(No Model.)

A. COFFIN.

STRUCTURAL METAL WORK.

No. 485,489. Patented Nov. 1, 1892.

FIG. 1.

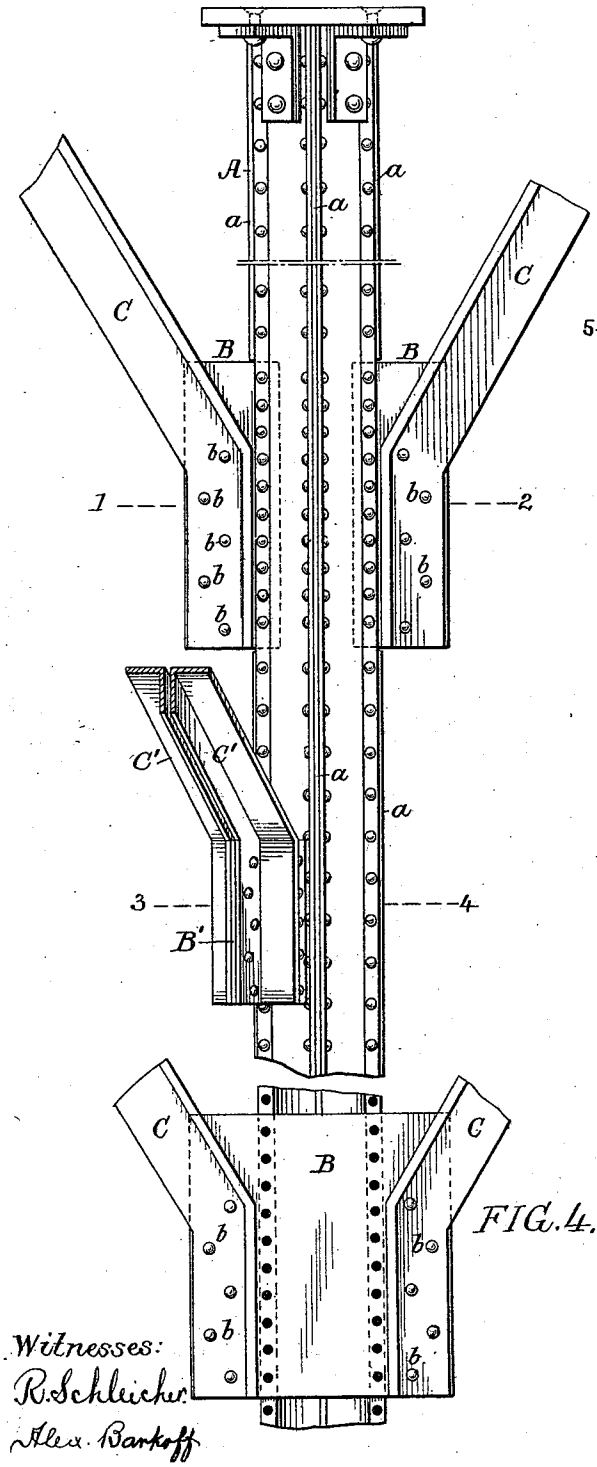

FIG. 2.

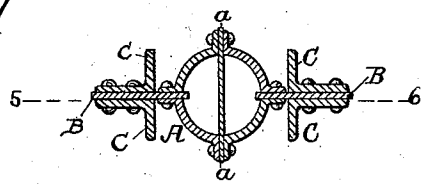

FIG. 3

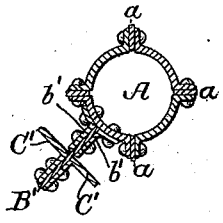

FIG. 5.

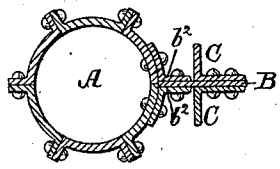

FIG. 4.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AMORY COFFIN, OF PHŒNIXVILLE, PENNSYLVANIA, ASSIGNOR TO THE PHŒNIX IRON COMPANY, OF SAME PLACE.

STRUCTURAL METAL WORK.

SPECIFICATION forming part of Letters Patent No. 485,489, dated November 1, 1892.

Application filed May 17, 1892. Serial No. 433,373. (No model.)

To all whom it may concern:

Be it known that I, AMORY COFFIN, a citizen of the United States, residing in Phœnixville, Pennsylvania, have invented certain Improvements in Structural Metal Work, of which the following is a specification.

The object of my invention is to securely attach braces to a metallic column at any point throughout the length of the column without interfering with its continuity and without weakening the same. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a column, illustrating my invention. Fig. 2 is a sectional view on the line 1 2, Fig. 1. Fig. 3 is a sectional view on the line 3 4, Fig. 1. Fig. 4 is a side view with one-half of the column removed, illustrating a single plate extending on each side of the column. Fig. 5 is a sectional view illustrating a modification of my invention.

My invention relates particularly to the metal work used in constructing large buildings. The vertical columns A support the floors and are practically continuous from the foundation to the roof. At intervals braces are required for the floors where large spans occur and are also used to support the roof structure; but in the proper construction of buildings of this character the continuity of the supporting-columns should not be interrupted. The columns I prefer to use are what are known as "Phœnix" columns, made up of a series of segmental flanged sections, secured together through the flanges by a series of rivets or other fastenings, making when finished a hollow column. In many cases the filling-plates *a* are placed between the flanges of the adjoining sections. I avail myself, as shown in Figs. 1, 2, and 4, of the space occupied by the filling-plates and cut away the plates, as shown, for instance, in Fig. 1, and insert plates B B, two in the present instance, one projecting on one side of the column and the other on the opposite side of the column. These plates have holes at their inner edges, which are in line with the holes in the flanges of the sections of the column, and rivets are passed through the holes, and the projecting plates B are securely fastened to the column. Attached in the present instance to each side of the plates B are metal braces C, made of angle-bars and secured to the plates B by rivets or bolts *b* or other fastenings. These braces C extend to the floor-beams or to the roof. It will be seen that the plates B, to which the braces are secured, may be placed at any point throughout the length of the column without in any way interfering with its continuity. In some instances the cross filling-plates *a*, as shown in the section, Fig. 2, may extend from one side of the column to the other, and, as shown in Fig. 4, the plates B, instead of being made in two sections, may be made in one piece and extend through the column projecting on each side thereof and secured to the column by rivets or other fastenings.

In Fig. 3 I have shown a brace, which is secured to a plate B′, attached to the column A by angle-plates *b*′. The plate B′ extends beyond the angle-plates and to it are attached the braces C′.

In Fig. 5 I have shown my invention applied to a column which is not provided with the filling-strips *a*. In this instance I cut away the adjoining end flanges at a point where the braces are to be secured and secure to the sections of the column inclined plates b^2, leaving sufficient space between them to insert the plate B, which extends beyond the inclined plates and to which are attached inclined braces C.

I claim as my invention—

1. The combination of the sectional column made up of a series of segments secured together and the plate B, secured to said column, with a brace C, secured to the said plate, substantially as described.

2. The combination of the sectional column, filling-plates between each section, and a plate B, forming a continuation of the filling-plates and secured to the column and projecting beyond the same with a brace or braces C, secured to the plate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses

AMORY COFFIN.

Witnesses:

WILLIAM D. CONNER,

HENRY HOWSON.