April 25, 1939. G. M. REIFER ET AL 2,155,872

FREIGHT CAR LOADING APPARATUS

Filed March 31, 1937 2 Sheets-Sheet 1

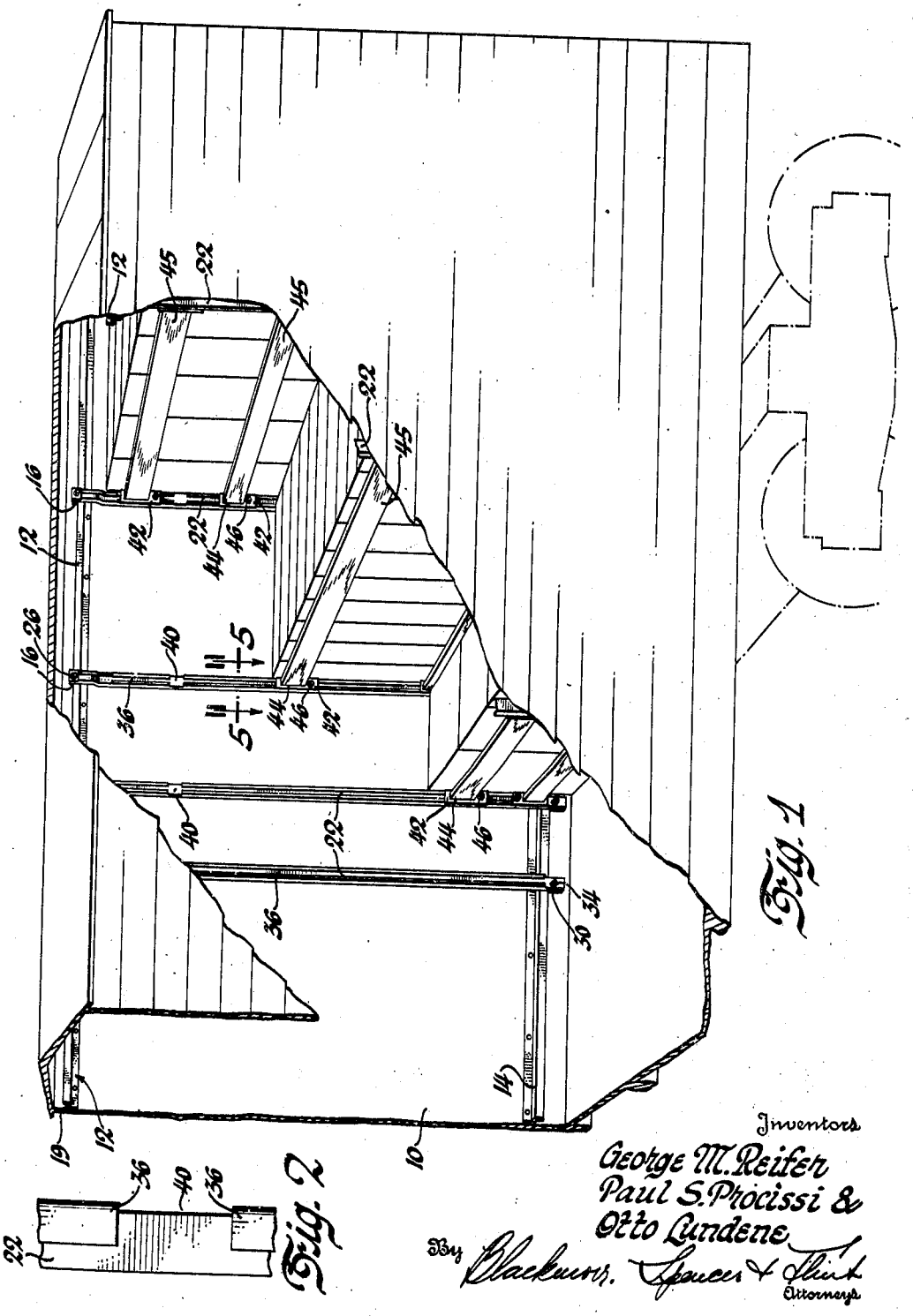


Fig. 1

Fig. 2

Inventors
George M. Reifer
Paul S. Procissi &
Otto Lundene
By Blackmore, Spencer & Flint
Attorneys

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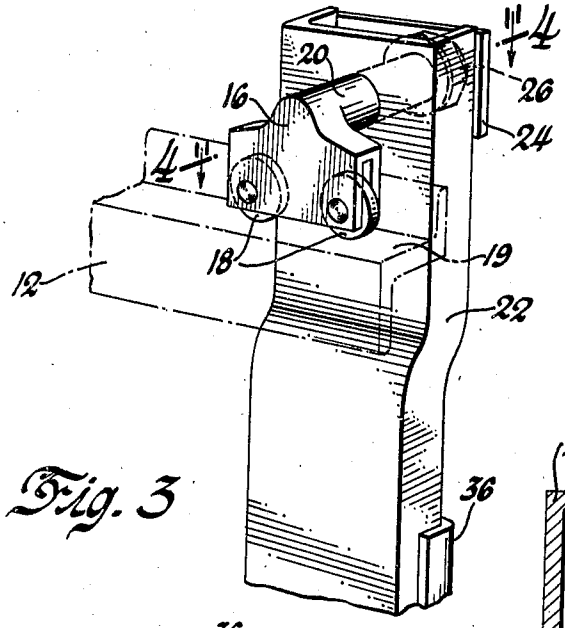


Fig. 3

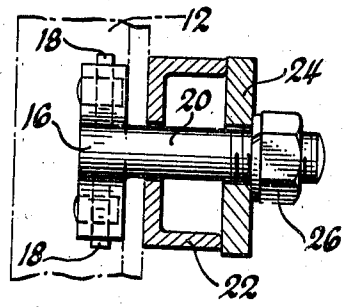


Fig. 4

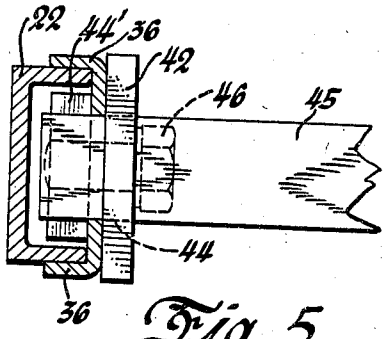


Fig. 5

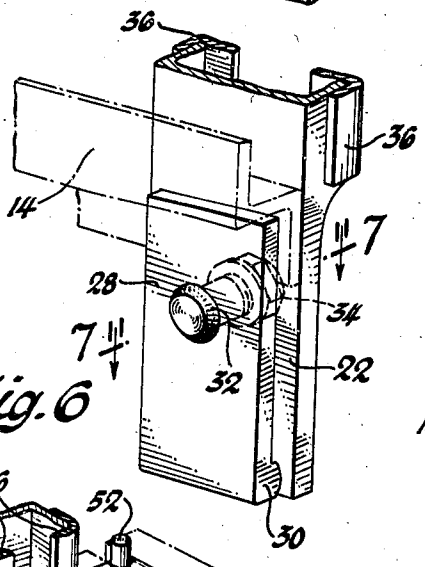


Fig. 6

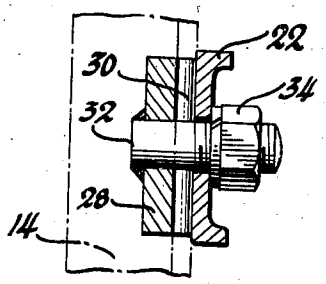


Fig. 7

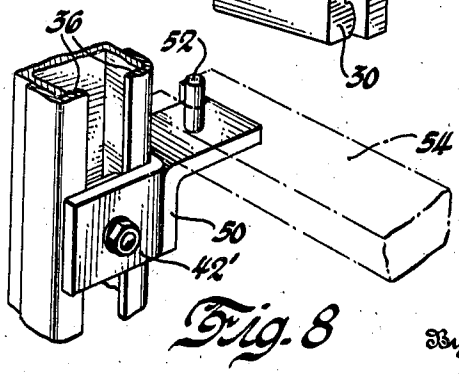


Fig. 8

Inventors
George M. Reifer
Paul S. Procissi &
Otto Lundene
By Blackmore, Spence & Flint
Attorneys

Patented Apr. 25, 1939 2,155,872

UNITED STATES PATENT OFFICE

2,155,872

FREIGHT CAR LOADING APPARATUS

George M. Reifer, Rochester, and Paul S. Procissi and Otto Lundene, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application March 31, 1937, Serial No. 133,930

6 Claims. (Cl. 105—369)

This invention has to do with means to facilitate the loading of box cars and similar conveyances.

It frequently happens that the freight with which a box car is to be loaded consists of boxes, barrels and bundles of various shapes and sizes and the problem is presented of locking different groups of such receptacles in place. The present invention provides universally adjustable braces which may be secured wherever desired within the car and may be used to clamp or hold the freight in position.

Universal adjustment is secured by providing guides adjacent the top and bottom of the opposite sides of the car and clamping upright stanchions to the guides. To facilitate handling and adjustment the stanchions are preferably provided with carriages at their upper ends which run on the upper guide ways and from which the stanchions are suspended thereby relieving the workman of the necessity of supporting their weight during adjustment.

Brace supports are adjustably mounted on the stanchions preferably by making the stanchions of channel shape and slidably mounting the supports in the channels. The supports preferably consist of plates overlying the channels and having openings registering with the channels. These openings are adapted to receive the ends of beams extending from one side of the car to the other, and these ends preferably extend through the openings into the channels so as to have the support afforded by the sides of the channel.

By providing a sufficient number of stanchions and braces the freight may be conveniently secured in the car whatever its size or shape, so that the load in the car may be increased and the cost of hauling reduced. Our system effects a very substantial saving as compared with the method usually employed today which consists in employing new lumber to brace the freight in place, this lumber being scrapped at the end of the journey whereas our equipment becomes a permanent part of the car and used repeatedly.

In the drawings

Figure 1 is a perspective view of a portion of a box car showing the preferred bracing arrangement in use.

Figure 2 is a side view of a slotted portion of the stanchion.

Figure 3 is a perspective view showing the manner of supporting the upper ends of the stanchions from the upper guideway.

Figure 4 is a section on line 4—4 of Figure 3.

Figure 5 is a section on line 5—5 of Figure 1.

Figure 6 is a perspective view showing the manner of clamping the lower ends of the stanchions to the lower guideway.

Figure 7 is a section on line 7—7 of Figure 6.

Figure 8 is a perspective view of another arrangement for securing the braces to the brace supports.

10 indicates one of the side walls of a box car. Near the upper end of the side wall and preferably, although not necessarily, supported from it is the longitudinally extending guide 12, preferably of Z shape as shown. A similar Z-shaped guide 14 is secured to the bottom of the side wall, but facing oppositely to the guide 12. While these guides are shown secured to the side wall they may, if desired, be secured to adjacent portions of the top or bottom of the car, but in such case the section would have to be somewhat changed. The guide 12 forms a runway, supporting carriages 16 one of which is shown in detail in Figure 3. The carriage is provided with rollers 18 which travel on the track 19 afforded by the guideway. Extending laterally from the carriage 16 is the shank 20 from which the stanchion 22 is suspended. The connection between the shank and stanchion may be of various sorts, but for simplicity the shank as shown in Figures 3 and 4, passes through an aperture in the bottom of the channel-shaped stanchion 22, and is provided with a clamping plate 24 on its outer end held in place by suitable nut and washer indicated at 26. It is obvious from an inspection of Figure 3 that the upper flange of the guideway 12 may be clamped between the carriage 16 and the bottom of the channel-shaped stanchion 22 by tightening the nut 26.

The arrangement for clamping the lower end of the stanchion to the bottom rail 14 is best shown in Figure 6, and consists of a plate 28 having a lug 30 at its lower end engaging the rear of the stanchion. The plate 28 overlaps the downwardly projecting flange of the guideway 14, and bolt 32 passes through the plate 28 and the stanchion 22, the outer end being equipped with a nut 34 which, when tightened, draws the plate 28 and stanchion into clamping engagement with the flange of the lower rail. Obviously, with this arrangement the stanchions may be moved lengthwise of the car by simply loosening the nuts 26 and 34, the carriage 16 supporting their weight during movement.

The stanchions 22 are provided along the major portion of their length with flanges 36 extending inwardly from the outer ends of the U.

These flanges may be integrally formed or may consist of angle members welded to the legs of the U as shown in Figures 3, 5 and 6. The flanges are interrupted, preferably adjacent their upper ends, as shown at 40, for a purpose to be later described.

42 indicates brace supports mounted for sliding movement along the stanchions. The brace supports each preferably take the form of a plate apertured as at 44 to receive the end of the brace 45 which may be made of wood or metal. The drawings illustrate the use of wooden braces, and these are extended through the openings 44 into the channel in the stanchions. With this method of mounting the stanchions themselves resist longitudinal displacement of the braces through their direct engagement with their ends.

The plates 42 are clamped to the stanchions by means of clamping plates 44' located within the channels, the plates 42 and 44' being connected by clamping bolts 46.

The portions 40 are provided for the purpose of facilitating the insertion or removal of the clamping plates 44' of the brace supports when desired. It has been found preferable to locate these interruptions above the center of the stanchions because the interruption reduces their strength somewhat, and it is desirable that the weakened portion be near the end of the stanchion to reduce the leverage exerted on it by the load in its efforts to shift.

It will be obvious that the described arrangement provides a universally adjustable brace, for the brace supports may be shifted anywhere throughout the length and height of the side walls of the car.

If desired, the friction of the clamps may be increased by roughening the contacting metal surfaces or securing to them suitable friction material such as is commonly used in brakes and clutches.

In Figure 8 there is shown a slight modification in which the plate 42' has secured to it as by welding an angled support 50 carrying a stud 52 which is adapted to engage in a notch or aperture in the brace member indicated at 54.

While this adjustable bracing has been described as especially applicable to box cars, it is obvious that it may also find use anywhere freight is being loaded in a conveyance, whether railroad car, truck, or boat, and where the term "car" is used in the specification and claims, it is to be understood that it is used in a sense to include any equivalent conveyance.

We claim:

1. The combination of a car having longitudinally extending guideways adjacent the top and bottom of opposed walls thereof, independent channel shaped stanchions clamped to said guideways in any desired position of adjustment, said stanchions being independently adjustable on said guideways, brace supports adjustably clamped in the channels and removable braces mounted on the supports.

2. The combination of a car having longitudinally extending guideways adjacent the top and bottom of opposed walls thereof, independent channel shaped stanchions clamped to said guideways in any desired position of adjustment, said stanchions being independently adjustable on said guideways, brace supports adjustably clamped in the channels said supports having apertures therein overlying said channels, and removable braces having their ends supported in said apertures and extending into the channels.

3. The combination of a car having longitudinally extending guideways adjacent top and bottom of opposed walls thereof, the upper guideways each being in the form of a rail having a horizontal flange extending outwardly from the wall and a vertical flange extending upwardly from the horizontal flange, the lower guideways each being in the form of a rail having a horizontal flange extending outwardly from the wall and a vertical flange extending downwardly from the horizontal flange, carriages having rollers supported on the horizontal flange of the upper guideways and having supporting means extending outwardly over the vertical flange, stanchions carried by said supporting means, means for drawing the stanchions and carriages toward each other to clamp the vertical flanges between them, said stanchions each being in the form of channel iron having inturned flanges at the ends of the sides of the channel, means for clamping the lower ends of the stanchions to the vertical flange of the lower guideways, brace supporting members adjustably carried by opposed stanchions and removable braces connecting said brace supporting members.

4. The combination of a car having longitudinally extending guideways adjacent top and bottom of opposed walls thereof, the upper guideways each being in the form of a rail having a horizontal flange extending outwardly from the wall and a vertical flange extending upwardly from the horizontal flange, the lower guideways each being in the form of a rail having a horizontal flange extending outwardly from the wall and a vertical flange extending downwardly from the horizontal flange, carriages having rollers supported on the horizontal flange of the upper guideways and having supporting means extending outwardly over the vertical flange, stanchions carried by said supporting means, means for drawing the stanchions and carriages toward each other to clamp the vertical flanges between them, said stanchions each being in the form of channel iron having inturned flanges at the ends of the sides of the channel, means for clamping the lower ends of the stanchions to the vertical flange of the lower guideways, brace supporting members overlying the flanges of the stanchions, means for adjustably securing the brace supporting members to the flanges comprising clamping members within the channels engaging the rear faces of the inturned flanges, and means for drawing said members together to clamp the flanges between them, said brace supporting members having apertures alined with the openings in the channels, and removable braces having their ends supported in the apertures in the brace supporting members of opposed stanchions and extending into the channels so as to be buttressed thereby.

5. The combination of a car having longitudinally extending guideways adjacent the top and bottom of opposed walls thereof, separate stanchions independently supported from the upper guideways, means for frictionally clamping the stanchions to the upper and lower guideways in any desired position of adjustment, brace supporting means slidable longitudinally of the stanchions, means for clamping the brace supporting means to the stanchion in various positions of adjustment, and removable braces supported by the aligned brace supporting means on opposed stanchions.

6. A stanchion for use in freight cars comprising a channel iron having inturned flanges at

the ends of the sides of the channel, a brace supporting member overlying said flanges, and means for adjustably securing the brace supporting member to the flanges comprising a clamping member within the channel engaging the rear faces of the flanges, and means for drawing said members together to clamp the flanges between them, said flanges having openings therein in opposed relation permitting the insertion of the clamping member within the channel, and said brace supporting member having an opening therein aligned with the opening in the channel to permit the introduction of a brace member therethrough into the channel.

GEORGE M. REIFER.
PAUL S. PROCISSI.
OTTO LUNDENE.