm 44 is preferably integral with the minor portion 22 of member 20, extending from its convex face, and adjacent its free end is provided with a transverse way 50 for accommodating the shank of screw 49. The arm may also be provided with an offset or shoulder 51 for engagement with the base portion 46 to limit swinging movement of the arm, as shown in Fig. 10, when the wing-like members 20 are located in a zone for supporting the casing upon a flat surface, as shown in Fig. 5, at which time the convex faces 22 of the members confront one another. The ear 47 is provided with a countersink 52 for the head of screw 49, and the ear 48 with an aligned screw threaded bore 53 for receiving the threaded end of the screw.

It is of course understood that by tightening or loosening the screw 28 the frictional engagement of the supporting member or block 29 with the rib 17 may be increased or diminished; and that, by tightening or loosening the screw 49 of each means 32 the frictional engagement of the arm 44 thereof with the ears 47 and 48 may be increased or diminished, so that a user may adjust the parts of the universal coupling so that no great force is required to move them one with respect to another, and yet they will not be affected by incidental vibration, forces or shocks otherwise tending to disturb the positions of parts selected by the user.

When the members 20 are arranged for support of the casing upon a surface, as in Figs. 4 and 5, the casing may be tilted up as indicated by the dot and dash axis X—X, Fig. 4, or tilted down as shown by dot and dash axis Y—Y. When the flash light is applied to the arm or other object, as in Fig. 7, the casing may be swung sidewise in either direction, the casing swinging on the supporting member or block 27.

I claim:

1. A flash light comprising, an elongated tubular casing, a supporting member pivotally carried by said casing, intermediate its ends, with the pivotal axis normal to the longitudinal axis of the casing, a rotatable shaft carried by said supporting member with its axis normal to the pivotal axis of the latter, a pair of elongated wing-like members each concavo-convex in cross section, to conform to the contour of the casing when in a first zone extending longitudinally and adjacent opposite sides thereof, and means pivotally connecting said wing-like members, one to each end of said shaft, to swing about an axis normal to the axis of the shaft, whereby the wing-like members may be swung to a second zone below the casing with their convex faces confronting one another for support of the casing upon a surface, and whereby, thru the intermediacy of said shaft, and said last mentioned means said wing-like members may be swung to a third zone below the casing with their concave faces confronting one another for gripping engagement with an object to support the casing thereby.

2. A flash light comprising an elongated tubular casing, a pair of elongated wing-like members, each concavo-convex in cross section, to conform to the contour of the casing when in a first zone extending longitudinally and adjacent opposite sides thereof, and a universal coupling connecting said casing and said wing-like members whereby the latter may be swung to a second zone below the casing with their convex faces lowermost for supporting the casing upon a surface, or swing to a third zone below the casing with their concave faces confronting one another for gripping engagement with an object to support the casing thereby.

3. A flash light comprising an elongated tubular casing, an elongated supporting block pivotally carried by said casing to normally extend along the bottom thereof and swing about an axis normal to the longitudinal axis of the casing, said block provided with a transverse shaft-bearing, a shaft received by said bearing, means for increasing or diminishing the frictional engagement of said shaft in said bearing, and a pair of wing-like members pivotally carried one by each end of said shaft to swing about an axis normal to the axis of the shaft, whereby the wing-like members may be disposed in close proximity longitudinally of the opposite sides of the casing or swing to a position below the casing for support thereof on a surface, and the casing tilted up and down with

respect to said supporting wings, and from side to side on said supporting block.

4. A flash light comprising an elongated tubular casing, a pair of elongated wing-like members, each concavo-convex in cross section, to conform to the contour of the casing when in a first zone extending longitudinally and adjacent opposite sides thereof, and means pivotally connecting said wings to the casing to swing outwardly from said first zone to a second zone below the casing with their convex faces confronting one another for support of the casing upon a surface, and to a third zone with their concave faces below the casing, and confronting one another for gripping engagement with an object to support the casing thereby.

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