

A. C. KUESTER.
 REINFORCING BAR FOR CONCRETE STRUCTURES.
 APPLICATION FILED MAR. 27, 1907.

947,199.

Patented Jan. 18, 1910.

Fig. 1.

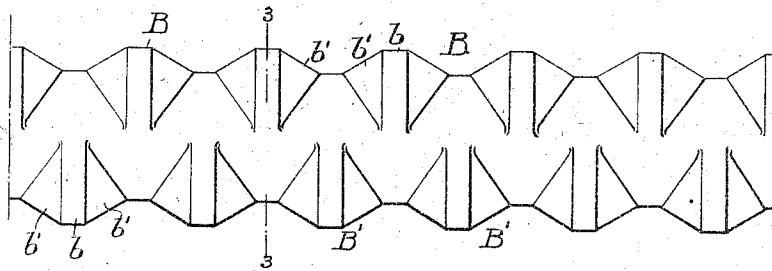


Fig. 2.

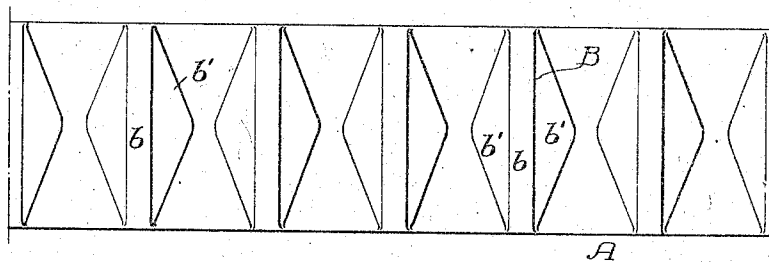
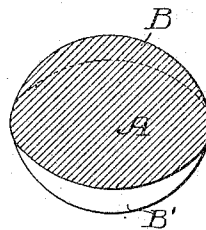


Fig. 3.



Witnesses:
 Will A. Burrows
 Augustus R. Oppie

Inventor:
 Albert C. Kuester
 by his Attorneys,
 Howson & Howson

UNITED STATES PATENT OFFICE.

ALBERT C. KUESTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE SCOTFIELD COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

REINFORCING-BAR FOR CONCRETE STRUCTURES.

947,199.

Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed March 27, 1907. Serial No. 364,838.

To all whom it may concern:

Be it known that I, ALBERT C. KUESTER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain improvements in Reinforcing-Bars for Concrete Structures, of which the following is a specification.

One object of my invention is to provide a novel form of tension member particularly applicable for use in concrete steel construction, which while having its parts so arranged that any section taken in a plane at right angles to its longitudinal axis shall be equal in area to any other section similarly taken at any other part of its length, shall also be easy to roll as well as possess to a high degree the various characteristics necessary in reinforcing bars, for use in structures of the class noted.

I further desire to provide a reinforcing bar of the above general character which shall be provided with projecting portions at intervals along its length, of such configurations as will permit of their formation by rolls easily made and maintained in good condition, and which shall satisfactorily act to tie together the various parts of the structure in which the bar is embedded.

These objects I attain as hereinafter set forth, reference being had to the accompanying drawings, in which:

Figure 1, is a side elevation of a length of my improved reinforcing bar; Fig. 2, is a plan of the bar illustrated in Fig. 1, and Fig. 3, is a vertical section taken on the line 3-3, Fig. 1.

In the above drawings, A represents the body of the bar, which will be seen from Fig. 3, to be substantially elliptical in section. At intervals along the two faces of the bar are formed projections B and B', each of which may be described as consisting of a rib portion *b*, the elements of whose surface are of equal length and substantially parallel with the longitudinal axis of the bar. This portion of each projection is at its maximum distance from the center line of the bar at a point intersected by the minor axis of the elliptical section of the bar, and from here it tapers off in both directions until it reaches the edges of the bar where it coincides with said edges. From each edge of this projecting portion *b*, there extend inclined portions *b'*, sloping downwardly longitudinally of the bar, the pro-

jections being so spaced that the distance between their adjacent portions *b'* is, at their nearest points, substantially equal to the width of the portion *b*. Moreover the projections B on one side of the bar are placed so as to be midway between a pair of projections B' on the opposite side of the bar;—the result of this construction being that any transverse section of the bar is substantially equal in area to any other transverse section thereof, regardless of where it is taken. As a result, it is obvious that in rolling the bar there is no surplus matter to be taken care of as the piece under treatment is passed through the rolls, and moreover, when the bar is in use, its tensile strength is substantially the same at all points of its length. The nature of the projections is also such that the bar makes a satisfactory bond with the concrete of the structure in which it is embedded, inasmuch as they constitute isolated transverse ribs which effectually render impossible any relative movement between the bar and the body of concrete.

In order to facilitate the making of rolls, I may make the grooves therein for forming the projecting portions B and B' with a milling cutter, in which case all transverse circular elements of the surface *b'* will be concentric with the transverse circular elements of the surface *b*; thus making all transverse sectional areas of the bar substantially equal in area, although not mathematically so.

I claim:

1. A reinforcing bar of equal transverse sectional areas throughout its length, said bar having two series of projections on opposite sides thereof, the projections of one series being opposite the spaces between the projections of the other series and being equal in area of cross section to said spaces in a median plane of the bar, said projections diminishing in cross section from such plane to the sides of the bar.

2. A reinforcing bar of substantially equal transverse sectional area throughout its length, said bar having two series of projections on opposite sides thereof, the projections of one series being opposite the spaces between the projections of the other series and each consisting of an independent transversely extending rib, each projection and the space between a pair of adjacent projec-

tions being of substantially equal area of cross section in a median plane of the bar, and said projections sloping or decreasing in height from such median plane to the sides of the bar.

3. A reinforcing bar having a body of elliptical section and provided with two series of projections on opposite sides thereof, the area of cross section of the projections on each side of the bar being substantially equal to the area of cross section of the spaces between the projections at the median plane of the bar, each of said projections diminishing in width and height from such median plane to the sides of the bar.

4. A reinforcing bar consisting of a substantially round body provided with opposite longitudinal series of transversely arranged bonding projections, the separate se-

ries of projections projecting from diametrically opposite portions of the bar body, and the projections of one series being in staggered relation to the projections of the opposite series, each of said projections encircling approximately one-half of the circumference of the bar body and being of a tapering projection from its highest point to its opposite terminals, and the projections in the two opposite rows being disposed in directly adjoining and abutting relation.

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

ALBERT C. KUESTER.

Witnesses:

G. P. MIDDLETON,
CLARA E. HUTCHINS.