

J. O. ELLINGER.
 REINFORCEMENT FOR CONCRETE CONSTRUCTION.
 APPLICATION FILED APR. 14, 1909.

1,053,585.

Patented Feb. 18, 1913.

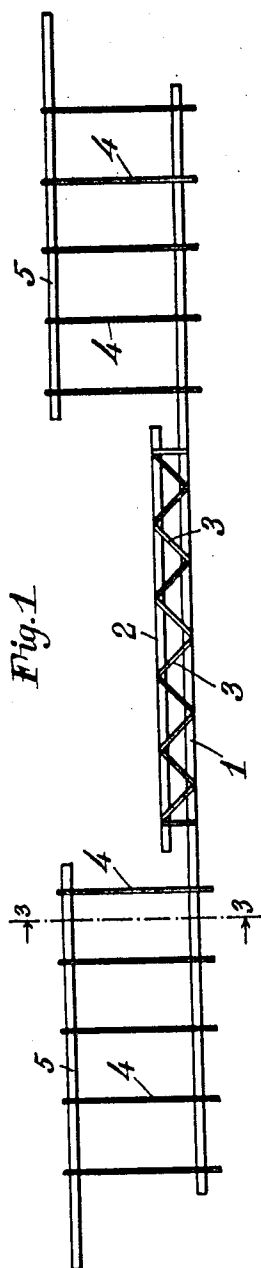


Fig. 1

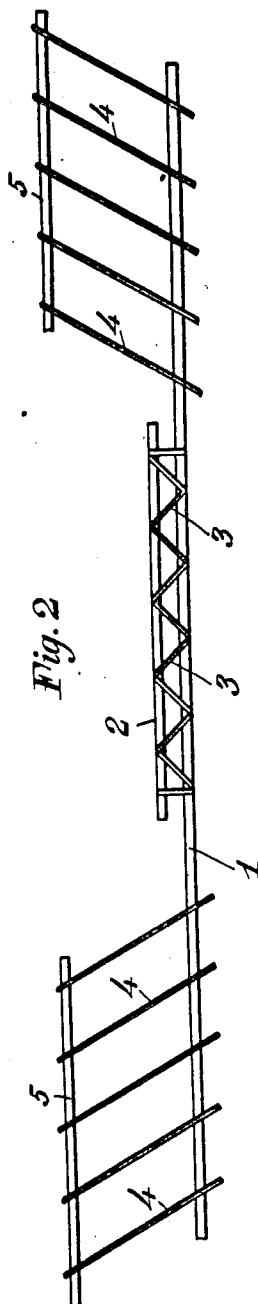


Fig. 2

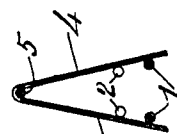


Fig. 3

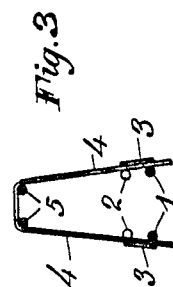


Fig. 4

Witnesses
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Isabel Richards

J. O. Ellinger Inventor
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UNITED STATES PATENT OFFICE.

JULIAN O. ELLINGER, OF NEW YORK, N. Y.

REINFORCEMENT FOR CONCRETE CONSTRUCTION.

1,053,585.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed April 14, 1909. Serial No. 489,819.

To all whom it may concern:

Be it known that I, JULIAN O. ELLINGER, a citizen of the United States, and residing in the city, county, and State of New York, have invented certain new and useful Improvements in Reinforcement for Concrete Construction, of which the following is a specification.

This invention relates to improvements and reinforcements for concrete beams, girders and the like. The particulars relate to such reinforcements wherein all the elements are securely joined together, so that they may be delivered as one unit.

One of the objects of my invention is to simplify the construction of such reinforcements.

Another object is to reduce the cost of construction.

Another object is to increase the efficiency.

Other objects will appear from the hereinafter description.

The invention is fully set forth in the following description taken in connection with the accompanying drawings forming a part of this application, in which the same reference characters indicate the same part of the certain views.

Referring to the drawings, Figure 1 is a side elevation of the reinforcement, showing the loops of the shear members perpendicular to the said bars; Fig. 2 is a side elevation of the construction, showing the loops inclined; Fig. 3 is a sectional line 3 of Fig. 1; and Fig. 4 is a cross-section of the modified construction and under which one longitudinal bar is used to connect and support the loops at their upper part.

The parts marked 1 on the drawing represent longitudinal bars, which extend substantially the full length of the reinforcement and form the main tension members thereof. 2 is a short bar located at the middle of each bar 1, substantially parallel thereto, and connected thereto by diagonal connecting rods or braces 3 and whose ends are rigidly secured to the bars 1 and 2 and form therewith a truss, the bars 2 also being auxiliary tension members. 4 are shear members, formed of a series of loops, each preferably made of continuous rods, the ends of which are connected to that part of the bar 1 outside of the rods 2 and braces 3. Other tension members are formed of short bars 5 extending longitudinally of the reinforcement and substantially parallel to the

bars 1. Each of these bars 5 forms a section of said other tension members and the inner ends of these sections are disconnected from each other and from the above referred to auxiliary members as shown and are arranged substantially on a line with the ends of the bars 2. The outer ends of said section project beyond the outer end of the bars 1, so that when a series of these reinforcements are placed together, end to end, over a column, the outer ends of the upper bars 2 will overlap and the ends of the bars 1 will rest on the column and extend substantially to the center thereof. The bars 1 and 2 in this construction form the tension member and the loops or rods 4 form the shear members. The bars 5 will take care of the negative bending moment and the shear at the points of support. It will be noted that the shear members are disconnected from the bars 2.

It is apparent that this construction is a very simple one. The amount of material used therein has greatly reduced the cost of construction and a cheaper and efficient reinforcement is produced.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is—

1. A reinforcing unit frame for concrete construction consisting of a plurality of main tension members spaced apart and substantially parallel to each other, auxiliary tension members arranged near the middle of and substantially parallel to the main tension members, diagonal members rigidly connected to the main and auxiliary tension members and forming therewith a truss at the middle of the frame, the truss extending longitudinally of the frame and terminating short of the ends of the latter, a tension member comprising sections which are disconnected from the auxiliary tension members and respectively are arranged at opposite sides of the latter and extend along the end portions of the main tension members, and shear members rigidly secured to said sections and the end portions of the main tension member and rigidly connecting the same together, the shear members being disconnected from said truss.

2. A reinforcing unit frame for concrete construction consisting of a plurality of main tension members spaced apart and substantially parallel to each other, auxiliary tension members arranged near the middle of and substantially parallel to the main

tension members, diagonal members rigidly connected to the main and auxiliary tension members and forming therewith a truss at the middle of the frame, the truss extending
5 longitudinally of the frame and terminating short of the ends of the latter, a plurality of tension members each comprising sections which are disconnected from the auxiliary tension members and are arranged
10 at opposite sides of the latter and respectively along the end portions of the main tension members, and shear members rigidly secured to the end portions of the ten-

sion members and to said sections and having portions extending transversely of the reinforcement from one of said sections to another of the same; the shear members being disconnected from the truss. 15

In witness whereof I have hereunto set my hand at the city, county and State of New York, this 29th day of March, 1909. 20

JULIAN O. ELLINGER.

In presence of—

JOHN J. RANAGAN,
ISABEL R. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."