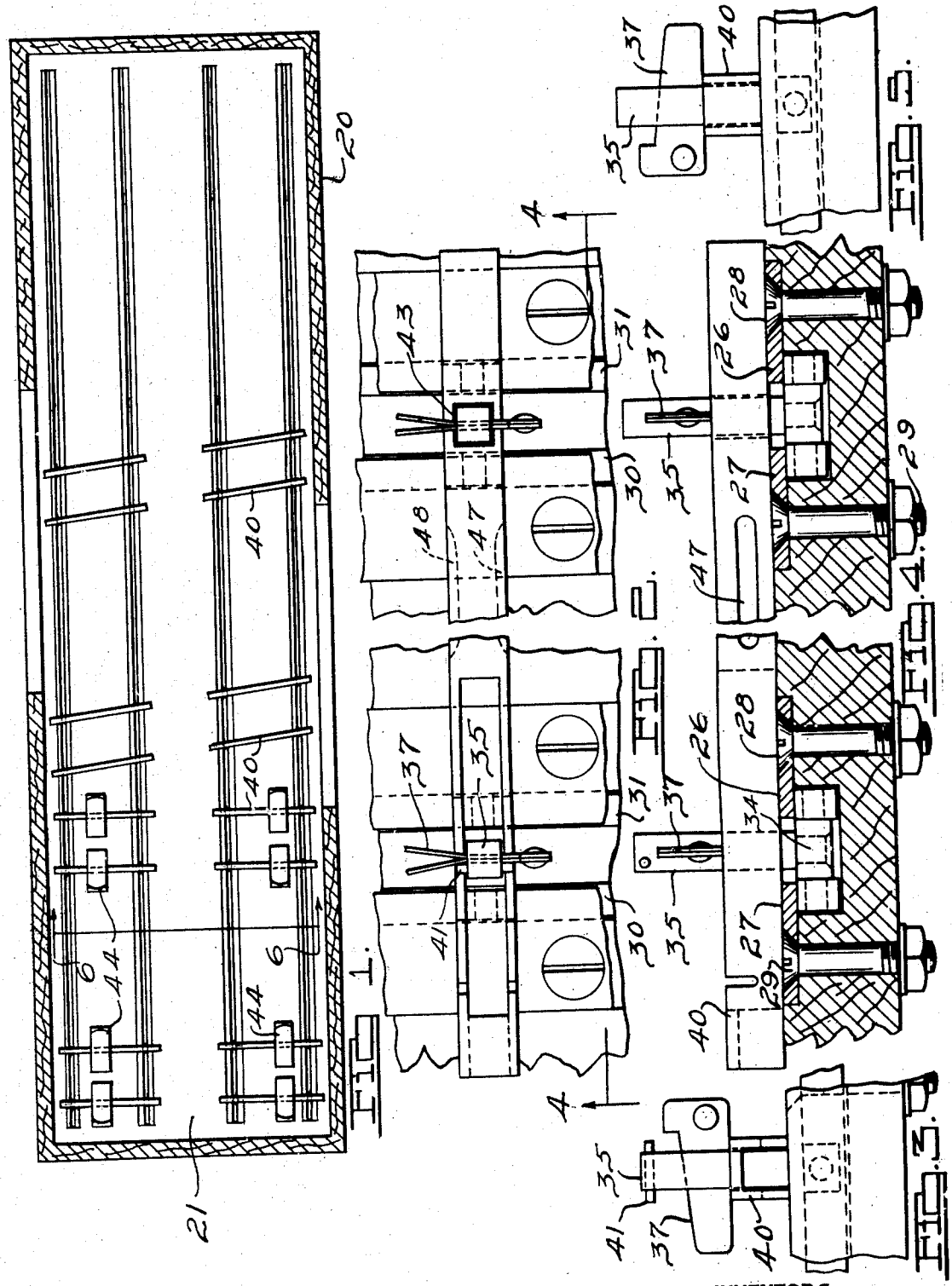
Oct. 14, 1930. H. A. MILLS ET AL 1,778,162

CAR LOADING DEVICE

Filed Nov. 21, 1929 2 Sheets-Sheet 1



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CAR LOADING DEVICE

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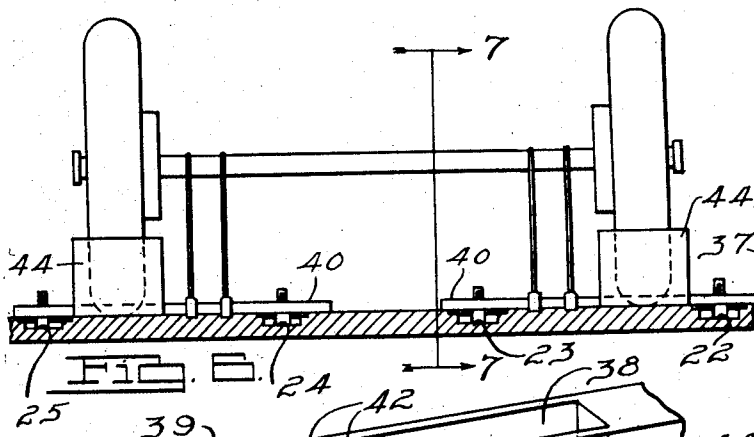


Fig. 6.

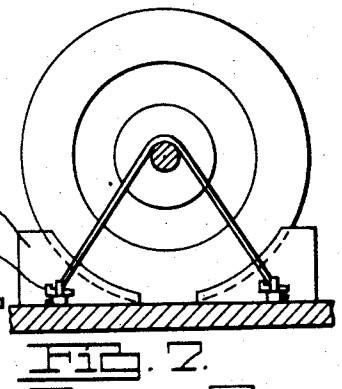


Fig. 7.

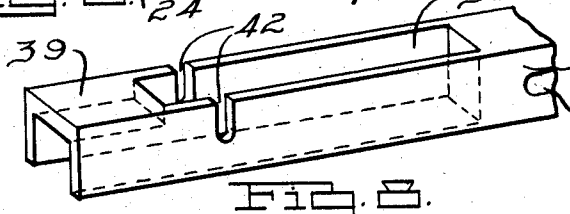


Fig. 8.

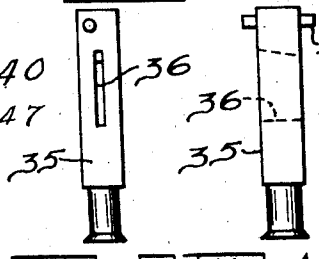


Fig. 9. Fig. 10.

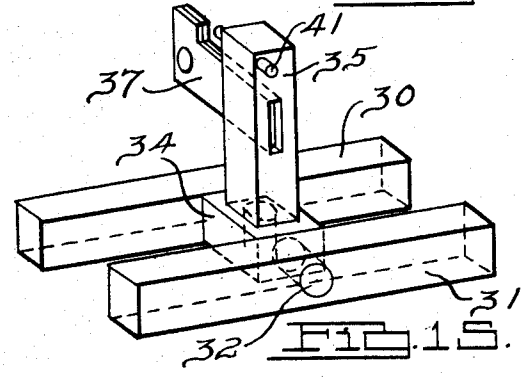


Fig. 15.

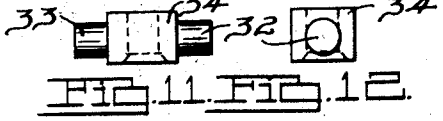


Fig. 11. Fig. 12.

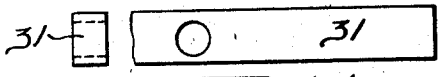


Fig. 13. Fig. 14.

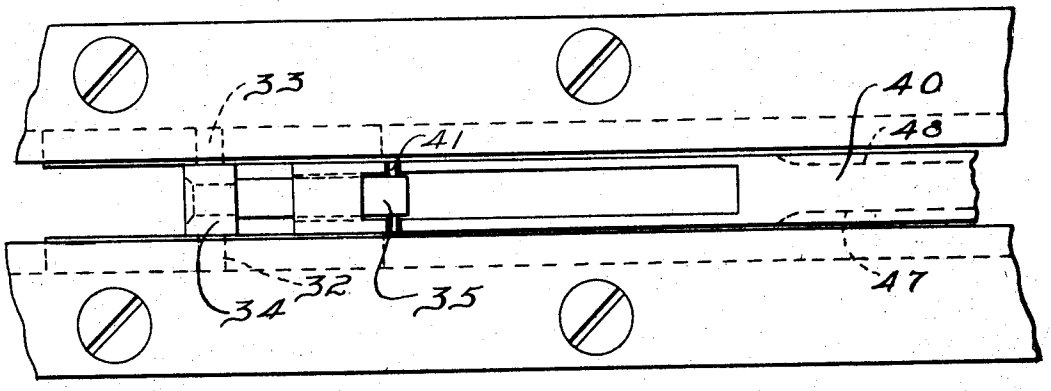


Fig. 16.

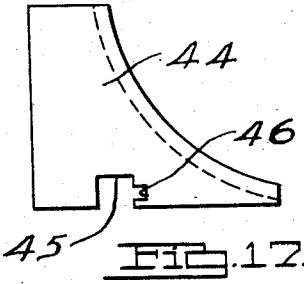


Fig. 17.

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UNITED STATES PATENT OFFICE

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CAR-LOADING DEVICE

Application filed November 21, 1929. Serial No. 408,886.

This invention relates to means for securing automobiles in freight cars during shipment.

The main objects of this invention are to provide an adjustable anchoring means for wheel blocks and the like; to provide an anchoring means which can be stored or housed in the freight car floor flush with the top surface thereof; to provide an anchoring means which is adapted to be permanent equipment not ordinarily removable from the freight car; to provide an improved anchoring means for wheel blocks which will permit the blocks to be adjusted both laterally and transversely of the freight car floor, as well as permit their positioning in an alignment which is at an angle to the longitudinal axis of the car floor, whereby an automobile may be anchored at an angle to the next adjacent one so as to nest or inter-fit the front ends of two automobiles; and to provide an improved anchoring means which is readily shiftable to various positions in the freight car and which may be quickly and easily secured in the desired position.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which

Fig. 1 is a plan view of a freight car floor equipped with our improved anchoring means.

Fig. 2 is an enlarged fragmentary plan view of one of the anchoring bars wedged in position to use.

Fig. 3 is an enlarged fragmentary view in elevation looking to the right from the left end of Fig. 4.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2, looking in the direction indicated by the arrows.

Fig. 5 is an enlarged fragmentary view in elevation looking to the left from the right end of Fig. 4.

Fig. 6 is an enlarged sectional view taken on the line 6—6 of Fig. 1, looking in the direction indicated by the arrows, and showing the wheels and axle of an automobile anchored thereon.

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 6, looking in the direction indicated by the arrows.

Fig. 8 is a fragmentary view in perspective of the slotted end of one of the anchoring bars.

Fig. 9 is a view in elevation of the pivoted post member of the improved joint construction to which the anchoring bars are attached

Fig. 10 is a view of the same taken at right angles to the view shown in Fig. 9.

Fig. 11 is a view in side elevation of the joint cross-head upon which the post is swiveled.

Fig. 12 is a view in end elevation of the same.

Fig. 13 is a view in end elevation of one of the slide members in which the cross-head is pivoted.

Fig. 14 is a fragmentary view in side elevation of the same.

Fig. 15 is a view in perspective of the assembled joint members.

Fig. 16 is an enlarged fragmentary plan view showing the joint members and anchor bar folded down into the slot in the car floor.

Fig. 17 is a view in side elevation of a wheel block used with our improved anchoring means.

In the construction shown in the drawings a freight car 20 has the floor 21 thereof longitudinally channeled out to provide spaced parallel grooves 22, 23, 24 and 25. Strips of strap iron 26 and 27 are secured by bolts 28 and 29 to the car floor with the marginal edge of the straps extending over the sides of the grooves and with adjacent edges of the iron straps in spaced relation so as to form a series of undercut grooves in the car floor.

The undercut grooves are provided with a plurality of joint members, each of which comprises a pair of rectangular shaped slide members 30 and 31 which are adapted to slidably fit in the undercut grooves between the under sides of the overlapping iron strips and the floor of the grooves. The slide members 30 and 31 are pivotally mounted on the oppositely extending trunnions 32 and 33 of a cross-head member 34. The cross-head 34 is

transversely bored to receive the cylindrical end of a square post member 35, which end is rotatably mounted in the cross-head and retained therein by having the end of its tip portion riveted. The body portion of the post member 35 is provided with a transversely extending tapered slot 36 which is adapted to receive a split key 37 therein.

The post member 35 is adapted to extend through and fit within a rectangular shaped slot 38 formed in the channel-shaped end 39 of an anchoring bar 40. The slot 38 is preferably formed by cutting away a portion of the web of the channel-shaped end 39 and the flanges thereon are adapted to snugly embrace opposite sides of the post 35.

Means are provided for retaining the anchoring bar 40 on the post 35 and at the same time permit relative movement therebetween, and comprise a transversely extending pin 41 mounted in the extreme end of the post 35 adjacent one corner thereof with the ends protruding from opposite sides of the post so as to engage the flanges of the channel-shaped end 39 of the anchoring bar.

The flanges of the channel-shaped end of the anchoring bar, at a point within the limits of the slot 38, are provided with a pair of transversely registering notches 42 which are adapted to receive the protruding ends of the pin 41, thus permitting the anchoring bar and post 35 to be folded so as to bring the anchoring bar in prolongation of the post. The proportions of the joint members and the anchoring bar are such that the bar 40, when folded in prolongation of the post 35, will pass between the adjacent edges of the strap members 26 and 27 and fit within the channel or groove in the car floor flush with the surface thereof.

The end of the anchoring bar 40 opposite to the end 39 is provided with a transverse opening 43 therethrough which is adapted to receive a post member 35 of another joint assembly in the next adjacent groove of the car floor.

Wheel blocks 44, preferably of wood, are provided with transverse slots 45 in the base thereof for fitting snugly over the anchoring bars 40. A key-way 46 is provided at one side of the slot 45 for receiving a suitable key to wedge the wheel block 44 in any desired position along the anchor bar 40. The opposite sides of the bar 40 are grooved out slightly as shown at 47 and 48, in registry with the key-way 46 so as to be more securely held by the key.

In the operation and use of this invention the freight car floor used for shipment of automobiles are routed out to provide two pairs of channels adjacent the opposite sides of the car. The metal straps 26 and 27, preferably countersunk so as to be flush with the car floor, are bolted to the floor so that their marginal edges overlap the channels routed out in the car floor, thereby providing a series of undercut grooves. Each of the undercut grooves 22, 23, 24 and 25 is provided with a plurality of the joint assemblies which comprise the slide members 30 and 31, connecting cross-head 34 pivoted therebetween, and post member 35, which is rotatably mounted on the cross-head.

Each of the joint assemblies in one groove of each pair, shown in the drawings as the grooves 23 and 25, has anchoring bars 40 mounted on the post members 35 and retained thereon by their respective pins 41. The slots 38, through which the post members 35 pass, and the notches 42 in the flanges of the channel-shaped ends of the anchoring bars permit the anchoring bars to be swung out into prolongation of the post 35, the ends of the pins 41 passing down into the notches 42 when in this position and the post member 35 fitting up between the side flanges of the channel-shaped end 39.

When in this position the anchoring bars 40 may be folded down into the slot in the car floor by rotation of the cross-head 34 on its trunnions 32 and 33. The post members of the joint assembles in the slots 22 and 24 are merely folded down into their respective slots by rotating the cross-heads 34 on their trunnions.

When it is desired to bring the anchoring bars into use they are raised from their slots and folded so as to be transverse of the post 35, in which position they may be swung around by rotation of the post 35 on its pivotal mounting so as to extend over and overlap the adjacent slot of that particular pair. When in this position a post member of the adjacent slot is raised to a vertical position and the end of the anchoring bar having the aperture 43 passed down over the post.

Wheel blocks 44 are then placed on the anchoring bars with the slots 45 in the base of the block fitting over and snugly embracing the bar 40. A pair of anchoring bars with wheel blocks facing toward each other are used for each wheel of the automobile to be anchored. When the automobile is in correct position in the freight car the wheel blocks, anchoring bar therefor, and joint assemblies on the opposite ends of the anchoring bar, are moved up until the wheel blocks snugly engage opposite sides of the automobile wheel as shown in Figs. 6 and 7 of the drawings.

When in this position the split web-shaped keys 37 are passed through the tapered slots 36 in the various posts 35 and driven therein so as to wedge the joint assemblies tightly in their respective grooves, thereby preventing sliding of the joint assemblies in their grooves. The ends of the split keys 37 are then turned outwardly so as to retain the joint assembly in tightly wedged position. The wheel blocks 44 may then be secured to the anchoring bars 40 by driving key

wedges in the slots 46 which are provided in the wheel blocks.

When it is desired to place one of the automobiles in the car at an angle to the longitudinal axis thereof with the front end nested or inter-fitting with the front end of another the anchoring bars 40 may be turned so as to be perpendicular to the plane of the wheels due to the slot 38. The slot in the end of the bar permits lengthwise movement thereof within certain limits and thus permits a wide range of adjustment.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims:—

What we claim is:—

1. The combination of a car floor having an undercut groove herein, a joint member slidable in said groove, and an anchoring bar secured to said joint member, said bar, and joint member being adapted to house within said groove when aligned therewith.

2. The combination of a car floor having a channelway therein, strips overlapping the marginal edges of said channelway to form an undercut groove, a joint member slidably retained in said groove, and an anchoring bar secured to said joint member, said bar and joint member being adapted to be housed wthin said groove when aligned therewith.

3. The combination of a car floor having an undercut groove therein, a post having one end slidably retained in said groove, and an anchoring bar on the other end of said post, said post and bar being connected and relatively movable to a position in prolongation of each other, said post and bar being shaped to house within said groove when aligned therewith.

4. The combination of a car floor having a channelway therein, strips overlapping the marginal edges of said channelway to form an undercut groove, a post having one end slidably retained in said groove, and an anchoring bar on the other end of said post, said post and bar being connected and relatively movable to a position in prolongation. of each other, said post and bar being shaped to house within said groove when aligned therewith.

5. The combination of a car floor having an undercut groove therein, spaced members slibable in said groove, a cross head pivoted between said members, a post member pivoted on said cross head to rotate on an axis at right angles to the axis of rotation of said cross head, and an anchoring bar secured to said post member.

6. An anchoring joint comprising a pair of slide members, a cross head pivoted between said members, and a post having one end rotatably mounted on said cross head, the axis of rotation of said post member being transverse to the axis of rotation of said pivoted cross head.

7. The combination of an anchoring joint comprising a pair of slide members, a cross head pivoted between said members, a post member pivoted on said cross head to rotate on an axis transverse to the axis of rotation of said cross head, and an anchoring bar having a slot therein for receiving said post member, said post and bar having a loose connection to permit said bar to be moved to a position in prolongation of said post and to a position transverse thereto.

8. The combination of an anchoring joint comprising a pair of slide members, a cross head pivoted between said members, a post member pivoted on said cross head to rotate on an axis transverse to the axis of rotation of said cross head, and an anchoring bar having a channel-shaped end, a portion of the web of said channel shaped end being cut away to provide a slot for receiving said post member, said post and bar having a loose connection therebetween to permit relative movement.

9. The combination of an anchoring joint comprising a pair of slide members, a cross head pivoted between said members, a post member pivoted on said cross head to rotate on an axis transverse to the axis of rotation of said cross head, and an anchoring bar having a channel-shaped end with the flanges thereof spaced to receive said post therebetween, a portion of the web of said end being cut away to permit said post to pass therethrough, a pin on said post having projecting ends for loosely retaining said post and bar in assembled relation, said flanges having notches therein for receiving the ends of said pin to permit said bar to be folded in prolongation of said post.

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