

J. LANZ.

COMPOSITE METAL BEAM OR COLUMN.

(Application filed Jan. 12, 1900.)

(No Model.)

2 Sheets—Sheet 1.

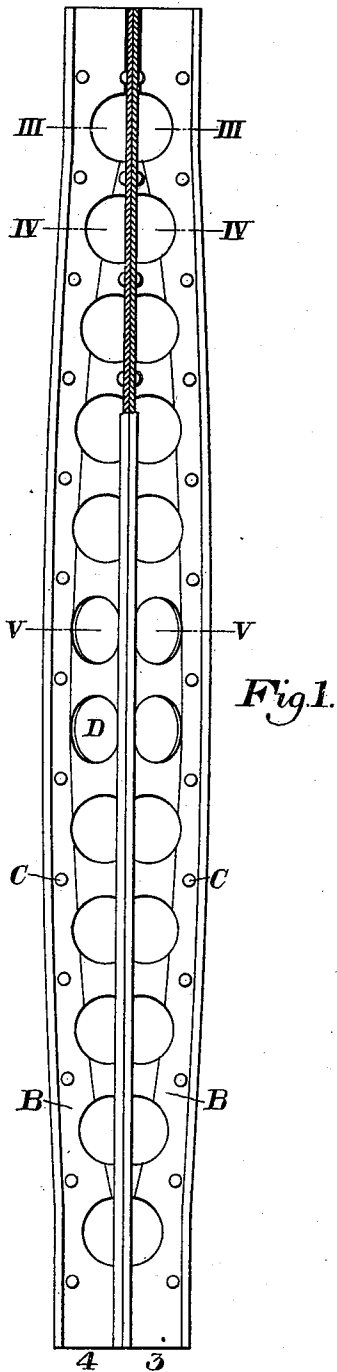


Fig. 2.

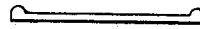


Fig. 3.

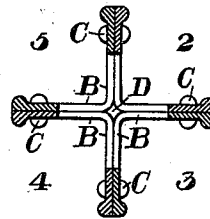


Fig. 4.

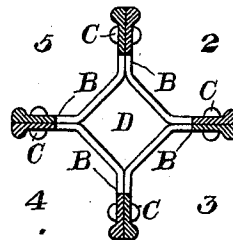
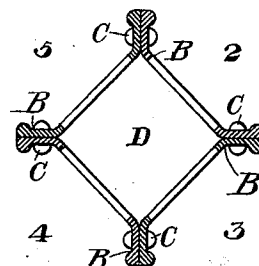


Fig. 5.



WITNESSES

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2 Sheets—Sheet 2.

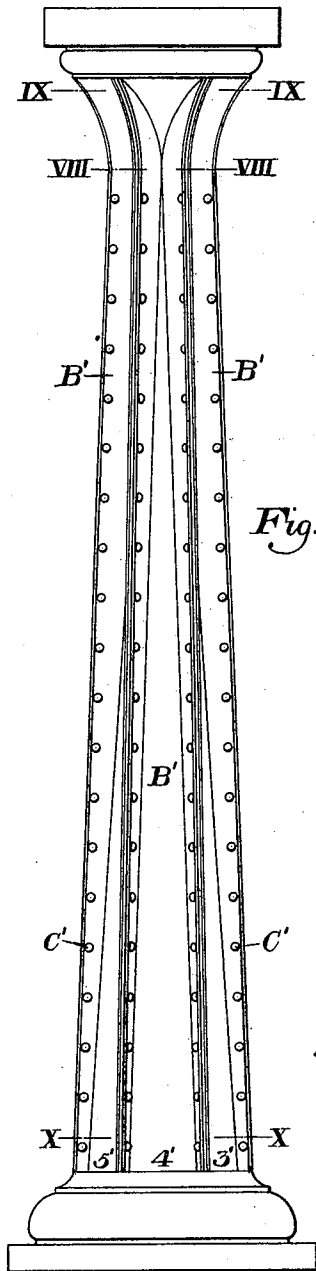


Fig. 6.

Fig. 7.



Fig. 8.

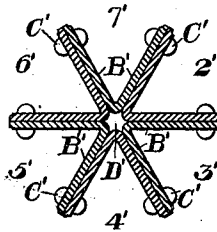


Fig. 9.

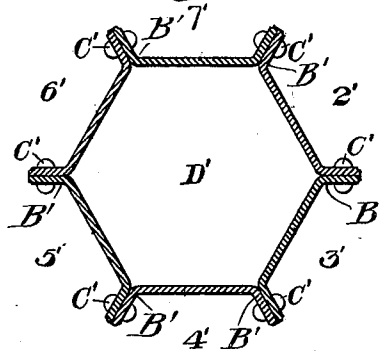
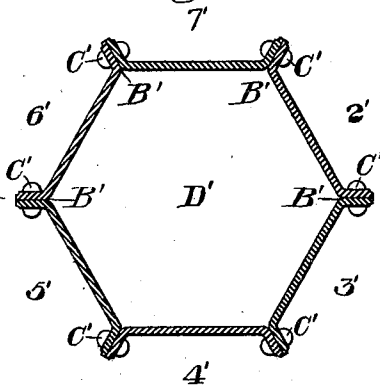


Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN LANZ, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO MARY C. LANZ,
OF SAME PLACE.

COMPOSITE METAL BEAM OR COLUMN.

SPECIFICATION forming part of Letters Patent No. 651,368, dated June 12, 1900.

Application filed January 12, 1900. Serial No. 1,204. (No model.)

To all whom it may concern:

Be it known that I, JOHN LANZ, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Composite Metal Beams or 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 shows in side elevation a composite metal bridge-beam constructed in accordance with my invention. Fig. 2 is an end view of the original form of one of the metal pieces of which the column is composed. Figs. 3, 4, and 5 are cross-sections, on a larger scale, on the lines III III, IV IV, and V V of Fig. 1, respectively. The figures on Sheet 2 show a modified construction. Fig. 6 is a side elevation of a composite column embodying my invention. Fig. 7 is an end view of one of the pieces of the column in its original shape. Figs. 8, 9, and 10 are horizontal cross-sections on the lines VIII VIII, IX IX, and X X, respectively, of Fig. 6, but on a larger scale.

The object of my invention is to provide a composite metal beam, brace, or column for use in bridge construction, buildings, &c., which shall be tapering or of varying diameter at different points of its length.

Referring to Sheet 1 of the drawings, in making my improved beam or column I take a number of metal plates or beams 2, 3, 4, and 5, which may consist either of flanged structural shapes or of unflanged metal plates, and the same being in angle form they are set with their angles in proximity and their flanges B B abutted against each other, preferably in line with radii of the beam or column and riveted together, as at C C, so as to constitute the composite beam shown in Fig. 1. In order to taper such column or beam, its elements 2 3 4 5 are shaped by pressing or otherwise so that the portions of the flanges B B which come in contact and through which the rivets pass vary in width conformably to the taper desired. The consequence is that the interior space D of the column or beam also varies in size, and the greater this space the greater will be the diameter of the composite column or beam. I am therefore enabled from metal pieces or plates of uniform size to make beams or columns having any desired taper or diameter

or variation of dimensions at different points. They may be made tapering from the bottom up, as in Fig. 6, or with a swell at the middle, as in Fig. 1. Indeed it will readily be seen that my improvement affords the greatest facility for shaping the column according to the particular use for which it is intended and for making it highly ornamental in appearance when desired.

In the figures on Sheet 2 of the drawings I show a column made of six metal plates 2' 3' 4' 5' 6' 7', which, as shown in Fig. 7, are originally unflanged, but which are pressed into angular form and are assembled with their flanges B' B' in contact and connected by rivets C' C', as above explained with reference to the figures on Sheet 1. By varying the width of the flanges B' the column is made of tapering form.

Within the scope of my invention as defined in the claims many changes may be made by the skilled mechanic, since

What I claim is—

1. A composite column, brace, or beam, made up of metal pieces of uniform width and angular form, having meeting flanges which are fastened together, said meeting flanges being varied in width at different points to vary the diameter of the column; substantially as described.

2. A composite metal beam or column made up of four pieces, 2, 3, 4, 5, of uniform width and angular form set with their angles in proximity to each other and with their flange portions fastened together, said flange portions being varied in width to impart to the beam or column varying diameters at different points; substantially as described.

3. A composite column, brace or beam made up of metal pieces of uniform width formed with suitable angles, having riveted flanges lying in a radius from the center of the column, said parallel flanges being varied in width to conform to the taper or diameter of the column desired at any point of its length; substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN LANZ.

Witnesses:

H. M. CORWIN,
GEO. B. BLEMING.