

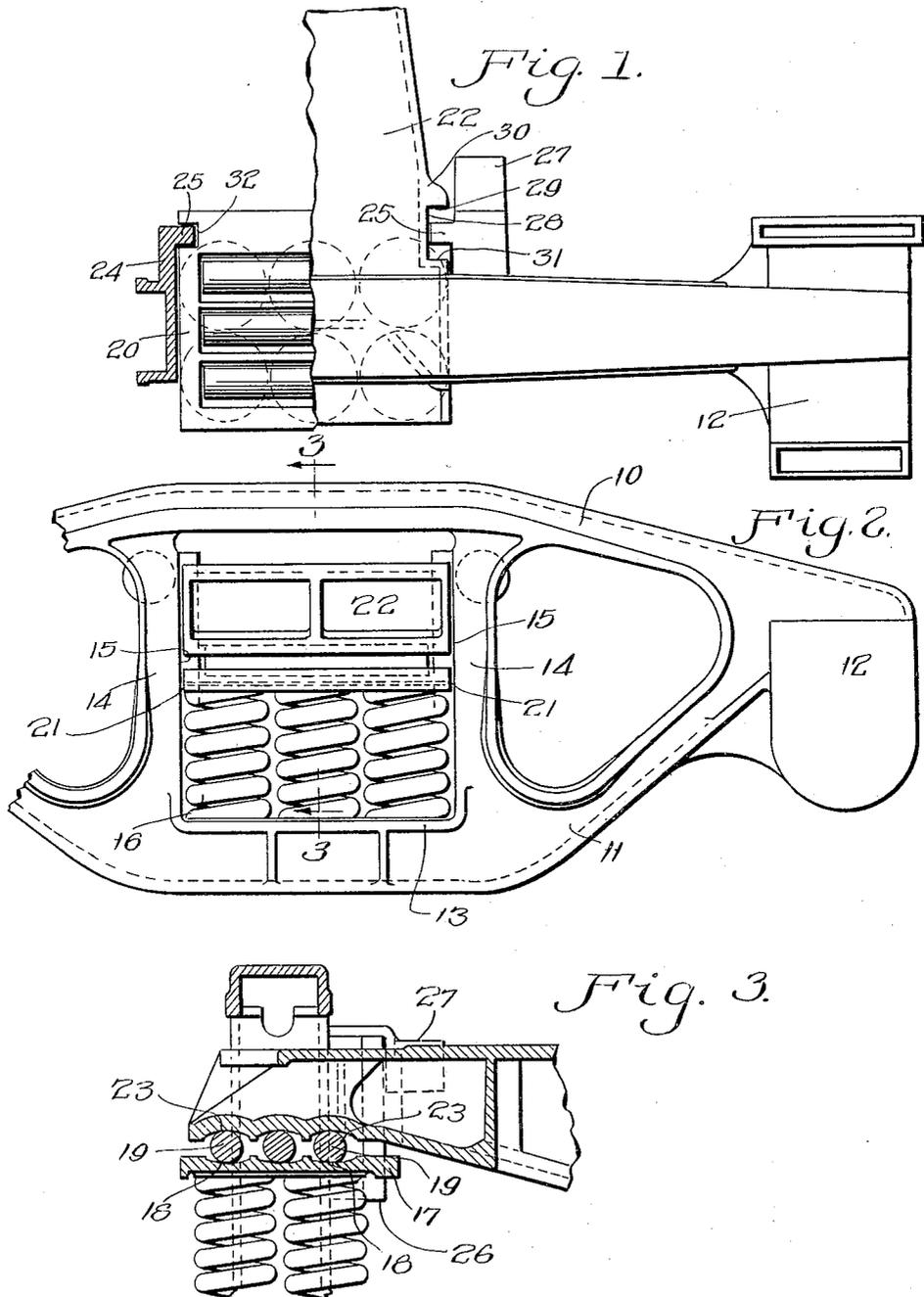
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RAILWAY TRUCK

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RAILWAY TRUCK

Original application filed June 10, 1926, Serial No. 114,987, now Patent No. 1,787,772, dated January 6,
1931. Divided and this application filed May 9, 1929. Serial No. 361,605.

This invention relates to railway trucks and is a division of my application, Ser. No. 114,987, filed June 10, 1926, issued January 6, 1931, as Patent No. 1,787,772.

An object of the invention is to provide improvements in so-called "lateral motion" trucks, consisting, broadly, in so arranging the columns of the side frames that the guide faces thereof will be spaced apart equally throughout their extent to provide space for a lengthening spring group and a full width bolster, together with guide elements for the bolster arranged in offset relation with respect to the side frames and out of line of the movement of the individual springs of the spring group.

Another object of the invention is to provide a lateral motion truck having guide means which not only maintain the bolster within the desired limits of movement but also serve to provide retaining guides for the roller seat during the necessary movements of the latter.

Other and further objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawing, Figure 1 is a fragmentary, composite, horizontal, sectional and top plan view of one side of a truck embodying my improvements. Figure 2 is a fragmentary, side elevational view of one side of said truck. And Figure 3 is a fragmentary, vertical, sectional view of the invention corresponding substantially to line 3-3 of Figure 2.

As shown in the drawing, only one side frame and the parts associated therewith are shown, but it will be understood that the opposite side of the truck is of a similar type. The side frames in the truck contemplated by my invention each comprises a compression member 10, a tension member 11, journal boxes 12, and a spring seat 13, all preferably integrally formed. The guide columns of the side frame are indicated at 14-14, being preferably channel-shaped in cross-section and preferably formed integrally with the remainder of the truck. The guide columns 14-14 have their bolster guide faces 15-15 disposed parallel

throughout their full lengths, as best shown in Figure 2 and the distance between said guide faces corresponds with the length of the spring seat 13. Disposed upon the spring seat 13 and occupying the full space between the guide faces 15-15 of the guide columns are the coil springs 16, preferably in a group of six, with the end springs disposed close to the guide faces 15-15 of the columns, the required movement of the springs, of course, being permitted by the parallel spacing of the guide faces 15-15 which are unobstructed throughout their extents.

Bearing upon the springs 16 is a roller seat 17 formed for the reception of the upper ends of the springs and having on its upper surface a plurality of roller seats 18-18 adapted to accommodate a series of cylindrical rollers 19-19, which are maintained in position in the roller seat member by side flanges indicated at 20. The edges 21-21 of the roller seat bear upon the guide faces 15-15 of the columns during certain movement of the parts.

A bolster 22 is provided, which is of a width at each end adapted to slidably fit between the guide faces 15-15 of the guide columns, the under-surface of the end of the bolster being provided with depressed roller seats 23-23 adapted to accommodate and bear upon the rollers 19-19, as best shown in Figure 3.

In order to restrict the movement of the bolster with reference to the side frames of the truck, laterally offset guides are provided, each comprising a laterally extended web 24 terminating at its inner extremity in an angularly disposed flange 25, one of the guide flanges being disposed adjacent each side of the bolster receiving opening in the side frame. Each guide extends from a point adjacent the under-surface of the compression member downwardly to a point below the upper ends of the spring coils 16, as indicated at 26, when said coils are in normal position. The guide flanges 25-25 are out of line and to one side of the springs so that they do not interfere with the normal movement of the latter and are so dis-

posed with reference to each other and to the guide surfaces 15 of the guide columns as to provide less space between their inner surfaces than that which is afforded between the guide faces 15—15, and are arranged at a point where there is no interference with the utilization of the full extent of the bolster receiving opening in the side frame for accommodating the springs, roller seat and bolster. The guides at their upper ends may merge with the brake hanger brackets 27 and by reason of the fact that the guides extend inwardly of the guide faces of the columns, there is no necessity for spacing the hanger brackets more widely apart than in ordinary practice, thus providing an important advantage in that there is no interference with the required movement of the brake hangers.

The bolster 22 is provided with a recess 28 in each of its side faces, each recess being defined by an end wall 29 provided by the lug 30 and by a wall 31 spaced from the wall 29 a distance to permit the required movement of the bolster longitudinally of itself, the walls 29 and 31 forming abutments to limit movement of said bolster. Due to the fact that the guide means are positioned inwardly of the side frame, the bolster is restricted in width only at the point of engagement with the guide means, and presents its full width between the guide faces 15—15 to enable the side faces of the bolster to cooperate with the guide faces 15—15 in a normal manner. The abutment walls 29 and 31 restrict longitudinal movement of the bolster in both directions, as will be appreciated.

The roller seat 17 is of such width as to extend beyond the faces 15—15 of the guide columns, and beyond the guide flanges 25—25 and is provided with notches indicated at 32, each of which is adapted to slidably receive one of the guide flanges 25, these notches providing abutments which prevent movement of the roller seat transversely of the side frame, while permitting the required vertical movement incident to operation of the springs. Due to the offset relation of the guide flanges, while they maintain the desired position of the parts, they offer no interference with the desired length of the roller seat which will permit rubbing engagement of the ends thereof with the guide faces 15—15, and are out of the way of the required movement of the springs.

During operation, the side faces of the bolster and of the roller seat bear generally upon the guide faces 15—15 while these members are held within the required limits of movement by the guide ribs, at the same time being offset with respect to the side frame in such manner as to prevent interference with the movement of the springs and also afford opportunity for utilization of

a large spring group and a full width bolster.

In assembling the truck, the end of the bolster is inserted in the window opening of the side frame before the springs are in position and the flanges 25—25 engaged with the guides in the side of the bolster, the bolster then being elevated to its proper position. The roller seat is then placed in position with the notches 32 accommodating the guide ribs 25, with the rollers 19 between the end of the bolster and the spring seat. The spring plank (not shown) is then placed in position and the springs finally arranged within the space between the guide columns in position to support the roller seat and bolster.

While I have herein shown and described what I now consider the preferred manner of carrying out my invention, the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a construction of the character described, the combination with a side frame having guide columns and a spring seat; a bolster extending between said columns; springs arranged on said spring seat; a roller seat and rollers interposed between said bolster and springs; and guide means having oppositely disposed guide faces arranged at one side of said guide columns for limiting movement of the bolster and spring seat.

2. In a construction of the character described, the combination with a side frame having a window opening therein; a bolster having its end projecting into said window opening; springs arranged within said opening; rollers and a roller seat interposed between said bolster and said springs; and guide means common to said bolster and roller seat for maintaining the same within desired limits of movement in opposite directions, said guide means being disposed out of line with the movement of said springs and confined to one side of said side frame.

3. In a structure of the character described, the combination with a side frame provided with guide columns having a spring seat and guide columns spaced apart a distance corresponding to the length of the seat and having guide faces disposed substantially parallel throughout their extents; a spring group disposed upon said spring seat; a bolster having one end projecting between said guide columns and having side faces adapted to engage the guide faces of said columns; a roller seat and lateral motion rollers interposed between said springs and said bolster; and limiting means arranged in offset position at one side of said side frame and cooperating to restrict move-

ment of the bolster and roller seat in opposite directions.

4. In a structure of the character described, the combination with a side frame including guide columns and a spring seat; springs disposed on said seat; a bolster having an end portion disposed between said guide columns and adapted to cooperate therewith, said bolster being provided with abutments confined to one side of said guide columns, and said side frame provided with elements confined to one side of said side frame and cooperating with said abutments, said elements and abutments being spaced with reference to each other to afford limited movement of said bolster longitudinally of itself; and lateral motion rollers interposed between said bolster and said springs.

5. In a structure of the character described, the combination with a side frame including guide columns and a spring seat; springs disposed on said seat; a bolster having an end portion disposed between said guide columns and adapted to cooperate therewith, said bolster being provided with abutments at one side of said guide columns, and said side frame provided with elements cooperating with said abutments to limit movement of said bolster longitudinally of itself; and a roller seat and rollers interposed between said bolster and said springs, said roller seat being adapted to cooperate with the guide faces of said columns and having means engaging the limiting abutments on said side frame.

6. In a structure of the character described, the combination with a side frame having guide columns and a spring seat, the guide columns having guide faces substantially parallel throughout their height and disposed apart a distance corresponding substantially to the length of the spring seat; a plurality of spring units placed upon said spring seat and the outer units of the group thus formed being disposed closely adjacent the guide faces of said guide columns; a bolster having an end portion projecting between said guide elements and of a width to slidably engage the guide faces of said column; a roller seat and lateral motion rollers interposed between said bolster and said springs; and laterally offset guide means having flanges projecting inwardly beyond the guide faces of said guide columns and inwardly toward each other, said flanges being accommodated in recesses in said roller seat and said bolster to provide inter-engaging abutments for restricting the movement of the roller seat and bolster.

7. In a structure of the character described, the combination with a side frame having guide columns and a spring seat, the guide columns having guide faces substantially parallel throughout their height and disposed apart a distance corresponding

substantially to the length of the spring seat; a plurality of spring units placed upon said spring seat and the outer units of the group thus formed being disposed closely adjacent the guide faces of said guide columns; a bolster having an end portion projecting between said guide columns and of a width to slidably engage the guide faces of said column; a roller seat and lateral motion rollers interposed between said bolster and said springs; laterally offset guide means having flanges projecting inwardly beyond the guide faces of said columns and inwardly toward each other, said flanges being accommodated in recesses in said roller seat and said bolster to provide interengaging abutments for restricting the movement of the roller seat and bolster; and brake hanger brackets arranged substantially in line with the guide faces of said guide columns at one side of said side frame.

8. In a truck, the combination with an integrally formed side frame provided with guide columns and a spring seat; of a spring cluster associated with said seat; a bolster having an end portion of full width to engage the guide surfaces of said guide columns; means arranged at one side of said truck and laterally offset with respect to said spring cluster, said means operating to limit endwise movement of said bolster in opposite directions; and lateral motion rollers interposed between said bolster and said spring cluster.

9. In a truck of the character described, the combination with a side frame having guide columns and a flat spring seat; a spring cluster associated with said spring seat; a bolster removably engaging the guide surfaces of said guide columns and extending beyond the outer faces thereof and bearing upon said spring cluster; guide means associated with said guide columns for limiting the endwise movement of said bolster, said means being arranged so that the distance between the same is less than the distance between the guide surfaces of said guide columns, said means being formed integrally with said guide columns and laterally spaced therefrom; a roller seat and rollers interposed between said spring cluster and said bolster, said roller seat being provided with elements engageable with said guide means for maintaining the roller seat in operative position.

10. In a truck, the combination with integrally formed side frames provided with guide columns and spring seats; of spring clusters associated with said seats; a bolster having end portions of full width to engage the guide surfaces of said guide columns and bearing upon said spring clusters; a spring plank detachably connecting said side frames; guide means arranged at one side of the spring cluster of each side

frame for limiting endwise movement of said bolster in both directions and serving to effect a connection between said side frame independently of said spring plank; a roller seat and lateral motion rollers interposed between said spring clusters and the adjacent ends of the bolster, said roller seats each engaging the guide means of the related side frame and being held in operative position by said guide means.

11. In a railway truck, the combination with side frames having substantially flat spring seats of a length to accommodate the bolster springs; guide columns spaced apart a distance corresponding to the length of the spring seat and extending substantially parallel for the full height thereof; a spring cluster occupying each spring seat of one of the side frames; a bolster of full width disposed between said guide columns and engaging the guide faces thereof; guide means integrally formed with each side frame for limiting endwise movement of said bolster, said means being arranged transversely to one side of each side frame and clear of the bolster springs; a roller seat and lateral motion rollers interposed between the opposite ends of said bolsters and the spring clusters associated with each side frame, said roller seat having means engageable with said guide means for maintaining the roller seats in operative position with reference to the side frames.

12. In a truck side frame having integrally formed guide columns and a spring seat, a spring cluster comprising a plurality of spring units including more than one arranged transversely with reference to said spring seat; a bolster adapted to bear upon said spring units; integral guide means spaced transversely to one side of said side frame and clear of said spring units and co-operating with said bolster to limit the endwise movement thereof in opposite directions, said means being arranged adjacent the upper portions of the columns and terminating short of the lower portions thereof to permit insertion and removal of said bolster; a roller seat having roller contours and carrying lateral motion rollers interposed between the spring units and the bolster, said roller seat being provided with means engageable with the integral guide means upon the columns to maintain the roller seat in operative position.

13. In a truck of the character described, the combination with side frames each including guide columns and a spring seat, a spring cluster occupying the spring seat of each frame, each spring cluster comprising at least two longitudinally extending rows of spring units arranged upon opposite sides of the longitudinal center line of the frame; a bolster of a width to provide guide faces engageable with the guide faces of said

guide columns; means arranged at one side of the side frame and laterally offset with respect to the spring cluster for providing a limited endwise range of movement for the bolster, a roller seat having contours for three rollers said means engaging the roller seat for holding it against lateral movement but permitting vertical movement; and three rollers interposed between said seat and said bolster, the outer and inner of said rollers being disposed substantially vertically in line with the outer and inner rows of said springs and the central roller being disposed substantially vertically in line with the longitudinal center of each side frame.

14. In a lateral motion truck a side frame having guide columns and a plurality of spring units, of a bolster, lateral motion rollers interposed between said bolster and spring cluster, and means for guiding said bolster and limiting longitudinal movement thereof, said guiding means being arranged in offset position with respect to said frame.

15. In a structure of the class described, the combination of a side frame having guide columns and a spring seat, a bolster extending between said guide columns, springs on said spring seat, a roller seat and rollers interposed between said bolster and springs, and guide means laterally offset with respect to said frame for holding the roller seat against lateral movement, said guide means engaging with the bolster and limiting the endwise movement of the bolster.

16. In a truck side frame having integral formed guide columns and a spring seat, a bolster positioned between said guide columns for vertical movement and adapted to have lateral movement with respect to said side frame, brake hanger brackets positioned on said side frame at one side thereof, guide means integral with the brake hanger brackets permitting the vertical movement of the bolster and limiting the lateral movement thereof, springs on said spring seat and a roller seat and rollers interposed between said springs and said bolster, said roller seat being held by said guide means on said brackets against lateral movement.

17. In a truck of the character described, the combination of side frames, each including guide columns and a spring seat, a spring cluster occupying the spring seat of each frame, a bolster of a width to provide guide faces engageable with the guide faces of said guide columns, means arranged at one side of said frame and laterally offset with respect to the spring cluster for providing a limited endwise range of movement for the bolster, a roller seat having contours for a plurality of rollers, said means engaging the roller seat for holding it against lateral movement but permitting vertical

movement, and a plurality of rollers interposed between said seat and said bolster.

18. In a truck of the character described, the combination of side frames, each including guide columns and a spring seat, a spring cluster occupying the spring seat of each frame, a bolster of a width to provide guide faces engageable with the guide faces of said guide columns, means arranged at one side of the side frame and laterally offset with respect to the spring cluster for providing a limited endwise range of movement for the bolster, a roller seat having contours for three rollers, said means engaging the roller seat for holding it against lateral movement but permitting vertical movement, and three rollers interposed between said seat and said bolster, the central roller being disposed substantially vertically in line with the longitudinal center of each side frame and between the remaining rollers.

In witness that I claim the foregoing I have hereunto subscribed my name this 4th day of May 1929.

CLAUS J. W. CLASEN.