

(No Model.)

J. S. ADAMS.  
SKELETON IRON TOWER.

No. 297,336.

Patented Apr. 22, 1884.

Fig. 1.

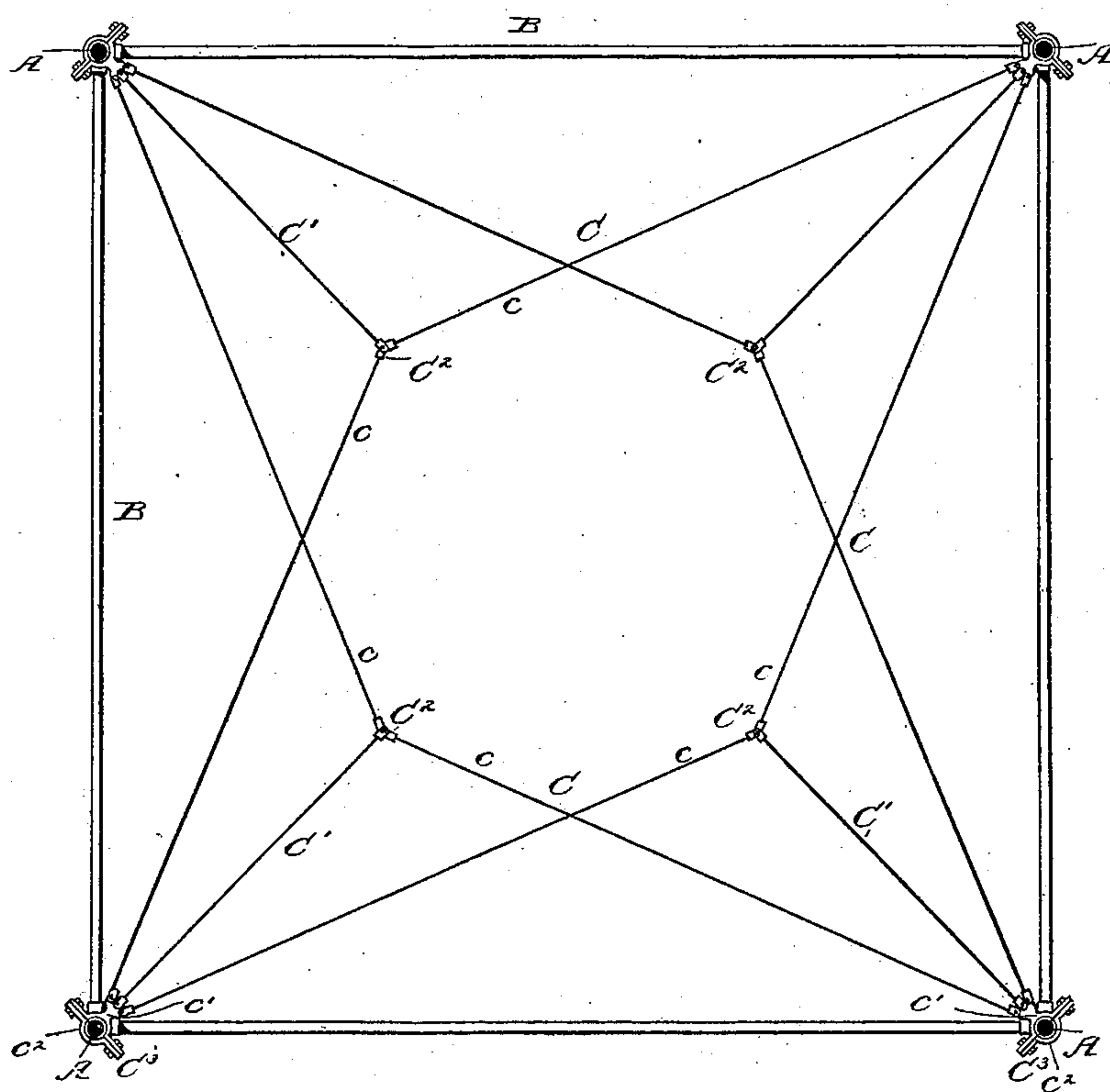
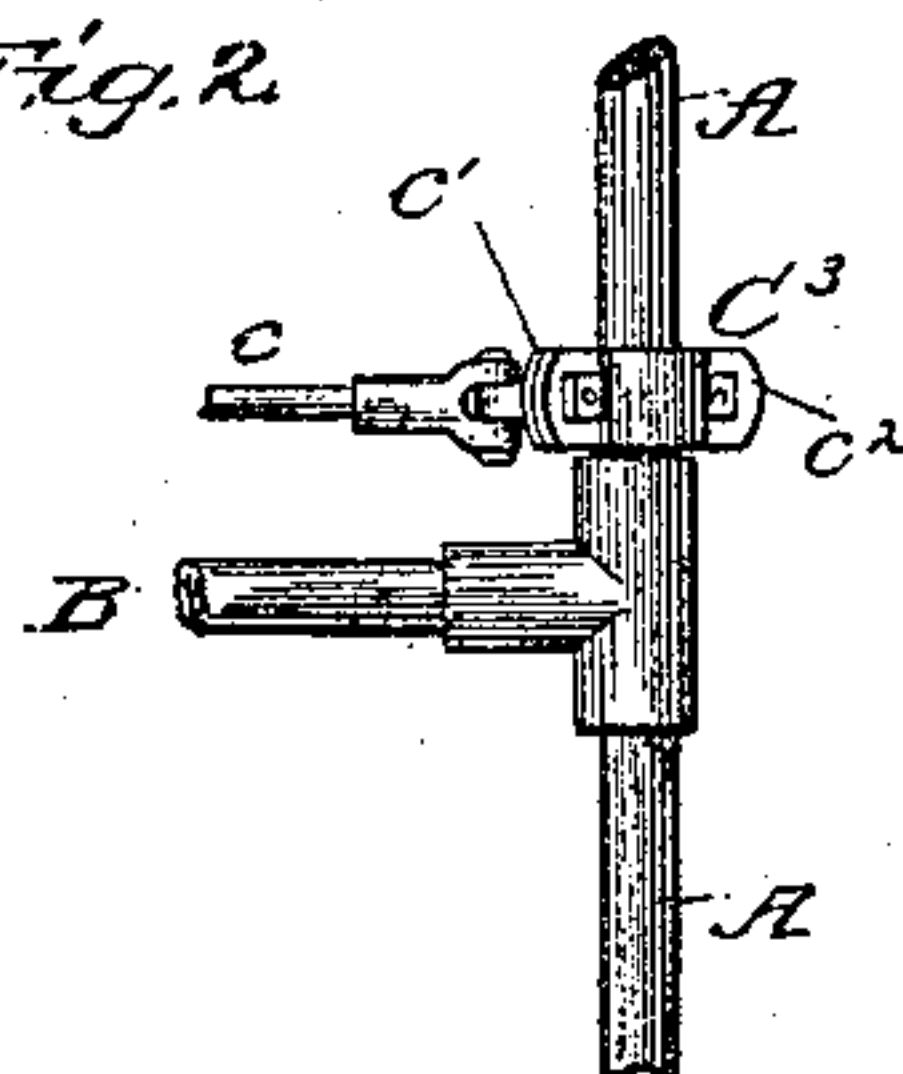


Fig. 2.



WITNESSES—

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# UNITED STATES PATENT OFFICE.

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## SKELETON IRON TOWER.

SPECIFICATION forming part of Letters Patent No. 297,336, dated April 22, 1884.

Application filed May 31, 1883. Renewed March 17, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. ADAMS, of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Skeleton Iron Towers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to interior trussing for quadrilateral skeleton iron towers, and has reference to a form of interior trussing for such towers by which the desired bracing effect is obtained, and which at the same time allows a central passage for an interior elevator-cab or lamp-carriage.

In the accompanying drawings, Figure 1 is a horizontal section of a quadrangular skeleton iron tower provided with my improvement. Fig. 2 is a detail view.

A A are the uprights of the tower, and B B are straight horizontal girts connecting said uprights in the planes of the tower sides.

C C are ties connecting diagonally-opposite uprights A, each pair of uprights being preferably connected by two of the said ties C.

C' C' are ties which join the ties C with the intermediate tower-uprights, A, and give proper tension to said ties C.

The novel feature of this invention consists in the bent or deflected arrangement and construction of the ties C, by which the central passage, D, is afforded, and which is accomplished by means of the ties C', connected and operating as shown. The ties C are usually made in two parts, *c c*, centrally joined to each other and to the ties C' by means of a coupling, C<sup>2</sup>, which may properly consist of elev-  
ises or eyes screw-threaded to the several tie-  
rods and flexibly bolted together. The outer  
extremities of the ties C and C' are preferably  
joined to the tower-uprights by means of the  
two-part clamping-plates C<sup>3</sup>, one part, *c'*, af-  
fording attachment for the several ties, as  
shown, being secured to the extremities of the  
ties and located on the inside of the uprights,  
and the second, *c''*, extending outside of the up-  
rights, and being bolted or otherwise secured  
to the part *c'*.

Instead of the two-part clamping-plates C<sup>3</sup>, eyes or sleeves having suitable lugs for the attachment of the ties, or tapped to receive

their threaded ends, may be applied to the tower-uprights in the process of erection, or to the couplings which unite the girts to the uprights.

I do not limit myself to any particular means of connecting the ties with each other or with the uprights or couplings, the distinctive feature of the invention being bent ties connecting diagonally opposite uprights of the tower, bent from a direct course between said uprights, and held in their bent position by means of the short ties C', connecting them between their ends with the intermediate uprights of the tower. By this means, as is clearly shown in the drawings, a central passage is afforded in the tower for the accommodation of an elevator or lamp-carriage, which may be suspended therein in any of the ordinary or preferred modes.

When the diagonally-opposite uprights are connected by two ties C, similarly arranged on opposite sides of the center or axis of the tower, as shown, the bracing effect of the diagonals is as perfect as though a single diagonal brace or tie of equal strength were drawn directly from upright to upright. An excellent bracing effect is, however, obtained by the use of two ties C and a corresponding number of deflecting-ties C', instead of four of each, as shown in the drawing, and such construction is intended to be embraced in the first claim hereto appended.

I claim as my invention—

1. In a quadrangular tower, the combination, with the uprights, of the diagonal ties C and the ties C', the former of said ties being centrally deflected, and the latter operating to hold the former under proper tension in such deflected position, substantially as described.

2. In the quadrangular tower, the combination, with the uprights, of the four diagonal ties C C, connected in pairs to the diagonally-opposite uprights, and the ties C' C', connected severally with the ties C and with the intermediate uprights, whereby the said ties C are held centrally deflected at opposite sides of the tower-axis, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

Witnesses: JOHN S. ADAMS.  
GEO. R. DUNHAM,  
JAMES TODD.