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TOE LIGHT

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FIG. 1.

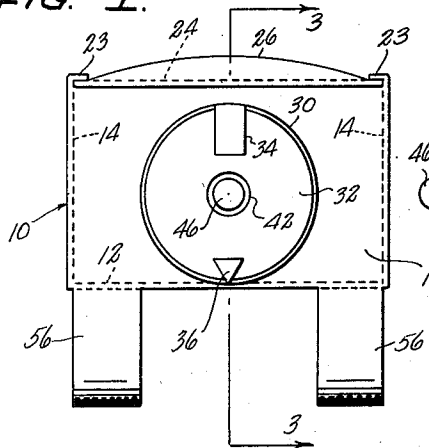


FIG. 2.

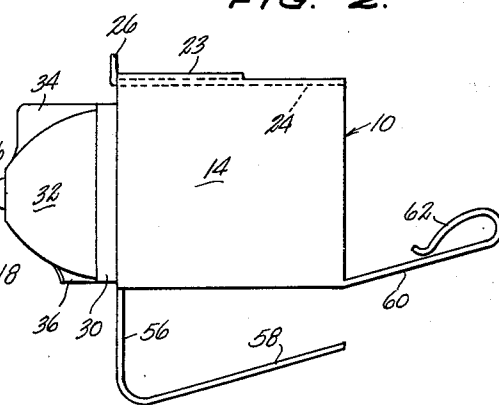


FIG. 3.

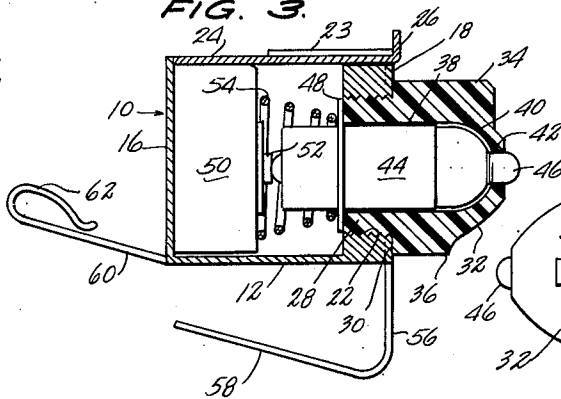


FIG. 4.

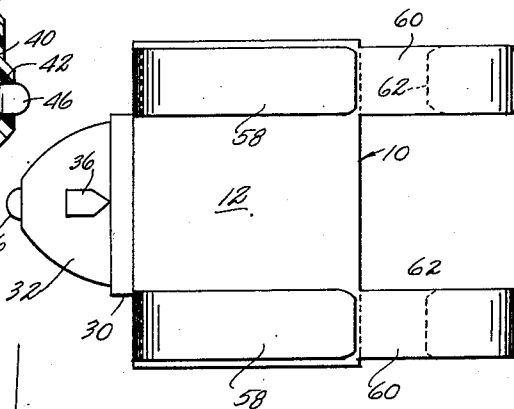
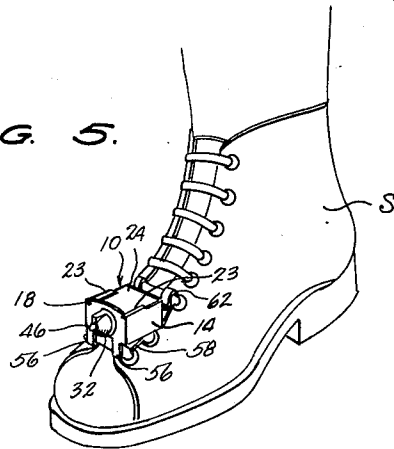


FIG. 5.



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TOE LIGHT

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4 Claims. (Cl. 240-6.4)

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This invention relates to a toe light applicable to the shoe of a wearer adjacent the toe of the shoe.

As one important object of the present invention, I propose to provide a light of the type stated which can either be applied to or removed from the shoe of a wearer with considerable ease.

Another important object is to provide a toe light which will not mar or otherwise damage a shoe to which it is applied.

In carrying out another purpose of the invention, it is proposed to provide a toe light that will be compact, simply formed, and easily turned on or off while mounted upon a shoe.

Still another object of the invention is to provide a toe light which will not interfere with walking, cycling, skating, or other exercises, and which will be so located as not to be subject to damage on any of these occasions.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of a toe light formed in accordance with the present invention;

Figure 2 is a side elevational view;

Figure 3 is a longitudinal sectional view taken substantially on line 3-3 of Figure 1;

Figure 4 is a bottom plan view; and

Figure 5 is a perspective view of the toe light as it appears when applied to the shoe of the wearer.

Referring to the drawings in detail, at 10 I have designated generally a substantially box-like, rectangular, hollow casing having a flat, rectangular bottom wall 12, parallel side walls 14 integral with and extending upwardly from opposite sides of the bottom wall, and a rear wall 16 integral with the side walls at the rear edges of said side walls, and extending between the side walls, said rear wall being integral also with the back edge of the bottom wall 12. The casing is preferably formed of plastic material.

A thickened front wall 18 is integral with the bottom and side walls, and is formed with a large central aperture having internal threads 22.

Formed upon the top edges of the respective side walls 14 are guide flanges 23, said flanges being extended inwardly toward one another, as clearly shown in Figure 1, and defining a slide-way receiving a flat cover plate 24 closing the top portion of the casing 10. The front edge of

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the cover plate 24 has an upturned lip 26, which may be conveniently grasped by a user when the cover plate is being applied to or removed from the casing.

Adapted for mounting upon the front wall 18 of the casing is a protective shield of insulative material having a cylindrical, externally threaded base 28 engageable with the threads 22.

The base 28 of the protective shield terminates intermediate opposite ends of the shield, and at the inner terminus of said base I provide a stop collar 30 on said shield. The stop collar extends circumferentially of the shield, as readily noted from Figure 1, and is adapted to engage the front wall 18 when the shield is threaded inwardly of the casing to its maximum extent.

Forwardly of the stop collar 30 the shield is formed with a dome-like front portion 32, and formed upon said front portion, at diametrically opposite locations thereon, are wings 34 and 36, that provide means whereby the shield may be grasped by a user for the purpose of rotating the shield in either direction.

The protective shield may be molded from a single piece of plastic material or the like, and is formed with a longitudinal bore opening at opposite ends of the shield. At the rear end of the shield, said bore is of cylindrical formation, the cylindrical portion of the bore merging into a tapered front portion 40. The front portion 40 of the bore tapers along curving lines and merges into a reduced passage 42 opening upon the front end of the shield.

A conventional flashlight bulb has been designated 44, the cylindrical base of said bulb being receivable in the rear or inner bore portion 38. The bulb is formed with a rounded front portion formed complementarily to and received within the tapered front portion 40 of the bore, and also has a nose 46 of reduced size that extends through and projects beyond the passage 42. Thus, when the bulb is illuminated, its beams will be clearly visible to oncoming vehicles or the like, so that a cyclist wearing the toe light will be provided with desirable protection against accidental injury.

The bulb 44 is formed intermediate opposite ends thereof with a circumferential flange 48 that abuts against the base 28 of the protective shield within the casing 10.

A conventionally formed flashlight battery 50 is seated within the rear portion of the casing 10 and has a post 52 engaging the center post of the flashlight bulb. A spring 54, which preferably is a spiral spring, abuts at one end against

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the battery 50, and at its other end against the bulb flange 48, thus to press said flange 48 firmly against the base 28 of the shield.

Integrally or otherwise rigidly secured to the front portion of the casing 10 and depending from the casing are front attaching clips that are spaced transversely of the casing, as readily seen from Figure 1 or Figure 4. Each of said clips includes a vertically disposed leg 56 merging into a rearwardly and upwardly inclined extension 58.

A pair of rear clips is also provided upon the device, these being secured to the rear end of the casing, and being extended rearwardly from the casing. The rear clips are respectively formed with inclined tongues 60 merging into forwardly turned hooks 62.

In assembling the device, the cover plate 24 is first removed. Thereafter, the bulb 44 is positioned within the protective shield, and the spring 54 is placed in engagement with the bulb flange 48. The battery is placed within the casing 10, and the shield is threaded into the opening 20 of the front wall 18. The cover plate 24 is then applied.

When the shield is turned home to its maximum extent, so as to cause the stop shoulder 30 to abut against the front wall 18, contact is made between the battery and the bulb. To break contact, it is merely necessary to rotate the control shield partially.

In placing the device upon a shoe, the user inserts the front clips under the shoe lace at the front of the instep, after which the device is shifted rearwardly, so as to engage said front clips securely under the laces. The rear clip is then placed under the third lace, after which the device is moved forwardly to engage said third lace under the hooks 62.

In this way, the toe light is swiftly and easily positioned upon the shoe upper, so as to interfere in no way with such operations as walking, cycling, ice skating or roller skating. Further, the device is so formed and located as to be incapable of being injured during the normal performance of these operations.

When used as a toe light by cyclists, the device will move through a circular path during operation of the bicycle pedals, thus to attract instantly the attention of motorists. Further, when worn by skaters, the toe light heightens the pleasure afforded viewers, since it remains visible at all times, and traces for a viewer the foot movements of the skater.

It is believed clear that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor changes in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A toe light mountable over the inclined upper of a shoe, comprising a hollow, rectangular casing having a substantially flat, horizontal bottom wall for positioning of the casing upon a shoe upper contiguous to the toe thereof; a removable cover closing the top of the casing; a battery mounted within the casing; a lamp bulb

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carried by the front wall of the casing in circuit with said battery and arranged to cast its beams forwardly of the casing; a tongue-like clip secured to the bottom of the casing at the rear end of the casing to project rearwardly thereof and including an upturned hook on its free end adapted for releasable engagement with the laces of a shoe on which the casing is positioned; and a pair of angular clips depending from the front end of the casing and having rearwardly extended free ends adapted for slidable insertion under other selected laces of said shoe located on the upper below said first named laces, said last named clips each having a vertically disposed leg rigid at its upper end with the bottom of the casing and extending downwardly therefrom to elevate the casing bottom at the front end of the casing above said inclined shoe upper and retain the casing bottom in a horizontal position thereabove, the free end of each of said last named clips being integral with the lower end of and being disposed at an acute angle relative to said vertically disposed leg.

2. A toe light mountable over the inclined upper of a shoe, comprising a hollow, rectangular casing having an open top and a substantially flat, horizontal bottom wall for positioning of the casing upon a shoe upper contiguous to the toe thereof, the casing having a front wall provided with a threaded aperture; a removable cover closing the top of the casing; a dome-like shield threaded in said aperture and having a longitudinal bore opening at opposite ends thereof; a battery mounted within the casing; a lamp bulb carried within the bore of said shield to be shifted into and out of contact with said battery responsive to threading of the shield in opposite directions, said bulb projecting beyond both ends of the bore and being arranged to cast its beams forwardly of the casing; a spring interposed between the battery and bulb within the casing to yieldably engage the bulb within the shield; a pair of transversely spaced, tongue-like clips secured to the bottom wall of the casing at the rear end thereof to project rearwardly of the casing, said clips including upturned hooks on their free ends adapted for releasable engagement with selected laces of a shoe on which the casing is positioned; and a pair of angular clips depending from the front end of the casing and having rearwardly extended free ends adapted for slidable insertion under other selected laces of said shoe located on the upper below said first named laces, said last named clips each having a vertically disposed leg rigid at its upper end with the bottom of the casing and extending downwardly therefrom to elevate the casing bottom at the front end of the casing above said inclined shoe upper and retain the casing bottom in a horizontal position thereabove, the free end of each of said last named clips being integral with the lower end of and being disposed at an acute angle relative to said vertically disposed leg.

3. A toe light mounted over the inclined upper of a shoe, comprising a hollow casing having a front wall provided with an aperture; a shield engaged in said aperture and having a bore opening at opposite ends thereof; a lamp bulb carried within the bore of the shield; battery means within the casing for illuminating said lamp bulb; a pair of transversely spaced, elongated, tongue-like clips fixedly secured to the casing at the rear end thereof, said clips projecting rearwardly from the casing and being inclined upwardly toward their free ends in a

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direction away from the casing, said clips including upturned hooks on their free ends, said hooks being bent back rearwardly in the direction of the casing and being adapted for releasable engagement therein of selected laces of a shoe on which the casing is positioned; and a pair of elongated, angular clips depending from the front end of the casing and having rearwardly extended free ends adapted for slidable insertion under other selected laces of said shoe located on the upper below the first named laces, each of said last named clips having an elongated, vertically disposed leg rigid at its upper end with the bottom of the casing, the legs of the clips extending downwardly from the casing normally to the longitudinal center line of the lamp bulb, and being in engagement at their lower ends with the shoe upper, thus to retain the casing in elevated position above the shoe upper with the bulb projecting its beams substantially horizontally, each of said last named clips having an elongated, straight free end integral with the lower end of said leg of each of the last named clips, the free ends of the last named clips extending rearwardly from said legs at an acute angle to said legs and in substantial parallelism with the first named clips.

4. A toe light mountable on the upper of a shoe, comprising a hollow, rectangular casing formed with a top open throughout its area, the casing having a front wall provided with a threaded aperture; a removable over slidably engaged in the top of the casing to close the same; a dome-like shield threaded in said aperture and having a longitudinal bore opening at opposite ends thereof, the shield being provided with a stop shoulder intermediate its ends engaging the front wall on threading of the shield in the direction of the front wall, said dome-like

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shield having a longitudinal bore opening at its opposite ends; a battery mounted against the back wall of the casing; a lamp bulb carried within the bore of said shield, said bore being so proportioned as to snugly receive the bulb, the bulb projecting beyond both ends of the bore and being arranged to cast its beams forwardly of the casing, the lamp bulb being shiftable into and out of contact with said battery responsive to threading of the shield in opposite directions; a circumferential flange formed upon that portion of the lamp bulb projecting within the casing beyond the inner end of the bore, said bulb flange being engageable against the inner end of the shield; a spring held under compression between the bulb flange and said battery, for normally urging the flange into engagement with the shield, said spring being adapted to exert pressure against the lamp bulb tending to shift the same in a direction away from the battery, thus to shift the lamp bulb out of contact with the battery on threading of the shield in a direction outwardly of the casing; and clip means carried by the casing for releasably connecting the same to the laces of a shoe.

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