June 10, 1958 W. N. DE WALD 2,838,744

PORTABLE EMERGENCY SIGNAL AND TRAFFIC CONTROL APPARATUS

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FIG. 1

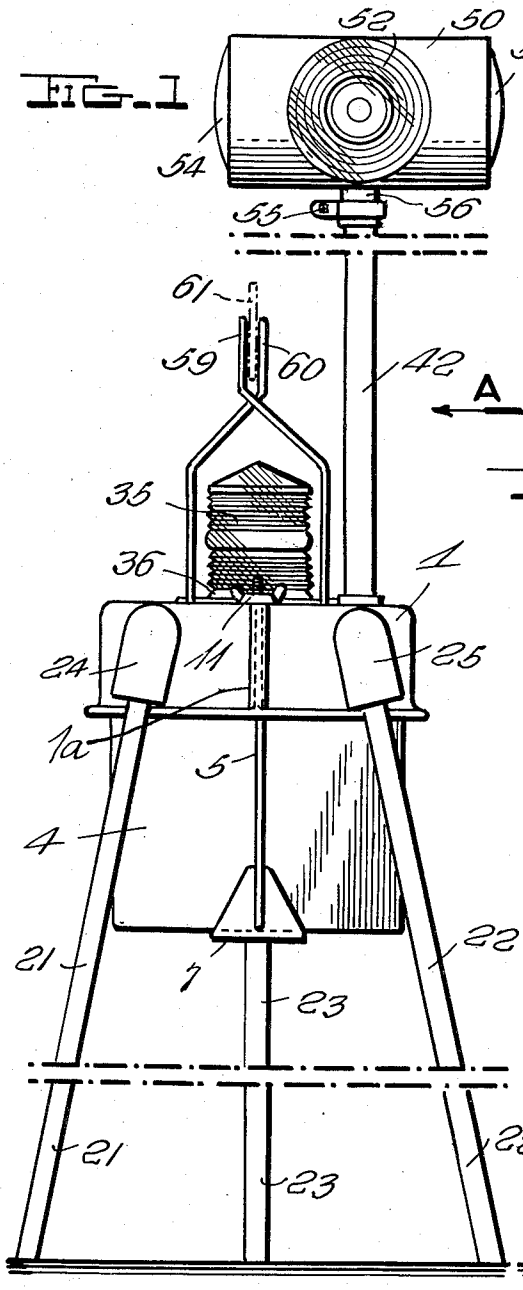
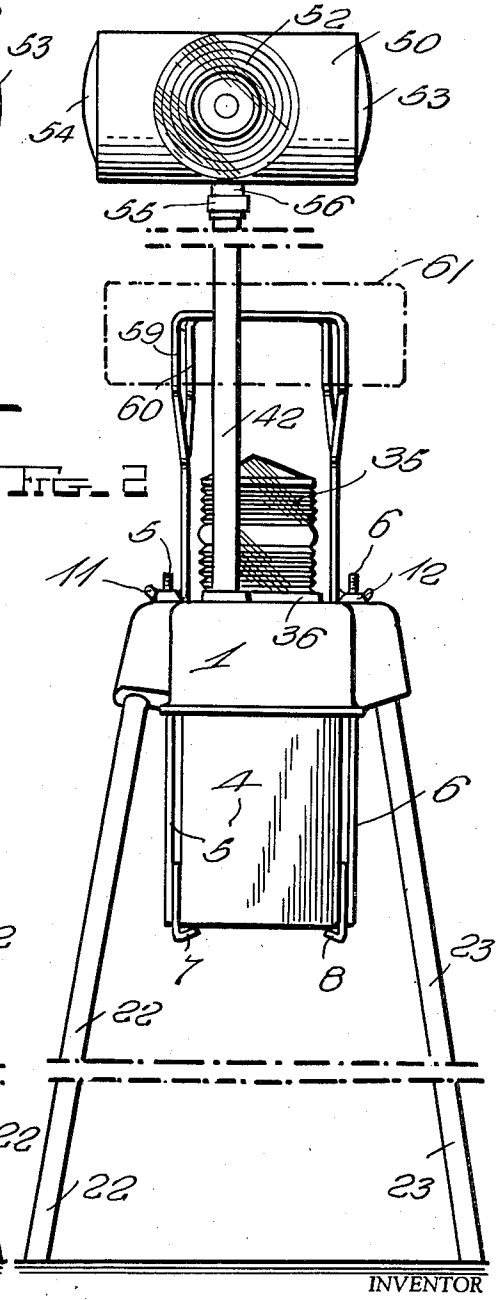



FIG. 2




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FIG. 3

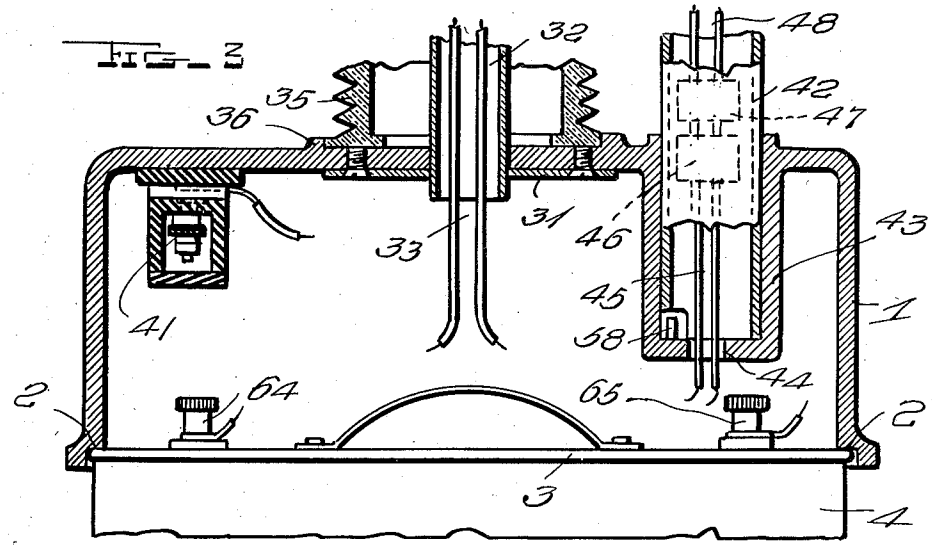



FIG. 15

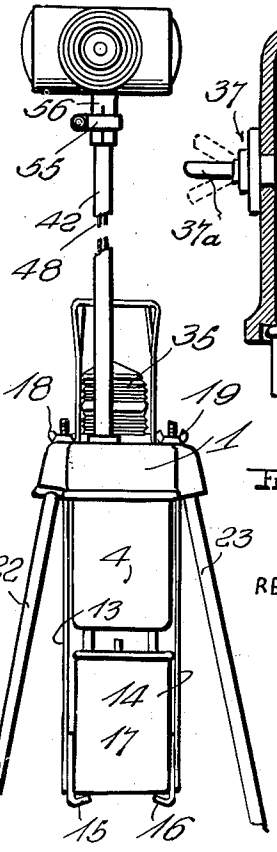



FIG. 4

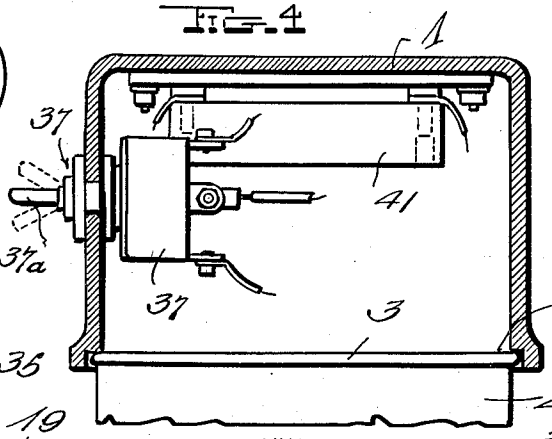



FIG. 14




FIG. 13

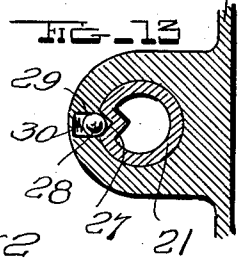



FIG. 12

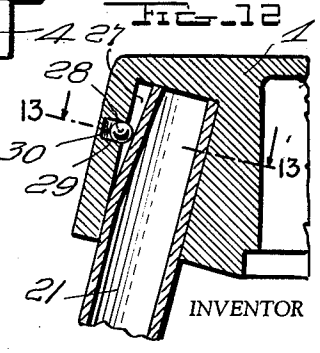
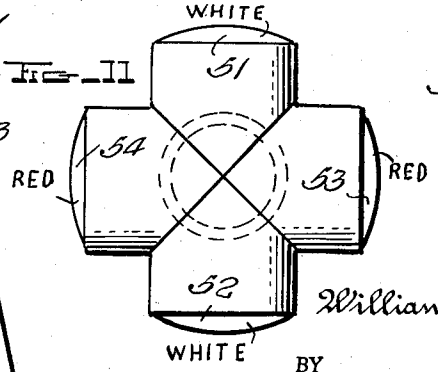



FIG. 11




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PORTABLE EMERGENCY SIGNAL AND TRAFFIC CONTROL APPARATUS

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FIG. 5

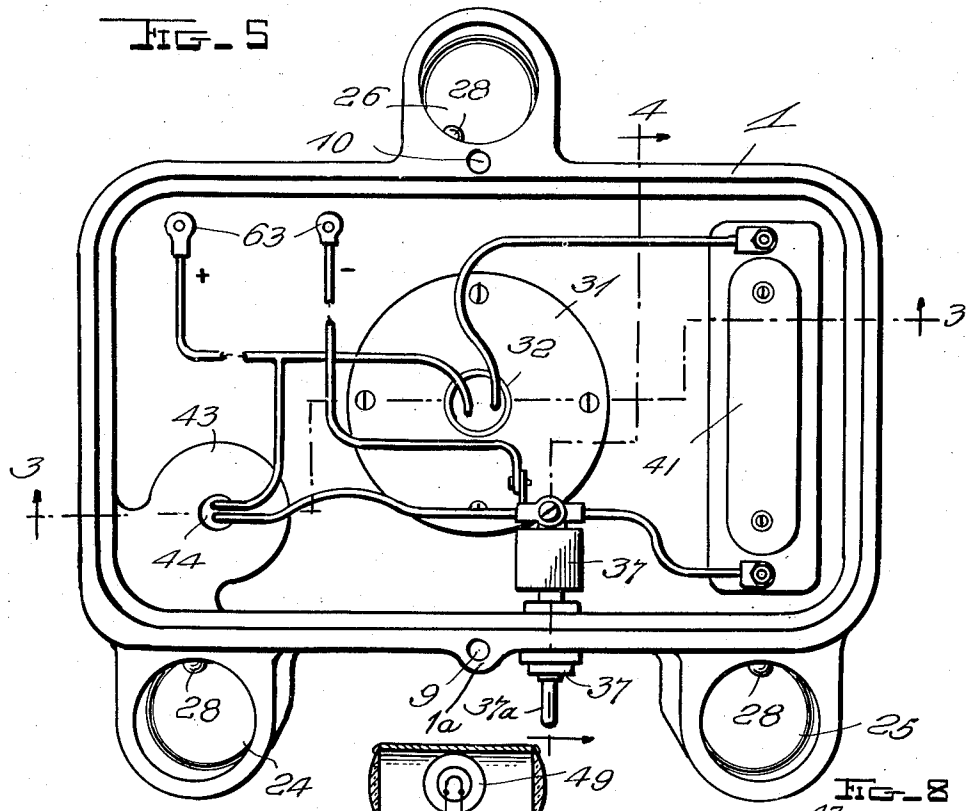



FIG. 8

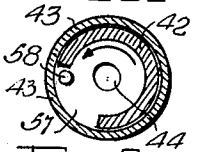



FIG. 9

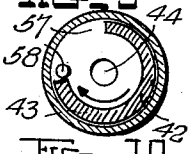
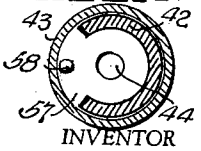



FIG. 10



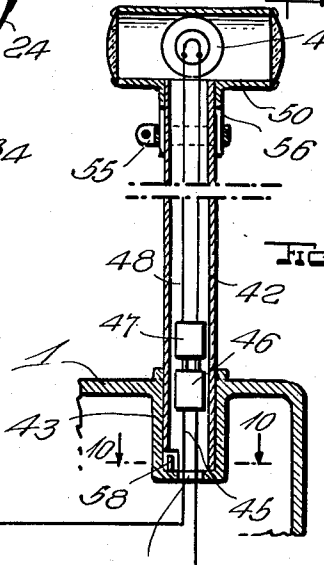
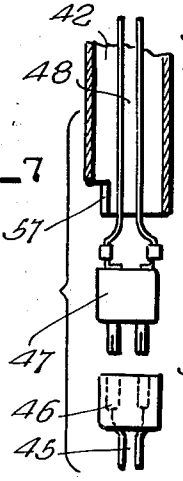




FIG. 7



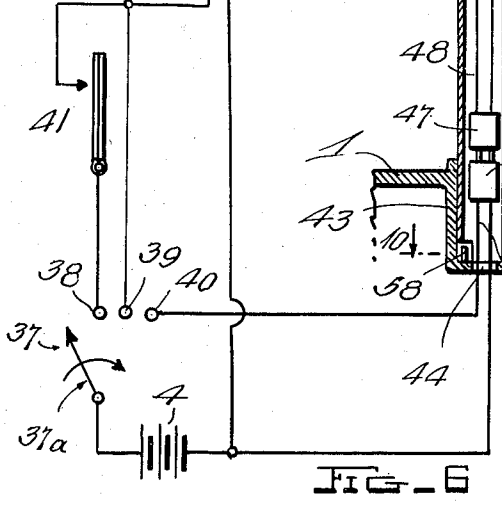




FIG. 6

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2,838,744

# PORTABLE EMERGENCY SIGNAL AND TRAFFIC CONTROL APPARATUS

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Application September 12, 1956, Serial No. 609,393

5 Claims. (Cl. 340—84)

My invention relates broadly to traffic signal and control equipment and more particularly to a construction of portable emergency signal and traffic control apparatus.

One of the objects of my invention is to provide a readily portable traffic control apparatus which may be set up in a highway under emergency conditions for controlling the flow of traffic.

Another object of my invention is to provide a simplified and inexpensive construction of traffic control apparatus constituting a composite emergency flashing signal; a sign exhibitor; a selectively operative constant warning light; and a turnstile type of traffic control indicator.

Still another object of my invention is to provide a construction of portable emergency traffic control equipment comprising a battery carrier which also includes support means for erecting the equipment on a highway; a mounting means for a warning light which is readily convertible from a constant visual light to a flashing signal light; a mounting means for a sign exhibitor; and a mounting means for a turnstile type of traffic control signal which is readily insertable into and supported from the battery carrier including means for establishing connection with the battery.

Still another object of my invention is to provide a battery carrier for an emergency traffic signal device in which a turnstile light control device is supported directly in the battery carrier and capable of lateral movement through an arc of approximately 90° for controlling the movement of traffic.

A further object of my invention is to provide a construction of battery carrier which is readily supportable in an elevated position above the surface of a highway and which provides a pendant suspension for a multiplicity of batteries which are wired through the battery carrier to an emergency light and a turnstile type of traffic control light, with a control switch and thermal interrupter located on the battery carrier and electrically connected with the emergency light and the traffic control light.

Other and further objects of my invention reside in the assembly of a portable readily erectable traffic control apparatus as set forth more fully in the specification hereinafter following by reference to the accompanying drawings, in which:

Fig. 1 is a side elevational view of the emergency traffic control equipment of my invention in erected position;

Fig. 2 is an end elevational view of the traffic control equipment shown in Fig. 1 looking in the direction of arrow A;

Fig. 3 is a fragmentary longitudinal sectional view taken through the battery carrier and illustrating a portion of the battery in position therein, the view being taken substantially on line **3—3** of Fig. 5 viewed in reverse end to end and with the turnstile shown partially in elevation at the position where the turnstile extends out of the top of the battery carrier;

Fig. 4 is a transverse sectional view taken through the battery carrier substantially on line **4—4** of Fig. 5;



Fig. 5 is a bottom view looking upwardly into the battery carrier and showing the combined facilities in the battery carrier for the mounting legs of the equipment, the emergency light support, the turnstile support, the circuit interrupter, the electrical circuit control switch and the wiring leading to the terminals of the battery adapted to be pendantly suspended in the battery carrier;

Fig. 6 is a schematic wiring diagram and arrangement of the emergency light and turnstile as included within the battery carrier;

Fig. 7 shows in juxtaposed relation the parts constituting the connecting means between the battery carrier and the light in the turnstile when the turnstile is inserted in position on the battery carrier;

Figs. 8, 9, and 10 are transverse sectional views taken substantially on line **10—10** of Fig. 6 and illustrating the limitation means which I provide for restricting the angular movement of the turnstile through an angle of approximately 90° for shifting the distinctively colored light indicators into the lines of traffic;

Fig. 11 is a top plan view of the traffic control light showing the arrangement of the distinctively colored traffic control lights which may be angularly shifted for directing the lines of traffic;

Fig. 12 is a fragmentary sectional view through one of the sockets in the battery carrier showing the manner in which the supporting legs are detachably mounted in the battery carrier;

Fig. 13 is a transverse sectional view on line **13—13** of Fig. 12 and Fig. 14 is a perspective view of a plug member which is provided with the equipment of my invention as a temporary closure means for the socket in the top of the battery carrier when the turnstile is removed and when the equipment is packed in knock down arrangement for transportation; and

Fig. 15 is an end elevational view of the assembled traffic control equipment of my invention showing the equipment provided with a second pendantly mounted battery suspended beneath the usual battery supplied with the equipment for insuring heavy duty operation of the equipment and prolonging the useful life of the apparatus in emergency use.

My invention is directed to a readily portable emergency signal and traffic control apparatus which may be erected quickly from a relatively small number of coacting component parts. The component parts may be packed in a relatively small kit to be carried in the trunk compartment of a conventional squad car used by police in patrolling a highway. The kit of parts may be quickly assembled in case of accident for erecting the emergency signal and traffic control apparatus on the highway to enable an officer or others to direct traffic around the accident. The kit of parts comprises essentially a battery carrier formed by a unitary casting which includes a support for the energizing battery, socket supports for erecting legs, mounting means for an emergency light, a socket support for a removable turnstile staff and circuit interrupter and switch control means enabling the emergency light to be constantly energized or intermittently energized, the top of the casting also providing a support for an indicator card or exhibitor for warning and guiding traffic. The emergency equipment of my invention may be powered by one or several storage batteries or dry cell units pendantly suspended from the battery carrier symmetrically between the supporting legs. The emergency equipment of my invention avoids all the objections enacted by regulation in many States against the flare bomb often used on highways in directing traffic under emergency conditions. The dangers incidental to the open flame of flare bombs is entirely eliminated in the incandescent lamp structure used in the equipment of my invention. The turnstile

which I provide is movable through an angle of 90° within a socket provided in the top of the battery carrier and enables the operator to orient the distinguishing indicator lights at the top of the turnstile to regulate the flow of accumulated lanes of traffic which generally builds up in the event of traffic stoppage under conditions of accident on the highways.

Referring to the drawings in more detail reference character 1 indicates the battery support or cover member which is a casting having a hollow body structure and side walls which terminate in a recessed peripheral channel 2 for receiving the top peripheral edge or flange 3 of the battery 4. The battery 4 may be a storage battery or a dry cell. Where dry cells are provided the weight of the kit is maintained small of the order of twelve pounds thereby greatly facilitating the portable characteristics of the apparatus. The battery 4 is suspended within the battery support or cover member 1 and spaced below the interior of the top of the battery support or cover member 1 by the peripheral channel 2 which also serves as a substantially weather-tight seal for the battery with respect to the battery carrier. The battery 4 is suspended within the battery carrier by means of bolt or suspension members indicated at 5 and 6 provided with inwardly directed brackets 7 and 8 on the ends thereof and projecting upwardly through the bores or passages 9 and 10 formed in the casting constituting the battery carrier and fastened by means of wing nuts 11 and 12 engaging the screw threaded ends of the bolt members 5 and 6 as represented more clearly in Figs. 1 and 2. The external side walls of the cover member 1 adjacent the bore 9 is provided with a strengthening projection 1*a* which enables the wall of the cover member 1 to be maintained thin and yet provide the strength necessary to support the bolt or suspension member which extends therethrough.

In cases of heavy duty operations where two or more batteries are supported in the battery support or cover member I provide the arrangement shown in Fig. 15 in which elongated bolt or suspension members 13 and 14 are provided with brackets 15 and 16 on the ends thereof engaging the bottom of a second battery 17 which is supported beneath the upper battery 4 and adapted to be electrically connected in parallel or in series therewith. The elongated bolt members 13 and 14 pass through the same passages 9 and 10 in the battery carrier and are secured by means of wing nuts 18 and 19 as represented in Fig. 15.

The battery support or cover member 1 is supported above the highway in a position which properly elevates both the emergency light and the traffic control light to a position within the line of sight of the approaching traffic, by means of tripod legs 21, 22 and 23 which fit into sockets 24, 25 and 26 cast in the exterior of the side walls of the battery support or cover member 1. These legs 21, 22 and 23 are tubular and are represented in Figs. 12 and 13 as provided with longitudinally extending keyways 27 in the upper ends thereof which register with spring actuated detents 28 mounted in sockets 29 within the interior side walls of the sockets 24, 25 and 26. The sockets 29 form recesses for coil springs 30 which eject the detents 28 into the keyways 27 as the legs are inserted into position in the battery support or cover member 1 thereby latching the legs with respect to the battery carrier 1 sufficiently for purposes of maintaining the equipment in assembled position during the period of emergency operation. The sockets 24, 25 and 26 are suitably inclined outwardly with respect to the battery support or cover member 1 to provide that angularity for the legs 21, 22 and 23 to insure the stable and balance support of the battery load above the highway.

The battery carrier supports at the center thereof a base plate 31 forming the flange of a tubular member 32 through which wires 33 extend to establish connection



with a lamp indicated at 34 in Fig. 6 within the light housing 35 which is in the form of a "Frenel-Lens." The "Frenel-Lens" is supported in a socket 36 in the top of the battery carrier and is generally red in color to attract the attention of traffic to the light 34. The light 34 may be constantly energized or intermittently energized by the circuit arrangement shown in Fig. 5. This is accomplished by means of a three position switch shown at 37 which is mounted in the side wall of the battery support or cover member 1 as represented in Figs. 4 and 5. The three position switch comprises a movable arm 37*a* movable over contacts 38, 39 and 40. Contact 38 connects through a thermal circuit interrupter 41 in series with one side of the incandescent emergency lamp 34, the other side of which is connected back to the battery 4. In Fig. 5 I have shown the thermal circuit interrupter 41 mounted in the underside of the battery support or cover member 1, the equivalent of which is symbolically illustrated in Fig. 6 as the thermal circuit interrupter 41. The thermal circuit interrupter 41 periodically makes and breaks the circuit through the lamp 34 so that the lamp 34 flashes periodically for warning approaching traffic of the location of the set-up of the apparatus of my invention. Where it is desired to maintain the light 34 at constant illumination the switch arm 37*a* is moved to contact 39 which directly connects the incandescent lamp 34 to the battery 4 without passing through the pulsing interrupter 41.

The turnstile signal control is supported on a tubular member 42 the lower end of which is insertable into a depending socket 43 cast integrally with the material of the battery support or cover member 1 and apertured at its lower extremity in the central position indicated at 44 for the passage of the electrical conductors 45 which lead from the battery 4 at one side and the contact 40 on the other side as represented in Fig. 6. The conductors 45 terminate in a receptacle 46 which is normally housed within the socket 43 but is capable of being pulled upwardly beyond the top of the battery carrier 1 out of the receptacle housing formed by the interior walls of the socket 43 due to the extra length which is provided in the flexible conductors 45. By raising the receptacle 46 out of the recessed socket 43 it is possible to quickly connect the prongs of the plug 47 with the tubular contacts within the receptacle 46. The plug 47 connects to flexible leads 48 which extend upwardly through the tubular member 42 to the incandescent light 49 in the traffic signal indicator head 50. The head 50 constitutes a housing having signal indicator closure lenses in diametrically opposite positions shown therein at 51 and 52; and 53 and 54. The lenses 51—52 are distinctively colored with respect to the lenses 53 and 54, that is, the lenses 51 and 52 may be white while the lenses 53 and 54 may be red. The head 50 is readily attachable to and detachable from the upper end of tubular member 42 by means of clamp 55 adapted to grip the resilient ends of the neck 56 of the head 50 around the upper end of the tubular member 42.

The lower end of the tubular member 42 is cut away through an arc of approximately 90° as represented at 57 in a position located directly above the vertically extending pin 58 located in the bottom of the socket 43 and projecting upwardly so that as the tubular member 42 is rotated through an arc of 90° the vertical edge wall of the slot 57 in the end of tubular member 42 abuts pin 58 in one extreme position of orientation of tubular member 42 while the opposite vertical edge wall of the slot 57 abuts the other side of the pin 58 when the tubular member 42 is rotated to the opposite extreme position. These two extreme positions are illustrated in Figs. 8 and 9 and the intermediate position is shown in Fig. 10. By reason of this limited control the tubular member may be operated as a turnstile for revolving lenses 51 and 52 from one lane of traffic to an opposite lane of traffic generally normal thereto.

To provide the traffic officer with an added facility of warning traffic under emergency conditions I provide a card exhibitor or sign holder on the top of the battery support or cover member 1 by an arrangement of a pair of resilient inverted substantially U-shaped frame members 59 and 60. These frame members 59 and 60 overlap with each other by the passage of one frame member through the other, the frame members being biased so that they tend to move into coplanar relation as represented in Fig. 1 to serve as resilient gripping means for the card or sign exhibitor represented at 61. The traffic officer may print the required warning on such card and insert the same between the gripping members 59 and 60 so that it may be seen by the approaching motorist in the glare of headlights at night or be clearly visible otherwise during daylight hours.

The equipment is normally packaged in a very compact assembly with the battery support or cover member 1 removed from the battery 4 and the legs 21, 22 and 23 withdrawn from the sockets 24, 25 and 26. The bolt members 5 and 6 are wholly detached and the battery 4 carefully packed ready for instant assembly in the battery carrier 1. Tubular member 42 is removed from socket 43 and the header 50 may be detached from the end of tubular member 42 and the flexible leads 48 with the plug 47 thereon withdrawn ready for reinsertion through the tubular member 42. This unit may, however, be maintained assembled with header 50 clamped at 55 on the end of tubular member 42 and the flexible leads 48 extending therethrough. In the disassembled condition plug 47 is wholly detached from receptacle 46 and receptacle 46 stuffed carefully into the depending socket 43. Under these conditions a protective plug 62 shown in Fig. 14 is insertable into the depending socket 43 for closing the open end of this socket and protecting the receptacle 46. Upon assembly of the equipment plug 62 is withdrawn enabling plug 46 to be drawn upwardly within the limits of the flexible leads 45 to establish connection with the prongs of plug 47.

All of the wiring is completed within the battery support or cover member 1 so that it is only necessary to connect the leads 63 to the battery terminals, insert the legs 21—23 into the sockets 24—26, secure the battery 4 in the battery support or cover member 1 by bolt members 5 and 6 and insert the turnstile tubular member 42 whereupon the equipment is ready for operation. Switch 37 operative from the exterior of battery support or cover member 1 readily controls the illumination of the turnstile lamp 49 or the emergency lamp 34 in either of the constant or intermittent conditions thereof. Battery 4 when of the storage battery type is readily removable for recharging and when of the dry cell type is readily replaceable for a fresh battery. The resilient members 59 and 60 in addition to serving as a grip for a card or sign 61 also serve as a hand grip facilitating the carrying of the battery support or cover member 1 with the battery 4 located in position therein.

As heretofore noted, any multiple number of batteries may be pendantly supported in the battery support or cover member 1 as represented at 4 and 17 in Fig. 15. The battery terminals are represented at 64 and 65 to which the leads 63 are readily connected in proper polarity relationship.

When assembled, the battery support or cover member 1 serves as a cover which extends over the battery and protects the equipment from rain, snow and the weather generally.

It will be understood that the switch 37 is selective so that the light 34 may be used independently of the traffic signal light 49. Moreover, the light 34 may be conditioned either as a flashlight or as a constant light. The mounting of the barrier carrier on legs 21, 22 and 23 is particularly important as these legs are dimensioned for the purpose of elevating the light 34 and the light 49 at proper heights to comply with State regulations. The elevation of the lights, particularly the warning or danger light 34, completely eliminates the objections found in State regulations against the conventional light flares distributed customarily along the highway to mark an accident area. There are no open flames in the device of my invention and the elevations of both the warning light 24 and the traffic light 49 are such that both lights provide a maximum of benefit in the line of vision of approaching motorists.

I have found the structure of my invention highly practical and successful in operation and although I have described my invention in certain preferred embodiments I realize that modifications may be made and I desire that it be understood that no limitations upon my invention are intended other than may be imposed by the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is as follows:

1. A portable emergency signal and traffic control apparatus comprising a battery support constituted by a hollow inverted top cover member having vertically disposed side walls, said side walls having a pair of vertically extending bores therein, suspension members extending through the bores in said side walls, a battery supported by said suspension members in pendant position beneath said cover member with the sides of said battery extending substantially coplanar with the side walls of said battery support, said battery support having socket members located in the side walls thereof, support rods removably insertable into the socket members in said side walls and extending beyond the sides of said battery and forming legs for suspending said battery support with respect to a mounting surface engaged by said legs, a vertically disposed angularly shiftable electrically illuminated turnstile signal detachably mounted in the top of said battery support and electrical connections extending from said electrically illuminated turnstile signal through the top of said battery support and connected to said battery for energizing said electrically illuminated turnstile.

2. A portable emergency signal and traffic control apparatus as set forth in claim 1 in which the socket members in the side walls of the cover member of said battery support are disposed on axes inclined outwardly from the side walls of said battery whereby said legs spread outwardly beyond the opposite sides of said battery for suspending the battery in elevated position above the plane of the mounting surface beneath said battery support.

3. A portable emergency signal and traffic control apparatus as set forth in claim 1 in which there are two socket members disposed in one side wall of the cover member of said battery support and a single socket member disposed in the opposite side wall of the cover member of said battery support symmetrically between the locations of said pair of socket members whereby the legs constitute a tripod mount for said battery support.

4. A portable emergency signal and traffic control apparatus as set forth in claim 1 in which said cover member has a linearly extending vertically disposed projection in the side walls thereof aligned with one of the vertically extending bores therein for strengthening the associated side wall of said cover member at the position at which the associated suspension member extends therethrough.

5. A portable emergency signal and traffic control apparatus as set forth in claim 1 in which one of the vertically extending bores is disposed in vertical alignment with the axis of one of the socket members and in which the other of the vertically extending bores is located symmetrically between two of said socket members.

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