UNITED STATES PATENT OFFICE.

EDWARD N. PAGELSEN, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOMAS W. JENKS, OF PITTSBURGH, PENNSYLVANIA.

TENSION MEMBER FOR CONCRETE CONSTRUCTION.

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1. To all whom it may concern:

Be it known that I, EDWARD N. PAGELSEN, a citizen of the United States, and a resident of the city of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Tension Member for Concrete Construction, of which the following is a specification.

My improved tension member, which is shown in the accompanying drawing, is formed with a cylindrical core or body 1, longitudinal ribs 2 extending along the body, and transverse ribs 3 extending between the longitudinal ribs to form pockets 2.

Metal rods are placed in the bottoms of concrete slabs and beams, for the purpose of taking up the tensile stresses which develop therein, and it is of the utmost importance that the strongest possible union shall exist between the metal and the concrete in these pockets. The greatest strain is in the form of large and strong projections having large areas of contact with the ribs 3, while the length of the projections provide large shearing areas. Staggering these transverse ribs 3 around the bar prevents excessive strains falling on the central core 1 at any one point. It also makes this tension member easier to manufacture.

In reinforced concrete construction, the plastic mass in hardening shrinks around the reinforcing member. With equal tensile strengths, and equal opportunities for union between the concrete and the bars, the bar with the smallest diameter is to be preferred because the greatest shrinkage grip occurs between the metal and concrete where the thickness of concrete is greatest.

For bars provided with extensions to engage the concrete, of those with equal measurements over these extensions, a round rod has the greatest strength. As the ribs need project no farther from a round core than from any other, the diameter of this type of bar will be less than that of any other with the same factors of usefulness.

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

1. A tension member for reinforcing concrete construction, comprising a cylindrical body, four longitudinal ribs extending along and equally spaced around the same, and transverse ribs extending between the longitudinal ribs to form pockets, the outer surfaces of the ribs being convex and forming segments of circles, and the ribs being staggered around the body portion.

2. A metal bar for reinforcing concrete construction composed of an integral body portion having outwardly curved surfaces, four or more longitudinal ribs co-extensive with the bar which divide the surface into sections or faces, and cross ribs, each extending across one face or section and merging into two adjacent longitudinal ribs, whereby each section or face is divided into a longitudinal series of cups or depressions, each having a convex bottom, the highest portion of which lies below a plane connecting the top portions of adjacent longitudinal ribs, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD N. PAGELSEN.

Witnesses:

FREDERICK M. BROWN.

N. BRUCE HUDSON.