Jan. 9, 1945. D. M. LIGHT 2,366,973

CAR TRUCK

Filed Oct. 10, 1941 3 Sheets-Sheet 1

Fig. 1.

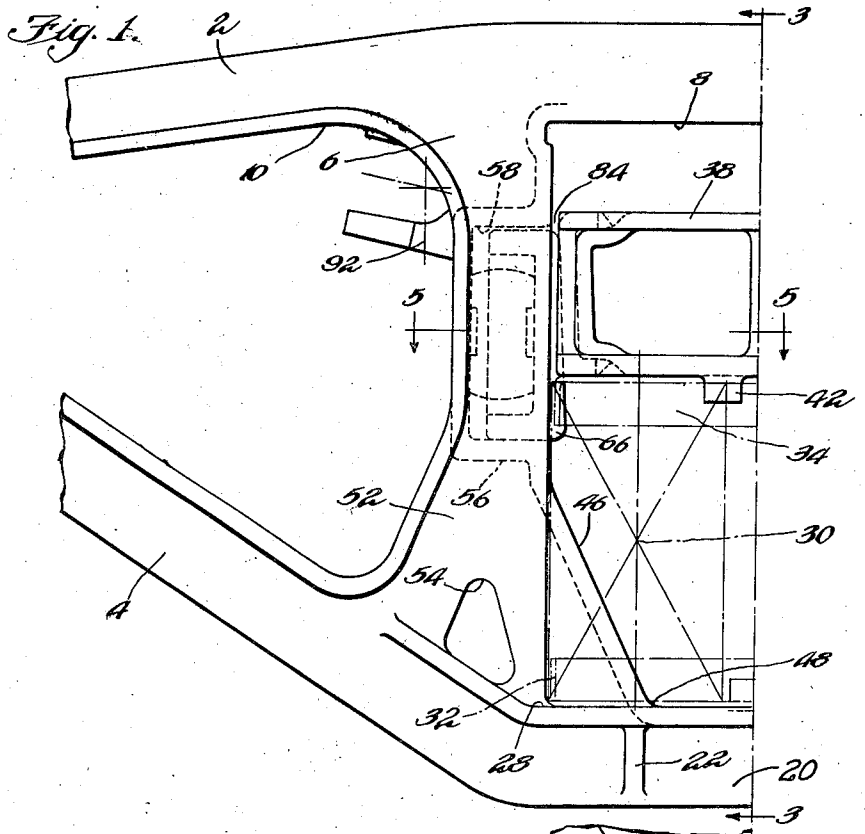
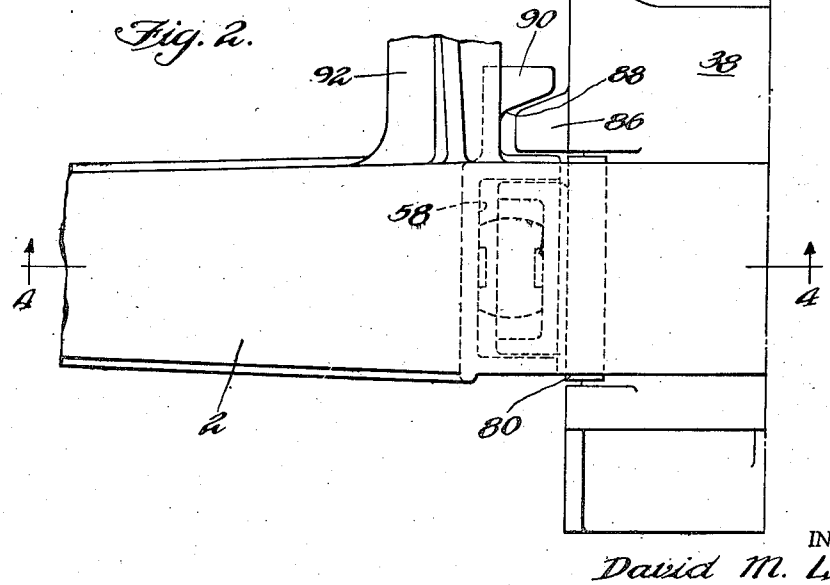


Fig. 2.



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Jan. 9, 1945. D. M. LIGHT 2,366,973

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Filed Oct. 10, 1941 3 Sheets-Sheet 2

Fig. 3.

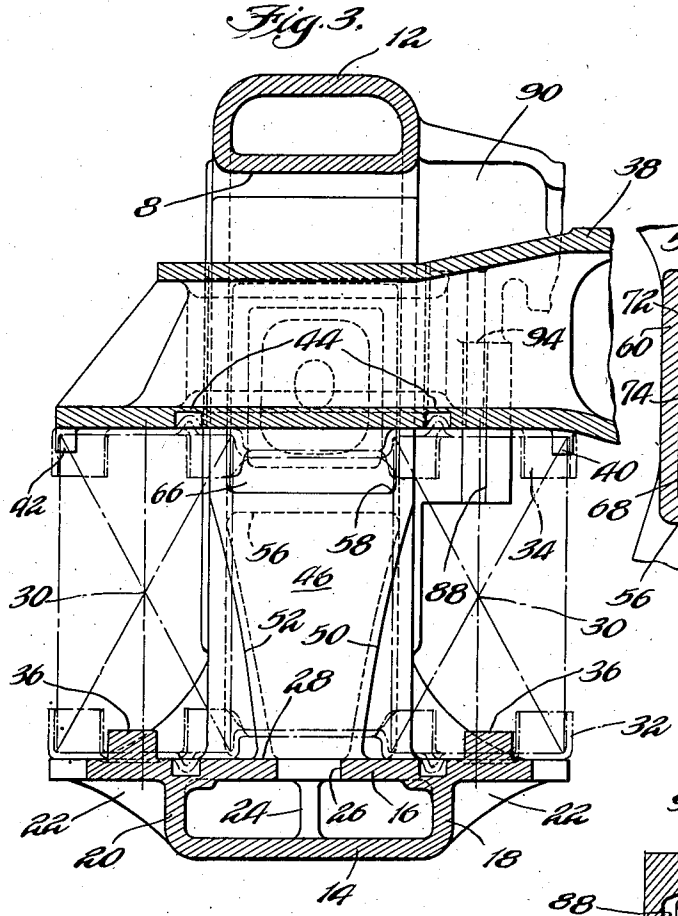


Fig. 4.

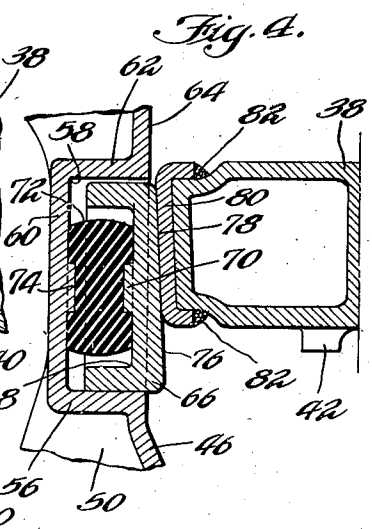


Fig. 5.

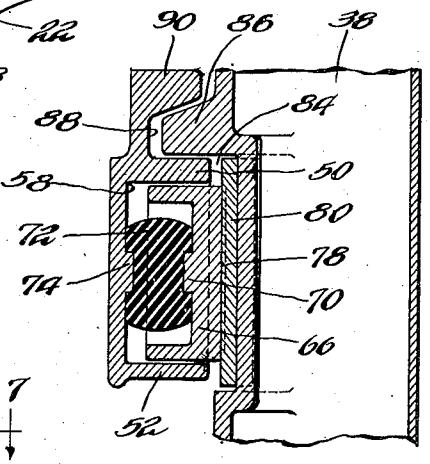
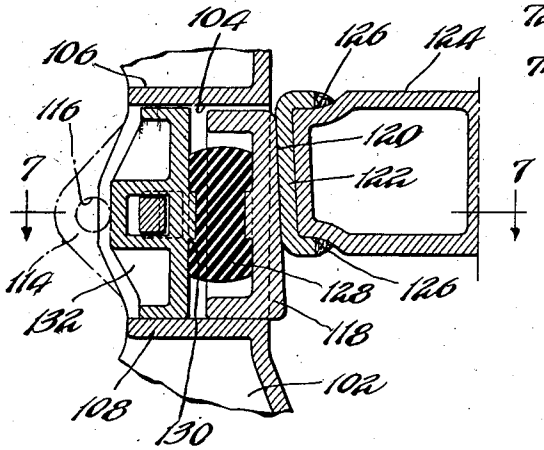


Fig. 6.



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Jan. 9, 1945. D. M. LIGHT 2,366,973

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Filed Oct. 10, 1941 3 Sheets-Sheet 3

Fig. 7.

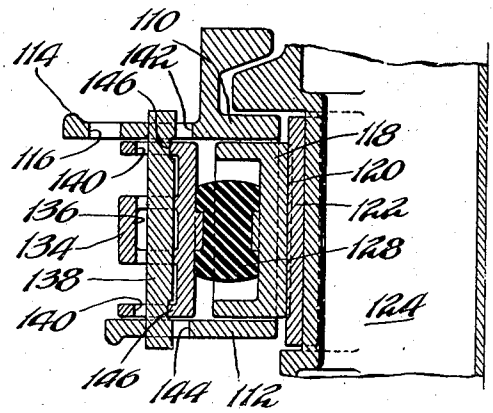


Fig. 8.

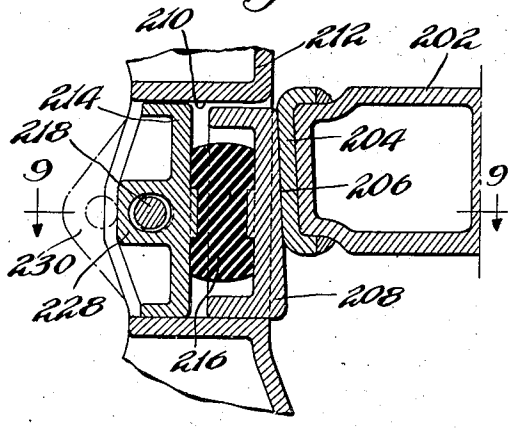


Fig. 9.

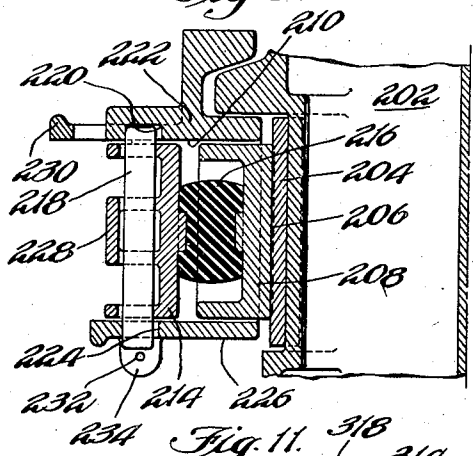


Fig. 10.

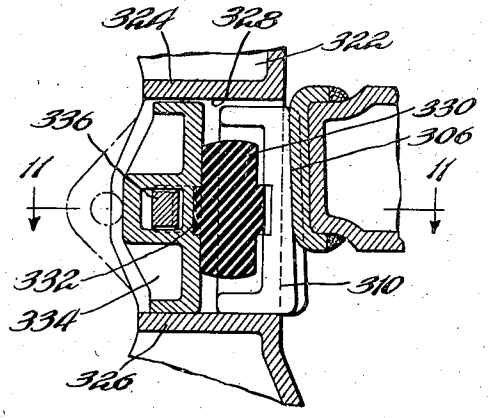


Fig. 11.

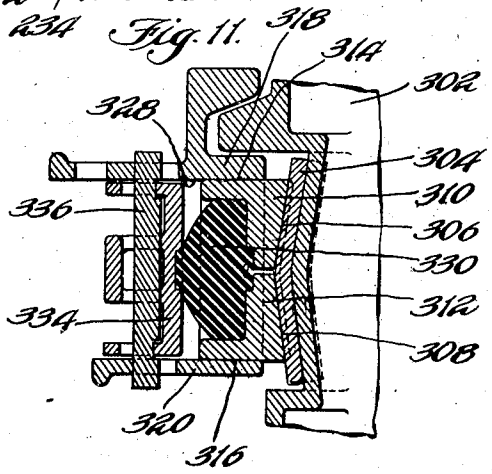
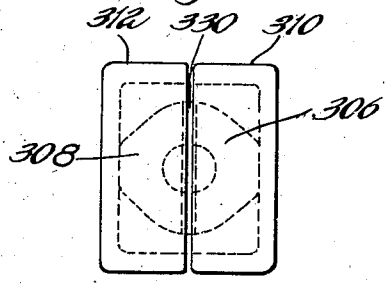


Fig. 12.



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Patented Jan. 9, 1945 2,366,973

UNITED STATES PATENT OFFICE

2,366,973

CAR TRUCK

David M. Light, Chicago, Ill., assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Application October 10, 1941, Serial No. 414,397

20 Claims. (Cl. 105—197)

My invention relates to four wheel railway car trucks and may be described as an improvement on my novel quick wheel change type of four wheel railway car truck as described and illustrated in my United States Patent No. 2,199,360, issued April 30, 1940.

Expressed generally, the principal object of my invention is to improve said design of car truck by affording simple friction means for association with the side frame and bolster therein which may readily be assembled or dismantled as may be required for such quick wheel change.

A specific object of my invention is to devise a special form of bolster which may utilize a friction wear plate for diagonal face engagement with a friction shoe which may be resiliently mounted in each of the guide columns of the associated side frame.

A different object of my invention is to devise such a snubbing arrangement between a side frame and bolster wherein a plurality of shoes may be mounted in each side frame, and said bolster may be afforded V-shaped friction surfaces at opposite sides thereof, one shoe of each set having engagement with one face of each V-shaped friction surface.

A still different object of my invention is to devise a novel truck such as that above-mentioned wherein friction devices in the respective columns will afford frictional as well as resilient resistance to lateral movements of the bolster with respect to the side frame.

Still another object of my invention is to devise a novel form of car truck wherein friction means may be applied to or dismantled from the columns of the side frame while other parts of the car truck remain in normal assembled relationship and wherein the friction parts in each column may be keyed therein in novel manner; and further, a novel keying arrangement whereby wear developed between the parts may be taken up by replacement of said key.

My invention further comprehends an arrangement such as that just described wherein a single resilient means may be utilized to urge apart the friction shoes of each set while at the same time urging said shoes into engagement with the friction surfaces of the bolster.

My invention contemplates such an arrangement as that described wherein a follower member may be mounted in each column of the side frame to facilitate application or removal of the friction shoes through the associated column, said follower member being demountable for that purpose.

In the drawings,

Figure 1 is a fragmentary side elevation of a railway car truck embodying my invention, only one end of the truck structure being shown inasmuch as the arrangement is similar at opposite ends thereof.

Figure 2 is a fragmentary top plan view of the truck structure shown in Figure 1, and Figure 3 is a sectional view therethrough, the section being taken substantially in the transverse vertical plane bisecting the truck and as indicated by the line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view taken through the truck and bolster assembly substantially in the longitudinal vertical plane bisecting the side frame and as indicated by the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view through the truck structure shown in Figures 1 and 2, taken substantially in the horizontal transverse plane indicated by the line 5—5 of Figure 1.

Figure 6 is an alternate sectional view corresponding substantially to the view shown in Figure 4, but differing therefrom in the manner of mounting the friction shoes.

Figure 7 is a sectional view comparable to that of Figure 5, taken through the modification shown in Figure 6 substantially in the horizontal plane indicated by the line 7—7 of Figure 6.

Figure 8 is a further sectional view comparable to that of Figure 6 but illustrating a modified arrangement for securing the spring plate or follower associated with the friction shoes.

Figure 9 is a sectional view comparable to that of Figure 7 taken through the modification of Figure 8 substantially in the plane indicated by the line 9—9 thereof.

Figure 10 is a further fragmentary sectional view illustrating another modification of my invention, the section being taken substantially in a plane comparable to that of Figure 4.

Figure 11 is a sectional view through the structure shown in Figure 10, the section being taken substantially in the horizontal plane indicated by the line 11—11 of Figure 10, and Figure 12 is a fragmentary elevational view of the friction shoe assembly associated with the modification illustrated in Figures 10 and 11.

Describing the structure in detail and referring first to the modification illustrated in Figures 1 to 5 inclusive, my novel truck comprises a truss type side frame having the compression member 2 and the tension member 4, an integrally formed column 6 defining therewith the central bolster opening 8 and at each side thereof a window opening 10, said compression member over said bolster opening having a box-section 12, best illustrated in the sectional view of Figure 3, and said tension member having below said bolster opening a relatively shallow box-section with a bottom chord 14, a top chord 16, an inboard wall 18, and an outboard wall 20, said inboard and outboard walls being reinforced by the vertical ribs 22, 22, and said box-section hav-

ing a longitudinally arranged vertical central rib 24 cored away centrally thereof adjacent the opening 26 in said tension member (Figure 3). The top chord 16 may be widened beneath said bolster opening to define the spring seat 28 for support of the spring group which may be seated thereon, said spring group comprising a plurality of spring means diagrammatically indicated at 30, 30, said spring means being confined between the bottom spring plate 32 and top spring plate 34. The bottom spring plate may be positioned on the spring seat 28 by interlocking engagement with upstanding lugs 36, 36 integrally formed with the top chord of said tension member, and the top spring plate may be positioned with respect to the superposed bolster generally designated 38, said bolster having downwardly projecting inboard and outboard lugs as at 40 and 42, and said top spring plate having upwardly projecting lugs cooperating with recesses in the bottom wall of said bolster as at 44, 44.

The lower portion of each column 6 conforms substantially to that of my novel side frame structure described in detail in my Patent No. 2,222,484, issued by the United States Patent Office November 19, 1940, said lower portion being of generally triangular form with a diagonal central web 46 merging with the top chord 16 of the tension member as at 48 (Figure 1), said triangular portion comprising inboard and outboard side walls 50 and 52 each of which may be cored away as at 54 adjacent the juncture of the column of the tension member and centrally thereof. At its upper end the web 46 is continuous with a horizontal transverse web 56, the web 56 defining the bottom wall of the rectangular pocket 58 formed in the upper portion of each column, the back wall of said pocket being defined by the vertical transverse web 60 at the margin of the adjacent window opening 10 and by the horizontal top transverse web 62 which may be continued into the vertical transverse web 64 above the pocket 58 in manner well illustrated in the sectional view of Figure 4. The inboard and outboard walls of the pocket 58 may be continuous with the inboard and outboard walls 50 and 52 of the column. Within each pocket 58 may be housed a friction shoe 66, said shoe being a box-like structure, rectangular in plan, (Figure 3) and having on its inner face the cavity 68 with the central lug 70 forming positioning means for the resilient means or compression spring 72, the opposite face of which may be positioned against the web 60 by the lug 74 thereon. The friction shoe 66 may have relatively close fit within the pocket 58 and on its friction face may present a diagonally arranged flat surface 76 for engagement as at 78 with the wear plate 80 which may be recessed in the side of the bolster and secured thereto in any convenient manner as by welding at 82, 82. The side wall of the bolster 38 is diagonally arranged at an angle complementary to that assumed by the friction surface 76 of the friction shoe, as best seen in the sectional view of Figure 4. Each side wall of the bolster may be afforded some clearance from the adjacent column as seen at 84 (Figure 5), the box-section end of said bolster having a generally rectangular section and being relatively closely confined laterally within the bolster opening 8 and positioned on the spring group therein in usual manner with normal clearance at the top of said bolster opening. The bolster 38 may have at each side thereof a guide lug 86 slidably received in the vertical slot 88 in the inboard bracket generally designated 90, said inboard bracket having integrally formed therewith brake hanger means 92, all as more particularly described in my Patent No. 2,199,360, issued by the United States Patent Office April 30, 1940. The slot 88 is formed along the lower portion of each bracket 90, the upper extremity thereof being indicated at 94 (Figure 3), said upper extremity being spaced a sufficient distance below the bottom web of the compression member 2 in order to permit the insertion of the bolster 38 within the bolster opening 8 for engagement with the lugs 86, 86 within the slots 88 without disturbing the spring group on which the bolster may be seated and thus permitting a quick wheel change arrangement, all as more particularly described in my said Patent No. 2,199,360.

In this arrangement it will readily be understood that the friction shoes 66, 66 at opposite sides of the bolster afford a relatively large friction surface for diagonal face engagement with the wear plates 80, 80 on the respective side walls of the bolster, the end of the bolster 38 thus being resiliently confined within the bolster opening 8 and therein restrained against vertical or lateral movement relative to the associated side frame. The friction shoes 66, 66 engaging the side walls of the bolster will also afford some restraint against any tendency of the bolster to move out of square with the side frame inasmuch as such out of square movement will tend to further compress the resilient means 72. The amount of friction developed may be controlled by the character of the resilient means 72 and the precompression thereof.

The modification illustrated in Figures 6 and 7 differs from that just described in that each column generally designated 102 is formed at the upper end thereof with a rectangular window or opening 104 at the position assumed by the pocket 58 in the previous modification, said rectangular openings 104, 104 in the respective columns being aligned longitudinally of the frame and extending entirely through the respective columns, thus affording means for removably mounting therein friction shoes similar to those described for the previous modification. In the modification now under consideration, each opening 104 may be defined above and below by the transverse webs 106 and 108 and at opposite sides thereof by the inboard and outboard webs or walls 110 and 112 of the column, said inboard wall 110 being extended longitudinally of the frame in the flange 114 in which may be cored a central opening 116 affording a toe hold for a pinch bar for a purpose hereafter described. Housed within each opening 104 may be a friction shoe 118 generally similar to that of the modification previously described, said friction shoe being slidably received in the opening 104 and having diagonal flat friction face engagement as at 120 with the wear plate 122 recessed in the side of the bolster 124 and secured thereto as at 126, 126. Partially housed within the friction shoe 118 may be the compression spring or rubber pad 128, the opposite face of which may seat as at 130 against the follower or spring cap 132. The follower 132 may have a rectangular form similar to that of the friction shoe, and said follower may be formed with a central lug 134 transversely slotted as at 136 for reception of the key 138, the ends of which may extend through aligned slots 140, 140 in the opposite walls of said follower and be received in openings 142 and 144 formed respec-

tively in the inboard and outboard walls of the column. The key 138 may have notched engagement as at 146, 146 at the opposite ends thereof with the aligned openings 140, 140 in the follower, thus positioning said key with respect to said follower.

In this arrangement the friction shoe 118 may be removed or applied in the column without disturbing the position of the bolster. This may be done by assembling the shoe, the compression spring, and the follower in normal position and fulcruming a pinch bar in the opening 116 in the inboard wall of the column and bearing against the follower lug 134, thus urging the follower into position to permit application of the securing key 138. In like manner a pinch bar may be utilized to remove the follower and shoe. It will be readily apparent to those skilled in the art that when the friction shoe 118 has become worn in use the slack may be taken up by replacement of the key 138 with a similar key somewhat thicker, said key thus functioning in the manner of a shim as well as a key, and permitting control of the amount of compression of the resilient means 128 by selection of shim means as desired.

In the modification illustrated in Figures 8 and 9 the arrangement is similar to that of the modification of Figures 6 and 7 except for the manner of keying the follower. In the modification of Figures 8 and 9 the bolster 202 is afforded a wear plate 204 for diagonal frictional engagement as at 206 with the friction shoe 208 which may be slidably received within the opening 210 in the column 212 in like manner as that for the modification illustrated in Figures 6 and 7. Spaced from the friction shoe 208 and also slidably mounted in the opening 210 may be the follower 214, and between said follower and shoe may be positioned the compression spring 216, said compression spring serving to urge said shoe into frictional engagement with said bolster. The follower may be maintained in normal position by means of the key 218, the inboard end of which may be pocketed as at 220 in the inboard wall 222 of the column 212, and the outboard end of which may extend through the aligned opening 224 in the outboard wall 226 of said column, said key extending through aligned openings in the inboard and outboard walls of the follower 214 and also through the central lug 228 thereof. The friction device including the friction shoe, the compression spring, the follower, and the key, may be applied or removed in like manner as that described for the modification of Figures 6 and 7, a pinch bar fulcrum being afforded at 230 in the inboard wall of the column for that purpose. In this modification the key 218 may be retained in position by a cotter key or other convenient retaining means secured as at 232 in the lug 234 on the outboard face of the wall 226 of the column.

The modification illustrated in Figures 10 to 12 inclusive differs from those just described in that a plurality of friction shoes are afforded at each side of the bolster. In the arrangement now under consideration, the bolster 302 may have the wear plate 304 recessed in the side wall thereof, said wear plate having a shallow V horizontal section, the diverging diagonal faces of which may seat as at 306 and 308 against the respective inboard and outboard friction shoes 310 and 312, said shoes having diagonal tapering friction engagement with said respective faces in manner clearly apparent from a consideration of Figures 10 and 11. The friction shoes 310 and 312 may also have frictional engagement as at 314 and 316 with the inboard and outboard walls 318 and 320 of the column 322, said walls, together with the top and bottom transverse webs 324 and 326 in said columns, defining the opening 328 within which said shoes have slidable movement. Partially housed within the friction shoes 310 and 312, at opposite sides of the opening 328, may be the compression spring or resilient pad 330, said pad having the cone-like configuration illustrated in Figure 11 in transverse section and being seated on its opposite face as at 332 against the follower 334 which may be secured in position by the key 336 in manner similar to that of the modification illustrated in Figures 6 and 7. A vertical plan view of the friction shoes and the resilient pad 330 confined therebetween is shown in Figure 12, the view thereof being taken from the bolster engaging side of said shoes and showing the bolster engaging friction surfaces at 306 and 308.

In the modification now under consideration, the compression spring 330 is confined between the spaced friction shoes 310 and 312 and the follower 334 in such manner that said resilient pad 330 affords a direct force path from said follower to each friction shoe, and from each friction shoe to the other friction shoe, said resilient pad thus serving to urge the shoes apart into engagement with the side walls of the column as well as serving to urge said shoes into frictional engagement with the side walls of the bolster. By this means friction is developed along the vertical sides of the shoes as well as along the diagonally arranged faces thereof engaging the diverging friction surfaces on the bolster wear plate. Thus the friction shoes are firmly positioned between the side walls of the column and engage the diverging friction surfaces on each side wall of the bolster with a gripping action which tends to prevent the bolsters assuming out of square relationship with the associated side frame or to restore normal relationship if such out of squareness occurs under service conditions.

It is to be understood that I do not wish to be limited by the exact embodiments of the device shown which are merely by way of illustration and not limitation as various and other forms of the device will, of course, be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with in the inboard and outboard walls of the adjacent column and with the adjacent friction face of said bolster, means for urging said friction shoes into frictional engagement therewith, said last-mentioned means comprising a follower, means securing said follower in said column, and resilient means under compression between said shoes and follower, said resilient means being operative to urge said shoes apart and to urge said shoes into engagement with the adjacent friction face on said bolster end.

2. In a railway car truck, a side frame having top and bottom members and spaced columns de-

fining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with the inboard and outboard walls of the adjacent column and with the adjacent friction face of said bolster, means for urging said friction shoes into frictional engagement therewith, said last-mentioned means comprising a follower keyed in said column, and resilient means under compression between said shoes and follower.

3. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with the inboard and outboard walls of the adjacent column and with the adjacent friction face of said bolster, and means for urging said friction shoes into frictional engagement therewith, said last-mentioned means comprising follower means adjustably keyed in said column.

4. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with the inboard and outboard walls of the adjacent column and with the adjacent friction face of said bolster, means for urging said friction shoes into frictional engagement therewith, said last-mentioned means comprising a follower adjustably positioned in said column, and resilient means under compression between said shoes and follower, said resilient means affording a direct force path from each shoe to the adjacent shoe.

5. In a quick wheel change railway car truck, a side frame having tension and compression members and spaced columns defining a bolster opening, a bolster resiliently supported therein, said columns having bolster guide means centrally positioned on the inboard faces thereof, and said bolster having guide lugs on the opposite side walls thereof in cooperative engagement with said guide means, said bolster presenting in the opposite side walls thereof reversely arranged tapering V-shaped friction surfaces, and friction means housed in the respective columns in engagement with said surfaces, each of said friction means comprising a plurality of friction shoes in frictional engagement respectively with the inboard and outboard walls of the adjacent column and with the adjacent friction surface on said bolster, and a single resilient member urging said shoes into engagement with said bolster and said inboard and outboard walls.

6. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with the inboard and outboard walls of the adjacent column and with the adjacent friction faces of said bolster, means for urging said friction shoes into frictional engagement therewith, said last-mentioned means comprising a follower keyed in said column, and resilient means under compression between said shoes and follower.

7. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of said friction means comprising a plurality of friction shoes in frictional engagement with the inboard and outboard walls of the adjacent column and with the adjacent friction face of said bolster, and means for urging said friction shoes into frictional engagement therewith.

8. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting friction faces, friction means resiliently housed in said columns in engagement with said faces, each of said friction means comprising a plurality of friction shoes having reversely arranged diagonal frictional engagement with the adjacent faces, a follower, and resilient means compressed between said shoes and follower and affording a direct force path between each of said shoes and said follower whereby said shoes may be urged into frictional engagement with said friction faces on said bolster.

9. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting friction faces, friction means resiliently housed in said columns in engagement with said faces, each of said friction means comprising a plurality of friction shoes having reversely arranged diagonal frictional engagement with the adjacent faces, a follower, and resilient means compressed between said shoes and abutting said follower, said resilient means affording a direct force path between the respective shoes to urge said shoes into frictional engagement with the side walls of the adjacent column.

10. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening and spaced window openings, a bolster end resiliently supported in said bolster opening and presenting reversely diagonally arranged friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, friction means housed in each of said openings in engagement with said friction faces, each of

said friction means comprising a follower removably keyed in the adjacent opening, a friction shoe spaced from said follower and in frictional engagement with an adjacent friction face and a wall of the adjacent column, and resilient means compressed between said follower and said shoe and operable to urge said shoe into engagement with said last-mentioned face and wall.

11. In a quick wheel change railway car truck, a side frame having tension and compression members and spaced columns defining a bolster opening, a bolster resiliently supported therein, said columns having bolster guide means centrally positioned on the inboard faces thereof, and said bolster having guide lugs on the opposite side walls thereof in cooperative engagement with said guide means, said bolster presenting in the opposite side walls thereof reversely arranged tapering V-shaped friction surfaces, and friction means housed in the respective columns in engagement with said surfaces.

12. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting V-shaped friction faces, friction means resiliently housed in said columns in engagement with said faces, each of said friction means comprising a plurality of friction shoes having reversely arranged diagonal frictional engagement with the adjacent faces, a follower, and resilient means compressed between said shoes and follower, the friction shoes associated with each friction means bearing against spaced parallel walls of the associated column.

13. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting friction faces, aligned openings in said columns, and friction means resiliently positioned in said openings in engagement with said faces, each of said friction means comprising a friction shoe, a spaced follower, and resilient means under compression between said shoe and follower, said friction means being removable from the associated column while said bolster end remains resiliently supported in said side frame, said resilient means being operable to urge said shoe into engagement with an adjacent friction face and column wall.

14. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting friction faces, and friction means resiliently housed in said columns in engagement with said faces, each of said friction means comprising a plurality of friction shoes respectively engaging spaced parallel walls of the adjacent column and having reversely arranged diagonal frictional engagement with the adjacent faces.

15. In a railway car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening and presenting reversely diagonally arranged V-shaped friction faces on the opposite side walls thereof, openings in the respective columns of said frame aligned longitudinally thereof, and friction means housed in each of said openings in engagement with said friction faces, each of said friction means being removable from the adjacent column while said bolster end remains resiliently supported in said bolster opening.

16. In a car truck, a side frame having top and bottom members and spaced columns defining a bolster opening, a bolster end resiliently supported in said opening, said bolster end having diagonally arranged side walls presenting V-shaped friction faces, aligned windows in said columns, and friction means resiliently housed in said windows in engagement with said faces, each of said friction means comprising spaced friction shoes in frictional engagement with parallel walls of the adjacent column.

17. In a railway car truck, a side frame having tension and compression members and spaced columns defining a bolster opening and spaced window openings, resilient means on said tension member in said opening, a bolster supported on said resilient means and presenting V-shaped friction faces adjacent said columns, and friction means housed in each of said columns, each comprising a plurality of friction shoes engaging the adjacent bolster faces and respectively engaging spaced parallel walls of the adjacent column, and a single resilient member operable to urge said shoes against the adjacent bolster face and against the respective walls of the adjacent column.

18. In a railway car truck, a side frame having tension and compression members and spaced columns defining a bolster opening, spaced window openings, resilient means on said tension member in said bolster opening, a bolster supported thereon with V-shaped friction faces adjacent said columns, and a friction device in each column comprising a plurality of friction shoes engaging the adjacent bolster faces and in frictional engagement respectively with inboard and outboard friction faces on the adjacent column, and a single resilient member operable to urge said shoes against the adjacent bolster face and against the respective walls of the adjacent column.

19. In a railway car truck, a side frame having tension and compression members and spaced columns defining a bolster opening, spaced window openings, resilient means on said tension member in said bolster opening, a bolster supported thereon with V-shaped friction faces adjacent respective columns, aligned windows in said columns and a friction device in each column window comprising a plurality of friction shoes engaging the adjacent bolster faces and in frictional engagement respectively with inboard and outboard friction faces on the adjacent column, each of said devices being removable from the associated window while said bolster remains positioned in said bolster opening on said resilient means.

20. In a car truck, a truss type supporting member having spaced columns with aligned openings therethrough, a supported member having an end resiliently positioned between said columns with friction faces adjacent said openings, and friction means in each opening including friction shoes and a resilient member operable to urge said shoes against said face and respectively against opposite walls of said column opening.

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