March 14, 1933. F. S. BUSHEY 1,901,800

WELDED CONSTRUCTION

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Fig. 1.

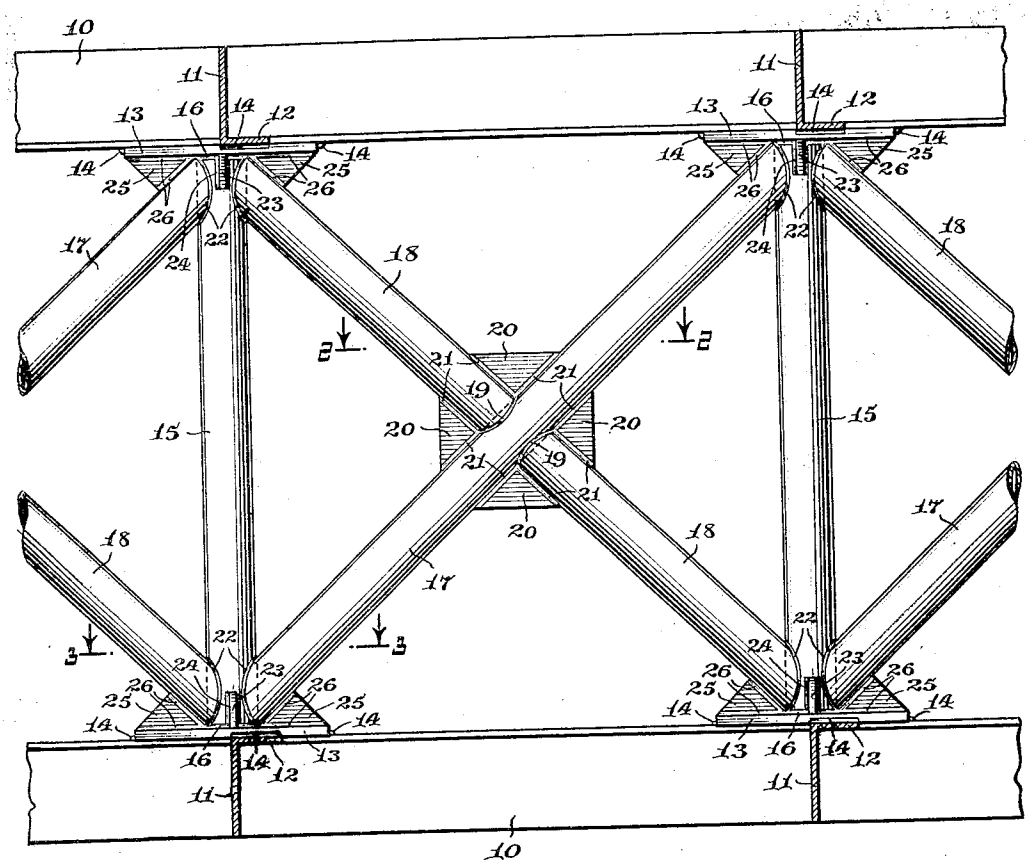
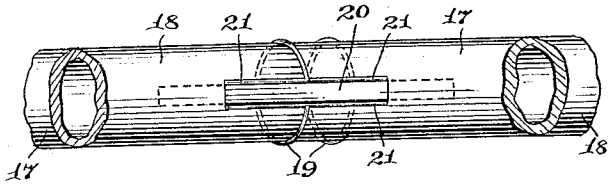


Fig. 2.



WITNESSES

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Fig. 3.

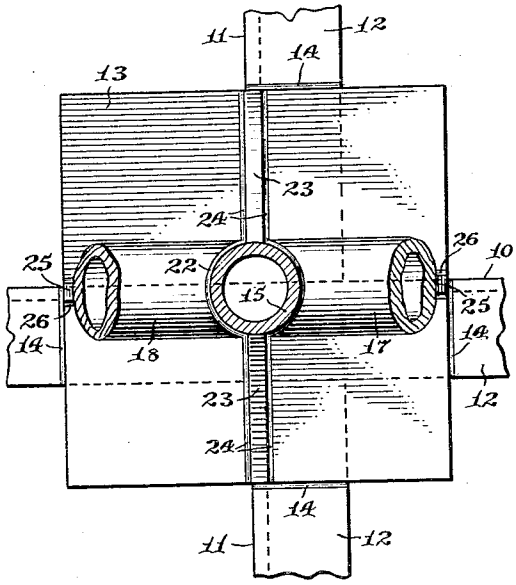


Fig. 4.

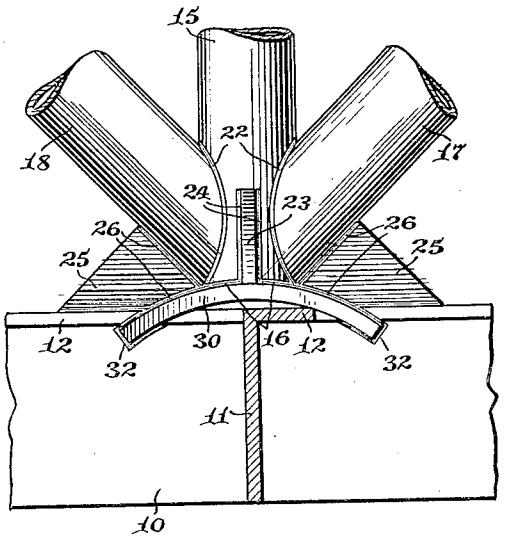


Fig. 5.

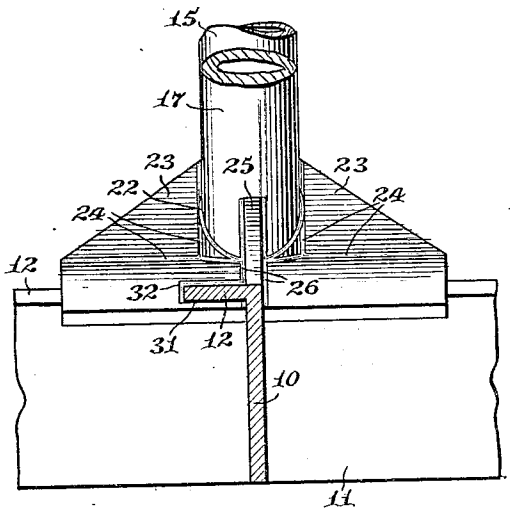
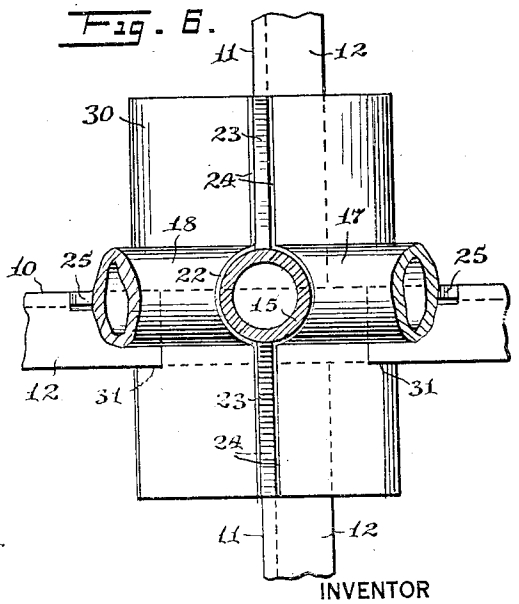


Fig. 6.



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UNITED STATES PATENT OFFICE

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WELDED CONSTRUCTION

Application filed November 21, 1930. Serial No. 497,323.

This invention relates to a fabricated metal structure which may be used advantageously as a truss, joist or other structural integrality, wherever needed and useful, and which is well adapted for use in marine construction.

The invention has for its general object the provision of a structure of the indicated character whose component parts will be welded together, to the end, that the use of fastening elements, such as bolts and rivets and also washers, will be obviated; that all sharp corners and crevices will be eliminated; and that the structure will be of substantial and rigid design capable of withstanding heavy strains and stresses.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawings.

Figure 1 is a fragmentary side view partly in section showing certain features of the invention;

Figure 2 is an enlarged fragmentary sectional plan view, indicated by the line 2—2 of Figure 1;

Figure 3 is an enlarged fragmentary sectional plan view, indicated by the line 3—3 of Figure 1;

Figures 4, 5 and 6 are fragmentary views, partly in section, of a modification of the invention.

Referring now more particularly to Figures 1, 2 and 3 of the drawings, it will be apparent, that there is shown a structure including upper structural elements 10 and 11, and lower structural elements 10 and 11. These structural elements may be of any suitable cross sectional shape to present a flange or flanges. In the present instance each structural element 10 and 11 is of L-shape or in the form of an angle iron to provide a flange 12. The elements 10 and 11 are arranged horizontally, and are further arranged at an angle with respect to each other. In the present instance the elements 10 and 11 are arranged perpendicular with respect to each other so that their flanges 12 will also be perpendicular with respect to each other and in the same plane. Flat rectangular plates 13 are provided for the upper elements 10 and 11 and also for the lower elements 10 and 11. The upper plates 13 serve as cap plates whereas the lower plates 13 serve as base plates and are arranged in pairs. The plates 13 of each pair are in vertical alinement with each other. Each of the plates 13 is laid against the flanges 12 of the related elements 10 and 11 and are welded thereto as at 14. Use is made of structural elements 15, each in the form of a stanchion or post, and each being preferably, though not necessarily, of tubular construction. One element 15 is provided for each pair of plates 13, and said element 15 has its opposite ends in contact with the plate 13, respectively, and welded thereto as at 16. Bracing means is employed in conjunction with the plates 13 and the elements 15 and is arranged between the upper elements 10 and 11 and the lower elements 10 and 11. Similar bracing means is employed in conjunction with two of the stanchions or posts 15. The said bracing means includes three main elements or parts, there being an element or part 17 and two similar elements or parts 18. The parts 17 and 18 are preferably tubular. One end of each of the parts 18 is in contact with the part 17 intermediate the ends of the latter and welded thereto, as at 19. The parts 18 are in alinement with each other and together with the part 17 form a cross. Angle pieces 20 are arranged between the parts 17 and 18, at their junctures, and are welded to the parts 17 and 18, as at 21. The parts 17 and 18 present four ends which are concaved to fit in contact with the adjacent stanchions or posts 15 and are welded thereto as at 22. It will therefore be understood that the parts 17 and 18 and the pieces 20 as welded together provide diagonal braces between adjacent stanchions or posts 15.

In accordance with another feature of the invention, use is made of pieces 23, there being employed two in conjunction with each plate 13 and the related end of each stanchion or post 15. Each piece 23 is welded to the stanchion or post 15 and the plate 13, as at 24.

Angle pieces 25 are arranged between the ends respectively of the parts 17 and 18 and the related plates 13, and are welded to said ends and the plates 13, as at 26.

In Figures 4, 5 and 6 there has been shown a modified form of base plate 30. The base plate 30 is curved and is provided with notches 31 to receive the flange 12 of the structural element 10. The plate 30 may be employed to interlock with the flange 12 of the structural element 10 and is welded thereto, as at 32. In other respects, the construction shown in Figures 4, 5 and 6 is similar to that shown in Figures 1, 2 and 3, and for the sake of convenience similar reference numerals are used to designate similar parts.

From the foregoing it will be apparent that the structure set forth may be used as a metal truss or metal support or metal joist for sustaining floors, decks and the like, and which will afford all of the advantages set forth hereinbefore.

I claim:

1. A structure having the combination of a structural element, a plate laid on said element and welded thereto, a tubular element having one of its ends in contact with said plate and welded thereto, angle pieces arranged between said plate and tubular element and welded thereto, braces each having one of its ends welded to said tubular element, and angle pieces arranged between said plate and the braces respectively and welded to the plate and braces.

2. A structure having the combination of upper and lower structural elements having flanges arranged at an angle with respect to each other and in the same plane, plates for said upper and lower structural elements and each plate being laid against the related flanges, vertical posts whose opposite ends are in contact with upper and lower plates respectively and welded thereto, and bracing means arranged between said elements and welded to said plates and posts.

3. A structure having the combination of upper and lower structural elements having flanges arranged at an angle with respect to each other and in the same plane, plates for said upper and lower structural elements and each plate being laid against the related flanges, vertical tubular posts whose opposite ends are in contact with upper and lower plates respectively and welded thereto, and tubular braces welded together and arranged between said posts and welded to said posts.

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