Feb. 7, 1928. 1,658,189

W. C. EMBURY

FLASH LIGHT STANDARD

Filed Jan. 19, 1927 3 Sheets-Sheet 1

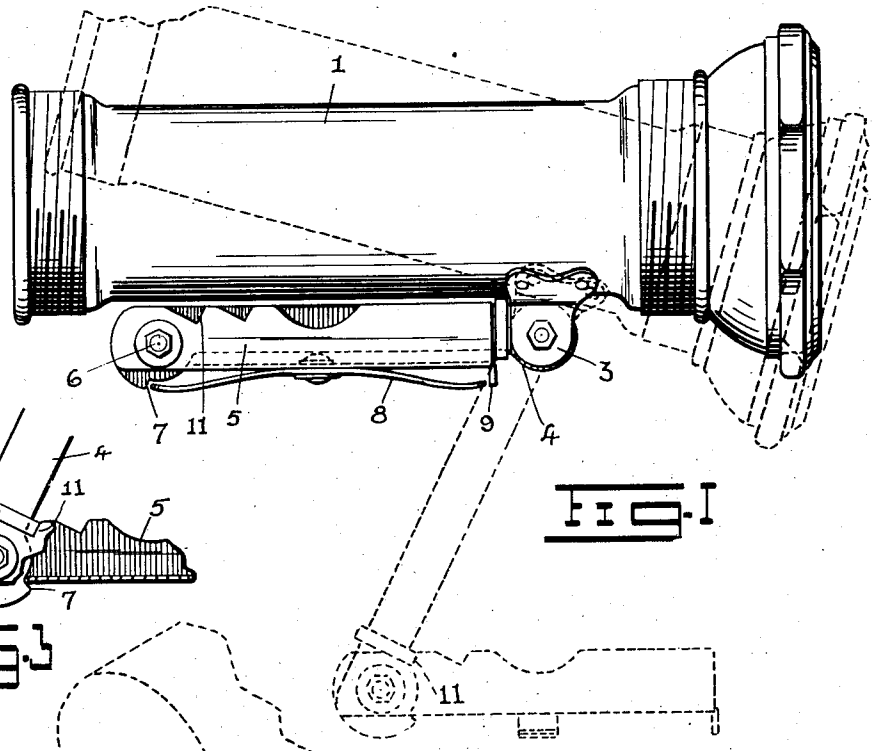


Fig. 1

Fig. 3

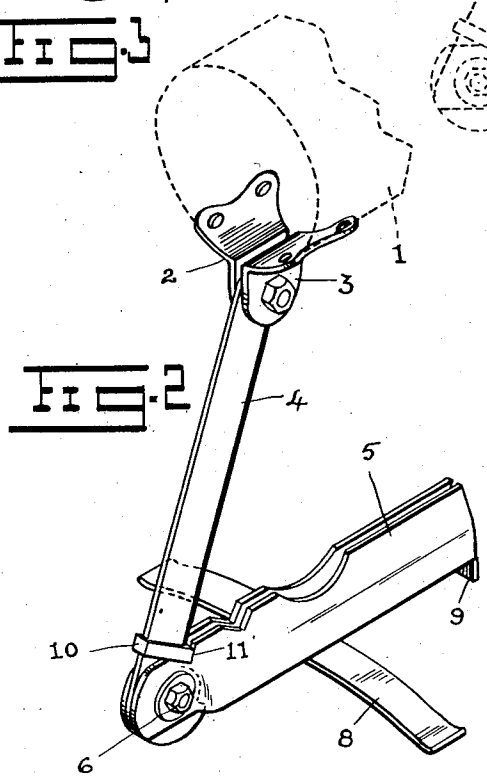


Fig. 2

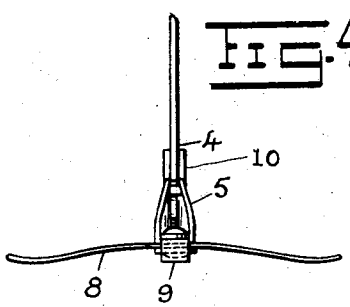


Fig. 4

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FLASH LIGHT STANDARD

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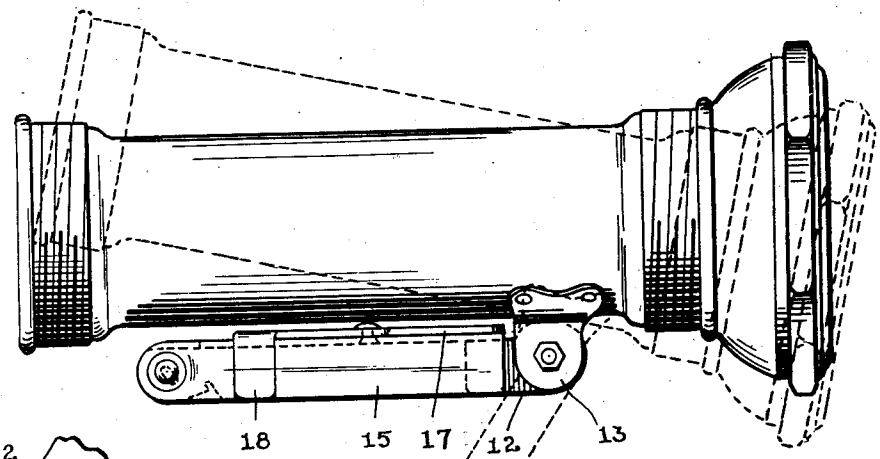


Fig. 5

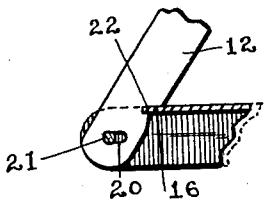


Fig. 7

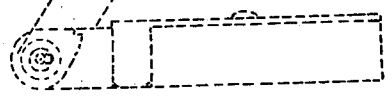


Fig. 8

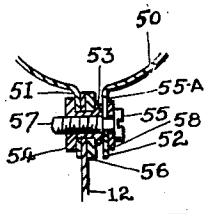
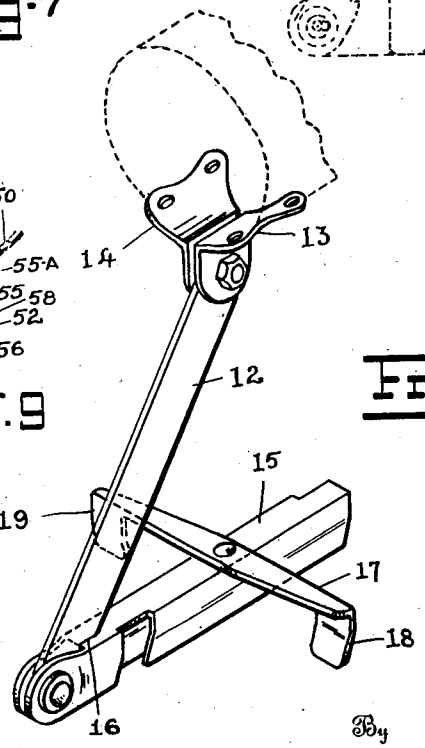


Fig. 9



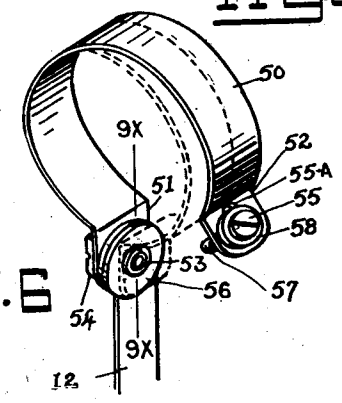


Fig. 6

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FLASH LIGHT STANDARD

Filed Jan. 19, 1927 3 Sheets-Sheet 3

Fig. 10





Fig. 12 Fig. 13

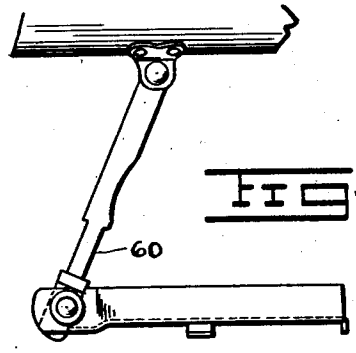


Fig. 11

Fig. 20

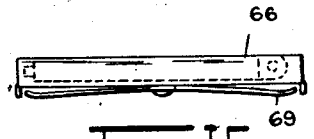


Fig. 15

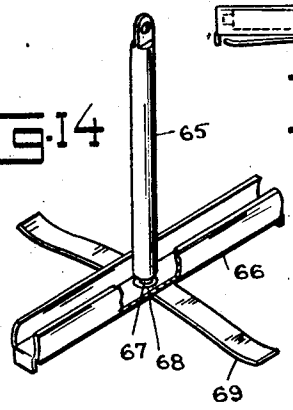
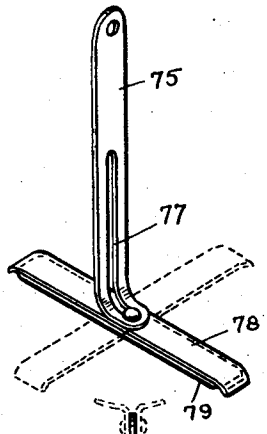


Fig. 14



Fig. 16



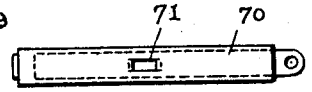


Fig. 18

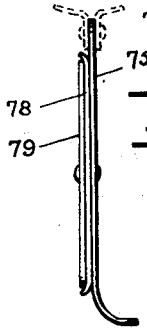


Fig. 21

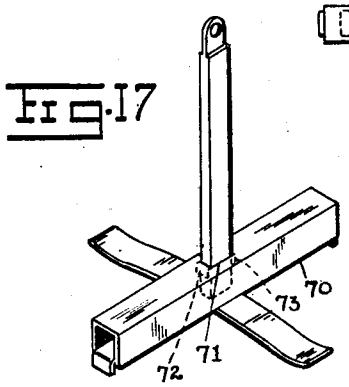


Fig. 17



Fig. 19

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Patented Feb. 7, 1928. 1,658,189

UNITED STATES PATENT OFFICE.

WILLIAM C. EMBURY, OF WARSAW, NEW YORK.

FLASH-LIGHT STANDARD.

Application filed January 19, 1927. Serial No. 162,158.

The object of this invention is to provide an improved and simplified collapsible standard for flash lights by means of which such a light is made self supporting in practically any angular position so that its light can be directed in any direction and without having to hold the flash light in the hand.

This and other objects of this invention will be fully illustrated in the drawing, described in the specification and pointed out in the claims at the end thereof.

In the accompanying drawing:

Figure 1 is a side elevation of a flashlight body provided with the improved collapsible standard in its collapsed position.

Figure 2 is a detail perspective view of the collapsible standard in its extended position.

Figure 3 is a detail side elevation and partial sectional view of the pivotal connection between the standard proper and its base.

Figure 4 is a detail end elevation of a portion of the collapsible standard in its extended form.

Figure 5 is a side elevation of a flash light provided with a slightly modified form of collapsible standard.

Figure 6 is a detail perspective view of the modified form of standard.

Figure 7 is a detail sectional view of the connecting joint between the link and base of the standard of the modified form of standard.

Figure 8 is a detail perspective view of a modified mounting for the collapsible standard by means of which the standard can be readily attached to any flash light body.

Figure 9 is a detail sectional view thru the pivotal connection between the standard and the standard mounting, the section being taken on the line 9—9 of Figure 8.

Figures 10 to 21 show other modified forms of the collapsible standard embodying my invention.

In the several figures of the drawing like reference numerals indicate like parts.

The collapsible standard forming the subject matter of my present invention is an improvement over the collapsible standard illustrated in my earlier application Serial No. 110,565. In my present invention the standard has been considerably simplified in construction over the standard illustrated in the application above referred to and in simplifying the construction of the standard it has been made more practical in its adaptation to a flash light with less cost added to the manufacture of a flash light equipped with this standard.

As illustrated in the figures of the drawing the standard is attached to the flash light body 1 by means of a saddle which comprises a pair of lugs 2 and 3 having upwardly curved extensions that conform to the cylindrical wall of the flash light body and are fastened thereto by means of suitable rivets or screws. The lugs project from the flash light body and form a narrow slot into which engages the upper end of the link 4. The end of the link 4 is pivoted between the lugs 2 and 3 by means of a suitable pivot stud that also clamps the links in place so as to provide frictional contact between the link and the lugs that will hold the link in any angular position in which it is placed.

The lower end of the link 4 is pivotally attached to the base member 5. This base member has the shape of a channel having a wide bottom and a narrow top just wide enough to admit the link 4 when the standard is collapsed. At the left hand end the bottom of the channel is cut away and the sides thereof brought together to form a narrow bifurcation at the end of the channel in which the lower end of the link 4 is pivoted. A pivot stud 6 passes thru the bifurcated end of the channel and the lower end of the link 4 located therein and by means of suitable washers the stud clamps the end of the link in place at one end of the base. This allows the link to turn on the end of the base with considerable frictional resistance sufficient to allow the link to support the flash light body when placed in an angular position without collapsing into the base.

The pivoted lower end of the link 4 is enlarged and on its periphery is provided a shoulder 7. This shoulder is adapted to engage the bottom of the base made up of the channel member 5 so that when the link is swung out of the channel member it is held against further movement after the shoulder 7 is in contact with the bottom of the base as illustrated in Figure 3. This holds the

link 4 in a predetermined angular position with relation to the base.

On the under side of the base 5 and centrally thereof is pivoted the cross bar 8. This bar is preferably made of flat spring stock and is slightly curved downwardly at each end to make it bow shaped so that the outer ends of the cross bar are at the same level with the end of the link 4 at one end of the base and with the bottom of the lug 9 depending from the outer end of the channel or base 5. In this way a four point support is provided at the bottom of the base 5 whenever the cross bar 8 is turned to a position at right angles to the base 5 as illustrated in Figures 2 and 4 from a position parallel to the bottom of the base as illustrated in Figure 1.

When the standard is not in use the relation of the parts of the standard is illustrated in Figure 1 in which the link 4 has been swung into the channel or base member 5 and both the base member and the link are swung against the side of the flash light body 1. In this position the different parts of the collapsible standard occupy a minimum amount of space so that its addition to the flash light body is not objectionable from the standpoint of the user of such a light when using it as a strictly manually held flash light.

The standard is, however, quickly extended to form a base for the flash light. This is done by simply swinging the base and link away from the body on the pivot stud that connects the link 4 to the flash light body and then swinging the base member 5 away from the link 4 until a further movement is arrested by the lug 7 as above pointed out. The cross bar 8 is then rotated on the under side of the base member and placed from a parallel position to a position at right angles to it in order to increase the supporting area of the base. With the standard thus extended it can be set on any horizontal or nearly horizontal surface to support the flash light without manual assistance. The flash light body can be swung on the upper end of the link 4 and placed in any angular position with relation to the base so as to direct the light from the flash light in any desired angular direction.

A short sleeve or ring 10 is provided for the purpose of positively locking the link 4 in the predetermined angular position in which it is placed with relation to the base 5 when the base is swung away from the link until a further movement is arrested by the shoulder 7. This sleeve encircles the link 4 and is adapted to slide back and forth thereon. When the standard is collapsed the sleeve is moved close to the pivotal connection between the link and the flash light body and is held in place in this position by the end of the base 5 between which and the lugs 2 and 3 sufficient space is left for this purpose.

When the standard is fully extended as above pointed out the sleeve 10 slides down on the link until the right hand end engages into the angular notch 11 provided in the top of the base 5. The engagement of the sleeve with the base prevents the link 4 from swinging down against the base when the standard is set up and supports the flash light. The friction in the pivotal joint between the link and the base can be reduced to a minimum by the use of the locking sleeve as the locking sleeve alone will hold the link in its extended position, no matter how much weight is placed on top of the link. Between the sleeve 10 and the shoulder 7 of the link 4 the base is thus held against movement in either direction so that when the standard is swung away from the flash light to be extended, its base can only be placed in one position and in this position it is locked until it is again desired to collapse the standard against the flash light body.

To collapse the standard all that is necessary is to turn the flash light body over so that the standard projects upwardly therefrom. The sleeve 10 will then slide down on the link 4 out of engagement with the notch in the base 5 and against the lugs 2 and 3. The base is then free to be folded against the link until the link is nested therein. Both the link and base are then folded against the body of the flash light and the cross bar 8 is turned parallel to the base 5.

In the modification illustrated in Figures 5 to 7 inclusive the link 12 is pivoted with its upper end to the lugs 13 and 14 and the lugs are in turn attached to the flash light body. The base member 15 is pivoted to the lower end of the link 12. In the collapsed position of the standard the link is nested in the channel forming the base member 15 which instead of being located with its bottom on the outside of the link as illustrated in Figure 1 is now located with its bottom between the link and the flash light body as illustrated in Figure 5. When the standard is therefore extended the link and base member together are first swung away from the flash light body until a point is reached at which the base member can be swung away from the left of the link to the right thereof until the base is held against further movement by the engagement of the shoulder 16 on the link 12 with the inverted bottom of the channel forming the base member 15.

The cross member 17 which is pivoted on the base member 15 is then turned from a position practically parallel to the base to a position at right angles to it. This cross member is provided with the depending

flanges one at each end thereof that serve as supporting legs for the cross bar 17 so that when the cross bar is extended as illustrated in Figure 6 it considerably enlarges the supporting area of the base 15. The depending flanges 18 and 19 may be nested into the sides of the channel forming the base member as illustrated in Figures 5 and 6 and for this purpose the sides of the channel are cut away to receive these depending flanges.

When the cross member 17 is extended the supporting base is ready to be placed in position to support the flash light. The weight of the flash light keeps the shoulder 16 of the link in contact with the base thus bracing the link in the predetermined angular position. For the purpose of locking the base on the link against closing after it has been extended the pivot hole 20 in the lower end of the link 12 thru which extends the pivot pin 21 carried by the base member 15, may be elongated so as to provide for the base member a short lateral motion after it has been moved to its extended position. With such a motion, the left hand end of the inverted bottom of the channel engages into the short slot 22 forming a continuation of the shoulder 16 and this engagement will then hold the base member locked in place on the link so that it cannot be swung in either direction until the end of the inverted bottom of the base member is again withdrawn from the slot 22 for the purpose of collapsing the standard.

As illustrated in Figures 8 and 9 the collapsible standard may be mounted on the flash light body by means of a removable clamp member 50. This member comprises a flexible loop having both ends bent outwardly therefrom to provide the lugs 51 and 52. Lug 51 has the hollow rivet 53 attached thereto with its head 54 located on the outside of the lug. On the inwardly projecting hollow shank of the rivet 53 is pivoted the upper end of the link 12 and next to it is placed the friction washer 56 and the end of the hollow shank of the rivet peened over on the outside of the washer to clamp the upper end of the link 12 between the washer 56 and the inside of the lug 51. On the other lug is carried the clamping screw 55. This screw is mounted in the slot 55A provided in the lug 52. For this purpose the shank 57 of the screw is grooved behind the head thereof and the reduced diameter of this shank is placed into the slot so that the screw after being inserted into the slot cannot drop out again. A washer 58 is placed between the head of the screw and the outside of the lug if desired.

The mounting of the standard above described is placed over the flash light body and is then closed as illustrated in dotted lines in Figure 8 and clamped in place in this position by means of the clamping screw which is threaded into the hollow rivet until the curved body of the mounting is drawn tight against the body of the flash light to firmly hold the collapsible standard on the flash light.

In the modifications illustrated in Figures 10 to 13 inclusive I have illustrated the collapsible standard as having a base that is long enough to straddle the pivotal connection between the link and the flashlight body. This is illustrated in Figures 11 and 12. In this modified form the channel forming the base of the standard is wider at the top, practically the full length thereof except at the end where the link is pivoted thereto. This form of construction makes it possible to reduce the width of a portion of the link as indicated at 60 so that the rectangular sleeve can be located at this reduced section of the link and have a limited movement thereon that will either bring it in the position at one end as illustrated in Figure 11 in which it serves to lock the standard open or it will bring it into the dotted line position at the other end of its movement illustrated in Figure 10 in which the link with the sleeve can telescope into the enlarged base formed by the channel.

In the modifications illustrated in Figures 14 to 21 inclusive the base of the standard is not hinged to the base but is separately fastened thereto. The standard illustrated in Figures 14 to 16 inclusive comprises a link made up of a rod 65 and a base formed by the channel 66. The rod has a reduced threaded extension 67 at the lower end with which it can be threaded into the hollow rivet 68 provided in the channel 66 for the purpose of holding the cross bar 69 in place thereon. When extended the standard appears as illustrated in Figure 14 and in its collapsed form it appears as illustrated in Figure 15. To collapse the standard the link formed by the rod is threaded out of the base and then separately snapped over the link to be held in place thereon until needed.

The modification illustrated in Figures 17 to 19 inclusive is similar to that illustrated in Figures 14 to 16 except that instead of a round rod a rod having a rectangular cross section is used for the link. The base 70 for this link is a rectangular tube or sleeve and in the middle at one side thereof is provided a hole 71 having guide lugs 72 and 73 bent in thereon to provide a socket into which the lower end of the rectangular link can engage to be supported by the base.

In Figures 20 and 21 a modification is shown in which the link is made up of a flat bar 75 having its lower end turned outwardly with a slot 77 extending from this outwardly turned end to approximately the

middle of the length of the link. A collapsible base made up of two cross bars 78 and 79 is adapted to slide back and forth on the link and for this purpose is provided with the rivet that extends into the slot 77 so as to guide the collapsible base from the position illustrated in Figure 21 to the position illustrated in Figure 20. In the first position the cross bars 78 and 79 are located alongside the link 75 and parallel thereto while in the second position the cross bars extend at right angles thereto and when extended form a base in the form of a cross at the bottom of the link.

I claim:

1. A support for pocket flash lights comprising a link, a base pivoted to the bottom of said link and pivotal means carried at the top of said link adapted to pivotally connect said link to the body of the flash light, a shoulder formed at the bottom of said link and adapted to engage with said base on the turning of said link on said base for the purpose of placing said link in a predetermined angular position with relation to said base said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

2. A support for pocket flash lights comprising a link, a base comprising a channel for said link, pivotal means adapted to connect said link with said base at one end thereof, and allow said link to swing in and out of said channel, pivotal means carried at the top of said link and adapted to connect the upper end of said link to the body of the flash light said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

3. A support for pocket flash lights comprising a link, a base comprising a channel for said link, pivotal means adapted to connect said link with said base at one end thereof, and allow said link to swing in and out of said channel shaped base, pivotal means carried at the top of said link and adapted to connect the upper end of said link to the body of the flash light, a shoulder at the lower end of said link, said shoulder being adapted to engage the bottom of said channel shaped base and arrest the movement of said link on said channel shaped base at a predetermined angular position with relation to said base said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

4. A support for pocket flash lights comprising a link, a base comprising a channel, said link being pivoted between the sides of said channel, a shoulder on said link adapted to engage the bottom of said channel at a predetermined position of said link with relation to said base, a cross bar mounted to swing at the bottom of said base and adapted to be moved either parallel or at right angles to said base said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

5. A support for pocket flash lights comprising a link, a channel shaped base for said link, a pair of parallel extension lugs at one end of said channel shaped base, the lower end of said link being pivoted between said extension lugs, and projecting slightly beyond said lugs to provide a supporting lug at one end of said channel shaped base, a lug depending at the other end of said base and forming a second supporting lug on said channel and a bar pivoted on the under side of said base to supplement said pair of supporting lugs for the purpose of supporting said base said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

6. A support for pocket flash lights comprising a link, a base pivoted to one end of said link and means for holding said base against movement in either direction on said link from a predetermined angular position with relation to said link said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

7. A support for pocket flash lights comprising a link, means for pivotally connecting said link to the flash light, a base member pivoted to the free end of said link, means provided on said link and adapted to engage said base to lock said link in a predetermined angular position on said base member said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

8. A support for pocket flash lights comprising a link, a pivotal connection between the flash light and one end of said link, a base member pivotally connected to the lower end of said link, a shoulder provided on said link and adapted to arrest the movement of the base member on said link in one direction at a predetermined position thereof with relation to said link and means for locking said base member from movement on said link in the opposite direction after it has been placed in the predetermined position with relation to said link said base and connecting link being adapted to collapse to a line substantially parallel to the axis of the flashlight and adjacent to its body.

9. A support for a pocket flashlight comprising a link, a pivotal connection between the flashlight and one end of said link, a base member pivotally connected to the lower end of said link, a shoulder provided

on said link and adapted to arrest the movement of the base member on said link in one direction at a predetermined position thereof with relation to said link, a shoulder provided in said base, a collar sliding on said link and adapted to engage with said shoulder in said base to lock said base member from movement on said link in the opposite direction after it has been placed in the predetermined position with relation to said link.

In testimony whereof I affix my signature.

WILLIAM C. EMBURY.