Jan. 13, 1942. R. A. MEADOR 2,270,134

ELECTRIC SIGNAL AND ILLUMINATED SIGN

Filed Nov. 28, 1938 3 Sheets-Sheet 1

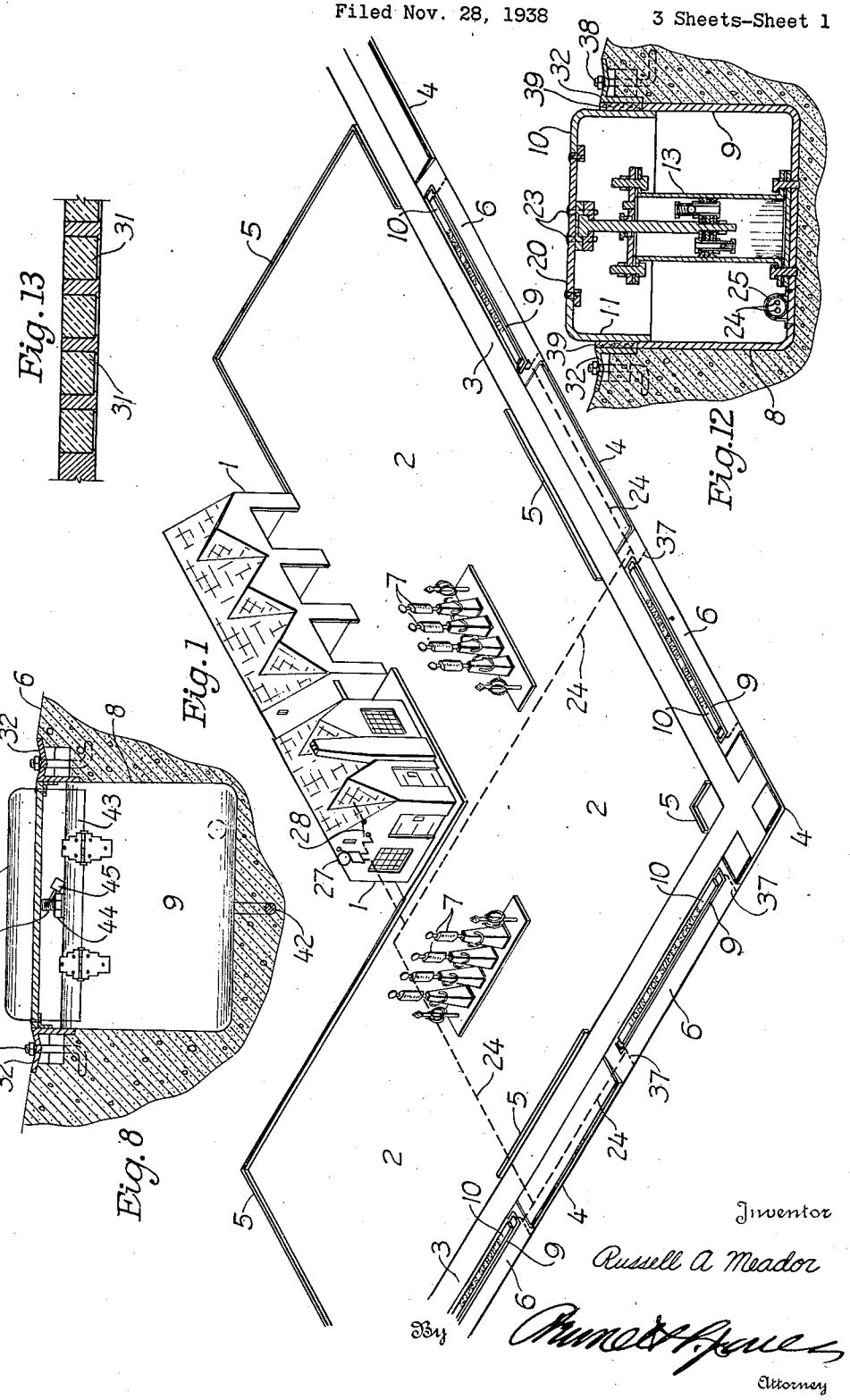


Fig. 13

Fig. 1

Fig. 12

Fig. 8

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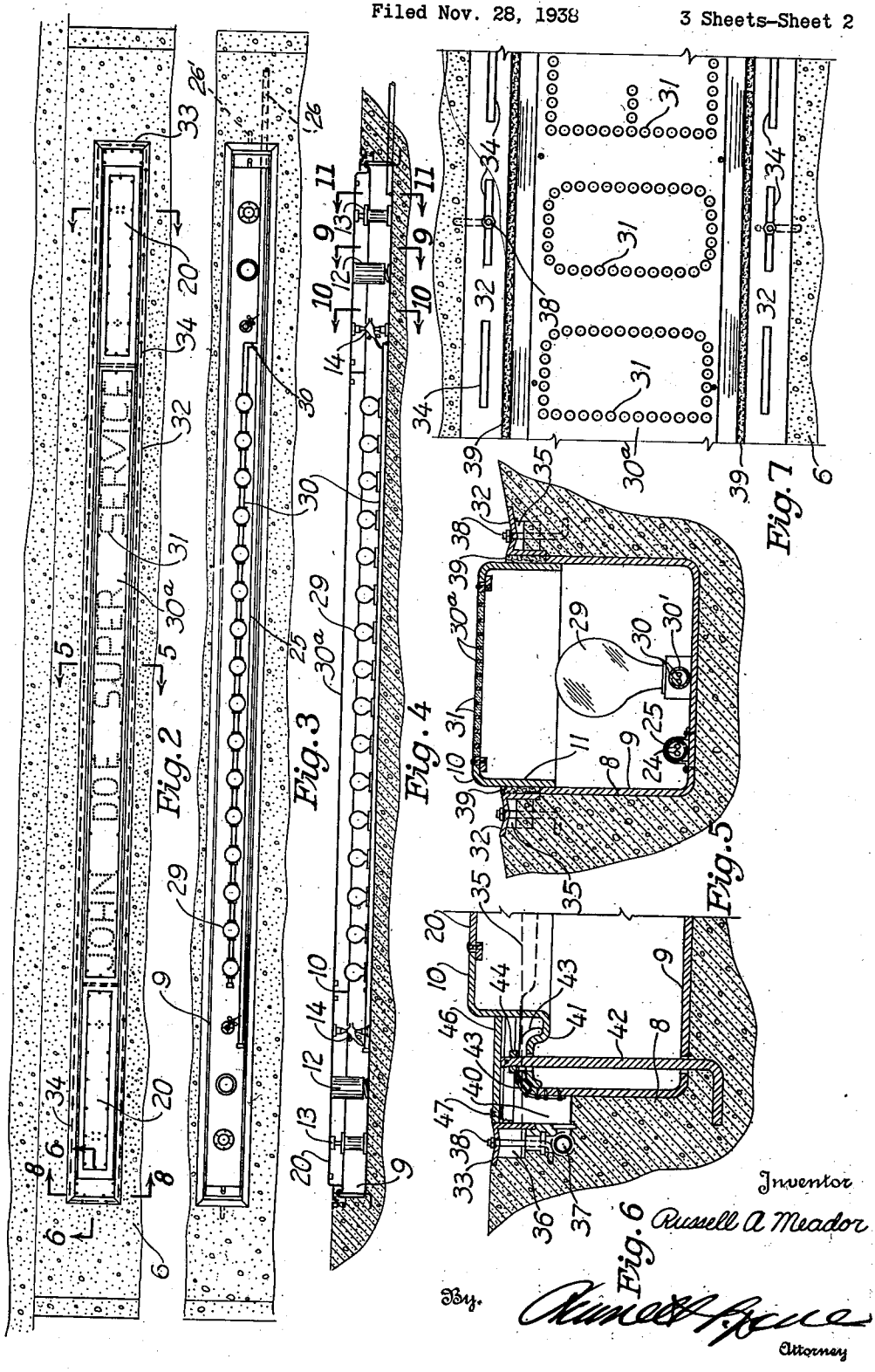


Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 7

Fig. 6

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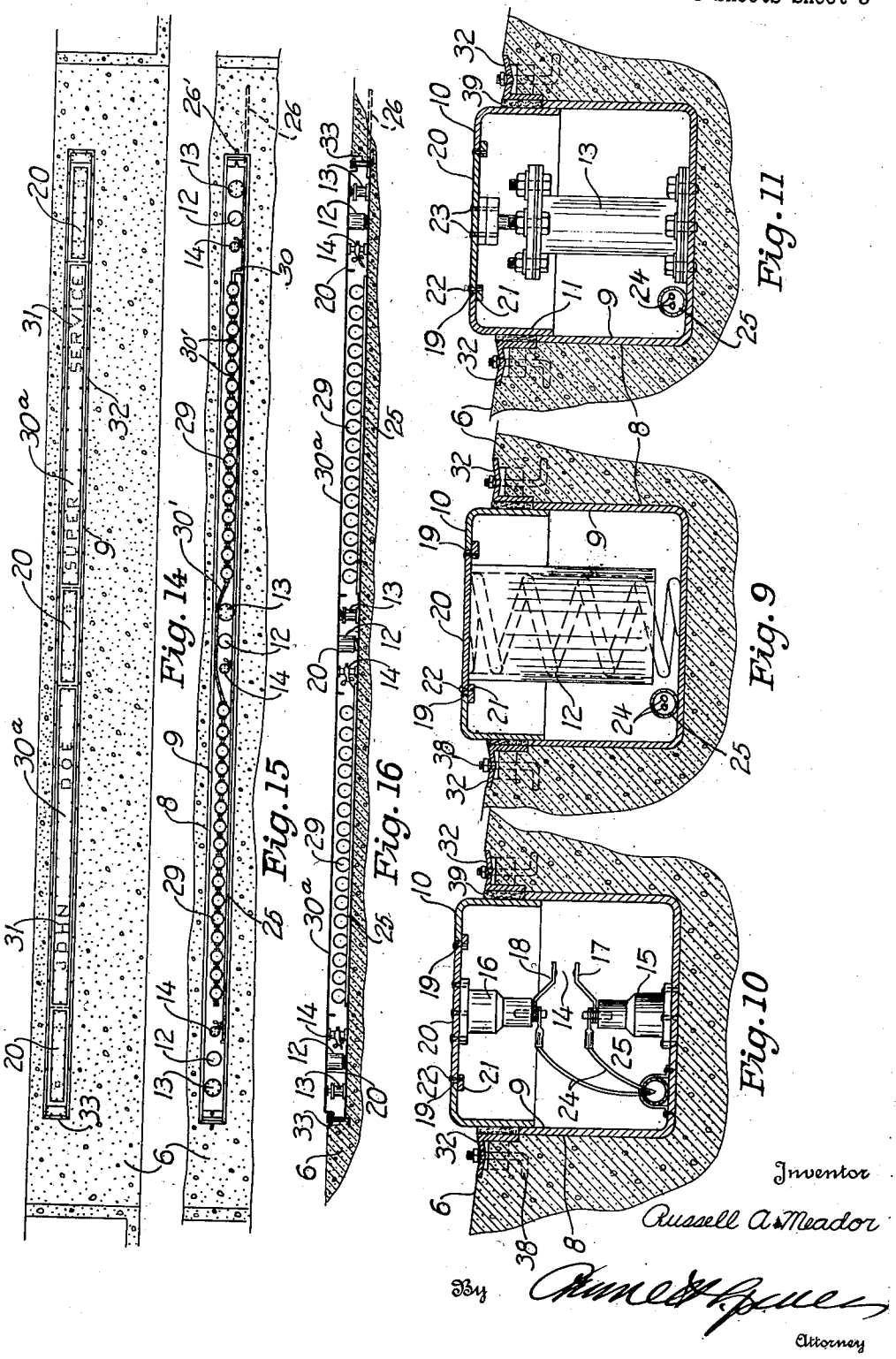


Fig. 14

Fig. 15

Fig. 16

Fig. 9

Fig. 11

Fig. 10

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ELECTRIC SIGNAL AND ILLUMINATED SIGN

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4 Claims. (Cl. 40—133)

This invention relates to electric signals and illuminating means or an illuminated sign used in connection therewith.

One object of the invention is to provide a novel electrical signal to give notice to a business establishment of a customer entering the establishment, and to indicate to the customer the fact that such notice of his entrance has been given so that he may expect to receive attention from the proprietor or a business attendant.

A further object of the invention is to provide signaling means of the character described for location at a garage, gasoline service station or the like, which means will be automatically operated by the vehicle of the customer entering the station.

A still further object of the invention is to provide a vehicle operated signal device which will also serve to attractively illuminate the station and entranceway and which may be used to display desired advertising or sign matter.

A still further object of the invention is to provide a combined signal operating and illuminating or sign device which may be set or embedded in the surface of the entranceway, which will be automatically operated to give a signal by the weight of a vehicle passing over it, which may be employed to give steady or intermittent illumination and similarly display desired sign matter, which will be proof against entrance of water or other foreign elements and furnish sufficient heat to melt snow or ice tending to obscure illumination, and which embodies means for the ready discharge from its surface of all moisture falling or tending to collect thereon.

A still further object of the invention is to provide signaling and illuminating means which is simple, strong and durable and which allows ready access thereto for cleaning, repairs, assemblage and disassemblage of contained parts, and for all other purposes.

A still further object of the invention is to provide signaling and illuminating means which will furnish attractive sidewalk illumination acting, in addition to any displayed advertising matter, to advertise the establishment or station, and which, if desired, may be utilized to operate various auxiliary sign elements, display or service devices.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:

Fig. 1 is a perspective view showing the invention as used in connection with an automobile service station or the like.

Fig. 2 is a top plan view of a portion of an entranceway of the station showing one form of signaling and illuminating device set therein.

Fig. 3 is a similar view with the tread plate of the casing of the device removed.

Fig. 4 is a vertical longitudinal section through the device shown in Figs. 2 and 3.

Figs. 5 and 6 are cross-sections taken on lines 5—5 and 6—6 of Fig. 2.

Fig. 7 is a plan view of a portion of the device on an enlarged scale.

Fig. 8 is a cross-section on line 8—8 of Fig. 2.

Figs. 9, 10 and 11 are cross-sections on lines 9—9, 10—10 and 11—11 of Fig. 4.

Fig. 12 is a section similar to Fig. 11 showing more fully the general construction of the shock absorber.

Fig. 13 is a detail section through the tread plate.

Figs. 14, 15 and 16 are views similar to Figs. 2, 3 and 4 of another form of signaling and illuminating device.

Referring now more particularly to the drawings, in which I have shown for exemplification the use of my invention at an automobile service station, 1 designates an appropriate building at the station, 2 a service parkway about the station, 3 sidewalks along the parkway, 4 the street curbing, 5 guard curbings, and 6 driveways or entranceways leading from the street to the parkway, which may be beveled or sloped in the usual manner for ready drainage of rainwater and to allow easy travel of a vehicle from the street to the parkway and vice versa. 7 represents groups of standard gasoline and oil pumps or other service equipment at the station.

The concrete or other material forming the surface of each driveway 6 has formed therein a depression 8 in which is fitted a casing 9. This casing is of oblong rectangular form and extends lengthwise transversely of the driveway. The casing is normally open at its top, which terminates a short distance below the surface of the driveway, and such open top of the casing is closed by an inverted U-shaped depressible top or tread plate 10 having depending side flanges 11 slidably engaging the inner surfaces of the side and end walls of the casing. The upper surface of this tread plate extends slightly above the level of the surface of the driveway so as to adapt it to be depressed by the weight of an automobile or other vehicle traversing the driveway.

In the construction illustrated in Figs. 1 to 13,

inclusive, showing a driveway of a certain practical width and a casing of a conformably practical width, the tread plate cooperates with two sets of supporting and controlling devices conveniently placed in the casing beneath the opposite ends of the plates. Each of these sets of supporting and controlling devices comprises a suitably housed and guided supporting spring 12, a suitable type of shock absorber 13, preferably one of hydraulic (oil) type, and an electric circuit closing switch 14. The springs are of suitable strength to support the tread plate in its elevated position and to allow it to be depressed by the wheels of a vehicle resting thereon, and said springs and the shock absorbers cooperate to reduce shocks and to control the movements of the tread plate in both directions to prevent injury to the same or to the casing and its contained parts. The switch 14 may be of any preferred construction, but as shown in Fig. 10 comprises members 15 and 16 fixed to the casing and tread plate, respectively, and carrying contacts 17 and 18, respectively, adapted to be engaged when the tread plate is depressed to close an electric circuit. Above each of such sets of supporting and controlling devices the tread plate is provided with an opening 19 through which access may be obtained for applying, removing, repairing or otherwise servicing these parts when occasion requires. Each of these openings 19 is normally closed by a cover or service plate 20 set flush in the opening and resting on seat flanges 21 carried by the tread plate, and to which the service plate is detachably connected by bolts or screws 22. The stem of the plunger element of the shock absorber is also detachably secured to the plate 20 by bolts or screws 23, so that the service plate may be removed without interference therefrom.

The contacts of the switch devices 14 are connected with conductors 24 forming part of an electric circuit, supplied with current from any source, and which conductors extend through a conduit 25 in the casing and lead outward therefrom at a suitable point, as the points 26 and 26', from which they may extend through an underground conduit or otherwise to main conductors or a current source and to one or more signal devices 27 located interiorly or exteriorly of the building 1, or at any other suitable point or points, so that upon the depression of the tread plate and closing of the switch devices the signal or signals 27 will be operated to notify the attendant of the approach of a customer.

By the sounding of the signal or signals the customer will also be advised of the fact that notice of his arrival has been given to attendants at the station. Associated with the signal device or devices may be a suitable switch 28 for cutting the same into and out of connection with supply conductors or a supply circuit when desired. A plurality of switch devices 14 located at spaced points in the casing are preferably employed in order to ensure that, no matter at what point the vehicle engages and depresses the tread plate, at least one switch will be closed to operate the signal circuit. The signals used may be bells, horns, semaphores, lamps or other aural or visual signal devices. The switch mechanism may also be employed, if desired, to operate other devices at the station upon the depression of each tread plate.

I also provide within the casing illuminating means, such as a desired number of incandescent lamps 29 or other suitable illuminators supplied with current by conductors 30 extending through a conduit 30' connected with the conductors 24 or in any suitable manner with the same or any other suitable source of current supply. These lamps may be plain white lamps, or lamps of all the same color, or lamps of variegated colors and of any sufficient size or light giving strength to produce a plain or colored illumination of the character desired. The light from these lamps shines through lenses or bull's-eyes 31, of plain or colored glass, set in openings formed either directly in the body of the tread plate or in a sign plate 30' detachably fitted in an opening in the body of the tread plate in a manner similar to the service plates 20. These openings and the bull's-eyes or lenses may be arranged in lettered formation or other suitable formation to produce sign or advertising matter of any desired kind, such as the name of the proprietor of the station, the name of a product sold by the station, or other desired sign or advertising matter. By this arrangement a very simple, but pleasing and attractive, type of illuminated sign may be produced, and the sign elements will serve as auxiliary illuminating means to attractively illuminate the station and its surroundings. The light given may be of steady or continuous type or it may be one of intermittent or flash type produced by suitable switching means, as desired, and, if desired, the arrangement may be such that the operation of switches 14 on depression of the tread plates may be utilized to cut out the lamps temporarily, for a momentary darkening effect at the time a vehicle crosses a tread plate, in order to give a further signal notification.

Arranged along the sides and ends of the casing are side gutter plates 32 and end gutter plates 33 of flanged formation or L-shape, the horizontal portions of said plates being transversely dished to form a drain gutter or channel. The plates 32 are provided at suitable points with drain openings 34 communicating with drain conduits or channels 35 formed in the concrete or other material of the driveway. The channels 35 may slope toward either or both ends of the casing, or toward either side or both sides of the driveway. In the present instance, the channels are shown as sloping from a central point toward both ends of the casing or both sides of the driveway and communicating adjacent the ends of the casing with eduction channels 36 which in turn communicate with drain conduits or tiles 37 for discharging any rain or other water passing into the drain channels into street gutters or drain pipes of a town service system. The plates 32 and 33 are detachably secured by nuts to retaining bolts 38 fixed in the concrete of the driveway so that they will be firmly held in position, but may be removed whenever required. The vertical plates or flanges of the side plates 32 are disposed above and outwardly in spaced relation to the sides of the casing and serve as retainers for packing material 39 placed between the same and the side flanges of the tread plate, whereby a tight joint is provided at all points along the sides of the casing to prevent access of rain or other water or foreign materials of every character to the casing, while allowing free up and down movements of the tread plate. The arrangement of the tread plate and gutter forming plates is such that any rain water falling upon the tread plate or on the surface of the driveway adjacent to the tread plate and casing will be quickly discharged through the drain channels to obviate any liability of the same

penetrating the casing. The arrangement is also such that the heat from the illuminating lamps within the casing will heat the casing and tread plate to such a degree as to cause the rapid melting of any snow or ice which may be deposited on the tread plate and the drainage of the water therefrom into the gutters and drain channels.

The depression or recess 8 is provided at each end with an access chamber or compartment 40 located between the end channel 36 and adjacent end of the casing 9 and partially overhanging the latter. This chamber may communicate with the drain pipe 37 for flow to the latter of any water which may find its way into the former. The tread plate 10 is of somewhat less length than the casing 8 and at each end is provided with an arched retaining and stop flange 41 which bears at its outer free edge against the adjacent end wall of the casing. This arched flange 41 is perforated for the engagement and upward passage through it of the upper free end of an anchor bolt 42 which is fixed at its lower end in the concrete of the driveway and extends upwardly through an opening in the bottom of the casing. Hinged to the end wall of the casing is a latch plate 43 arched to conform to and adapted to be swung over upon the flange 41 to cover the joint therebetween and to serve as a stop to limit the upward movement of the tread plate 10. The latch plate is slotted for passage of the upper threaded end of the bolt 42 on which is fitted a nut 44 which holds the latch plate in latching position. Removal of the nuts 44 of the bolts 42 at the ends of the casing frees the tread plate 10 so that it may be lifted out whenever it is desired to remove it from any cause or to uncover and allow complete access to the interior of casing 8. The upper end of each bolt 42 may be perforated to receive the hasp of a padlock 45 whereby the tread plate may be fastened against removal except by an authorized person. A cover plate 46 is provided to close each chamber 40 between the gutter plate 33 and end of the tread plate 10, and this cover plate may be detachably secured to the gutter plate by bolts or screws 47, allowing access to be obtained to the chamber when desired while closing the same against access of foreign materials.

The construction of the device as above described, in which the tread plate is supported at or adjacent to each of its ends by a supporting and cushioning spring and an associated shock absorber, may be generally used and found to be sufficient where the casing and tread plate are of reasonable length to suit a driveway of ordinary width. Where the casing and driveway are of some considerable length to suit a very wide driveway, however, it may be desirable to provide one or more additional sets of springs, shock absorbers and switches located between the end sets. An arrangement of this kind is shown in Figs. 14, 15 and 16 in which, in addition to the end sets of springs, shock absorbers and switches 12, 13 and 14, there is provided at the center of the casing and beneath the center of the tread plate an additional set of devices of this character, to wit, a spring 12', shock absorber 13' and switch 14' similar in type to the devices 12, 13 and 14. At this point in the tread plate there is also provided a service opening 19' and cover or service plate 20' to allow access to said centrally disposed set of devices. This form of the device may be provided with two sign plates 30a, as shown. There is thus assured adequate support of the tread plate, whatever its length, an equalized cushioning action and a certain and reliable action of a switch or switches to operate the signal circuit when the tread plate is depressed.

From the foregoing description, taken in connection with the drawings, the construction and mode of operation of my improved electric signal and illuminated sign will be readily understood without a further and extended description. It will be evident that the invention provides a device of this character for use at gasoline service stations, garages, and other like establishments having drive-in driveways whereby upon the entrance of a customer a signal will be given to notify attendants of the establishment of the entrance of a customer and to advise the customer at the same time that his approach has been signaled. It will also be evident that the invention provides an attractive type of sidewalk sign which may not only be employed to advertise the establishment, but will also give effective illumination to prevent accidents and to give attractiveness to the establishment, whereby its business will be promoted. The invention provides a device of this character which may be readily installed, at a comparatively low cost, which is not liable to easily get out of order, which is readily accessible for access to its contained parts for cleaning, repairing and replacing the same whenever necessary, and which may be used without interference either with vehicular traffic or the passage of pedestrians along adjacent sidewalks. As stated, the device may also be used for operating various kinds of signals or service devices at the establishment, such as auxiliary advertising devices, the valves of clear vision pumps to automatically maintain a constant supply of liquid in a dispensing apparatus for sale, and to perform various other kinds of service.

While the structures shown for purposes of exemplification are preferred, it will, of course, be understood that changes in the form, construction and arrangement of parts may be made within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim is:

1. A vehicle controlled illuminated sign device adapted to be embedded in a roadway and to have its illuminating means operated by a vehicle traveling thereover, said device comprising a casing normally open at its top and including a vehicle operated depressible tread forming a cover closing said open top of the casing, said cover having light emitting means constructed and arranged to form a sign display, electrical illuminating means in the casing, and a switch device in the casing operated by depression of the tread to connect said illuminating means with a source of current supply.

2. A vehicle controlled illuminated sign device adapted to be embedded in a roadway and to have its illuminating means operated by a vehicle traveling thereover, said device comprising a sign casing normally open at its top, sign illuminating means therein, a depressible tread operated member closing the open top of the casing and having light emitting means forming a sign, a circuit controller controlled by said member to govern the supply of electric current to the illuminating means, and means in the casing independent of said circuit closer for yieldingly supporting and cushioning the movement of the tread member.

3. In combination, a casing normally open at

its top, a depressible tread operated sign member forming a cover closing the open top of the casing and having sign letters formed of light emitting means adapted to be illuminated by light from the casing, a light producing element in the casing, an electric circuit arranged within the casing and including said light producing element and also including a circuit closer adapted to be operated by depression of said sign member for closing said circuit to energize the light, and means in the casing independent of the circuit closer for yieldingly supporting and cushioning the downward movement of the tread operated member.

4. In a vehicle operated illuminated sign structure, an elongated stationary sign casing adapted to be embedded in a vehicle roadway with its upper portion substantially level with the surface of the roadway, said casing having a normally open top, illuminating means in the casing, an electric circuit including said illuminating means and also including a circuit closer arranged in the casing and adapted when operated to connect said circuit and illuminating means, and a cover closing the open top of the casing and including a tread portion projecting from the casing above the surface of the roadway with its upper surface substantially parallel therewith and a depending portion vertically movable within the casing, said cover having sign letters formed of light emitting means and being depressible under pressure of the wheels of a vehicle passing over said tread portion to operate the circuit closer.

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