

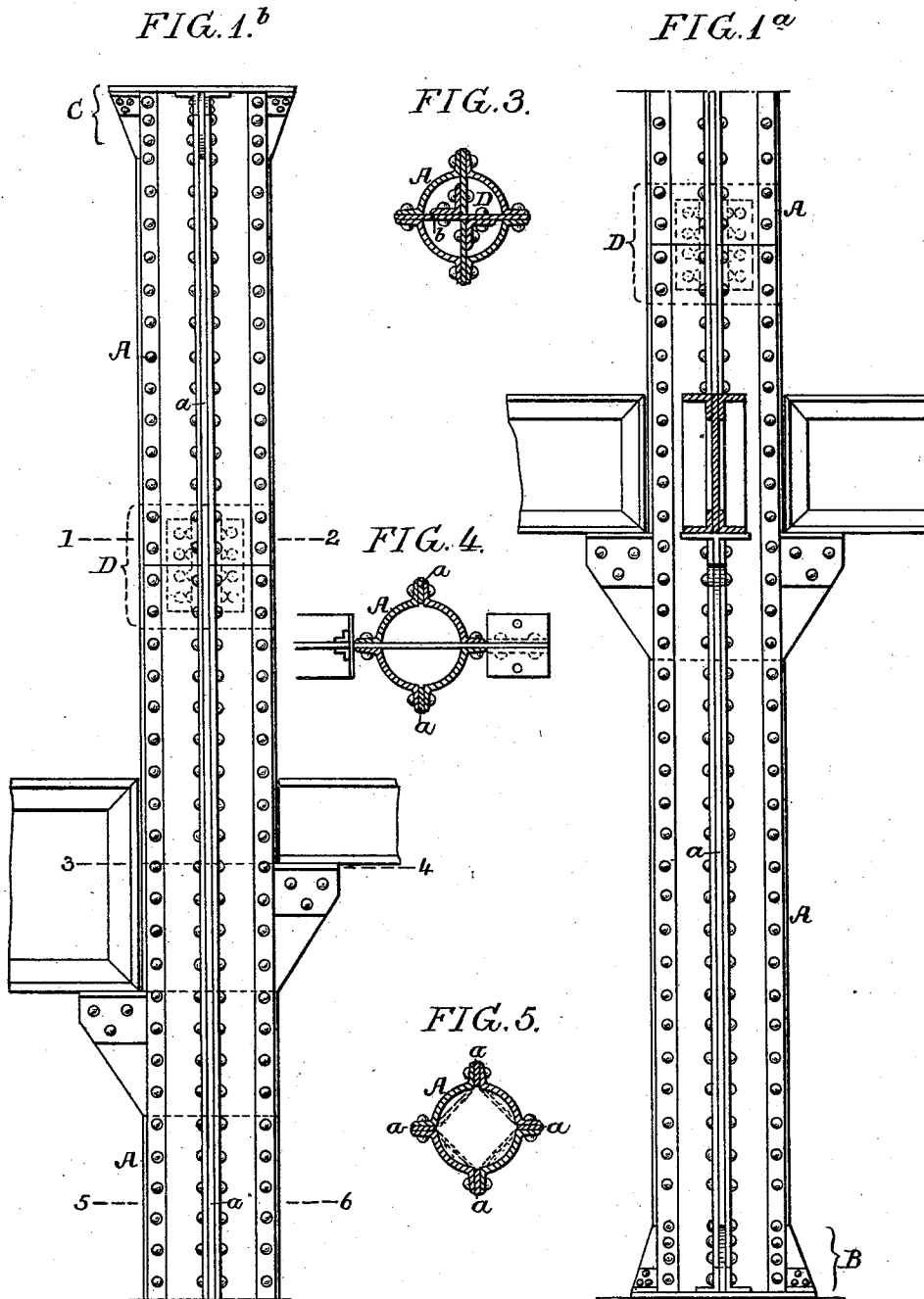
(No Model.)

2 Sheets—Sheet 1.

A. COFFIN.  
STRUCTURAL COLUMN.

No. 477,925.

Patented June 28, 1892.



Witnesses:  
Jas L. Skidmore.  
Albert Popkins

Inventor:  
Amory Coffin  
by his Attorneys  
Howson & Howson

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

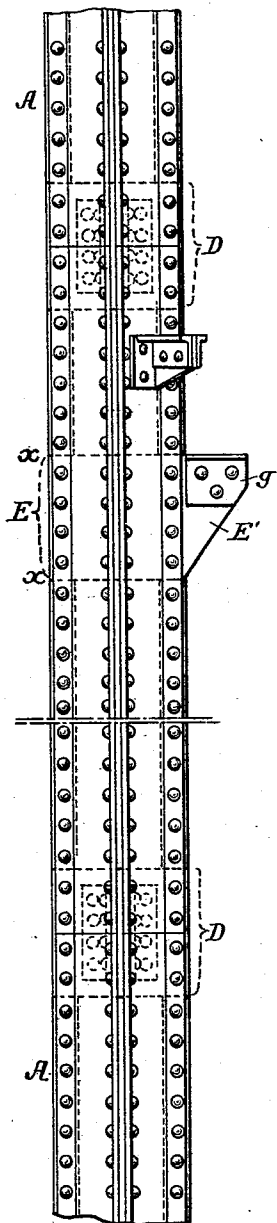


FIG. 12.

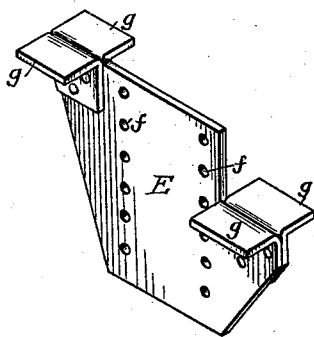


FIG. 6.

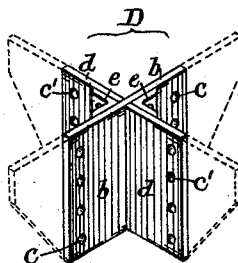


FIG. 8.

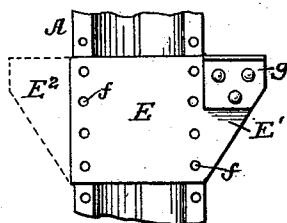


FIG. 7.

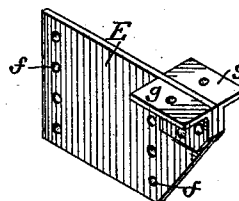


FIG. 11.

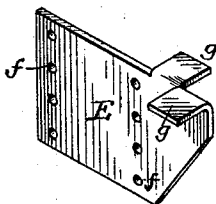


FIG. 10.

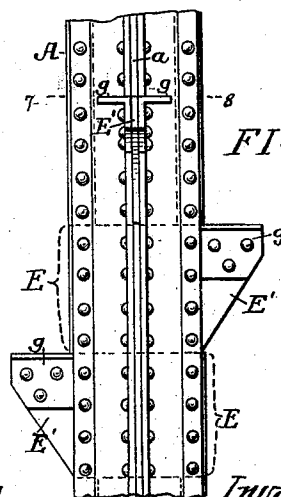
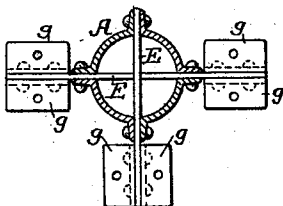


FIG. 9.

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# UNITED STATES PATENT OFFICE.

AMORY COFFIN, OF PHOENIXVILLE, ASSIGNOR TO THE PHOENIX IRON COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

## STRUCTURAL COLUMN.

SPECIFICATION forming part of Letters Patent No. 477,925, dated June 28, 1892.

Application filed March 5, 1892. Serial No. 423,859. (No model.)

*To all whom it may concern:*

Be it known that I, AMORY COFFIN, a citizen of the United States, and a resident of Phoenixville, Chester county, Pennsylvania, have invented certain Improvements in Structural Columns, of which the following is a specification.

The object of my invention is to construct a continuous column for structural metal work made up of sections spliced together and having at intervals supports for floor-girders which do not interfere with the continuity of the column and do not weaken the same. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1<sup>a</sup> is a side view of a lower portion of a column, illustrating my invention. Fig. 1<sup>b</sup> is a side view of the upper portion of the column shown in Fig. 1<sup>a</sup>. Fig. 2 is a side view of sufficient of a column to illustrate my invention. Fig. 3 is a section on the line 1 2, Fig. 1<sup>b</sup>. Fig. 4 is a section on the line 3 4, Fig. 1<sup>b</sup>. Fig. 5 is a section on the line 5 6, Fig. 1<sup>b</sup>. Fig. 6 is a perspective view of the coupling. Fig. 7 is a perspective view of one of the brackets. Fig. 8 is a sectional view of the column at a bracket. Fig. 9 is a view showing the placing of two or more brackets to accommodate girders of different depth. Fig. 10 is a section on the line 7, 8, Fig. 9; and Figs. 11 and 12 are perspective views illustrating different forms of brackets.

In constructing large buildings the present plan is to support the floors of the building by means independent of the walls. This is accomplished by erecting a metallic frame-work composed of columns and cross-girders, and the usual method prior to my invention has been to extend the columns from floor to floor, having caps and bases for each section between floors and securing the cross-beams to the columns at the junction of the two columns by having the cap or base of sufficient depth to accommodate the beam; but this method of construction necessitates a large number of parts and considerably increases the cost. By my improvement I dispense with all intermediate bases and caps and can support the floors at any point desired with-

out interfering in any manner with the continuity of the column.

Referring to the drawings, A is the column, secured in a base B of any suitable construction and having a cap C at its upper end. This column is of the form known as the "phoenix" column, being made up of sections, as shown in Fig. 5, each section being segmental in form and having flanges, the flanges of the adjoining sections being secured together by rivets or other fastenings; but it will be understood that the segments need not necessarily be curved, but may be shaped as shown by dotted lines in Fig. 5, or may be of other forms.

Between the flanges are filler-plates *a*, punctured so as to receive rivets or bolts. I utilize a portion of the space occupied by the filler-plates for the girder-supporting bracket-plates and the coupling-plates for uniting two of the sections together by discontinuing the filler-plates at the points where the brackets or couplings are attached. I discontinue the filler-plates *a* a short distance from each end of each section of the column and insert therein the coupling D, (shown in Figs. 3 and 6,) which in the present instance is a structure composed of a plate *b*, extending from side to side of the column and having rivet-holes *c c* at each side and plates *d d* at right angles to the plate *b* and secured thereto by angle-bars *e e*. The plates *d d* are also provided with holes *c' c'* at their edges. Thus when the coupling D is inserted between the two sections of the column the holes *c c'* in the plates *b* and *d* align with the holes in the flanges of the sections of the column. Rivets or bolts are then passed through the holes, and the two sections of the column are thus secured together by the coupling D and the coupling-plates form a continuation of the filler-plates.

In order to support the beams or girders which carry the floors, I discontinue the filler-plates at the points *x x*, Fig. 2, and mount therein a plate E, (shown in Figs. 7 and 8,) having orifices *f* at each side, which align with the holes in the flanges of the column-sections, and I extend the plate beyond the holes, so as to form a bracket E', which supports the girder or beam. I bolt to this bracket angle-

plates *g g*, which give increased bearing for the girder, although these extensions may be bent from the metal of the bracket, as shown in Fig. 11, without departing from my invention.

When the girder is continued on the opposite side of the column, I extend the plate to form a bracket *E'*, as shown by dotted lines in Fig. 8, and where the beams or girders are on four sides of the column I may make the bracket as shown by dotted lines in Fig. 6, constructing the plates the same as the coupling-plate *D*, and, in fact, in some cases the coupling-plate and bracket may be combined where the columns abut each other on the floor-line.

In Figs. 9 and 10 I have shown the bracket-plates *E'* for different girders arranged one above the other, so that the girders of different depth used for long or short spans can be readily supported upon the same column.

In Fig. 12 I have shown a bracket-plate having two brackets of different heights, so as to accommodate different depths of girders. It will be seen by the above description that I have a structure the columns of which are continuous from top to bottom of the building and at any point throughout the length of the column brackets can be projected to support beams or girders of any depth and that the couplings between sections do not interfere in any manner with the brackets and do not project beyond the line of the column.

It will be understood that this construction may be applied to columns having more or less than four segments. The angle of the cross-plates will vary according to the number of segments.

I claim as my invention—

1. The combination, in a sectional column made up of a series of segments secured together, of a bracket-plate mounted between two or more of the segments and extending beyond the line of the column with a seat-bracket secured to said plate to support a girder or beam, substantially as described.

2. The combination of two abutting segmental columns and filler-plates between the segments with a coupling made of plates, said coupling extending into the two columns between the segments and bolted to said segments, substantially as described.

3. The combination of the two abutting columns and the plate extending into the two columns and secured to each column and having a projection or projections extending beyond the line of the column for supporting girders or beams, substantially as specified.

4. The combination of a segmental column and a plate secured between the segments and extending on each side of the column with seat-brackets secured to the plate on each side of the column, substantially as described.

5. The combination of a segmental column with a plate secured between the segments and having extension-brackets out of line with each other to accommodate beams or girders of different heights, substantially as set forth.

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

AMORY COFFIN.

Witnesses:

H. F. REARDON,  
HENRY HOWSON.