Oct. 8, 1957 V. W. CLARK 2,808,912

RADIO TOWER AND LEG FOR THE SAME

Filed Feb. 1, 1954

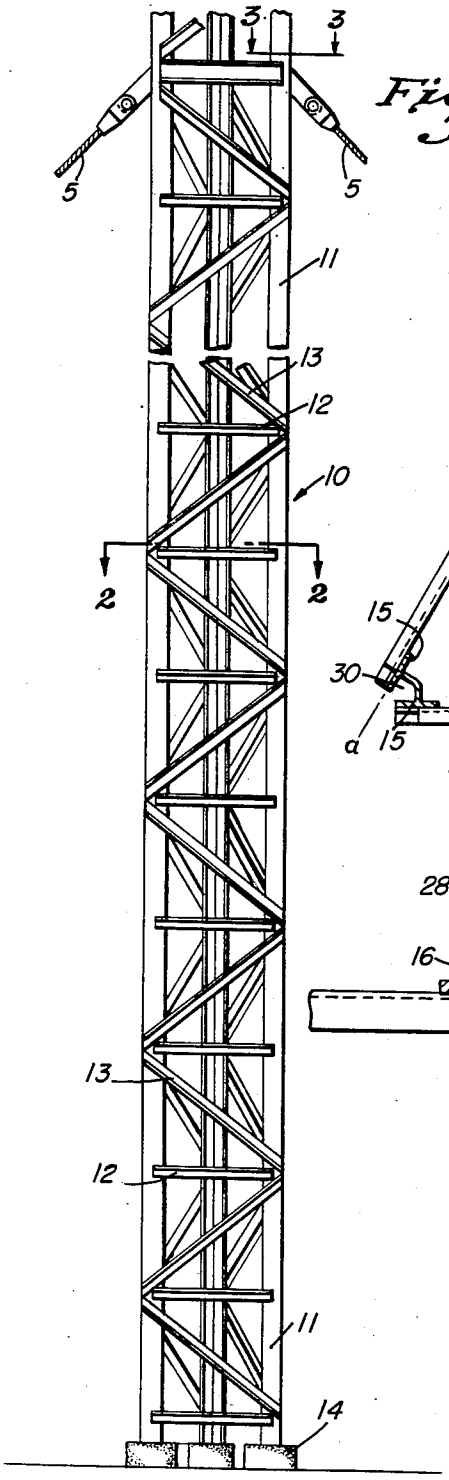


Fig. 1.

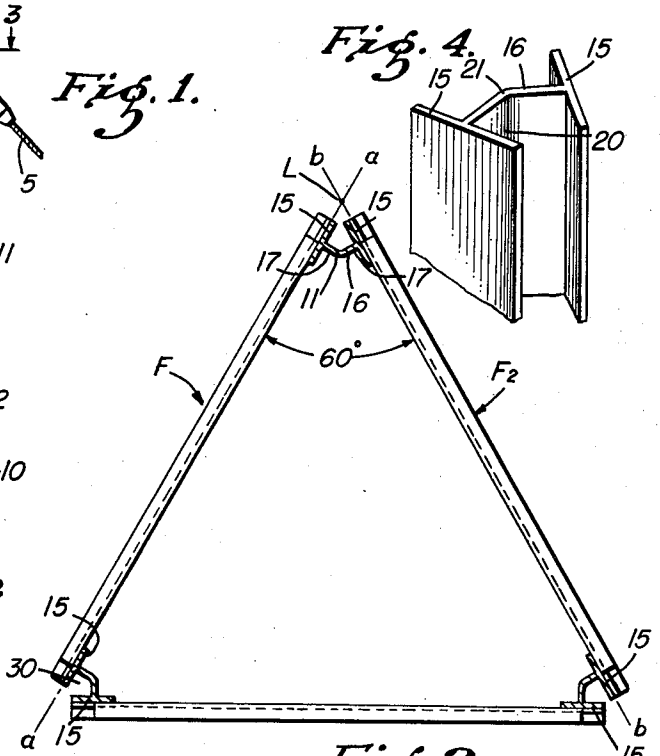


Fig. 2.

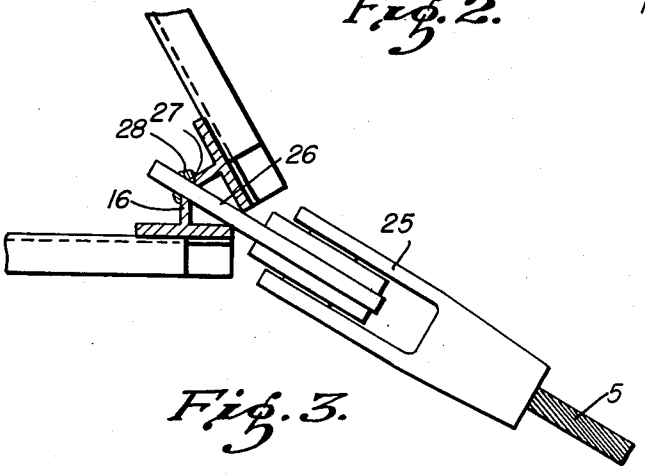


Fig. 3.

Fig. 4.

VIRGIL W. CLARK

INVENTOR.

BY

Attorney

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2,808,912

RADIO TOWER AND LEG FOR THE SAME

Virgil W. Clark, Houston, Tex., assignor, by mesne assignments, to The Youngstown Sheet and Tube Company

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1 Claim. (Cl. 189—13)

My invention relates to fabricated steel towers and relates in particular to towers of the type employed in radio broadcasting.

It is an object of the invention to provide a tower which is economical because of its greater strength per pound of steel employed and because of its greater tolerances.

It is a further object of the invention to provide a tower which may be extended to extreme heights as compared to towers now in use without expenditure of excessive quantities of material.

A further object of the invention is to provide a trifacial tower employing a novel arrangement of legs and reinforcing which enables the art to obtain heights in excess to those obtainable in tower constructions employing structural angles as leg members.

A further object of the invention is to provide a tower having legs which may be readily formed from structural steel members known generally as H-beams, by bending the webs of such beams transversely so that the plates or flanges of these beams are swung from planes which are substantially parallel to each other into planes which are disposed at an angle to each other and intersect along a line which is substantially parallel to the edges of the flanges.

Further objects and advantages of the invention may be brought out in the following part of the specification wherein I have described the details of a preferred form of the invention for the purpose of completely disclosing the invention so that it may be readily practiced by the art, without intention to limit the scope of the invention which is set forth in the appended claim.

Referring to the accompanying drawing which is for illustrative purposes only:

Fig. 1 is an elevational view, to reduced scale, of a preferred form of the tower;

Fig. 2 is a section, to enlarged scale, taken as indicated on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary section taken as indicated on the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of a portion of one of the leg members.

As shown in Figs. 1 and 2, the tower **10** comprises legs **11** laced by cross bracing comprising girts **12** and diagonals **13**. The tower **10** is supported by piers which receive the lower ends of the legs **11**, and upper portions of the tower **10** are steadied by guy wires **5**.

Each of the legs **11** comprises a pair of flanges or plates **15** which are extended vertically, or longitudinally of the legs. These plates **15** are disposed in planes which correspond to the faces of the trifacial tower. In Fig. 2, I show planes *a*—*a* and *b*—*b* which are defined by faces F and F2 of the tower. These planes lie at an angle to each other and cross along a vertical line L which identifies one corner of the tower and which is substantially parallel to the edges of the plates **15**. The plates **15** of

the leg **11**, shown in the upper part of Fig. 2, are arranged so that their outer faces lie in or correspond to the crossing planes *a*—*a* and *b*—*b*. Although the outer faces of the plate **15** are not parallel, the edges thereof are parallel. The plates **15** are connected by a web **16** comprising adjacent longitudinal portions **17** which merge with the inner faces of the plates **15** along lines which are arranged longitudinally of the plates **15** and which are spaced from the edges of the plates **15**. In the construction shown the lateral edges of the web **16** engage the plate **15** along longitudinal lines disposed centrally between the edges of the plates.

One of the features of the leg **11** is that it may be readily made from a structural member of the general character of an H-beam, such structural member having two parallel plates or flanges connected by a web which is spaced inwardly from the edges of the flanges. In the construction shown herein, the legs **11** have been made from H-beams by bending the webs of such H-beams transversely of a line, such as the line **20** of Fig. 4, which extends longitudinally along the web **16** at substantially equal distances from the plates **15**. The bend made at **21** may be readily sharp, or the bend may approach nearer to an arc inscribed around the line on which the crossing planes defined by the plates **15** intersect. The tower leg disclosed herein lends itself well to the construction of towers of the tri-facial type shown. The web of the H-beam may be readily bent so as to bring the plates **15** into planes *a*—*a* and *b*—*b* crossing at an angle of 60°, shown in Fig. 2, with the portions **17** of the web **16** lying at an angle of 120°.

The guy wires **5**, consisting of cables, are connected to the tower as shown in Fig. 3 by means of insulators **25** having connector means comprising plates **26** arranged to be extended between adjacent edges of the leg plates **15** and through vertical slots **27** in the leg webs **16**, wherein they are secured by welds **28**. In the formation of the legs **11**, outwardly faced channels **30** are formed between the outer portions of the plates **15**, such channels being adapted for reception of lines which are to be extended up the tower and wherein such lines will be substantially protected against injury.

I claim:

In a tower of the character described: three legs arranged to define corners of a trifacial tower, each of said legs consisting of a structural member comprising a pair of parallel elongated plates connected by a web, said web being bent transversely and holding said plates at an angle of approximately 60° to each other so that said plates of each leg lie in the planes of the adjacent faces of said tower, said webs having openings therein; girt members and diagonal members for reenforcing the tower, said members being arranged in the faces of the tower and having their ends connected directly to the leg plates contiguous thereto; and guy means connected directly to the webs of the tower legs, said guy means comprising connector plates extending between the adjacent edges of the leg plates through said openings of said webs and being connected directly thereto.

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