

T. J. SHEA.
 PLATE JOINT, CLAMPING BAR THEREFOR, AND PROCESS OF MAKING SAID JOINT.
 APPLICATION FILED JAN. 27, 1915.

1,185,014.

Patented May 30, 1916.

Fig. 1.

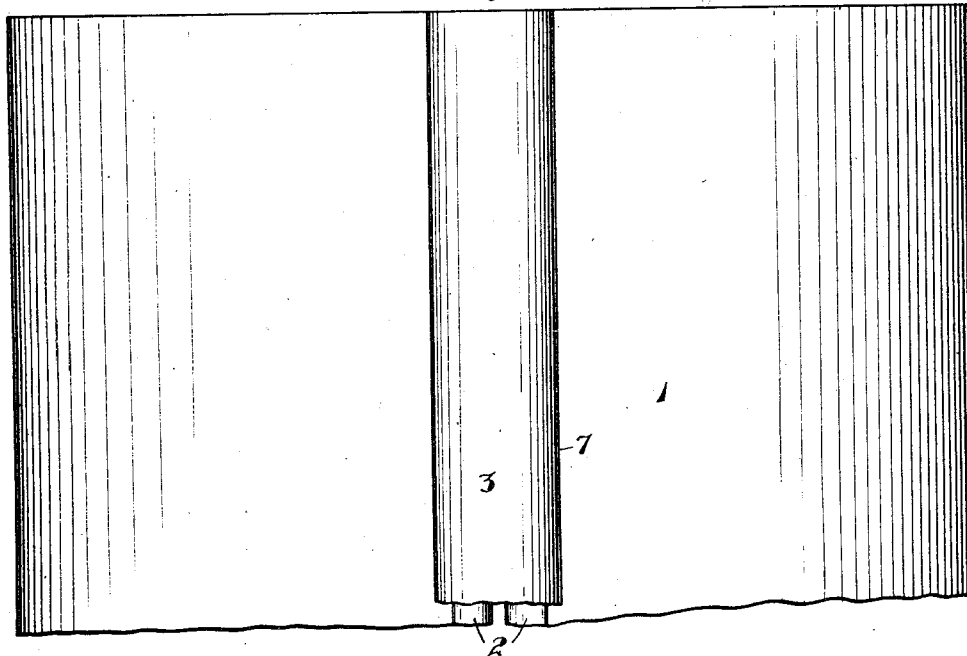


Fig. 2.

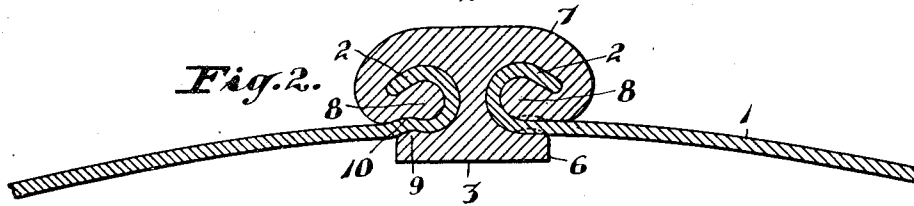


Fig. 3.

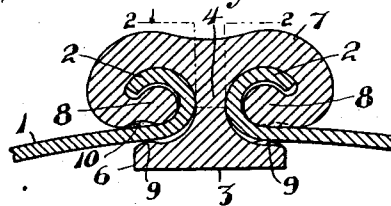
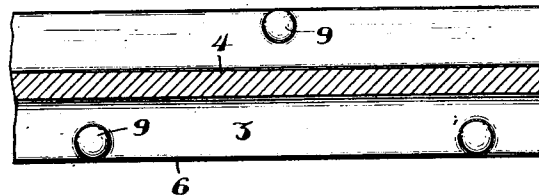


Fig. 4.



WITNESSES:

J. C. Fiedner
L. M. Ball

INVENTOR,
Thomas J. Shea,

BY *Francis M. Wright,*
 ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS J. SHEA, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO CHARLES T. HUGHES, OF SAN FRANCISCO, CALIFORNIA.

PLATE-JOINT, CLAMPING-BAR THEREFOR, AND PROCESS OF MAKING SAID JOINT.

1,185,014.

Specification of Letters Patent.

Patented May 30, 1916.

Application filed January 27, 1915. Serial No. 4,658.

To all whom it may concern:

Be it known that I, THOMAS J. SHEA, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented new and useful Improvements in Plate-Joints, Clamping-Bars Therefor, and Processes of Making Said Joints, of which the following is a specification.

The present invention relates to an improved process of uniting edges of metal plates, an improved clamping bar for uniting said edges, and an improved joint made by such process and by means of said bar.

It is particularly valuable for joining together the ends of plates which form the courses of large tanks, such as are used for storing oil or water; also for longitudinal seams of pipes. But it is also adapted for joining edges of plates of any description.

In the accompanying drawing, Figure 1 is a front view of two curved plates, the edges of which are joined together by my improved joint; Fig. 2 is an enlarged sectional view thereof; Fig. 3 is a similar view of the parts of the joint in their position before completion thereof; Fig. 4 is a longitudinal sectional view on the line 2-2 of Fig. 3.

Referring to the drawing, 1 indicates two curved plates, the straight edges of which it is desired to join together. For this purpose said plates are formed at said edges with rounded flanges 2 bent back outwardly. 3 indicates a clamp bar the length of which substantially corresponds with the width of the plates to be joined. This bar is made so as to be roughly T-shaped in form having a central member 4, a foot or inner member 6 extending transversely to said central member, and equally on both sides, and a head or outer member 7 also extending a considerable distance transversely to said central member and equally on both sides thereof. The extended marginal portions of said head member are rolled back inwardly and so that the edges 8 thereof are rounded and thickened at the extreme edge and are of approximately the same form as the inner surfaces of the flanges 2 of the plates. The opposing surfaces of the two sides of the foot member and of the head member are formed, directly opposite to one another, the one with rounded bosses 9, best shown in Fig. 4, and the other with

recesses 10 substantially of the same shape and size as the bosses.

The two plates having been secured to the lower course of the tank with their flanged edges adjoining each other and at the proper distance apart, the clamp bar is placed with its lower end above the flanges of the two plates, said flanges are then inserted in the spaces between the edges of the head member and the central and foot members, and the bar is then lowered, so that its upper and lower ends eventually coincide with the upper and lower edges of the plate. The clamping bar is then, preferably by hydraulic or other power, strongly compressed in a direction substantially parallel with the surfaces of the plate, and at right angles to the clamp bar, the two sides of the clamp bar being pressed together, and then in a direction transverse to said plate, and finally assumes the form shown in Fig. 2. By such compression the metal of the plates is bent to conform to the adjacent bosses on the foot member of the bar and the corresponding recesses on the head member thereof.

It is important that the edges 8 of the clamping member and the flanges 2 be rounded, as this construction distributes the strain, and prevents disruption of the plates.

A joint of this character is of great strength, and is much cheaper in construction than a joint made by riveting. Moreover, it effects a great saving in the material of the tank, as no longer does the thickness of the plate require to be sufficient to withstand the pressure of a given degree when weakened by rivet holes made therein. Consequently the thickness of the plate can be diminished by 20% or 25%, thus effecting a great saving in the cost of construction. Moreover, this construction makes the tank much stiffer than heretofore, the clamp bar 3 acting as a stiffening rod.

I claim:—

1. A plate joint comprising a T-shaped clamping bar between the edges of the plates, the edges of the plates being received between the transverse members of the bar, the opposing surfaces of said members having the one bosses and the other recesses, and each interposed edge having recesses to receive said bosses and bosses to enter said recesses.

2. A plate joint comprising plate edges having flanges bent back and a clamping bar having a central member between said edges and inner and outer transverse members on each side of the bar, a pair of transverse members having marginal portions bent back on themselves and received between the plates and their flanges, the flanges of the plates being received in said latter bends.

3. A plate joint comprising plate edges having flanges bent back outwardly and a T-shaped clamping bar between said edges, the outer pair of transverse members of said clamping bar having marginal portions bent inwardly and received between the plates and their flanges, the flanges of the plates being received in said latter bends, the opposing surfaces of the head and foot members respectively, having the one bosses and the other recesses, and the interposed flange having recesses to receive said bosses and bosses to enter said recesses.

4. The method of joining edges of plates which consists in forming flanges on said plates at said edges, forming a clamping bar having transverse members one of which has inwardly bent edges, placing said latter edges in juxtaposition with the former edges and moving said clamping bar into a position in which the recesses between the members of the bar aline with said flanges, moving the bar in a longitudinal direction to inclose therein said flanges, and then compressing said bar on said flanges.

5. The method of joining edges of plates

which consists in forming flanges on said plates at said edges, forming a clamping bar having transverse members one of which has inwardly bent edges, placing said latter edges in juxtaposition with the former edges and moving said clamping bar into a position in which the recesses between the members of the bar aline with said flanges, moving the bar in a longitudinal direction to inclose therein said flanges, and then compressing said bar on said flanges in a direction first substantially parallel with the surfaces of the plates and at right angles to the clamping bar and then in a direction transverse to said plate.

6. A clamping bar having a central member and transverse members on each side of the central member, one of the transverse members on each side being bent back on itself and spaced from the remainder thereof.

7. A clamping bar having a central member and transverse members on each side of the central member, one of the transverse members on each side being bent back on itself and spaced from the remainder thereof, one transverse member on each side having bosses, and the other having corresponding recesses.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS J. SHEA.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.