

No. 835,758.

PATENTED NOV. 13, 1906.

J. KAHN.

TENSION MEMBER FOR REINFORCED CONCRETE.

APPLICATION FILED JULY 5, 1906.

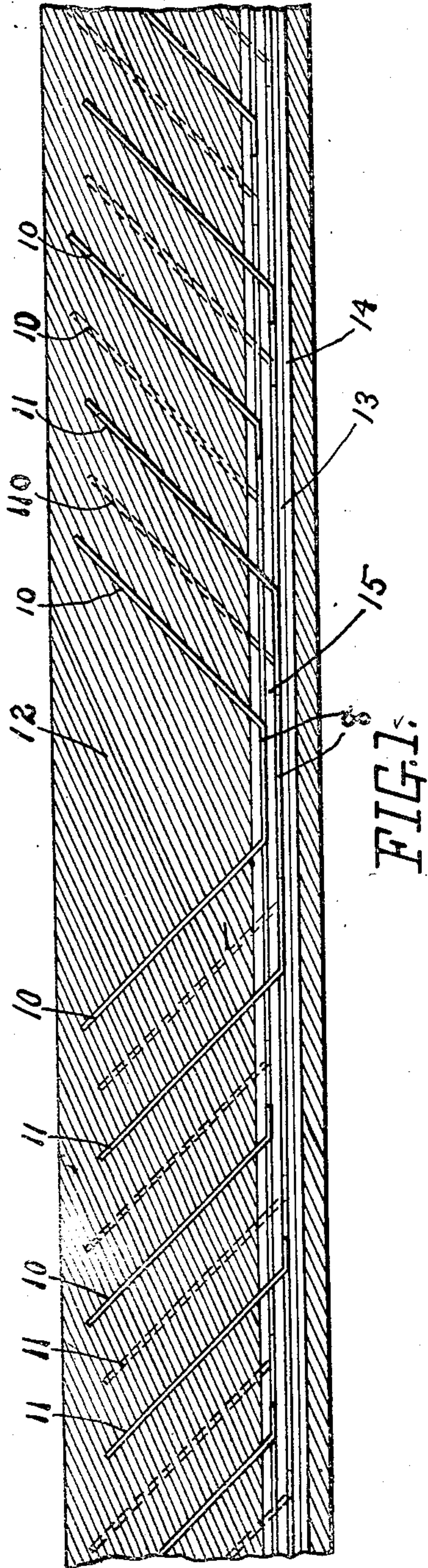


FIG. 1.

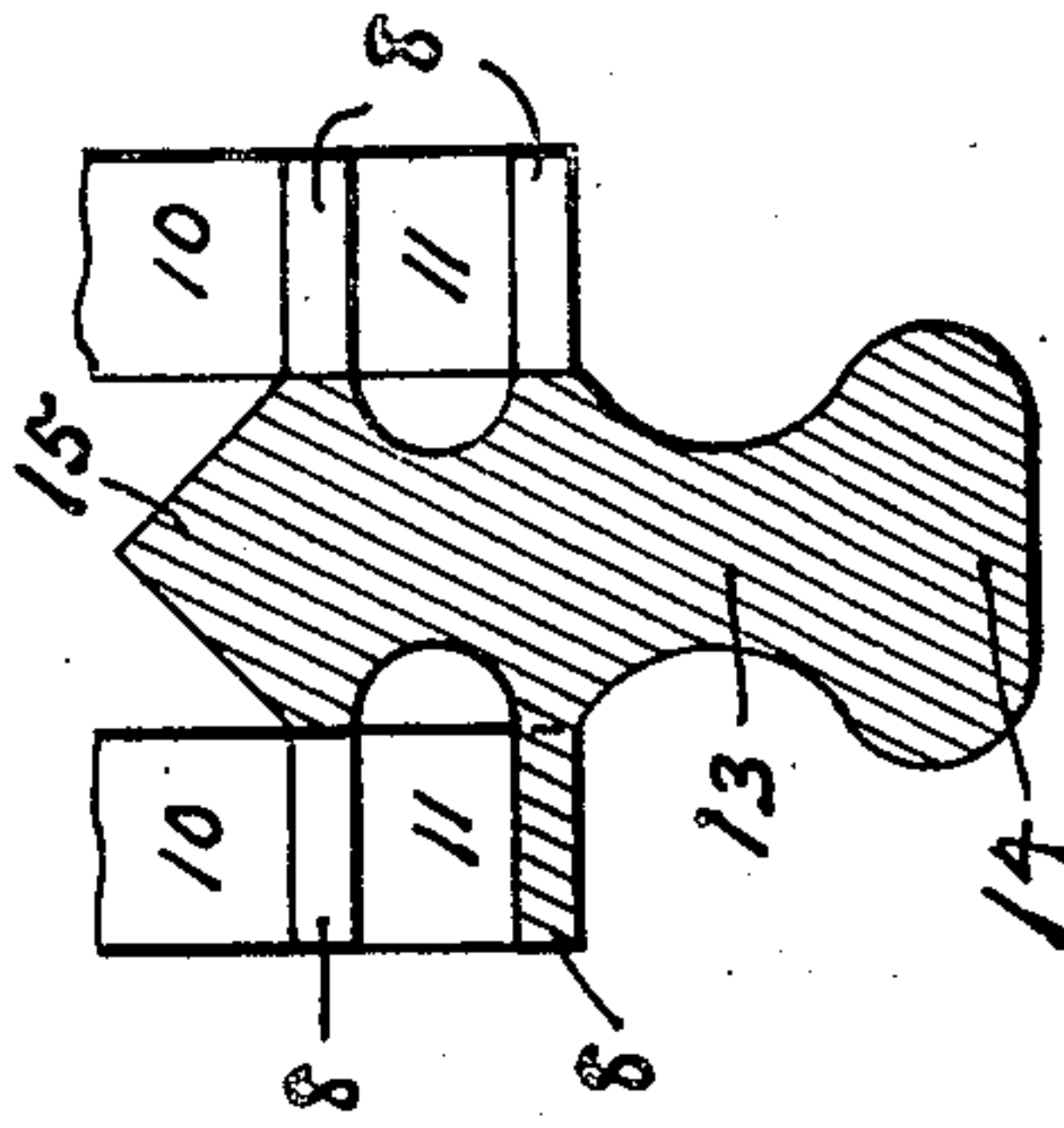


FIG. 5.

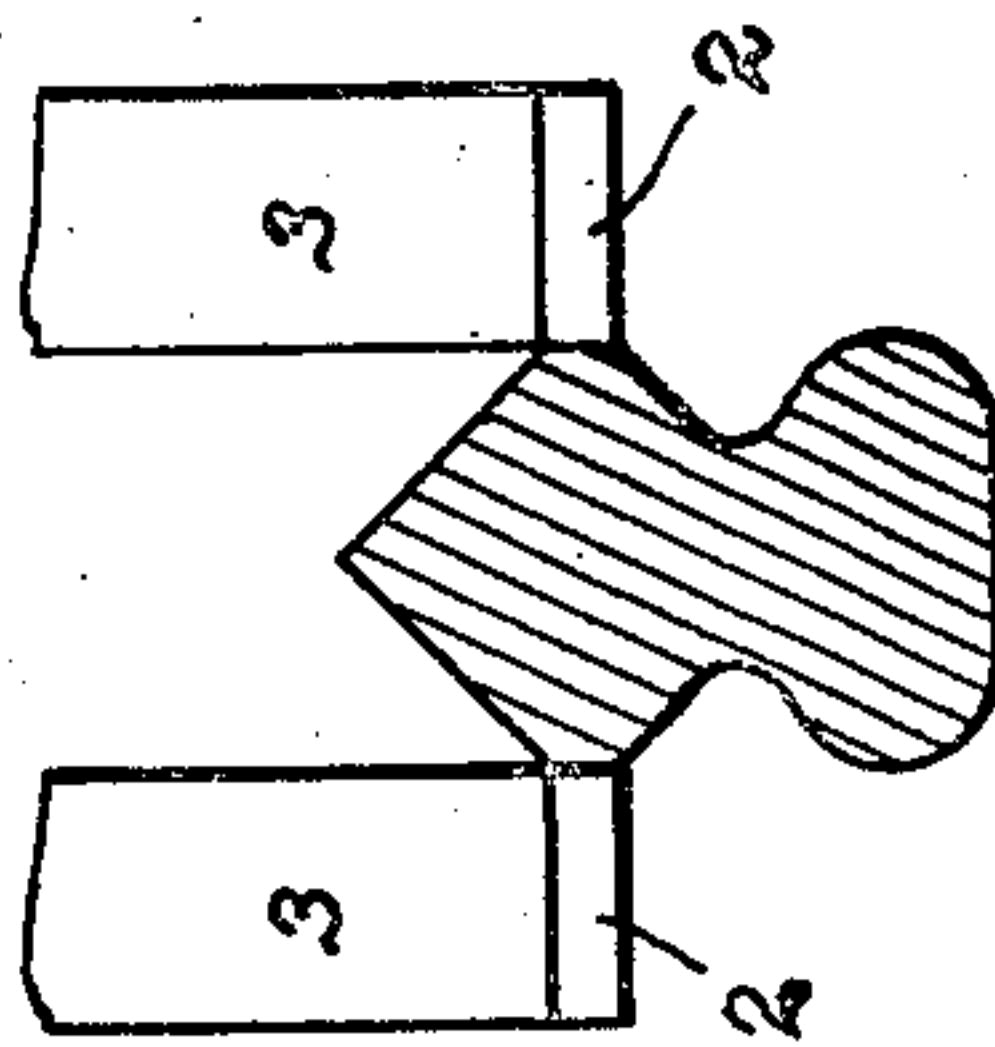


FIG. 4.

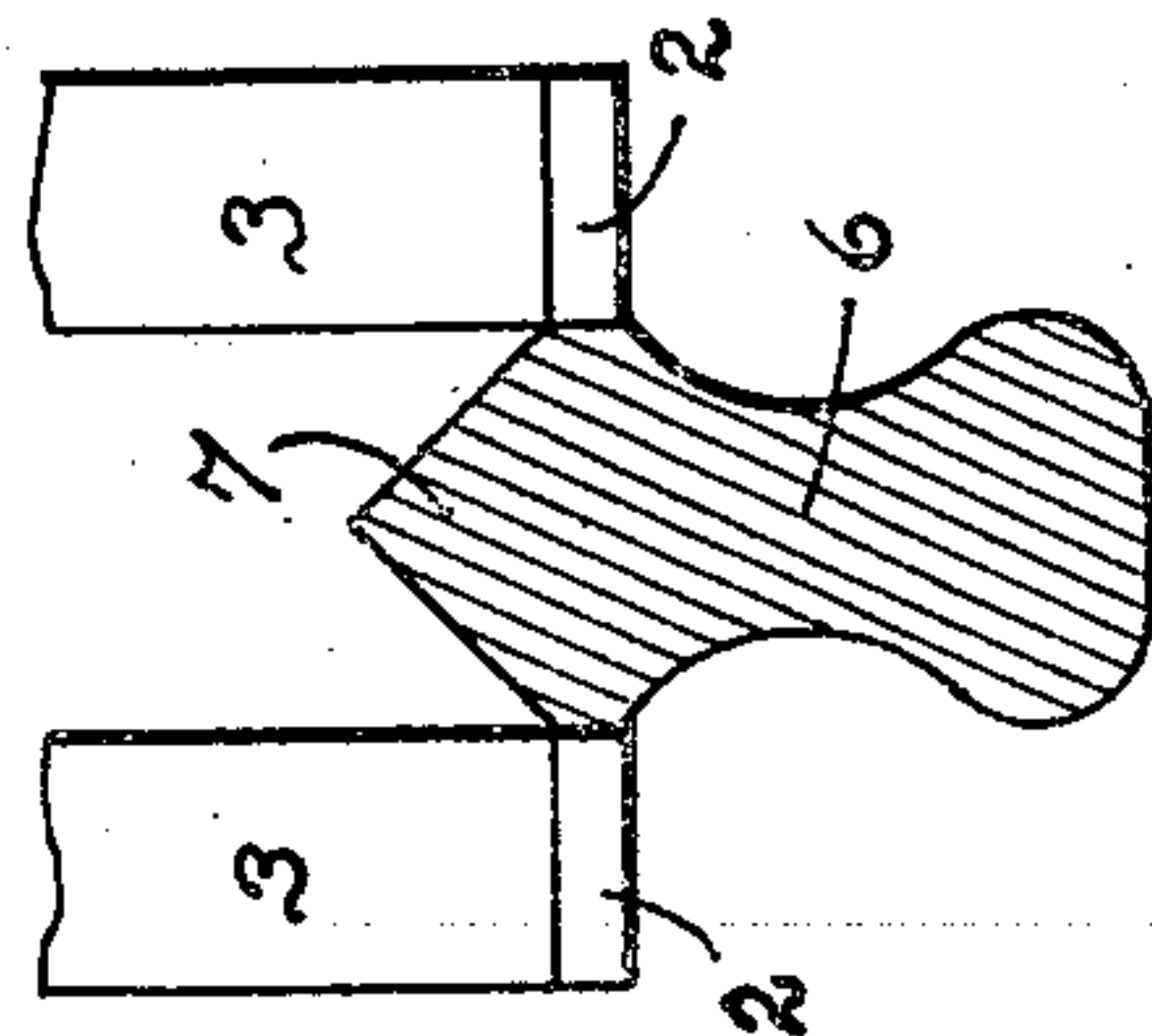


FIG. 3.

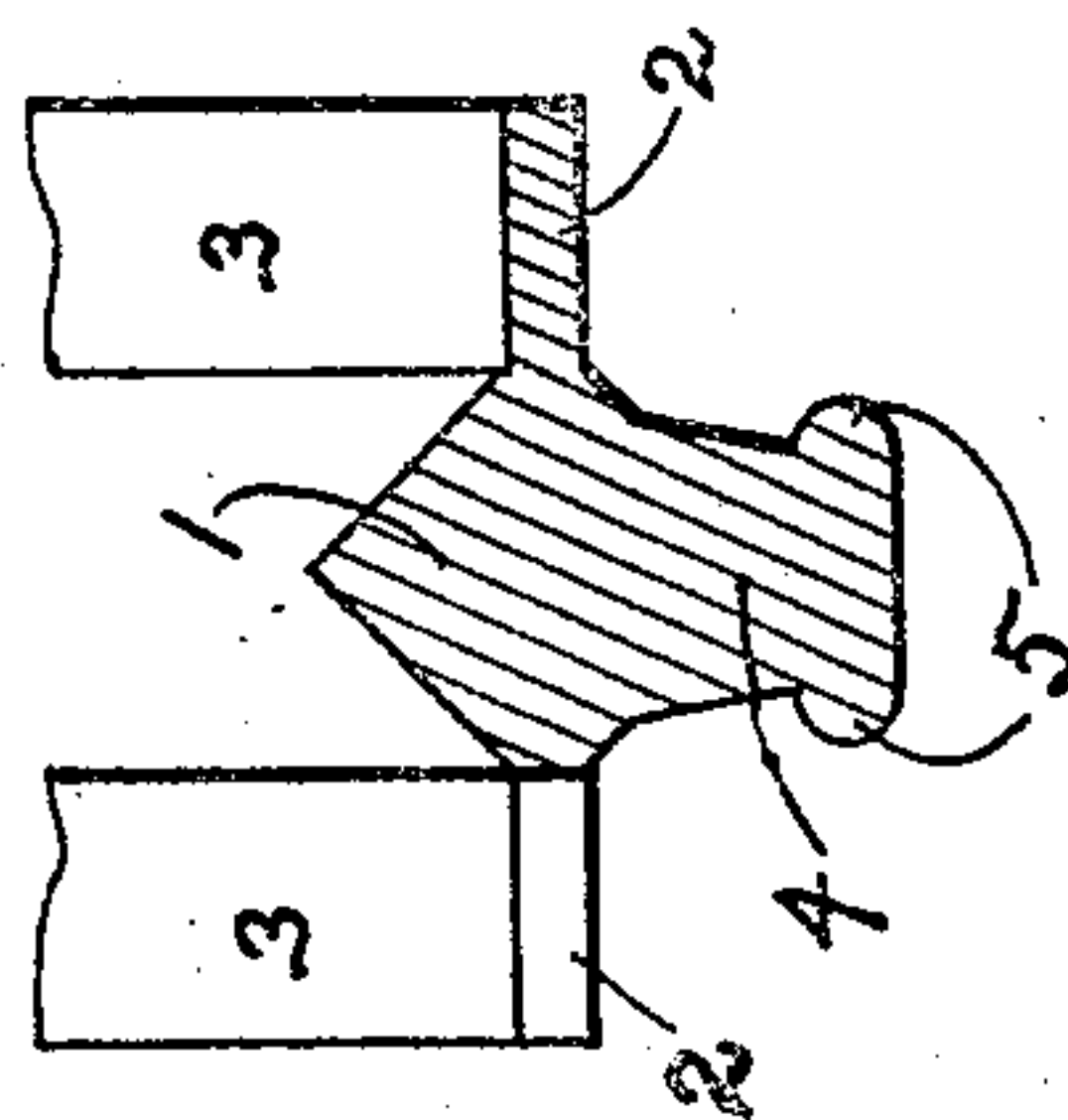


FIG. 2.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## TENSION MEMBER FOR REINFORCED CONCRETE.

No. 835,758.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed July 5, 1906. Serial No. 324,723.

*To all whom it may concern:*

Be it known that I, JULIUS KAHN, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented new and Improved Tension Members for Reinforced Concrete, of which the following is a specification.

In using the reinforcing members for combined concrete and steel construction, particularly members with a cross-section similar to that shown in Figure 10 of my patent, No. 751,921, dated February 9, 1904, it sometimes happens that the concrete on the lower sides of these beams breaks away and falls, exposing the reinforcement.

My present invention is adapted to avoid this; and it consists in a longitudinal rib below the flanged portion of the reinforcing member, which rib is grooved to admit of the concrete forming a stronger bond with the metal of the lower side of the reinforcing member.

In the accompanying drawings, Fig. 1 is a longitudinal section of a beam reinforced by a metallic tension member whose cross-section is shown in Fig. 5. Figs. 2, 3, and 4 are cross-sections of other tension members provided with grooved ribs for said purpose.

Similar reference characters refer to like parts throughout the several views.

Fig. 2 shows a cross-section of a tension member which consists of a main body portion 1, having longitudinal flanges which are cut to provide portions struck up to form inclined tension members 3 similar to those indicated in Fig. 1. A rib 4 projects downward from the lower side and tapers until near the lower edge, where it expands to form ridges 5. Where molded in the concrete of a beam or slab, the plastic material will lock around the rib, and the ridges 5, being so far from the natural plane of fracture at the lower side of the flanges 2, will prevent the strip or sheet of concrete from falling, and thus exposing the lower side of the metallic tension member.

In Fig. 3 the rib 6 is shown to extend down from the body 7 farther below the flanges 2 than in Fig. 2, and the comparative depths of the grooves are greater. In Fig. 4 the rib is shown of still different form, but the object of the grooved rib is the same.

In Fig. 5 is shown a cross-section of a reinforcing member provided with two flanges 8 on each side of the main body portion 9. The inclined arms 10 and 11 extend laterally, as

shown in Fig. 1, the arms 11 from the lower flanges extending up through the spaces made by cutting the upper flanges to form the arms 10. By locating the arms in the manner indicated in Fig. 1 a very reliable union is formed between the metal and the concrete, and the compression stresses set up in the plastic body 12 are transmitted along to the tension member 15 by the arms 10 and 11. These arms, spaced as shown, are adapted to overcome great shearing stresses. The longitudinal rib 13 has an enlarged outer portion 14 to prevent the concrete from breaking from the lower side of the tension member, as above stated.

Having now explained my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A tension member for reinforced concrete consisting of a main longitudinal portion having webs along the opposite sides of the same, and a downwardly-extending rib having a reduced portion adjacent to the main portion of the tension member.

2. A tension member for reinforced concrete consisting of a main longitudinal portion having webs along the opposite sides of the same adapted to be struck up to form the inclined tension members of a truss, said main longitudinal portion being triangular in cross-section above said webs, and having a downwardly-extending tapering portion below the webs to form a rib, said rib being enlarged at its outer edge.

3. A reinforced concrete construction comprising a body of plastic material, a metallic reinforcement for the same comprising a main portion having longitudinal webs projecting from opposite sides of the same, said webs being struck up to form diagonal tension members of a truss for the purpose of transmitting stresses from the plastic material to the main portion of the reinforcement, said main portion having a downwardly-extending rib grooved to insure a permanent connection between the plastic material and the reinforcement.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

JULIUS KAHN.

Witnesses:

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