July 16, 1940. D. S. BARROWS 2,207,848

RAILWAY TRUCK

Filed July 18, 1934 3 Sheets-Sheet 1

Fig. 1.

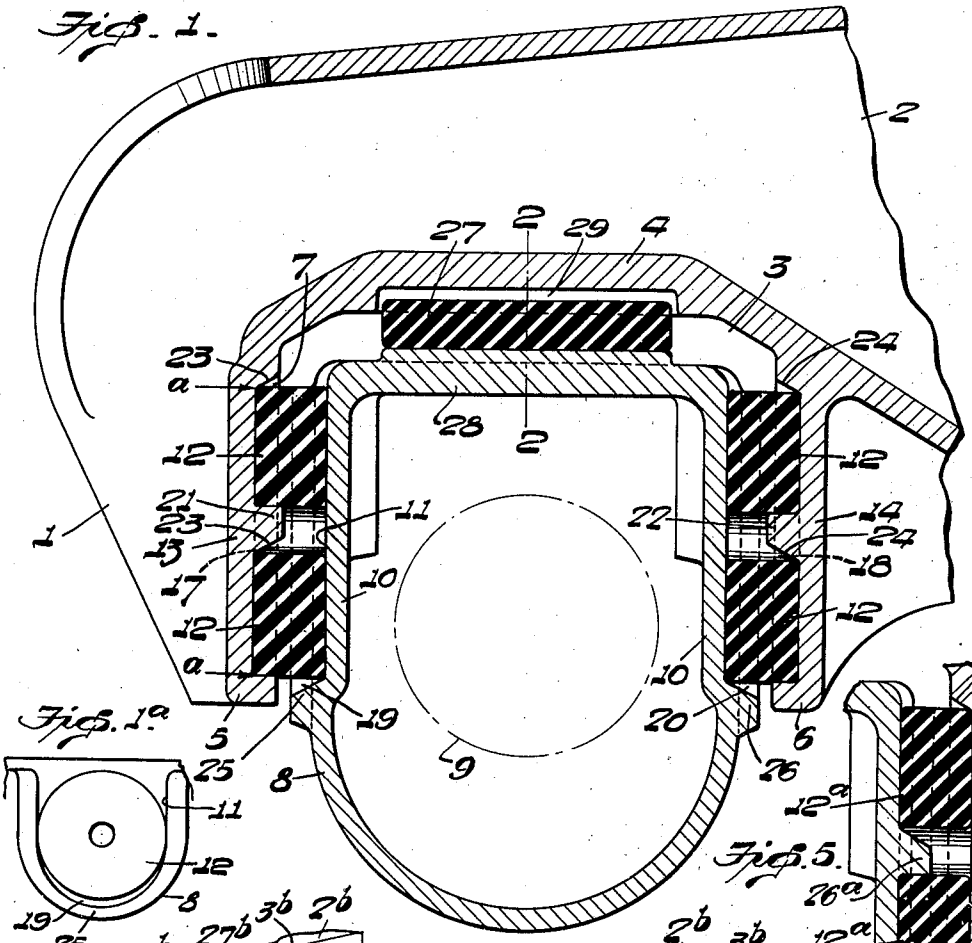


Fig. 1a.

Fig. 5.

Fig. 3.

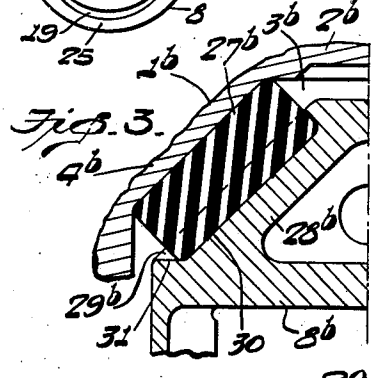


Fig. 4.

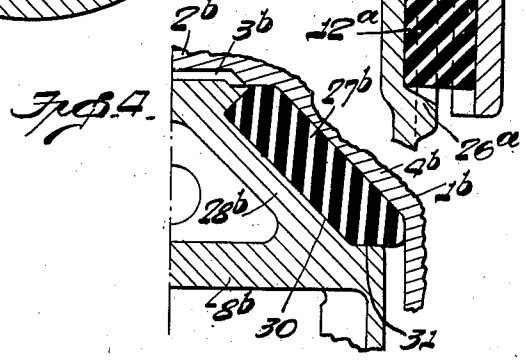
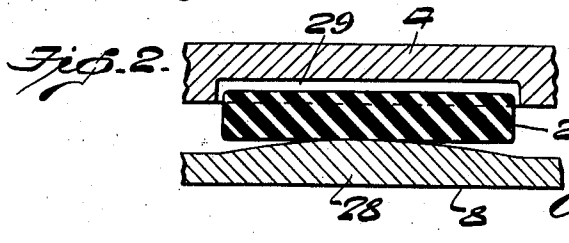


Fig. 2.



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RAILWAY TRUCK

Filed July 18, 1934 3 Sheets-Sheet 2

Fig. 6.

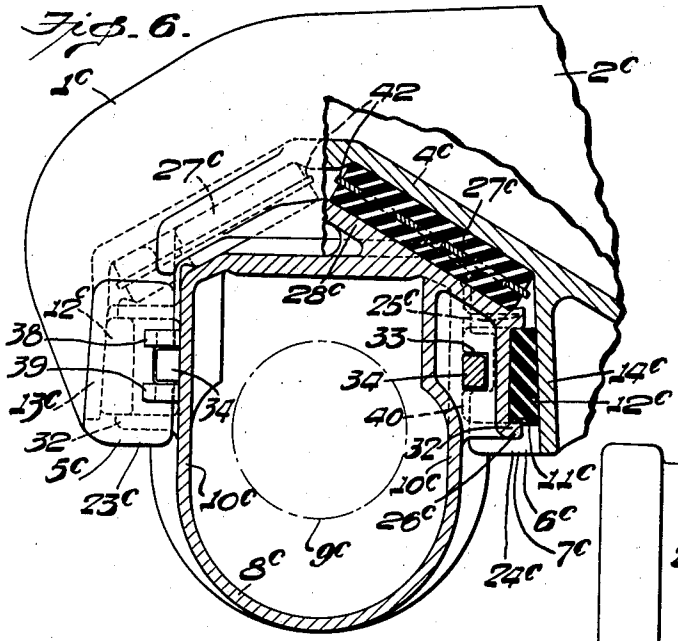


Fig. 7.

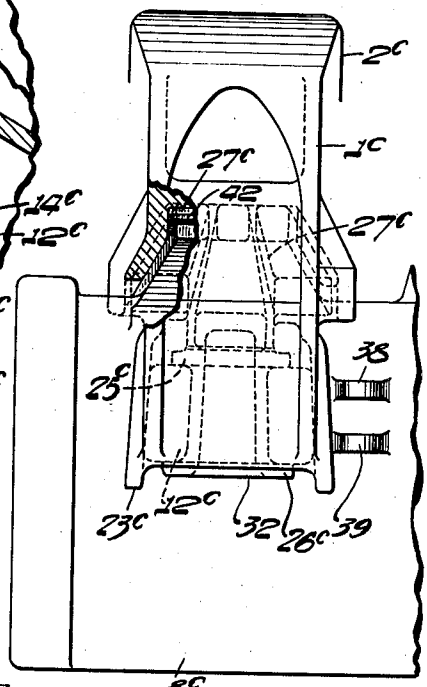


Fig. 8.

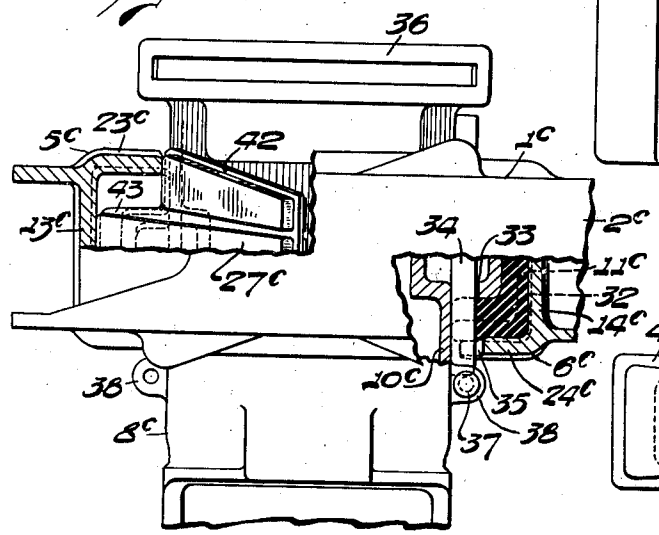


Fig. 9.

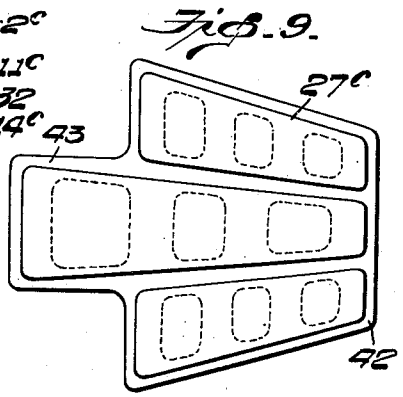
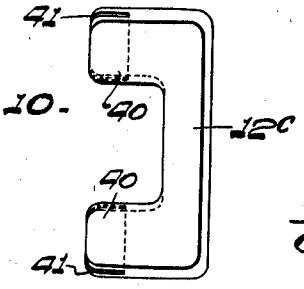


Fig. 10.



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July 16, 1940. D. S. BARROWS 2,207,848

RAILWAY TRUCK

Filed July 18, 1934 3 Sheets-Sheet 3

Fig. 11.

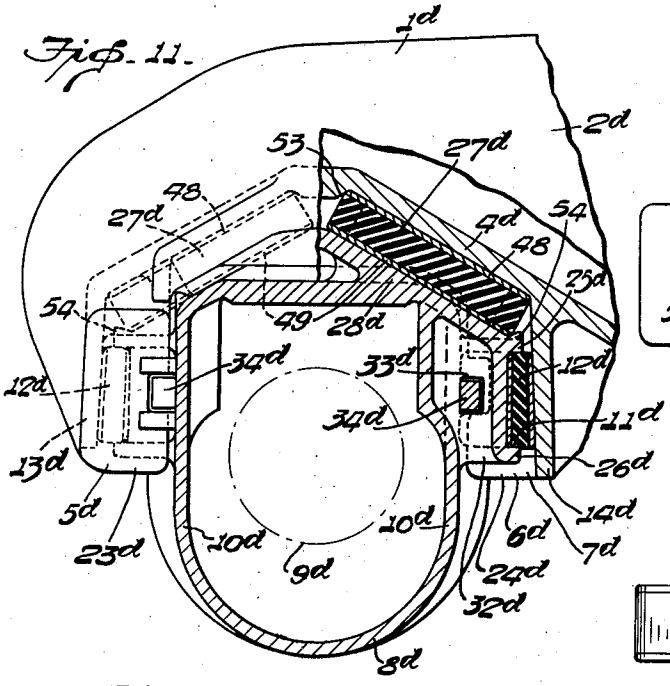


Fig. 13.

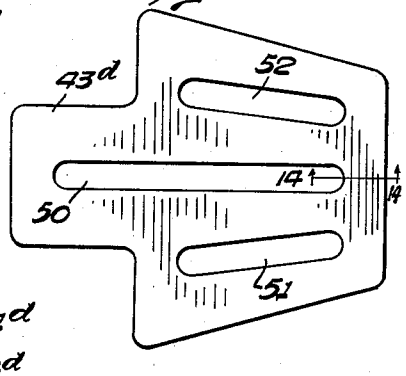


Fig. 14.

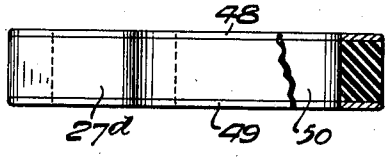


Fig. 12.

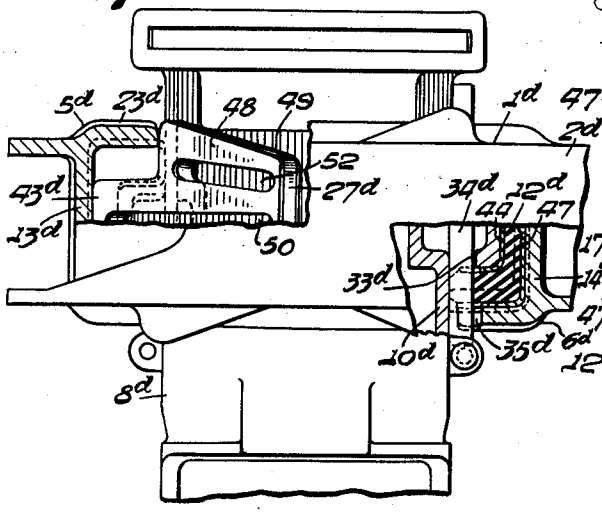


Fig. 15.

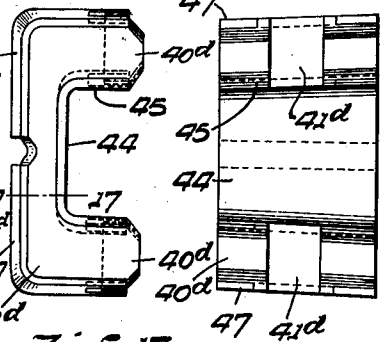
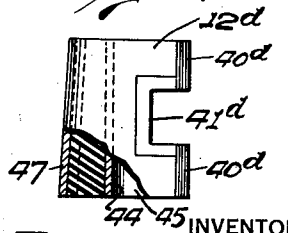


Fig. 16.

Fig. 17.



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UNITED STATES PATENT OFFICE

2,207,848

RAILWAY TRUCK

Donald S. Barrows, Rochester, N. Y., assignor to The Symington-Gould Corporation, Rochester, N. Y., a corporation of Maryland

Application July 18, 1934, Serial No. 735,895

22 Claims. (Cl. 105—224.1)

This invention relates to railway trucks and, more particularly, to such in which the side frames have separable journal boxes with resilient means between said boxes and frames.

The principal object of my invention, generally considered, is the employment of resilient rubber for allowing self-adjustment or equalizing of separable journal boxes with respect to associated frames, and incidentally absorbing minor vibrations and decreasing the force of impacts transmitted to frames through the journal boxes.

Another object of my invention is the employment of resilient rubber between journal boxes and associated frames to allow transverse rocking of the boxes or swinging of the side frame with respect thereto, to allow for torsional displacement of the boxes in horizontal planes, to provide for the absorption of minor vibrations, to decrease side frame impact, and to provide a non-rattling and wearless connection between each box and the associated frame.

A further object of my invention is to provide a resilient rubber medium for transmitting forces between the side frame and associated boxes, said medium involving the combination of compression and shear in inclined pads in such a manner as to keep the shearing component within a safe figure while at the same time avoiding the deadening effect of straight compression on the resilient rubber.

A still further object of my invention is the provision of retaining devices comprising rivets or cotters extending through the journal box side projections and disposed between lug portions on the frame with rubber pads notched to clear the devices.

An additional object of my invention is the provision of a side frame and journal box arrangement allowing for cushioned angular movement between the associated axle and the frame so that both axles and bolster would always remain truly parallel and the same resilient means would act to restore the truck to normal rectangular shape on tangent track.

Other objects and advantages of the invention relating to the particular arrangement and construction of the various parts will become apparent as the description proceeds.

Referring to the drawings illustrating my invention, the scope whereof is defined by the appended claims:

Figure 1 is a vertical longitudinal sectional view through an end portion of a side frame and associated journal box illustrating one embodiment of my invention.

Figure 1ª is a fragmentary sectional view on the line *a—a* of Fig. 1, looking in the direction of the arrows.

Figure 2 is a fragmentary transverse sectional view on the line 2—2 of Figure 1.

Figure 3 is a fragmentary view corresponding to Figure 1, but showing another embodiment of my invention.

Figure 4 is a view corresponding to Figure 3, but showing the parts when a load is applied and the resilient rubber pad distorted.

Figure 5 is a fragmentary view corresponding to Figure 1, but showing a further embodiment of my invention.

Figure 6 is a view corresponding to Figure 1, except that a portion of the frame is shown in elevation rather than in section and an additional embodiment is illustrated.

Figure 7 is a fragmentary end elevational view, partly in section, of the embodiment of Figure 6.

Figure 8 is a fragmentary plan, partly in section, of the embodiment in Figures 6 and 7.

Figure 9 is a detail plan of one of the inclined resilient rubber cushioning elements detached from the truck.

Figure 10 is a plan of one of the side resilient cushioning elements detached from the truck.

Figure 11 is a view corresponding to Figure 6 showing the employment of resilient pads with wear plates vulcanized or otherwise secured thereto.

Figure 12 is a fragmentary plan, partly in section, of the embodiment illustrated in Figure 11.

Figure 13 is a plan of one of the top pads used in the form of my invention illustrated in Figures 11 and 12.

Figure 14 is an elevational view, partly in section, on the line 14—14 of Figure 13.

Figure 15 is a plan of one of the side pads used in the form of my invention illustrated in Figures 11 and 12.

Figure 16 is a side elevational view of the pad shown in Figure 15.

Figure 17 is an end elevational view, partly in section, on the line 17—17 of Figure 15.

Referring now to the drawings in detail, and first considering the embodiment of my invention illustrated in Figures 1 and 2, there is shown an end portion 1 of a jaw type side frame 2, the portions of said side frame not shown being desirably of conventional character comprising a compression member, a tension member, and bolster guide columns spacing said members and leaving a window or bolster opening therebetween. The portion 1 of the frame in the present

embodiment is formed beyond the union of end portions of the compression and tension members and is provided with a downwardly opening pocket 3 defined by a generally horizontal side frame web portion 4, and depending jaw portions 5 and 6. Each jaw portion has one or more pockets 7 (in the present embodiment one) opening toward a corresponding pocket in the other jaw portion.

Mounted between the jaw portions 5 and 6 of the frame end portion 1 and disposed beneath the web portion 4 is a journal box 8, adapted to receive an associated journal 9, diagrammatically illustrated, and the inner contour of which may be of conventional or normal construction for receiving an associated wedge and brass (not shown). Each side wall 10 of the box has an outwardly opening pocket 11 which cooperates with the pocket 7 of the frame in housing the pads or discs of resilient rubber 12 between the side walls of the box and the jaws of said frame. The pockets 7 and 11 may be defined by normally parallel walls or webs 13 and 14 on the frame, and 10—10 on the box, and bordering flange or web portions 17 and 18 on the frame and 19 and 20 on the box. The webs 13 of the frame are, in the present embodiment, provided with disc-positioning lugs or abutment portions 21, and the webs 14 are provided with disc-positioning or abutment portions 22 presenting preferably inclined shoulders 23 and 24 for engaging said resilient rubber pads or discs 12, the inclination of said shoulders serving to increase the bearing areas for said discs when the latter are deformed or stressed upon the application of the load. In the same way, the abutment portions 25 and 26 joining the portions 19 and 20 on the box provide inclined abutment surfaces for the discs 12, said discs, in the present embodiment, being first positioned over the lugs 21 and 22, and the box then inserted in place.

In the embodiment of my invention illustrated in Figure 5, the arrangement is transposed in that the intermediate abutment or lug is on the box rather than on the frame, said box thus having a plurality of inclined abutment portions 26^a and the frame only having one abutment portion 24^a at each side, the pads 12^a being assembled first with respect to the box, and the frame then fitted thereover, as will be understood.

Instead of merely employing the rubber side pads 12 or 12^a in shear, I may use a resilient rubber top pad 27 normally resting on a roof portion 28, the upper surface of which is desirably convex or sloping both ways from the center, as shown most clearly in Figure 2, in order to allow for relative angling of the box with respect to the frame without overstressing the edge portions of the rubber, and received in a downwardly opening pocket 29 in the web portion 4 of the frame. The pad 27 may either be positioned initially in contact with the horizontal surface defining the pocket 29 so as to assist the side shear pads at all times, or may be spaced from said surface, as shown in Figure 1, so as to be contacted by the frame only when the latter has been moved downwardly under load a predetermined amount, as, for example, when it is subjected to full load, so that said pad then acts to take overload forces applied to the frame.

Referring now to the embodiment of my invention illustrated in Figures 3 and 4, a construction is there disclosed in which the end portion 1^b of a side frame 2^b has a downwardly opening pocket 3^b defined by inclined web portions 4^b, and the journal box 8^b received therein has inclined roof portions 28^b provided with diagonally opening pockets 29^b receiving diagonal resilient rubber pads 27^b instead of the normally horizontal resilient rubber pad of the previous embodiment. In the present embodiment, the rubber pads 27^b may be either used to assist the side shear pads, as in the previous embodiment, in which event, they may contact initially with the frame or only after the frame has been loaded to a predetermined extent, or they may act alone without the use of side pads in shear, as the pads 27^b act both in compression and shear, as shown most clearly in Figure 4, which illustrates what happens when the frame is loaded, said pads being distorted by the angularly disposed abutting surfaces on the frame and supported by corresponding angularly disposed abutment surfaces 30 and 31 on the box.

Referring now to the embodiment of my invention illustrated in Figures 6 to 10, inclusive, there is shown an end portion 1^c of a jaw type side frame 2^c, the portions of said frame not shown being desirably of conventional character, or as shown, for example, in my Patent No. 1,652,808, dated December 13, 1927. The end portion 1^c is provided with a downwardly opening pocket or notch defined by inclined web portions 4^c and generally upright but slightly downwardly diverging side portions or jaws 5^c and 6^c. Pockets 7^c are provided beneath the inclined portions 4^c and inwardly of the jaw portions 5^c and 6^c by flange portions 23^c and 24^c extending from web portions 13^c and 14^c.

Mounted between the jaw portions 5^c and 6^c of the frame end portion 1^c, and disposed beneath the inclined web portions 4^c, is a journal box 8^c adapted to receive an associated journal 9^c, diagrammatically illustrated. The interior of said box may be of conventional or normal construction for receiving an associated wedge and brass (not shown). Each side wall 10^c of the box has an outwardly opening pocket 11^c formed on a lateral projection 32, said projection being apertured, as indicated at 33, to receive a retainer or pin 34, the ends of which project through notches 35 in the pocket-defining flanges 23^c and 24^c, the inner end of which is stopped by the dust guard well 36 of the box, said retainer being held in position, in any desired manner, as by means of a locking member or rivet 37 received in apertured flanges 38 and 39 projecting from the walls 10^c of the box.

In the present embodiment, the pockets 7^c of the frame receive and house the projections 32 of the box as well as associated resilient pads 12^c desirably formed of rubber, said pads being desirably U-shaped in plan so that the lateral or angularly disposed portions 40 straddle the box projections 32, notches 41 being desirably provided in the portions 40 for receiving the associated pin or retainer 34. In this way, the box is held in place with respect to the frame for limited yielding movement, either longitudinally or laterally of the frame, sufficient clearance being provided for the retainer 34 to allow the desired amount of movement.

When a load is applied to the frame 2^c, the rubber pads 12^c are not only placed under shear on account of the frictional engagement on the slightly diverging web portions 13^c and 14^c acting on the outer surfaces of said pads, which are retained in position by abutment portions 25^c and 26^c, but said pads are also compressed be-

cause, while the engaging surfaces on the journal box are generally parallel, those on the frame are, as previously stated, slightly diverging downward. The pads 12c, as contradistinguished from the pads of the prevous embodiments, which were shown as preferably of uniform thickness or width, and provided with normally parallel sides, have the outer and inner generally upright surfaces slightly inclined with respect to one another to agree with the relative inclination between the webs 13c and 14c on the frame and the corresponding webs on the box. On account of having the lower portions of the pads 12c generally thicker than the upper portions, provision is made for maintaining a substantially uniform fiber stress in the rubber, the axis of movement of the box with respect to the frame being nearer the upper than the lower portions of said pads.

In addition to merely employing the rubber side pads 12c, or in place of such side pads, I may use resilient rubber top pads 27c disposed between the inclined web portions 4c of the frame and inclined roof portions 28c of the box. In the present embodiment, the rubber pads 27c are attached to and project from opposite sides of a reinforcing metal portion or grid 42, and may be of uniform thickness, as illustrated, or tapered to an increasing thickness near the bottom edges like the pads 12c for a similar reason. If tapered, the space between the inclined roof portions 28c of the box and the inclined web portions 4c of the frame is desirably tapered to correspond. In the present embodiment, the pads 27c have central tongues 43 which project laterally beyond the main portions of the pads over the lateral projections 32 on the box 8c. The sloping pads 27c may be used to either assist the side pads 12c, as in the previous embodiment, in which event, they may contact initially with the frame, or only after the frame has been loaded to a predetermined extent, or they may act alone without the use of the side pads. As they are stressed both in compression and shear, as shown most clearly in Figure 6, the action on said pads when under stress is similar to that on the pads 27b, as shown in Figure 4.

Referring now to the embodiment of my invention illustrated in Figures 11 to 17, inclusive, there is shown an end portion 1d of a jaw type side frame 2d, the portions of said frame not shown being desirably of conventional character like the embodiment of Figures 6, 7 and 8. The end portion 1d is provided with a downwardly opening pocket or notch defined by desirably inclined web portions 4d and generally upright side portions or jaws 5d and 6d. Pockets are provided beneath the inclined portions 4d and in the jaw portions 5d and 6d by flanges 23d and 24d extending from web portions 13d and 14d, which web portions are generally upright but desirably diverge slightly in a downward direction.

Mounted between the jaw portions 5d and 6d of the frame end portion 1d, and disposed beneath the inclined web portions 4d, is a journal box 8d adapted to receive an associated journal 9d, diagrammatically illustrated. The interior of said box may be of conventional or normal construction for receiving an associated wedge or brass, not shown, as in the embodiment of Figures 6 to 10, inclusive. Each side wall 10d of the box desirably has an outwardly opening pocket 11d formed on a lateral projection 32d, said projection being desirably apertured, as indicated at 33d, to receive a retainer or pin 34d, the ends of which project through notches 35d in the pocket-defining flanges 23d and 24d, as in the previous embodiment.

In the present embodiment, the pockets 7d of the frame receive and house the projections 32d of the box as well as associated resilient pads 12d, desirably formed of rubber. Each pad is desirably U- or channel-shaped in plan and provided with a U- or channel-shaped inner wear plate 44, formed of steel or other metal, which plate is vulcanized or otherwise secured to the inner side surface of the pad 12d, and has flange portions 45 which overlie and protect the inner or adjacent surfaces of the side or angularly disposed portions 40d. Wear plates 47 are desirably secured to the outer side surfaces of the pads 12d, said plates 47 being angular or angle-shaped so that one protects each outside corner of the pad, the adjacent ends of said plates being spaced and the rubber notched therebetween in order to allow for compression. The steel or metal plates 44 and 47 are desirably notched to correspond with the notching of the rubber, as indicated at 41d for receiving the associated pin or retainer 34d. By the use of these pads 12d, with the associated wear plates, not only is the box held in place with respect to the frame for yielding limited movement, either longitudinally or laterally, but the whole mass of rubber is used more efficiently, because the abutment surfaces by engaging the wear plates, carry the forces into the entire mass of rubber, rather than merely into the abutment engaged edges thereof.

When a load is applied to the frame 2d the rubber pads 12d are not only placed under shear on account of the frictional engagement on the slightly diverging web portions 13d and 14d acting on the outer surfaces of the metal wear plates 47 of the pads, which pads are retained in position by abutment portions 25d and 26d, but said pads are also compressed because while the engaging surfaces of the journal box are generally parallel, those on the frame are, as previously stated, slightly diverging downwardly. The pads 12d, like those of the previous embodiment, desirably have outer and inner generally upright surfaces slightly inclined with respect to one another to agree with the relative inclination between the webs 13d and 14d on the frame and the corresponding webs on the box, as in the preceding embodiment.

In addition to merely employing rubber side pads 12d, or in place of such pads, I may use resilient rubber top pads 27d disposed between the inclined web portions 4d of the frame of the inclined roof portions 28d of the box. In the present embodiment, the rubber pads 27d have upper and lower wear plates 48 and 49, vulcanized or otherwise secured to the corresponding surfaces of the rubber, said plates and the rubber therebetween being desirably provided with registering longitudinal slots 50, 51 and 52, the side slots 51 and 52 desirably slightly diverging as they extend from the normally adjacent end portions of the pads so as to lie approximately midway between the central slot 50 and the diverging edges of said pads. The pads 27d may be of uniform thickness, as illustrated, or tapered to an increasing thickness near the bottom edges like the pads 12d, for a similar reason. If tapered, the space between the inclined roof portions 28d of the box and the inclined web portions 4d of the frame is desirably tapered to correspond.

In the present embodiment, the pads 27d have

central tongues 43d which project laterally between the main portions of the pads over the lateral projections 32d on the box 8d. The sloping pads 27d may be used to either assist the side pads 12d as in the previous embodiment, in which event, they may contact initially with the frame or only after the frame has been loaded to a predetermined extent, or they may act alone without the use of the side pads, as they are stressed both in compression and shear. On account of the wear plates 48 and 49 which are desirably applied both at the top and bottom of the pads 27d, although it will be understood certain of the advantages may be secured by application to only one side of each pad, the forces from the frame are transmitted through the webs 4d and abutment portions 53 through the entire mass of rubber therebetween to the underlying top surface of the roof portion 28d and the lower abutment lugs 54 at the outer edges thereof. The slots 50, 51 and 52 allow for the lateral expansion of the rubber upon it being compressed between the frame and box.

From the foregoing disclosure, taken in connection with the accompanying drawings, it will be seen that I have provided a side frame and separable journal box construction employing resilient pads, either horizontal or inclined, of uniform thickness, or tapered between the tops of the boxes and the adjacent portions of the frame immediately thereabove, whereby transverse rocking of the box or swinging of the side frame with respect to the box is provided for, as well as torsional displacement of each box with respect to the frame in a horizontal plane, or a combination of such movements, said resilient pads also providing for the absorption of minor vibrations and the decrease of the shocks transmitted from the wheels and axles through the journal boxes, providing a non-rattling and wearless connection between the boxes and frame. Such rubber pads above the boxes may be supplemented or replaced by pads which primarily take shear and are disposed between the sides of the boxes and the jaw portions of the associated frame, said side pads being either of uniform thickness or tapered, as desired, and having angular portions which may embrace portions of the box to thereby cushion shocks and allow for restrained movement of the box with respect to the frame in lateral as well as longitudinal planes, the rubber of the pads being preferably subjected to a combination of shear and compression, with the shearing component kept within a safe figure and at the same time avoiding the deadening effect of straight compression on the rubber.

It will be further seen that I have provided for positively retaining the boxes from separation from the ends of the frame with which associated by a retaining device intersecting overlapping portions of the box and frame and held in position by a locking device such as a rivet or cotter extending through journal box side projections, the rubber side pads, if then used, being notched to clear said retaining devices.

Although preferred embodiments of my invention have been illustrated, it will be understood that modifications may be made within the spirit and scope of the appended claims.

I claim:

1. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws, each jaw having a pocket opening toward the other, a journal box disposed between said jaws and having pockets opening toward said jaw pockets, and a pad of resilient rubber disposed between each jaw and the adjacent wall of said box and received in said pockets, portions of said jaws above said pads and portions of said box below said pads forming abutments to place said pads in shear for transmitting force from the frame to said box.

2. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws spaced longitudinally of said frame, each jaw having a pocket opening toward the other, a journal box disposed between said jaws and having pockets opening toward said jaw pockets, and a pad of resilient rubber disposed between each jaw and the adjacent wall of said box and received in said pockets, portions of said jaws above said pads and portions of said box below said pads having abutments comprising inclined shoulders to place said pads in shear for transmitting force from the frame to said box, the inclination of said shoulders causing the abutment areas to increase as the pads are stressed.

3. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws, each jaw having a pocket opening toward the other, a journal box disposed between said jaws and having pockets opening toward said jaw pockets, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box and received in said pockets, portions of said jaws above said pads and portions of said box below said pads forming abutments to place said pads in shear for transmitting force from the frame to said box, and another pad of resilient rubber disposed on top of said box and below an overlying portion of said frame.

4. In a railway truck in combination with a side frame having a downwardly opening pocket defined by jaws spaced longitudinally of said frame, each jaw having a pocket opening toward the other, a journal box disposed between said jaws and having pockets opening toward said jaw pockets, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box and received in said pockets, portions of said jaws above said pads, and portions of said pockets below said pads forming abutments to place said pads in shear for transmitting force from the frame to said box, and a pad of resilient rubber resting on the top of said box with its upper portion fitting in a downwardly opening pocket in said frame, the upper wall of said last-mentioned frame pocket engaging said pad only when the first-mentioned resilient rubber pads are subjected to a predetermined amount of shear.

5. In a railway truck in combination with a side frame having a downwardly opening pocket defined by jaws, a journal box disposed between said jaws, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, portions of said jaws above said pads and portions of said box below said pads forming abutments to place said pads in shear for transmitting force from the frame to said box, the roof of said box being inclined downwardly from approximately the central portion thereof, and the portion of said frame thereabove being correspondingly inclined, and resilient rubber pads disposed between said inclined portions of said box roof and frame for assisting said side pads in transmitting force to said box.

6. In a railway truck, in combination with a side frame notched at an end, a journal box dis-

posed in said notch, resilient pads between the sides of said box and the adjacent portions of the frame, and abutment portions on said frame and abutment portions on said box respectively disposed above and below said pads, so that they act under shear to transmit vertical forces therebetween.

7. In a railway truck, in combination with a side frame having a downwardly opening pocket, a journal box disposed in said pocket, the upper surface of said box sloping both ways from a central portion, the surface of the frame thereabove being normally horizontal, and a pad of resilient rubber of uniform thickness disposed between said surfaces.

8. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws, a journal box disposed between said jaws, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, portions of said jaws above said pads and portions of said pockets below said pads forming abutments to place said pads in shear for transmitting force from the frame to said box, the roof of said box being inclined downwardly from approximately the central portion thereof and a portion of said frame thereabove sloping at a different inclination, and resilient rubber pads disposed between said inclined portions of said box roof and frame for assisting said side pads in transmitting force to said box, said pads being tapered to correspond with the tapering of the space between said frame and box.

9. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws, a journal box disposed between said jaws, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, each pad being tapered downwardly to an increased thickness and the spaces between the frame and box being correspondingly tapered, the roof of said box being inclined downwardly from approximately the central portion thereof and the portion of the frame thereabove being correspondingly inclined, and resilient rubber pads disposed between said inclined portions of said box roof and frame for assisting said side pads.

10. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by jaws, a journal box disposed between said jaws, a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, each pad being U-shaped in plan and embracing a lateral extension at the side of the box, flanges on said frame embracing said extensions and pads, and means for positively holding said box assembled with said frame comprising retainers intersecting said extensions, flanges and pads.

11. A resilient rubber pad U-shaped in plan and provided with metal wear plates, one secured to its inner and two to its outer side surfaces, said outer wear plates being angular for protecting the outer corners and spaced from one another to allow for greater flexibility, and the inner wear plate being U-shaped for protecting the arms and connecting portion of the pad.

12. A resilient rubber pad provided with metal wear plates secured to opposite surfaces, said pad and wear plates having registering slots therethrough and extending longitudinally thereof to provide clearance spaces for the rubber to be squeezed into.

13. In a railway truck, in combination with a side frame having a downwardly opening pocket, a journal box received in said pocket, said journal box having a lateral extension embraced between flanges on said frame defining said pocket, a resilient pad with portions disposed between said extension and flanges, and means for positively holding said box assembled with said frame comprising a retainer intersecting said extension, said pad, and said flanges.

14. In a railway truck, in combination with a side frame having depending jaws adjacent an end thereof, a journal box disposed between said jaws, and a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, portions of said jaws above said pads, and portions of said box below said pads, forming abutments to place said pads in shear for transmitting force from the frame to the box.

15. In a railway truck, in combination with a side frame having depending jaws spaced longitudinally thereof, a journal box disposed between said jaws, and a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, portions of said jaws above said pads, and portions of said box below said pads, having inclined shoulders forming abutments to place said pads in shear for transmitting force from the frame to said box.

16. In a railway truck, in combination with a side frame having depending jaws, a journal box disposed between said jaws, and a pad of resilient rubber disposed between each jaw and the adjacent wall of said box, portions of said jaws above said pads, and portions of said box below said pads, forming abutments to place said pads in shear for transmitting force from the frame to said box, and another pad of resilient rubber disposed on top of said box and below an overlying portion of said frame.

17. In a railway truck, in combination with a side frame having depending jaws, a journal box mounted between said jaws, the roof of said box being inclined downwardly, from an intermediate portion thereof, toward the sides, and the portions of said frame thereabove sloping longitudinally at inclinations different from those of the box roof, and resilient rubber pads disposed between said inclined portions of said box roof and frame, said pads being tapered to correspond with the tapering of the space between said frame and box.

18. In a railway truck, in combination with a side frame having a downwardly opening pocket, the upper part of which is defined by an inclined wall portion, the lower part by depending jaws, a journal box disposed in said pocket with clearance between the sides thereof and said jaws, a pad of resilient rubber disposed between the upper surface of said box and the inclined wall portion of said frame thereabove, and a metal wear plate secured to at least one of the surfaces of the rubber pad, adjacent said box and frame, the surface engaged by the side of said wear plate opposite to that secured to the pad terminating in a shoulder normally engaged by said plate for limiting movement therebetween.

19. A resilient rubber pad U-shaped in plan and provided with metal wear plates, one secured to its inner and two to its outer side surfaces, said outer wear plates being angular for protecting the outer corners of said pad and being spaced from one another to allow for greater flexibility, and the inner wear plates being U-shaped for protecting the arms and connecting portion of the pad, said arms and the associated wear plates

having corresponding rectangular notches bifurcating their end portions for receiving a retaining device.

20. In a railway truck, in combination with a side frame having a downwardly opening pocket defined by downwardly diverging walls terminating in depending jaws, a journal box received between said jaws and having a roof portion defined by downwardly diverging webs, and pads of resilient rubber disposed between said downwardly diverging frame walls and downwardly diverging box webs, and between the inner surfaces of said jaws and side portions of said box, for transmitting force from the frame to said box.

21. In a railway truck, in combination with a side frame having a downwardly opening pocket, the upper part of which is defined by an inclined wall portion, and the lower part by depending jaws, a journal box disposed in said pocket with clearance between the sides thereof and said jaws, a pad of resilient rubber disposed between the upper surface of said box and the inclined wall portion of said frame, a metal wear plate secured to at least one of the surfaces of the rubber adjacent said box and frame, and resilient rubber in the clearance space between the sides of said box and said depending jaws.

22. In a railway truck, in combination with a side frame having longitudinally spaced depending jaws, a journal box mounted between said jaws, the upper surface of said box being spaced from the surface of the frame thereabove, said frame surface being formed with a downwardly opening pocket defined by a normally horizontal flat surface, said box having a roof the upper surface of which, beneath said pocket, slopes from the center to a pair of opposite side edges and a pad of resilient rubber of uniform thickness disposed in said pocket between said surfaces, with its side edges normally spaced from said jaws.

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