

July 16, 1946.

H. COHEN

2,404,276

TOWER CONSTRUCTION

Filed July 28, 1944

Fig. 1.

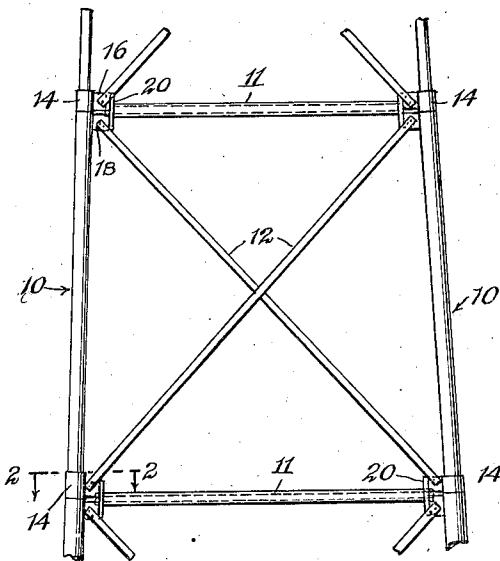


Fig. 2.

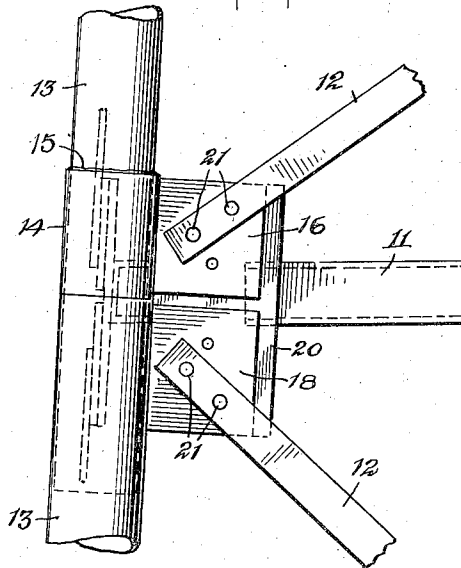
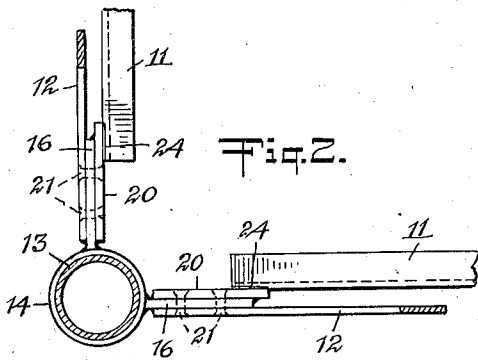
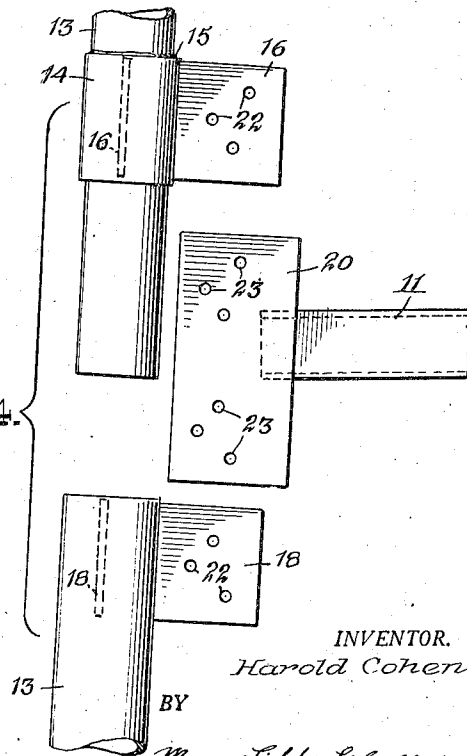


Fig. 2.

Fig. 4.



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## UNITED STATES PATENT OFFICE

2,404,276

## TOWER CONSTRUCTION

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Application July 28, 1944, Serial No. 547,065

2 Claims. (Cl. 189—19)

1

This invention relates to the construction of towers, masts, scaffolds and analogous structures.

The principal object of the invention is the provision of means whereby structural components may be quickly, easily and rigidly connected with each other to form a structure of the types mentioned.

A further object is the provision of an improved construction for integrating structural elements to form a tower and the like which is effectually braced so that the finished structure will be rugged, durable and stable.

With the foregoing, other objects of the invention will appear when the following specification is read in conjunction with the accompanying drawing, in which—

Fig. 1 is a fragmentary side elevational view of a structure embodying the features of the invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary side elevational view on an enlarged scale to more clearly bring out the main features of the invention.

Fig. 4 is a collective view of the certain parts which are shown assembled in Fig. 3.

In the present instance there is shown by way of example a structure in the form of a quadrilateral pyramidal tower which may be of any suitable dimensions as to height and width. The tower is constructed of sections, including legs 10 and bracing members or tie bars 11 and 12, connected with the legs 10 in accordance with the present invention.

The legs 10 constitute the main supports for sustaining the weight and the strains and stresses from any causes. Each leg 10 consists of a plurality of members 13 of suitable length and different cross-sectional sizes so as to be telescoped. Each member 13 consists of a metal tube, round in cross-section. As shown, the legs 10 are arranged slantwise to provide a pyramidal structure but the legs may be disposed upright in a vertical position.

In accordance with the invention, a joint is provided between adjacent ends of the members of each leg 10, for this purpose; each leg member 13 has fixedly secured thereto a collar 14 to provide an extension beyond the collar spaced a suitable distance from its lower extremity. In the present instance the collar 14 is welded to the member 13, as at 15. Wings or gussets 16 are rigidly secured to the collar 14, as by welding. Obviously, the collar 14 may be omitted and the gussets may be secured directly to the member 13. The wings

2

or gussets are arranged at a right angle with respect to each other and project laterally. Wings or gussets 18 are rigidly secured to the member 13 at the upper end, as by welding 19. The wings or gussets 18 are arranged at a right angle with respect to each other and project laterally in the same manner as the wings or gussets 16, so that these parts will be disposed in pairs with the wings or gussets of each pair disposed edgewise in the same plane while the lower end portion of one member 13 is telescoped into the upper end portion of another member 13. Each collar 14 limits the extent of the insertion of one leg member 13 into another, because the collar 14 on one leg member abuts the end of a contiguous leg member. An oblong plate 20 is rigidly secured flatwise to the gussets 16 and 18 of each pair overlapping the same in any suitable manner, as by the use of fasteners 21, received in holes 22 and 23 in the gussets and plate, respectively. In this manner an upper and lower leg member 13 are rigidly connected in telescoping relation to form the legs 10.

The legs 10 thus fabricated are rigidly connected in the desired spaced relationship by the brace members 11 and 12. There is a brace member 11 arranged horizontally between each pair of plates 20 at each side of the tower, and the opposite ends of said brace member 11 are rigidly secured to said plates 20, respectively, as by welding 24. A brace member 12 is arranged diagonally between a gusset 16 on the lower end of a leg member 13 and a gusset 18 on the upper end of a second leg member 13 at each side of the tower, and the opposite ends of said brace member 12 are rigidly secured to said gussets 16 and 18 by some of the fasteners 21.

From the foregoing it will be understood the various parts are integrated in such manner as to produce a structure which will be strong, durable and stable.

I claim:

1. A tower including spaced legs, each leg comprising joined tubular members, each joint between the leg members comprising an extension and shoulder on one leg member respectively telescoped into and abutting the end of a socket formation on an adjacent leg member, a gusset plate secured adjacent the end of each leg member and a connecting plate extending across the joint line between the leg members and secured to a pair of adjacent gusset plates, a horizontally positioned brace member directly secured to each pair of connecting plates on two opposed legs, and diagonally positioned brace members each di-

3

rectly secured to a pair of gusset plates of two opposed legs.

2. In a tower, spaced legs each composed of tubular members joined in pairs in telescoping relation, each joint between the leg members including a gusset plate secured adjacent the end of each leg member and a connecting plate extending across the joint line between the leg members and

4

secured to a pair of adjacent gusset plates, a horizontally positioned brace member directly secured to each pair of connecting plates on two opposed legs, and diagonally positioned brace members each directly secured to a pair of gusset plates of two opposed legs.

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