

[54] **PRECAST OR EXTRUDED CENTRAL DIVIDERS FOR HIGH CHAIRS AND CURBS FOR ROAD CONSTRUCTION**

[76] Inventor: **Alfred Schwarz**, 12½-578 Agnes St., Winnipeg, Manitoba, Canada

[22] Filed: **Jan. 30, 1973**

[21] Appl. No.: **328,143**

[30] **Foreign Application Priority Data**

Feb. 16, 1972 Great Britain..... 7142/72

[52] U.S. Cl..... **404/70, 404/7, 404/17**

[51] Int. Cl..... **E01c 11/18**

[58] Field of Search..... 404/7, 6, 4, 70, 17, 18, 404/72, 82, 101, 135, 100, 106, 27, 119, 118; 52/294, 338

[56] **References Cited**

UNITED STATES PATENTS

68,971	9/1867	Fancher.....	404/7
413,846	10/1889	Chambers.....	404/119
895,243	8/1908	Davis.....	404/7
1,110,295	9/1914	Phillips.....	404/70

1,113,784	10/1914	Higman.....	404/7 X
1,435,618	11/1922	Newell.....	404/4
1,887,195	11/1932	De Joy.....	404/118
2,076,890	4/1937	Heltzel.....	404/101
3,037,433	6/1962	Maher.....	404/7
3,237,537	3/1966	Hutchings.....	404/70
3,272,096	9/1966	Lum.....	404/1

Primary Examiner—Nile C. Byers, Jr.

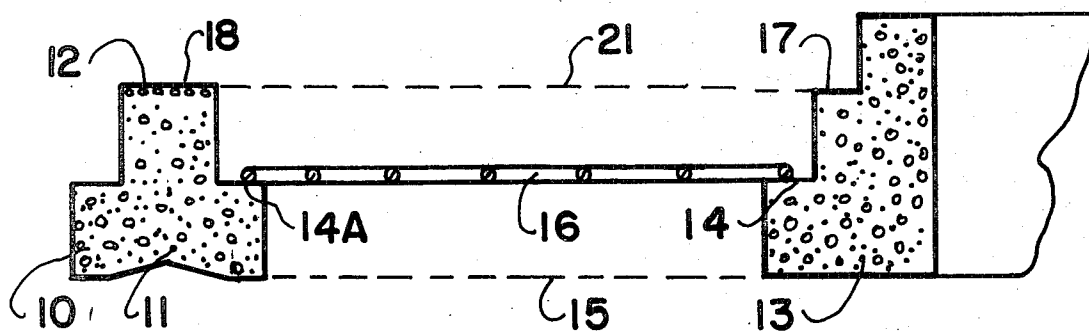
Attorney, Agent, or Firm—Stanley G. Ade

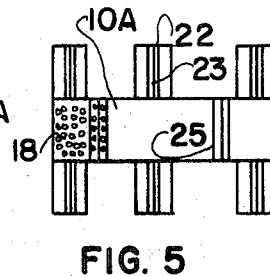
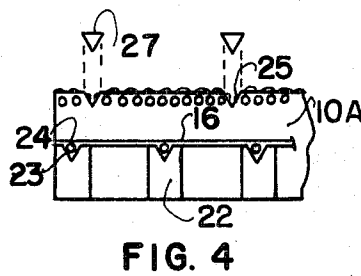
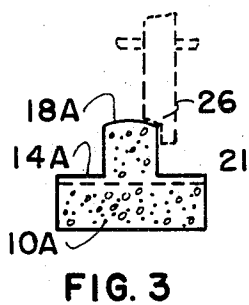
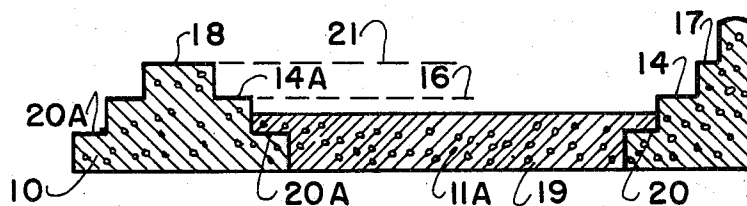
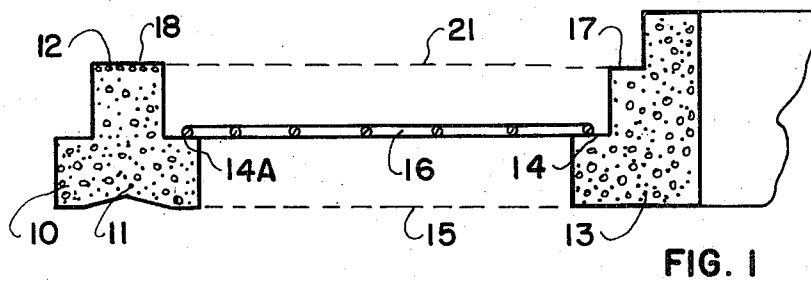
[57]

ABSTRACT

A central divider strip and a curb section are laid upon a prepared surface and are provided with outwardly extending ledges to support a mat of reinforcing steel spaced above the prepared surface. The upper sides of the divider strip and curb act as guide rails for a conventional road laying machine. The divider strip can be provided with reflective beads, luminescent dye or metal particles throughout the mix. The beads define the center line by reflecting the headlights of vehicles and the particles can be used for the detection of the center lines by electronic detection devices in the vehicle.

5 Claims, 5 Drawing Figures





PRECAST OR EXTRUDED CENTRAL DIVIDERS FOR HIGH CHAIRS AND CURBS FOR ROAD CONSTRUCTION

BACKGROUND OF THE INVENTION

This invention relates to new and useful improvements in dividers and the like for road construction.

Conventionally, insofar as concrete highways are concerned, curbs are formed either by forms or by a curb-laying machine whereupon a central rail is laid on the gravel or sand base. High chairs are placed on this base to support reinforcing steel spaced above the base surface. A concrete laying machine then lays the first road section between the rail and one curb and when this has set, the central rail is removed whereupon the second road section is laid between the inner edge of the first road section and the second curb. White lines or other dividing means are then painted on the road surface for traffic control. In relatively warm climates, intermittent reflective studs known as "cats' eyes" may be embedded after the road surface has been laid.

Alternatively, asphalt may be laid by a similar type of machine running on temporary rails, once again requiring a curb making machine and white lines, etc.

SUMMARY OF THE INVENTION

The present invention overcomes disadvantages attendant the use of conventional construction.

Primarily, it consists of a precast or extruded strip which is used as the divider strip and incorporates ledges upon which reinforcing steel may be rested thereby eliminating high chairs. A precast curb strip may also be used in conjunction with the divider strip manufactured in a similar manner and also incorporating ledges upon which the reinforcing steel may be rested. Once laid on the sand or gravel bed, the curb and divider strip may be used as the rails upon which the concrete or asphalt laying machine may run thus speeding up the process considerably. Furthermore, the divider strip may have incorporated therein, reflective beads, magnetic chips or the like thus eliminating the necessity for the installation of other dividing means. The divider strip may also use a concrete of a contrasting color to the finished surface thus giving a permanent divider line to the finished highway.

In relatively warm climates, the upper surface of the divider strip may be crowned so that it is proud of the finished highway and here again reflective beads or magnetic traffic control chips may be incorporated into the mixture eliminating forever periodic painting thus constituting savings in maintenance costs.

If the divider strip is made of the same material, different in colour only to the roadway, they become integral when finished. Alternatively, by coating the sides of the divider strip with asphalt or other expandable material, they can act as expansion joints for the finished roadway.

Another advantage of the present device is that the ledges supporting the reinforcing steel need not be continuous thus reducing the weight characteristics of the divider strip and/or curb if desired.

Another advantage resides in the fact that V-shaped notches may be formed in the portion of the divider strip which is proud of the finished highway, once again adding to the reflective value or characteristics of the divider strip inasmuch as intermittent bright patches will appear during night driving.

Another object of the invention is the reduction in cost in the manufacture of finished highways.

With the foregoing objects in view, and other sub objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an end view of a divider strip and curb strip with the reinforcing steel in position.

FIG. 2 is a view similar to FIG. 1, but modified to receive precast concrete slabs or, alternatively, wood or steel moulds, a construction usable in bridge construction and the like.

FIG. 3 is an end view of a modified divider strip showing a crown on the surface.

FIG. 4 is a side elevation of FIG. 3.

FIG. 5 is a plan view of FIG. 3.

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

Proceeding therefore to describe the invention in detail, reference character 10 illustrates a precast central divider strip preferably formed of concrete and having longitudinally extending reinforcing steel 11 incorporated therein. Also incorporated in at least the upper portion of the mix, is a plurality of reflective beads 12 with which may be incorporated, if desired, magnetic chips (not illustrated) for traffic control purposes.

Alternatively, this divider strip can be extruded into position at the site by one of several concrete extruding machines modified to produce the desired cross section.

Reference character 13 illustrates a precast curb section and both the curb section and the divider strip are provided with the shoulders or ledges 14 and 14A respectively, which are in horizontal alignment and the divider strip and curb strips are laid down upon a base of sand or gravel indicated by the line in phantom 15.

A reinforcing steel mesh or sheet 16 is then laid upon the ledges 14 and 14A which maintains it in spaced relationship to the base 15.

The curb strip 13 is provided with a further shoulder or ledge 17 which is in horizontal alignment with the upper surface 18 of the divider strip. This means that a conventional concrete or asphalt laying machine (not illustrated) may use the ledge 17 and the upper surface 18 as rails to move along and deposit the road forming material therebehind.

In FIG. 2, a modification has been shown which enables precast slabs 19 to be engaged upon shoulders 20 and 20A, said slabs being reinforced by longitudinally extending reinforcing iron 11A so that the slabs may be used to form a bridge or the like. Alternatively, the slabs 19 may be replaced with wood or metal forms (not illustrated) so that slabs can be poured therein.

The reinforcing wire or mat 16 may then be laid upon the ledges 14 and 14A and the finished road surface laid as hereinbefore described.

In relatively warm climates which do not require continual road scraping during the cold months, it is desir-

able that the divider strip be formed as shown in FIGS. 3, 4 and 5. Here the divider strip 10A is provided with a crowned upper surface 18A with the finished road surface being indicated by reference character 21. By the incorporation of reflective beads 12 as hereinbefore described, this forms a permanent divider strip which is slightly proud of the road surface.

For weight considerations, the shouldered portions 14A need not be continuous and are shown as intermittent abutments 22 in FIGS. 4 and 5. These abutments are preferably provided with notches 23 to receive the transverse members 24 of the reinforcing steel mats 16 thus preventing displacement during the concrete laying process.

It is also desirable that transverse V-notches 25 be formed in the crown surface and also provided with reflective beads thus giving an intermittent flashing indication during night driving due to the headlights of the car striking the inclined surfaces forming the V-notches.

In order to utilize the divider strip 12A for support of the road surface laying machine, the machine would preferably be provided with wheels shown in phantom in FIGS. 3 by reference character 26, having a flanged periphery to engage the curb surface and side of the upper portion of the divider strip. In this connection, it may be necessary to provide temporary plugs 27 which fit within the transverse V-notches 25 during laying operation. Alternatively, a plurality of wheels could be provided so that the machine is always supported upon the upper crowned surface at all times.

It should be noted that by coating the vertical sides of the various strips with bituminous asphalt or the like, expansion joints are provided between the strips and the road slab. This can either be applied manually or the precast sections can be dipped prior to installation.

By incorporating the metallic particles such as magnetic chips or iron oxide within the central strip, and curb, as well as at intersections, electronic warning devices in vehicles can be operated to warn the driver that he is approaching or crossing certain zones or markings which will assist in the development of automatic guiding systems.

Also, in urban areas the incorporation of such mate-

rial will enable blind persons, by use of a battery powered detector, to cross intersections and to facilitate identification thereof.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. In a road construction which includes a prepared base and a reinforcing steel mat; at least one curb section and a central divider strip on said base in spaced and parallel relationship one with the other, and means on said curb section and said divider strip to support the associated mat of reinforcing steel in spaced above relationship to said base, said means taking the form of longitudinally extending ledges formed on the inner side of said curb section and on the side of said divider strip facing said curb section.

2. The device according to claim 1 in which said curb section includes a further ledge above said first ledge stepped back from said first ledge to define the upper surface level of the finished road surface.

3. The device according to claim 2 which includes reflective beads incorporated in the upper surface of said divider strip.

4. The device according to claim 2 which includes electronically detectable metal particles in said divider strip.

5. A divider strip for concrete and bituminous roads which include a reinforcing steel mat, comprising in combination a longitudinally extending upper portion and a plurality of transverse spaced and parallel abutments formed on the upper side of said upper portion and extending from each side thereof thereby defining spaced and parallel shoulders for the support of the associated reinforcing steel mat, said curb section including a further ledge above said first ledge stepped back from said first ledge to define the upper surface level of the finished road surface.

* * * * *

50

55

60

65