

May 21, 1929.

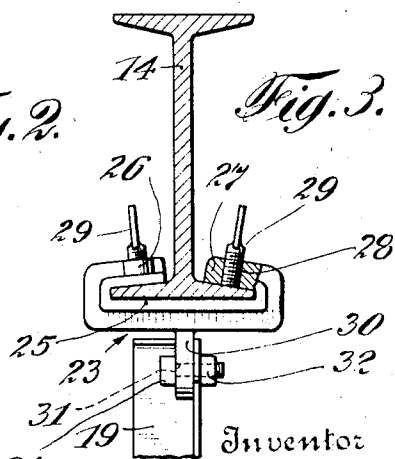
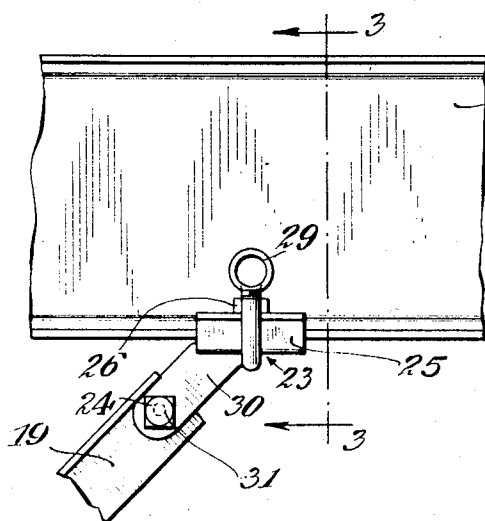
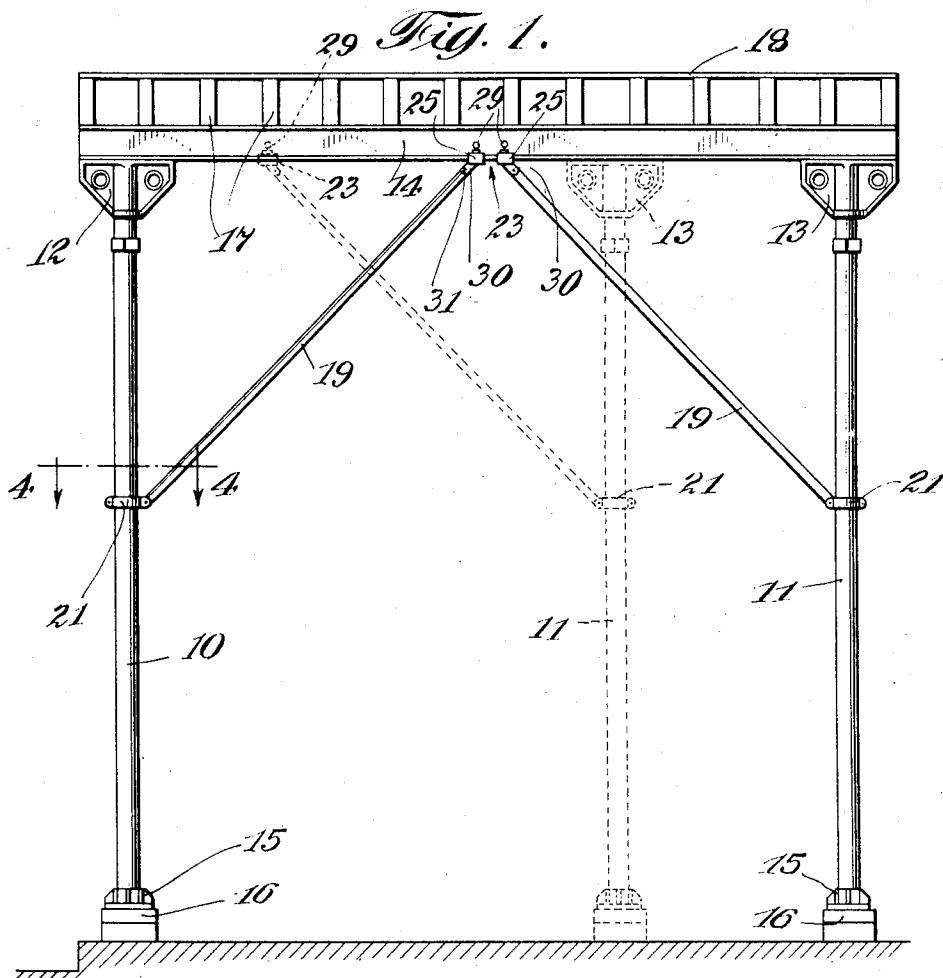
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1,714,298

FRAMED STRUCTURE AND FITTING THEREFOR

Filed Oct. 17, 1927

2 Sheets-Sheet 1



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Fig. 4.

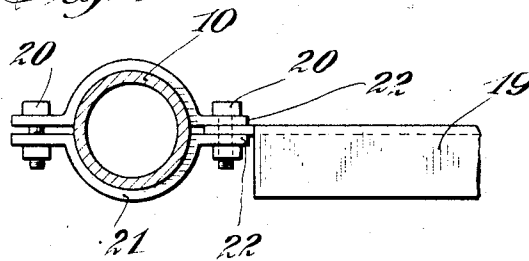


Fig. 5.

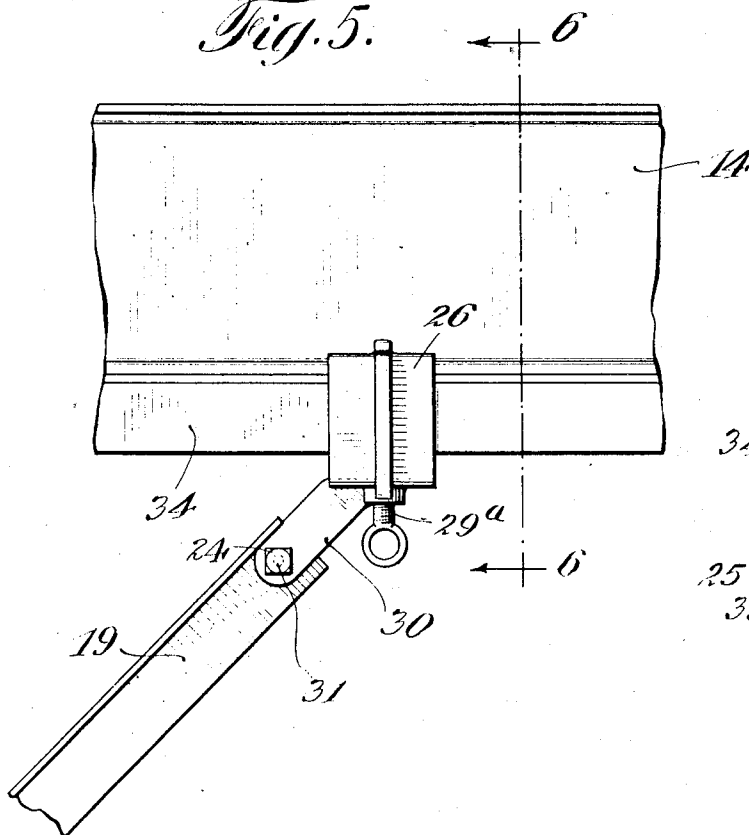
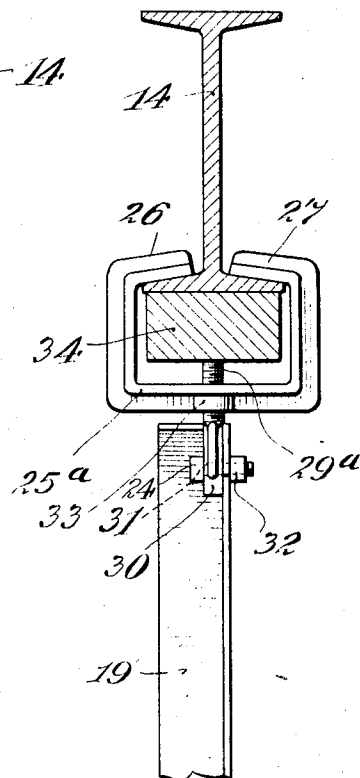


Fig. 6.



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UNITED STATES PATENT OFFICE.

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FRAMED STRUCTURE AND FITTING THEREFOR.

Application filed October 17, 1927. Serial No. 226,636.

This invention relates to improvements in framed structures, especially such as are fabricated of or with structural steel elements and has particular reference to novel bracing means and brace-attaching brackets for such structures.

While the invention has many other specific applications, it is particularly adapted for use in scaffolds and in relatively inexpensive temporary supports or covers for sidewalks, in bridges, overhead pipe lines, runways, ramps, grandstands, and the like. Considering one of these applications as an illustration, it is customary in the construction or repair of large buildings to erect a platform over the sidewalk to protect passersby from falling material and at the same time to provide the contractors with convenient space for storage of supplies, machinery, etc. Such structures have frequently been fabricated from steel elements or combinations of steel and timber and usually comprising a plurality of spaced columns or stanchions which support relatively spaced I-beams or the like transversely across the sidewalk and over which a number of wooden joists are disposed to support the usual flooring. In some instances, it is desirable to have the platform of sufficient height to permit the passage of large motor trucks thereunder, and particularly, in such cases, it is necessary to provide diagonal braces between the columns and the beams. Where such braces have been used prior to this invention, they have been permanently secured to the beams or other elements by means of rivets or the like, and in some cases they have required for their attachment, special plates extending outwardly from the beams or from their flanges. Such constructions have been comparatively costly, particularly with respect to the labor involved in erecting and dismantling the same, and the fittings employed have not always been capable of use in a subsequent structure after dismantling.

One of the objects of the present invention is to provide a simplified arrangement of bracing means which will be of low first-cost and capable of being readily assembled and dismantled with a minimum amount of labor.

Another object of the invention is to provide a novel fastening bracket which can be readily detached from the frame structure

without injury to any of its parts or fastening means.

These and other objects and advantages of the invention will be readily apparent from the following description in connection with the accompanying drawings, wherein two forms of the invention have been shown by way of illustration and wherein—

Figure 1 is a vertical transverse view through a sidewalk platform provided with bracing means in accordance with the invention;

Fig. 2 is an enlarged detail elevation of the brace-attaching bracket and showing fragmentarily the supporting beam and one end portion of the brace;

Fig. 3 is a vertical transverse sectional view on line 3—3 of Fig. 2;

Fig. 4 is a horizontal sectional view on line 4—4 of Fig. 1;

Fig. 5 is a view similar to Fig. 2 and showing a modified form of bracket; and

Fig. 6 is a vertical transverse sectional view on line 6—6 of Fig. 5.

The framed structure illustrated in Fig. 1 comprises a pair of upright columns 10 and 11 suitably spaced apart and respectively provided at their upper ends with head castings 12 and 13 upon which is seated a transverse beam 14 which may be of any desired cross sectional configuration, but which in the drawings is shown as an I-beam. The lower ends of the columns 10 and 11 are provided with flange members 15 which constitute supporting feet for the columns by means of which they may be secured to wooden sills 16 or the like; said columns 10 and 11 are illustrated as being formed of steel pipe, but they may, of course, be of other types of structures if desired, and furthermore they may be provided with various types of head castings not necessarily like those specifically illustrated. A plurality of spaced wooden sills 17 are supported upon the beams 14, and said sills in turn have secured to their upper edges the transversely extending planks 18 which constitute the platform proper.

In addition to the connections at their meeting extremities, the columns 10 and 11 and beam 14 are connected together by braces 19, which in the illustrated embodiment are formed of steel angle bars and disposed diagonally. Since each of the braces 19 and their attaching means are similar in all respects, a

detailed description of only one will be given. As best shown in Figs. 1 and 4, the lower end of the brace 19 is secured by means of a bolt 20 to a split clamp 21 which embraces the column 10 and is rigidly secured thereon. Preferably, said clamp 21 has a pair of spaced ears 22 between which the vertical flange of the brace 19 is disposed and through which the clamping bolt 20 extends. The upper upper end of the brace 19 is provided with an aperture through the vertical flange and is fastened to the novel mounting bracket 23 by means of a bolt 24.

As best shown in Figs. 2 and 3, the bracket 23 comprises a substantially C-shaped body 25 having inturned end portions 26 and 27 which terminate in spaced relation to each other and in substantially the same vertical plane as the body 25. Each of said inturned ends is provided with a threaded opening 28 in which is operable a clamping screw 29 and the inner end of which is adapted to bear against the corresponding flange of the I-beam 14 in such a manner as to impose a clamping pressure between the bracket and the I-beam. It is to be understood that the body 25 and end portions 26 and 27 of the bracket are adapted to straddle the lower flanges of the beam 14 and are adjustable longitudinally with reference to the beam. Also, carried by the bracket body 25 and extending angularly in a direction away from the beam is a lug 30 having an aperture 31 for the reception of the bolt 24. One flange of the brace 19 is adapted to bear against the lug 30 and is permanently held in position by the nut 32 on the extremity of the bolt 24.

In erecting the structure, the brackets 23 are assembled on the beam 14 prior to its connection with the upper ends of the columns 10 and 11; said brackets being initially free to move longitudinally on the beam. The split clamps 21 are then mounted upon the columns 10 and 11 and the lower ends of the braces 19 connected thereto, as previously described. The upper ends of the braces 19 are then swung upwardly and brought into proper association with the apertured lugs 30 of the brackets 23 whereupon the fastening bolts 24 may be inserted through said lugs and braces and after which the clamping screws 29 may be turned down to effectively lock the brackets 23 in the desired position. It will be noticed that the positions of the brackets 23 are determined entirely by the braces 19, and in view of this arrangement, it is possible to produce said braces with greater allowance for tolerance. Furthermore, it

will be noticed that the relative distance between the columns 10 and 11 is not necessarily affected by the length of the braces or vice versa, since it is possible to dispose the parts in such relation that the braces 19 will cross each other as indicated by the dotted line brace in Fig. 1 with reference to the full line brace at the left hand side of the figure.

In Figs. 5 and 6, a modified form of the invention has been shown in which the C-shaped body 25^a is of slightly different proportions from that of the first embodiment in that the inturned ends 26 and 27 are spaced further away from the central portion of said body, and instead of providing clamping screws 29 in said ends 26 and 27, a single clamping screw 29^a is provided, extending through the threaded aperture in a boss 33 in the center of the body 25^a. The inner extremity of said clamping screw 29^a may either bear against the lower side of the beam 14, or by preference it bears against a wooden block 34; said block if desired being co-extensive with the lower side of the I-beam. The result is the same in that the bracket 25^a is capable of being firmly clamped on the beam 14 and adjustable longitudinally thereon.

From the foregoing, it will be evident that an improved brace-attaching bracket has been provided for fabricated structures; it being characterized by simplicity in construction which renders possible its economic production and use. As has been previously stated, the invention may be employed in conjunction with various types of framed structures and is not necessarily restricted to use in sidewalk platforms. Furthermore, the invention is obviously susceptible of numerous modifications in the details of construction and arrangement of parts, and the right is herein reserved to make such changes as fall within the scope of the appended claim without departing from the spirit of the invention.

I claim:—

A bracket of the class described comprising a C-shaped body the ends of which are reversed, fastening means passing through said reversed ends to engage the flanges of a structural element and cause said body to be clamped thereto, and a diagonally-disposed apertured extension attached to the central part of the bracket and projecting sidewise therefrom for connection with the brace member.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

FREDERIC A. DAVIDSON