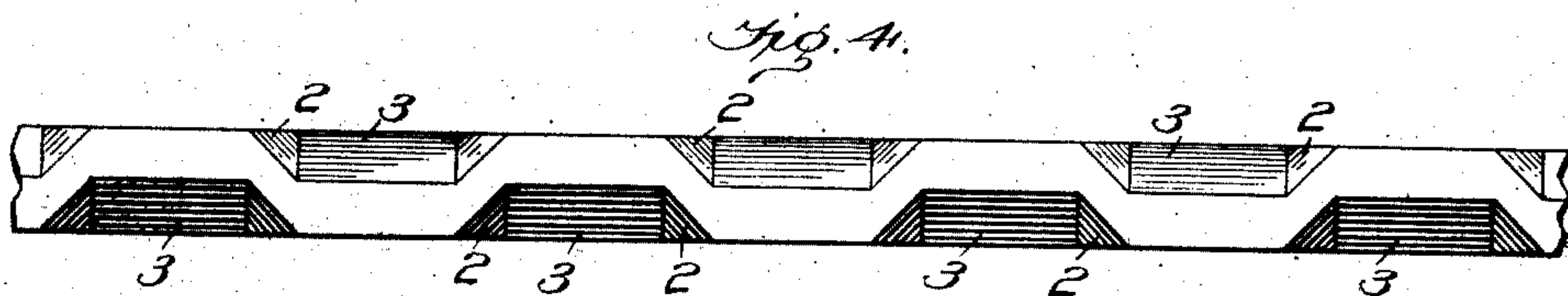
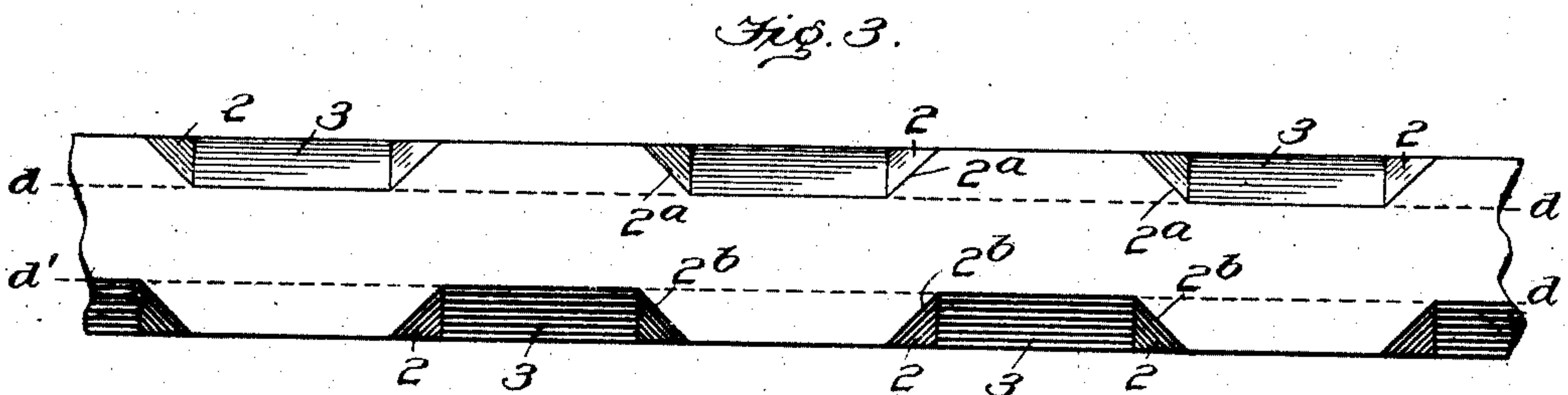
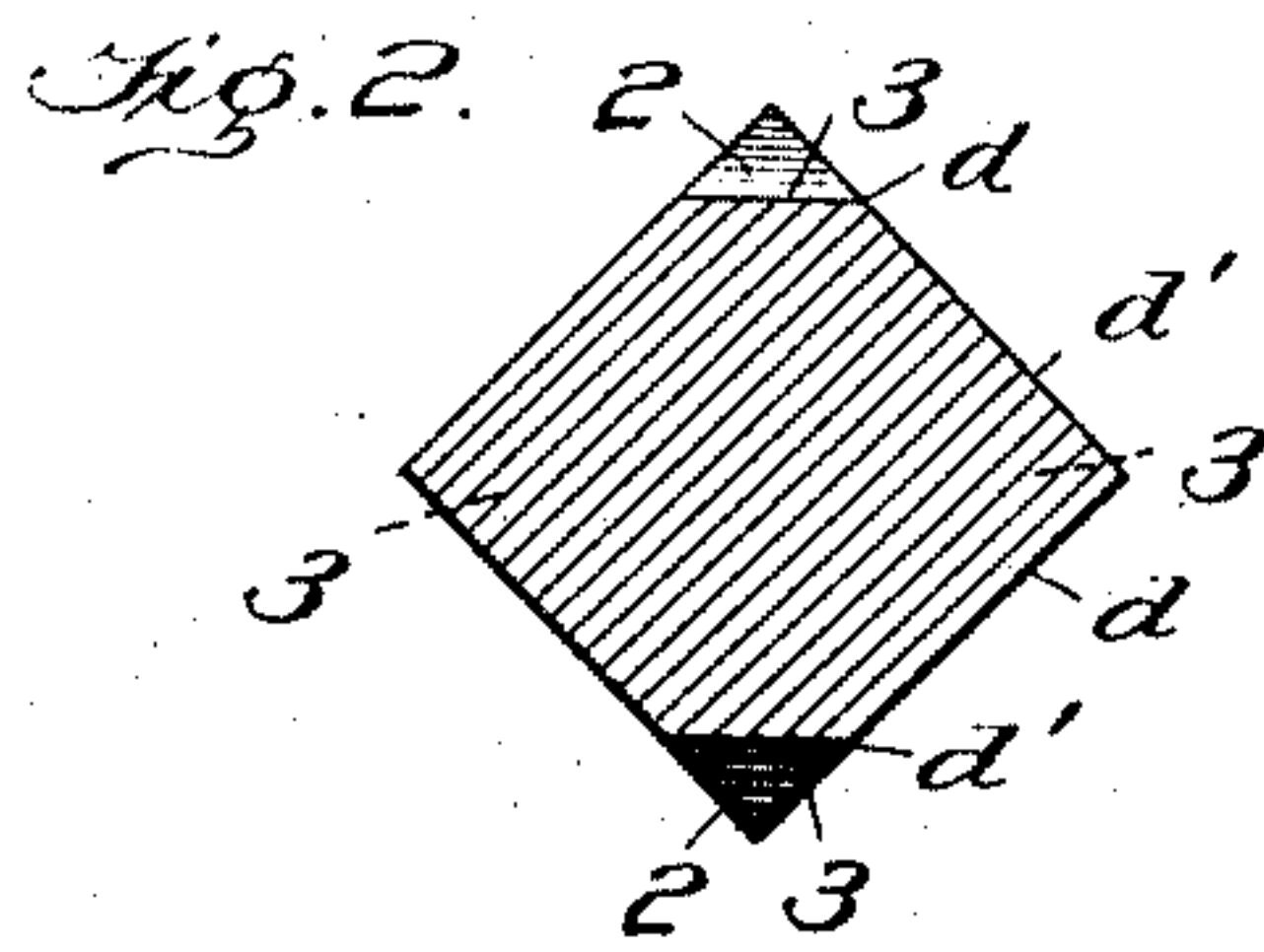
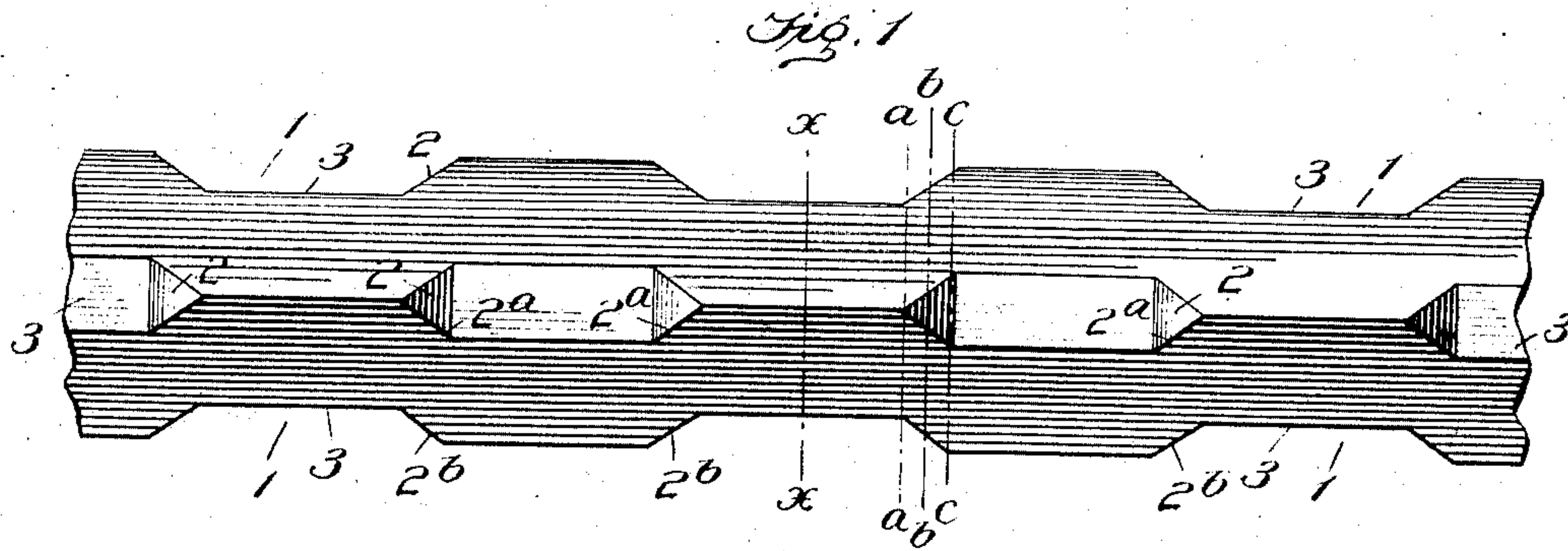


J. M. DUDLEY.
 REINFORCING BAR FOR CONCRETE CONSTRUCTIONS.
 APPLICATION FILED AUG. 5, 1907.

928,430.

Patented July 20, 1909.



Inventor

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Witnesses

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JAMES M. DUDLEY, OF BESSEMER, ALABAMA.

REINFORCING-BAR FOR CONCRETE CONSTRUCTIONS.

No. 928,430.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed August 5, 1907. Serial No. 387,164.

To all whom it may concern:

Be it known that I, JAMES M. DUDLEY, a citizen of the United States, residing at Bessemer, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Reinforcing - Bars for Concrete Constructions, of which the following is a specification.

My invention relates to metal bars or rods for reinforcing concrete or similar constructions.

It is my object to produce a reinforcing bar which shall, as a whole, possess the maximum strength for its weight in metal and which shall be so designed that it may be readily and cheaply rolled into the desired conformation which will be such as to form a rigid mechanical bond with material in which it is embedded.

With the above objects in view I use a bar of metal which is polygonal in cross section and has its edges only indented in such a manner as to give the bar a substantially uniform cross-sectional area which shall be but little less than the cross-sectional area of the original stock, the indentations being such as to give the desired gripping surfaces without appreciably weakening the bar and as to be readily formed by rolling so that the bars may be produced at a minimum cost. By utilizing a rectangular bar, as I prefer, and indenting only its corner edges, while leaving the main side faces of the bar undisturbed, I secure a bar which is subjected to the minimum strain in manufacture and has no cross cuts or indentations across or in its side faces which would greatly weaken the bar as a whole. As a result of my construction the bar will have a tensile strength per unit of cross-sectional area equal to that of the original stock and at the same time will have nearly an equal cross-sectional area with the original stock.

Referring to the accompanying drawings in which I have illustrated preferred forms of my invention:—Figure 1, represents an elevation of a square bar looking at it from one of its indented edges. Fig. 2, represents a cross-sectional view along the line $x-x$, Fig. 1. Fig. 3, represents a plan view looking at one side of the bar which may be either square or rectangular. Fig. 4, represents a view of a narrow side of a flat rectangular bar.

Similar reference characters refer to similar parts throughout the drawings.

Referring to the bar illustrated in Fig. 1,

this is formed from square stock which is provided along each of its four edges with a series of spaced indentations 1 which are illustrated as notches having slanting gripping faces 2 and straight longitudinal faces 3 forming the bottom of the notches. The notches are diametrically oppositely disposed in pairs and arranged so that the gripping faces 2 on the notches along one pair of diametrically opposite edges overlap in transverse planes the reversely disposed gripping faces of the notches in the other pair of diametrically opposite edges. In other words, the notches are arranged in opposite pairs which are staggered relatively. It will be noted in Fig. 3 that the adjacent side edges 2^a and 2^b of the gripping faces 2 in any side face of the bar are parallel, the several gripping faces having the same angular inclination. This arrangement of the notches produces a bar which will have the same cross-sectional area at the points of intersection by the planes a , b and c of Fig. 1, and therefore throughout its whole length. The planes a , b and c will intersect the bar so as to form polygons, whose areas will be equal.

In Fig. 3 it will be noted that the portions of the side faces of the bar included between the lines d and d' are left entirely unaffected by the operation of forming the notches, thereby leaving undisturbed the major portion of the bar, such as is included in the hexagonal area which in Fig. 2 is bounded by the full and dotted lines and the portions of the sides between the lines d and d' . This longitudinal hexagonal central portion of the bar being unweakened by the process of forming the notches or gripping indentations would therefore possess per unit of cross-sectional area the full tensile strength of the original stock which it practically equals in cross-sectional area. The notches may be rolled in the edges with approximately one third of the power that would be required to roll similar notches extending across the side faces of the stock or disposed wholly within a side face.

While this construction illustrated is preferable for producing an absolute uniformity of cross-sectional area throughout the bar, the same results may be practically obtained where curved or V-shaped notches are similarly disposed in the same staggered manner along the edges so as to produce substantial uniformity in cross-sectional area.

In Fig. 4 I have illustrated a flat rectangular bar, the wide side faces of which correspond to the showing in Fig. 3.

Obviously my improved bar may be
5 formed in various shapes from different kinds of stock, the length and depth of the indentations being designed as occasion may require. Also the form and design of the bar may be variously modified within the
10 scope of my invention.

Having heretofore illustrated and described several preferred forms of my invention I desire, without particular limitation thereto, to secure and protect by Letters
15 Patent, the following.

A reinforcing bar of substantially rectangular cross section with two of the oppositely disposed corners having alternate angled and flattened sections and the remain-

ing two corners similarly constructed, the
20 flattened portions of each pair of corners being adjacent the angled portions of the remaining pair of corners, each of the flattened portions terminating in triangular
25 plane surfaces the apexes of which lie in the lines of the angled portions and the bases in the planes of the flattened portions, the triangles of one pair of corners lying adjacent the triangles of the other pair and reversely
30 directed.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES M. DUDLEY.

Witnesses:

J. H. TEWHUS,
ANNIE L. PEACE.