

April 23, 1963

D. T. EMMEL

3,086,430

TRAFFIC CONTROL EQUIPMENT

Filed Jan. 28, 1959

3 Sheets-Sheet 1

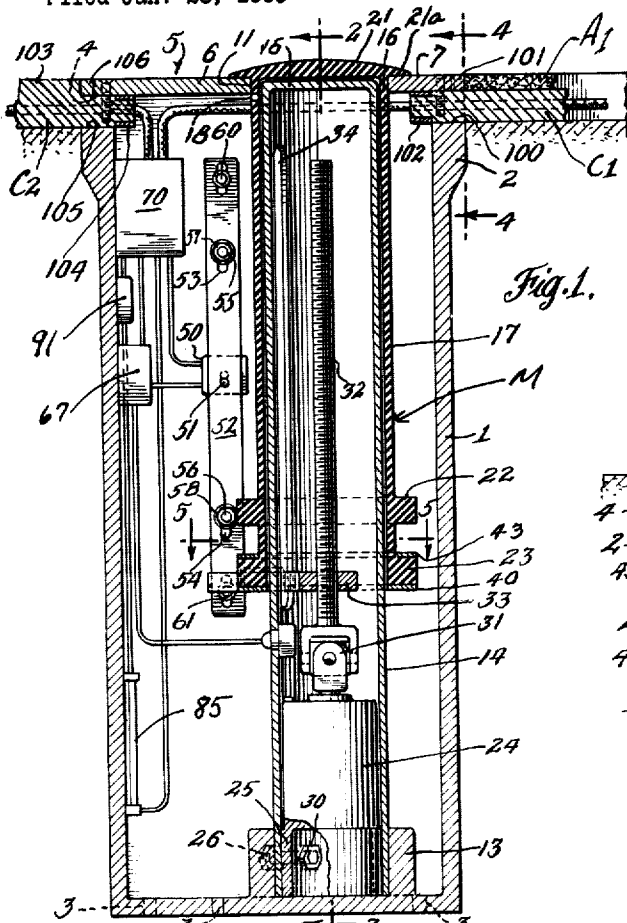


Fig. 1.

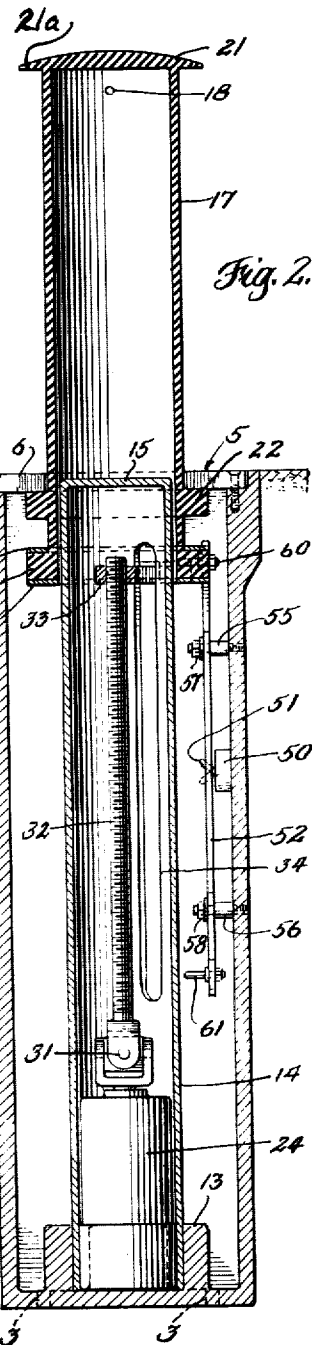
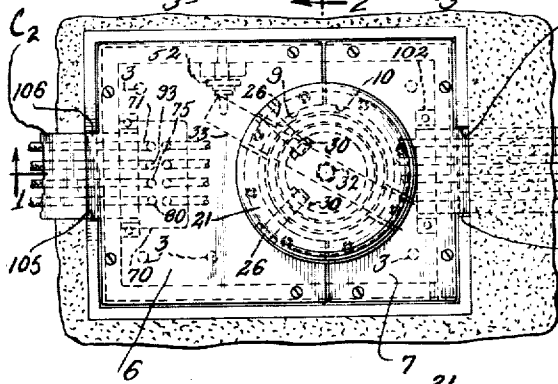


Fig. 2.



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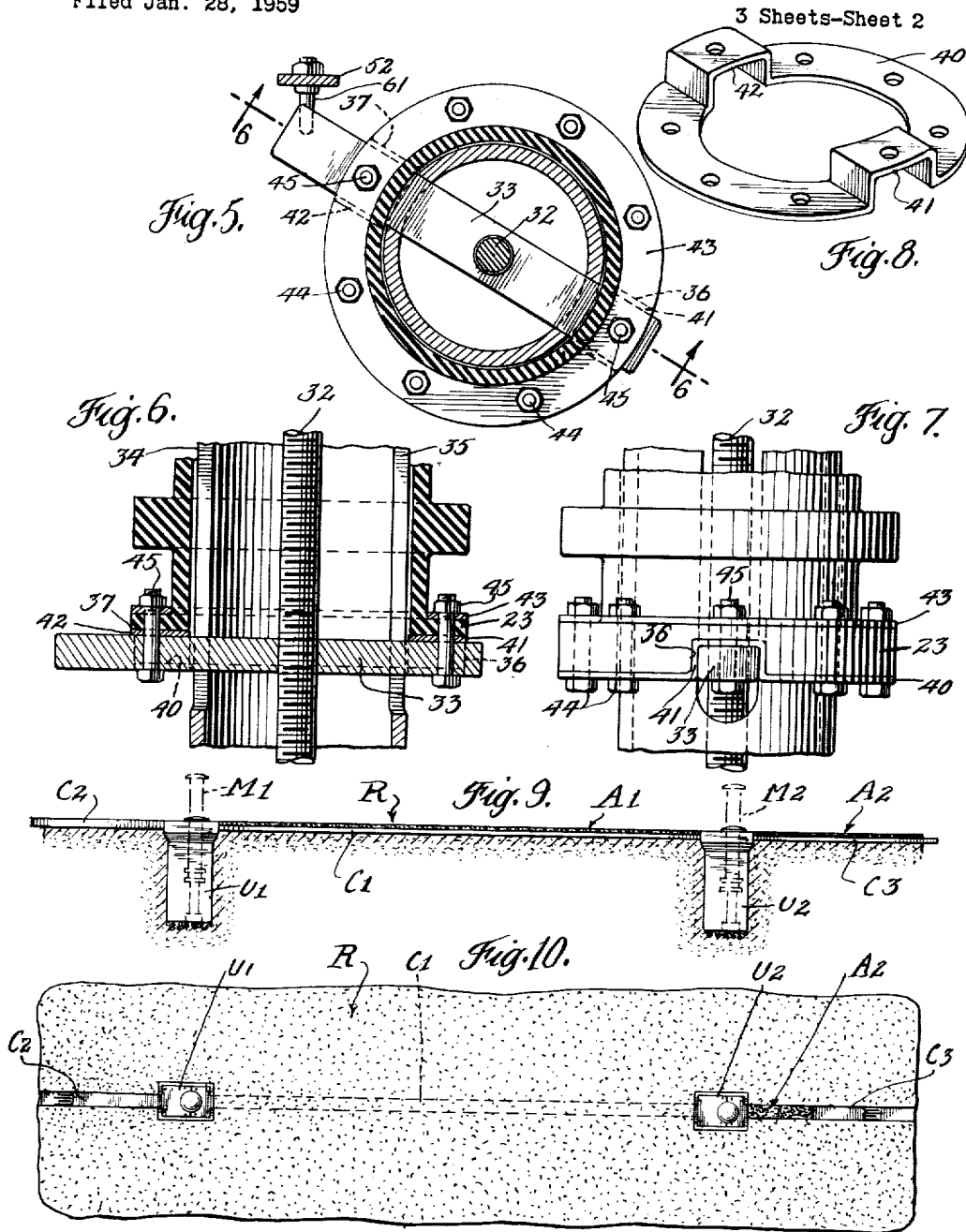
D. T. EMMEL

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3 Sheets-Sheet 2



INVENTOR
David T. Emmel
BY
Symmes & Lechner
ATTORNEYS

April 23, 1963

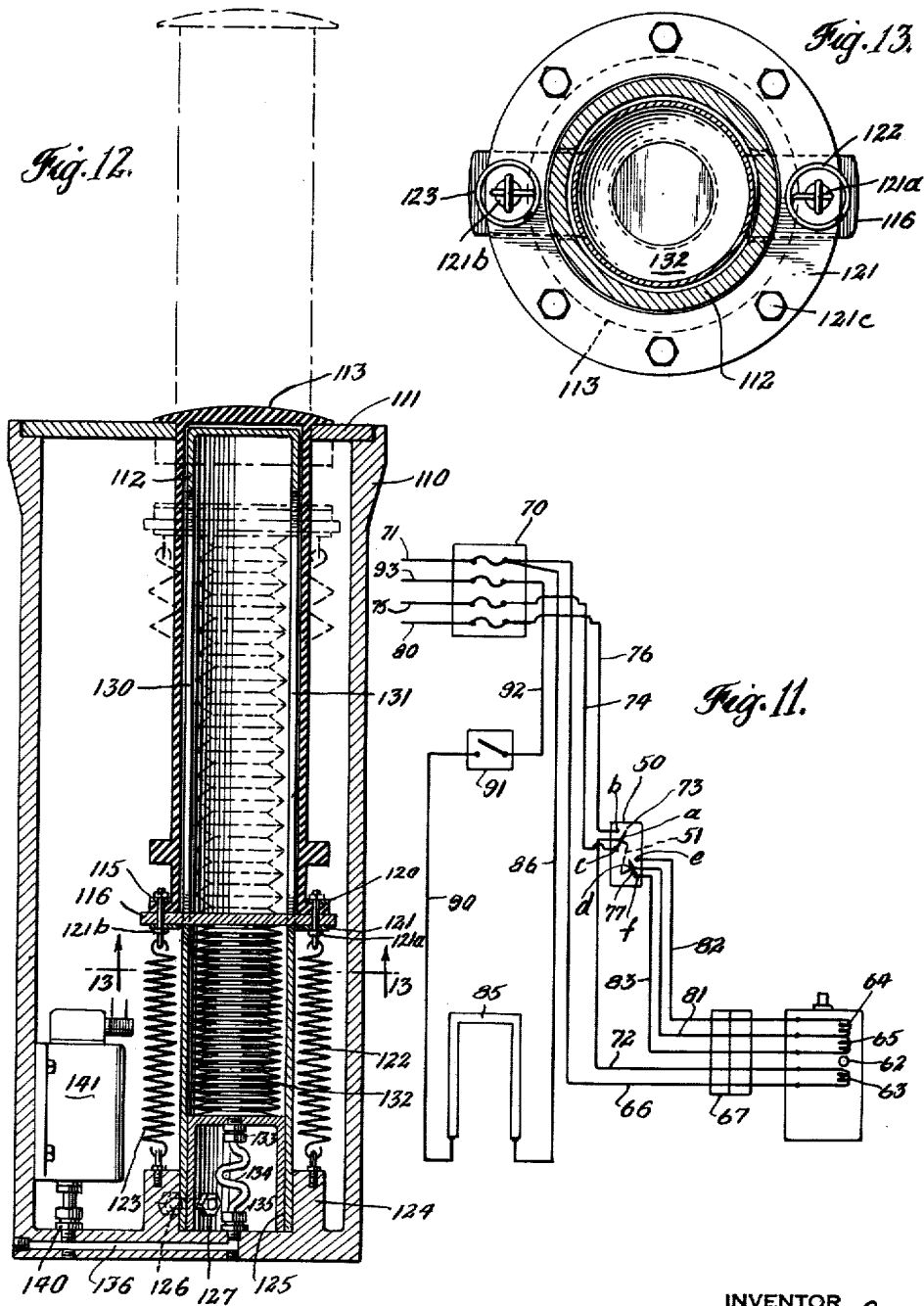
D. T. EMMEL

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TRAFFIC CONTROL EQUIPMENT

Filed Jan. 28, 1959

3 Sheets-Sheet 3



INVENTOR
David T. Emmel
BY
Seymour V. & Lechner
ATTORNEYS

1

3,086,430

TRAFFIC CONTROL EQUIPMENT

David T. Emmel, 1823 Silver Ave., Abington, Pa.

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12 Claims. (Cl. 94-1)

This invention relates to equipment for the control of traffic and in particular relates to equipment for changing the number of traffic lanes as between the opposite sides of a highway or altering the lane pattern on either side.

For this purpose the invention contemplates post-like flexible traffic markers adapted to be raised above the highway when it is desired to use the same and lowered into the highway when not in use, the markers being disposed on the highway in a desired control pattern.

In large metropolitan areas and in heavily trafficked expressways and freeways the control of the flow of traffic, particularly during peak hours, is a current and serious problem. For example, in most cities there is a large number of vehicles moving in and out of the city during the early morning and late afternoon hours. To take care of this it is usually necessary to change the direction of traffic flow in the lanes of the main arteries. For example, a main street may have three lanes on each side which, during the peak hours, are changed so that five lanes take traffic in one direction and only a single lane in another. So, too, on the expressways and freeways, particularly where the number of cars entering is large, it is necessary to alter the traffic pattern. For example, at an entrance point it is often desirable to block off the adjacent lane for some distance before the entrance point so that there will be a free flow of cars into the highway despite the large number of oncoming vehicles. A variety of equipment has been and is used for control of traffic in instances such as mentioned above.

For example, in some cases removable wooden barriers are used, but these have been largely supplanted by the familiar conical-shaped rubber pylon. In other cases barriers in the form of sectional curbing has been developed. Usually this comprises a section of curbing in the order of eight to ten feet long which, when not in use, is sunk below the street level and then elevated to a desired position when the need for traffic control arises.

The methods and apparatus developed heretofore to solve the problems of the kind in question all have special disadvantages. For example, the wooden barriers and the rubber pylon involve a very high incidence of labor expense because all of these have to be manually placed in position and removed. Furthermore, there is a coordination problem in that on a freeway, for example, it is usually necessary that all the entrances be controlled at the same time. The same is true, of course, on long city streets and particularly where there are several streets involved. All of this requires the time of a large number of men and the use of equipment such as trucks and the like. Furthermore, there is an additional expense in that the wooden barriers and pylons must be stored in readily available places.

Additionally, the wooden barriers and the rubber pylons have a disadvantage of the standpoint of contact with vehicles. For example, a vehicle running into a wooden barrier may cause not only damage to itself

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but damage to adjacent vehicles or personnel. A vehicle contacting a rubber pylon will usually upset the same and there is a danger of the same rolling or bounding into the path of oncoming cars and causing accidents.

5 With regard to the curbing mentioned above, this has a special disadvantage in that the initial installation cost is very high. Furthermore, these installations have a high maintenance cost.

The present invention provides, and it is an object of 10 the invention to provide, mechanism for use on city streets, freeways and other like places for the control of traffic without the disadvantages of high installation cost, high maintenance cost, high labor cost and without the danger of accidents.

15 One object of the invention is to provide a traffic marker, preferably flexible, which, when not in use, is recessed below or substantially flush with the street level but which can be automatically raised above the street level for traffic control purposes.

20 Another object of the invention is to provide a traffic marker which can be elevated above the street when it is desired to use the same, the device being arranged so that the elevating mechanism will not be loaded by a vehicle wheel running over the marker, regardless of 25 whether the marker is in the elevated or non-elevated position.

Another object of the invention is to provide a traffic marker which can be elevated above the street when it is desired to use the same, the elevating mechanism being 30 of the hydraulic or electro-mechanical type and the device being arranged so that no load is taken by the elevating mechanism due to the wheel of a vehicle running over the device.

Another object of the invention is to provide a flexible 35 traffic marker which can be elevated above the street when it is desired to use the same, the marker being hollow and cylindrical in form and arranged to slide up and down over a rugged tubular member adapted to receive the load of a vehicle wheel running over the unit.

40 Another object of the invention is to provide a flexible, generally annular-shaped traffic marker mounted in a housing recessed into the street, the marker being movable through an opening in the housing so as to project above the street level when it is desired to use the same, 45 and the opening being arranged so that it does not present a large hole in the street in the event the marker is ripped away, for example, by being engaged by the wheels of a skidding vehicle or the like.

Another object of the invention is to provide a traffic 50 control device having a rugged housing disposed beneath the surface of the street, the housing having a top part which is flush with the street level and including a slot through which a flexible marker can be raised and lowered, the slot being formed in part by a load-taking 55 member within the housing.

Another object of the invention is to provide a flexible traffic marker mounted in a housing recessed below the street level, the marker being movable through an opening in the housing so as to project above the street level 60 when it is desired to use the same, the marker being constructed to seal off the housing from water, dirt, dust and the like in the elevated and non-elevated position.

Another object of the invention is to provide a flexible 65 traffic marker mounted in a housing recessed below the street level, the marker being movable through

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an opening in the housing so as to project above the street level when it is desired to use the same and the marker having an enlarged head which provides a seal for the opening when the marker is in the non-elevated position.

Another object of the invention is to provide a flexible traffic marker mounted in a housing recessed below the level of the street, the marker being movable through an opening in the housing so as to be elevated above the street level when it is desired to use the same, and the marker having means which seals off the opening when the marker is in the non-elevated position and also being provided with means to seal off the opening in the elevated position, the last-mentioned means also serving to help to retain the marker securely in the housing in the event the same is contacted by the wheels of a vehicle.

Another object of the invention is to provide, for traffic control purposes, a plurality of spaced units recessed below the street level and each having a flexible marker arranged to be raised and lowered above and below the street by electrically operated means, each unit being connected by a flexible conduit carrying conductors and having a top planar surface flush with the street level and serving as a traffic lane indicator.

Another object of the invention is to provide, for traffic control purposes, a plurality of spaced units recessed below the street level each having a flexible marker arranged to be raised and lowered above and below the street level by electrically-operated means, each unit being connected by a flexible conduit carrying conductors and recessed into a trench below the level of the street together with material contrasting to the appearance of the street in each trench covering the conduits and forming a traffic lane indicator.

The foregoing, together with other objects and advantages of the invention, will be apparent from the following description and drawings wherein:

FIGURE 1 is an elevational view partially in section taken along the lines 1—1 of FIGURE 3 and showing a unit of the invention mounted below the surface of the area to be controlled with the flexible marker in the down or inoperative position;

FIGURE 2 is a sectional elevational view taken along the lines 2—2 of FIGURE 1, except that the flexible marker is shown in the operative or up position;

FIGURE 3 is a plan view of the device of FIGURE 1;

FIGURE 4 is a view taken along the lines 4—4 of FIGURE 1;

FIGURE 5 is an enlarged view taken along the lines 5—5 of FIGURE 1 with certain parts of the unit omitted;

FIGURE 6 is a fragmentary view taken along the lines 6—6 of FIGURE 5;

FIGURE 7 is a fragmentary view looking toward the left in FIGURE 5;

FIGURE 8 is an isometric view of a retainer;

FIGURE 9 is an elevational view showing the manner in which the units of the invention are mounted in the street nad interconnected by power conduits;

FIGURE 10 is a plan view of FIGURE 9;

FIGURE 11 is a schematic diagram of certain of the electrical components for the unit of FIGURE 1;

FIGURE 12 is a modified form of the invention wherein the elevating mechanism is of the hydraulic type; and

FIGURE 13 is a view taken along the lines 13—13 of FIGURE 12.

In the present description it will be understood that the terms "street," "highway," "freeway" and the like are synonymous in that each pertains to an area of vehicular travel. Furthermore, it will be understood that the invention is applicable to control vehicle traffic in areas other than streets, highways, etc., for example, in parking lots.

FIGURES 9 and 10 are illustrative of a typical arrangement of the units of the invention on a roadway. With reference to these figures, it will be seen that units

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U-1 and U-2 are spaced from one another and recessed into the area to be controlled such as the road R with the tops of the units being flush with the road level. The flexible markers M-1 and M-2 are shown in the up or operative position. In the preferred form the units are electrically operated and are interconnected by flexible conduits (carrying conductors) which are generally rectangular in cross section adapted to be arranged in any of several desirable ways. For example, the flexible conduit C-1 interconnecting the units U-1 and U-2 is disposed in a correspondingly shaped trench between the units and covered with a layer of asphalt, concrete or whatever material from which the road is constructed. With this arrangement the only thing visible to a vehicle operator is the top of the unit as indicated in FIGURE 10. Preferably the conduits are of uniform width.

On the left-hand side of FIGURE 9 the conduit C-2 is disposed in a suitable trench and the top surface of the conduit is flush with the level of the street. The conduit material may be colored or uncolored so as to provide a contrast with the material from which the road is made. With this arrangement the conduit serves as a lane indicator. On the right-hand side of FIGURE 9 the conduit C-3 is arranged the same as the conduit C-1. However, the covering material A-2 is in contrast with the material of the road. For example, where the road is concrete the covering material may be asphalt to provide a traffic lane indicator. In any of the above arrangements a suitable mastic may be provided in the trench to hold the conduit in place. The conduits C-2 and C-3 may run to adjacent units or one or the other may run to the power supply for the units.

From the above it will be apparent that the units of the invention connected by the type of conduit described are readily adaptable to varying situations. In many situations it is desired, under the usual traffic conditions, that there be no lane lines or other indications of traffic division. The invention is readily adaptable for this purpose in that the interconnecting conduits can be sunk below the road and covered with the same material as the road and the tops of the unit, including the flexible marker, can be colored to correspond with the road. Thus, in the inoperative condition there is little, if anything, to indicate a lane division. Often times the traffic control scheme requires permanently marked lanes. The invention is readily adaptable for such instances by either having the conduit itself serve as a lane indicator or the conduit may be sunk below the ground and covered with contrasting material.

A preferred manner of constructing an embodiment of the invention wherein the flexible marker elevating mechanism is the electro-mechanical type will next be described.

In FIGURE 1 a generally rectangular-shaped housing 1 has a thickened section 2 near the top thereof and a plurality of drain holes 3 formed in the bottom. These holes are for the purpose of permitting any water (due to condensation) accumulating in the housing to escape. Usually a layer of gravel is placed in the bottom of the hole containing the housing, the gravel serving as a means for disbursing water coming through the drain holes. The housing is sunk into the ground so that the topmost part is flush with the level of the area to be controlled such as the street level L. The top part of the housing has a shoulder 4 and a cover 5 comprising the parts 6 and 7 which are firmly bolted on the shoulder. The parts 6 and 7 are undercut as indicated at 9 and 10 in FIGURE 3, the undercuts cooperating to form an opening or aperture 11. On the bottom part of the housing there is an upwardly extending boss 13 within which is disposed the tubular-shaped support 14. The support 14 has a top 15 projecting into the aperture 11 which is arranged substantially flush with or just below the upper surface of the cover 5. The aperture 11 and the top part of the support 14 form an opening or an-

nular slot 16. The flexible marker M is positioned for back and forth movement through the opening.

The marker M is preferably made of rubber or some other equivalent flexible or yieldable material, and has an aperture 18 for the escape of air in the event the marker is struck by a vehicle. The marker has a hollow, elongated body 17 disposed over the support 14 and is generally tubular or annular in shape. The marker extends into the aperture 11 or slot 16 and has a head portion 21 formed with a peripheral shoulder 21a engaging the cover 5 and serving as a means to seal off the aperture 11 or slot 16 when the marker is in the down or inoperative position. On the lower part of the marker there is formed an annular, ring-like section or shoulder 22 which, when the marker is in the up or operative position (FIGURE 2), bears against the cover and seals the aperture 11 or slot 16. The shoulders 21a and 22 seal the housing against water, dust, dirt and the like. On the bottom of the marker there is another annular, ring-like section or foot 23 which serves as a means for fastening the marker to the elevating and lowering mechanism which will next be described.

The motor 24 is disposed within the housing 1 and the motor has a skirt 25 resting on the bottom of the housing. The boss 13, the member 14 and the skirt 25 are all apertured to receive the bolts 26, the nuts 30 on the bolts being permanently fixed to the skirt 25. It will be apparent that when the bolts 26 are removed the support 14 and motor 24 can be easily and quickly removed from the housing. The drive shaft of the motor has a coupling 31 connected to a drive screw 32 extending upwardly through the support 14. Energizing of the motor rotates the screw and the motor is of the reversible type so that the screw can be rotated in either direction. Connected with the screw is a nut or drive bar 33 which extends transversely across the member 14 and outwardly through two slots 34 and 35 cut in the side of the member 14. When the screw 32 is rotated the drive bar moves up or down, rotation of the drive bar being prevented by its contact with the slots. Rotation of the screw in one direction drives the bar upwardly so that the marker projects outwardly of the housing and rotation in the opposite direction drives the bar downwardly to move the marker within the housing. The preferred manner in which the drive bar and the marker M are connected will next be explained.

As best seen in FIGURES 6 and 7, the foot 23 of the marker has two oppositely disposed channels 36 and 37 within which is disposed the retainer 40. The shape of the retainer is best shown in FIGURE 8 where it will be seen that there are two raised portions 41 and 42 which fit (FIGURES 6 and 7) into the slots 36 and 37. On the top of the foot 23 there is a washer 43. The washer 43, the foot 23 and the retainer 40 are provided with holes to accommodate the nuts and bolts 44 by means of which the washer and retainer are held firmly on the foot 23. The portions 41 and 42 of the retainer are shaped to fit over the drive bar 33 and are held fixedly thereon by means of the nuts and bolts 45. It will be seen that by removing the nuts and bolts 45 the marker can be quickly disengaged from the elevating mechanism.

The upper and lower limits of travel of the marker is determined by a switch 50 which controls the motor 24. The switch is adjustably mounted on the housing. The operating lever 51 of the switch is adapted to be moved by a bar 52 actuated by the drive bar 33. The bar 52 has a pair of slots 53 and 54 which receive the studs 55 and 56 mounted on the side of the housing, the slots providing for vertical motion of the bar, as explained below. The bar is held on the studs by the nut-washer arrangements 57 and 58. On opposite ends of the bar there are lugs 60 and 61 which are adjustable in a vertical direction. These lugs project outwardly far enough so as to be engageable by the drive bar 33.

When the drive bar, in moving to its full down position, engages the lug 61, it pulls the drive bar down, which in turn moves the switch lever 51 to the down position indicated by the dotted lines in FIGURE 2. When the drive bar is moving in its full up position, it engages the lug 61 to move the lever 51 to the up position as indicated by the full lines indicated in FIGURE 2. It is pointed out that the nut-washer arrangements hold the bar so that it will be moved only by the drive bar and not by gravity.

In FIGURES 1 and 12 it will be observed that the head 21 of the marker and top 15 of the support are closely adjacent and preferably in contact with one another. This arrangement has a highly useful purpose. For example, where a vehicle wheel contacts or runs over the head of the marker, the force of load is taken by the support and the head will not be pushed through the opening. Further, in those instances where the marker is made of material more rigid than rubber, the load of the vehicle will be taken by the support and not imposed on the elevating mechanism. Also, it will be observed that in the event the wheel of a skidding vehicle contacts the marker in its elevated position and rips the same away, the support provides that there is no large hole left in the street area.

The manner in which the motor 24 is energized to raise and lower the marker and the effect of the switch 50 will next be explained.

The motor 24 is preferably of the shaded-pole type having (FIGURE 11) an armature 62 and field coils 63 shading coils 64 and 65. One side of the field coil 63 is connected to a line 66 running through the connector 67 to the junction box 70 where it is connected to the common conductor 71. The other side of the field coil 63 is connected to a line 72 which runs through the connector 67 to the switch 50. The switch 50 has a group of poles a, b and c, the movable arm 73 being arranged to interconnect the poles a and b or a and c. The conductor 72 is connected to the center pole a. The arm 73 is actuated by the operating lever 51. In the position of the arm 73 as shown, the conductor 72 is connected to the conductor 74 running to the junction box 70 where it is connected to a power line 75. When the movable contact 73 is moved to engage the poles a and b, the conductor 72 (running to the field coil 63) is connected to a line 76 running to the junction box where it is connected to a power line 80. The power lines 75 and 80 are alternatively energized as will be explained later.

The conductor 81 which is common to the shading coils 64 and 65 runs via the connector 67 to the switch 50. The switch has another set of poles d, e and f. The movable arm 77 is adapted to interconnect the poles d and e or d and f and is connected to the lever 51 and operated at the same time as the arm 73. The conductor 81 is connected to the center pole d. The other side of the shading coil 64 is connected by the conductor 82 going through the connector 67 to the pole e, and the other side of the coil 65 is connected by the conductor 83 going through the connector 67 to the pole f. In the position of the arm 77 as shown the shading coil 65 is operative to cause the armature 62 to rotate in one direction, namely, to move the marker M up. When the arm 77 connects the poles d and e, the coil 64 is operative to cause opposite rotation and move the marker down.

Preferably the unit has a heater element 85 which as seen in FIGURE 1 is mounted on one side of the housing 1. A conductor 86 runs to the junction box where it is connected to the common conductor 71. The conductor 90 from the other side of the heater element runs to the thermostat 91 which is in turn connected by a conductor 92 running to the junction box where it is connected to a power line 93. The heater element is operated during the winter months to prevent freezing.

The lines 71, 75, 80 and 93 from the junction box are

adapted to be connected by external conduits (C-1, C-2 or C-3) to a master power supply. The conductor 71 is connected to a common conductor in the power supply. The conductor 93 is connected to a power source in the supply which supplies power for the heater element 85. The conductor 75 is connected to a timing mechanism in the power supply which will energize the line at certain periods. As will be explained later on, the energizing of this line is for use in moving the marker up to its operative position. The line 80 is interconnected to a timer in the power supply and, as will be apparent later, energizing of this line is for use in moving the marker to its down or inoperative position.

In explaining the operation of the elevating mechanism it will be assumed that the marker has just reached its up or operative position and the components are in the position shown in FIGURES 2 and 6 with a substantial portion of the marker being exterior to the housing.

When the timing mechanism in the power supply energizes the line 75 (or the line could be energized manually) power is supplied via the conductor 74, poles *a* and *c* and conductor 72 to the field coil 63. The shading coils 65 are shorted by the arm 77 interconnecting the poles *d* and *f* and the field coil 64 is inoperative because the poles *d* and *e* are disconnected. The shading coil 65 then operates to cause the rotor 62 to rotate in a direction so as to cause the drive bar and marker to move down. The downward movement continues until such time as the drive bar engages the stud 61 and trips the switch 50. At this time the arm 73 opens the connection between the poles *a* and *c* so as to deenergize the field coil 63 and the arm 74 opens the contact between the poles *e* and *f* to de-short-circuit the shading coil 65. At this time the arm 73 interconnects the poles *a* and *b* and the arm 77 interconnects the poles *d* and *e*. The timer in the power supply energizes the line 75 for a time sufficient for the down motion of the marker to be completed and then the line 75 is deenergized. In the down or inoperative position substantially all of the marker is disposed within the housing.

When it is desired to elevate the marker, the timer in the power supply energizes the line 80. The arm 73 (connecting the poles *a* and *b*) causes the field coil 63 to become energized. The arm 77 (connecting the poles *d* and *e*) short-circuits the shading coil 64 and causes the motor to turn in a direction to move the drive bar and marker to the up position. This motion continues until the drive bar engages the stud 60. At this time the movable arms 73 and 74 move to the positions shown in the full lines of FIGURE 11 so that the upward motion stops. When the marker is to be moved down the cycle is repeated as explained above.

As indicated in FIGURES 1, 3 and 4, the conduits C-1, C-2 and C-3 are generally rectangular in cross section and carry the appropriate number of conductors which in this case is four. The conduit C-1 shown in FIGURE 1 enters the housing 1 via the channel 100 cut in the thickened section 2. The portion 7 of the cover has a tab 101 which bears on the conduit pressing the same firm against the bottom of the channel. On the inside of the housing the conduit is shaped to receive a hose-type clamp 102 which prevents the conduit from moving out of the housing. The conduit C-2 as shown in FIGURE 1 is also rectangular in shape but is somewhat greater in height so that the upper surface 103 is flush with the street level L. A clamp similar to the clamp 102 is provided on the inside. It will be noted that the conduit is disposed in the channel 105 in the top portion 2 of the housing and that the cover part 6 has a tab 106 which presses down on the conduit and holds the same firm against the bottom of the channel.

The conduit C-2 may run back to the power supply where the conductors 71, 93, 75 and 80 are appropriately connected. On the inside of the housing the conductors 71, 93, 75 and 80 in the conduit C-2 run to the junction

box 70 where they are connected as heretofore described. The conductors 71', 93', 75' and 80' in the conduit C-1 also run to the junction box where they are connected to the conductors 71, 93, 75 and 80. The conductors 71', 93', 75' and 80', of course, run to the next adjacent unit.

In FIGURES 12 and 13 I have shown an embodiment of the invention wherein the elevating mechanism is of the hydraulic type. The unit is constructed similar to the unit of FIGURE 1 having a housing 110, cover 111, a central support member 112 and a flexible marker 113. The foot 115 of the marker is used to connect the same with the elevating mechanism. On the bottom of the foot 115 there is a drive bar 116 which is secured to the foot 115 by the upper and lower washers 120 and 121 all held in tight engagement by the nut and bolt arrangements 121c. The bolts 121a and 121b (FIGURE 12) are formed with hooks which hold the springs 122 and 123 fixed to the boss 124 on the bottom of the housing. As indicated the member 112 is disposed within the boss 124 and at the bottom there is a table 125. The table, the support member and the boss are apertured to receive bolts such as indicated at 126 fastened to the nuts 127 permanently attached to the inside of the table.

The function of the springs 122 and 123 is to pull the marker and drive bar to the down position as shown, the farthestmost down position of the drive bar being limited with its engagement with the bottom of the slots 130 and 131 in the support 112. Alternatively, a band extending around the support near the bottom of the slots and adjustably secured to the support may serve as a stop for the drive bar.

On top of the table 125 is an expansible bellows 132. The bellows is adapted to receive air through the connector 133 in the table, the line 134, connector 135 on the bottom of the housing, the air line 136 in the bottom of the housing and the connector 140 leading to the solenoid-operated air valve 141. When air is admitted to the bellows the same expands which pushes the drive bar and the marker up to the position shown in the dotted lines. When the air pressure is relieved, the springs pull the marker down to the position shown in full lines.

While it is now shown, it will be understood that there are suitable air and electric lines coming into the housing and leading to the valve 141. These lines are connected to adjacent units or run back to a central supply station.

Each of the units described above may be adapted for change in the area level, for example, where the level is raised by repaving. In such instances the cover is replaced by one of appropriately greater thickness, or an adaptor is secured to the cover. Where such a change is made, appropriate adjustments are made in the elevating mechanism to take care of the change in marker travel.

I claim:

1. A traffic control device comprising: a housing to be recessed into the area to be controlled with the top of the housing substantially flush with the area surface, the housing having a circular aperture formed in said top; a support member mounted in said housing and formed with a top surface extending into said aperture, said aperture and the top of the support forming a circular slot, the support being formed with a pair of oppositely disposed slots extending in a direction from the top to the bottom of said housing; a tubular-shaped, flexible marker surrounding said support and extending through said slot outwardly of the housing and terminating in a head portion; a drive bar mounted in said slots for movement therealong; means connecting said marker with said drive bar for movement therewith; a rotatable screw extending along said support and connected with said drive bar, rotation of the screw causing movement of the drive bar;

and a motor connected with said screw for rotating the same.

2. A traffic control device comprising: a housing to be recessed into the area to be controlled with the top of the housing substantially flush with the area surface, the housing having a circular aperture formed in said top; a cylindrically-shaped support member mounted in said housing and formed with a top surface extending into said aperture, said aperture and the top of the support forming a circular slot, the support being formed with a pair of oppositely disposed slots extending in a direction from the top to the bottom of said housing; a tubular-shaped, flexible marker surrounding said support and extending through said slot outwardly of the housing and terminating in a head portion, the bottom of said marker having an annular ring-like section formed on the outer periphery thereof, the section having two oppositely disposed channels; a retainer on the bottom of said section and having a pair of raised portions fitting into said channels; washer means on the top of said section; a drive bar mounted in the slots of said support for movement therealong and extending through said raised portions; fastening means interconnecting said washer means, said section, said retainer and said drive bar; a rotatable screw extending along said support and connected with said drive bar, rotation of the screw causing movement of the drive bar; and a motor connected with said screw for rotating the same.

3. A traffic control device comprising: a housing to be recessed into the area to be controlled with the top of the housing substantially flush with the area surface, the housing having an aperture formed in said top; a support member in said housing and rigidly connected therewith, one end of the support extending into said aperture, said one end and said aperture cooperating to form an annular slot; a hollow, annular-shaped marker disposed over said support and extending into said slot and having a head portion; and drive mechanism connected with said support and with said marker to move the marker through said slot to an operative position wherein a substantial portion of the marker is exterior to the housing and to move the marker through said slot to an inoperative position wherein substantially all of said marker is disposed within said housing and in the inoperative position, the head of the marker being closely adjacent said support end so that the end provides a support for the head when the marker is in inoperative position.

4. A construction in accordance with claim 3 wherein said head has an annular shoulder engaging the top of said housing when said marker is in the inoperative position, the engagement forming a weather seal for said slot.

5. A construction in accordance with claim 3 wherein said marker has an annular shoulder which engages the underside of the top of said housing when the marker is in operative position, the engagement forming a weather seal for said slot.

6. A traffic control device comprising: a housing to be recessed into the area to be controlled with the top of the housing substantially flush with the area surface, the housing being formed with an opening on said top; a hollow flexible marker extending into said opening and having a head portion, the opening accommodating back and forth motion of the marker; means mounting said marker in said housing including drive mechanism to move the marker to an operative position wherein a substantial portion of the marker is exterior to the housing and to move the marker to an inoperative position wherein substantially all of said marker is disposed within said housing; and a support fixedly connected to said housing and disposed inside of said marker so that the marker is in telescopic relationship therewith and having a portion positioned closely adjacent said opening and engaging the bottom of said head when the marker is in the inoperative position to provide a support for the head and to

carry the load of a vehicle engaging said device in the area of said opening.

7. A construction in accordance with claim 6 wherein said head has an annular shoulder engaging the top of said housing when said marker is in the inoperative position, the engagement forming a weather seal for said opening.

8. A construction in accordance with claim 6 wherein said marker has an annular shoulder which engages the underside of the top of said housing when the marker is in operative position, the engagement forming a weather seal for said opening.

9. A traffic control device comprising: a housing having an aperture formed in the top thereof; a support member mounted in said housing and formed with a top surface extending adjacent said aperture, said aperture and the top of the support forming a marker slot, the support being formed with a pair of oppositely disposed slots extending in a direction from the top to the bottom of said housing; a flexible marker on said support and extending through said marker slot; a drive bar mounted in said slots for movement therealong; means connecting said marker with said drive bar for movement therewith; a rotatable screw extending along said support and connected with said drive bar, rotation of the screw causing movement of the drive bar; and a motor connected with said screw for rotating the same.

10. A traffic control device comprising: a housing having an aperture formed in said top; a support member mounted in said housing and formed with a top surface extending adjacent said aperture, said aperture and the top of the support forming a marker slot and the support being formed with a pair of oppositely disposed slots extending in a direction from the top to the bottom of said housing; a flexible marker on said support and extending through said marker slot, the bottom of said marker having an annular ring-like section formed on the outer periphery thereof, the section having two oppositely disposed channels; a retainer on the bottom of said section and having a pair of raised portions fitting into said channels; washer means on the top of said section; a drive bar mounted in the slots of said support for movement therealong and extending through said raised portions; fastening means interconnecting said washer means, said section, said retainer and said drive bar; a rotatable screw extending along said support and connected with said drive bar, rotation of the screw causing movement of the drive bar; and a motor connected with said screw for rotating the same.

11. A traffic control device comprising: a housing, the housing being formed with an opening at the top thereof; a hollow flexible marker positioned for back and forth movement through said opening; drive mechanism connected with said housing and with said marker to move the marker through said opening to an operative position wherein a substantial portion of the marker is exterior to the housing and to an inoperative position wherein substantially all of the marker is disposed within said housing; and support means fixedly connected with said housing and having a portion extending into the interior of said marker and across said opening when the marker is in either of said positions and forming a support to carry the load of a vehicle engaging said device in the area of said opening when the marker is in either of said positions.

12. A traffic control device comprising: a housing having an aperture formed at the top thereof; means forming a fixed support mounted in said housing and having a top surface extending adjacent said aperture, said aperture and the top of said support forming a marker slot; a hollow flexible marker on said support in telescopic relationship therewith and extending through said marker slot; and drive mechanism carried in part by said flexible marker and in part by said support to move the marker through said marker slot to an operative position wherein a substantial portion of the marker

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is exterior to the housing and to an inoperative position wherein substantially all of the marker is disposed within said housing, said support forming a means to carry the load of a vehicle engaging said device in the area of said marker slot when the marker is in either of said positions. 5

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