June 20, 1961 G. F. OAKLEY 2,989,009

ANCHOR FOR LADING STRAPS AND THE LIKE

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Fig. 1

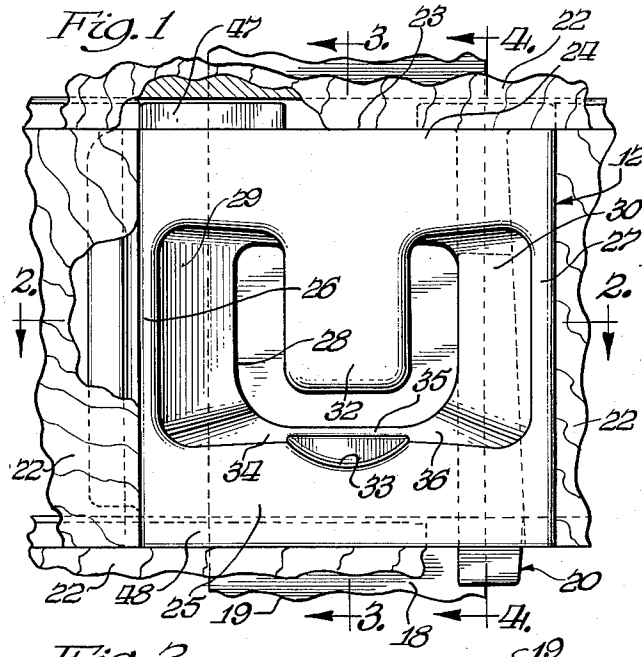


Fig. 3

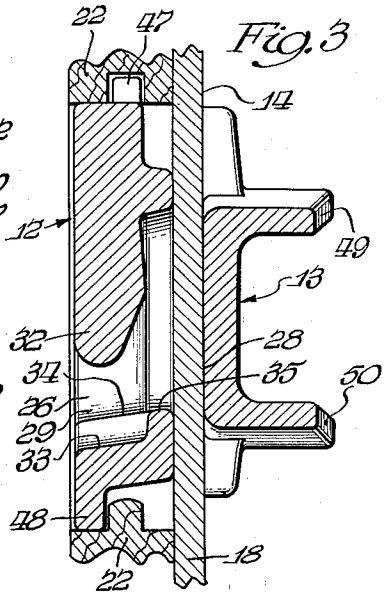


Fig. 2

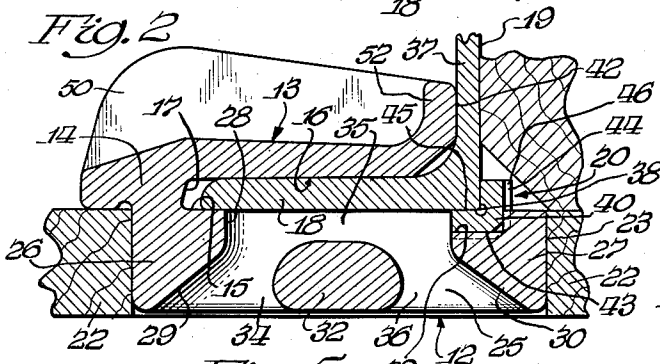


Fig. 4

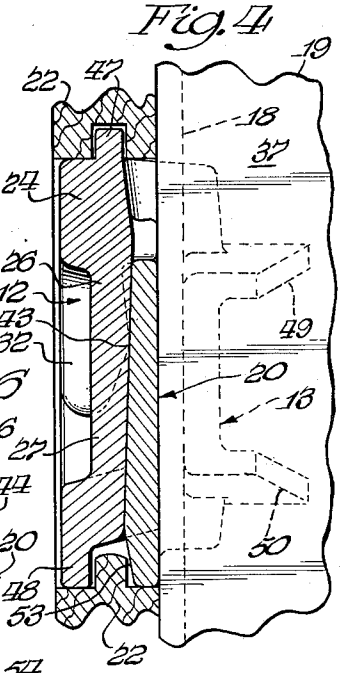


Fig. 5

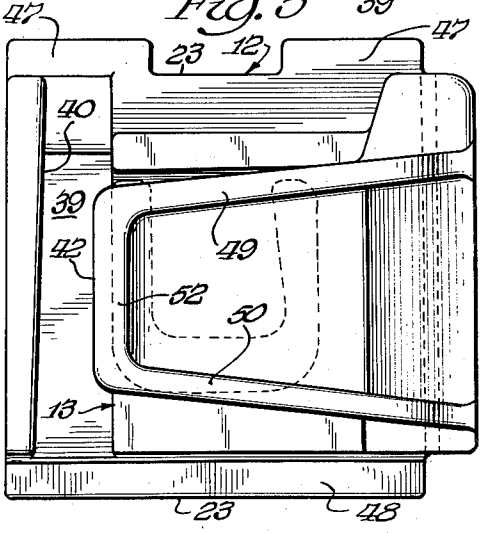
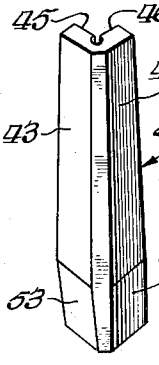


Fig. 6



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ANCHOR FOR LADING STRAPS AND THE LIKE

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Fig. 7

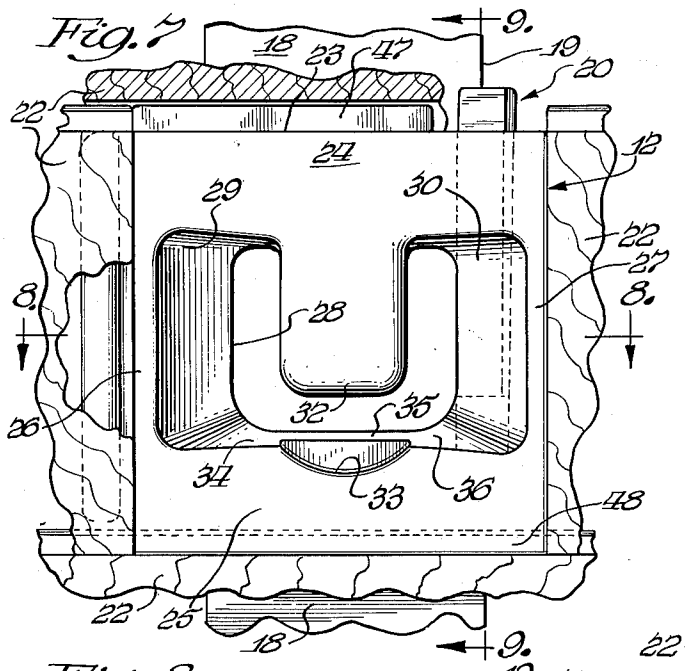


Fig. 11

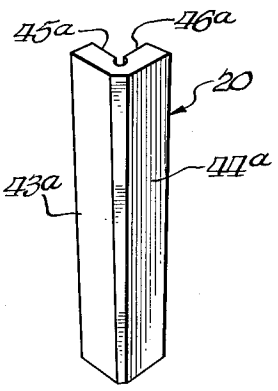


Fig. 8

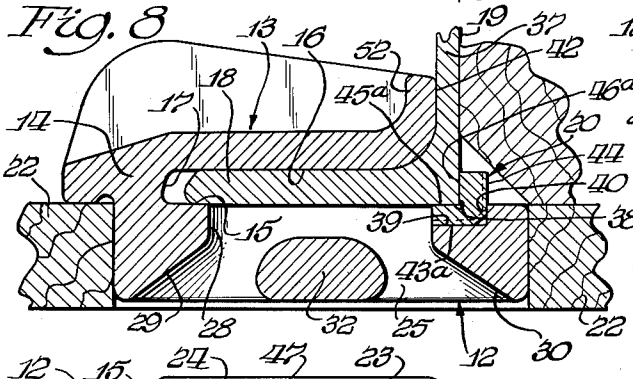
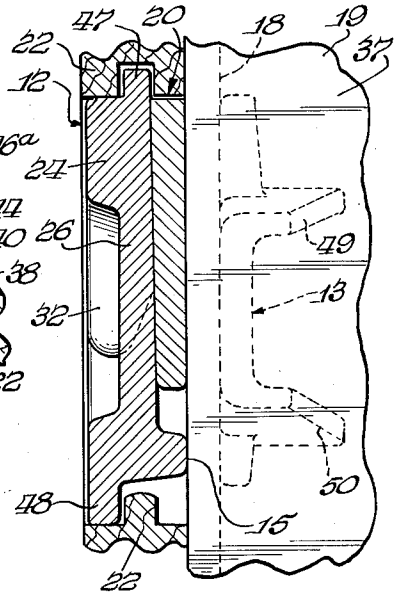


Fig. 9



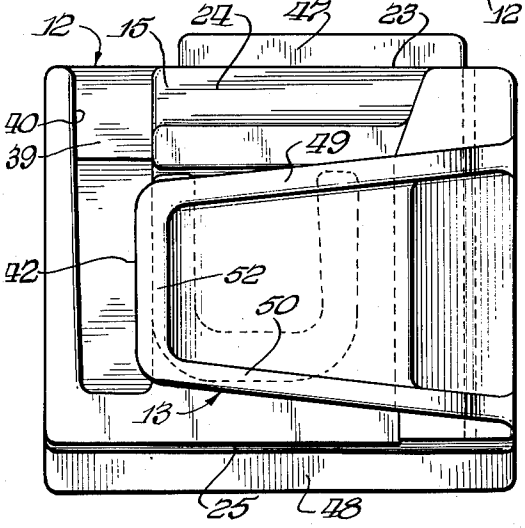


Fig. 10

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United States Patent Office 2,989,009 Patented June 20, 1961

2,989,009
ANCHOR FOR LADING STRAPS AND THE LIKE

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Filed Mar. 8, 1956, Ser. No. 570,280
6 Claims. (Cl. 105—369)

This invention relates to anchors for lading straps and the like and more particularly to such anchors which are adapted to be secured in place relative to a support such as the flange of a Z-post or the like by a filler piece such as a wedge.

One of the objects of my invention is to provide an anchor for lading straps and the like which may be secured to the flange of a Z-post or the like, which comprises a part of the frame structure of a vehicle, without the necessity of having an end of the post exposed or without cutting away any portion of the post at the position of the application, or elsewhere.

Another object of the invention is to provide an anchor for lading straps and the like which is adapted to mounting in substantially flush relationship to the lining of a vehicle wall while being secured to and supported from a part of the vehicle frame structure with the aid of a removable filler piece that is normally kept in place relative to the anchor by the said lining.

As another object, my invention comprehends the provision of an anchor for lading straps and the like having a slot between front and rear portions thereof which is adapted to fit over a flange on a structural supporting member, and which also has an angular recess for receiving a filler piece adapted to engage angularly disposed faces of the supporting member to hold the anchor in engagement with said flange in two angularly disposed directions.

These and other objects of this invention will become apparent from the following detailed description when taken together with the accompanying drawings, in which:

FIG. 1 is a front elevational view of an anchor for lading straps and the like embodying my invention in a preferred form, and illustrates the anchor as it is mounted with reference to the structure of an interior wall of a freight car or the like, the latter mentioned car structure being fragmentarily illustrated with parts broken away to disclose structural details;

FIG. 2 is a top sectional view of the structure depicted in FIG. 1 wherein the section is taken substantially as indicated by a line 2—2 and accompanying arrows in FIG. 1;

FIGS. 3 and 4 are side sectional views of the structure illustrated in FIG. 1 wherein the sections are taken respectively at positions indicated by lines 3—3 and 4—4 and accompanying arrows in FIG. 1;

FIG. 5 is a rear elevational view of the anchor structure depicted in FIG. 1 with the associated mounting structure omitted;

FIG. 6 is a perspective view of a key part utilized in the mounting of my disclosed anchor, as shown in FIGS. 1, 2 and 4;

FIG. 7 is a view similar to FIG. 1, but showing a modified form of my anchor for lading straps and the like;

FIG. 8 is a top sectional view of the structure illustrated in FIG. 7, and wherein the section is taken substantially as indicated by a line 8—8 and accompanying arrows in FIG. 7;

FIG. 9 is a side sectional view of the structure shown in FIG. 7 and wherein the section is taken substantially

on a line 9—9 of FIG. 7 and in the direction indicated by arrows;

FIG. 10 is a rear elevational view of the anchor shown in FIG. 7; and

FIG. 11 is a perspective view of a key part utilized with the anchor shown in FIGS. 7 to 10 inclusive, as illustrated in FIGS. 7, 8 and 9.

Considered generally, the exemplary embodiments of my invention which are disclosed in the accompanying drawings for illustrative purposes each constitute an integral structure embodying a front or tie anchoring portion 12 and a rear or hook portion 13, which portions are integrally joined by a web 14 and have surfaces 15 and 16 respectively in spaced, opposed and substantially parallel relationship and which, together with an inner surface 17 of the web 14, define a slot open at the top and bottom and at the side opposite the web for receiving the inboard flange 18 of a structural supporting post member 19, such as the inboard flange of a Z-post commonly used in the wall structures of freight cars. Although many of the structural details of the front or anchoring portions of the disclosed anchors are like those illustrated and described in my copending application Serial No. 313,878, filed October 9, 1952, and issued July 10, 1956, as United States Letters Patent No. 2,753,816 for Anchoring Devices for Lading Straps and the Like, sufficient details of that portion of this anchor will be described herein for an understanding of this invention. In order to avoid the necessity of sliding the disclosed anchor onto a structural supporting member such as that illustrated from the end of that structural supporting member or to avoid cutting away any part or parts of the structural supporting member in order to apply the anchor thereto, and still to have the anchor firmly held in place on the structural supporting member in use, a key part 20 is utilized therewith. This key part interfits between angularly disposed portions of the front portion of the anchor and angularly disposed portions of the structural supporting post on the side of the anchor opposite the web 14 to accomplish its anchor holding function.

Considered in greater detail, the front or tie anchoring portion 12 of the disclosed anchor has a thickness corresponding generally to the thickness of interior lining boards, such as 22, commonly used in railway freight cars, and in the form disclosed, is substantially rectangular as viewed in front elevation with a height corresponding to the width of the lining boards commonly used in freight cars, so that when mounted on a structural supporting member, such as the Z-post 19, as disclosed in FIG. 2, the front of the anchoring portion is practically flush with the adjacent lining boards and space for the mounting of the anchor is provided by merely cutting away a portion of one board at the supporting post, so that opposed ends of the cut board abut opposite side edges of the mounted anchor.

As depicted herein, the front or tie anchoring portion 12 of the disclosed anchor has an outer frame portion 23 including a top portion 24, a bottom portion 25 and side portions 26 and 27, which portions 24, 25, 26 and 27 define an opening 28 through the mid-portion of the anchor from front to rear with beveled inner side faces 29 and 30 facing inwardly and forwardly at opposite sides of the opening. A tie post 32 which is integral with the top portion 24 of the frame portion 23 extends downwardly therefrom at the mid-portion of the opening 28 and at a position such that it is substantially flush with the plane of the front surface of the frame portion and spaced outwardly from the plane of the rear surface of the frame portion. The tie post portion has a width less than that of the opening 28 and extends downwardly across the vertical mid-portion of the opening to a position spaced from and opposed to the lower portion 25 of

the frame portion, so that a tie, such as a lading strap, which has been looped, can be passed over the tie post through the space between the end of the tie post and the lower portion **25** of the frame portion. A recess **33** in the upper front part of the lower portion **25** of the frame portion and opposed to the end of the tie post portion affords additional space for inserting a looped lading strap to a position in which it encompasses the rear and side portions of the tie post portion, and leaves surfaces **34**, **35** and **36** on the lower portion **25** of the frame portion which prevent the looped strap from becoming dislodged from its position around the tie post portion. The beveled inner side faces **29** and **30** at the opposite sides of the opening **28** elongate the front portion of the opening and prevent a lading tie or strap from becoming sharply bent when extended from the tie post at widely divergent angles wherein the tie or strap approaches parallelism with the front surface of the anchor and the adjacent side wall structure.

In addition to the front flange **18**, the structural supporting member **19** has a web portion **37** which is in substantially right-angular relationship to the flange **18** and forms therewith an outer corner **38**. The front portion **12** of the anchor is wider than the flange **18** of the structural supporting member to provide space at one side for the web **14**, by which it is integrally joined to the rear or hook portion **13** of the anchor. At the side opposite the web **14**, the rear of the side portion **27** of the anchor frame portion is grooved or recessed from top to bottom in a direction parallel to the web **14** to provide angularly disposed surfaces **39** and **40**. As disclosed herein, the surfaces **39** and **40** are in substantially right-angular relationship to one another. In the disclosed anchors, the rear or hook portion **13** of the anchor is sufficiently long and the slot **15** is deep enough that when the flange **18** is fully inserted into the slot **15**, an end surface **42** of the rear or hook portion **13** engages an opposed inner surface of the web **37** of the structural supporting member. When in such position, the surface **40** is spaced laterally of the anchor from the plane of the end surface **42** sufficiently that it is also spaced from the plane of the outer surface of the web **37** and from the corner **38**. Also, the surface **39** is spaced from the front surface of the flange **18**.

The key part **20** is an elongated element having a length somewhat less than the height of the front or tie anchoring portion **12** of the anchor and is substantially L-shaped in section with outer surfaces **43** and **44** angularly disposed relative to one another and to fit against the surfaces **39** and **40** of the front or tie anchoring portion. The key part **20** also has surfaces **45** and **46** in angular relationship to one another and disposed to fit against the outer surfaces of the flange **18** and web portion **37** of the structural supporting member **19** at the corner **38** of that structural supporting member. Thus, when the anchor is in place on a structural supporting member, as shown in FIG. 2, with the key part **20** inserted between the front portion of the anchor and the structural supporting member on the side of the anchor opposite the web **14** and with the surfaces **43** and **44** of the key part engaging the surfaces **39** and **40** of the front or tie anchoring portion and the surfaces **45** and **46** of the key part engaging the flange and web surfaces of the structural supporting member adjacent the corner **38**, the key part holds the front surface **16** of the rear or hook portion of the anchor against the rear surface of the flange **18** of the structural supporting member, while also holding the end surface **42** of the rear or hook portion **13** against the inner surface of the web portion **37** of the structural supporting member. With a reasonably tight fit of the key between the front or tie anchoring portion of the anchor and the opposed surfaces of the structural supporting member, the anchor is firmly held in place. The key part is prevented from falling out of its assembled position between the front or tie post portion of the anchor and the structural supporting member by engagement of the end surface thereof with an adjacent lining board.

In the disclosed structure, and when the disclosed anchors are adapted to use with tongue and groove lining boards, the front or tie post portion of the anchor may have an upwardly projecting tongue **47** extending across the top thereof which fits into the groove of the adjacent lining board **22**, as shown in FIGS. 3 and 4, and also may have a flange **48** along the front of the front or tie post portion which depends from that portion to overlie the tongue of the adjacent lining board below the anchor. Also, the rear or hook portion **13** of the anchor may be provided with reinforcing ribs such as **49** and **50** which project rearwardly and extend longitudinally of the rear or hook portion and adjoin a reinforcing end flange **52**, the outer surface of which provides the web engaging surface **42** of that portion of the anchor.

In the embodiment illustrated in FIGS. 1 to 6 inclusive, the key part **20** is tapered so that the outer surfaces **43** and **44** thereof converge somewhat toward the opposed inner surfaces **45** and **46** at the upper end of the key. The surfaces **39** and **40** on the front or tie post portion of the anchor are correspondingly tapered. Thus, in this instance, the key part is inserted at the bottom of the anchor and the key and anchor are moved relative to one another, so that the key is driven upwardly into its holding position relative to the anchor and the structural supporting member or the anchor is driven downwardly relative to the structural support while the adjacent lining board supports the key. This form of key held anchor is preferred for use in instances in which the lining boards are installed from the tops of the car walls and are jacked or otherwise forced upwardly into position before being nailed in place. With this arrangement of parts, the anchors, although held by their respective keys, will slide upwardly along the flanges of the supporting structures with the lining boards when they are forced together.

In this form also, I prefer to provide lower end surfaces **53** and **54** on the outer surfaces of the key adjoining the surfaces **43** and **44** respectively, which lower end portions **53** and **54** are tapered in the opposite direction longitudinally of the key to provide some relief at the end portion of the key so that, when inserted at the bottom of the anchor, in which instance the anchor is driven downwardly relative to the post to tighten the key part in its holding position, the end portion of the key part will clear the tongue portion of the adjacent lining board below the anchor and will rest on the board next to the tongue portion.

In the anchor illustrated in FIGS. 7 to 11 inclusive, the outer surfaces **43***a* and **44***a* of the key are tapered with respect to inner surfaces **45***a* and **46***a* thereof, so that they converge toward the bottom of the key, and the corresponding surfaces on the front or tie post portion of the anchor may be similarly tapered. In this instance, the key is inserted from the top of the anchor and is driven into place. With this type of key, any movements of the key part effected by vibration and during use tend to tighten the anchor in its position relative to the structural supporting member. However, this key and anchor are preferred for use in instances in which the lining boards are installed from the bottom and are forced into close engagement by pressure from the top.

While I have illustrated preferred embodiments of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an anchor for lading ties adapted to mounting on a structural post or the like having a web portion and

an angularly positioned inboard flange forming an outside corner, and wherein said anchor comprises an integral structure having front and rear portions joined at one end of each thereof by a web, said front and rear portions having substantially parallel opposed surfaces extending from the web in spaced relationship to one another to define a slot therebetween which is open along the end opposite the web for receiving therein a portion of an inboard flange of a structural post, and said front portion including tie anchoring means; the improvement comprising said front portion extending beyond the rear portion in a direction away from the web, said extending portion having a key receiving recess therein which extends laterally of the open side of the slot adjacent the rear surface of said front portion to provide two surfaces in substantially right angular relationship, and a retaining key having two outer surfaces in right angular relationship and that fit into and mate with said recess in engagement with the angularly disposed surfaces thereof and having a plurality of inner surfaces in angular relationship for engaging the inboard flange and angularly disposed web portion of a post at said corner to retain the anchor in place on the post in angularly related directions.

2. An anchor for lading ties as defined in claim 1, and wherein one of the inner surfaces of said retaining key, when placed in said recess, frictionally engages the inboard flange and the other of said inner surfaces of the key frictionally engages said web portion.

3. An anchor for lading ties as defined in claim 1, and wherein said key is substantially L-shaped in lateral section and longitudinally tapered.

4. In an anchor for lading ties and adapted to mounting on a structural post having an inboard flange and a web portion extending rearwardly therefrom forming an outside corner, and wherein said anchor comprises an integral structure having substantially parallel front and rear portions joined at one end by a web providing a slot therebetween which is open at the end opposite the web to receive therein a portion of the inboard flange, said rear portion being of a length to engage at its free end with the web portion of the structural post when the inboard flange is extended into the slot, said front portion having lading tie holding means on the front thereof; the improvement comprising said front portion extending

laterally of the anchor beyond said rear portion thereof at the end of the anchor opposite said web, said extending portion also having a key receiving recess at the rear thereof which is disposed laterally of and adjacent the open end of the slot, said key receiving recess having surfaces in angular relationship to one another, and a key slidable longitudinally into the said recess from one end thereof, said key having angularly related outer surfaces fitting the angularly related surfaces of the recess and having angularly related inner surfaces for engagement with both the inboard flange and web portion of the structural post for holding said rear portion of the anchor against both the inboard flange and web portion of the structural post and holding the anchor against movement relative to the inboard flange of the post.

5. An anchor for lading ties as defined in claim 4, and wherein said key is substantially L-shaped in lateral section and longitudinally tapered to provide wedging action in the recess.

6. An anchor for lading ties as defined in claim 4, and wherein lining boards are mounted and secured against said inboard flange of the structural post, and portions of the ends of said recess are aligned with edge portions of adjacent lining boards so that the lining boards prevent longitudinal movement of the key from the recess.

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