

(No Model.)

3 Sheets—Sheet 1

F. H. KINDL.
STRUCTURAL COLUMN.

No. 577,820.

Patented Feb. 23, 1897.

Fig. 1.

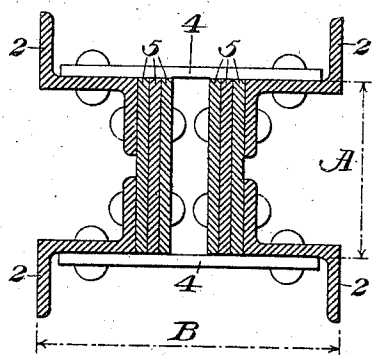


Fig. 2.

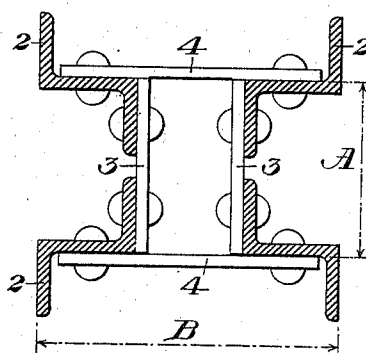
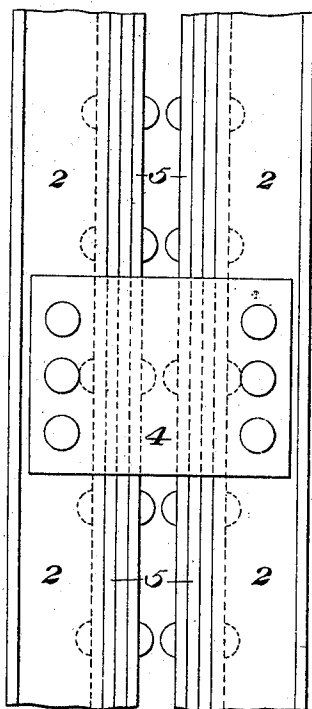


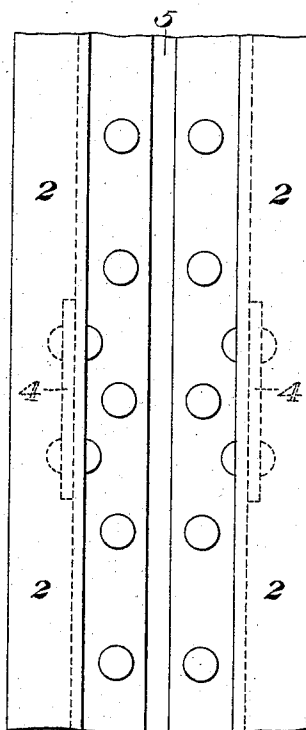
Fig. 3.



WITNESSES

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B. J. St. John

Fig. 4.



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Fig. 5.

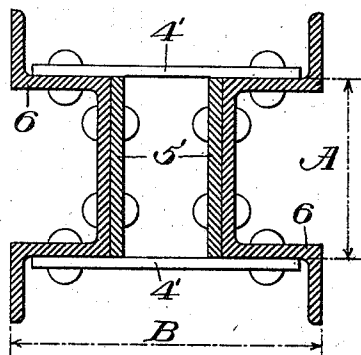
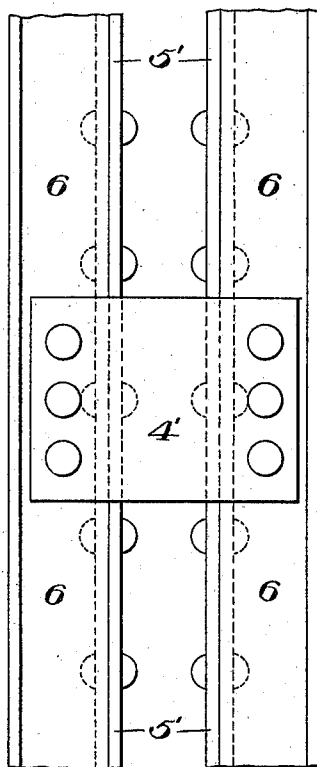


Fig. 6.



WITNESSES

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B. S. Holdship

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by Bechewell & Bechewell
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(No Model.)

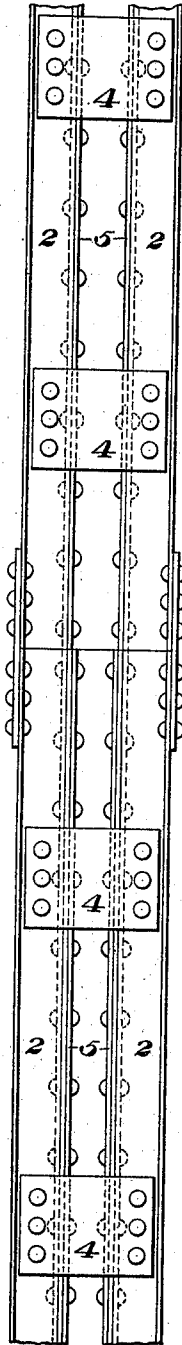
3 Sheets—Sheet 3.

F. H. KINDL.
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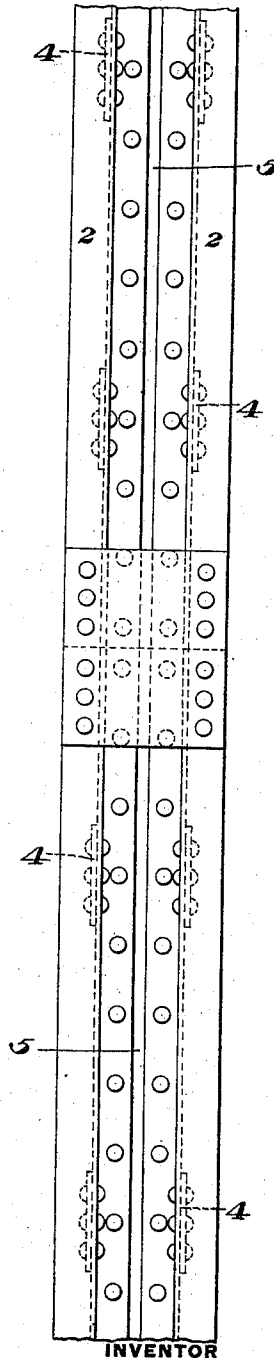
Fig. 7.



WITNESSES

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Fig. 8.



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UNITED STATES PATENT OFFICE.

FREDERICK H. KINDL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE
CARNEGIE STEEL COMPANY, LIMITED, OF SAME PLACE.

STRUCTURAL COLUMN.

SPECIFICATION forming part of Letters Patent No. 577,820, dated February 23, 1897.

Application filed May 18, 1896. Serial No. 592,052. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. KINDL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Structural Columns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal sectional view of one of the lower sections of a compound column constructed in accordance with my invention. Fig. 2 is a similar view of one of the upper sections of the same column. Figs. 3 and 4 are front and side elevations of the section of Fig. 1. Fig. 5 is a cross-section of one of the upper sections of the compound column, showing another method of building up the column. Fig. 6 is a partial side elevation of the section of Fig. 5; and Figs. 7 and 8 are front and side elevations of a portion of one of my improved columns, showing the joining of the successive sections.

My invention relates to the compound columns employed in buildings, and is designed to provide a column of this character in which the successive sections of which it is composed shall be of successively less weight and strength as the column is built upwardly, the dimensions A and B of the column remaining the same throughout the various sections.

In the drawings, Fig. 1 shows the lower section of a form of my invention wherein Z-bars are employed. In this form two Z-bars 2 2 are secured in pairs to base-plates 5 5, the trough-shaped sections thus formed being united together by a series of batten-plates 4 4, riveted on opposite sides of the trough-shaped sections, which are placed back to back. In order to strengthen the lower sections of the column built up of the sections shown, I provide additional plates 5 5, which are continuous for the lower sections of the column and are secured to the flanges of the Z-bars. The inner flanges of the Z-bars are spaced apart a sufficient distance to allow for the insertion of as many of the strengthening-plates 5 5 as may be necessary for the lower section. As the column is built up the number of these strengthening-plates is gradually decreased, Fig. 2 showing one of

the uppermost sections, wherein these supplemental strengthening-plates are entirely discarded, the pairs of Z-bars being united by batten-plates 3 3. It will be noticed that the dimensions A and B of the various sections are constant, and that the Z-bars and plates of which the sections are built up are of the same size, so that the rolling of structural shapes of different sizes and thicknesses is avoided.

In Figs. 5 and 6 I show another section, which may be used in the same manner as that of the previous figures, the only difference in this form being that the column is composed of two channels 6 6, the bases of which are integral with the sides, these bases being placed back to back, spaced apart the desired distance, and secured together by the separated batten-plates 4', as in the other construction. The strengthening-plates 5' are employed in this form exactly as before, the number of these plates being decreased in the same manner in the successive sections.

The advantages of my invention will be apparent to those skilled in the art, since a column is thus obtained in which the dimensions A and B of the successive sections of the column are the same, so that the floor-beams and girders will be of the same length throughout the successive floors and can have the same spacing for rivets, bolts, &c., while the successive sections, though growing successively lighter and of less strength, are built up of structural shapes that can be rolled in the same passes without a change of rolls and are known to the art as the same size. The necessity of rolling structural shapes of different sizes for each section is therefore avoided and a very cheap and effective column obtained.

By the words "trough-shaped section" in the claims I intend to cover both the form of Fig. 1, in which the trough is built up, and that of Fig. 5, in which the trough is rolled in one integral piece, or other trough shapes built up in other ways. It will be understood that instead of using Z-bars or channels of the same cross-section in the successive sections they may be varied as to weight and size, if desired, that the supplemental strengthening-plates may be made thinner or the mate-

rial therein otherwise diminished in the successive sections, and many other variations may be made in the form and arrangement of the parts without departing from my invention, since

I claim—

1. A compound column, the successive sections of which are composed of trough-shaped sections secured back to back with their bases spaced apart, said sections having longitudinal strengthening-plates secured thereto in the space between the bases of the two sections, the number of the plates diminishing with the successive sections; substantially as described.

2. A compound column, the successive sec-

tions of which are composed of two trough-shaped sections provided with projecting flanges and secured together back to back with their bases spaced apart, and longitudinal strengthening-plates secured to the bases of the trough shapes in the space between them, the amount of material in these strengthening-plates decreasing with the successive sections; substantially as described.

In testimony whereof I have hereunto set my hand.

FREDERICK H. KINDL.

Witnesses:

H. M. CORWIN,
F. E. GAITHER.