Nov. 11, 1930. J. A. BYINGTON 1,781,318

BOX CAR BRACE

Filed April 29, 1929

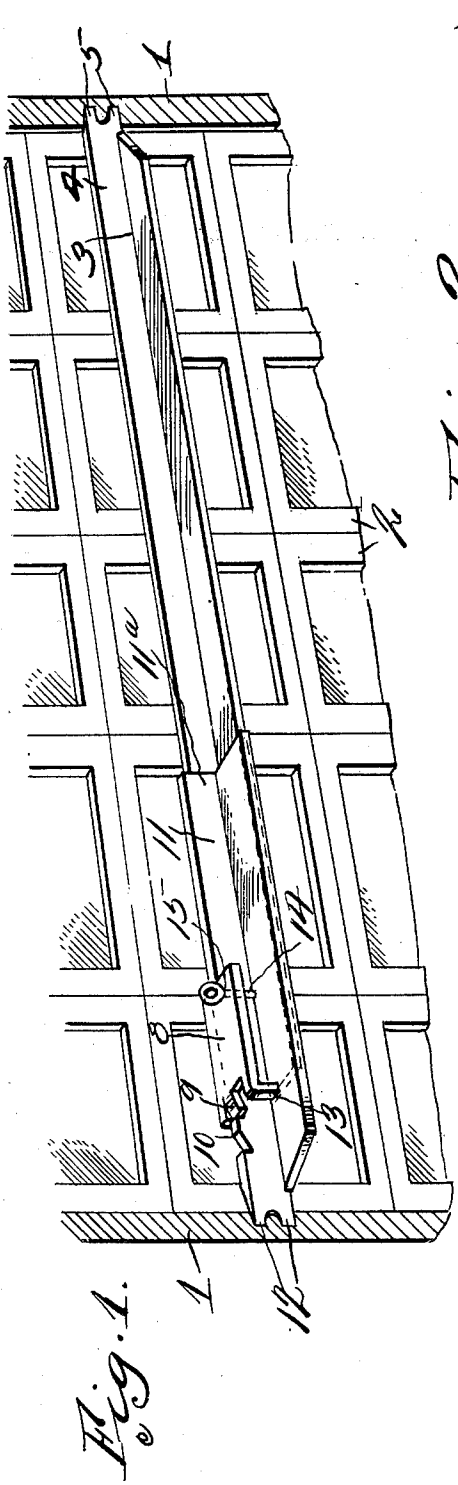


Fig. 1.



Fig. 2.

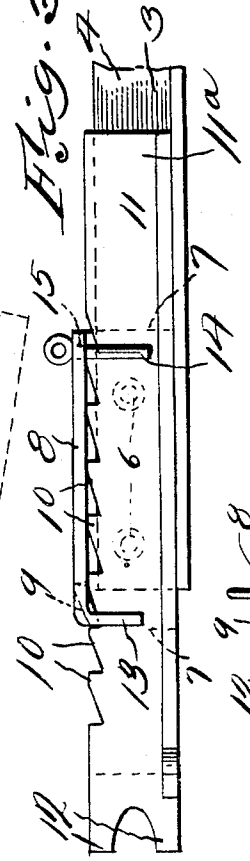


Fig. 3.

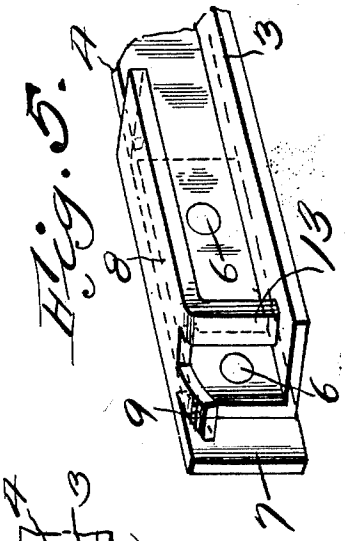


Fig. 5.

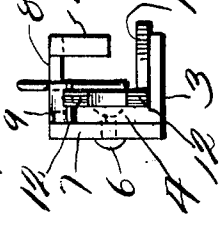


Fig. 4.

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Patented Nov. 11, 1930 1,781,318

UNITED STATES PATENT OFFICE

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BOX-CAR BRACE

Application filed April 29, 1929. Serial No. 358,973.

The invention relates to braces adapted to be quickly placed across the interior of a box car in engagement with the opposite walls thereof and against or adjacent articles stacked in the car for preventing shifting of the articles during transit, or when the car is moved from place to place within a yard during process of loading.

A further object is to provide the ends of the brace members with piercing members adapted to imbed in the opposite walls of the car, thereby allowing the device to be placed in any position within the car.

A further object is to provide interengaging teeth between the brace sections, which teeth form the fulcrum points between the sections when the sections are forced into substantial alinement for holding the load. Also to provide a recess to one side of one of the teeth forming means for the reception of the flange of the other member, thereby allowing the members to be easily and quickly adjusted in relation to each other, according to the distance between the walls of the car.

A further object is to form the members from angle iron bars disposed within each other and to provide the flange of one of said members with teeth projecting beyond the flange of the other member and the other member with a toothed plate overlying the toothed flange and provided with a struck in tooth for engagement with the teeth of the flange and a recess and downwardly extending finger to the outside of the struck-in tooth and forming means whereby the member having the teeth can be adjusted longitudinally or moved into interengagement with the struck-in tooth. Also to provide the plate with an aperture for the reception of a holding pin for holding the brace sections in substantial alinement.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:

Figure 1 is a perspective view of the brace, showing the same in position within the box car.

Figure 2 is a top plan view of the brace.

Figure 3 is an enlarged view in elevation of one end of the brace.

Figure 4 is an end view of the brace.

Figure 5 is a perspective view of one end of one of the brace members, showing the tooth carrying plate carried thereby.

Referring to the drawing, the numeral 1 designates the spaced walls of a freight car and 2 stacks of boxes within the car, which boxes are for purposes of illustration, shown as conventional boxes in which oranges are packed for shipment and storage purposes. Although boxes are shown, the device hereinafter set forth may be used for holding any kind of material or any article from shifting in the car during transportation, or when the car is shifted in the yard from track to track during the loading operation.

The load holding brace is preferably constructed in a manner whereby it may be constructed from conventional angle bars, thereby reducing the cost of manufacture to a minimum, and the brace comprises a main section 3 having its flange 4 provided with spaced teeth 5 at its end for imbedding in one of the car walls 1, as clearly shown in Figure 1. Secured to the other end of the bar 3 and to the flange 4 thereof by means of rivets 6 is the flange 7 of an angle member, the flange 8 of which extends outwardly as clearly shown in Figure 1, and is provided with a downwardly extending tooth 9, which tooth is received between any of the upwardly extending teeth 10 of the extension bar 11. The extension bar 11 is also formed from an angle bar, and is disposed within the angle bar brace section 3, and has its outer end provided with spaced teeth 12 adapted to imbed in the other wall 1 of the car. It will be noted that the tooth 9 does not extend the full width of the flange 8, and a downwardly extending finger 13 is provided on the end of the plate 8, consequently the extension member 11 can be laterally moved outwardly or inwardly for interengaging the tooth 9

with the proper tooth 10, as shown in dotted lines in Figure 2, and after the interengaging the end 11ª of the extension member 11 is forced inwardly with the engaged teeth 9 and 10 as a fulcrum point.

As the members 11 and 3 assume parallel positions when the device is placed in position, the teeth 5 and 12 of said members will be forced into the walls 1 of the car, and the device will engage the boxes 1 or be positioned where they will prevent sliding of the boxes or tilting of the stacks incident to jar during coupling and uncoupling cars or shunting cars around the yard. After the members 11 and 3 assume the proper positions as shown in Figures 1 and 2, pin 14 is passed through the aperture 15 in the plate 8 for holding the member 11 in close engagement with the flange 4 of the member 3, and as the same are in close engagement it is obvious that the teeth will be maintained in interengagement when the brace is in position. When it is desired to remove the brace, it will only be necessary to remove the pin 14 and move the member 11 laterally outwardly until it engages the downwardly extending finger 13, and at which time the teeth will be out of interengagement and the bar 11 can be moved inwardly, or if it is desired to extend the bar 11, it will only be necessary to move said bar outwardly and then inwardly for interengaging the proper teeth.

From the above it will be seen that a brace is provided for loads within freight cars, which brace may be easily and quickly placed in position or removed, thereby allowing the same to be utilized from time to time during the loading of a car. Although one brace is shown, it is obvious any number may be used according to the nature of the load.

The invention having been set forth what is claimed as new and useful is:—

1. The combination with spaced walls of a load brace, said brace comprising hingedly engaged members adapted to engage the walls at obtuse angles to each other and to be moved into parallel relation and means for holding said members in parallel relation.

2. The combination with spaced walls, a load between said walls, of a load brace, said brace comprising hingedly connected elongated members, and wall piercing members carried by the ends of the elongated members.

3. The combination with spaced walls, a load between said walls, of a load brace, said brace comprising elongated bars, said bars being right angularly shaped in vertical transverse cross section, one of said bars being disposed within the other bar and having one of its flanges extending above the flange of the other bar, teeth carried by the flange extending above the flange of the other bar, a plate carried by one of the bars and overlying the toothed flange of the other bar, a lug carried by said plate and adapted to interengage with the teeth of the toothed flange, said lug and teeth forming fulcrum points between the bars when moved towards parallel relation into engagement with each other and means for holding said bars in engagement with each other.

4. A load brace comprising an elongated main bar formed from angle iron, wall piercing means carried by one end of said main bar, an extension bar formed from angle iron and disposed within the main bar, a toothed plate carried by the main bar and overlying the extension bar, a plurality of teeth carried by the extension bar and with which the toothed plate engages whereby a fulcruming point is formed between the bars, wall piercing means carried by the end of the extension bar and means for holding the bars in engaged parallel relation.

5. A load brace comprising an elongated main bar formed from angle iron, an extension bar formed from angle iron and disposed within the main bar, one of the flanges of the extension bar extending above the flange of the main bar and provided with a plurality of teeth, a plate carried by the main bar and overlying the teeth of the flange of the extension bar, an inwardly extending tooth carried by the plate and laterally received between the teeth of the extension bar, a finger carried by the plate in the path of the toothed flange of the extension plate and forming means whereby said extension bar is limited in its lateral movement to a tooth disengaged position and a pin carried by the plate and cooperating with the toothed flange of the extension plate for holding the tooth of the extension bar and the plate in engagement.

6. A load brace comprising a main bar, an extension bar, laterally interengaged toothed connections between said bars and means for maintaining the toothed interengagement between the bars.

7. A load brace comprising a main bar, an extension bar, hinged connection between said main bar and extension bar, said hinged connection between the bars being variable in position, whereby the bars may be extended at different distances in relation to each other.

8. A load brace comprising a main bar, an extension bar, a hinged connection between said bars, said hinged connection forming means for maintaining said bars in extended relation.

In testimony whereof he hereunto affixes his signature.

JAMES AUGUSTUS BYINGTON.