

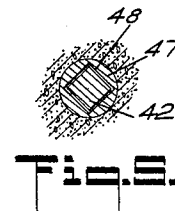
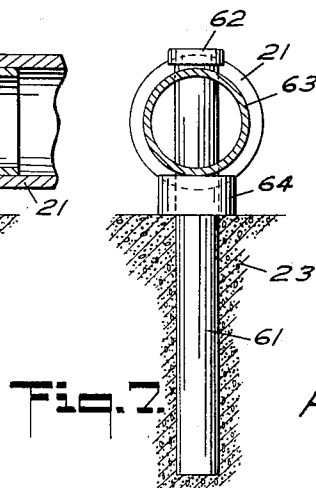
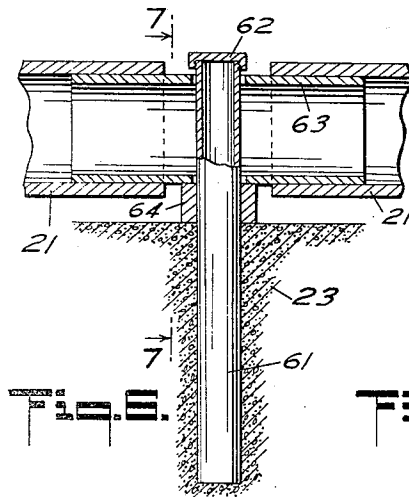
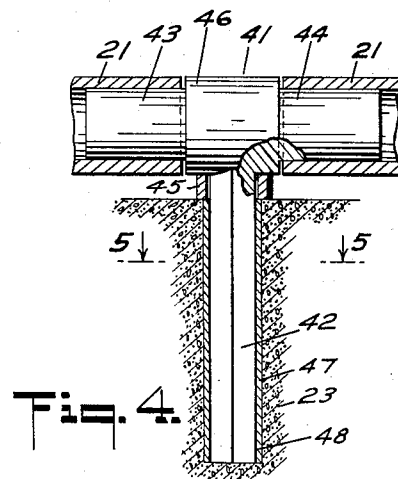
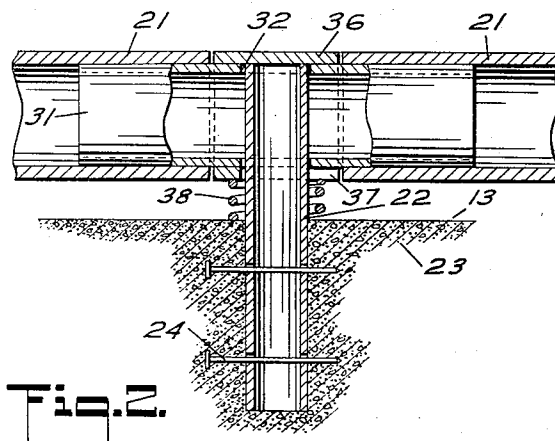
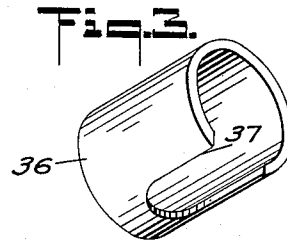
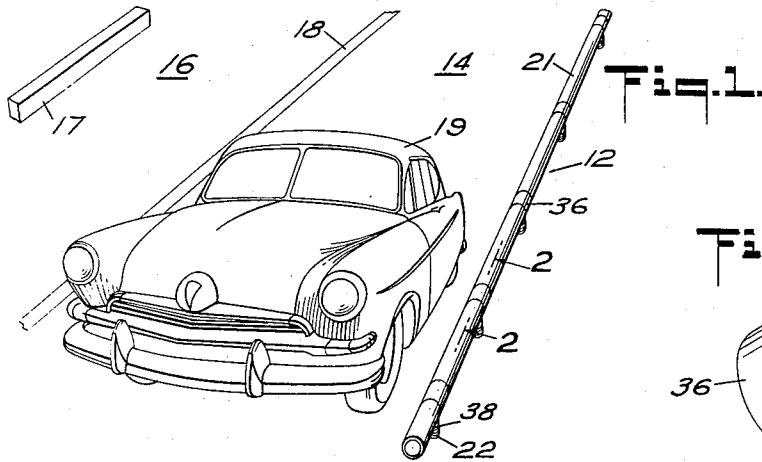
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DIVIDING APPARATUS FOR HIGHWAY LANES AND THE LIKE

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2,927,513

DIVIDING APPARATUS FOR HIGHWAY LANES AND THE LIKE

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2 Claims. (Cl. 94—1.5)

This invention relates to highway or street construction, and more particularly towards improved means for clearly defining the lanes of such a highway or street.

As is well known in highway construction, some means are practically always utilized to divide the roadway so as to make the lanes thereof readily apparent to the vehicle operators. This is especially important in positively defining the center of the roadway in order to minimize head-on collisions, and in conventional construction, several different ways of establishing a center dividing strip have been widely used. For example, some roadways are merely painted with one or more strips to mark the center thereof. On more heavily travelled high-speed freeways and the like, it is not at all uncommon to separate the opposed lanes of travel with a relatively wide parkway or unpaved area, or in some instances by constructing a fence paralleling the lanes. The various disadvantages and shortcomings of all of the foregoing systems are readily apparent from even the most simple analysis of highway accidents and fatality statistics. It is most obvious that the use of a painted division marked affords no protection whatsoever against driver error or mechanical failure of the vehicle. While a highway provided with a dividing strip offers some advantages, in many instances, sufficient area is not available to construct the same. Also the maximum economical feasible width of such a strip might be in the neighborhood of twenty feet, and with a vehicle travelling at sixty miles per hour, it would take only one-quarter of a second to cross the strip. The construction of a dividing fence has cut down on accidents in some localities, but this arrangement also possesses certain undesirable features. By way of example, if the fence is built sufficiently strong to withstand the terrific impact load of a high speed vehicle, the cost becomes extremely high. Also the necessary height of the fence detracts from the appearance of the highway and results in substantial damage to a vehicle which might just barely sideswipe the same.

Accordingly, it is an object of the present invention to provide means for defining a division between the lanes of a highway which will positively, yet simply, prevent a vehicle from crossing from one lane to the other.

Another object or feature of my invention is to provide apparatus of the character described which takes up a minimum width of the roadway, and which may be also constructed of a minimum height without danger of a vehicle "jumping" the same.

A further object of the invention is to provide lane division apparatus of the above type in which means are provided for preventing excessive damage to a vehicle accidentally striking the same.

Yet another object of my invention is to provide apparatus of the type referred to which is inexpensive, which may be rapidly installed in place, and which requires no maintenance difficulties or expense.

The invention possesses other objects and features of advantages, some of which, with the foregoing, will be set forth in the following description of the preferred form of

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the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a perspective view of an automobile on a highway equipped with the dividing apparatus of my invention.

Figure 2 is a longitudinal sectional view taken substantially in the plane indicated by line 2—2 of Figure 1.

Figure 3 is a perspective view of a portion of the apparatus shown in Figure 2.

Figure 4 is a view similar to Figure 2, illustrating a modified form of construction.

Figure 5 is a sectional view taken substantially in the plane 5—5 of Figure 4.

Figure 6 is a longitudinal sectional view of another embodiment of my invention.

Figure 7 is an end elevational view taken substantially in the plane indicated by the line 7—7 of Figure 6.

With particular reference to Figures 1 and 2 of the drawing, the dividing apparatus of the present invention, generally indicated by the numeral 12, is shown in operative position along the centerline of a roadway 13, the latter having two lanes 14 and 16 for traffic moving in one direction on one side of the apparatus 12, and two lanes (not shown) on the other side of the apparatus for traffic moving in the opposite direction. A curb 17 is indicated as a boundary for the outer lane 16, while a painted strip 18 forms a means of distinguishing the lanes 14 and 16. It will be appreciated that when a vehicle 19 is driving on the inner lane 14, the apparatus 12 forms a barrier for preventing the vehicle from passing over the center of the roadway and into the adjacent lane of traffic which is moving in the opposite direction.

The apparatus 12 includes a plurality of longitudinally extending and horizontally disposed rail elements such as pipe sections 21, the latter being supported at spaced intervals by vertical standards, also shown as pipes 22, in order to position the rails 21 in spaced relation to the roadway 13 for a purpose to be presently explained. Pipe sections are preferably utilized for both the vertical and horizontal portions of my apparatus, as such sections offer maximum strength for a minimum cost. The lower ends of pipes 22 are preferably set in concrete 23 which forms the roadway, and if desired, nails 24 or other elements traversing the pipes may be used to more securely anchor the vertical standards in position.

If the horizontal pipes 21 were fixedly secured to pipes 22 and disposed closely adjacent the roadway surface, a vehicle travelling at high speeds would have little difficulty in hurdling the barrier. On the other hand, if the pipes 22 were raised sufficiently to prevent the foregoing while the apparatus might be effective in preventing a vehicle from crossing the center of the highway, it would result in severe damage to a vehicle even lightly contacting the same. Therefore, as an important feature of my invention, the pipes 21 are positioned sufficiently low to prevent damage to the body of a vehicle striking the same, yet so arranged to prevent the vehicle tires from riding over the pipes.

The foregoing is preferably accomplished by having each of the pipe sections 21 independently rotatable about their vertical supports 22, so that upon engagement of the pipes with the rotating wheel or wheels of a vehicle, counter rotary movement will be imparted to the pipes, and the lack of traction will prevent the vehicle from crossing over the pipes. By way of example, I have found that by using eight inch pipe for the rails 21 and spacing the latter approximately one inch from the road-

way to clear any debris, and permit proper drainage under the pipes only the bottom of the tire and wheel rim may engage the rails. Mounting of the rail sections on the standards to accomplish the foregoing is preferably effected by using a sleeve 31 suitably transversely apertured at diametrically opposed points as shown at 32 to slide over the vertical pipe 22 and form therewith a generally T-shaped member. The respective ends of sleeve 31 are aligned with the centerline of the roadway for a distance of several inches, and as will be seen in Figure 2, the respective ends of the pipe rails 21 are telescopically journaled on such ends for free rotation thereon. It should be noted that as a substantial axial gap exists between the respective ends of the pipes 21, I prefer to substantially eliminate this gap by use of a cylindrical collar 36, best seen in Figure 3, which encompasses the central portion of sleeve 31, and which is provided with an axial slot 37 to permit passage of the collar past the standard 22. In constructing the dividing apparatus, it may be necessary to tilt each pipe rail prior to final installation, and it will of course be understood that collar 36 is slid into place after a single rail has been placed on sleeve 31. Thereafter, the other rail may be installed, with such operations continuing along each standard.

Means are provided for supporting the sleeve 31, and consequently the rails 21, in the previously mentioned position, and as indicated in Figure 2, such support may comprise a compression spring 38, surrounding pipe 22 and extending between the roadway surface and either sleeve 31 or collar 36. The spring will also serve to resiliently support the entire structure and serve to absorb any vertical components of impact loads imparted to the rails.

In Figures 4 and 5, a slightly modified arrangement is disclosed for supporting the pipe rails 21 above the roadway surface. In this embodiment of the invention, a generally solid T-shaped member 41 is provided, the leg 42 thereof extending removably into a sleeve 47 anchored in the roadway. The oppositely extending arms 43 and 44 serve as journal mounting for the rails, while a radially enlarged central portion 46 has an outer diameter substantially the same as that of the pipe rails so as to generally fill the previously mentioned gap between the ends of the respective rails. In view of the fact that a substantial weight is carried by the member 41, it may be desirable to provide an additional support in the form of a collar 45, having a generally diamond or other irregularly shaped bore 48 to encompass the similarly shaped leg 42 of the member, such irregular shapes serving to prevent any relative rotative movement therebetween. One of the primary advantages of this type of construction is the minimum of parts required, and the relative ease of installation.

A still further embodiment of my invention is shown in Figures 6 and 7 of the drawing which in many respects is similar to that shown in Figure 2. Here it will be noted that the vertical pipe standard 61 extends vertically above the upper surface of the rails 21, and as no collar is utilized, a cap 62 is threaded to the upper end of the pipe 61 to prevent water from accumulating in the same. A horizontal sleeve 63 is positioned on pipe 61 to rotatably support the pipe rails, and a collar 64 encompassing pipe 61 supports the bearing sleeve in spaced relation to the roadway. By eliminating the collar 36, the respective rail sections are capable of a limited degree of axial movement, as well as rotary movement, thereby lending further flexibility to the apparatus. However, it will be noted that the length of the sleeve members in all of the embodiments will not permit accidental dislocation of any of the rail sections.

From the foregoing description, the construction and mode of operation of the apparatus of this invention should be apparent. It will be appreciated that various combinations of the exemplary embodiments illustrated herein, as well as other routine changes or modifications, could be adopted without departing from the spirit and scope of the invention. It will further be understood that there is sufficient tolerance between the respective parts of the apparatus to permit assembly and disassembly of the parts.

I claim:

1. Apparatus of the character described including a plurality of vertical post members, a cylindrical member having a transverse bore therethrough, slidably mounted on each of said post members at the upper end of the latter means for supporting said cylindrical member in spaced relation to a roadway surface, a plurality of tubular rail members having a diameter greater than the diameter of said post members journaled on said cylindrical members, and filler means overlying said post members and positioned between adjacent rail members whereby a substantially continuous and flush rail is provided.

2. Apparatus as set forth in claim 1 in which said filler means includes a sleeve-like element having an axial slot therein, said sleeve element encompassing the central portion of said cylindrical member with the slot thereof receiving said post member, and the ends of said sleeve element being disposed adjacent the opposed ends of respective rail members.

References Cited in the file of this patent

UNITED STATES PATENTS

1,969,845	Hick	Aug. 14, 1934
2,150,651	Ewing	Mar. 14, 1939
2,153,392	Robertson	Apr. 4, 1939