

E. McCLURE.
CONCRETE REINFORCEMENT.
APPLICATION FILED AUG. 8, 1910.

992,970.

Patented May 23, 1911.

Fig. 1.

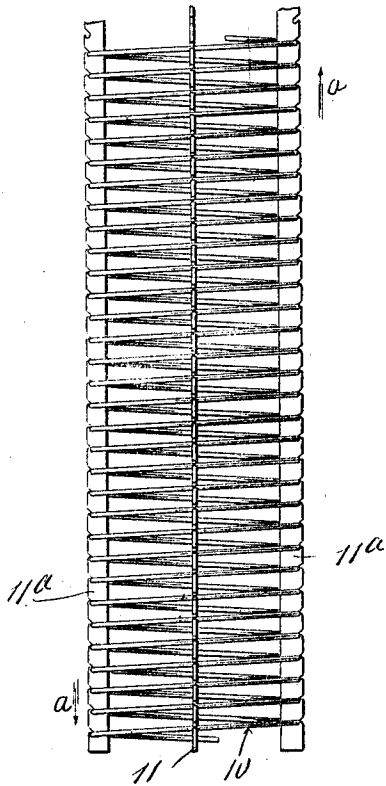


Fig. 2.

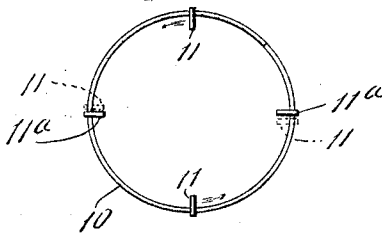


Fig. 5.

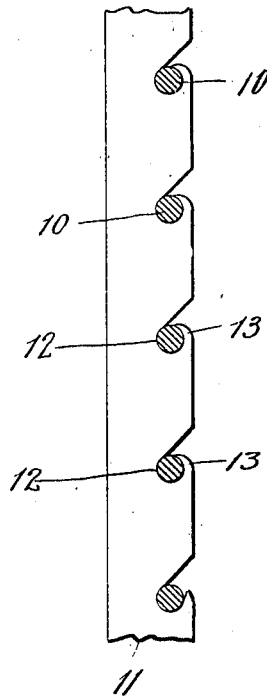


Fig. 3.

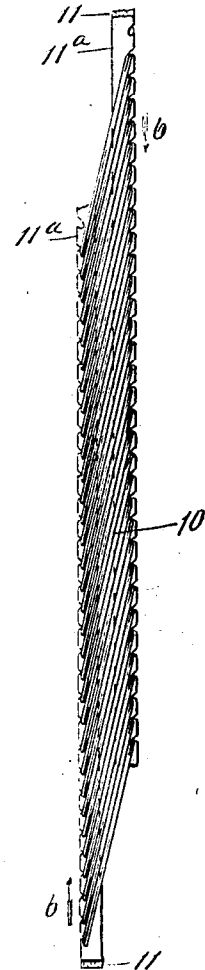
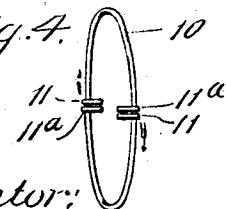


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CONCRETE REINFORCEMENT.

992,970.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed August 8, 1910. Serial No. 576,088.

To all whom it may concern:

Be it known that I, EDWARD McCCLURE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Concrete Reinforcements, of which the following is a specification.

This invention relates to concrete reinforcements and more particularly to that class of reinforcements used in reinforced concrete columns for resisting the lateral or transverse stresses that occur therein.

The object of this invention is to provide a reinforcement unit of this class which may be collapsed into condensed form for transportation or storage, and which may be readily extended into operative condition for use in the column.

To such ends this invention consists in a reinforcement for resisting the lateral stresses in columns, and having spaced, encircling reinforcement members and one or more spacing members directly secured thereto in such manner that the whole may be collapsed upon itself into compact form or extended into operative condition.

The invention further consists in the several novel features of construction and arrangement set forth in the following specification and particularly pointed out in the claims.

The invention is clearly illustrated in the drawing furnished herewith, in which—

Figure 1 is a side elevation of a reinforcement embodying the preferred form of the invention and showing the same in its extended or operative position, Fig. 2 is an end view thereof, Fig. 3 is a side elevation of the reinforcement shown in Fig. 1, but illustrating the same in its collapsed condition, Fig. 4 is an end view of the reinforcement in its collapsed condition and Fig. 5 is a fragmental side view of a spacing member showing a number of the encircling members in cross section and secured upon said spacing member.

Referring to the drawings, which show an embodiment of the preferred form of the invention, an encircling reinforcement element 10, will be seen, which element is adapted to act as a reinforcement for reinforced concrete columns and arranged to resist the lateral or transverse stresses that occur therein. Said encircling reinforcement element may be made in various forms, and as

shown comprises a spiral band, the coils or turns of which may be spaced apart to suit the particular conditions in any given case. Said spiral band may be made of round rod or wire of proper diameter, but it is obvious that various other forms of strain resisting elements may be used. For maintaining the coils of said encircling reinforcement element in spaced relation to each other, spacing members 11, 11^a, are provided, which as shown may have seats 12, adapted to receive the coils of the encircling reinforcement element 10. It is preferred to secure said encircling members in the seats 12, and to accomplish this, overhanging portions are provided upon the spacing member, which as shown may comprise tongues 13, that may be clenched over the portions of the encircling members confined in the seats.

Many forms of spacing members are well known to those skilled in the art, and may be substituted for the one shown in the drawings without departing from the spirit of this invention.

It is preferred to employ two or more spacing members, two of which 11^a, are arranged diametrically opposite to each other as shown in Figs. 1 and 2, which spacing members act not only to space the several coils or turns of the encircling reinforcement elements, but to provide means whereby said encircling reinforcement may be moved into condensed condition. When the particular form of spacing member shown in the drawing is used, the tongues 13 may be clenched down upon the encircling members sufficiently to retain the same in their seats, but not firmly enough to prevent the several coils of the encircling reinforcements from turning in the seats. When more than two spacing members are used in the device, said extra spacing member or members should be loosely secured upon the encircling members so that they may be slid around upon the encircling members until brought adjacent to the stationary spacing members 11^a. When only two spacing members are used, it is evident that the reinforcement may be collapsed into condensed form by simply forcing the spacing members 11^a, in opposite directions as indicated by the arrows *a*, in Fig. 1, until the parts are brought into the collapsed condition seen in Fig. 3. In this condition the parts are brought into the compact form and the parts may be

easily handled and will occupy considerably less space than the parts would in their extended form. To bring said condensed reinforcement into operative position, the bars 11^a, are moved in opposite directions, as indicated by the arrows *b*, in Fig. 3, until the parts assume the original position shown in Fig. 1. When more than two spacing members are employed in the device, the other spacing members are first shifted around until they occupy the position shown in dotted lines in Fig. 2; that is to say, they are brought close to the stationary spacing members 11^a, so that the seats thereof will be in register with each other, whereby the seats will act as fulcrums or bearings, in which the several coils of the encircling element may turn. This form may then be condensed by simply shifting the groups of spacing members longitudinally in opposite directions as before, and the reinforcement may be extended into operative form by re-shifting the spacing members and subsequently moving the intermediate spacing members into such positions that all will be symmetrically disposed with respect to each other. After this has been done, the tongues of the spacing members may be clenched down if desired, to more rigidly fasten the encircling members to the spacing members.

The advantages of this device are readily apparent. The condensed structure can be handled easier, occupies less room in storage, and reduces the cost of transportation on account of the reduction of space occupied.

While I have shown and described the preferred form of the invention, it is to be understood that various modifications and arrangements of the several parts may be made without departing from the spirit of the invention, and I do not desire, therefore, to limit myself to the exact construction shown and described, except as may be necessitated by the state of the art.

I claim as new and desire to secure by Letters Patent:

1. A reinforcement for reinforced concrete columns, comprising an encircling reinforcement element having a plurality of spaced encircling members, and spacing bars for said encircling reinforcement element having notches in which the reinforcement members of the reinforcement element are rotatively secured and having overhanging portions

for loosely holding said encircling members in the notches, whereby said spacing members may be shifted longitudinally of themselves to bring said encircling reinforcement into collapsed form.

2. A reinforcement for reinforced concrete columns, comprising an encircling reinforcement element having a plurality of encircling members, a pair of diametrically opposed spacing members having seats formed therein for receiving and spacing apart said encircling members and overhanging portions for loosely retaining said encircling members in their seats, said seats acting as bearings in which the encircling members may turn, whereby said spacing members may be shifted relative to each other to collapse the reinforcement into compact form.

3. A reinforcement for reinforced concrete columns, comprising a spiral reinforcement, a pair of diametrically opposed spacing members having seats formed therein at definite, fixed, points thereon for loosely receiving and spacing the several coils of the spiral reinforcement member, said spacing members being adapted to be shifted relative to each other to collapse the reinforcement into compact form.

4. A reinforcement for reinforced concrete columns, comprising a spiral reinforcement member formed of a round rod, a pair of diametrically opposed spacing members, having notches formed therein for receiving and spacing apart the several coils of the spiral reinforcement member and overhanging tongues arranged to loosely secure said coils upon the spacing members, said spacing members being adapted to be shifted relative to each other to collapse the spiral reinforcement into compact form.

5. A concrete column reinforcement unit, comprising a spiral band and spacing bars for spacing the coils apart, the several coils of the band being rotatively secured in seats formed in said spacing bars, and being capable of movement into collapsed form while connected with the spacing members.

In witness whereof I have hereunto subscribed my name at Chicago, Cook county, Illinois, this 1st day of August 1910.

EDWARD McCLURE.

Witnesses:

FANNIE F. RICHARDS,
CHARLES O. SHERVEY.