

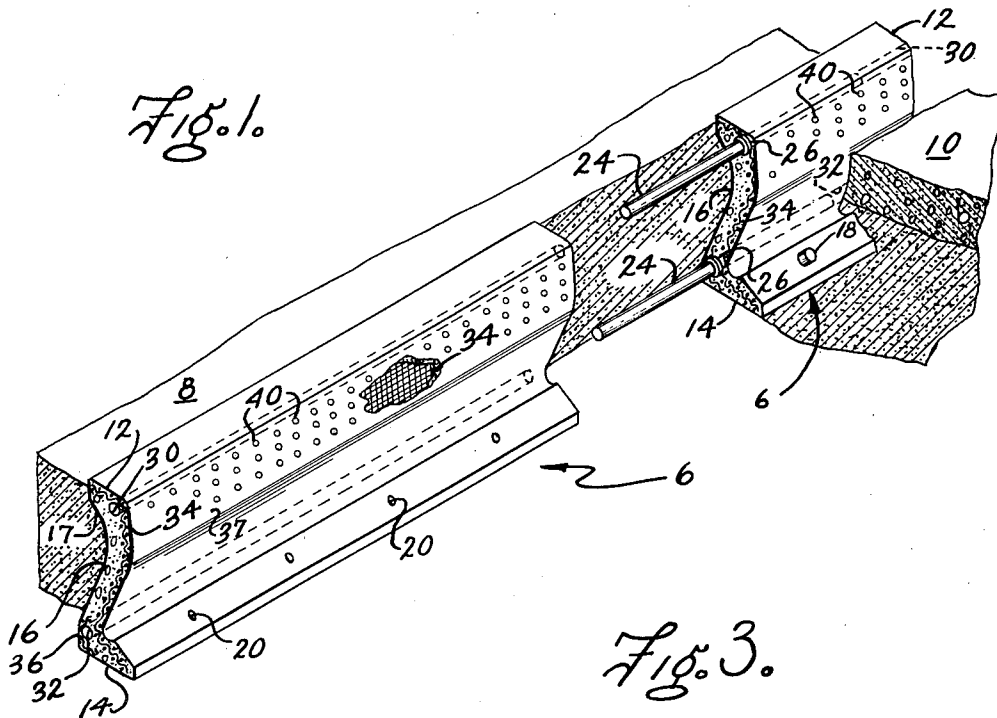
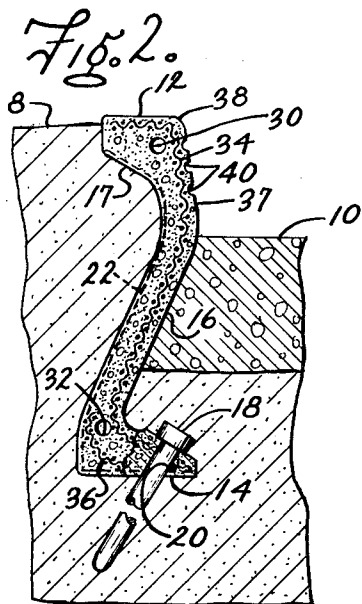
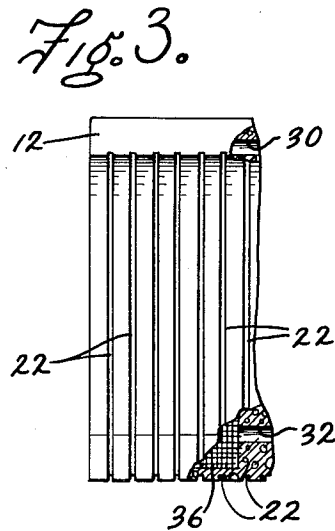
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PREFABRICATED CURB SECTIONS

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PREFABRICATED CURB SECTIONS
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This invention relates to prefabricated curb forming members and particularly to pre-cast concrete curb sections.

The principal object of this invention is to provide compact, lightweight, inexpensive curb sections which are easy to handle and install, but which possesses a high order of positional stability and holding power when disposed in curb forming relation along the edge of a road.

Another object of this invention is to provide a prefabricated curb section having a cross sectional shape which coacts with a roadbed to oppose forces tending to topple the section.

A further object of this invention is to provide curb sections which may be readily held in end-to-end relation to form curbing along a road and in which any of the sections may be easily cut into segments of any desired length.

Still another object of this invention is to provide curb sections of the above type having reflective surfaces which are located so as to be substantially impervious to wear by tire scuffing and the like.

The above and other objects and advantages of this invention will be apparent from the following description and with reference to the accompanying drawing in which:

FIG. 1 is a perspective view partly in section of curb sections embodying this invention;

FIG. 2 is an end elevational view of a curb section; and

FIG. 3 is a partial rear elevation of a curb section.

Referring in detail to the drawing, curb sections embodying this invention are shown generally at 6 in FIG. 1. The sections are preferably of pre-cast concrete construction. A sidewalk or tree belt is indicated at 8, and a roadbed is shown at 10. While the curb section 6 may be pre-cast to any desired length, it has been found suitable from the standpoint of compactness and weight to fabricate the sections in approximately 4 ft. lengths. The curb sections may be suitably of a height approximating that of granite type curb stones, that is, in the order of 15" or 16". The particular size of curb section may, of course, depend on the type of job which it is intended. The curb size should preferably be such as to permit relatively easy handling and manipulation.

Each curb section comprises upper and lower flanges 12 and 14 which extend laterally outward in opposite directions from the upper and lower ends respectively of an upstanding portion or web 16. The upper flange 12 extends outwardly of the upright portion 16 and provides the upper surface of the curb. The undersurface 17 (FIG. 2) of the upper flange 12 is inclined downwardly, forming in effect a fillet between the flange 12 and the back surface of the web 16. This construction facilitates back filling under the curb flange 12 to obtain solid support for the flange. The lower flange extends outwardly from the lower end of the web 16 in a direction opposite the upper flange and is of sufficient width to underlie the road surfacing material 10 (FIG. 2).

The web 16 extends between the opposite ends of the upper and lower flanges, forming therewith a generally Z-shaped cross sectional member. As shown in FIG. 2, the upstanding portion 16 extends downwardly and outwardly from the upper flange, and then downwardly

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and inwardly to the inner edge portion of the lower flange. The upper flange 12 is disposed in superposed relation to the lower flange, and the upright portion 16 also overlies the lower flange and forms an acute angle therewith. Both the flange 12 and the web 16 are disposed wholly within the space defined by a vertical projection of the lower flange. This construction provides a compact unit and enables the entire unit to be lowered into an excavation or trench which is barely large enough to accommodate the lower flange 14.

Means for anchoring the curb members in place include a plurality of anchor pins 18 which extend through holes 20 in the lower flange 14. The holes 20 and pins 18 are preferably tapered from top to bottom providing a tight fit of the pins 18 in the holes 20. The anchor pins securely hold the curb member in an upright position during a back filling operation. In addition, the anchor pins which are located adjacent the outer edge of the flange 14, anchor the flange in a horizontal position and prevent tipping or canting of the curb section when it is struck on its face, such as by the wheel of a vehicle.

Each curb section is provided with a plurality of score lines or grooves 22 (FIG. 3) which are located at longitudinally spaced intervals along the member. These score lines provide means for cutting the curb section into segments of any desired length. For example, where a standard length curb member is too large to fit into a given space, the curb member may be cut to the desired length by means of a chisel and hammer. The score lines weaken the curb member in parallel cross sectional planes and when the member is struck on one of the lines it will break or part cleanly in the plane of the line struck.

Means for connecting or holding two curb members in end-to-end relation comprises dowels or pins 24. Centrally affixed to each dowel is a washer 26. Each curb section includes holes 30 and 32 which extend from end-to-end therethrough. The upper hole 30 is disposed near the neutral axis of the member and adjacent the inner end of the upper flange. The other hole 32 also extends from end-to-end of the curb section and is located at the lower end of the upright portion 16. The holes 30 and 32 extend completely through the curb section so that any segment or portion of a curb section, regardless from which part of the section it is cut, includes holes capable of receiving the dowels.

The curb sections or segments thereof are held in proper end-to-end alignment by fitting the dowels into the upper and lower holes of the adjacent ends of two sections. As indicated in FIG. 1, the dowels are fitted into the holes of one curb section and a second section is moved into position to receive the free ends of the dowels 24. The two sections are then moved together into contiguous end-to-end relation with the free ends of the dowels telescoping into the holes 30 and 32 of the second curb section. The washers 26 insure that the dowel will extend equally into the holes of both curb sections.

The curb section 6 further includes metallic wire mesh reinforcement 34 imbedded into the concrete and located adjacent the outer surface of the section since the outer surface is put under tension when struck by a vehicle wheel. An additional mesh reinforcing member 36 is located at the heel or lower rear corner of the curb section. This reinforcing member reduces the possibility of frost damage to the curb section at the junction of the lower flange and the web 16.

The cross sectional shape of the curb sections provide relatively compact members possessing a great degree of stability, even though they are relatively light in weight. As best shown in FIG. 2, the weight of the roadbed including the paving material, overlying the lower flange 14, acts downwardly on the flange 14. Thus

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a torque is exerted on the flange 14 which opposes torques tending to topple the curb rearwardly, such as when the face 37 of the curb is struck by the wheel of a vehicle. In addition to the weight of the roadbed, the weight of the vehicle itself exerts a force which is transmitted to the lower flange. This also opposes tendency of the curb to tip rearwardly when struck.

While straight curb sections are illustrated for use alongside a straight road section, it is also within the scope of this invention to provide longitudinally curved curb sections. Since curved curb sections are generally of uniform length, dowel holes may be located at opposite ends of the sections and need not extend from end-to-end entirely through the section. The dowels may be curved from end-to-end to conform with the curvature of the curb sections in which they are to be fitted. Curved curb sections have generally the same cross sectional configuration as the straight sections, herein illustrated, and consequently possesses the advantage of positional stability described above.

Since these curb sections are formed by precasting concrete, many modifications may be made in the shape of the sections without departing from the spirit and scope of this invention. For example, the curb edge 38 (FIG. 2) may be cast to rounded configuration of relatively large radius. The rounded curb edge would be more resistant to chipping and less damaging to tires bumping or rubbing against the corner.

The front face 37 of the curb section may be provided with a plurality of recesses 40. A light reflective material or luminous paint may be used to coat the surfaces of the recesses. Consequently the curb will be visible even in the nighttime. Since the luminous material is disposed in the recesses 40, it will be protected from the scuffing action of vehicle tires and the like rubbing against the face of the curb.

Having thus described this invention, what is claimed is:

An integral pre-cast concrete curb section of predetermined length and of generally uniform cross section from end-to-end and comprising a vertically disposed upstanding portion, a lower flanged portion extending from the bottom of said upstanding portion in one direction and an upper flanged portion extending from the top of said upstanding portion in an opposite direction to the lower flanged portion, said upstanding portion interconnecting opposite end edge portions of said flanged portions, said

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upper flanged portion and said upstanding portion overlying said lower flanged portion and lying within a vertical projection of said lower flanged portion, the under-surface of the upper flanged portion extending from end-to-end downwardly at an obtuse angle to the inner surface of said upstanding portion and forming a continuous fillet from end-to-end of said section to enable solid back filling under the upper flange, said curb section including holes therethrough from end-to-end to receive pins and hold a plurality of sections in alignment for forming a continuous curb of any desired length, said section being provided with a plurality of score lines lying in longitudinally spaced parallel planes disposed at right angles to the pin receiving holes at the back side of the section enabling said section to be cut and reduced in length for fitting with other sections to provide a curb of any desired length, the said outer surface of said upstanding portion of the section extending downwardly and inwardly to the said lower flanged portion, whereby the outer end of said lower flanged portion will underlie, at least in part, the surface of a road bed when the aforesaid downwardly and outwardly extending part of said upstanding portion is disposed to serve as an exposed vertical portion of a roadside curb.

References Cited in the file of this patent

UNITED STATES PATENTS

76,614	Harris et al.	Apr. 14, 1868
355,810	Brown	Jan. 11, 1887
398,630	Landis	Feb. 26, 1889
688,851	Harrison	Dec. 17, 1901
1,881,376	Hunter	Oct. 4, 1932
2,120,742	Grundy	June 14, 1938
2,135,400	Johnson	Nov. 1, 1938
2,184,137	Brewer	Dec. 19, 1939
2,225,496	Gethin et al.	Dec. 17, 1940
2,292,771	Raad	Aug. 11, 1942
2,678,592	Wiedman	May 18, 1954
2,885,882	Fuller et al.	May 12, 1959

FOREIGN PATENTS

162,891	Austria	Apr. 25, 1949
551,070	Belgium	Mar. 15, 1957

OTHER REFERENCES

The Lewen System Moldless Reinforced Concrete Construction, 1912, Catalog No. 4.