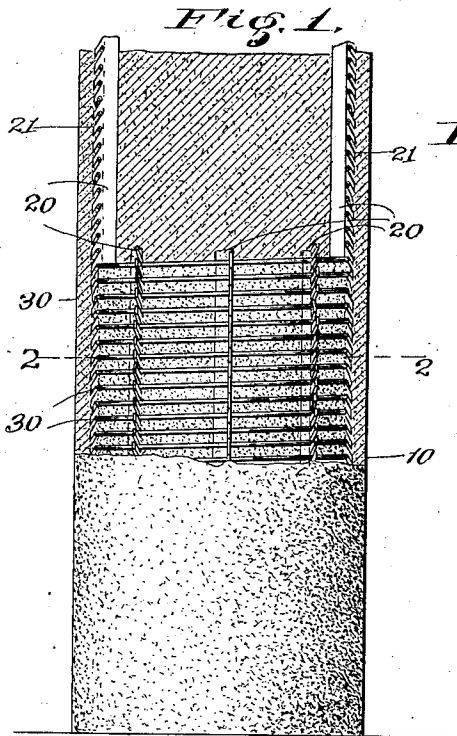


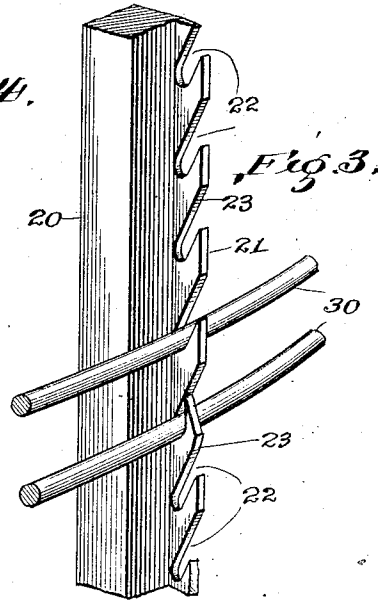
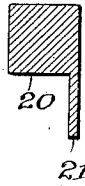
No. 857,821.

PATENTED JUNE 25, 1907.

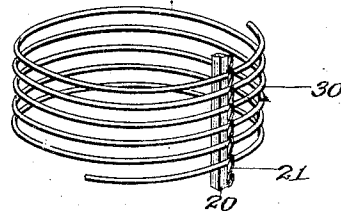
E. McCLURE.  
BUILDING CONSTRUCTION.  
APPLICATION FILED DEC. 17, 1906.



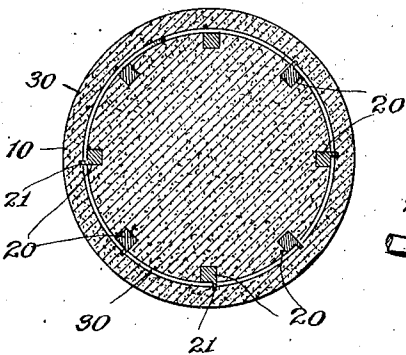
*Fig. 4.*



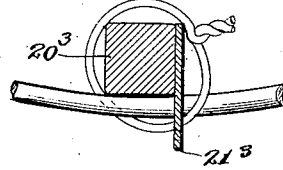
*Fig. 5.*



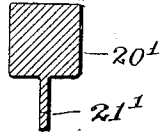
*Fig. 2.*



*Fig. 8.*

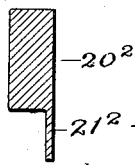


*Fig. 6.*



Witnesses:  
Wm. P. Bond  
Lester S. Russell

*Fig. 7.*



Inventor:  
Edward M. Clare,  
by Charles C. Sherry,  
his Atty.

# UNITED STATES PATENT OFFICE.

EDWARD McCLURE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
FRANKLIN P. SMITH, OF CHICAGO, ILLINOIS.

## BUILDING CONSTRUCTION.

No. 857,821.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed December 17, 1906. Serial No. 348,119.

*To all whom it may concern:*

Be it known that I, EDWARD McCLURE, a citizen of the United States, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Building Construction, of which the following is a full, clear, and exact description.

My invention relates to certain new and useful improvements in building construction and more particularly to improvements in the columns which form the upright supporting members, of the building.

The object of the invention is to simplify constructions of this class, to increase the strength thereof, to provide a rigid and practically inflexible binder for the concrete and to otherwise improve the same.

To such end the invention relates to certain novel features of construction and arrangement, a description, of which will be found in the following specification and the essential features of which will be more definitely pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawing in which

Figure 1 is a view partly in side elevation and partly in section illustrating the preferred form of my invention. Fig. 2 is a horizontal section taken in the line 2-2 Fig. 1. Fig. 3 is a fragmental perspective view of one of the upright members, and binder wire that form the main frame or skeleton of the column. Fig. 4 is a horizontal cross section through one of the uprights. Fig. 5 is a perspective view of a fragment of the binder wire and one upright, and Figs. 6, 7 and 8 are horizontal cross sections of modified forms of uprights.

In Figs. 1 to 5, inclusive, 10 represents a column constructed in accordance with the preferred form of my invention. As shown the frame work of the column contains a number of circumferentially disposed bars or uprights 20, of any suitable cross section, and preferably of rolled steel bars. The size of the bars, that is to say the area of their cross section, and their number depend upon the size of the column and the load to be carried, and the ones shown in Figs. 3 and 4 are approximately half size and suitable for a column of say, from 18 to 30 inches. These bars are connected by a coil of wire 30, which is wound around the bars and suitably spaced

apart and connected thereto by a serrated or toothed fin or web 21, which extends out from the main part of the bar or rod as clearly shown in Figs. 3 and 4. This fin or web 21, is quite thin as compared with the main body of the bar or rod 20, and the notches or spaces 22, between the teeth 23 preferably extend at an acute angle with respect to the bar or rod. The alternate bars or rods 20, are up-ended or reversed, to make the teeth and notches extend downward and in a direction opposite to that in which the notches in the other bars extend, the effect being to secure the wire to the bars or rods without any further fastening medium. In practice, however, it is found desirable to clench the ends of some of the teeth down upon the wire and this is done with every fifth or sixth tooth. By thus clenching a few of the teeth the wires and uprights are tied together and no twisting is possible of the frame thus formed. In constructing columns of this class it is important that the main body of the uprights should not be weakened in any manner, inasmuch as its strength will thereby be greatly impaired. Various attempts have been made to space the wires upon the uprights and to tie them thereto, as for instance, they have been wired thereto, but with a construction of this kind the frame when complete, may be twisted around and it is practically impossible to make a perfectly rigid frame, which is obviously necessary in a device of this class. For very light work, thin, notched strips have been used but this is impractical for heavy work, and if rods of large diameter are used with notches and teeth extending the full width of their faces, a great waste of material is occasioned and the bar is weakened by punching out the slots between the teeth. Furthermore the clenching down of teeth of this size becomes a difficult matter requiring extra labor and time. By constructing the rod or bar of the proper cross section to be the most effective for the purpose intended, and providing it with a serrated fin or web for the attachment of the wire, all of the undesirable and impracticable features are avoided and means are provided whereby the rods and wire may be firmly united to make a more rigid frame work, with less amount of metal, and labor in its construction. To complete the column the frame thus formed is filled with concrete 30

and the outer surface covered with two or three inches of concrete, thus completely embedding the frame in the concrete. The concrete surrounds the bars on all of their sides and fills in between the teeth of the fins and between the turns of the coil of wire, so that the frame and concrete are firmly united. A column thus constructed has practically the same carrying capacity as the ordinary steel column occupying the same amount of area in cross section and is less destructible in fire than the unprotected steel columns.

In Fig. 6 the fin or web 21<sup>1</sup> is shown as placed in the center of one of the sides of the bar 20<sup>1</sup>, and in Fig. 7 the bar 20<sup>2</sup> is oblong in cross section with the fin or web 21<sup>2</sup> extending out from one of its corners. In Fig. 8 the fin or web is shown as composed of a separate strip of metal 21<sup>3</sup> wired to the main bar 20<sup>3</sup>. Other alterations and modifications of the device are possible and I do not therefore desire to limit myself to the specific forms shown and described except as particularly pointed out in the appended claims.

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

1. In a concrete column construction, the combination of one or more upright bars or rods and a spiral encircling band extending throughout the entire length of the column, each bar or rod having a thin toothed longitudinally extending web adapted to form a connecting medium between the encircling band and the bars or rods.

2. In a concrete column construction, the combination of a plurality of circumferentially disposed upright bars or rods, each having a thin toothed longitudinally extending fin or web, a spiral coil of wire wound upon the bars and extending throughout the entire length of the column, each turn of the wire being seated in the notches between the teeth of the fins, and a body of concrete in which the bars and wire are wholly embedded.

3. In a concrete column construction, the combination with a metal frame work, comprising upright bars or rods having thin longitudinally extending fins or webs that contain diagonally extending notches, and a spiral coil of wire wound upon said bars and extending throughout the entire length of the column, each turn of said wire resting in a notch in the fins or webs, of a body of concrete in which the frame work is wholly embedded.

4. In a concrete column construction, the combination of a plurality of upright bars or rods, each having a thin longitudinally extending toothed fin or web, the teeth extending diagonally with respect to the bar, and the teeth on the alternate bars extending upward, and on the others extending downward, a spiral coil of wire wound around the bars or rods and extending throughout the entire length of the column and seated in the spaces between the teeth, and a body of concrete in which the bars and wire are wholly embedded.

5. In a concrete column construction, the combination of a plurality of bars or rods, each having a longitudinally extending toothed web, a spiral coil of wire wound around the bars or rods and extending throughout the entire length of the column and seated in the spaces between the teeth, certain of which are clenched down upon the wire, and a body of concrete in which the bars and wire are wholly embedded.

In witness whereof I have executed the above application for Letters Patent of the United States, at Chicago, county of Cook and State of Illinois, this twelfth day of December, 1906.

EDWARD McCLURE.

Witnesses:

R. R. BARNITT,  
A. FRISBIE.