

A. THOMAS.
 REINFORCEMENT FOR CONCRETE ROADWAYS.
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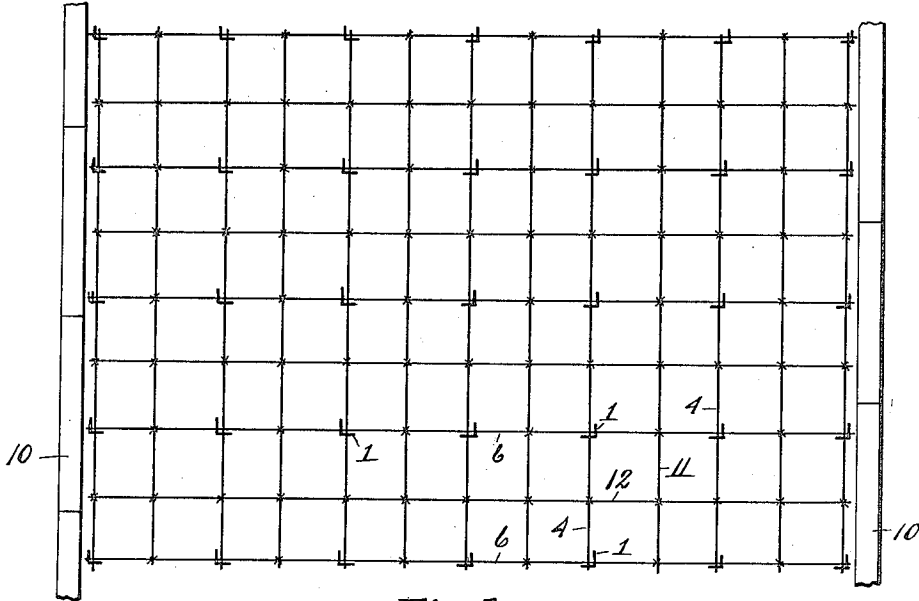


Fig. 1.

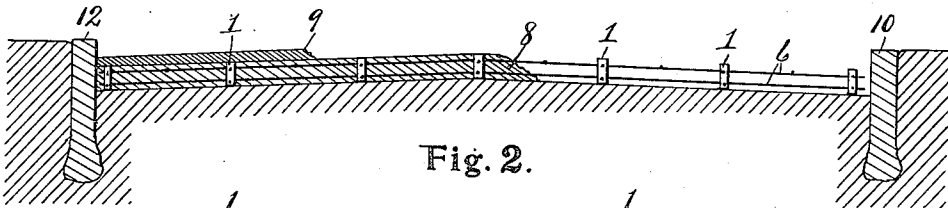


Fig. 2.

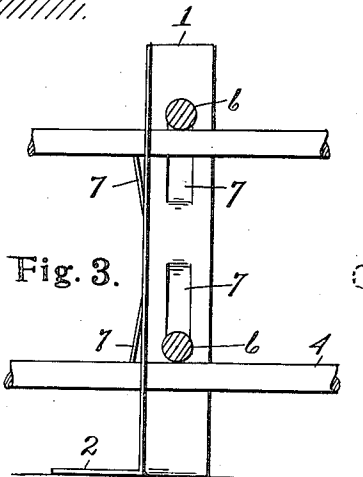


Fig. 3.

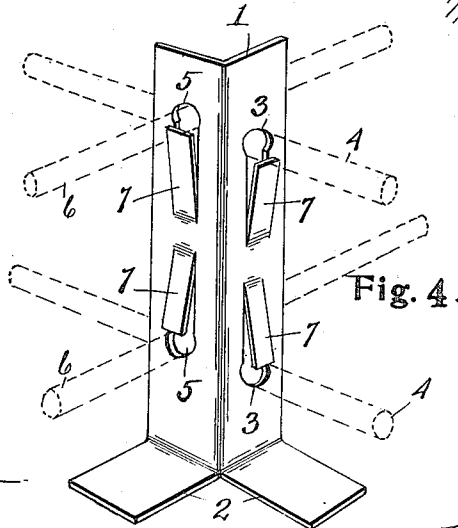


Fig. 4.

Witnesses

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REINFORCEMENT FOR CONCRETE ROADWAYS.

1,017,118.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AVILA THOMAS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Reinforcements for Concrete Roadways; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a reinforcement for concrete roadways, and consists in the construction and arrangement of parts hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide a unifying structure for incorporation in concrete roadways to prevent fracture by contraction and maintain the integrality of the mass, provision being made for assembling the component parts of the structure in sections of the width of the roadway and of any suitable length, and for so forming said structure as to enable it to serve as a gage in the laying of the concrete.

The above object is attained by the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of a section of my reinforcing and unifying structure in position between the curbs of a roadway or street. Fig. 2 is a transverse section through a roadway of concrete construction partially completed, showing the manner of applying my invention. Fig. 3 is an enlarged fragmentary view in elevation, showing one of the angle iron posts employed to support the longitudinal and transversely extending bars which pass through and are embedded in the concrete body with portions of said bars supported therein. Fig. 4 is a perspective view of one of said posts, showing by dotted lines the manner in which the bars or tension members are supported thereby.

In forming my unifying structure I employ a plurality of angle iron posts 1 which are split longitudinally from one end along the angle and the severed portions turned outwardly to form the laterally projecting

feet 2 which afford the post a broad bearing upon the roadway. One wing or face of each of the angular posts is provided with the spaced apertures 3 adapted to receive the longitudinal bars or tension members 4, the opposite wing or face being provided with like apertures 5 adapted to receive the transverse bars or tension members 6. These bars are supported in the posts to cross at right angles, as shown, and for the purpose of locking the bars securely to the posts, integral locking tongues 7 are struck from the metal of the wings of the post leading from the bar-receiving apertures therein, the free ends of said tongues projecting slightly into said apertures when lying parallel with the faces of said wings. The tongues when formed are sprung outwardly so as to free the apertures through which the tension bars pass to enable the free passage of the bars therethrough and facilitate the positioning of the posts upon said bars. When properly positioned the posts may be locked to the bars by springing the free ends of the locking tongues inwardly into forcible contact therewith, whereby the tongues are caused to grip the bars and securely lock them in the apertures in the wings of the posts. As nearly as practicable, the post are so positioned that the natural contracting strain on the tension members will tend to draw the bars through the posts in a direction to cause the tongues to bind more tightly against the bars and more firmly lock them to the posts, whereby independent movement between the posts and bars is overcome and the unification of movement, if any, is made certain. The contracting tendency being toward the center from the sides, the posts are so disposed on each side of the center of the roadway as to cause the locking tongues 7 to engage the transverse bars or tension members exterior to the outer faces of the wings of the posts through which said members pass, insuring a gripping action of said tongues upon said bars in case of any tendency of the bars to draw through the posts by any contracting action thereof, thereby firmly tying together the reinforcing structure and preventing a fracture in the concrete body across the line of contracting strain.

The area of the feet portions 2 at the base of the posts affords a broad bearing upon the grade of the roadway which prevents the

posts from settling, while the wide bearing in the concrete body afforded by the angular wings of the posts obviates the possibility of any movement of the posts in the concrete body through the exercise of any contracting force. The height of the posts is such that when placed in position on the road bed they determine the grade at which the grout or coarser concrete 8 shall be laid, as shown in Fig. 2, the finishing course 9 of sand and cement being applied to the surface of the grout to complete the roadway.

The reinforcing structure is made in sections of the entire width of the roadway to extend from curb to curb indicated at 10, each section being of such length as may be found practicable, and said sections, longitudinally of the roadway, being connected by a suitable expansion joint, not shown. Between the main longitudinal and transverse tension bars, auxiliary bars 11 and 12 may be employed which are connected to each other at their points of crossing and to the main tension bars in any suitable manner.

By means of this reinforcing structure, the body of concrete forming the roadway is bound together in such a manner as to cause the whole mass to move under the effect of a contracting force, thereby preventing a fracture therein by a movement of a portion of the mass away from a remaining portion.

In using this reinforcing structure, it is set up in the roadway, as shown in Fig. 1, and the concrete filled in around it so that it becomes thoroughly embedded therein. The reinforcement when in position is self-sustaining, being supported perfectly in place in a manner to prevent the possibility of displacement during the work of filling it and grading the concrete. The upper and lower courses of tension members formed by the longitudinal and transverse bars extending at right angles, which are supported by and locked to the posts, afford such a network of reinforcement as to insure integrity of the concrete body in which it is embedded.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A reinforcing structure for concrete

bodies, comprising supporting members L-shaped in cross section, longitudinal and transverse tension members passing through the wings of said angular supporting members and crossing at right angles, and integral locking tongues on said supporting members movable into locking engagement with said tension members for preventing longitudinal movement of the tension members through the wings of the supporting members.

2. A reinforcement for cementitious bodies, comprising vertical members having projecting wings disposed at right angles, transverse and longitudinal tension members crossing at right angles at said supporting members and passing through the wings thereof to be supported thereby, the wings of said supporting members having locking tongues which engage the tension members and prevent longitudinal movement of said members through said wings.

3. A reinforcement for cementitious bodies, comprising supporting members having wings disposed at right angles and provided with feet members formed integral therewith, the faces of said wings being provided with apertures, tension members passing through the supporting wings and crossing at right angles, and locking tongues on the faces of said supporting wings extending into said apertures to engage the tension members and lock them therein.

4. As a unitary structure, a section of reinforcing fabric for cementitious bodies, comprising vertical members having angularly disposed wings and a foot portion adapted to rest upon a grade, said wings have apertures therethrough, transverse and longitudinal tension members crossing at right angles and passing through the apertures in the angular wings of the supporting members, and integral locking tongues on the wings extending into said apertures for locking the tension members to the wings of the supporting members to maintain them in place and unify the structure.

In testimony whereof, I sign this specification in the presence of two witnesses.

AVILA THOMAS.

Witnesses:

O. B. BAENZIGER,
I. G. HOWLETT.