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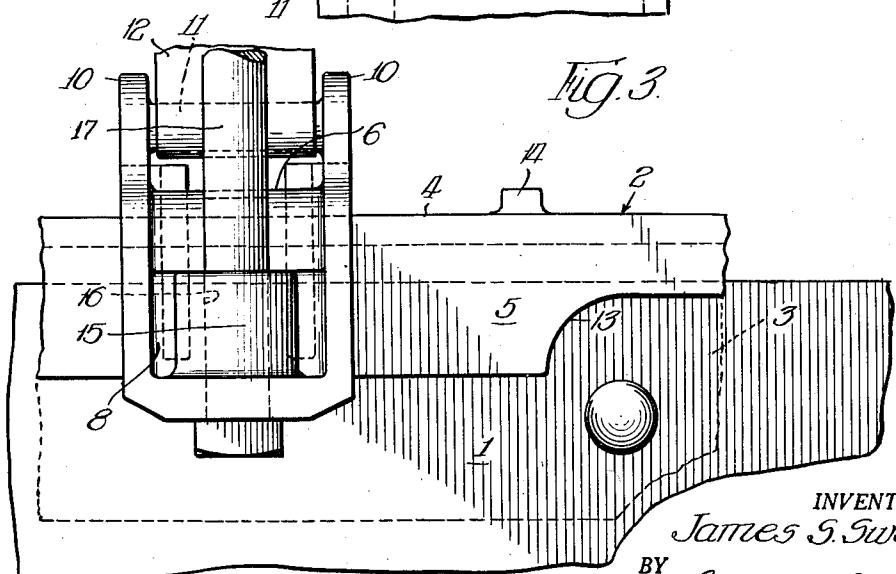
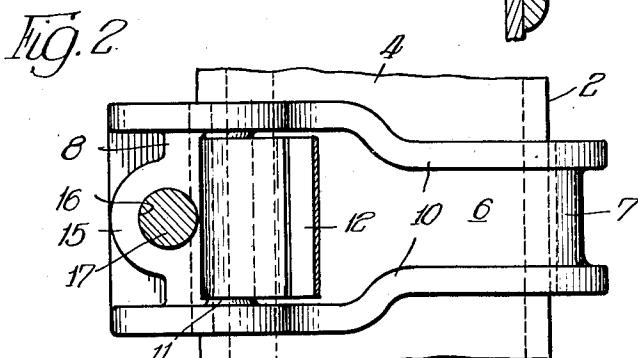
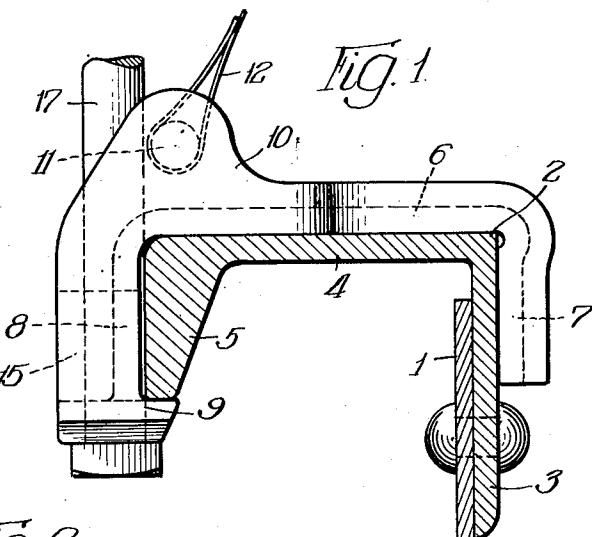
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2,655,874

LADING BAND ANCHOR

Filed Oct. 29, 1949

3 Sheets-Sheet 1



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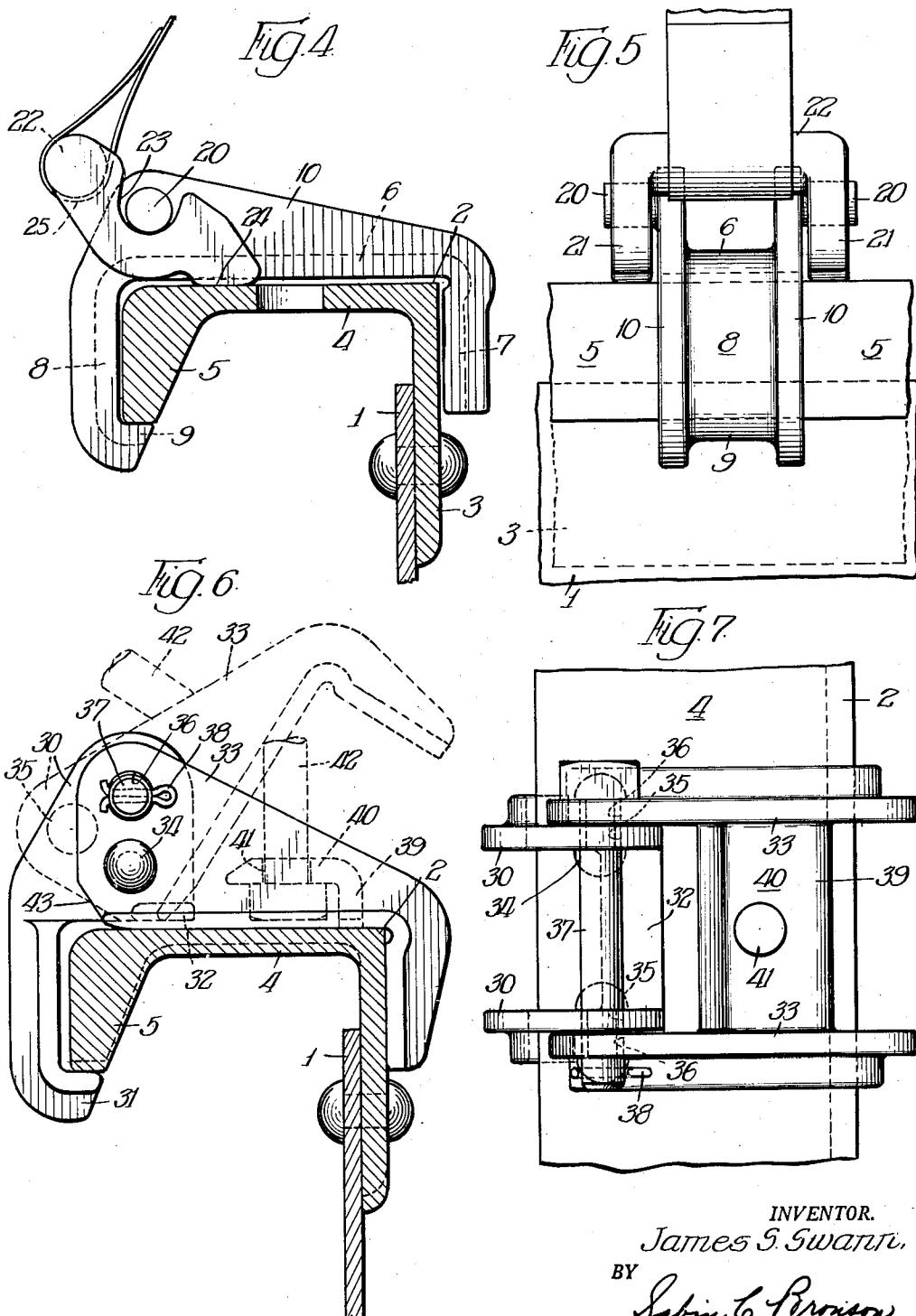
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LADING BAND ANCHOR

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3 Sheets-Sheet 2



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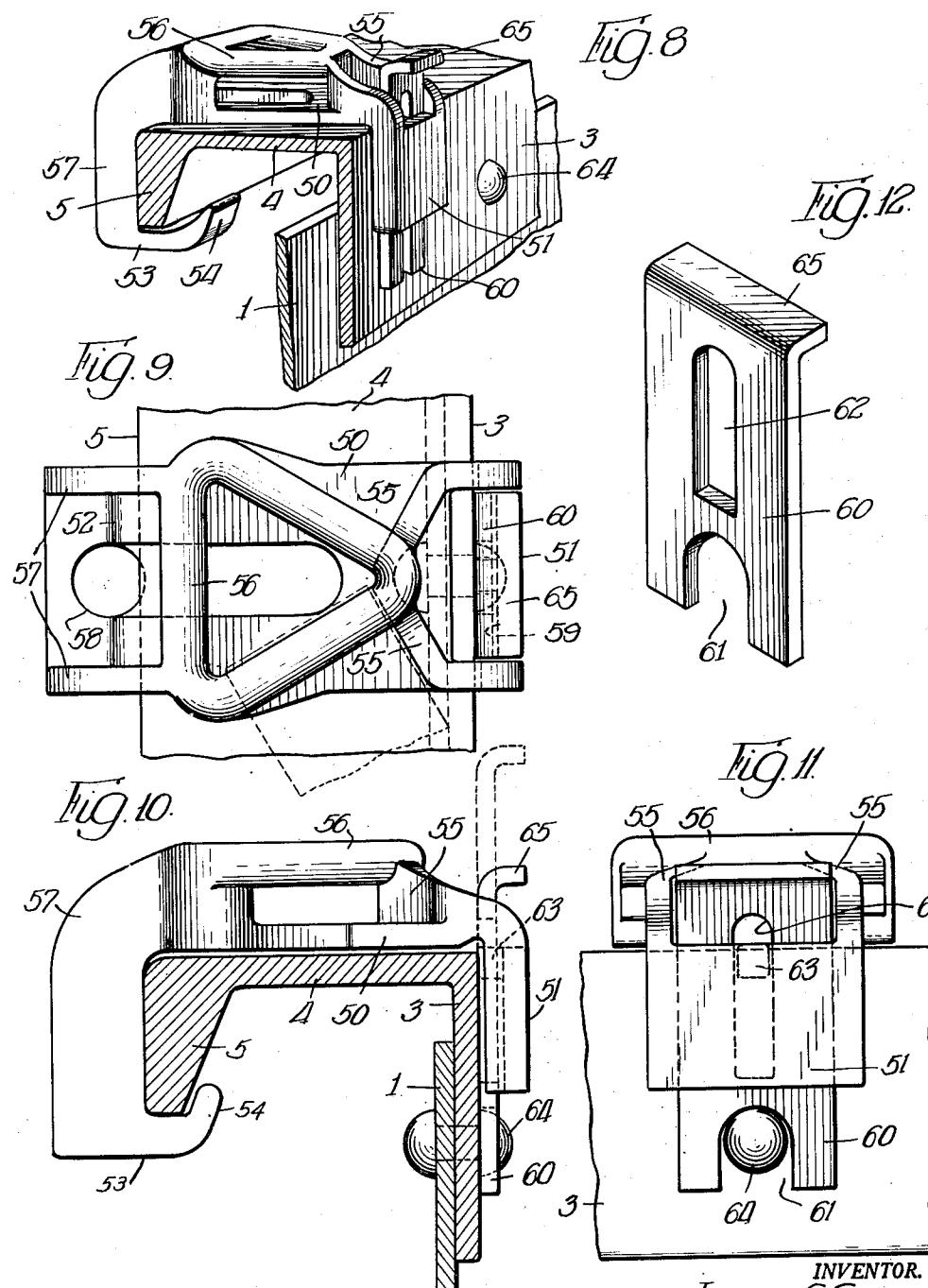
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LADING BAND ANCHOR

Filed Oct. 29, 1949

3 Sheets-Sheet 3



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2,655,874

LADING BAND ANCHOR

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11 Claims. (Cl. 105—369)

1

This invention relates to improvements in means to secure the ends of high tension lading bands which are used to tie down lading in open top cars when such lading extends above the sides of said cars.

In common practice it is not unusual for trainmen to burn or drill holes in the side sheets or top chord of such cars through which said bands may be inserted and looped for connection with the main portion of said bands. When such parts of a car are thus punctured a weakening of the structure and more rapid deterioration results.

It is the principal object of the invention, therefore, to provide an effective securing means for the ends of said bands, which means may be readily attached to new cars being built, or to old cars already in service.

It is another object of the invention to provide such a band securing means which is non-removable but slideable along the top chord of said cars so that the same may be selectively positioned along said chord to best advantage in securing the lading in the car.

A further object is to provide such a band securing means with means to secure either the ends of lading bands or the ends of bolts in instances where a more substantial lading securing means may be necessary.

A still further object of the invention is to provide said securing means in two pivotally united parts so that said means may be applied to the top chord of a gondola car without alteration in any respect and so that when applied and the parts fixedly united together, the securing means will then be non-removable and slidably attached to said chord.

It is another object of the invention to associate with either the one piece or two-piece modification of securing means a cam whereby when upward pull is exerted on the securing means the cam will bind against a surface of the chord and effectively resist sliding of said means on said chord.

Other objects and advantages of the invention will appear in the following description thereof.

Referring now to the accompanying drawing forming part of this application and wherein like reference characters indicate like parts:

Fig. 1 is a side view of a one piece banding clevis illustrating means for securing either a band or bolt thereto, and showing associated car parts in section.

Fig. 2 is a top plan view of Fig. 1.

2

Fig. 3 is an end elevation of Fig. 1.

Fig. 4 is a view similar to Fig. 1 of modified form of the invention.

Fig. 5 is an end elevation of Fig. 4.

Fig. 6 is a view similar to Fig. 1 of a two-piece modification of the invention.

Fig. 7 is a top plan view of Fig. 6.

Fig. 8 is a perspective view of a still further modification of the invention.

Fig. 9 is a top plan view of the modification shown in Fig. 8.

Fig. 10 is a side elevation of Fig. 9.

Fig. 11 is an end elevation of Fig. 9.

Fig. 12 is a perspective view of the locking key used in the modification shown in Figs. 8-11.

In the drawings, 1 indicates the upper margin of the side sheets of an open top railway car and 2 the top chord thereof which, in this instance, is a bulb angle, as is common in such cars. Such angles have a depending flange 3 and a horizontal web portion 4, extending outwardly from upper edge of flange 3, and terminates in a downwardly extending bulb portion 5. Flange 3 is rigidly secured, as by welding, riveting or otherwise, to said upper margin 1 of the side sheets.

The securing means shown in Figs. 1, 2 and 3 is designed so as to be slideable along said top chord 2 but be normally non-removable therefrom, and comprises a channel-shaped structure including a base portion 6 of a length approximately the width of the web portion 4, so as to rest transversely thereon, having a downturned flange 7 partially overlapping flange 3 and a downturned flange 8 approximately equaling the depth of and overlapping the bulb 5; said flange 8 having a reflare 9 inwardly turned so as to underlap the bulb 5. The sides of said securing means are provided with integral upstanding reinforcing webs or walls 10 which are of increased height approximately above flange 8, and between the outer upper portions of said walls 10 extends a round bar or rod 11 which is adapted to be encircled by a load retaining band 12. It is apparent that a band securing means such as thus far described would be sufficient as an anchor for high tension lading bands only, and also that once said means is applied to a bulb angle, as shown in Fig. 1, it cannot be removed normally.

To apply the same to a bulb angle it could be slide thereon longitudinally from one end of the bulb angle, which would be relatively simple in new car construction. However, when applying the device to equipment in use, the bulb angle would have to be cut-out sufficiently, as shown at 13, in Fig. 3, when as many of the

devices as desired may be applied, after which a filler piece could be welded in the cut-out portion, or a stop, such as shown at 14, welded on the web 2 of bulb angle adjacent either end of the cut-out portion so as to prevent the securing means sliding to the cut-out portion 13 and accidentally being removed therefrom.

In those instances wherein it is desirable to provide an anchor for either of two different types of banding means for optional uses as desired, I have shown an embossment 15 integrally formed with and projecting outwardly from the base portion of flange 8, said embossment being semi-cylindrical in form and having a hole 16 through same and the base of flange portion 8, the axis of said hole 16 being parallel with said flange 8 and spaced outwardly of the bar or rod 11. Thus when the device is used to anchor heavy lading, such as machinery or the like, a long bolt 17 may be passed upwardly through said hole 16 to a beam or other suitable member extending transversely of the car over said lading and to which the lading is secured. Thus an anchor is provided adaptable for anchoring either of two different types of lading securing means for optional use, depending upon the character of the lading being transported.

Figs. 4 and 5 illustrate a modification of the invention wherein means is provided to clamp the band holding device against longitudinal movement along the rail. In these figures corresponding parts which are identical with the like parts in Figures 1, 2 and 3 bear the same reference characters; for example, the side-wall sheets are indicated at 1, the bulb angle 2 comprising the flange 3, web 4 and bulb 5, and the banding clevis comprising the web or base portion 6, the downturned inner flange 7, outer flange 8 and reflare 9. In this modification, however, walls 10 are provided with a pair of outwardly projecting axially alined studs 20. A channel-shaped yoke comprising spaced arms 21 and a connecting rod or pin 22 extending between corresponding outer ends of arms 21, is provided, said arms straddling said walls 10 and having axially alined semi-circular upwardly facing bearing portions 23 formed in the upper edges of said arms, to receive the studs 20. The lower edges of said arms 21 are arcuate between their ends, and at their inner ends are formed with a cam-like surface 24. It will be noted that when the parts are assembled, as shown in Fig. 4, on a car bulb angle, the distance between the rod 22 and the top of the bulb angle is such in relation to the width of the arms 21, that the arms cannot be removed from under studs 20. With this structure, when a lading band or strap is applied around rod 22, as indicated in dotted lines at 25, and an upward tension applied thereto, cam surface 24 will bind against upper surface of the bulb angle web 4 and positively prevent sliding of the device along said bulb angle.

Figs. 6 and 7 illustrate a two-piece modification of the invention which may be applied to the bulb angle without alteration of same, and when applied is normally non-removable therefrom. In these views also, the side sheathing is indicated at 1, and the bulb angle comprises the web 4, flange 3 and bulb 5, secured to said side sheathing. The outer part of the two-piece clevis comprises a main portion having spaced parallel walls 39 which partially overlap web 4, extend downwardly adjacent bulb 5 and underlap the bottom edge of said bulb 5, as at 31. An integral web 32 extends between said walls 39 at the inner

lower corners thereof and is located so as to rest upon the web 4 when applied thereto. Pivot to arms 30 so as to overlap same, are a pair of parallel somewhat triangularly shaped arms 33, the pivots being in the form of axially alined rivets 34. The arms 30 are provided with axially alined holes 35, and the arms 33 are likewise provided with axially alined holes 36, which holes 36 are selectively registerable with said holes 35 so that when the parts of the clevis are in operable position on top rail 12, as shown in Fig. 6, a long pindle 37 may be passed through the registering holes 35-35 and 36-36 and be held therein by means of the cotter key 38. This pindle 37 forms the means about which one end of a banding strap may encircle and be anchored thereto.

For those instances where it is necessary for a bolt to be used in securing heavy lading, I have shown an angle piece 39 secured at its ends by welding or otherwise to the sides 33 and spanning the space therebetween, and which also keeps said sides in proper spaced relation. One arm 40 of said angle piece is disposed substantially parallel to the base of said arms 33 and is provided with a hole 41 therethrough, through which may extend a bolt 42 with the head thereof retained under said arm 40. When bolts are used, they are inserted through said holes when arms 33 are in elevated position, as shown in dotted lines, Fig. 6, and when the parts are in the position shown in full lines, Fig. 6, the bolt cannot be removed, nor can the clevis be removed from the bulb angle, but it may be moved longitudinally therealong.

It will be noted in Fig. 6 that the distance between flange 31 and base of arms 30 is slightly more than the width of the bulb 5 for ease of application thereto, and also it will be noted that the lower outer corners of arms 33 are chamfered, as at 43, which portions 43 rest upon web 4 when arms 33 are raised for application of the clevis to the top rail. When, however, said arms 33 are lowered so that the base of said arms rest upon web 4, the arms 30 will thereby be raised so that the flange 31 firmly engages the bottom of bulb 5.

In the modification shown in Figs. 8-12 the lading band anchor comprises a base portion 50 having a downturned flange 51 partially overlapping flange 3 and a downturned flange 52 and a reflare 53 which terminates in an upturned lip portion 54; parts 52, 53 and 54 extending around bulb 5 of the top chord and are slidable thereupon. Extending upwardly from opposite sides of flange 51 is a pair of converging walls 55 which support, at their converging ends, the apex of a continuous triangularly or polygonally shaped bar 56, any of the sides of which are adapted to be encircled by a high tension lading band. By providing a triangularly shaped bar 56 the lading bands may be applied so as to extend in any or all of three different directions, a material advantage over the other modifications. Extending upwardly from opposite sides of flange 52 is a pair of walls 57 which support the opposite corners of the base of said triangular bar 56. The triangularly shaped bar 56 is thus supported in spaced relation to base portion 50. Between walls 57 is formed a hole 58 through which may extend a bolt similar to bolt 17 for supporting a beam extending across the top of lading and thereby tying said lading in place. This modification of the invention is applied to the top chord of a car in the same manner as in

the other modifications and is adapted to slide longitudinally along the bulb angle. The flange 51 is provided with a recess 59 for reception of the key 60, the lower end of which is bifurcated, as at 61, and the body portion of which is provided with an elongated slot 62. A lug 63 extends inwardly from flange 51 into slot 62 and holds the key in place in said recess except for sliding movement from one end of the slot to the other over lug 63. The bifurcated portions 61 is 10 adapted to slide down over and rest upon a rivet head 64 and when in such position obviously the clevis is locked from sliding longitudinally along the top chord. When, however, the key is raised as by the laterally extending lip 65 the key is freed from such rivet head and the device may be slid longitudinally to any position desired on said top chord. The rivet head 64 illustrated is one of a row of spaced rivets which unite flange 3 to upper margin of side wall 1 of an open top railway car, such as a gondola car.

This application is a continuation-in-part of my formerly filed application Serial No. 82,347, now abandoned.

I claim:

1. A clevis for a high tension loading band for open top railway cars having a top rail secured to a side wall of said car, said top rail having an arm extending outwardly from said side wall, and a flange depending from the outer edge of said arm, said clevis comprising a channel-shaped structure adapted to be slidingly secured to said top rail, one flange of said structure being formed as to underlap the lower edge of said rail flange, the other flange of said structure adapted to overlap the inner edge of said arm so as to be normally non-removable therefrom, and a part around which a load retaining band is adapted to encircle.

2. A clevis for a high tension loading band for open top railway cars having a bulb angle top rail secured to a side wall of said car, the web of said angle extending outwardly from said side wall, said clevis comprising a channel-shaped structure adapted to slidingly engage said top rail and constructed and arranged so as to underlap the lower edge of the bulb of said angle and to overlap the inner edge of said web so as to be normally non-removable therefrom, and means adapted to optionally secure one end of load retaining means thereto.

3. A clevis for a high tension loading band for open top railway cars having a top rail secured to a side wall of said car, said top rail having an arm extending outwardly from said side wall, and a flange depending from the outer edge of said arm, said clevis comprising a channel-shaped structure adapted to be slidingly secured to said top rail and to underlap the lower edge of said flange and to overlap the inner edge of said arm so as to be normally non-removable therefrom, and means adapted to optionally secure one end of load retaining means thereto.

4. An anchor for a high tension loading band for open top railway cars having bulb angle top rails respectively secured to the side walls, the web of said bulb angle extending substantially normal to said wall, said anchor comprising an angle portion slidable upon said rail and overlapping the flange thereof, a part pivotally attached to said portion and extending outwardly from said portion and underlappingly engageable with the bulb of said angle, said part and portion being pivotally united by a pintle extending

therethrough above said top rail around which a load retaining band is adapted to encircle.

5. An anchor for a high tension loading band for open top railway cars having bulb angle top rails respectively secured to the side walls, the web of said bulb angle extending substantially normal to said wall, said anchor comprising an angle portion slidable upon said top rail and overlapping the flange thereof, a part pivotally attached to said portion and extending outwardly from said portion and underlappingly engageable with the bulb of said angle, said pivotal attachment comprising a pintle extending through said part and portion and constituting means 15 above said top rail around which a load retaining band is adapted to encircle, whereby upon tension being applied to said band said part and portion will grip said top rail and resist sliding movement therealong.

6. An anchor for a high tension loading band for open top railway cars having bulb angle top rails respectively secured to the side walls, the web of said bulb angle extending substantially normal to said wall, said anchor comprising a channel-shaped portion slidable upon said top rail, overlapping the flange thereof and underlappingly engageable with the bulb of said top rail, a part pivotally attached intermediate its ends to said portion and extending outwardly from said portion, and means at the outer end of said part above said top rail around which a load retaining band is adapted to encircle.

7. An anchor for a high tension loading band for open top railway cars having bulb angle top rails respectively secured to the side walls, the web of said bulb angle extending substantially normal to said wall, said means comprising a portion slidable upon said top rail overlapping the flange thereof and underlappingly engageable with the bulb of said top rail, a part pivotally attached intermediate its ends to said portion and extending outwardly from said portion, said part having means at its outer end above said top rail around which a load retaining band is adapted to encircle, the inner end of said part adapted to engage said top rail upon tension being applied to said band to thereby retard movement of said anchor along said rail.

8. In an open top railway car having a top rail, a clevis attachable to said rail for anchoring one end of high tension load retaining means, said clevis comprising a base portion adapted to be secured to said rail, a circuitous bar having spaced portions extending from one side thereof to said base portion to support said bar in spaced relation to said base portion, portions of said bar adapted to be selectively encircled by load retaining means so as to extend in any of a plurality of directions.

9. A clevis for anchoring one end of high tension load retaining means, said clevis adapted for sliding movement upon a bulb angle secured by a row of rivets to the margin of a car wall, said clevis comprising a channel-shaped portion, a flange extending normal to one end of said portion for overlapping engagement with the flange of said angle and having a central longitudinal recess therein, a second flange extending from the opposite end of said portion for underlapping engagement with the bulb of said angle, means supported in spaced relation to said portion and adapted to be encircled by load retaining means, and a key reciprocable in said recess for contact with a rivet head to hold said clevis from sliding.

10. A clevis for anchoring one end of high tension load retaining means, said clevis adapted for sliding movement upon a bulb angle secured by a row of rivets to the margin of a car wall, said clevis comprising a base portion having a flange underlappingly engageable with the bulb of said angle, and a flange extending normal to one end of said base portion, overlappingly engageable with the flange of said bulb angle, and having a central longitudinal recess therein, a 10 circuitous bar integrally formed with and supported in spaced relation to said base portion, portions of said bar adapted to be selectively encircled by load retaining means so as to extend in any of a plurality of directions, and a key 15 bifurcated at one end reciprocable in said recess for contact over a rivet head to hold said clevis from sliding.

11. In an open top railway car having a top rail, a clevis attachable to said rail for anchoring one end of a high tension load retaining means, said clevis comprising a circuitous bar, spaced 5 portions projecting from one side thereof adapted to be secured to said top rail to space the bar from said top rail, whereby load retaining means may selectively encircle said bar between said spaced projecting portions.

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