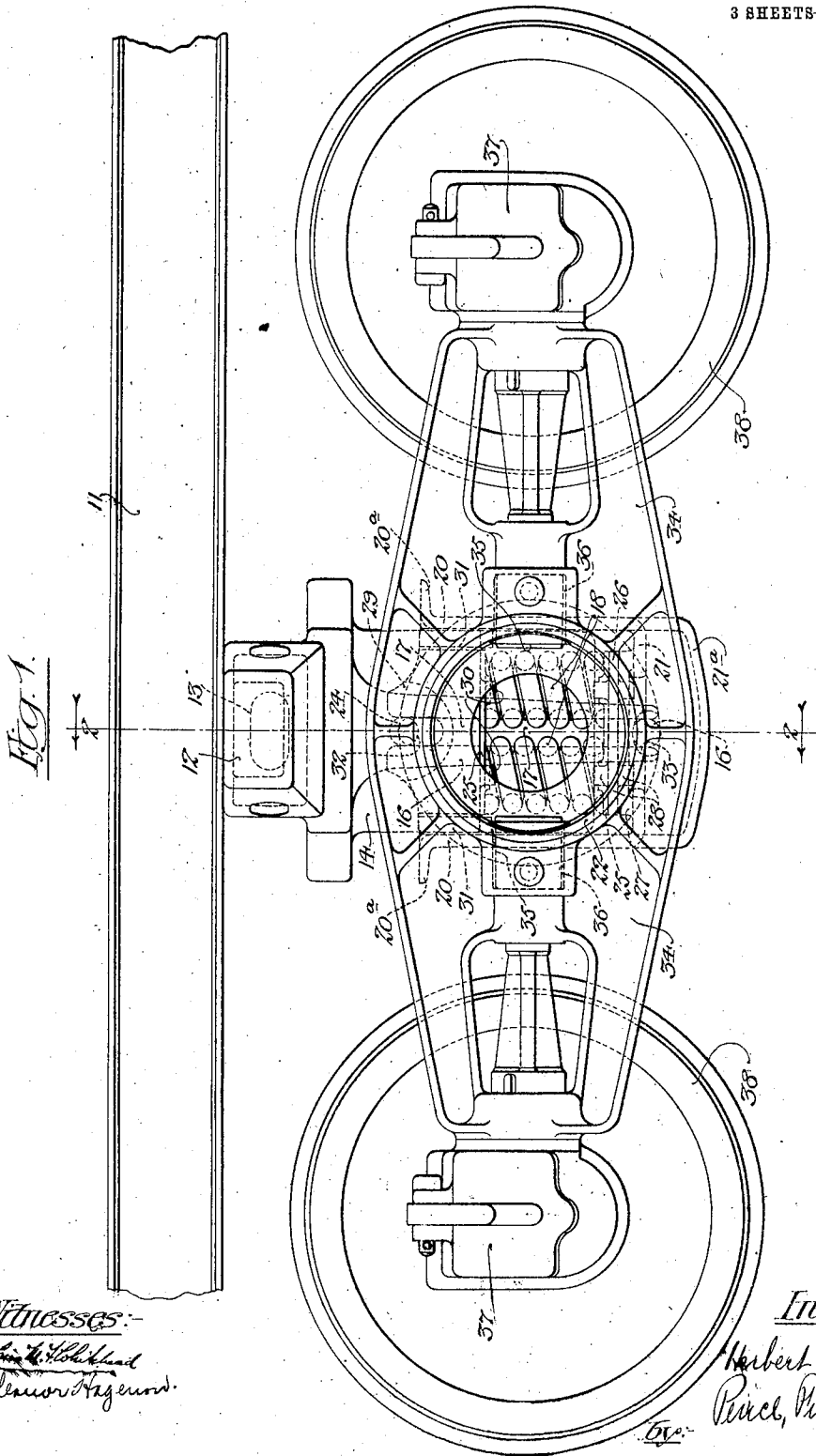


H. H. HEWITT.
RAILWAY CAR.
APPLICATION FILED NOV. 21, 1912.

1,058,430.

Patented Apr. 8, 1913.

3 SHEETS—SHEET 1.



Witnesses:
John H. Holbrook
Eleanor H. Hewitt

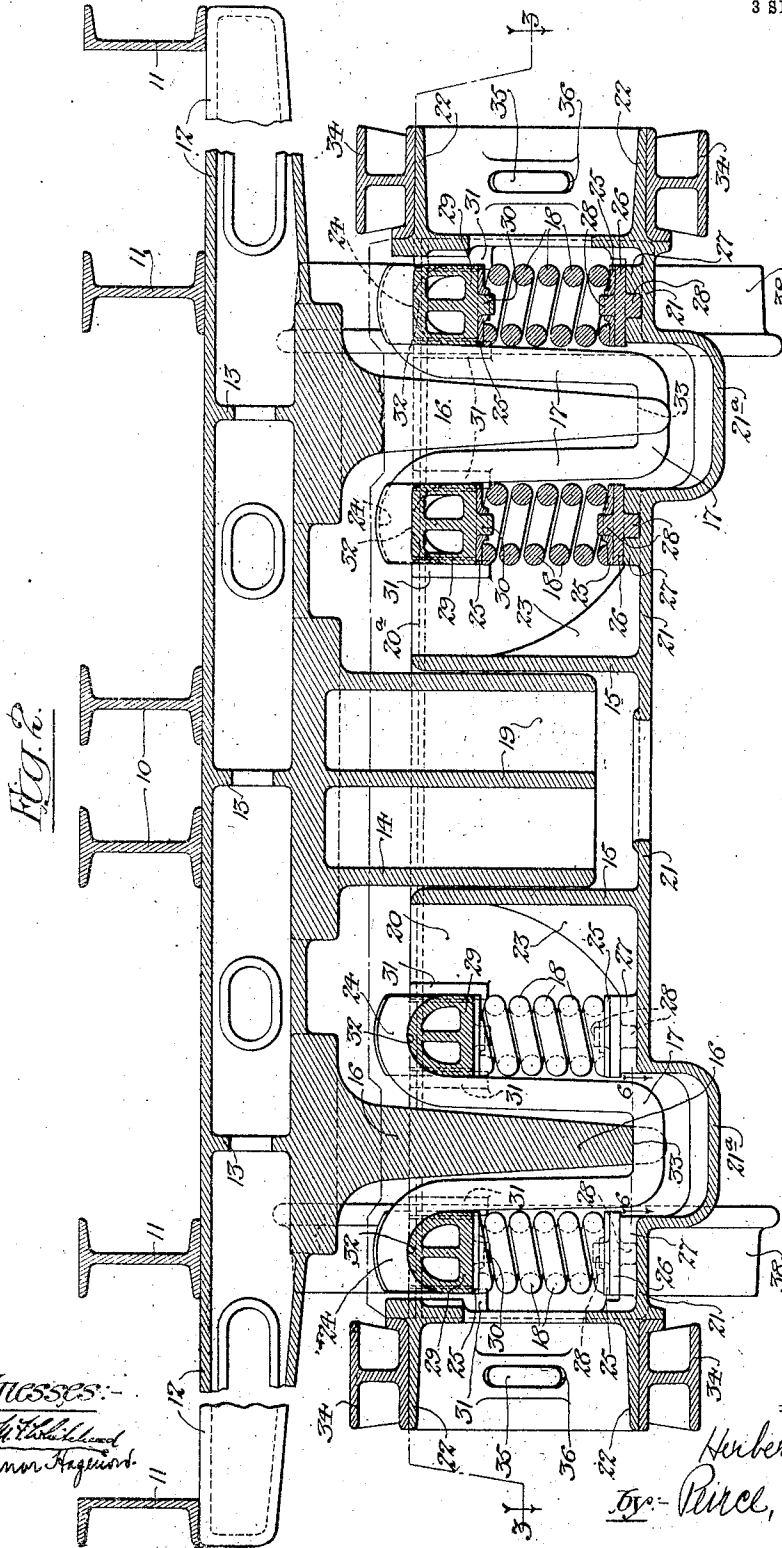
Inventor:
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3 SHEETS—SHEET 2.



Witnesses:
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Inventor:
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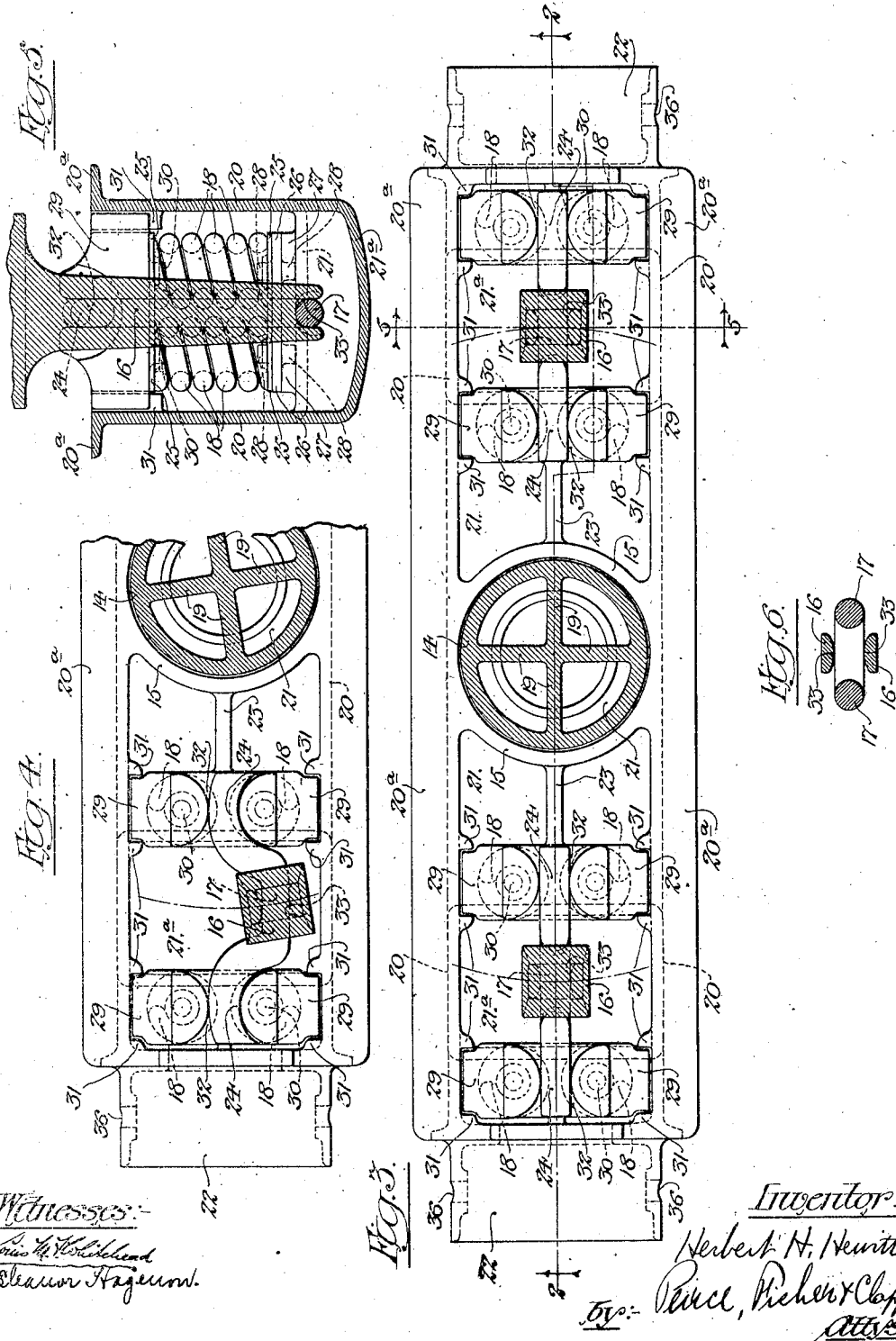
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HERBERT H. HEWITT, OF BUFFALO, NEW YORK.

RAILWAY-CAR.

1,058,430.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed November 21, 1912. Serial No. 732,754.

To all whom it may concern:

Be it known that I, HERBERT H. HEWITT, a citizen of the United States, and a resident of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Railway-Cars, of which the following is a full, clear, and exact description.

The invention relates to railway cars and seeks to provide improved means for mounting the car body upon the bogie trucks and more particularly to provide an improved construction of car body bolster and truck transom, and means for carrying the body bolster directly upon the truck transom. The invention consists in the features of improvement hereinafter set forth, illustrated in the preferred form in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of a bogie truck, a portion of a car body and the improved means for mounting the car body upon the truck. Fig. 2 is a cross-section on the lines 2-2 of Figs. 1 and 3. Fig. 3 is a plan view of the truck transom with the parts depending from the body bolster shown in section on the line 3-3 of Fig. 2. Fig. 4 is a plan view of one end of the transom with the parts shown in the position assumed when the car is rounding a curve. Fig. 5 is a cross section on the line 5-5 of Fig. 3. Fig. 6 is a detail section on the line 6-6 of Fig. 2.

The longitudinal center and side sills 10 and 11 are carried upon a transverse body bolster 12. The bolster 12 preferably comprises a hollow body of cast iron or steel provided with interior strengthening flanges 13. At its center, the bolster is provided with a cylindrical depending guide post 14 which extends within a cylindrical bearing 15 at the center of the truck transom. At its ends, the bolster is provided with depending struts 16 which are carried upon swinging hangers 17, the hangers, in turn being supported by sets of springs 18 on the ends of the truck transom.

The weight of the car body is thus directly sustained by the sets of springs at the end of the truck transom through the medium of the hangers 17 and the struts 16. No weight is carried by the center bearing between the

bolster and the transverse connecting member or transom of the truck, but the engagement of the guide or king post 14 with the vertical bearing cylinder 15, centers the truck relatively to the car body and resists all lateral strains upon the connections between the truck and car body. At the same time, the guide post 14 is free to shift vertically within the cylindrical bearing 15 as required by the compression of the supporting springs 18. The spring supported hangers 17 are arranged to swing in longitudinal direction, so that the truck may pivot about the central guide post when the car is on a curve.

The central king or guide post 14 and the portion 15 of the truck transom which forms the central bearing or well therefor, are made extremely large, not only for the sake of providing a strong construction, but also to provide ample bearing surface between these parts to resist wear. The post 14, to reduce weight, is hollow and is provided with transverse strengthening flanges 19. The central guide post 14 and the struts 16 which are secured to the body bolster 12 may be formed of separate castings, but preferably, as shown, these parts are cast integral with the body bolster.

The transverse member or transom of the truck comprises side walls 20 having outturned, strengthening edge flanges 20^a and transverse bridge or bottom portions 21 and is also provided with projecting end portions 22 for engagement with the side frames of the truck. The transom, if desired, may be built up of wrought metal, but, preferably, the side, bottom and end portions are formed, as shown of a single integral casting. The central bearing 15 between the sides and above the bottom of the transom is also cast integral therewith, the bearing being strengthened by triangular ribs 23 extending between the bearing and the bottom.

The swinging hangers 17 and the supporting springs 18 therefor are arranged within the chambered portions of the truck transom between the side walls 20 thereof and between the center bearing 15 and the end portions 22. The hangers 17 are preferably formed of heavy steel rods of circular section, bent to the U-form shown and provided at their upper ends with integral outturned

pivots 24. The pivots 24 are shaped or curved in longitudinal or axial direction, as shown, the ends of the pivots being below the central portions thereof. The ends of each hanger are independently supported. 5
 Preferably a set of four heavy coiled springs is provided for each hanger, and the springs of each set are arranged in pairs spaced apart in lateral direction, so that the hang- 10
 ers may be suspended between them with the ends of the hanger independently sustained upon separate pairs of springs.

Each pair of springs is provided with cap plates 25 having openings therein in line 15
 with the axes of the springs and are mounted upon supporting pieces 26 which in turn rest on raised seating portions 27 formed upon the bottom wall or bridge members 21 of the transom. The spring supports 26 are 20
 provided on their upper and lower faces with centering studs 28 which engage openings in the seats 27 and the openings in the lower spring caps 25. Between the seats 27 and below the hangers the bottom wall is pro- 25
 vided with depressed portions 21^a, or, if desired, it may be cut away to provide space for the lower ends of the swinging hangers.

Each pair of springs sustains a saddle 29 which is provided on its lower side with 30
 studs 30 engaging the openings of the upper spring caps 25 and the ends of the saddles are arranged between vertical guide lugs 31 formed upon the side walls 20 of the transom. The raised central portions of the sad- 35
 dles 29 are provided with bearing seats 32 for the pivots 24 at the upper ends of the hangers. The pivots, as stated, are curved or are shaped in longitudinal or axial direc- 40
 tion and the bearing surfaces of the seats 32 are correspondingly shaped. That is to say, each seat is concave in a direction transverse to the axis of the pivot, but is convex in out- 45
 line in a direction parallel to the axis of the pivot, the bearing face being a surface such as would be formed by revolving an arc cor-
 responding to the curve of the pivot about the pivot axis.

This construction forms an extremely rigid, strong connection between the upper 50
 ends of the hangers and the spring supported saddles, and at the same time permits the free swinging movement of the hangers as the car passes around a curve. Further- 55
 more, the curved form of the pivots and bearing seats of the saddles securely interlocks the hangers with the saddles. To form a secure connection between the strut 16 and the hanger 17, the strut is provided at its lower end with a notch or seat 33 for re- 60
 ceiving the lower horizontal portion of the hanger. To permit the free relative movement of the strut and hanger as the car rounds a curve, the side walls of the recess or seat 33 are convexly curved in horizontal 65
 direction, as most clearly shown in Fig. 6.

The arrangement of the springs, hangers and struts is strong and compact and forms an effective means for sustaining the load directly upon the springs at the side portions of the truck, while at the same time the 70
 truck is free to pivot upon the central guide post 14, as the car rounds a curve. The construction obviates the necessity of employing center and side bearing plates, such as are used, the rubbing friction of which 75
 resists the movement of the truck and its adjustment to the curves of the track. The improved construction obviates the friction of the ordinary center and side bearings and thus reduces the wear on the wheel flanges 80
 and on the rails at the curves of the track. In the improved construction, as the car rounds a curve, one of the hangers of each strut swings in one direction, as indicated in Fig. 4, while the other hanger swings in the 85
 opposite direction. This movement tends to raise the lower portions of the hangers or depress the upper portions thereof to compress the springs so that the reaction of the springs and the weight of the car body aids 90
 in squaring the truck when the car passes off the curve onto the straight track.

The improved construction may be applied to different types of car trucks, but in the form shown, the end portions 22 of the 95
 truck transom are cylindrical and engage central bearing openings in the side frames 34 of the truck. Keys 35 held within pockets in the side frames engage slots 36 in the cylindrical journal ends 22 of the tran- 100
 som and secure the side frames thereto, while permitting the vertical rocking movement of the side frames as the car passes over irregularities of the track. When the im- 105
 provement is applied to a truck of this form having side frames which are free to rock or oscillate on the journal ends of the transom, the enlarged central guide post 14 and bearing 15 effectively hold the transom in upright position and resist any tendency to 110
 displace the transom in the application of the brakes.

In the construction shown, the journal boxes 37 are swiveled upon the ends of the side frames, as set forth in a prior applica- 115
 tion filed by me December 8, 1911, Serial No. 664,634, and are provided with suitable bearings for the car axles upon which the wheels 38 are mounted.

It is obvious that numerous changes may 120
 be made in the details set forth without departure from the essentials of the invention as defined in the claims.

I claim as my invention:—

1. The combination with a car body and a 125
 pivoted bogie truck therefor, of supporting springs carried on opposite sides of said truck, swinging hangers suspended from the upper portions of said springs, and struts 130
 depending from said car body and engaging

said hangers at points below the upper portions of said springs.

2. The combination with a car body and a pivoted bogie truck therefor, of a set of coiled supporting springs on each side of said truck, saddles carried by said springs, swinging, U-shaped, hangers suspended from said saddles and each arranged between the springs of the corresponding set, and struts depending from said car body and engaging said hangers.

3. The combination with a car body and a pivoted bogie truck therefor, of swinging, U-shaped hangers on the opposite sides of said truck, separate springs for independently supporting each end of each of said hangers, and struts depending from said car body and engaging the lower ends of said hangers.

4. The combination with a car body and a pivoted bogie truck therefor, of swinging, U-shaped hangers on the opposite sides of said truck, coiled supporting springs on the opposite sides of each of said hangers, separate hanger sustaining saddles, one for each end of each of said hangers, carried by said springs, and struts depending from said car body and engaging said hangers.

5. The combination with a car body and a pivoted bogie truck therefor, of swinging, U-shaped hangers on the opposite sides of said truck, coiled supporting springs on the opposite sides of each of said hangers, separate hanger sustaining saddles, one for each end of each of said hangers, carried by said springs, said truck having guides for each of said saddles, and struts depending from said car body and engaging the lower ends of said hangers.

6. The combination with a car body and a pivoted bogie truck therefor, of a set of coiled supporting springs on each side of said truck, each set comprising two pairs of springs spaced apart in transverse direction, a swinging U-shaped hanger sustained between the pairs of springs of each set, and struts depending from the car body and engaging said hangers.

7. The combination with a car body and a pivoted bogie truck therefor, of a set of coiled supporting springs seated on each side of said truck, each set comprising two independent pairs of springs spaced apart in transverse direction, a saddle sustained by each pair of springs, a swinging U-shaped hanger suspended from the saddles of the pairs of springs of each set, and struts depending from said car body and engaging the lower ends of said hangers.

8. The combination with a car body and a pivoted bogie truck therefor, of swinging U-shaped hangers on opposite sides of said truck having pivots curved in axial direction at their upper ends, independent spring-sustained supports having corre-

spondingly curved seats for said pivots, and struts depending from said car body and engaging said hangers.

9. The combination with a car body and a pivoted bogie truck therefor, of a swinging, U-shaped hanger on each side of said truck having pivots curved in axial direction at their upper ends, independent saddles having correspondingly curved bearing surfaces for said pivots, springs for sustaining said saddles, and struts depending from said car body and engaging said hangers.

10. The combination with a car body and a pivoted bogie truck therefor, of a swinging, U-shaped hanger on each side of said truck having curved pivots at their upper ends, separate saddles for each end of each of said hangers having correspondingly curved seats for said pivots, a separate pair of coiled springs for sustaining each of said saddles, and struts depending from said car body and engaging the lower ends of said hangers.

11. The combination with a car body and a pivoted bogie truck therefor, spring-sustained supports on the opposite sides of said truck, swinging U-shaped hangers suspended from said supports, and struts depending from said car body and having seats at their lower ends for receiving the lower ends of said hangers, said seats having side walls convexly curved in horizontal direction to permit the relative movement of said struts and hangers as the car passes around a curve.

12. In a railway car, the combination with the body bolster and the transverse connecting member of the car truck, of an enlarged central guide post on one of said parts pivotally and slidably engaging the other of said parts, supporting springs mounted on the opposite ends of said transverse connecting member, hangers suspended from the upper ends of said springs, and struts depending from the bolster and engaging said hangers below the upper portions of said springs.

13. In a railway car, the combination with the body bolster and the transverse connecting member of the car truck, of an enlarged central guide post on one of said parts pivotally and slidably engaging the other of said parts, a set of supporting springs mounted on each end of said transverse member, a swinging U-shaped hanger suspended between the springs of each set, hanger sustaining saddles, one for each end of each of said hangers, supported on said springs, and struts depending from said bolster and engaging the lower ends of said hangers.

14. In a railway car, the combination of a body bolster and a truck transom, said body bolster having a central, depending,

- guide post pivotally and slidably engaging said bolster, a set of springs mounted on each end of said transom, saddles on the upper ends of said springs, a U-shaped hanger arranged between the springs of each set and suspended from said saddles, and struts depending from said bolster and engaging the lower ends of said hangers.
15. In a railway car, the combination of a body bolster and a truck transom, said body bolster having a central, depending, guide post pivotally and slidably engaging said bolster, two independent pairs of springs mounted at each end of said transom, separate saddles carried by said pairs of springs, swinging U-shaped hangers suspended from said saddles, said transom having guides for each of said saddles, and struts depending from said bolster and engaging the lower ends of said hangers.
16. In a railway car, the combination of a truck comprising side frames, a transom pivotally mounted at its ends upon said side frames, a car bolster having a central depending guide post, said transom having a bearing pivotally and slidably engaged by said guide post, sets of springs mounted on the opposite ends of said transom, a swinging U-shaped hanger carried by each set of springs, and struts depending from said bolster and engaging said hangers.
17. In a railway car, the combination of the truck side frames, having central bearing openings, a transom having a chambered body and journal ends arranged within the bearing openings of said side frames, a car bolster having a depending, enlarged, central guide-post, said transom having a bearing pivotally and slidably engaged by said guide-post, a set of supporting springs mounted within each end of said transom, saddles carried by said springs, said transom having guides for said saddles, swinging U-shaped hangers carried by said springs and struts depending from said bolster and engaging said hangers.
18. In a railway car, the combination of a body bolster having a central depending guide post, a truck transom of U-shaped section having a central bearing for said guide posts, two pairs of springs at each end of said transom between the side walls thereof, said pairs of springs being spaced apart in lateral direction, a saddle carried by each pair of springs, the side walls of said transom having guides for said saddles, swinging U-shaped hangers suspended from said saddles and arranged between said pairs of springs, and struts depending from said bolster and engaging the lower ends of said hangers.
19. In a railway car, the combination with a body bolster having a depending circular guide post, a cast metal truck transom having integral end portions for engaging the truck side frames and an integral, central bearing pivotally and slidably engaged by said guide post, the body of said transom between said central bearing and said end portions being chambered, springs supported within the chambered portions of said transom, saddles supported upon the upper ends of said springs, said transom having integral guides for said saddles, swinging hangers having a pivotal engagement at their upper ends with said saddles, and struts depending from said body bolster and engaging the lower ends of said hangers, substantially as described.
20. A cast metal truck transom having a chambered U-shaped body, integral journal ends for pivotally engaging the truck side frames and an integral central bearing for pivotally engaging a central guide post, substantially as described.
21. A cast metal car body bolster having an integral, depending central guide post for pivotally and slidably engaging a truck center bearing and depending supporting struts fixed at its ends for engaging swinging truck hangers, substantially as described.
22. A cast metal car body bolster having an enlarged, depending, central guide post for pivotally and slidably engaging a truck center bearing, and integral, depending supporting struts at its ends for engaging swinging truck hangers, substantially as described.
23. A cast metal car body bolster having an integral, depending, central guide post for pivotally and slidably engaging a truck center bearing and integral, depending supporting struts at its ends for engagement with swinging truck hangers.
24. In a railway car, the combination with a cast metal body bolster having an integral, depending, central guide post, a truck transom having a central bearing pivotally and slidably engaged by said guide post, sets of springs supported within the ends of said transom, swinging hangers suspended from the upper ends of said springs and rigid struts integral with said body bolster and depending therefrom and engaging the lower ends of said hangers, substantially as described.
25. In a railway car, the combination of truck side frames having central bearing openings, a transom having journal ends arranged within the bearing openings of said side frames, a car bolster having a depending, enlarged, central guide post, said transom having a vertical central bearing pivotally and slidably engaging said guide post, sets of springs mounted on the opposite portions of said transom adjacent said journal ends, and supports for the ends of said bolster carried by said springs, substantially as described.

26. In a railway car, the combination of a truck comprising side frames, a transverse connecting member pivotally mounted at its ends upon said side frames, a car bolster having a central depending guide post, said transverse member having a bearing pivotally and slidably engaged by said guide post, sets of springs mounted on the opposite ends of said transverse member, and supports for the ends of said bolster carried by said springs, substantially as described.

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