April 22, 1930. C. E. GOETZ 1,755,729

LOAD BRACE FOR RAILWAY CARS AND THE LIKE

Filed May 14, 1929 2 Sheets-Sheet 1

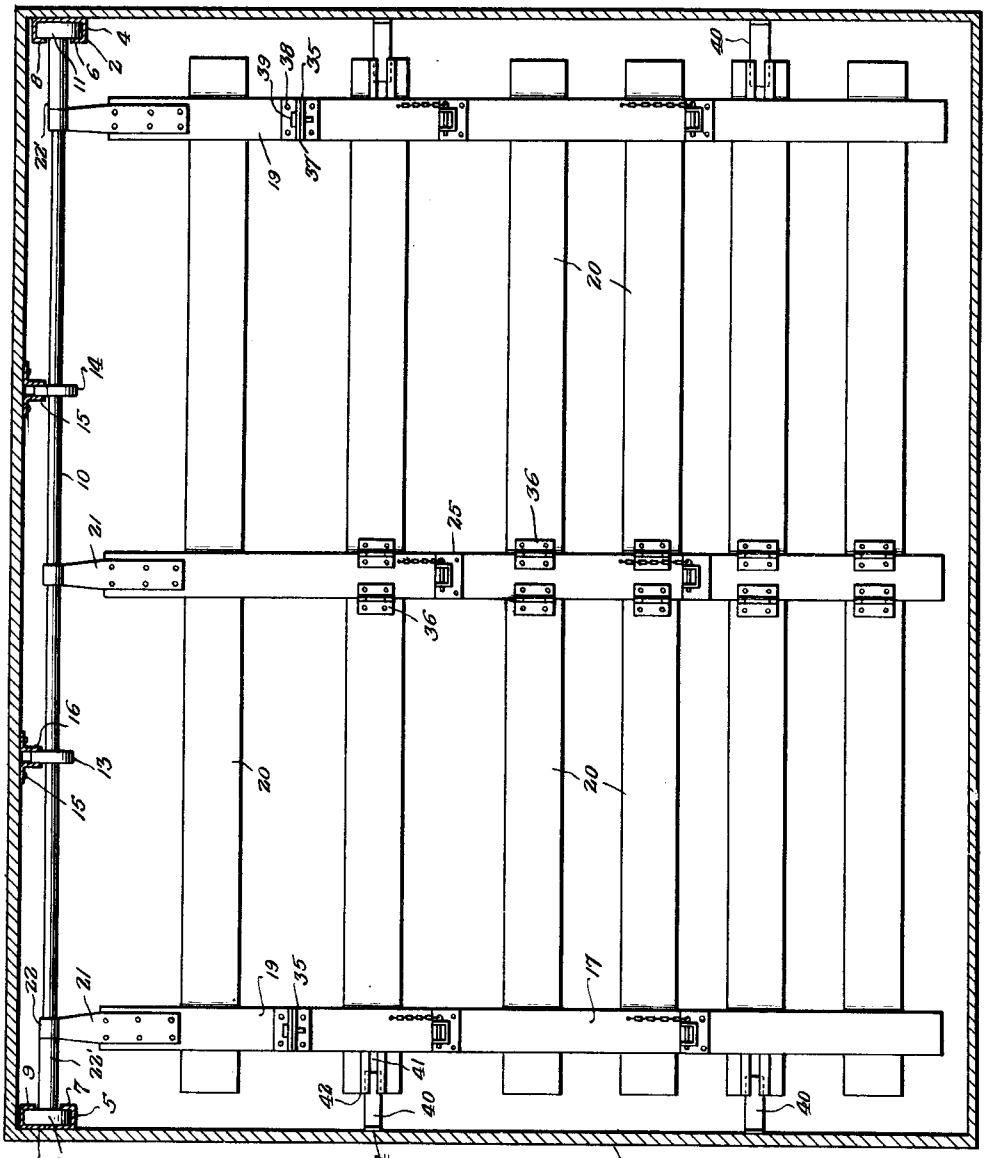

Fig. 1.

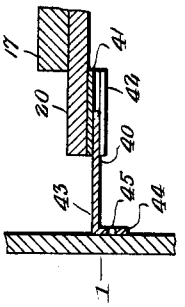

Fig. 7.

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LOAD BRACE FOR RAILWAY CARS AND THE LIKE

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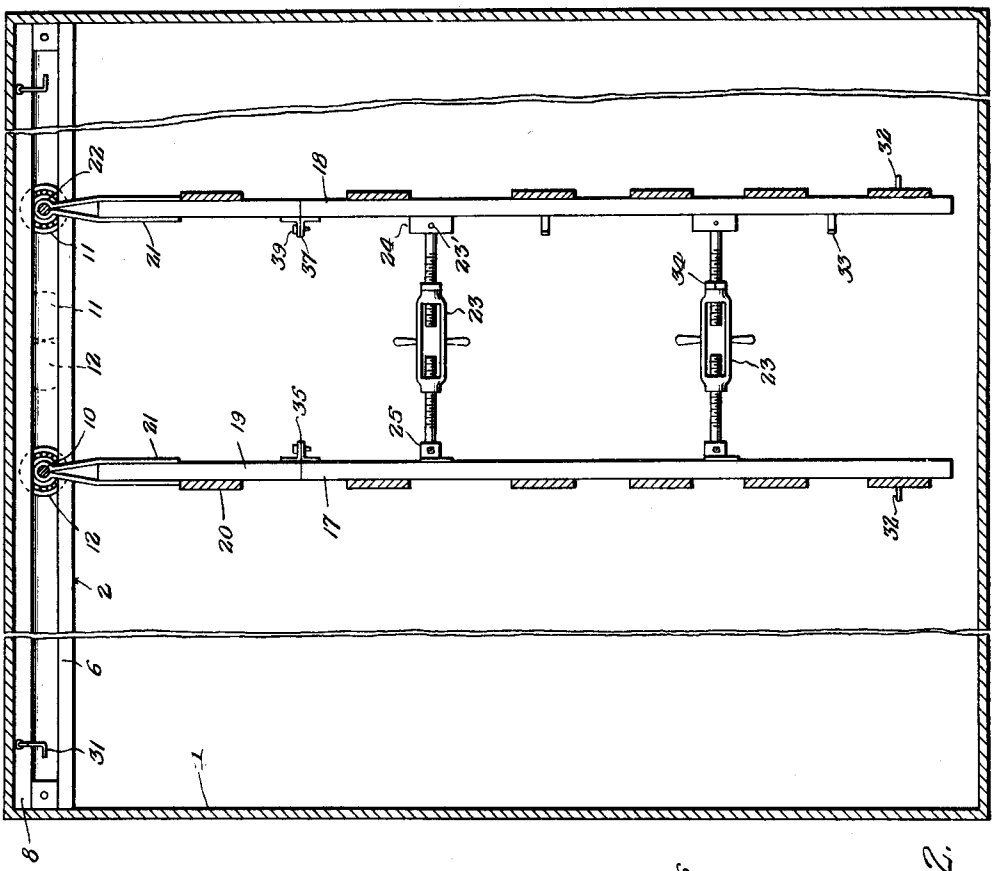

Fig. 2.

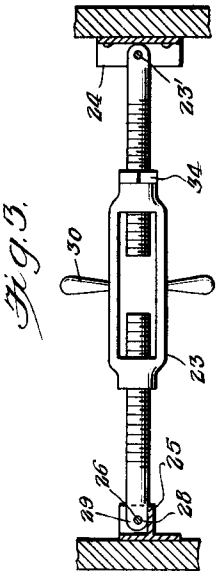

Fig. 3.

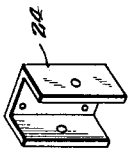

Fig. 5.

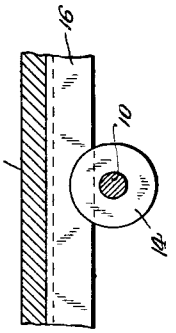

Fig. 6.

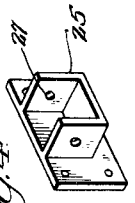

Fig. 4.

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UNITED STATES PATENT OFFICE

CHARLES E. GOETZ, OF BENSON, ARIZONA

LOAD BRACE FOR RAILWAY CARS AND THE LIKE

Application filed May 14, 1929. Serial No. 363,009.

This invention relates to load braces for railway cars or the like, and more particularly deals with load braces which form a permanent part of the railway car construction, and which can be folded into inoperative position against the ceiling or roof of the car when not in use, and yet which furnishes a strong, durable and economical brace when in use to prevent shifting of the lading while the car is in transit.

Load braces now on the market so far as I am aware all are of a temporary nature consisting of gates or fences which engage the lading within the cars, but which are built and secured to the car walls after the lading has been packed, usually by nails, screws or other securing means. These braces are a total loss at destination since they must be torn out to permit access to the lading. Consequently, these braces entail considerable expense and loss to the shipper since a new brace must be built for each shipment. Furthermore, the time required to properly pack the lading in the cars and secure the same in place is considerably longer in the use of braces now known as compared with braces made in accordance with my invention.

With the foregoing objections and disadvantages in mind, therefore, I have produced a device that entirely and completely eliminates all such loss and expense, reduces the time required to prepare and pack the lading for shipment, while at the same time providing a device that will more securely and positively hold the lading against shifting during transit.

The objects of my invention, therefore, are to provide a brace capable of repeated use and which requires no further expenditure after its initial installation and at the same time, it is always readily available whenever desired, but can be folded adjacent the roof of the car when not in use, or when it is desired to use the particular car so equipped with my brace for the shipment of goods not requiring braces.

A further object is to provide a brace with means thereon for forcing the same firmly against the lading, said means being collapsible so as to permit folding of the brace to its inoperative position.

Still another object is to provide a brace which will not shift, warp, cant or rattle when in either its operative or inoperative position.

An additional object is to provide a brace comprising a gate formed in sections so hinged at their center as to permit loading of a portion of the car which may then be held in position by the brace while the opposite section may be swung open to permit ingress or egress of those engaged in loading the car and after complete loading, the sections are securely locked in closed position and forced into engagement with the lading to prevent shifting thereof.

Lastly, I provide a night brace by means of which the gates may be temporarily secured to the car walls at any point within the length of the car when the unloading has been only partially completed so as to prevent shifting of the contents remaining within the car.

Further objects and advantages will be more readily apparent as this description proceeds when taken in connection with the accompanying drawings forming part hereof.

In the drawings:—

Figure 1 is a face view of my invention applied to a railway car or the like, the car being shown in transverse section.

Fig. 2 is a side view of my invention similarly applied, the car being shown in section, and also being broken away to accommodate the figure to the sheet of drawing.

Fig. 3 is a detail view of the means for forcing the gates into engagement with the lading.

Figs. 4 and 5 are further detail views of the mechanism illustrated in Fig. 3.

Fig. 6 is a fragmentary detail view of the means for preventing warping, canting, or tilting of the shaft which supports the gates.

Fig. 7 is a fragmentary horizontal sectional view of the night brace and associated parts.

Referring now more particularly to the drawing, I have illustrated my invention as being applied to a railway car or the like as indicated at 1, but, of course, the same is capable of application in ships, motor vehicles,

trucks or other carriers that are adapted to receive lading and in which it is desired to prevent shifting of the lading during transit.

The carrier is here illustrated as being provided with top, bottom and side walls, and on each of the side walls thereof adjacent the top wall, I provide tracks 2 and 3 which are so constructed as to provide runways 4 and 5, and overhanging flanges 6, 7, 8 and 9.

As illustrated in Fig. 2, the tracks 2 and 3 are extended throughout the length of the car or carrier to which my invention is applied, although it is to be understood that the track may be made in any suitable length as found necessary in use.

Extending transversely of the car adjacent the top wall thereof, I provide a shaft 10 carrying on each extremity thereof, rollers 11 and 12, which are adapted to seat in the tracks 2 and 3 with the overhanging flanges 6, 7, 8 and 9 of the tracks 2 and 3 engaging the inner faces of the rolls 11 and 12 so as to prevent accidental displacement of the rolls from the track and transverse shifting of the shaft 10.

At spaced points on the shaft 10, I provide guide rolls 13 and 14 which run in guideways secured at suitable points to the top wall of the carrier and comprising spaced angle irons 15 and 16.

By providing these guide rolls 13 and 14 running in the guideways formed by the angle irons 15 and 16, it will be seen that all warping, tilting, canting or shifting of the shaft 10 is prevented and a very firm and rigid structure is provided.

It will be seen from an inspection of Fig. 2 of the drawing that two gates or fences 17 and 18 are employed. The means for suspending both of these gates from the tracks 2 and 3 are identical and it is believed that a description of one will suffice for both.

The gates 17 and 18 comprise vertical strips 19 and transverse strips 20 as clearly illustrated, secured to the vertical strips 19 in any suitable manner so as to form a unitary gate or fence structure.

The gates 17 and 18 are freely suspended from the shaft 10 by means of strap irons 21 which are suitably secured to the upper extremities of the vertical strips 19 and are provided with loops 22 encircling the shaft 10. It will, therefore, be seen that the gates 17 and 18 are supported from the shaft 10 in such a manner as to be free to swing thereon and that the gates 17 and 18 are suspended at three equidistant points on the shaft 10 so that the gates 17 and 18 are firmly braced against distortion.

I have illustrated the means for securing the gates to the shaft 10 as comprising strap iron members 21 which are secured to opposite faces of the vertical strips 19 and which comprise a single piece of strap metal encircling the shaft 10.

While this is believed to be the preferred form of connecting means, I desire it to be understood that any suitable connection can be employed so long as it fulfills the necessary requirements. To prevent lateral shifting of the gates 17 and 18, I provide sleeves 22′ on the shaft 10, which are interposed between the loops 22 and the rolls 11 and 12 at each end of the shaft 10.

From the description so far, it will be seen that the gates 17 and 18 are supported from the shaft 10 in such a manner that they can be freely swung on the shaft 10 into position adjacent the top wall or roof of the car when not in use, and it is also to be seen that the gates 17 and 18 can be moved back and forth within the carrier on the rolls 11 and 12. It is also to be seen that the structure provides a permanent brace within the car and one which is capable of repeated use without any additional expense after the initial installation.

In order to firmly press the gates 17 and 18 against the lading in the opposite ends of the car or carrier, I provide spreading means between the fences 17 and 18. The form that I prefer at the present time comprises turn buckles 23, one end of which is pivoted at 23′ to a U-shaped bracket 24 carried by the gate 18 and on the opposite gate, I provide a socket 25 which is adapted to receive the opposite end of the turn buckle which is provided with an opening 26 registering with openings 27 in the bracket 25 and a pin 28 is adapted to be passed through the registering openings 26 and 27 for the purpose of securely locking this end of the turn buckle in position.

In order to prevent rattling and to provide firm engagement of the turn buckle with the socket 25, the end of the turn buckle which engages the socket 25 is provided with a flattened head 29 which firmly engages the side walls of the bracket.

In order to operate the turn buckle 23 so as to spread the gates 17 and 18 into engagement with the lading, I provide the handles 30 by means of which the yoke of the turn buckle may be operated. These handles may be cast integral with the yoke of the turn buckle or may be detachably secured thereto.

Having described my invention, we will assume that it is desired to use the brace which has been folded to inoperative position against the top wall of the car and there secured in position by means of the hooks 31 and eyelets 32. The hooks 31 having been disengaged from the eyelets 32, the gates 17 and 18 will be swung into vertical position as illustrated in Fig. 2. The turn buckle 23 which has been disengaged from the socket 25 and which lies against the face of the gate 18 where it is held by the spring clips 33 is disengaged from the spring clips and swung about its pivot 23′ so that its opposite end rests in the socket 25. The pin 28 is there-

upon passed through the registering openings 26 and 27 so that the turn buckle is securely attached to the gates. By then operating the yoke of the turn buckle by means of the handle 30, it will be readily apparent that the ends of the turn buckle are spread, thereby forcing the gates 17 and 18 into firm engagement with the lading and when the gates have been forced to their final position, the lock nut 34 on the turn buckle is threaded into abutment with the end of the yoke of the turn buckle, as illustrated in Fig. 3 to thereby hold the gates 17 and 18 in their spread condition.

In order to prevent possible loss of the pin 28, I secure the same to the gate by means of chains.

In order to facilitate loading of the carrier, I construct each of the gates 17 and 18 in sections.

This is accomplished by cutting the end vertical strips 19 as indicated at 35 and by hinging all of the transverse strips except the uppermost to the central vertical strip 19, as indicated at 36, from which it will be seen that when it is desired a portion of the lading may be packed in the carrier and the gate firmly engaged therewith while, at the same time, the opposite side of the gate may be swung outwardly so as to permit access to that portion of the car which is being packed and after the packing has been completed, the open sections of the gate may be swung into normal position, as indicated in Fig. 2, and there locked by means of suitable fastening means indicated at 37. This fastening means may comprise any suitable form of bolt or lock. It is here illustrated as comprising angle irons 38 provided with an opening through which the bolt 39 is passed.

It quite often occurs in the unloading of the carriers that the operation is not complete before the workmen engaged in that occupation quit for the day. The contents remaining in the carrier may be in such small quantity that it is impossible to force the gates 17 and 18 thereagainst by means of the turn buckles 23.

In order to meet this emergency, I provide night braces on each of the gates 17 and 18 as indicated at 40.

These night braces comprise sockets 41 suitably secured to any number of the transverse strips 20 and comprising metal or other suitable members having overhanging flanges 42 between which an extensible member 43 is adapted to slide. This member 43 terminates in an angular end 44 provided with an opening 45 and as seen from an inspection of Fig. 1, when it is desired to temporarily secure the gates 17 and 18 against the lading remaining in the car, it is merely necessary to push the gates into engagement with the lading, slide the extensible member 43 outwardly until the angular end 44 engages the side wall of the carrier, and by then inserting a nail, screw or similar fastening means through the opening 45, the fences can be temporarily secured to the side wall of the car in any position throughout the length of the car or carrier.

In Fig. 2, I have illustrated the rolls 11 and 12 in dotted line position to indicate that when the gates are secured in their folded condition adjacent the top wall or roof of the carrier, the rolls 11 and 12 abut when the hooks 31 are engaged with the eyelets 32. The purpose of this construction is to prevent any rattling or shifting of the gates when in folded condition.

It is believed to be obvious that if these gates when in either operative or inoperative position were permitted to shift due to vibrations in the car while in transit, that it would only be a matter of time before certain of the parts thereof would be broken or badly damaged and in order to eliminate such a possibility, I have take precaution to so design my invention that it is held firmly in either of its positions.

From the foregoing, it will be seen that I have provided a very efficient, durable and inexpensive load brace which eliminates all of the expense and loss incident to use of braces now on the market and one which may be attached to the standard types of carriers now in use without modification or change. Furthermore, that my load brace is readily available whenever required, and that the cost of shipping lading as well as the time required in packing for such shipment is materially reduced.

Furthermore, by the use of my invention, the likelihood of injury or damage to the lading is materially lessened. Such injury or damage is a source of innumerable claims against the railroad companies, but with my device, I eliminate the possibility of such claim, and consequently, reduce the cost not only to the shipper, but to the railroad companies as well.

What is claimed is:

1. In a load brace for railway cars and the like, a plurality of tracks on said car, shafts extending between said tracks and having rolls thereon engaging the tracks, gates freely suspended from said shafts, and means on the shafts for preventing lateral shifting of the gates thereon.

2. In a load brace for railway cars and the like, a plurality of tracks on said car, shafts extending between said tracks and having rolls thereon engaging the same, gates freely suspended from said shafts, and means for preventing buckling of said shaft.

3. In a load brace for railway cars and the like, a plurality of tracks on said car, shafts extending between said tracks and having rolls thereon engaging the same, a guideway

on said car intermediate the ends of said shafts, a roller on said shaft engaging said guideways to prevent buckling of the shafts, and gates freely suspended from said shaft and movable therewith along the tracks.

4. In a load brace for railway cars and the like, a plurality of tracks, shafts extending between said tracks, having rolls thereon engaging the tracks, gates suspended from each shaft, spreaders between the gates comprising turn buckles having one end pivotally connected to one of said shafts, a socket on the opposite gate, and means on the opposite end of the turn buckles for locking said end of the turn buckle in said socket.

5. In a load brace for railway cars and the like, a plurality of tracks, shafts extending between said tracks and having rolls thereon engaging the tracks, gates suspended from each shaft, spreaders between the gates comprising turn buckles having one end pivotally connected to one of said gates, the opposite end of the turn buckle having a squared end provided with an opening therethrough, a socket on the opposite gate having apertures therein, means comprising a pin adapted to be passed through the openings in the socket and in the end of the turn buckle to secure said end of the turn buckle in said socket.

6. In a load brace for railway cars and the like, a plurality of tracks, shafts extending between said tracks, having rolls thereon engaging the tracks, gates suspended from each shaft, spreaders between the gates comprising turn buckles having one end pivotally connected to one of said shafts, a socket on the opposite gate, and operating handles on said turn buckle to permit contraction or expansion of the turn buckle.

7. In a load brace for railway cars and the like, a plurality of tracks, shafts extending between said tracks and having rolls thereon engaging the same, guideways secured to said car, the guideways comprising pairs of spaced angle irons, spaced rollers on said shafts lying between the pairs of angle irons and movable longitudinally thereof to prevent warping of said shafts, and gates suspended from said shafts and adapted to be forced into engagement with the lading.

8. In a load brace for railway cars and the like, a plurality of tracks, shafts extending between said tracks and having rolls thereon engaging the same, sectional gates freely suspended from said shafts, each gate comprising a plurality of vertical and horizontal strips, one of said vertical strips being located at the center of the gate, means for hinging the sections of said gates to said central strip at opposite sides thereof, means for locking the sections in load engaging position, and spreaders between said gates to force the same in engagement with the lading.

9. In a load brace for railway cars and the like, a plurality of tracks, means for movably suspending the gate from said track, a night brace carried by said gate comprising a socket member having overhanging flanges, an extension member slidably mounted in said socket member and having an angular head provided with an aperture, the said extension member being adapted to be forced into engagement with the side wall of the car, and means passing through the aperture in said head to secure the gate temporarily against the lading.

In testimony whereof, I have hereunto set my hand.

CHARLES E. GOETZ.