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ROADWAY MARKING

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FIG. 1

FIG. 2

FIG. 3

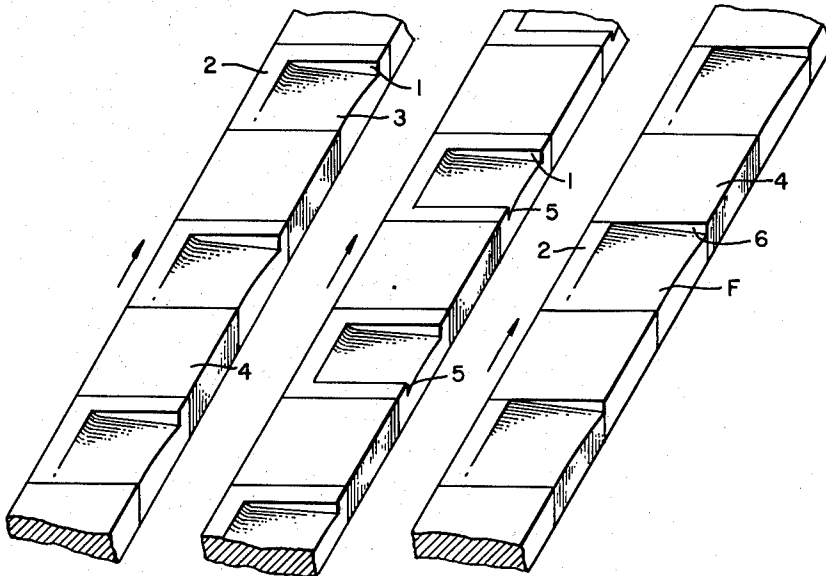
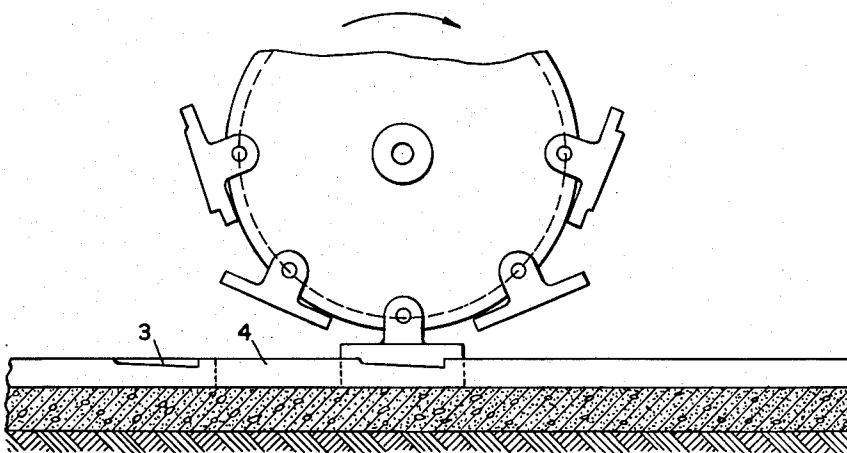


FIG. 4



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ROADWAY MARKING

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The present invention concerns the execution and production of traversible light coloured edge marking strips in hardenable masses, preferably concrete, wherein the complete curb stone does not cause any kind of obstruction on the introduction of mechanised snow clearing devices or of motor mowers.

It is known that road construction for modern fast traffic roads is greatly in arrears relative to the rapidly increasing number of automotive vehicles. It is therefore decisively important that roads should be rapidly constructed, should be capable of high performance, and should guarantee the greatest possible safety for traffic, especially in the dark. Such roads should not only be capable of being produced economically but also capable of being maintained economically.

An essential member for the construction of fast traffic roads and for the security of the traffic is the curb stone.

The use of light coloured edge marking strips in concrete stones at the edge of fast traffic roads is known. Concrete curb stones having vertical reflecting surfaces, in which the incident head light of the vehicle causes illumination of these reflecting surfaces are also known. Furthermore, it is also known to mark the left and right roadway edges differently, for example with the help of marking posts which stand on the two sides of the roadway and have differing spacings or are provided with differently reflecting bodies.

The use of boundary posts or of curb stones which have edges or lugs projecting upwardly out of the plane of the roadway covering, is not, however, to be recommended, since the introduction of snow ploughs or of motor mowers is impossible or at least made very difficult. Even relatively flat curb stones with edges projecting to a small extent above the plane of the roadway are moved out of the ground or sheared off by snow clearing apparatus. In most cases the clearing apparatus is considerably damaged.

An object of the invention is to provide a very economical and relatively rapid method of production of edge marking strips, so that favourable weather conditions may be best utilised in the construction of roads, without requiring special protective devices against atmospheric influences.

Another object of the present invention is to provide as an article of manufacture a pre-cast concrete block adapted to form a curbstone at a carriageway edge, said block presenting an upper surface adapted to lie flush with said carriageway edge and at least one substantially vertical reflecting surface extending downwardly from said upper surface.

Yet another object of the invention is to provide an arrangement of edge marking strips in a hardenable mass for automotive vehicle fast traffic roads, in which each strip comprises a plurality of concrete marking bodies, having approximately vertically extending reflecting surfaces, which act in such a way that they are illuminated by irradiation by means of the headlights of the vehicle, the reflecting surfaces extending below the plane of the roadway, so that their upper edges do not project above the surface of the roadway.

The strips may be prefabricated or constructed in situ. In the latter case a mass is introduced into a correspond-

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ingly profiled trench or longitudinally extending mould boxes with fixed bottoms and then the desired upper surface shape is moulded in by means of a pressing ram moved stepwise and, if necessary coupled with a vibrator, whereupon the mass hardens; any laterally emerging pressed out mass is separated by means of vertical knives. The pressing rams with the vibrator may be fixed in a simple manner to the wheel crown of a motor vehicle. Moreover the lateral cutting knives may be fixed on the vehicle, so that the production of the surface of the marking strip is effected continuously in a single pass. The application on the plastic stone surface of the mass of a separating layer of paper, rubber foil or like is to be recommended in order to prevent sticking of the pressing rams.

Each marking body or beam comprising a plurality of marking bodies, is transported, as a unitary completed building part, to the site of prepared beds of high load bearing capacity. Each bed is made in such a way that it is non-yielding in the vertical direction. The finished marking body may be provided with reflecting surfaces arranged relative to one another in such a way that there is produced not only a continuous light edge strip but also a reflecting surface which occurs on the edge strip at predetermined intervals extending approximately vertically, which vertical surfaces are illuminated by means of the incident headlights of the vehicles and which reflect this illumination.

The reflecting surfaces are worked in the shaped mass of artificial stone or the edge strip, in the manufacture thereof and, in fact, in such a way that the projections having the reflecting surfaces or edges of the moulded blank or of the individual element do not project above the plane of a roadway side edge zone of these parts or above the plane of the roadway which extends flush with the edge zone.

It has been shown that the vehicle headlights stand so high and the viewing angle of the vehicle driver who is sitting relatively high up is so large that the reflecting surfaces extending below the plane of the roadway are fully illuminated and can be recognised well. A continuous margin at the side of the roadway of the assembled marking elements may facilitate the assembling and may simultaneously form a guiding rail for the filling machine in the later manufacture of the roadway or of the road surface, so that the previously customary rail guides or iron guiding rails are superfluous.

The surfaces of the individual marking bodies which are assembled into edge marking and fixing strips for the roadway edges are outside the road side edge strip and are bevelled off outside the roadside edge strips and outside the projections having the reflecting surfaces and are preferably of curved shape so that the spatial angle below each reflecting surface is automatically maintained clean by rain water running away.

Under certain circumstances it is advantageous with particular section guides to use units of the edge strip which have differently reflecting surfaces opposed to one another, if desired, differing in shapes and colours, which should give the opposite traffic rapid and fully effective orientation. The use of light coloured bodies which are completely plane and which have no reflecting surfaces, in combination with the first described marking bodies formed with reflecting surfaces, is advantageous under certain conditions. Completely plane constructional parts are capable of being produced more cheaply. Their use permits the maintenance of larger spacings of the reflecting surfaces and gives the driver of the vehicle in darkness timely warning with reference to steering on bends, climbing and descending sections.

The above brief description, as well as other objects,

features and advantages of the present invention, will be more fully understood by reference to the following detailed description of several illustrative embodiments, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a diagrammatic perspective view of an edge marking strip comprising individual marking bodies, with one reflecting surface on each body, interposed between bodies having no reflecting surfaces, to form a continuous roadway marking strip;

FIG. 2 is a similar perspective view in which there are individual marking bodies with reflecting edges interposed between plain bodies, wherein the elements provided with reflecting surfaces have two reflecting surfaces disposed opposite to one another;

FIG. 3 is a diagrammatic perspective view of an edge marking strip, in which each alternate body is flat and has reflecting surfaces formed thereon, these elements being interposed between elements having inclined surfaces which latter reveal such reflecting surfaces; and

FIG. 4 is a diagrammatic elevation of a rammer, such rammer having a plurality of step-wise advancing rams adapted to produce reflecting surfaces in a continuous marking strip initially consisting of an amorphous mass.

A plate-shaped marking body (FIG. 1), having the reflecting surface 1, has, at the roadway side, a continuous relatively broad margin 2 which is used as a guide rail in the finished marking strip and facilitates the assembly of individual marking bodies. The upper surface of each individual plate-shaped marking body, between the margin 2 and the reflecting surface 1, is curved as shown at 3. As a result the rain water runs in a direction towards the reflecting surface and the spatial angle between the reflecting surface 1 and the curved surface 3 is kept unobstructed in this manner.

Completely plain elements 4 are interposed between the marking bodies containing the reflecting surfaces. Moreover, several such plain elements could be interposed for enlargement of the spacing between the reflecting surfaces.

FIG. 2 shows the construction of plate-shaped marking bodies provided with two reflecting surfaces, whereby the reflecting surfaces can be seen by the traffic in the opposite direction; an appropriate counter-reflecting surface 5 is arranged opposite to the reflecting surface 1.

It is evident from FIG. 3 that the reflecting surfaces could also be produced in such a manner that the outstanding lateral face of the appropriate plain element is utilized.

In this case the reflecting surface 6 is formed on the side edges of the plain element 4 and the plate-shaped marking body is provided with margin 2 having a curved surface 7.

The individual elements are placed in correspondingly prepared beds for example in gravel beds mortared with bitumen on a non-yielding foundation.

Under certain circumstances it is advantageous to avoid prefabricated parts and to construct the edge marking strips in situ in a continuous process. In such cases the hardenable mass, in a manner known per se, is arranged in trench like depressions and then, by the use of pressing rams, the desired surface profiling is worked into the still plastic mass.

For this purpose, pressing rams are used which advance stepwise as shown in FIG. 4, these being fixed to a wheel body in operative connection with a motor vehicle. In this way there is the possibility, by means of alteration of the pressing tool, of modifying the clearances between

the individual slabs with reflecting surfaces and also of adjusting the profiling if necessary, to the particular road conditions.

In this case also the concrete mass is arranged in appropriately prepared non-yielding foundations. When pressing rams are used the edge marking strip is produced in a continuous pass so that there are no individual elements.

The individual elements shown in FIGS. 1, 2 and 3 could advantageously be assembled into a beam of completed parts, for example, so that in each case five individual elements together yield one finished unit. The transportation of such units from the place where they are made to the building site is possible without more ado and the laying, at the site and in position, is thereby simplified.

It can also be seen from FIGS. 1 to 3 that the edge marking elements do not have upwardly projecting edges and the roadway plane extends flush with the edge strips.

While preferred embodiments of the invention have been shown and described herein, it is obvious that numerous additions, changes and omissions may be made in the invention without departing from the spirit and scope thereof.

I claim:

1. In combination a roadway and a marking system comprising spaced indentations along at least one side edge of said roadway, said indentations having substantially vertical substantially wedge shaped reflecting surfaces facing the line of traffic, the lower surfaces of said indentations sloping downwardly and outwardly of the surface of said roadway and downwardly toward said reflecting surfaces, whereby surface drainage flows outwardly of said roadway and against said reflecting surfaces for self cleaning.

2. In a roadway marking system according to claim 1 wherein said indented edge comprises a series of blocks arranged end to end and at least some of said blocks being provided with said indentations.

3. In a system according to claim 2, wherein said indented blocks are provided with a U shape horizontal upper surface opening away from said roadway.

4. In a system according to claim 2, wherein said indented blocks are provided with a flat horizontal L shape upper surface extending along two edges thereof, including the edge adjacent the roadway.

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