May 29, 1934. E. C. WENDT 1,960,652

STRUCTURAL SUPPORTING MEANS

Filed Oct. 13, 1932 2 Sheets-Sheet 1

Fig. 1.

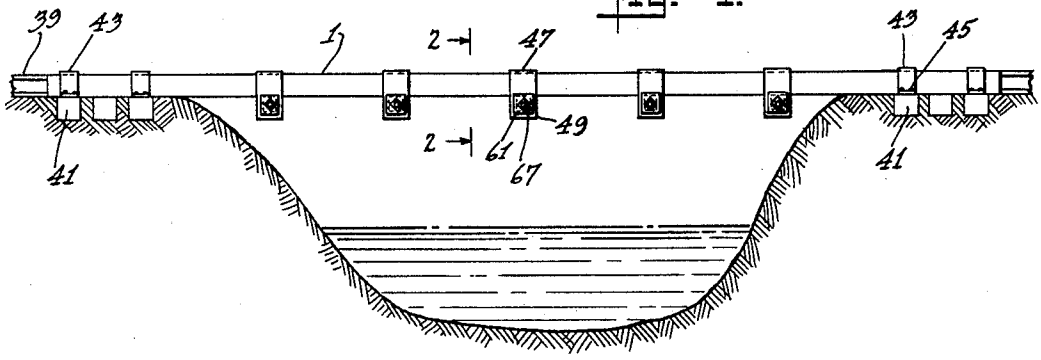


Fig. 2.

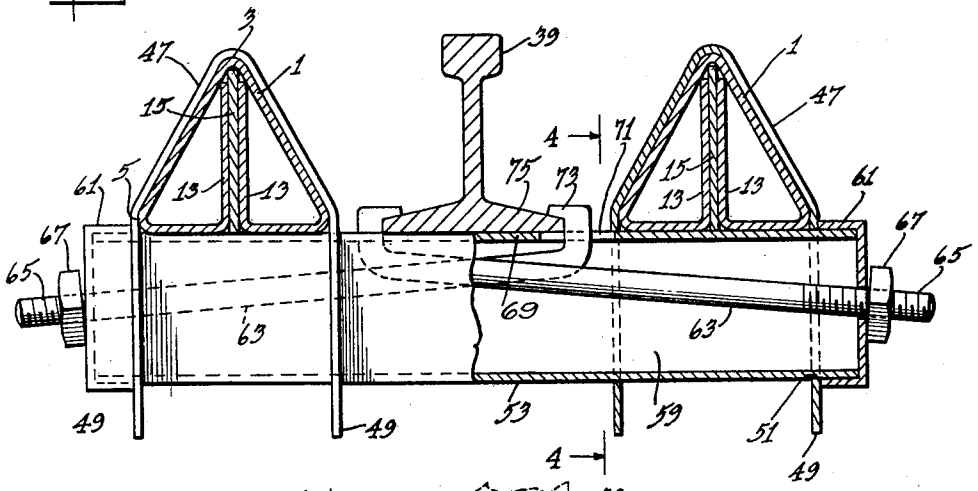


Fig. 3.

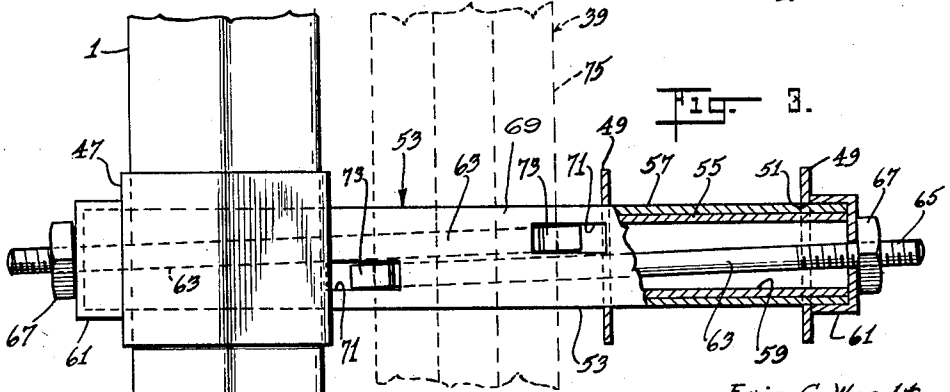
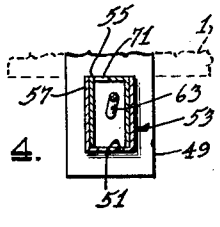


Fig. 4.



Eric C. Wendt
INVENTOR

BY

Munn & Co.
ATTORNEYS

May 29, 1934. E. C. WENDT 1,960,652

STRUCTURAL SUPPORTING MEANS

Filed Oct. 13, 1932 2 Sheets-Sheet 2

Fig. 5.

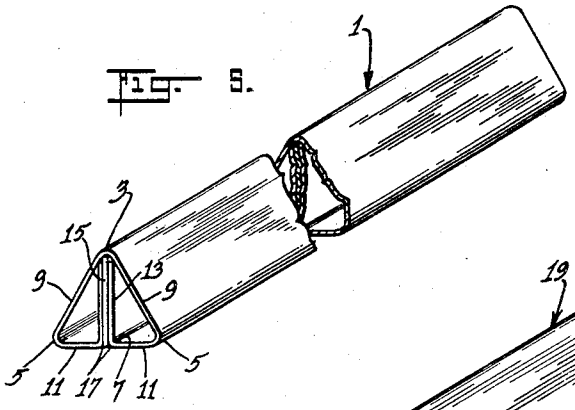


Fig. 6.

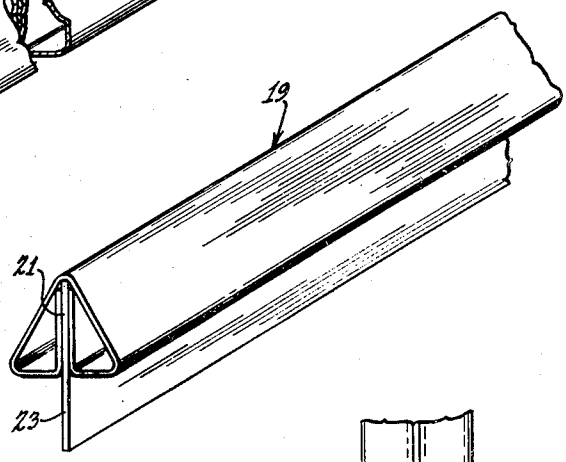
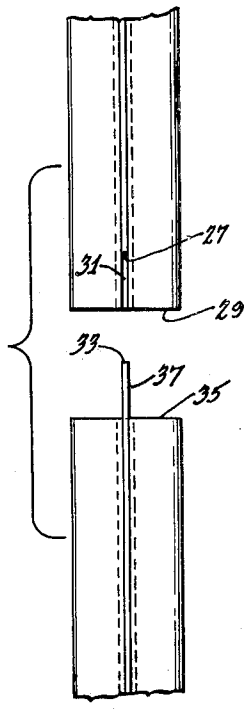


Fig. 7.



Eric C. Wendt
INVENTOR

BY

Munn & Co.
ATTORNEYS

Patented May 29, 1934

1,960,652

UNITED STATES PATENT OFFICE

1,960,652

STRUCTURAL SUPPORTING MEANS

Eric C. Wendt, Grafton, Wis.

Application October 13, 1932, Serial No. 637,625

5 Claims. (Cl. 104—123)

My invention relates to improvements in structural supporting means, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a structural member having a high transverse strength in proportion to the cross-sectional area thereof, and readily adapted for various uses.

A further object is to provide novel means for associating a plurality of structural members in collaboration with each other.

A further object is to provide novel means for associating structural members with a supported means such as a rail, and which may be easily associated with and dissociated from the structural members and supported means.

A further object is to provide novel means associated with the structural members for adjustably positioning the supported means with respect thereto.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming part of this application, in which

Figure 1 is a side elevation of my invention as positioned for spanning a stream and supporting the rail of a track.

Figure 2 is a vertical sectional view taken substantially along the line 2—2 of Figure 1, a portion of the structure being broken away.

Figure 3 is a top plan view of the structure shown in Figure 2, a portion thereof being broken away.

Figure 4 is a vertical sectional view taken substantially along the line 4—4 of Figure 2.

Figure 5 is an isometric view of the structural member portion of my invention.

Figure 6 is an isometric view of a modification of the structure shown in Figure 5, and

Figure 7 is an elevational view of the adjoining ends of a pair of structural members, illustrating the construction for connecting the members together in abutting relationship.

In carrying out my invention I provide an elongated structural member 1, as shown in Figures 1 and 5, which has an external contour laterally simulating a triangle, and may be formed by folding a sheet of material, such as sheet metal, longitudinally along substantially parallel lines, as indicated by numerals 3, 5 and 7, for providing side portions 9, complementary side portions 11 and inwardly extending web portions 13.

The web portions 13 may be disposed in spaced apart positions for receiving a web or filler plate 15 therebetween. The web plate 15 is preferably connected with the side portions 11 at 17 by a suitable means such as welding, and supplements the reenforcement of the web portions 13.

In Figure 6 I have shown a structural member 19 which is similar to the structural member 1 except that the web plate designated as 21 in Figure 6 is extended as at 23.

The web plates 15 and 21 of the structural members 1 and 19 respectively, may have an end 27 positioned at a distance from an end 29 of the structural members for providing a space 31 between the web portions thereof, and the other end 33 positioned at a corresponding distance beyond the other end 35 of the structural members. When it is desired to connect two of the structural members together in abutting relationship, the extending portion 37 of the web plate of one structural member may be positioned within the opening 31 of the other structural member, so that the ends 27 and 33 of the web plates and the ends 29 and 35 of the structural members may be disposed in contiguous relationship, after which the web plates and the structural members may be welded together for providing a continuous structure.

Figures 1 to 3 inclusive show the structure for supporting the rails 39 of a track over a stream, excavation, culvert, etc. In carrying out this form of my invention, I make use of the type of structural member 1 illustrated in Figure 5.

As the structure for supporting each of the rails is identical, the description may be confined to the structure for supporting a single rail. A pair of the structural members 1 is utilized for supporting a rail 39. The structural members 1 are disposed in spaced apart and substantially parallel positions, and have their end portions mounted on bearing members 41. The structural members 1 may be connected with the bearing members by any suitable means such as anchor straps 43 extending over the structural members 1 and connected with the bearing members by means of bolts 45.

A plurality of paired straps 47 are disposed in proper spaced apart positions on the structural members 1 and are preferably shaped to conform to a portion of the contour of structural members 1.

Each of the paired straps 47 comprises in part a pair of depending portions 49 provided with aligned and preferably rectangular openings 51 therein through which a tie beam 53 may ex-

tend. A tie beam is associated with each of the paired straps 47 and may be constructed of a pair of inter-fitting channel members 55 and 57 connected together by welding, for providing a passageway 59 therethrough.

Cap members 61 are positioned on the ends of the tie beams and are provided with openings therein through which bolts 63 may extend.

The bolts are provided with threaded end portions 65 for receiving nuts 67.

The top 69 of the tie beams supports the rail and is provided with offset slotted openings 71 therein through which hook end portions 73 of the bolts may extend. The hook portions are adapted for receiving the base flanges 75 of the rail 39.

It will be noted that the openings 71 are spaced a sufficient distance apart so that they may extend some distance outside of the edges of the base flanges of the rail and that the hook portions of the bolts are positioned on opposite sides of the rail both with respect to each other and also with respect to the cap members with which they are connected. This construction provides for the lateral adjustment of the rail with respect to structural members 1 by loosening or tightening the nuts 67.

When it is desired to disassemble the structure from the rail, the nuts 67 are loosened for releasing the hook portions 73 from the rail, at which time the hook portions may be moved through the openings 71 and the cap members and the bolts removed from the tie beam. The tie beam 53 may then be disconnected from the straps 47, by being moved through the openings 51 in the depending portions 49 of the straps. The straps 47 may then be removed from the structural members 1.

The assembling of the parts is, of course, readily apparent in view of the above.

While I have illustrated and described the preferred embodiment of my invention, it will, of course, be understood that various modifications and changes may be made without departing from the spirit or scope of the invention.

I claim:

1. A rail supporting structure comprising a pair of structural members positioned on opposite sides of a rail and having the end portions thereof mounted on bearing means, hangers disposed on the structural members and arranged in pairs, a tubular tie beam connected with and supported by the paired hangers and bearing on the under side of the rail, and anchor bolts disposed longitudinally within the tubular tie beam and extending through the top thereof for connecting the rail therewith.

2. A rail supporting structure comprising a pair of structural members positioned on opposite sides of a rail and having the end portions thereof mounted on bearing means, hangers disposed on the structural members and arranged in pairs, said hangers being provided with depending portions provided with substantially aligned openings therethrough, a tubular tie beam extending through the openings in the depending portions and bearing on the under side of the rail, cap members disposed on the ends of the tie beam, and anchor bolts disposed in the tie beam and extending through openings in said tie beam and cap members, said anchor bolts being provided with hook portions for connection with the base of the rail and having threaded end portions for receiving nuts, said nuts bearing on the cap members for retaining the hook portions in connection with the rail.

3. A rail supporting structure comprising a pair of structural members positioned on opposite sides of a rail and having the end portions thereof mounted on bearing means, said structural members being triangular in cross-section and having an apex portion thereof positioned uppermost, strap hangers disposed on the structural members and substantially conforming in part to the triangular cross-sectional contour of the members, said hangers being arranged in pairs and provided with depending portions having substantially aligned openings therethrough, tie beams extending through the openings and bearing on the under side of the rail, and means for connecting the rail with the tie beams.

4. A rail supporting structure comprising a pair of structural members positioned on opposite sides of a rail, strap hangers disposed on the structural members, said strap hangers being arranged in pairs and being provided with depending portions, the depending portions of both pairs having alined openings therethrough, tubular tie beams extending through the openings, the upper portion of said tie beams forming a support for the rail, and each tie beam being provided with longitudinally extending slots, caps at the ends of each tie beam, and a bolt extending through each of said slots and having a hook arranged to engage the base of the rail, the opposite end of the bolt extending through one of said caps and being provided with a nut for drawing the bolt firmly down on the rail.

5. In a rail supporting structure, a tubular tie beam disposed underneath the base of the rail, said tie beam having a pair of slots in the upper portion thereof extending beyond the base of the rail, a perforated cap covering each end of the tie beam, a bolt disposed within the tubular tie beam and having a hooked end arranged to extend through one of said slots and to bear on the upper portion of the rail base, the opposite end of the bolt extending through the perforated cap, a second bolt disposed within the tubular tie beam and having a hook arranged to extend through the other slot and into engagement with the upper surface of the rail base, the opposite end of said second bolt extending through the cap, and nuts for drawing the hook portions of the bolts toward each other.

ERIC C. WENDT.