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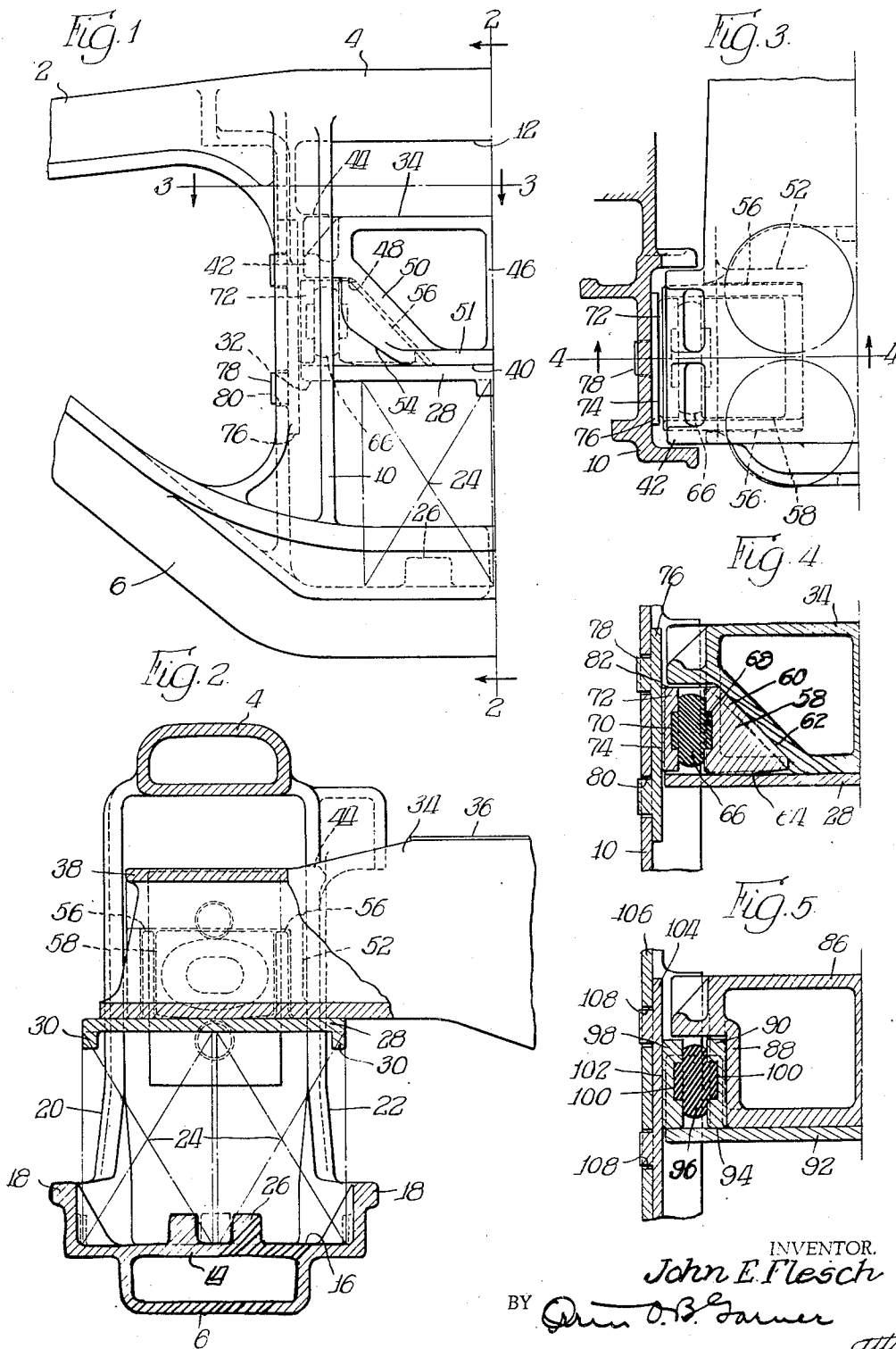
J. E. FLESCH

2,333,921

CAR TRUCK

Filed Jan. 30, 1941

3 Sheets-Sheet 1



Nov. 9, 1943.

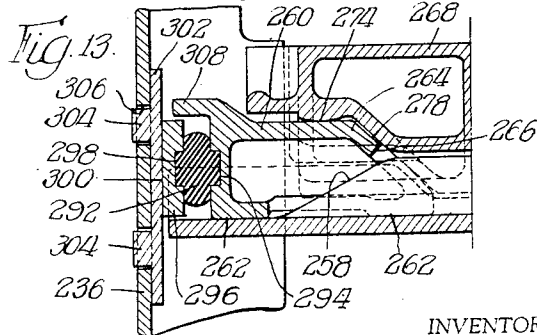
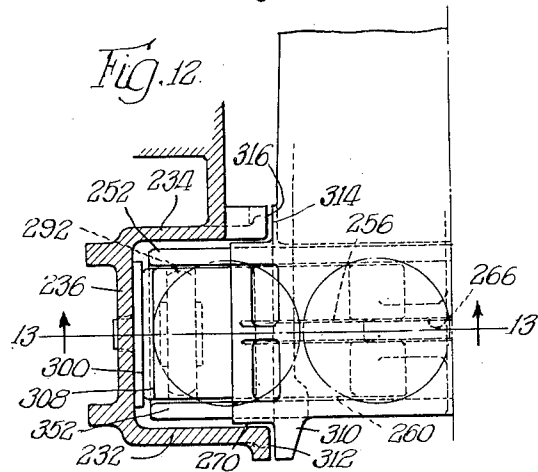
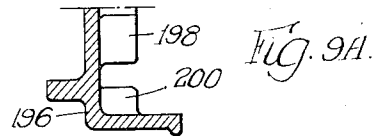
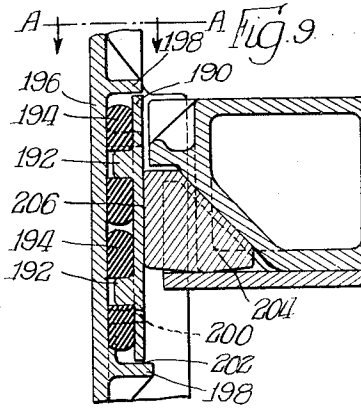
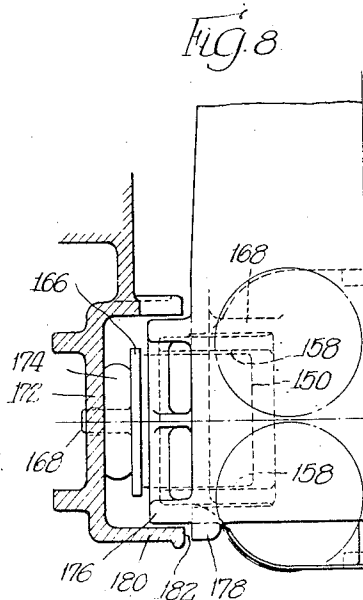
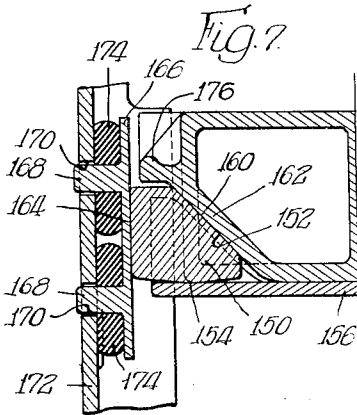
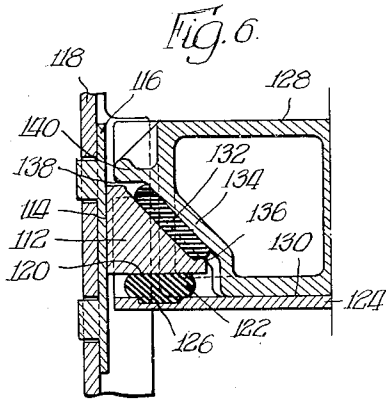
J. E. FLESCH

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CAR TRUCK

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3 Sheets-Sheet 2



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Nov. 9, 1943.

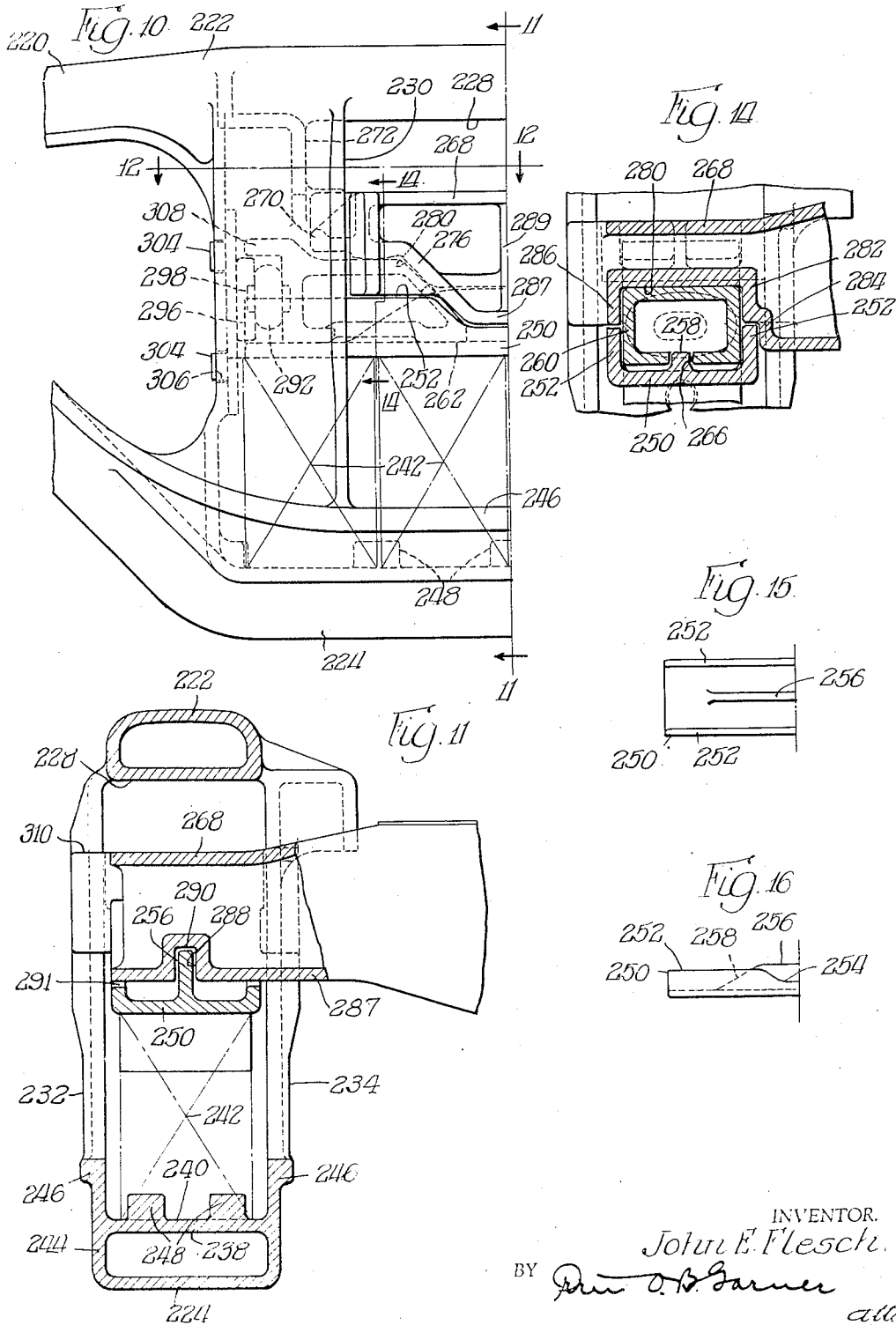
J. E. FLESCH

2,333,921

CAR TRUCK

Filed Jan. 30, 1941

3 Sheets-Sheet 3



INVENTOR.
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UNITED STATES PATENT OFFICE

2,333,921

CAR TRUCK

John E. Flesch, Chicago, Ill., assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Application January 30, 1941, Serial No. 376,582

29 Claims. (Cl. 105—197)

My invention relates to railway car trucks and more particularly to a spring plankless quick wheel change truck having snubbing means associated with each bolster end and guide columns on the side frames.

My invention contemplates a railway car truck wherein cushioning means are afforded at opposite sides of each bolster end to resist out-of-square movement of the bolster and the side frames.

A different object of my invention is to devise such a railway car truck wherein cushioning means are afforded for relative longitudinal movement of the bolster and the side frames.

Another object of my invention is to afford snubbing means for a railway car truck operable between each bolster end and the guide columns on the side frames for preventing synchronous oscillations of the bolster supporting spring group.

A further object of my invention is to design cushioning means operable between a spring cap and a portion of the bolster end and engaging the guide columns on the side frame in such manner that frictional absorption between said means and the guide columns is substantially constant and uniform upon relative vertical movement of the bolster and side frames. The friction device is so designed that relatively small vertical oscillations of the bolster spring group are snubbed.

A specific object of my invention is to afford friction means confined between each bolster end and the guide columns and seated on a spring cap, said friction means comprising wedge members seated between the bolster and spring cap, friction shoes engaging said columns, and resilient pads compressed between said shoes and said wedge members whereby the compression of the resilient pads remains substantially unchanged upon relative vertical movement of the bolster and side frames.

My invention comprehends such a friction device wherein the compressed rubber pads are so arranged that out-of-square movement of the bolster and side frames will further compress said pads, thus setting up forces which act to restore said bolster to its squared relationship with said side frames.

In the drawings,

Figure 1 is a fragmentary side elevation of a railway car truck embodying one modification of my novel invention.

Figure 2 is a fragmentary sectional view of the car truck shown in Figure 1, the section being

taken substantially in the vertical transverse plane bisecting the car truck as indicated by the line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view of the car truck shown in Figure 1, the section being taken substantially in the horizontal transverse plane indicated by line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view taken substantially in the vertical longitudinal plane indicated by the line 4—4 of Figure 3.

Figure 5 is a fragmentary sectional view of a modified arrangement of the friction means shown in Figure 1, the section being taken in substantially the same plane as that of Figure 4.

Figure 6 is a fragmentary sectional view of another modified form of the friction means shown in Figure 1, the section being taken in substantially the same plane as that of Figure 4.

Figure 7 is a fragmentary sectional view of a different modification of my invention, the section being taken substantially in the same vertical longitudinal plane as that of Figure 4.

Figure 8 is a fragmentary sectional view of the modification shown in Figure 7, the section being taken substantially in the same horizontal transverse plane as that of Figure 3.

Figure 9 is a fragmentary sectional view showing another arrangement of the friction means in Figure 7, the section being taken substantially in the same plane as that of Figure 7; and Figure 9A is a fragmentary sectional view taken substantially in a horizontal transverse plane indicated by line A—A of Figure 9.

Figure 10 is a fragmentary side elevation of a railway car truck embodying another modification of my novel invention.

Figure 11 is a fragmentary sectional view of the railway car truck shown in Figure 10, the section being taken substantially in a transverse vertical plane bisecting the car truck as indicated by line 11—11 of Figure 10.

Figure 12 is a fragmentary sectional view taken substantially in a horizontal transverse plane indicated by line 12—12 of Figure 10.

Figure 13 is a fragmentary sectional view taken substantially in the vertical longitudinal plane indicated by the line 13—13 of Figure 12.

Figure 14 is a fragmentary sectional view taken substantially in the vertical transverse planes indicated by the line 14—14 of Figure 10.

Figure 15 is a half top plan view of the spring cap used in the modification shown in Figures 10 to 14, the other half not being shown because it is similarly arranged; and Figure 16 is a half

side view of the spring cap shown in Figure 15.

In the modification shown in Figures 1 to 4 inclusive the railway car truck comprises a side frame 2 having a top compression member 4 and a bottom tension member 6 merging at each end in integrally formed journal boxes (not shown) which accommodate the journal ends of supporting wheel and axle assemblies (not shown) in usual manner. Each U-section guide column 10 extends between the top member 4 and the bottom member 6 and defines with said members the bolster opening 12. Beneath the bolster opening 12 the top wall 14 of the tension member 6 may be laterally widened to afford a spring seat 16. Along outboard and inboard edges of said wall 14 may be formed upstanding vertical flanges 18, 18 which merge with the slightly outward flared outboard and inboard legs 20 and 22 respectively of each U-section column 10 to afford a spring pocket or well which confines the lower ends of a spring group diagrammatically indicated at 24. Positioning means for said spring group may be afforded by upstanding lugs 26, 26 on the spring seat 16. A spring cap 28 affords retaining means for the upper ends of said springs in the form of outboard and inboard lugs 30, 30, and at each side said cap is formed with a longitudinally projecting end portion 32 accommodated between legs 20 and 22.

On the bolster 34 is a seat 36 for a side bearing (not shown) and the bolster end 38 is received within the bolster opening 12 and seated on the spring cap 28 as at 40. On opposite sides of the bolster end 38 are formed laterally projecting shelves 42, 42 each received between the legs 20 and 22 of the adjacent column 10. Each inboard leg 22 is terminated as at 44 short of the top member 4 a vertical distance slightly greater than the depth of the shelf 42 to permit passage therethrough during assembling and dismantling of the bolster and side frame. A central vertical rib 46 reinforces the bolster end 38.

At each side of said bolster end may be formed a pocket or recess 48 defined by a diagonally arranged side wall 50 extending between each lateral shelf 42 and bottom wall 51 of the bolster, an inboard transverse wall 52 which integrally joins the adjacent vertical side wall and bottom wall of the bolster, and an outboard downwardly directed flange 54 extending along the outboard edge of the diagonally arranged side wall 50. Within each pocket 48 may be received vertical upstanding spaced walls 56, 56 formed on each end of the spring cap 28, said walls being of generally triangular form for accommodation in said pocket 48. The bolster is thus interlocked with the spring cap 28.

Confined within each pocket 48 may be a friction device comprising a wedge block 58 (Figure 4) seated on the spring cap 28 between the walls 56, 56 and having a diagonally arranged face 60 in complementary engagement as at 62 with the bottom surface of the diagonal wall 50. The wedge block 58 is afforded a slightly arcuate bottom surface 64 for seating on the spring cap 28 to permit adjustment for wear between the block 58 and the bolster and spring cap. Seated against the block 58 may be a resilient pad 66 positioned on said block as at 68 by a lug received within a complementary recess thereon. Seated against the opposite face of said pad and positioned thereon as at 70 in similar manner may be a friction shoe 72 having frictional engagement as at 74 with a wear plate 76. The wear plate 76 may be inter-

locked with the column 10 by means of spaced studs 78, 78 received within complementary openings 80, 80 in the vertical transverse web of said column. The friction shoes 72, 72 are afforded but slight clearance at 82, 82 from the lateral shelves 42, 42 on the bolster and the lateral end portions 32, 32 on the spring cap so that relatively slight vertical movement between the bolster and the side frames will cause the friction shoes to slide along the wear plates 76, 76. It will be apparent that because the bolster is seated on the spring cap 28 the resilient pads 68 are placed and maintained under constant and uniform compression, and the friction absorbed will remain substantially constant during relative vertical movement of the bolster and side frame.

In Figure 5 is shown a modified form of the friction means previously described. In this modification the side wall of the bolster 86 may be slightly offset as at 88 to afford space for a block 90, said block 90 being seated on spring cap 92 as at 94. A resilient pad 96 is compressed between said block 90 and a friction shoe 98, said pad being positioned therebetween by lugs formed on opposite faces thereof and accommodated within complementary recesses on said block 90 and said shoe 98 as at 100, 100. The friction shoe 98 engages as at 102 a wear plate 104 interlocked with guide column 106 as at 108, 108.

Another modification of the friction device in Figures 1 to 4 is shown in Figure 6 wherein a generally triangular friction block 112 is afforded frictional engagement as at 114 with a wear plate 116 interlocked with the guide column 118 in a manner similar to that previously described. The friction block 112 is seated as at 120 on a resilient pad 122 which may be positioned on the spring cap 124 as at 126. The bolster 128 is seated on the spring cap as at 130 and a resilient pad 132 may be interposed between the friction block 112 and the diagonally arranged portion 134 of each side wall of the bolster. A retaining shoulder 136 is afforded on the friction block 112 for the resilient pad 132, and the top of said block is afforded slight clearance as at 138 from the lateral shelf 140 on the bolster.

It is apparent in this modification that the friction block 112 will slidably engage the wear plate 116 upon relatively slight downward movement of the bolster and that upon upward movement of the bolster sliding engagement of the friction block along the wear plate will be delayed until the forces in the resilient pad 122, which is being placed under increasing compression, becomes greater than the frictional resistance between the block and the wear plate.

The modification shown in Figures 7 and 8 differs from the modification shown in Figures 1 to 4 in that the resilient pads are interposed between the guide column and the wear plate. A friction block 150 is confined within each pocket 152 on each side of the bolster end and is afforded between the walls 158, 158 on the spring cap a generally arcuate seat as at 154 on said cap and diagonal face engagement as at 160 with the diagonally arranged portion 162 on the bolster. The friction block 150 engages as at 164 the wear plate 166 having spaced lugs 168, 168 accommodated within spaced openings 170, 170 in the web of the guide column 172. Interposed between said web and the wear plate 166 and encircling each lug 168 may be a resilient pad 174 which is compressed when the bolster is seated on the spring cap in assembly, and which is maintained un-

uniform compression upon relative vertical movement of the bolster and side frames.

On the outboard face of each shelf 176 may be formed a vertically extending lug 178 for abutment with the outboard leg 180 of the bolster guide column as at 182 to afford stop means for relative longitudinal movement of the bolster and side frames. The abutment at 182 also limits the compression of the resilient pads 174, 174.

The modification shown in Figures 9 and 9A differs from that shown in Figures 7 and 8 in the manner of mounting the wear plate on the guide columns. Each wear plate 190 is afforded spaced positioning lugs 192, 192 accommodated in openings on resilient pads 194, 194. The guide column 196 is afforded on its inner surface top and bottom lugs 198, 198, and at each side of the wear plate 190 spaced guide lugs 200, 200 serve with the stop means 198, 198 to maintain the wear plate 190 and the resilient pads 194, 194 in their proper position on the guide column 196. It may be noted that the wear plate 190 is afforded but slight clearance at 202, 202 from the stop means 198, 198 so that the friction block 204 will slidably engage as at 206 the wear plate 190 upon slight vertical movement of the bolster with respect to the side frame.

In the modification shown in Figures 10 to 14 the side frame 220 comprises a top compression member 222 and a bottom tension member 224 merging adjacent their ends at journal means (not shown) which accommodate the journal ends of associated supporting wheel and axle assemblies (not shown). On each side of the bolster opening 228 is a U-section column 230 comprising an outboard wall 232, an inboard wall 234, and a transverse web 236 joining said walls.

In this modification beneath the bolster opening the top wall 238 of the tension member 224 affords a spring seat 240 of substantially the same lateral width as the top wall 238, said spring seat extending longitudinally of the side frame within each U-section column 230. The spring group 242 is arranged in a line on the spring seat 240, each outer spring being substantially confined within the adjacent U-section column. The side walls 244, 244 of the tension member 224 are projected upwardly to form retaining flanges 246, 246 which are integrally joined with the walls 232 and 234 respectively of each column to afford a spring pocket. Lugs 248, 248 on the top wall 238 afford positioning means for the lower ends of the spring group 242.

On top of the spring group 242 may be seated a spring cap 250 shown in detail in Figures 15 and 16. The spring cap 250 comprises a rectangular base having along its longitudinal edges vertical walls 252, 252 which may be centrally relieved as at 254. Intermediate said walls may be formed a longitudinally extending upstanding rib 256 having each tapered end 258 terminated short of the ends of said base.

Each end of the spring cap 250 is accommodated within the adjacent column, and between the walls 252, 252 a wedge member 260 (Figure 13) is afforded spaced seats 262, 262 on said spring cap. Each wedge member 260 may be a hollow generally rectangular block having its bottom wall and its inner diagonal end wall 264 slotted as at 266 to accommodate the tapered end 258 of the rib 256 and thus interlock the wedge member with the spring cap.

Extending into said bolster opening 228 is a bolster end 268 having on each side thereof a lateral shelf 270 received between the outboard and

inboard legs 232 and 234 of the adjacent column 236. Each leg 234 is relieved or notched at 272 to permit passage of a shelf 270 in assembling and dismantling of the bolster and side frame. Inwardly of each shelf 270 the bolster end 268 is afforded an arcuate bearing surface seated as at 274 on the top wall of the wedge member 260, and the diagonal wall 276 on the bolster is afforded a seat as at 278 on the slightly arcuate outer surface of the diagonal end wall 264 of the wedge member. On each side of the bolster a recess or pocket 280 is defined by the diagonal wall 276, an inboard transverse wall 282 offset at 284 to accommodate the inboard wall 252 on the spring cap 250, and an outboard depending flange 286 formed in substantially the same plane as the outboard wall 252 of the spring cap. In the bottom wall 287 (Figure 11) of said bolster may be formed a transverse channel 288 which receives as at 290 the central rib 256 on the spring cap to interlock the bolster end therewith. The bottom wall 287 may be accommodated within the relieved portions 254, 254 of the walls 252, 252 on the spring cap and is afforded clearance therefrom as at 291, 291. A central vertical rib 289 reinforces the bolster end 268. It may be noted that in this modification the bolster end is afforded spaced seats on the wedge members 260, 260 and is not afforded a seat directly on the spring cap.

Against the outer wall of each member 260 may be seated a resilient pad 292 (Figure 13) of any suitable resilient material, said pad being positioned thereon by a lug extending within a complementary recess on said outer wall as at 294. A friction shoe 296 is seated against the opposite face of said pad 292 and may be positioned thereon in similar manner by a lug extending within a complementary recess on said shoe as at 298. The friction shoe 296 engages as at 300 the wear plate 302 interlocked with the web 236 of the adjacent guide column by spaced projections 304, 304 extending through complementary openings 306, 306 in said web. A top flange 308 on said member 260 overlaps the top edge of the friction shoe 296 and is afforded slight clearance therefrom.

An outboard vertical lug 310 (Figure 12) at each outer corner of the bolster end is afforded abutment at 312 with the flanged edge of wall 232 of the guide column and an inboard bearing pad 314 at each side of the bolster may be afforded abutment at 316 with the flanged edge of the inboard wall 234 of the guide column. Stop means are thus afforded for relative longitudinal movement of the bolster with respect to the side frame and it may also be noted that said stop means limit the compression of the resilient pad 292.

Assembly of my novel car truck is substantially identical for each modification. Each friction device is seated in assembled relationship on the respective end portion of the spring cap and as the bolster is lowered into position the friction device is placed under compression between the transverse web of the U-section column and the bolster end.

It will be understood by those skilled in the art that I have devised a novel form of railway car truck and different arrangements thereof wherein friction means are supported by a spring cap within U-section columns and are associated with the bolster in such manner that a substantially constant thrust is exerted against the webs of said columns during vertical movement of the

bolster with respect to the side frame. In this manner such movement will be resisted by substantially uniform frictional absorption.

It may be noted that in my novel structure the bolster is guided with respect to the side frame by means of the arrangement of spring cap, friction devices, and lateral shelves which are received within the U-section columns. Any tendency for out-of-square movement of the bolster with respect to the side frame will further compress the resilient members in the friction devices and thus set up forces which will restore the bolster to its normal squared relationship with the side frame. It is readily apparent that any longitudinal movement of the bolster with respect to the side frame will be cushioned by further compression of the rubber pads.

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 a bolster opening defined by a top member, a bottom member, and spaced columns each being of U-section with spaced legs and an intervening web, spring means on said bottom member, a spring cap on said spring means comprising end portions with spaced upstanding walls accommodated between said legs, a bolster end seated on said cap and having pockets at opposite sides thereof receiving said upstanding walls for interlocking said bolster with said cap, lateral shelves on said bolster end projecting between said legs above said end portions, and a friction device supported on said cap within each pocket and comprising resilient means under substantially constant compression between said bolster end and the adjacent web whereby relative vertical movement of said bolster end and said side frame is resisted by substantially constant frictional absorption.

2. In a railway car truck, a side frame having a bolster opening defined by a top member, a bottom member, and spaced columns each being of U-section with spaced legs and an intervening web, friction means on said web, spring means on said bottom member, a spring cap on said spring means comprising end portions with spaced upstanding walls accommodated between said legs, a bolster end seated on said cap and having pockets at opposite sides thereof receiving said upstanding walls for interlocking said bolster with said cap, lateral shelves on said bolster end projecting between said legs above said end portions, and a friction device within each pocket comprising a block interposed between said cap and said bolster end, a shoe engaging said friction means, and resilient means under compression between said shoe and said block.

3. In a railway car truck, a side frame having a bolster opening defined by a top member, a bottom member, and spaced columns each being of U-section with spaced legs and an intervening web, spring means on said bottom member, a spring cap on said spring means comprising end portions with spaced upstanding walls accommodated between said legs, a bolster end supported from said cap and having pockets at opposite sides thereof receiving said upstanding walls for interlocking said bolster with said cap, lateral

shelves on said bolster end projecting between said legs above said end portions, and a friction device on each end portion within each pocket interposed between said bolster end and the adjacent web and exerting substantially constant thrust against said web during relative vertical movement of said bolster end and said side frame.

4. In a railway car truck, a side frame having a bolster opening defined by a top member, a bottom member, and spaced columns each comprising spaced legs and an intervening web, spring means on said bottom member, a spring cap on said spring means with end portions extending between said legs, a bolster end supported from said spring cap and having lateral shelves projecting between said legs, and means associated with said bolster end, said spring cap, and each column for frictionally resisting relative movement of said bolster end and side frame, said means including a rigid member seated on each end portion and abutting said bolster end, friction elements supported respectively by said web and said member, and resilient means under compression between one of said elements and its supporting part.

5. In a railway car truck, a side frame comprising compression and tension members and spaced columns defining therewith a bolster opening, resilient means on said tension member in said opening, a spring cap on said means, a bolster seated on said cap and comprising a recess in each side thereof, spaced upstanding walls on each end of said cap and received within the associated recess, friction means supported from said cap and said bolster between the upstanding walls in each recess, and friction means supported from the adjacent column in engagement with said first-mentioned friction means.

6. In a railway car truck, a side frame having a bolster opening defined by a top member, a bottom member, and spaced columns each being of U-section with spaced legs and an intervening web, a wear plate mounted on each web, spring means on said bottom member, a spring cap on said spring means comprising end portions with spaced upstanding walls accommodated between said legs, a bolster end seated on said cap and having pockets at opposite sides thereof receiving said upstanding walls for interlocking said bolster with said cap, lateral shelves on said bolster end projecting between said legs above said end portions, and a friction device seated on each end portion between said walls within the respective pocket and abutting said bolster end and frictionally engaging the adjacent wear plate.

7. In a railway car truck, a side frame comprising compression and tension members and spaced columns defining therewith a bolster opening, resilient means on said tension member in said opening, a spring cap on said means, a bolster seated on said cap and comprising a recess in each side thereof, spaced upstanding walls on each end of said cap and received within the associated recess, a friction means supported from said cap and said bolster between the vertical walls in each recess, and friction means supported from the adjacent column in engagement with said first-mentioned friction means, one of said friction means comprising cushioning means for maintaining said bolster and frame in squared relationship.

8. In a railway car truck, a side frame comprising tension and compression members and spaced columns defining therewith a bolster opening, coil

springs on said tension member in said opening, a spring cap seated on said springs and having spaced vertical walls at each end thereof, a bolster end received within said opening comprising pockets receiving the associated walls, means in each pocket seated on said spring cap in abutment with said bolster end, and other means supported from the adjacent column in frictional engagement with said first-mentioned means.

9. In a railway car truck, a side frame comprising tension and compression members and spaced columns defining therewith a bolster opening, coil springs on said tension member in said opening, a spring cap seated on said springs and having spaced vertical walls at each end thereof, a bolster end received within said opening comprising pockets receiving the associated walls, means in each pocket seated on said spring cap in abutment with said bolster end, and other means supported from the adjacent column in frictional engagement with said first-mentioned means, one of said means comprising cushioning means for maintaining said bolster and side frame in assembled relationship.

10. In a railway car truck, a side frame comprising top and bottom members and spaced columns defining therewith a bolster opening, wear plates on said columns, spring means on said bottom member in said opening, a spring cap having spaced vertical walls, a bolster end received within said opening comprising pockets receiving said walls, and cushioning means in each of said pockets seated on said spring cap in abutment with said bolster end and in frictional engagement with the associated wear plate.

11. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated on said cap and comprising recesses at opposite sides thereof, a block in each recess seated on said cap, resilient means supported by said block, friction means engaged with said resilient means and other friction means on the adjacent column in engagement with said first-mentioned friction means.

12. In a railway car truck, a side frame comprising spaced columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap on said group, a bolster end positioned on said cap and comprising recesses at opposite sides thereof, a block in each recess seated on said cap, resilient means supported by said block, friction means engaged with said resilient means, other friction means on the adjacent column in engagement with said first-mentioned friction means, and upstanding means on said cap at opposite sides of said first-mentioned friction means and received within said recess.

13. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated on said cap and comprising recesses at opposite sides thereof, a pair of rigid members and an interposed resilient member in each recess, one of said rigid members being seated on said cap, and friction means on the adjacent column in engagement with the other of said rigid members.

14. In a railway car truck, a side frame comprising columns partially defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated

on said cap and comprising recesses at opposite sides thereof, a pair of rigid members and an interposed resilient member in each recess, one of said rigid members being seated on said cap, friction means on the adjacent column in engagement with the other of said rigid members and spaced upstanding means on said cap received within said recess at opposite sides of said rigid and resilient members for interlocking said cap and said bolster end.

15. In a railway car truck, a side frame comprising spaced columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster seated on said cap and having a recess in each side thereof, friction means seated on said cap in each recess, friction means on the adjacent column in engagement with said first-mentioned friction means, and upstanding walls on said cap at opposite sides of said first-mentioned friction means, said walls being received within said recess for interlocking said cap and said bolster.

16. In a railway car truck, a side frame comprising top and bottom members, spaced columns of U-section defining with said members a bolster opening, spring means on said bottom member in said opening, a spring cap having portions extending within said columns, a bolster end supported from said cap and having recessed means at each side thereof, and cushioning means supported by said cap within said recessed means and associated with webs of said columns for maintaining said bolster and side frame in squared relationship, said cap having spaced vertical walls in engagement with said recessed means.

17. In a railway car truck, a side frame comprising top and bottom members, and spaced columns defining therewith a bolster opening, wear plates on said columns, spring means on said bottom member in said opening, a spring cap having spaced vertical walls, a bolster end received within said opening comprising pockets receiving said walls, cushioning means in each of said pockets seated on said spring cap in abutment with said bolster end and in frictional engagement with the adjacent wear plate, said means comprising a plurality of rigid members, and an interposed resilient member.

18. In a railway car truck, a side frame comprising top and bottom members and spaced columns defining therewith a bolster opening, wear plates on said columns, spring means on said bottom member in said opening, a spring cap, a bolster end received within said opening comprising pockets, cushioning means in each of said pockets seated on said spring cap in abutment with said bolster end and in frictional engagement with the adjacent wear plate, said means comprising a plurality of rigid members, and an interposed resilient member, and spaced upstanding walls on said cap confining the cushioning means in each pocket.

19. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated on said cap and comprising recesses at opposite sides thereof, a pair of rigid members and an interposed resilient member in each recess, one of said rigid members being slidably seated on said cap in wedge engagement with the bolster end, and friction means on the adjacent column in engagement with the other of said rigid members.

20. In a railway car truck, a side frame comprising top and bottom members, and spaced columns defining therewith a bolster opening, spring means on said bottom member in said opening, a spring cap, a bolster received in said opening having diagonally formed side walls, friction elements supported on said cap in engagement with said side walls, friction elements on said columns engaged with said first-mentioned friction elements, and upstanding means on said cap at opposite sides of first-mentioned elements and interlocked with said bolster.

21. In a railway car truck, a side frame comprising spaced columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster seated on said cap and having a recess in each side thereof, a friction member supported from said cap in each recess, a friction member supported from the adjacent column in engagement with said first-mentioned member, resilient means under compression for urging one of said members into engagement with the other, and upstanding walls on said cap at opposite sides of said first-mentioned member and received within the associated recess.

22. In a spring cap, a flat portion for seating upon associated resilient means, said portion comprising a seat at each end thereof for an associated friction device, and spaced upstanding walls at each end of said flat portion, said walls affording retaining means for the adjacent device and interlocking means for engagement with a superposed member.

23. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated on said cap and comprising recesses at opposite sides thereof, a rigid member resiliently mounted on the cap in each recess, resilient means bearing against the bolster and said member, and friction means on the adjacent column in engagement with said member.

24. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a spring group on said frame in said opening, a spring cap thereon, a bolster end seated on said cap and comprising recesses at opposite sides thereof, a rigid member resiliently mounted on the cap in each recess, diagonal resilient means bearing against the bolster and said member, and friction means on the adjacent column in engagement with said member.

25. In a railway car truck, a side frame comprising columns partly defining a bolster opening, a readily removable friction plate resiliently mounted on each column and interlocked against relative vertical movement with respect thereto, a spring group on said frame in said opening, a bolster end supported on said group, and friction blocks supported from said group at opposite sides of said bolster end, said blocks and said end having complementary wedge surfaces for urging the blocks into engagement with respective plates.

26. In a railway car truck, a side frame having spaced columns partly defining a bolster opening, resilient means on said frame in said opening, a bolster supported from said means, friction means on each column, and friction devices supported from said resilient means and affording indirect support for the bolster therefrom, each of said devices comprising a block in wedge engagement with said bolster and a friction shoe resiliently mounted on said block in engagement with the adjacent friction means.

27. In a railway car truck, a side frame having spaced columns partly defining a bolster opening, a spring group on said frame in said opening, a bolster supported from said group, friction means on each column, and friction devices supported directly from said group, each of said devices comprising a pair of spaced horizontally aligned rigid members and an interposed resilient means, one of said rigid members bearing against the bolster, and the other of said rigid members bearing against the adjacent friction means, and means on the bolster for moving said devices downward therewith.

28. In a railway car truck, a side frame having spaced columns and an intervening bolster opening, bolster supporting resilient means on said frame in said opening, a bolster supported from resilient means a recess in each side of the bolster extending through the bottom wall thereof, friction devices afforded support in said recesses by said resilient means, each of said devices comprising a wedge block and a friction shoe resiliently mounted thereon for engagement with the adjacent column, and cooperating wedge surfaces on each side of the bolster and the adjacent wedge block for urging the latter toward the adjacent column whereby the associated shoe is urged into engagement with a friction surface on said column.

29. In a railway car truck, a side frame having spaced columns and an intervening bolster opening, each of said columns having a rear web and inboard and outboard walls, said bolster opening having a widened upper portion, bolster supporting resilient means on said frame in said opening, a bolster supported on said means and having recesses in opposite sides thereof, friction devices supported from said resilient means in respective recesses, each of said devices comprising a block in complementary wedge engagement with the bolster, and a friction shoe resiliently mounted on said block for abutment with a friction surface on the adjacent rear web, and lugs on opposite sides of said bolster overlying said devices and received between the inboard and outboard walls of respective columns, said lugs being of less depth than that of the widened portion of said bolster opening whereby the bolster may be elevated therein and removed therefrom while the bolster supporting resilient means and associated friction devices remain in assembled relationship.

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