

A. L. LARSON.
 CONCRETE REINFORCEMENT.
 APPLICATION FILED JUNE 29, 1912.

1,043,442.

Patented Nov. 5, 1912.

Fig. 1

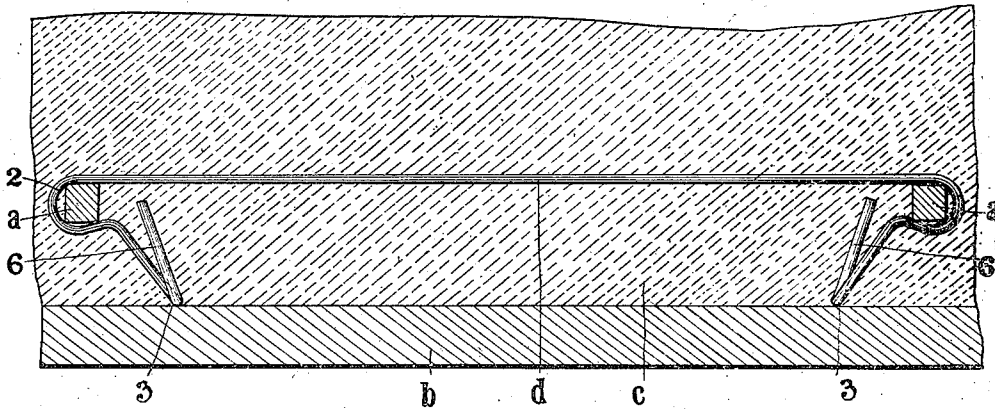


Fig. 2

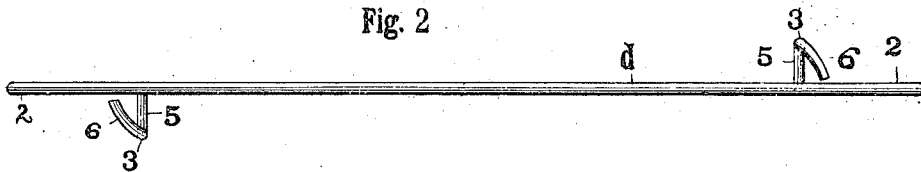


Fig. 3

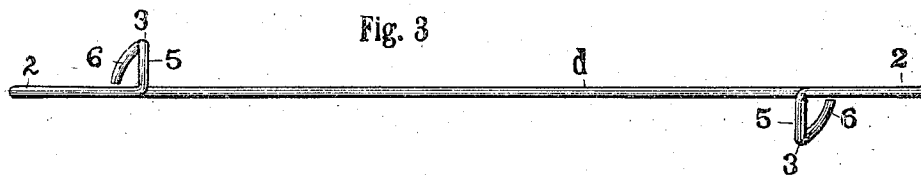
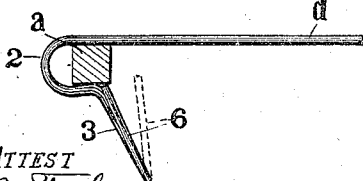
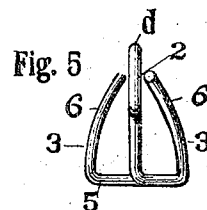


Fig. 4



ATTEST
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UNITED STATES PATENT OFFICE.

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CONCRETE REINFORCEMENT.

1,043,442.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST L. LARSON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Concrete Reinforcement, of which the following is a specification.

My invention relates to a new and original reinforcement for concrete structural work, all substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a sectional elevation of what may be considered a floor of concrete with my improved reinforcements embedded therein and showing the temporary wood work or false bottom upon which the concrete is laid. Figs. 2, 3, 4 and 5 are different views of the wire tie. Thus, Fig. 2 is a plan view of the tie, and Fig. 3 is a bottom view thereof. Fig. 4 is a cross section of one of the several supporting rods and a portion of a combined tie and support in the act of being engaged on said rod. Fig. 5 is an end elevation of the tie, showing both bent ends thereof.

Several distinct and original advantages are obtained by the invention as shown and as will appear in the description herein. Thus, *a* represents a rod or bar of sufficient size in cross section to serve the purpose, depending much upon the place of its use and the depth and weight of the concrete *c* to be supported. These rods usually are angular in cross section and twisted lengthwise and are placed at suitable intervals apart and according to the length of the ties *d*. The said ties are made out of wire of a suitable size and have somewhat peculiarly shaped ends to serve several important purposes, chief of which are the engagement upon the said rods in the loops 2 and supporting the said rods while the concrete is green as well as tying the rods permanently together. To these ends the said wires or ties have their ends bent reversely to form an open loop 2 at the immediate ends of the tie and the extremities bent into substantially stirrup shape, as at 3, 5 and 6. Thus, the portion 3 constitutes a leg and the portion 5 a straight rest or foot, and the end 6 an inclined portion extending back to the front of loop 2. The end 6 is somewhat

longer than the other stem of the stirrup so that it will come directly into the path of the rod and prevent its accidental disengagement from within the loop 2 if there were any danger of this occurring. This is shown in Fig. 1 and in dotted lines; Fig. 4. The straight bottom portion of the hook comes down in resting position on the false bottom *b*, as seen in Fig. 1. Then as the said bottom is removed after the concrete has hardened, the said straight portion is embedded in the concrete and flush with its under-surface and there is no protrusion of the wire visible. Obviously the tie or wire member *d* becomes a distinct and separate article of manufacture but adapted to be used with the rods *a* in the manner shown. It will also be seen that the entrance to loop 2 is somewhat contracted, and requires the springing back of stem 6 of the hook and the widening of said entrance somewhat as seen in Fig. 4 to get the rod into the said loop.

The open loops 2 are formed beneath the body of the wire in this instance while the hook shaped supporting portions 3 extend below said loops and at right angles thereto; and said hook portions also have their free stems 6 extending laterally to opposite sides of the body of the tie and in end view appear as seen in Fig. 5. The real function of the so-called hooks 3 is not to hook onto anything but rather to serve as supports or legs for the tie and the rods or bars *a*. In a true sense, therefore, the said ties serve as combined tie and rod supports and have their working purpose distinctly associated with said rods.

If the ties and rods were used in columns, posts, girders or the like the construction and connection of the said parts would be the same as herein. In that case the rods would run lengthwise of such post, column, girder or the like and the ties transversely, but there would be no other difference.

What I claim is:

In concrete reinforcing work, a wire tie having open spring loops adapted to receive strengthening bars for reinforcing concrete and the ends of said wire bent into supports of substantially stirrup shape beneath said loops, the said supports comprising leg portions 3 in the same vertical plane as the body of said wire and said loops and straight foot portions 5 at right

angles to the body of the wire and extremities 6 extending upward and inward at an inclination from the outer ends of said straight portions and terminating in front
5 of the entrance to said loops, the bends of said wire at the ends of said straight portions 5 being substantially at right angles and the said straight portions on each wire

projecting laterally at right angles to opposite sides in respect to the body of the wire. 10

In testimony whereof I affix my signature in presence of two witnesses.

AUGUST L. LARSON.

Witnesses:

R. B. MOSER,

E. M. FISHER.