June 19, 1928. 1,674,204

A. G. JOHNSON

REENFORCING STRUCTURE FOR CONCRETE

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Fig. 1.

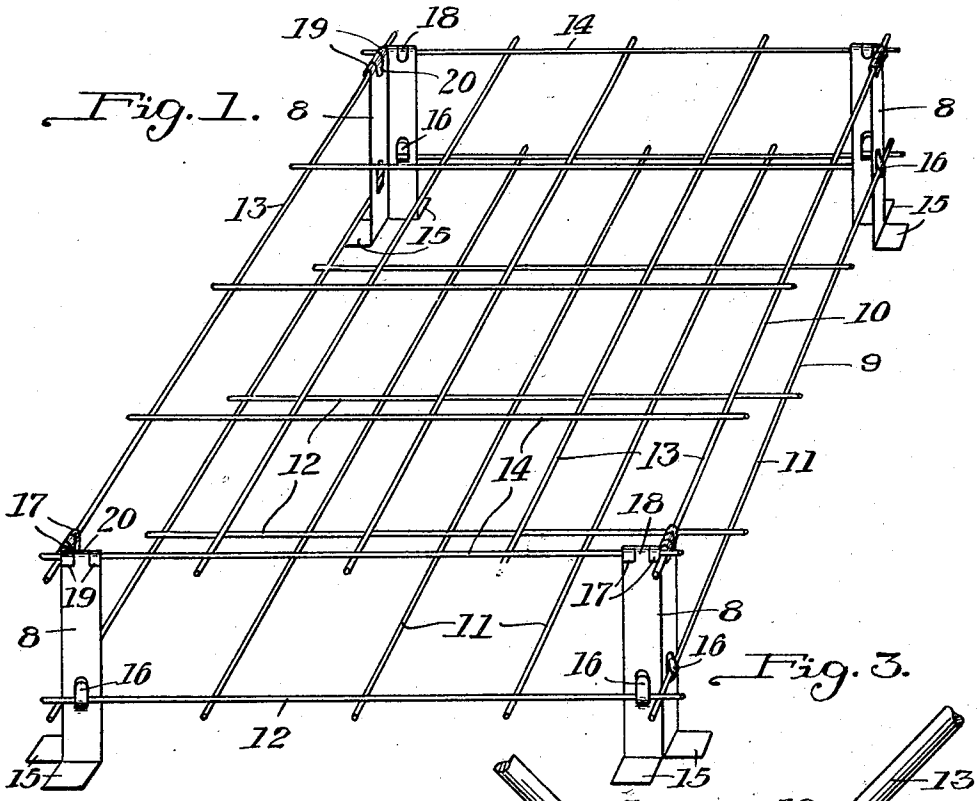


Fig. 3.

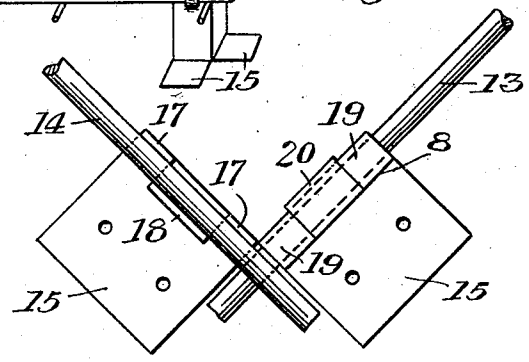


Fig. 2.

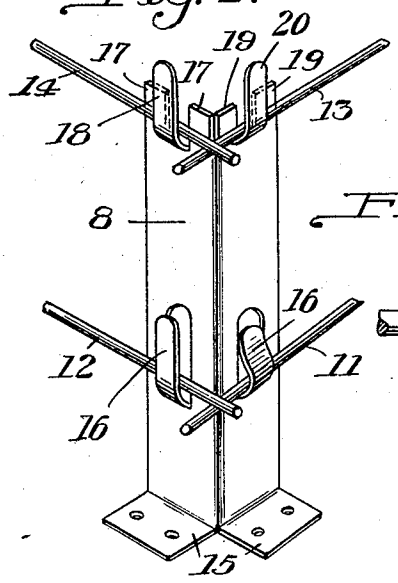
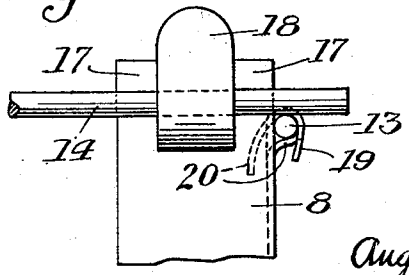


Fig. 4.



INVENTOR
August G. Johnson
By Archworth Martin
Attorney

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A. G. JOHNSON

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Fig. 5.

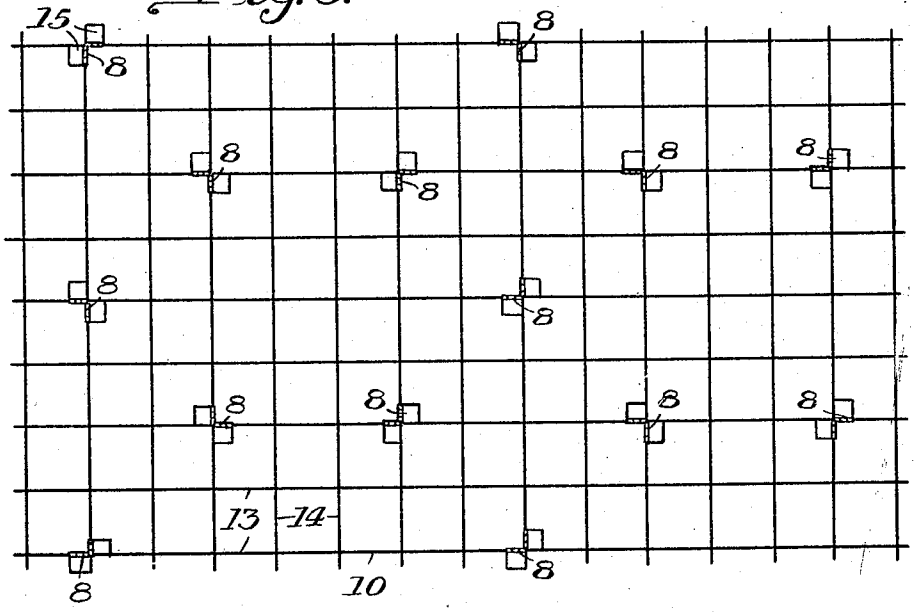


Fig. 6.

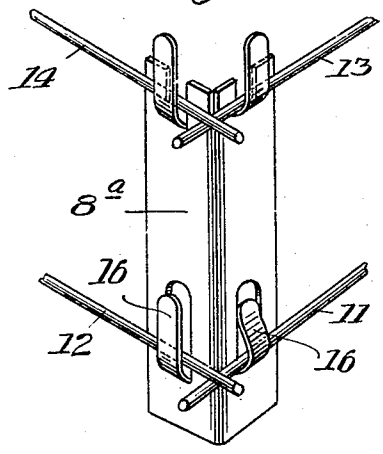
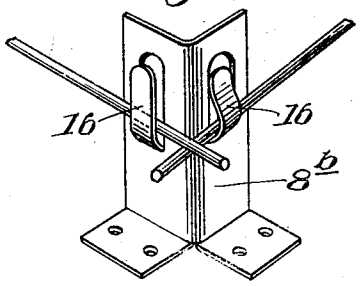


Fig. 7.



INVENTOR

August G. Johnson

By Archibald H. Martin,

Attorney.

Patented June 19, 1928. 1,674,204

UNITED STATES PATENT OFFICE.

AUGUST G. JOHNSON, OF MONESSEN, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH STEEL COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

REENFORCING STRUCTURE FOR CONCRETE.

Application filed July 22, 1926. Serial No. 124,242.

My invention relates to reenforcing structures for concrete or other plastic material, and has for one of its objects the provision of an improved means for assembling and supporting metallic reenforcing members and the like.

Another object of my invention resides in the provision of an improved means for supporting a plurality of sheets of reenforcing fabric in spaced relation to one another.

Still another object of my invention is to provide an improved form of supporting structure for reenforcing bars.

Some of the forms which my invention may take are shown in the accompanying drawing wherein Fig. 1 is a perspective view of a reenforcing unit constructed in accordance with my invention; Fig. 2 is a perspective view, on an enlarged scale, of one of the tie members of Fig. 1; Fig. 3 is a plan view of one of the tie members of Fig. 1; Fig. 4 is an end elevational view of a portion of the apparatus of Fig. 2; Fig. 5 is a plan view showing one manner in which the tie members may be distributed in the plane of a sheet of metal fabric; Fig. 6 is a perspective view showing a modification of the structure of Fig. 2, and Fig. 7 shows still another modification.

Referring to Figs. 1 to 4, the structure is shown as employed in connection with the building of concrete roads, but may also be used in connection with the formation of floors, walls or the like.

For convenience of illustration, I have shown tie bars 8 for supporting fabric structures 9 and 10 in vertically spaced relation. The fabric 9 is composed of what may be termed strand wires or rods 11 and stay wires or rods 12 that may be welded or otherwise secured together, while the fabric 10 is composed of strand rods 13 and stay rods 14. The purpose of making the reenforcement in the form shown, is to provide a double layer of metallic reenforcement for a roadway or the like.

Each tie bar 8 is formed from an angle bar that fits within the corners formed by the strand and stay rods at their points of juncture. The lower ends of the tie bars are bent outward as indicated at 15 in order to prevent the unit from sinking into soft ground previous to pouring of the concrete, and may be utilized to secure the unit to wall or other surface.

Tongues 16 are struck out from the body of the angle 8, for supporting certain of the strand rods 11 and stay rods 12, the tongues being then bent inward, as shown in Fig. 2, to prevent vertical displacement of the rods. The upper end of each of the tie bars 8 is slit to form tongues 17, 18, 19 and 20. The tongues 18 and 20 are bent inward over the strand rods 13 and stay rods 14, respectively, and the tongues 17 and 19 bent outwardly around such rods, as shown more clearly in Fig. 3, thus securely anchoring the fabric 10 to the tie bars 8 and to the fabric 9. The angle of the bars 8 conforms to the angle formed by the strand and stay rods, thus producing a bracing effect which resists deformation of the fabric in a horizontal plane.

The formation of the tie bars 8 and their tongues is such that the fabric and the bars can be shipped separately, and conveniently assembled by the workmen when they are ready to pour the concrete. The tie bars and the fabric may be assembled in units of a given size, or fabric of any desired length or width can be placed upon the bars, the bars being distributed throughout the fabric at suitable distances, as indicated in Fig. 5.

The tie bars may also be modified in various particulars, as by omitting foot portions 15, so that the bar will have the appearance of tie bar 8^a of Fig. 6. As many sets of holding tongues as desired may be provided on each bar, so that any number of sheets of fabric may be supported by each set of bars.

Furthermore, the tie bars may be constructed as shown at 8^b in Fig. 7, for supporting a single sheet of fabric in vertically spaced relation to the roadway or other surface.

Various other changes in detail and general arrangement may be readily made without departing from the spirit and scope of the invention as defined in the accompanying claims.

I claim as my invention:

1. The combination with a reenforcing fabric having strand and stay members secured to one another at points of intersection, of a tie bar that is angular in cross section and disposed at right angles to the

plane of the fabric, and means for securing the bar to the fabric, with its angle fitting within the angle formed by a strand member and a stay member, the said means comprising tongues struck out from the body of the tie bar and bent over one of said members in opposite directions.

2. The combination with a reenforcing fabric having strand and stay members secured to one another at points of intersection, of a tie bar that is angular in cross section and disposed at right angles to the plane of the fabric, and means for securing the bar to the fabric, with its angle fitting within the angle formed by a strand member and a stay member, the said means comprising tongues formed in each flange of the bar and bent over the said members.

3. The combination with a reenforcing fabric having strand and stay members secured to one another at points of intersection, of a tie bar that is angular in cross section and disposed at right angles to the plane of the fabric, and means for securing the bar to the fabric, with its angle fitting within the angle formed by a strand member and a stay member, the said means comprising upwardly-extending tongues formed in each flange of the bar and bent over the said members, whereby the fabric is held against movement in downward and horizontal directions.

In testimony whereof I the said AUGUST G. JOHNSON have hereunto set my hand.

AUGUST G. JOHNSON.