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CONSTRUCTION FORMS

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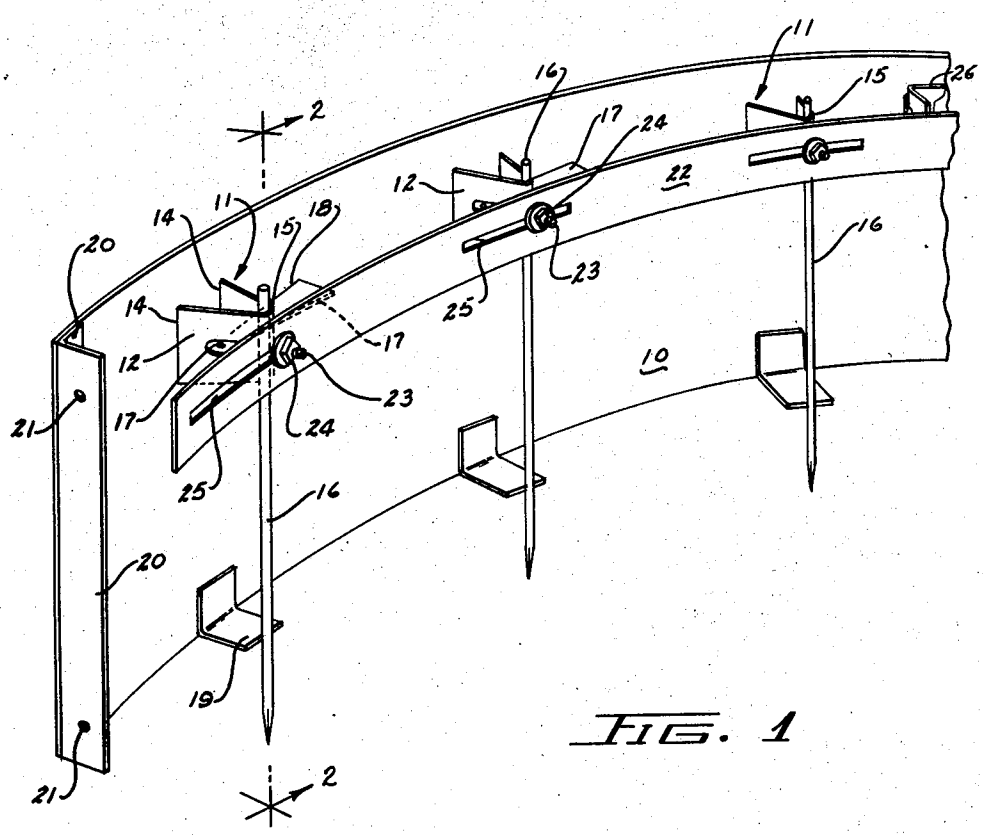


FIG. 1

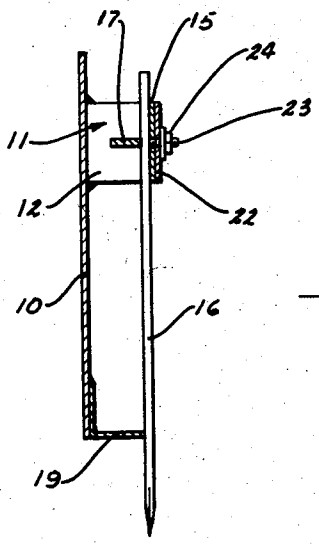


FIG. 2

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CONSTRUCTION FORMS

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7 Claims. (Cl. 25—118)

This invention relates to apparatus for use in building structures of concrete and similar materials and more particularly to road rails and similar construction forms used in the building of roads, walls, curbs and the like.

One of the objects of the present invention is to provide novel apparatus of the above character which is particularly adapted for use in constructing curved sections of concrete and like materials.

Another object is to provide a novel construction form which may be curved either convexly or concavely for use in the building of concrete or like structures which are curved, such as curbs at street intersections.

Still another object is to provide a novelly constructed flexible form or rail which is considerably more versatile than similar forms heretofore known in the sense that it makes possible a greater variety of curvatures within the length of a single or connected form sections.

A further object is to provide a novel construction form of the flexible type which comprises novel means for rendering the same substantially rigid on grade and in a desired contour of single or plural curvature.

A still further object is to provide a construction form of the above type which is of simple yet rugged and relatively inexpensive construction, easy to handle and install, and adapted for ready connection to and disconnection from rigid straight line forms or other flexible forms of the same or different construction.

The above and further objects and novel features of the invention will more fully appear from the following detail description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for the purpose of illustration only and are not intended as a definition of the limits of the invention.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is an isometric view of a portion of a typical section of a road rail or construction form embodying the present invention; and

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 1.

The invention as illustrated in the drawings, by way of example, is embodied in a novel flexible section of a road rail or construction form which may be used in building structures with curved or rounded corners, such as gutters or curbs at road intersections, and structures which may have single, double, triple, etc., curvatures in the contour thereof. A series of form sections of this type are as a general rule connected in end-to-end relation and set up on a desired line and grade in a well known manner to confine and support concrete or similar construction materials until the same set or harden. When flexible forms of this type are not in use and are being moved from one location to another, the same are subject to rough handling and hence, to severe strains and stresses which are often of the bending or twisting variety. The novel construction contemplated by the invention provides for giving desired strength and rigidity to the forms during both use and handling while also permitting desired advantage to be taken of the flexible nature of the form for building contoured structures. These advantageous features are attained by a very simple device which does not appreciably increase the weight and cost but which does, on the other hand, contribute to the facility with which the forms may be set up and supported in upright position on grade.

In the embodiment shown in Fig. 1, a flexible form section comprises a body or web 10 of flexible sheet metal or other suitable material of desired width. The required thickness of the web and the necessary degree of flexibility thereof will be determined by the uses to which the same is to be put. Secured to the outer face of web 10 near the top edge thereof and suitably placed longitudinally thereof, are a plurality of stake pockets 11 for a purpose to be described below. Each stake pocket is preferably constituted by a sheet metal strap 12 bent to a V shape and secured at its end edges 14 by welding or other suitable means to web 10.

The bight or bend 15 in each stake pocket is preferably arcuate for snugly receiving and closely engaging a round stake 16 although stakes of other shapes may be used. The side walls of each stake pocket have aligned horizontal slots in which a flat key or wedge 17 is slidable. Each wedge 17 is tapered in width, the widest portion 18 being at the right hand end, as seen in Fig. 1. The key or wedge 17, the slots in which it slides and stake 16 are so related in assembled condition that when the wedge is driven toward the left (Fig. 1) one edge thereof engages the stake and the other edge engages the ends of the slots remote from the stake. The latter is thus tightly wedged into the bight 15 of the stake pocket, as seen in Fig. 2, and acts to support the web 10 in vertical position on or above the ground in a manner well known and understood in the art. The lower edge of web 10 may be suitably spaced from stakes 16 by angle irons 19 secured to the web by welding or other suitable means.

For the purpose of connecting a series of form sections together in end-to-end relation said sections may be provided with any of many known types of end connections. In the drawings, a simple form of end connection is illustrated as comprising an angle bar 20 suitably secured, such as by welding, to the outer end face of web 10 for abutment with a similar angle bar on an adjacent form section (not shown). Bolts extending through holes 21 may be used as connecting means. The other end of web 10 is provided with a similar angle bar (not shown). The flexible web section 10 may thus be connected to either a rigid form or to another flexible form and may be set up in either a straight line or on a desired curved contour in plan view.

Novel means are provided for the purpose of imparting a degree of rigidity to web 10 when the same has been curved or bent into a desired longitudinal contour to thereby facilitate the setting up of the form on grade, facilitate the handling thereof between locations, provide increased strength against the forces exerted when concrete is poured and insure maintenance of the desired contour. The novel means provided for the above purposes relieves stakes 16 of the necessity of absorbing some of the lateral thrusts which they would otherwise have to assume.

In the form shown, said stiffening means comprises a flexible strap 22 supported on pins 23 which are secured to and project outwardly and horizontally from the bights 15 of the stake pockets 11. The pins 23 are preferably threaded to receive nuts 24 and the inner ends thereof are welded, riveted or otherwise suitably secured to the stake pockets 11, 15 (Fig. 2). The bar or strap 22 has elon-

gated slots 25 through which pins 23 project. Thus, the web 10 may be bent to a desired contour between each set or pair of stakes and secured or locked in that position by tightening the appropriate nuts 24. The web is thus given rigidity in a desired contour and the stakes are tied together in such a manner that forces which might otherwise fall upon a single stake will be desirably distributed among several stakes. The strap 22 may be applied either before, during or after the flexible form section 10 is installed on grade with the stakes driven. Installation in many instances is facilitated by securing the form in the desired contour by means of strap 22 before driving the stakes. Both web 10 and strap 22 may be bent in one or several directions, thus making it possible to secure the form in rigid condition with either a single or plural curvature.

There is thus provided a novel and versatile construction form of the flexible type which is particularly adapted for use in building curved sections of roads, walks, curbs, walls or the like with concrete or similar materials. The novel construction permits the use of relatively light weight materials without sacrificing accuracy or durability. The simplicity and lightness of the construction facilitate installation and removal of the novel form sections and also facilitate handling. These features in turn reduce the danger that the forms may be damaged during handling. A sturdy and dependable flexible form which will negotiate sharp and irregular curves or bends is also provided.

Although only a single embodiment of the invention is illustrated in the drawings and described in detail in the foregoing specification, it is to be expressly understood that the invention is not limited thereto. For example, the end connection for the form section may be of any suitable known type, and the spacers between the stakes and the web may, if desired, be loose or associated with the stakes instead of being secured to the web. If desired, one or more spacers 26 may be secured to the web or to the strap intermediate the stake pockets to insure a minimum spacing between the web and strap, and the latter parts may be connected to each other at an end or intermediate point by such a spacer. More than one nut may be used on each of the pins 23, and lock washers may be employed between the nuts and straps to insure the locking together of the web and strap when the form is on location. Satisfactory results might also be attainable in some applications by replacing all or some of the slots in the strap with closely spaced holes for receiving the supporting pins or by adjustably mounting the strap on spaced supports attached to the web between the stake pockets rather than directly on the latter. Various other changes, such as in the design and arrangement of the parts illustrated, may also be made without departing from the spirit and scope of the invention, as will now be understood by those skilled in the art.

What is claimed is:

1. A construction form comprising a flexible web, a plurality of stake pockets secured to one face of said web, and means for connecting the ends of said stake pockets remote from the web, said means including a flexible member and means for adjustably securing said member to each of said stake pockets.

2. A construction form comprising a flexible web, a flexible sheet metal member extending longitudinally of said web, said member having flexibility in only one plane, and means for securing said member to said web in spaced relation thereto and at longitudinally spaced positions to rigidly hold said web in a flexed position, said means comprising a plurality of stake pockets mounted on said web and spacing said web and member, said member being secured to said stake pockets.

3. A construction form comprising a flexible web, a flexible member extending longitudinally of said web, a plurality of stake pockets mounted on said web and spacing said web and member, and means for adjustably securing said member to said stake pockets, said means including supports projecting from said pockets through spaced openings in said member.

4. A construction form as defined in claim 3 wherein said openings are elongated slots extending longitudinally of said member.

5. A construction form as defined in claim 3 wherein said supports are threaded pins and including locking nuts threaded onto said pins for locking said member against said pockets.

6. A construction form comprising a flexible web, a plurality of stake pockets secured to one face of said web, and means for securing said pockets in a variety of positions relative to each other to hold the web at different curved positions, said means comprising a flexible sheet metal strap extending longitudinally of said web and means adjustably securing said strap to each of said pockets.

7. A construction form comprising an elongated longitudinally-flexible sheet metal web, a plurality of longitudinally spaced stake pockets secured to one face of said web, each of said stake pockets consisting of a sheet metal member bent to V shape to embrace a stake at the bend and having the end edges thereof secured to said web, a longitudinally-flexible sheet metal strap extending longitudinally of said web along the outer ends of said stake pockets, means on said stake pockets for supporting said strap for adjustment relative to said pockets, and means for locking said strap to each of said pockets in a variety of adjusted positions.

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