

(No Model.)

C. O. WEIDMAN.  
TUBULAR TOWER CONSTRUCTION.

No. 566,552.

Patented Aug. 25, 1896.

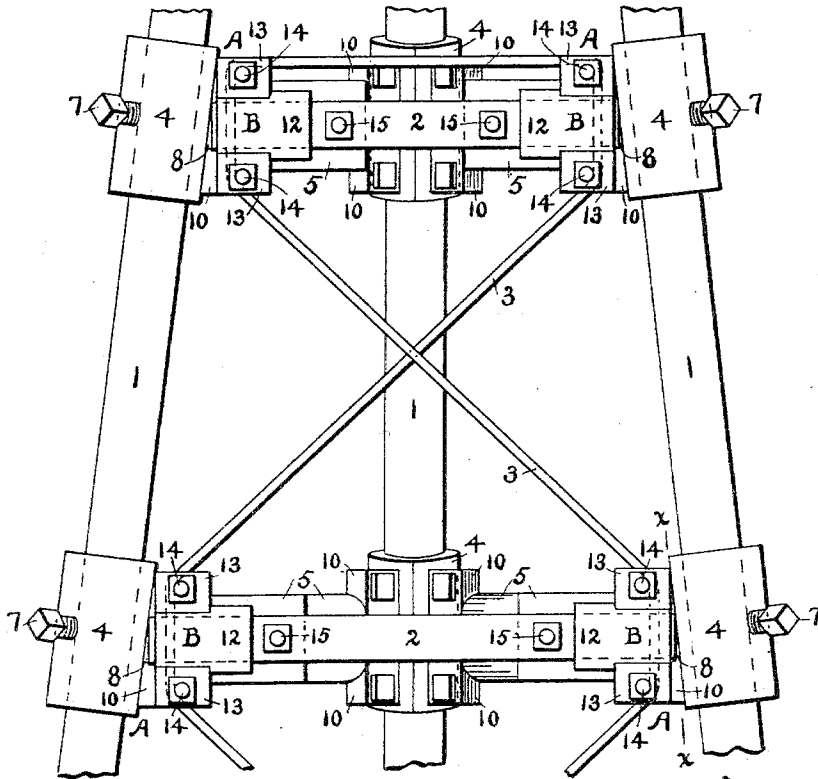


FIG. 1.

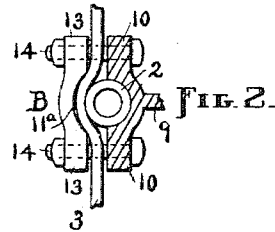


FIG. 2.

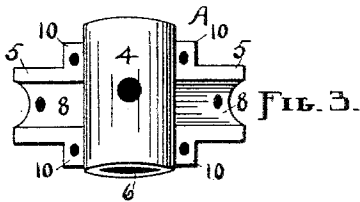


FIG. 3.

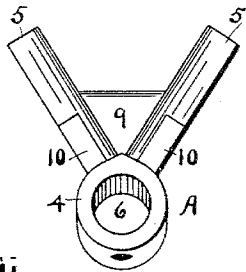


FIG. 4.

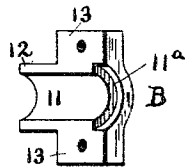


FIG. 5.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES O. WEIDMAN, OF MEDINA, OHIO.

## TUBULAR-TOWER CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 566,552, dated August 25, 1896.

Application filed November 6, 1895. Serial No. 568,084. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES O. WEIDMAN, a citizen of the United States, residing at Medina, in the county of Medina and State of Ohio, have invented certain new and useful Improvements in Tubular-Tower Construction, of which the following is a full, clear, and exact description.

My invention relates to the construction of towers used for carrying wind-wheels, water-tanks, or other structures; and it consists of tubing framed and held together with peculiar corner-irons, clips, and braces, as hereinafter more fully described and especially claimed.

The object of my improvement is to provide a tower of the class designated above which excels in strength, durability, and cheapness.

My improved construction enables me to build an exceedingly neat and rigid tower capable of sustaining great weight and of enduring powerful lateral strain.

That my invention may be seen and fully understood by those skilled in the art reference will be had to the following specification and annexed drawings, forming a part thereof, in which—

Figure 1 is a side view of a part of a three-post tower, showing the application of my invention thereto; Fig. 2, a vertical section on lines *x x*, Fig. 1, showing the method of securing the wire or rod braces and tightening the same; Fig. 3, a side view of one of the corner-irons; Fig. 4, a top view of the same, and Fig. 5 a perspective view of one of the clips.

Similar letters and figures of reference designate like parts in the drawings and specification.

The tubular corner-posts 1, three in number, have the corner-irons A secured thereto at different elevations, and said irons, with the clips B, carry the tubular girths 2 and the wire or rod braces 3. Each corner-iron A consists of the perforated cylindrical body 4 and the arms 5 5, extending laterally from said body. The perforation 6 in the body 4 is of a little larger diameter than the post 1, and said body is slipped over said post and secured at the proper elevation by the bolt or set-screw 7. To further secure the body 4 in position, wedges or keys may be driven in be-

tween said body and the post 1, if desired. Each arm 5 is flat on the outside with the exception of the groove 8, which runs longitudinally through the same, and convex on the inside. The horizontal web 9 connects each pair of arms 5 at the back for greater strength. The wings 10 appear at the junctions of the arms 5 with the body 4, an upper and under one for each of said arms. The wings 10 and the centers of the arms 5 near their ends are perforated to receive bolts, as will be explained hereinafter.

The clips B are substantially convex on the outside and flat on the inside with the exception of the groove 11, which extends the entire length of each. Each clip B comprises the shank 12 and the upper and under wings 13 13, the two latter being perforated. The outer terminus of each groove 11 in the clip B is deeper than the main groove to form the offset 11<sup>a</sup>. (Shown in Figs. 2 and 5.)

After the corner-irons A have been secured in place upon the posts 1, as hereinbefore described, the parts are assembled as follows: Insert each girth 2 in the grooves 8 of adjacent arms 5, pass the bolts 15 through holes in said girth previously provided to correspond with those in said arms, and screw down the nuts on said bolts. Place a clip B over each end of the girth 2, and pass the bolts 14 through the perforations or holes in the wings 10 and 13. It will be understood that the grooves 8 and 11 are substantially half-round. Consequently when the faces of the arms 5 and the clips B are brought together an opening or passage is formed between them of about the same diameter as the girth 2. Now secure one end of the continuous rod or wire which forms the braces 3 in any suitable manner to the bottom girth 2, as by winding the same around said girth, carry said wire around the outside of the bolts 14 beneath the clip B, then diagonally upward to the next highest corner-iron A, passing around the outside of the bolts 14, and so on, until the upper girth 2 is reached, where the wire or rod is carried over to the opposite side, around the outside of the bolts 14, and diagonally downward, or between opposite corner-irons A until the bottom is reached, where the opposite end of said wire is fastened. A suitable stretcher may be employed to take up surplus slack in the material forming the

braces 3 while putting the same in place. Finally, turn down the nuts on the bolts 14 until the braces 3 are entirely free from slack, and the structure is complete. The girths 2 are firmly held in place by the arms 5, the clips B, and the bolts 14 and 15. As the nuts on the bolts 14 are turned down the outer end of the clip B is forced against the contiguous parts of the brace 3 with great power, the end of the shank 12 serving as the fulcrum, and the wire is bent partially around the girth 2, as best shown in Fig. 2, the outward curve of wire thus formed being received into the offset 11<sup>a</sup>. This operation not only secures the brace 3 very firmly, but at the same time takes out all slack in the wire and enhances the strength and solidity of my construction.

It will be understood that any number of girths and contiguous parts may be used and more than three corner-posts, according to the shape of the tower which it is desired to build. The number and position of the arms 5 on the body 4 may vary to conform to the location and number of corner-posts without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a tower construction, of a series of corner-irons consisting of the perforated cylindrical bodies 4, the grooved and perforated arms 5 and the perforated wings 10; a series of grooved clips consisting of the shanks 12 and the perforated wings 13, said clips having the offsets 11<sup>a</sup> therein, and the connecting parts, substantially as and for the purpose set forth.

2. The combination in a tower construction, of a series of corner-irons consisting of the perforated cylindrical bodies 4, the grooved and perforated arms 5 and the wings 10; a series of grooved clips consisting of the shanks 12 and the perforated wings 13, said clips having the offsets 11<sup>a</sup> therein, and tubular girths and continuous braces secured between

said irons and clips, substantially as and for the purpose set forth.

3. The combination in a tower construction, of posts, corner-irons fixed to said posts at different elevations, said irons consisting of perforated bodies having perforated grooved arms and perforated wings, grooved clips provided with perforated wings and offsets, perforated girths adapted to be received into the grooves in said arms and clips and there secured by bolts passing through the perforations in said wings, arms and girths, and diagonal wire or rod braces passing around the outer bolts and clamped under said clips over said girths, substantially as and for the purpose set forth.

4. The combination in a tower construction, of posts, corner-irons having perforated bodies, wings and arms, the latter grooved, grooved clips with offsets in one end and perforated wings, girths adapted to be received between said arms and clips and secured thereto by bolts passing through the perforations therein, continuous wire or rod braces passing diagonally back and forth under said offsets and over said girths, substantially as and for the purpose set forth.

5. The combination in a tower construction, of perforated corner-irons having perforated arms and wings, the former grooved, grooved clips having perforated wings, girths having perforated ends adapted to be received between said arms and clips, continuous wire or rod braces passing between said clips and girths, adapted to be clamped down over said girths by bolts passing through the perforations in said wings, thereby tightening said braces, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES O. WEIDMAN.

Witnesses:

N. H. MCCLURE,  
FRANK HEATH.