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A. KOHL

2,610,420

CANE

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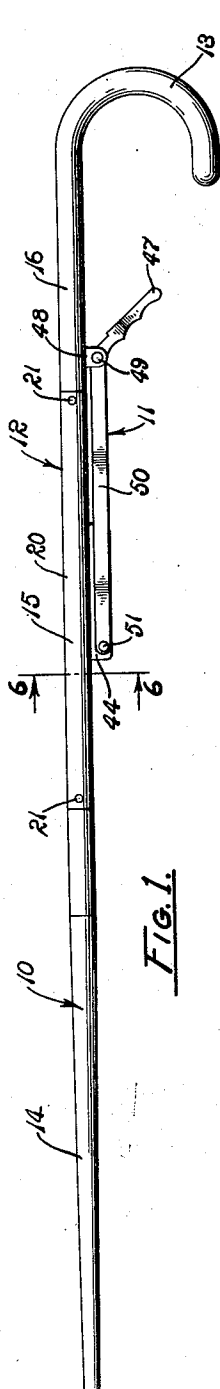


FIG. 1.

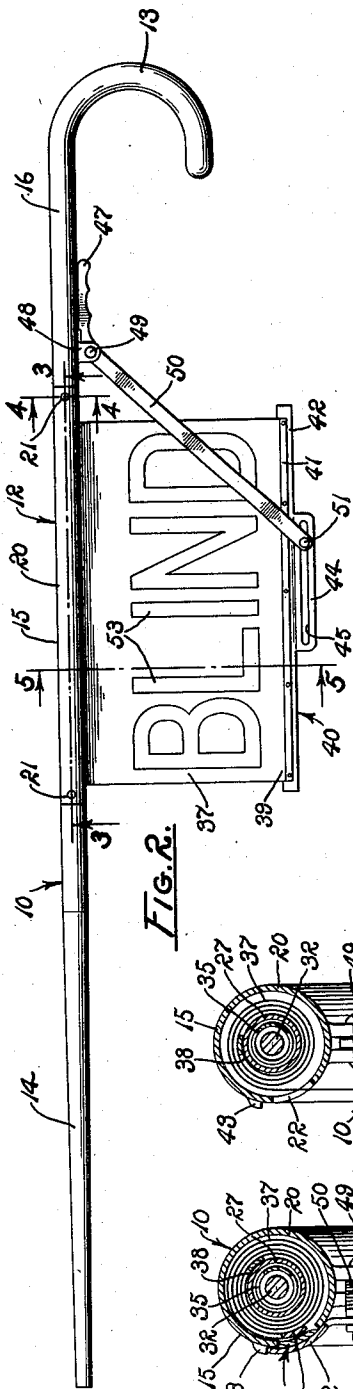


FIG. 2.

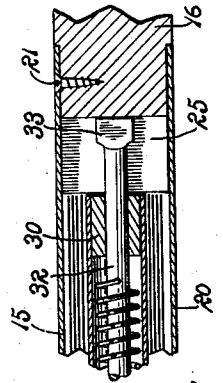


FIG. 3.

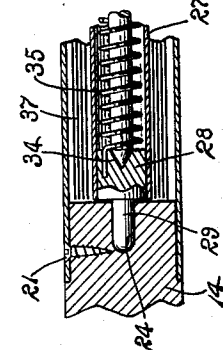


FIG. 4.

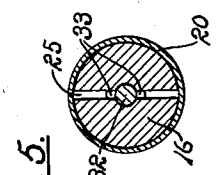


FIG. 5.

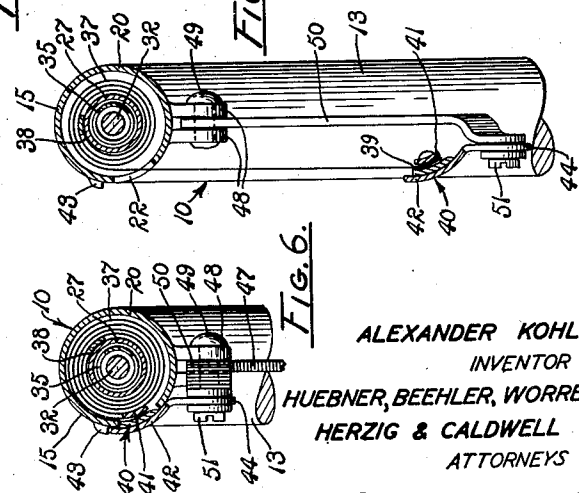


FIG. 6.

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# UNITED STATES PATENT OFFICE

2,610,420

CANE

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5 Claims. (Cl. 40-85)

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The present invention relates to canes, and more particularly, to a combined cane and visual signaling device.

It is well known for people who are blind to employ white canes to indicate to motorists and others their need for consideration. Such canes are not as conspicuous as desired for safety purposes and are readily confused with many other objects which shoppers not infrequently carry in congested areas. It is generally recognized that a device as convenient to employ as such a white cane but having improved signaling characteristics is needed for the protection of blind people, the physically handicapped, and other pedestrians having need for special consideration from motorists and the like.

An object of the present invention therefore is to provide an improved device whereby handicapped individuals may conveniently signal their condition to others in order to receive needed courtesy, cooperation, or assistance.

Another object is to provide an improved cane and signaling device integral therewith which is conveniently manipulatable for display of a visual signal.

Another object is to provide a device of the character and for the purposes set forth that is simple in structure, economical to produce, dependable in operation, and convenient to employ.

Another object is to provide a combined cane and signal device particularly suited to the use of people who are blind or physically handicapped.

Another object is to provide in a cane, the combination of a flexible sheet member, means within the cane adapted to mount the sheet member and resiliently to retract the sheet member within the cane, and a manual control adapted to draw the sheet member from the cane for visual display thereof.

A further object is to provide a compact, lightweight, and convenient device whereby people who are blind can readily call attention to their condition for safety and convenience purposes.

Still further objects and advantages will become apparent in the subsequent description in the specification:

In the drawing, Fig. 1 is a side elevation of a combined cane and signaling device embodying the principles of the present invention, the signaling device being retracted within the cane for carrying convenience.

Fig. 2 is a side elevation similar to Fig. 1 but showing the signaling device withdrawn from the cane for display purposes.

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Fig. 3 is a somewhat enlarged fragmentary section through the cane, as taken on line 3-3 of Fig. 2.

Fig. 4 is a transverse section of the cane taken on line 4-4 of Fig. 2.

Fig. 5 is a transverse section of the cane and signaling device taken on line 5-5 of Fig. 2.

Fig. 6 is a transverse section of the cane and signaling device with the latter in retracted position, as taken on line 6-6 of Fig. 1.

Referring in greater detail to the drawing:

A cane embodying the principles of the present invention is indicated generally at 10 and the signaling apparatus at 11. The cane provides a shank 12 and a handle 13 continuous with the shank, both of a well known form. As shown in the drawing, the shank has a solid rod-like lower end portion 14, a hollow cylindrical central portion 15, and a solid rod-like upper end portion 16. The upper end portion and the handle are conveniently formed in unitary relation and the handle 13, upper end portion 16, central portion 15, and lower end portion 14 made from wood, plastic, metal, or other suitable material.

As shown in Fig. 3, the lower end portion 14 and the upper end portion 16 have juxtapositioned ends which constitute end walls for the hollow cylindrical central portion 15.

A hollow tubular member 20 interconnects the lower end portion 14 and the upper end portion 16 in fixed spaced relation. Said end portions are fitted to the tubular member and rigidly connected thereto, as by screws 21. The handle 13 is preferably return bent as shown and the tubular member 20 is provided with a slot 22 longitudinally thereof disposed toward the side of the shank toward which the return bent handle extends.

An axial bore 24 is formed concentrically in the upper end of the lower end portion and the lower end of the upper end portion provided with a diametrical slot 25. A hollow roller cylinder 27 has a journal member 28 fixedly mounted at an end thereof providing a shaft portion 29 rotatably extended into the axial bore 24. A bearing 30 is mounted in the opposite end of the cylinder. A shaft 32 is rotatably mounted in the bearing 30 and provides a flattened end 33 engaged in the slot 25 to preclude rotation of the shaft relative to the shank 12. The opposite end of the shaft 32 is rotatably mounted in the journal member 28, as shown at 34. A spiral torsion spring 35 has one end connected to the journal member 28 and another end connected to the shaft 32.

A substantially rectangular sheet 37 of flexible material such as cloth, paper, or plastic has an inner edge 38 connected longitudinally of the cylinder 27 and is rolled around the cylinder. The spring 35 is mounted under initial torsion so that the sheet 37 is resiliently maintained in rolled position about the cylinder. The sheet has an outer edge 39. An elongated rigid edge member 40 is affixed to the outer edge 39 of the sheet. The edge member conveniently consists of a strip 41 of metal or other suitable material riveted to a plate 42 with the outer edge 39 of the sheet sandwiched therebetween. The plate 42 is transversely arcuate to fit against the periphery of the cylindrical central portion 15 of the shank in closing relation to the slot 22. A bead 43 is preferably provided along one side of the slot 22 on the tubular member 20 and acts as a positioning stop for the plate when in retracted position. The plate has an edge 44 extended outwardly from the tubular member 20 and is provided with a guideway 45 longitudinally thereof.

A trigger 47 is pivotally mounted adjacent to the central portion 15 on the shank in alignment with the slot 20 by means of a pair of spaced flanges 48 extended from the shank and a pin 49 extended through the flanges and the trigger transversely of the shank. A lever arm 50 is extended from the trigger longitudinally of the shank adjacent to the slot 22. A headed follower 51 is mounted on the extended end of the lever arm in slidable engagement with the guideway 45. The trigger and the lever arm are conveniently integrally formed in obtuse angular arrangement so that when the lever arm is substantially parallel with the shank 12, as shown in Fig. 1, the trigger is conveniently disposed for operation adjacent to the handle 13.

It will be obvious that any desired type of indicia 53 may be displayed on the sheet 37, but for use by people who are blind, the word "blind" is most suitably employed.

#### Operation

The operation of the device of the present invention is believed to be clearly apparent and is briefly summarized at this point. In the absence of any pressure on the trigger 47, the spring 35 maintains the sheet 37 tightly rolled about the roller cylinder 27 with the plate portion 42 of the edge member 40 in covering relation to the slot 22 seated against the bead 43, as shown in Figs. 1 and 6. In such condition the device is utilized solely as a cane.

When it is desired to display the indicia 53, the trigger 47 is pressed toward the shank 12 pivoting the lever arm 50 outwardly from the shank and through engagement of the follower 51 in the guideway 45 the sheet 37 is forcibly drawn outwardly through the slot 22 rotating the roller cylinder 27 against the effect of the torsion spring 35. With the trigger maintained in such position and the sheet 37 with its indicia 53 thus prominently displayed, a person employing the cane readily succeeds in drawing attention to himself and to the message provided by the indicia 53.

When the trigger 47 is released, the torsion spring 35 being under increased torsion incident to the display of the sheet 37, promptly retracts the sheet and winds the same about the cylinder 27 until the plate 42 returns to its position in closing relation to the slot 22 and is seated against the bead 43.

The device of the present invention is simple in structure, economical to produce, and is fully effective in the displaying of any desired predetermined message in a manner that readily attracts attention. It is a source of comfort to blind people and others employing it and being conspicuous readily elicits from motorists and others the type of consideration and courtesy desired.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and systems.

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

1. The combination of a cane having a handle and a hollow shank, a sheet of flexible material having a pair of opposite edges, retraction means mounted within the shank connected to an edge of the sheet, a trigger pivotally mounted on the shank, an elongated rigid edge member having a guideway formed longitudinally therein affixed to the edge of the sheet opposite to the retraction means, and a control linkage slidably engaged in the guideway of the edge member having controlled connection to the trigger whereby in response to trigger operation the sheet is drawn into a position extended from the shank and tensioned between said control linkage and the retraction means.

2. A signaling cane comprising an elongated hollow shank having a longitudinal slot formed therein, a sheet of flexible material having an inner edge extended through the slot into the shank and an outer edge extended outwardly of the slot, resilient retraction means mounted within the shank connected to the inner edge of the sheet, and manual control means mounted on the shank, said control means having a trigger portion and a lever arm portion of unitary construction, being pivotally mounted on the shank, and the lever arm portion being connected to the outer edge of the sheet whereby pivotal movement of the control means draws the sheet outwardly of the slot in opposition to the retraction means.

3. A signaling cane comprising a shank having a hollow central portion defined by a substantially cylindrical wall and opposite axial end walls, the cylindrical wall having a slot formed longitudinally therein; a return bent handle continuous with the shank; a hollow roller cylinder positioned within the central portion of the shank; a journal member fixedly mounted in an end of the roller cylinder and rotatably mounted substantially concentrically in an end wall of the central portion; a bearing mounted in the end of the roller cylinder opposite to the journal member adjacent to an end wall of the central portion, the end wall adjacent to the bearing being diametrically slotted; a shaft having a flattened end portion extended into the slot in the end wall rotatably mounted in the bearing, and having an opposite end portion rotatably mounted in the journal member concentrically within the roller cylinder; a torsion spring in circumscribing relation to the shaft within the roller cylinder having an end connected to the journal member and an opposite end connected to the shaft; a rectangular sheet of flex-

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ible material wrapped about the roller cylinder having an inner edge connected to the roller cylinder and an opposite edge extended through the slot in the shank; and manual control means having a trigger portion and a lever arm portion of unitary construction, pivotally mounted on the shank, and the lever arm portion being connected to the outer edge of the sheet whereby pivotal movement of the control means draws the sheet outwardly of the slot in opposition to the retraction means.

4. The combination of a cane having an elongated hollow shank with a longitudinal slot formed therein and a handle continuous with the shank, a trigger pivotally mounted on the shank adjacent to the handle in alignment with the slot and on an axis transversely of the slot, a lever arm integral with the trigger extended longitudinally of the slot, a roller rotatably mounted within the shank adjacent to the slot, a sheet of flexible material having an inner edge connected longitudinally of the roller and an outer edge extended outwardly of the slot, said sheet bearing visual signal indicia, an elongated rigid edge member affixed to the outer edge of the sheet and having a guideway formed longitudinally therein, a follower mounted on the extended end of the lever arm and slidably engaged in the guideway of the edge member, and a torsion spring within the shank interconnecting the roller and the shank and rotatably urging the roller to retract the sheet within the shank.

5. A signaling cane comprising a shank having a hollow central portion defined by a substantially cylindrical wall and opposite axial end walls, the cylindrical wall having a slot formed longitudinally therein; a return bent handle continuous with the shank; a hollow roller cylinder positioned within the central portion of the shank; a journal member fixedly mounted in an end of the roller cylinder and rotatably mounted substantially concentrically in an end wall of the central portion; a bearing mounted in the end

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of the roller cylinder opposite to the journal member adjacent to an end wall of the central portion, the end wall adjacent to the bearing being diametrically slotted; a shaft having a flattened end portion extended into the slot in the end wall, rotatably mounted in the bearing, and having an opposite end portion rotatably mounted in the journal member concentrically within the roller cylinder; a torsion spring in circumferential relation to the shaft within the roller cylinder having an end connected to the journal member and an opposite end connected to the shaft; a rectangular sheet of flexible material wrapped about the roller cylinder having an inner edge connected to the roller cylinder and an opposite edge extended through the slot in the shank; an elongated rigid edge member affixed to the extended edge of the sheet having a transversely arcuate plate portion fitted to the exterior of the shank in covering relation to the slot and a flange portion formed with a guideway longitudinally thereof parallel to the shank; a trigger pivotally mounted on the shank in alignment with the slot adjacent to the handle on a pivotal axis transversely of the slot; a lever arm integral with the trigger extended longitudinally of the slot; and a follower mounted on the extended end of the lever arm in engagement with the guideway of the flange portion of the rigid edge member.

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