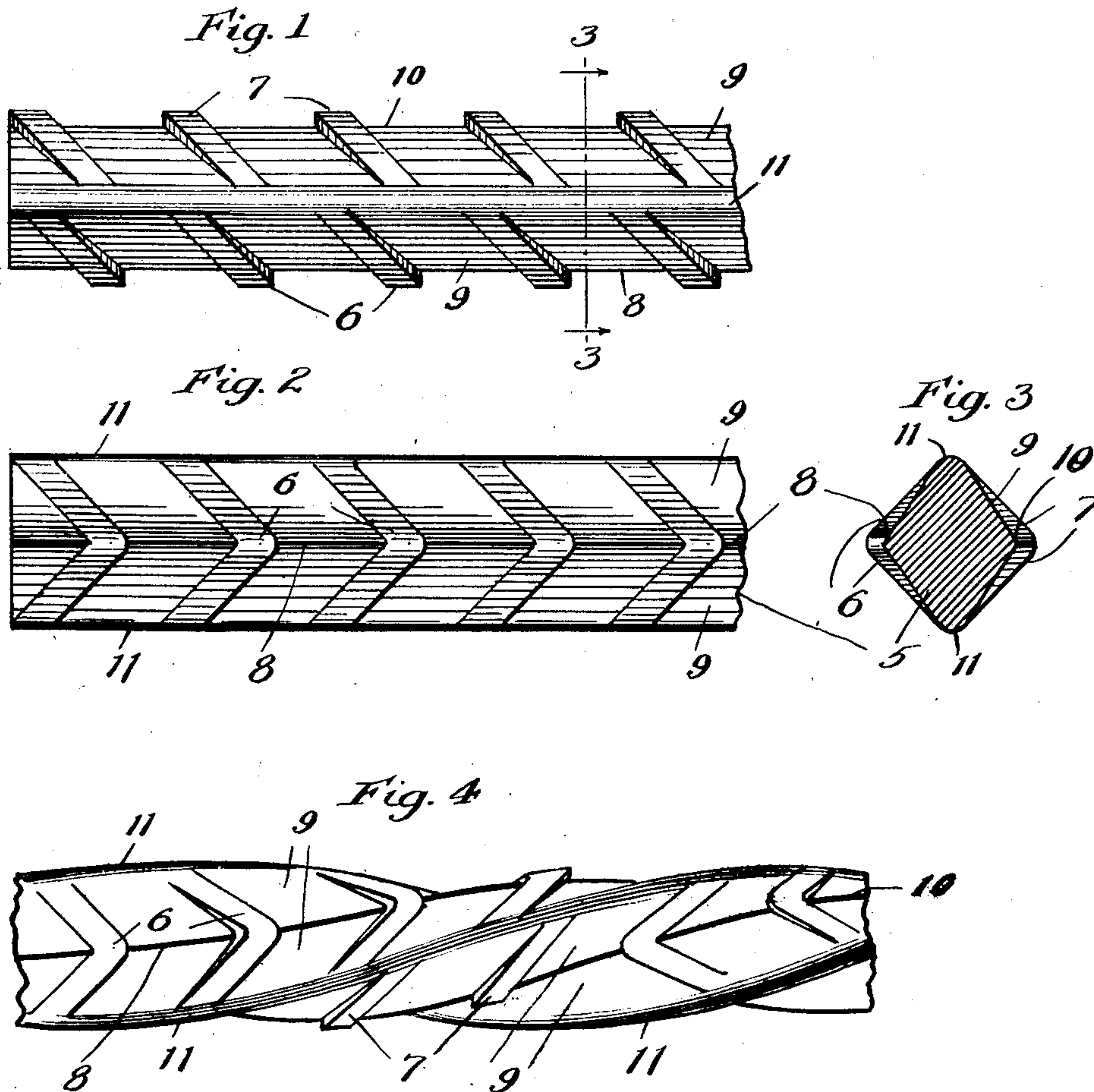


No. 884,341.

PATENTED APR. 7, 1908.

W. W. RAMSEY.  
METAL REINFORCE FOR CONCRETE.

APPLICATION FILED JULY 31, 1907.



Witnesses:

Wm. Guiger  
H. W. Munday

William W. Ramsey *Inventor*  
By Munday, Everts, Adcock & Clarke.  
*Attorneys*



# UNITED STATES PATENT OFFICE.

WILLIAM W. RAMSEY, OF CHICAGO, ILLINOIS.

## METAL REINFORCE FOR CONCRETE.

No. 884,341.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed July 31, 1907. Serial No. 386,436.

*To all whom it may concern:*

Be it known that I, WILLIAM W. RAMSEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in a Metal Reinforce for Concrete, of which the following is a specification.

This invention relates to metal bars for reinforcing concrete, and its object has been the production of a form of bar adapted to be shaped by rolling, and which is superior to other bars in the perfect lock it affords to the concrete against movement longitudinally of the bar.

The nature of the improvement is fully disclosed below, and will also be understood from the accompanying drawing in which

Figure 1 is an elevation of a section or portion of my improved bar. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is an elevation of bar showing it twisted.

In said drawing, 5 is the body of the bar. As seen at Fig. 3, it is substantially square in cross section and it is provided at intervals of an inch or so with transverse projections intended and adapted to form shoulders which will act as abutments to the concrete in which it is embedded and prevent any movement by the concrete longitudinally of the bar. These transverse shoulders are desirably in the form of raised ridges 6, 6 and 7, 7. There are two series of these ridges and each ridge forms a V in outline, with its apex coincident with one of the longitudinal corners of the bar and its limbs extending in diagonal directions across the flat faces which come together at the corner. The ridges are highest at the apices and fade away upon the flat sides. Thus in the drawing, 8 is one of the corners to which the ridges 6 are applied, and 9, 9 are the faces of the bar which meet at that corner, and upon which the limbs of the ridges are spread, while 10 is the other corner, opposite to corner 8, to which the ridges 7 are applied in a similar manner, except that the limbs of ridges 7 are preferably reversed in direction from those of ridges 6.

The ridges 6 and 7 form abutments upon opposite sides of the bar, and effectually resist any tendency by the concrete to change position longitudinally of the bar. If preferred, the bar may be twisted as in Fig. 4, with the results usually attending that change.

The vertical faces of the ridges are abrupt so that the concrete cannot slide or ride over them, and may be formed in the rolling process of manufacture by depressing the interspaces between them. The corners 11 of the bar are desirably rounded off as shown at Fig. 3.

I prefer to use my improved bar in the twisted form because the V shaped ridges extending across the bar as in Fig. 4 tend to prevent any tendency to untwist. I thus obtain the full strength of the bar under tension and prevent the elongation incident thereto.

I claim:—

1. The concrete reinforcing bar, diamond shape in cross section, and having diagonal abutment ridges, meeting at and extending from the obtuse corners of the bar, said abutment ridges vanishing into the side faces of the bar at the acute angle corners thereof, substantially as specified.

2. The concrete reinforcing bar, diamond shaped in cross section, and having diagonal abutment ridges meeting each other at an angle in pairs at the obtuse angle corners of the diamond shaped bar, and extending to the acute angle corners thereof, said diagonal abutment ridges pointing or extending in opposite directions on the two opposite obtuse angle corners of the bar, said ridges vanishing into the flat sides of the bar at the acute angle corners thereof, substantially as specified.

3. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs at two opposite corners of the bar and extending across the adjacent side faces of the bar, said bar having its other two corners smooth and free from projections, substantially as specified.

4. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs at two opposite corners of the bar and extending across the adjacent side faces of the bar, said bar having its other two corners smooth and free from projections, said diagonal abutment ridges tapering in thickness from the corners of the bar where two side ridges meet towards the smooth corners of the bar, substantially as specified.

5. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs



at two opposite corners of the bar and extending across the adjacent side faces of the bar, said bar having its other two corners smooth and free from projections, said pairs of  
5 diagonal abutment ridges, which meet at one corner, pointing or extending in the opposite direction from those which meet at the opposite corner of the bar, substantially as specified.

10 6. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs at two opposite corners of the bar and extending across the adjacent side faces of the bar,  
15 said bar having its other two corners smooth and free from projections, and said bar being twisted, substantially as specified.

20 7. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs, at two opposite corners of the bar and extending across the adjacent side faces of the bar, said bar having its other two corners smooth

and free from projections, said diagonal abutment ridges tapering in thickness from the  
25 corners of the bar, where two said ridges meet toward the smooth corners of the bar, said bar being twisted, substantially as specified.

8. The concrete reinforcing bar, rectangular in cross section, having diagonal abutment ridges meeting each other in pairs, at  
30 two opposite corners of the bar and extending across the adjacent side faces of the bar, said bar having its other two corners smooth  
35 and free from projections, said pairs of diagonal abutment ridges which meet at one corner, pointing or extending in the opposite direction from those which meet at the  
40 opposite corner of the bar, said bar being twisted, substantially as specified.

WILLIAM W. RAMSEY.

Witnesses:

H. M. MUNDAY,  
EDW. S. EVARTS.