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W. CAUSTIN ET AL

2,642,519

LUMINIFEROUS CANE

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Fig. 1.

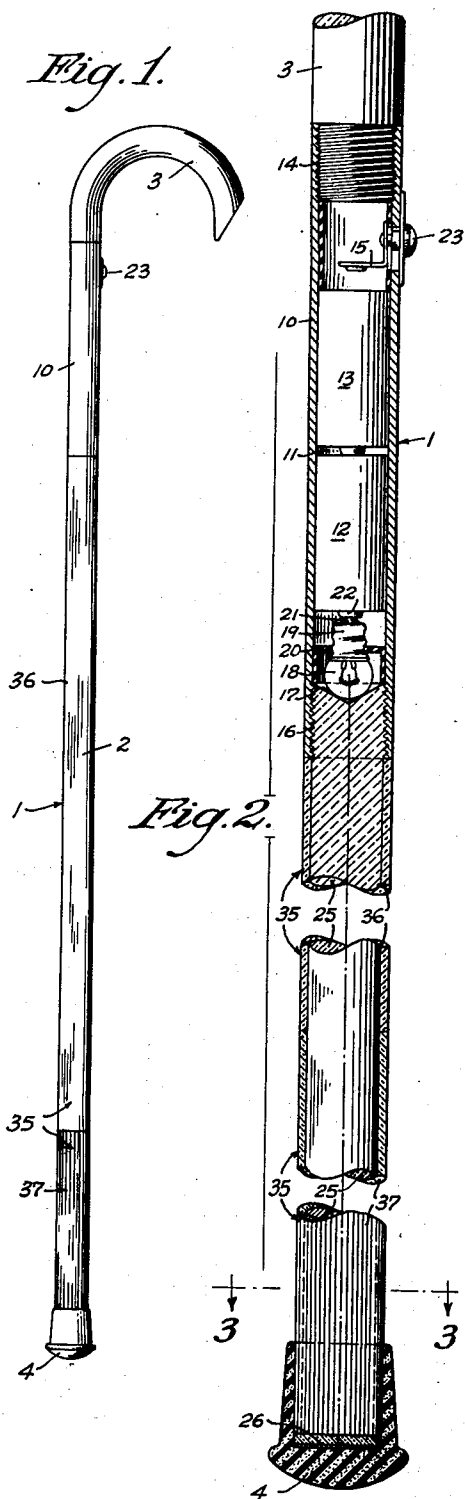


Fig. 3.

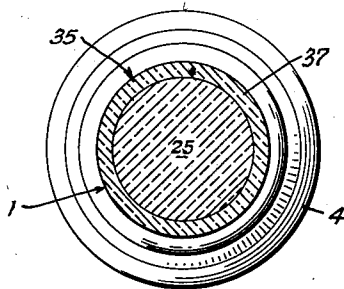
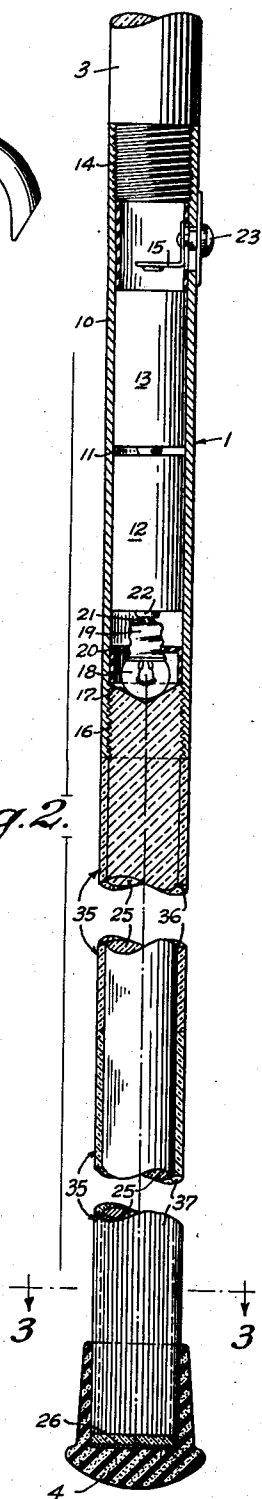


Fig. 2.



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UNITED STATES PATENT OFFICE

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LUMINIFEROUS CANE

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Los Gatos, Calif.; said Carl J. Gustafson as-
signor, by decree of distribution, to Olive Rye

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2 Claims. (Cl. 240—6.42)

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This invention relates to luminiferous canes, walking sticks, or the like and more particularly to an improved construction for such devices so as to make them distinguishable in darkness as well as in daylight.

In this connection it should be understood that the present invention is intended for use by blind persons. As is customary and of common knowledge, the white cane with a red tip has become so associated with the blind that everyone is aware of the character of their affliction the moment the cane is seen. Heretofore, blind people could, during daylight, and with the use of the white cane, walk in congested areas and over street crosswalks with reasonable assurance that others would give due consideration to them because of their affliction. However, at night the same consideration could not be expected because the whiteness of the cane is not distinguishable.

The present invention has as its object the provision of a cane whereby blind persons can go out at night with assurance that motorists and drivers of similar vehicles will be able to see and recognize their affliction in darkness as well as the light.

With the foregoing in mind it is an object of this invention to provide a white cane of non-breakable luminiferous material.

Another object is to provide a cane shaft of light-bearing material having a source of light at one end thereof and a reflector at the opposite end thereof so as to obtain the maximum intensity of light within such shaft throughout its length.

Another object is to provide a cane shaft of light-bearing material coated or covered with a light-diffusing substance which appears white whether illuminated or not.

Another object is to provide a cane shaft having a light-bearing quality with a coating of light-diffusing material of a color combination which will render the same visible and distinguishable as a blind person's cane in the dark as well as the light.

These and other objects will appear more fully in the following specification and claims when read in the light of the accompanying drawings in which:

Fig. 1 is a side view of a cane embodying the present invention.

Fig. 2 is an enlarged detail of the cane shown in Fig. 1 with parts thereof in section and other parts in elevation.

Fig. 3 is a cross section of the shank of the cane shown in Figs. 1 and 2 and taken substantially along line 3—3 in Fig. 2.

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Referring to Figs. 1 and 2 of the drawing, a cane 1 is shown comprising the usual shank 2 having a handle 3 at its upper end and a tip 4 at its opposite end. It should here be understood that the cane 1 is merely illustrative and may have a handle of any desired form without departing from the spirit of this invention.

Between the shank and handle is a tubular section 10 providing a chamber 11 adapted to receive dry cells 12 and 13 of any common and well known form. The upper end of the section 10 is threadedly secured to the handle portion 3 as at 14 and is further provided with a switch structure 15 slidably arranged upon the tubular section for movement into and out of circuit making and/or breaking relation to the dry cell 13. The opposite end of the tubular section 10 is threadedly secured to the upper end of the shank 2 as at 16. The end face 17 of the shank is recessed substantially to receive the knob-end of an electric lamp 18 the base 19 of which is threadedly secured to a reflector plate 20. The plate 20 fits snugly within tubular section 10 and the contact end 21 of the lamp base 19 engages the terminal 22 of the dry cell 12.

From the foregoing it will be apparent that the button 23 of the switch 15 is so disposed as to be easily accessible to the fingers of the hand by which the cane handle is held and controlled. Consequently, in the case of a blind person using the cane, it will be a simple matter for him to feel the switch to ascertain whether or not it is in circuit making or breaking position.

The important features of the present invention are embodied in the shank of the cane. More especially they are embodied in the light-refractive and light-diffusing qualities of the elements now to be explained and their relationship one with another for the purpose of attaining a uniform overall illumination of the cane shank.

The main portion 25 of the cane shank consists of a bar of light carrying substance such as polymethyl methacrylate, commonly known as "Lucite." It is the end face 17 of this main portion 25 that engages the lamp 18 so as to receive light therefrom. Moreover, the reflector plate 20 carrying the lamp intensifies the light emanating from the lamp so as to assure a full ray of light within the body of the main portion 25 of the shank.

The tip 4 at the opposite end of the shank 2 comprises a cap of rubber material which obstructs passage of light rays from the end of the cane shank. A light-reflecting body 26, disposed in the tip or cap 4, may be a highly polished metal plate or a small piece of mirrored glass. This

body 26 abuts the free end of the main portion 25 so as to reflect the light rays emanating from the lamp 18 back toward the latter. In this manner the main portion 25 will be properly illuminated in a uniform manner throughout its entire length. This will render the entire shank 2 an illuminated bar which is distinguishable at night as a signal to motorists.

In order to make the shank 2 more readily distinguishable both night and day, it is contemplated that the outer surface thereof be treated or coated in such a manner as to appear white by day and to diffuse the light throughout the outer coated surface by night.

The best mode of accomplishing the foregoing is illustrated in the drawing, Figs. 1, 2 and 3, in the form of an outer layer of light-diffusing material 35, preferably of the cellulose acetate class and of the butyrate variety. This material can be applied either as a coating while in a plastic or fluid state or may constitute sheet form or a tubular section expanded and shrunk onto the main portion 25 of the shank 2.

In this manner, the major length of the shank is covered with a layer 36 of light-diffusing material that is white in color and which in daylight appears in the true color of the "white cane" designating a blind user. By the same token the lower section of the shank is covered with a layer 37 of cloudy red light-diffusing material which in daylight clearly designates the user of the cane as a blind person.

The cane, covered with the two colored layers 36 and 37 in the foregoing manner, when illuminated as hereinbefore described, will show up in darkness as a pure white shaft with a vivid red lower section. Consequently, when a person using this cane attempts crossing a highway or street in darkness, the attention of motorists is immediately and perceptibly attracted by the illuminated shank, particularly if it is in motion as when a blind person feels his way with it along the pavement.

From the foregoing it will be apparent that we have provided a walking cane or stick which will enable blind people to venture walking at night time with probably greater assurance for their safety than is likely during daylight. The same instrument is equally useful to blind persons in daylight and will withstand chipping and discoloration more than painted canes that are now in use.

While the present invention has been described in specific detail herein, it will be apparent that the same is susceptible to variations, modifications and alterations without departing from the spirit of our invention. We therefore desire to avail ourselves of all variations, modifications and alterations fairly coming within the scope of the appended claims.

What we claim as new and desire to protect by Letters Patent is:

1. In a luminiferous cane of the type having a light source adjacent its handle end and means for manually controlling said light source; a first planiform reflector on one side of said light

source, a shank portion for said cane of relatively rigid, non-breakable, transparent substance capable of carrying light axially thereof, said shank portion of substantially uniform diameter throughout a major portion of its length, said shank having one end thereof disposed to receive light rays from said light source, and from said first reflector, a second substantially planiform reflector mounted adjacent the opposite end of said shank portion from said light source for promoting uniformity of the intensity of said light rays throughout the entire length of said shank portion, and a translucent layer of light-diffusing material of cloudy white color applied to the outer surface of said shank portion for illumination by both the direct and reflected light thereby to produce a substantially uniform white glow throughout the length of the shank of the cane during darkness.

2. A luminiferous cane comprising a metallic tubular member of substantial strength, said tubular member being of a size to receive electric battery means of a predetermined size therein, a switch on said tubular member, a hand grip element having an end thereof firmly attached in relatively interfitted relation to an end portion of said tubular member, a first reflector inserted in the end of said tubular member opposite to that to which said hand grip portion is attached, a light bulb mounted in said reflector to have electrical contact with said reflector, said metallic tubular member, and with said battery means for control by said switch, a shank of light transmitting material firmly attached in relatively interfitted relation to the reflector end of said tubular member to have supporting engagement with said light bulb and to receive light rays from said bulb and from said first reflector, said metallic tubular member comprising an intermediate structural portion of the cane, a second reflector mounted on the opposite end of said shank from said light bulb to reflect back into said shank light rays reaching said second reflector from said light bulb and from said first reflector, and a coating of translucent light diffusing material over substantially the entire exposed surface of said shank for illumination by light rays from said light bulb and both of said reflectors.

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