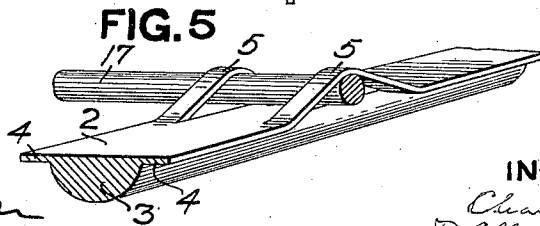
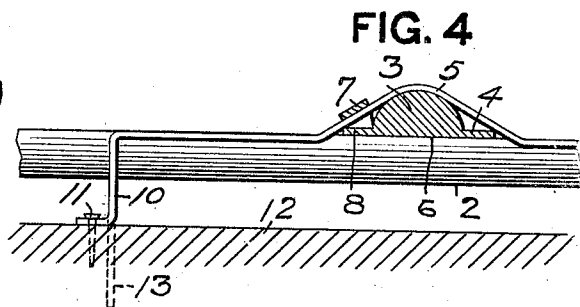
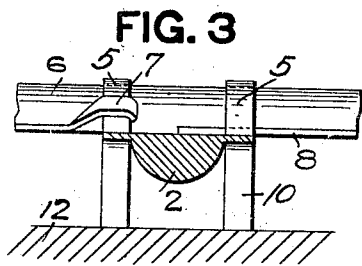
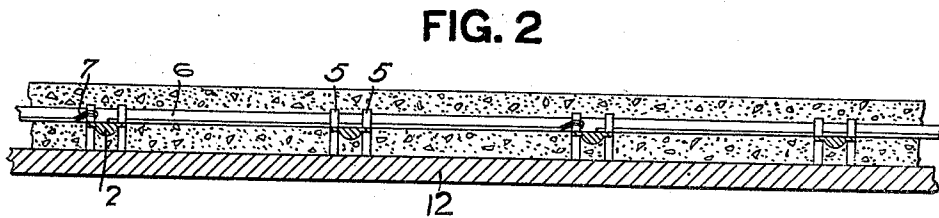
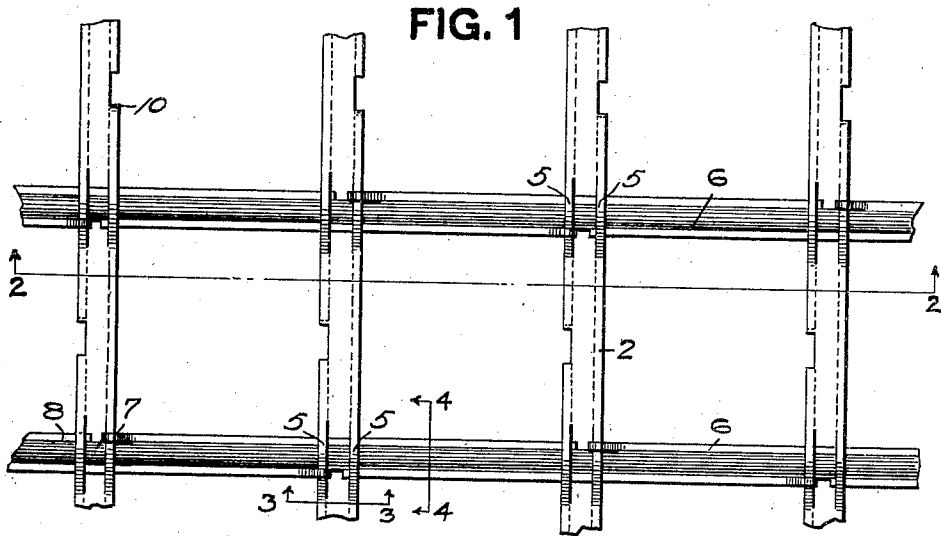


C. D. WATSON & A. W. BUEL.
 REINFORCED CONCRETE CONSTRUCTION.
 APPLICATION FILED MAY 4, 1908.

946,890.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 1.



WITNESSES.

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Robert C. Fother

INVENTORS.

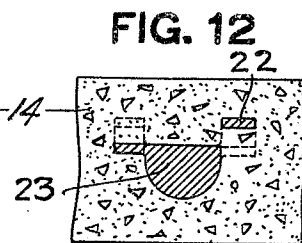
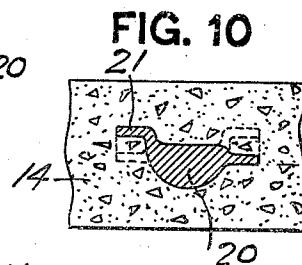
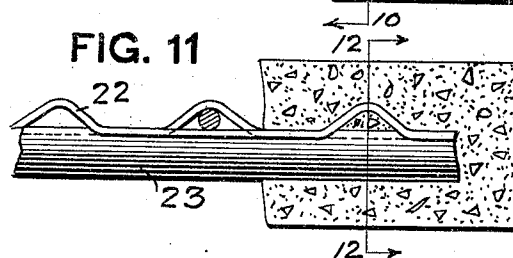
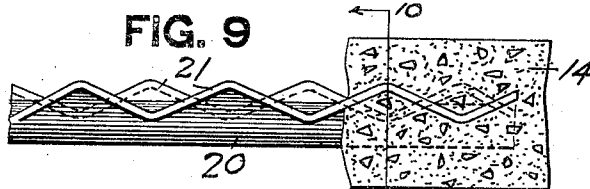
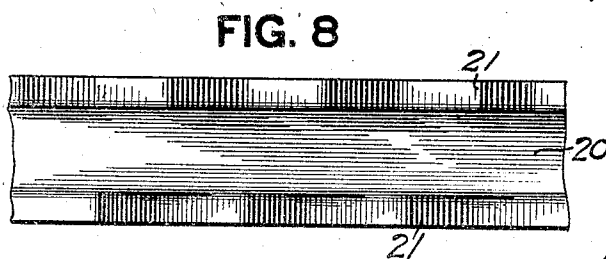
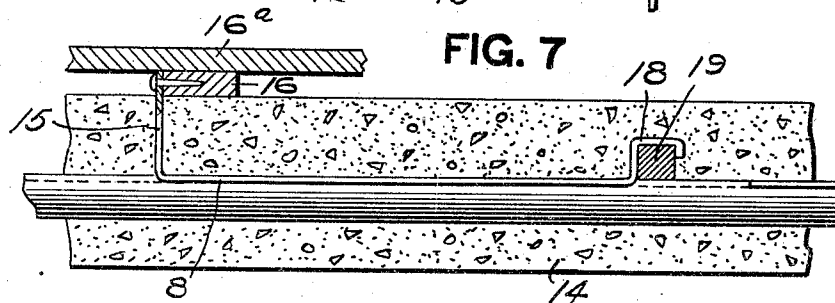
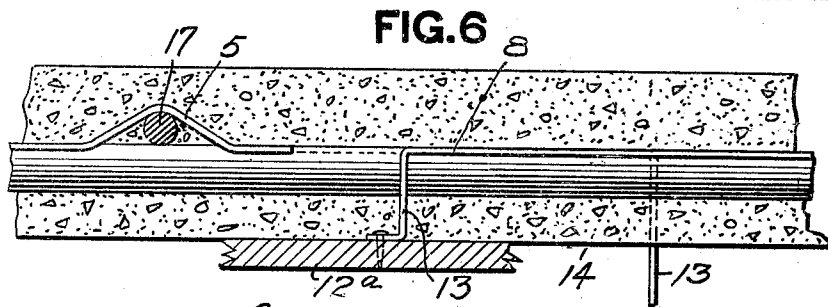
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2 SHEETS—SHEET 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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REINFORCED CONCRETE CONSTRUCTION.

946,890.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed May 4, 1908. Serial No. 430,722.

To all whom it may concern:

Be it known that we, CHARLES D. WATSON, a resident of Ben Avon, in the county of Allegheny and State of Pennsylvania, and ALBERT W. BUEL, a resident of New York, county of New York, and State of New York, have invented a new and useful Improvement in Reinforced Concrete Construction; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to reinforced concrete construction.

The main object of our invention is to provide a reinforcing bar of such cross section as to give the maximum strength while at the same time capable of being so formed as to provide for interlocking said bar with a tension bar extending at right angles thereto, or forming a mechanical bond with the concrete surrounding the same.

A further object of our invention is to provide a bar of this character provided with means in itself for supporting said bar on the centering or making provision for the attachment thereto of floor or ceiling strips. To these ends our invention comprises the novel features hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a plan view of a portion of a metallic fabric used for concrete construction embodying our invention; Fig. 2 is a section on the line 2—2 Fig. 1; Fig. 3 is an enlarged section on the line 3—3 Fig. 1; Fig. 4 is a cross section on the line 4—4 Fig. 1; Fig. 5 is a perspective view of a portion of our reinforced bar; Figs. 6, 7, 8, 9 and 11 are modified forms of our invention; Fig. 10 is a cross section on the line 10—10 Fig. 9, and Fig. 12 is a cross section on the line 12—12 Fig. 11.

In the drawings the numeral 2 designates a bar which may be rolled in suitable rolls, said bar consisting of the enlarged or thickened body portion 3 with the flanges 4 projecting out therefrom. The flanges 4 may be slit or cut at intervals to form the loops 5 and where said bar is used in connection with cross tension members 6 said tension members, which may be of the same cross section as the reinforced bar 3, are inserted in the loops 5 as indicated in Fig. 4. The tension members 6 have the straps 7 cut in the flanges 8 and said straps are adapted to

be bent over the loops 5 so as to form an inter-locking connection at the points where the bars cross each other. In this manner a metallic fabric is formed in which the parts are securely connected together so as to form a practically integral structure. In order to support the bars upon the centering while the concrete is being tamped around the fabric, the straps 10 may be cut in the flanges 4 and said straps are then turned down into the position indicated in Figs. 3 and 4. The fasteners 11 secure the straps to the centering 12. In this manner provision is made for firmly supporting the fabric so that it is held in proper position when the concrete is tamped in place. In addition the straps 13 may be formed in the flanges of the bars, said straps extending through the concrete 14 and forming a support for the ceiling strips 12^a which are often desirable in this class of work. Or, if desired, the strips 15 as indicated in Fig. 7 may extend up through the cement and may be attached to the strips 16 to which the flooring 16^a may be secured.

In Fig. 6 we have illustrated a modified form of tension bar which consists of the round bar 17 passing through the loop 5. Again, in Fig. 7 we have illustrated still another modified form of my invention in which instead of forming a loop in the flanges, the strap 18 is formed which is adapted to be bent up to almost entirely inclose the square tension member 19.

In Figs. 8 and 9 we have shown a modified form of our invention in which the bar 20 has its flanges 21 corrugated so that when the bar is surrounded with concrete these corrugations will act as a mechanical bond between the bar and the concrete and make a very strong and rigid construction.

In Figs. 11 and 12 we have illustrated another form of our invention in which the loops 22 are formed at intervals in the flanges of the bar 23 and said loops in the same manner act to lock or bind the concrete securely in place, the tension bars being omitted.

What we claim as our invention is:

1. In reinforced concrete construction, the combination of a bar, a second bar crossing said first named bar, each bar having an integral connecting device, the device of one engaging the device of the other adjacent the point of intersection.

2. In reinforced concrete construction, the combination of a bar, loops formed in said bar; a tension bar passing through said loops, said last named bar having straps
5 formed therein adapted to engage said first named bar.

3. In reinforced concrete construction, the combination of a bar having an enlarged or thickened body portion with flanges projecting therefrom, loops formed in said
10 flanges, a tension-bar of like cross section passing through said loops, said last named bar having straps formed in its flanges adapted to engage said first named bar.

15 4. In reinforced concrete construction, the combination of a bar having an enlarged or

thickened body portion with flanges projecting therefrom, loops formed in said flanges, an inverted tension-bar of similar cross section passing through said loops, said last
20 named bar having straps formed in its flanges adapted to engage said first named bar.

In testimony whereof, we the said CHARLES D. WATSON and ALBERT W. BUEL have here-
25 unto set our hands.

CHARLES D. WATSON.
ALBERT W. BUEL.

Witnesses:

ROBERT C. TOTTEN,
J. R. KELLER.