No. 861,229. PATENTED JULY 23, 1907.

R. C. WRIGHT & F. E. STEBBINS.

CAR TRUCK FRAME.

APPLICATION FILED OCT. 13, 1904.

2 SHEETS—SHEET 1.

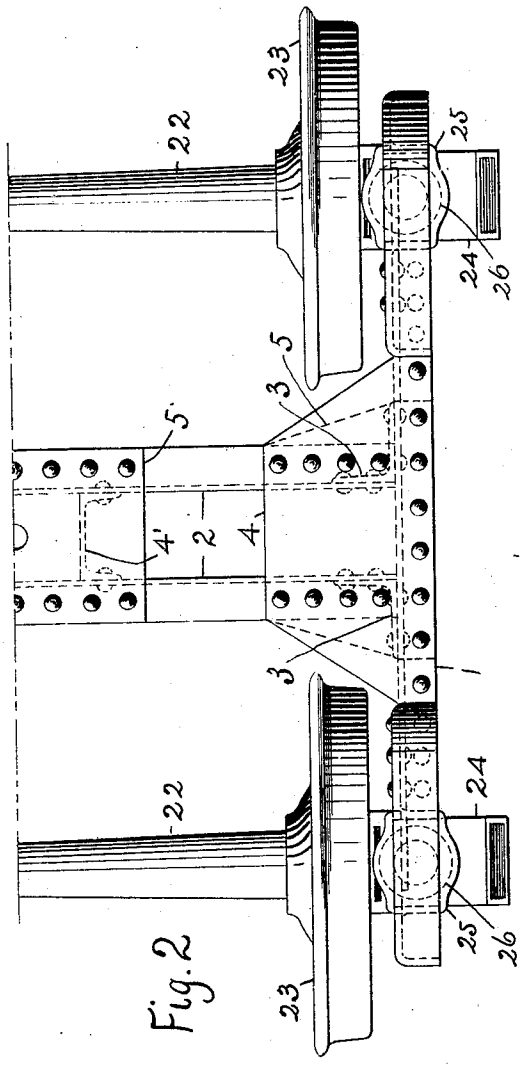

Fig. 2

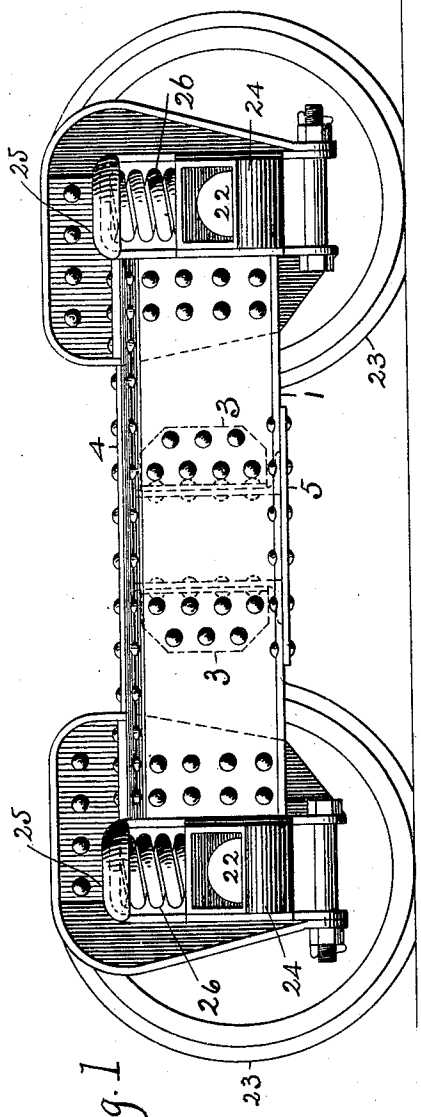

Fig. 1

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2 SHEETS—SHEET 2.

Fig. 4

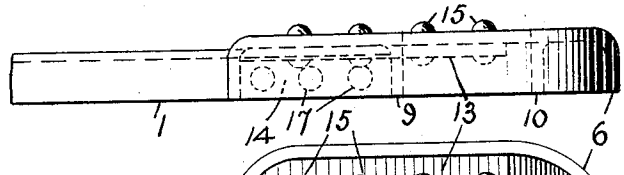

Fig. 3

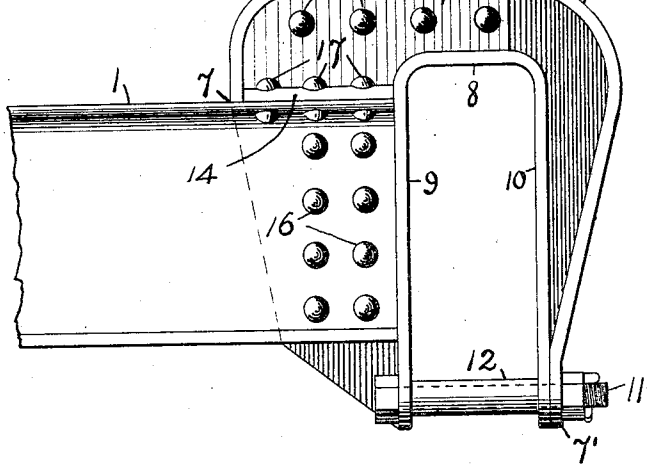

Fig. 6

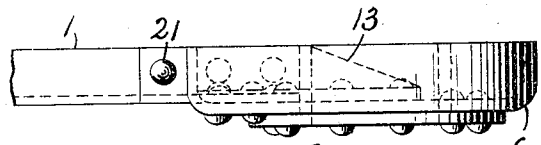

Fig. 5

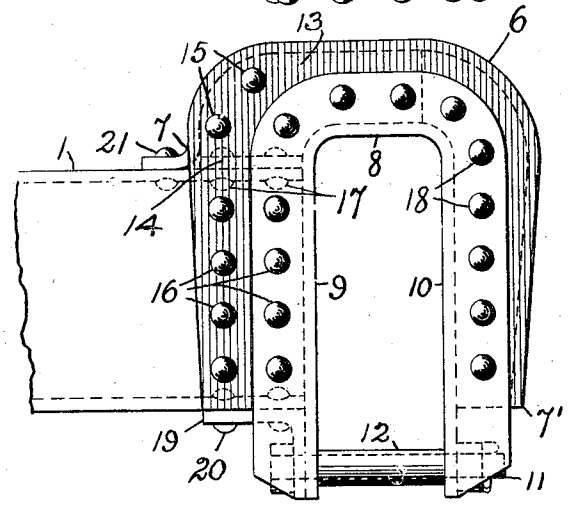

Fig. 7

Witnesses.

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UNITED STATES PATENT OFFICE.

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CAR-TRUCK FRAME.

No. 861,229. Specification of Letters Patent. Patented July 23, 1907.

Original application filed February 14, 1896, Serial No. 579,234. Divided and this application filed October 13, 1904. Serial No. 228,256.

To all whom it may concern:

Be it known that we, RANSOM C. WRIGHT and FRANK E. STEBBINS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, and Washington, District of Columbia, respectively, have invented certain new and useful Improvements in Car-Truck Frames, of which the following is a specification.

The invention relates to car trucks and especially to the frames thereof, our object being the production of a metallic frame which can be manufactured cheaply, and repaired when necessary in the ordinary car shop; which shall be strong and durable and have the pedestals separately fashioned and secured to the ends of the side pieces so that should occasion demand they can be removed and new one substituted; which shall have the pedestals made in such shape that they may receive and rest upon springs supported by the journal boxes, thus cushioning the entire frame; and which, withal, shall constitute improved means for performing the requisite functions of a frame adapted to support and carry heavy cars and loads.

With these main ends in view our invention consists in certain novelties of construction, formation, and combinations of parts as hereinafter set forth and claimed.

The accompanying drawings illustrate two examples of the physical embodiment of our invention constructed according to the best modes we have so far devised for the practical application of the principle.

Figure 1 is a side view of a car truck embodying our improvements. Fig. 2 is a one half top plan view of Fig. 1, the other half being of similar construction is not shown. Fig. 3 is an enlarged side view of one of the four ends of the frame shown in Fig. 1. Fig. 4 is a top plan view of Fig. 3. Fig. 5 is a side view of an end of a frame showing another example of pedestal construction and attachment. Fig. 6 is a top plan view of Fig. 5. Fig. 7 shows the section of a composite side piece which may be substituted for the side pieces shown in other views.

Referring to the several figures, the numeral 1 designates the side pieces of the frame consisting of flanged metallic beams, in this instance of channel form, rolled or pressed to shape, the web and flange or flanges of each beam being provided with suitable holes to receive rivets; 2, the transoms, in this instance of metallic channel beams rolled or pressed to shape, provided with suitably spaced holes in their webs and flanges; 3, connection angles which secure the webs of the transoms to the webs of the side pieces by rivets passed through the several parts, as shown; 4, top gusset plates, and 5 bottom gusset plates, each being riveted to the flanges of the transoms and side pieces; 4′, one of the tie pieces which unite the webs of the transoms by means of rivets passed through the several elements; and 5′ is a top tie plate uniting the centers of the transoms and riveted in place.

The first example of separate pedestal is made substantially as follows: A rolled steel plate is cut to the required shape, heated and pressed between dies or forged under a hammer so as to have a flange 6 extending around the outer edge from the point 7 to the point 7′, and also an inner flange of a ⊓ shape to receive and guide a journal box, the said inner flange embracing a horizontal portion 8 and perpendicular portions 9 and 10. The outer, lower end of flange 6 and the lower end of flange 10, as well as the lower end of flange 9, are perforated to receive a tie bolt 11 which passes through a spacing piece or thimble 12, as shown. A nut secures the bolt in place. Between the flange 6 and flange 8 is located a filling or strengthening plate 13 provided with a perforated flange 14, the said plate 13 being secured in position by the rivets 15 passed through the steel plate and the web of the strengthening plate as clearly illustrated. The pedestal thus fashioned is placed upon the end of a side piece and fastened by the two rows of rivets 16, and rivets 17 passed through the upper flange of the side piece and the flange 14 of the strengthening plate.

The second example of pedestal construction is made in a manner similar to the first. It is fashioned so as to have the continuous flange 6, extending from the point 7 around to 7′ and the strengthening plate 13 is applied in the same way to the head of the pedestal as is shown and described in the first example. The ⊓ shaped flange embracing the parts 8, 9 and 10 is, however, not made integral with the steel plate as in the first example, but consists of the flange of an angle iron bent or cast to a ⊓ shape and with the web of said angle iron secured by rivets 18 to the edge of the opening for the journal box cut from the steel or base plate. The flanges at the lower ends of the angle iron are perforated to receive the tie bolt, and an angular piece of metal 19 may be riveted to the lower flange of the side piece by rivets 20, and the free leg perforated to receive the tie bolt, thus rigidly anchoring the inner end of the said bolt. If desired, the upper end of flange 6 may be bent outwardly and secured to the upper flange of the side piece by a rivet 21, as shown. In attaching this pedestal to the end of a side piece the outer row of rivets 16 will pass through the web of the angle iron, the steel plate, and the web of the side piece, as is obvious.

It will be observed that in both the examples of pedestals sections through the head and outer jaw are chan-

nel-shaped; that the strengthening plate 13 reinforces the head of the pedestal; that the rivets which secure the pedestal to the end of a side piece pass through both the pedestal and end of a side piece and hold the surfaces in close frictional contact; and that the pedestals are relatively of light weight. Wearing shoes may obviously be added to these pedestals when desired.

In Figs. 1, 2, 3 and 4 the forged or wrought metal pedestal is shown applied to the plain web surface of the end of a channel side piece, the flanges thereof being turned outwardly, or, in other words, the pedestals are applied to the back end surfaces of the channels.

In Figs. 5 and 6 the channel side piece has its flanges extended inwardly and the pedestal is applied to the front end surface. Either side piece may be turned end for end when secured to the transom ends. Fig. 7 shows two bulb irons which may be substituted for the channel side piece whenever desired. Two parallel angle irons or two parallel channel irons may also be used, constituting a composite flanged side piece.

In Figs. 1 and 2 the numeral 22 designates the axles; 23, the wheels; 24, the journal boxes with recesses in their sides; 25, the removable spring caps; and 26 the helical springs interposed between the journal boxes and the caps, which latter bear against the flanges 8 of the pedestals, thus cushioning the entire frame.

From the foregoing description taken in connection with the drawings it becomes obvious that we have produced a car truck frame which fulfils all the conditions set forth as the purpose of our invention, and which possesses other characteristics of construction constituting the same a superior means for the purposes intended.

While we have shown only two examples of the physical embodiment of the invention, we do not thereby intend to limit its scope to such specific constructions, inasmuch as the principle may be embodied in other forms and constructions and by other modes without constituting substantial departures.

What we claim as new and desire to secure by Letters Patent is:

1. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces adjacent their centers, and forged or pressed steel pedestals secured by rivets upon the ends of the side pieces.

2. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces adjacent their centers, and forged or pressed steel pedestals, having flanges, secured by rivets upon the ends of the side pieces.

3. The combination in a car truck frame, of flanged side pieces cut off through the webs and flanges, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, each having an outer jaw or leg channel-shaped in cross section, secured by rivets upon the ends of the side pieces.

4. The combination in a car truck frame, of flanged side pieces with substantially vertical ends, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, each having a head channel-shaped in cross section, secured by rivets upon the ends of the side pieces.

5. The combination in a car truck frame, of flanged side pieces fashioned substantially square at the ends, a transom or transoms uniting the side pieces adjacent their centers, and forged or pressed steel pedestals, each having an outer jaw or leg channel-shaped in cross section, secured by rivets upon the ends and to the webs of the side pieces.

6. The combination in a car truck frame, of flanged side pieces with substantially vertical ends, a transom or transoms uniting the side pieces adjacent their centers, and forged or pressed steel pedestals, each having a head channel-shaped in cross section, secured by rivets upon the ends of the side pieces and to the webs thereof.

7. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, each having a strengthening plate or piece 13 with a flange 14 at right angles to the same, the said plate 13 being riveted to the head of the pedestal, the flange riveted to the top flange of a side piece, and the pedestals also riveted to the webs of the side pieces.

8. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, secured by rivets to the ends of the side pieces; each of said pedestals being strengthened by an angular plate riveted to the pedestal above the bearing for the spring, and the flange 14 located above and riveted to the top flange of a side piece.

9. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, each having an angular piece of metal comprising a plate 13 with a flange 14, said plate being attached to the pedestal head and the flange 14 being riveted to the top flange of a side piece, and said pedestals secured to the ends of the side pieces.

10. The combination in a car truck frame, of flanged side pieces, a transom or transoms uniting the side pieces each adapted to extend between the journal boxes and having its ends cut off through the web and flanges adjacent their centers, and detachable steel pedestals, each having a ⊓ shaped and flanged bearing for a journal box riveted about the opening in the pedestal, and said pedestals secured by rivets upon the extreme ends of the side pieces so as to constitute extensions of the said side pieces.

11. The combination in a car truck frame, of flanged side pieces extending between the journal boxes only, a transom or transoms uniting the side pieces adjacent their centers, and steel pedestals, each having an angle iron secured to the opening for a journal box, and said pedestals secured upon the ends of the side pieces.

12. The combination in a car truck frame, of flanged side pieces cut off substantially square, a transom or transoms uniting the side pieces adjacent their centers, and metallic pedestals, each having an iron with a web and flange surrounding the opening for the journal box, and said pedestals secured to the ends of the side pieces by rivets which pass through a web of the iron and the side of a pedestal, and also through the web of a side piece.

13. A car truck frame having a transom or transoms, metallic side pieces, and forged or pressed steel pedestals secured upon the ends of the side pieces by rivets passed through the webs of the side pieces and the sides of the pedestals.

14. A car truck frame having a transom or transoms, flanged side pieces cut off through the webs and flanges, and forged or pressed steel pedestals secured upon the ends of the side pieces; each of said pedestals having the outer leg and head of channel shape in cross section.

15. A car truck frame having a transom or transoms, flanged side pieces cut off through the webs and flanges to form plain ends, and forged or pressed steel pedestals secured upon the ends of the side pieces; each of said pedestals having an outer flange integral with the pedestal, and a ⊓ shaped flange to engage a journal box.

16. A car truck frame having a transom or transoms, flanged side pieces, and forged or pressed steel pedestals secured upon the ends of the side pieces; each of said pedestals having a strengthening piece at the head of the same and above the top flange of a side piece.

17. A car truck frame having a transom or transoms, flanged side pieces cut off so as to present plain square ends, and forged or pressed steel pedestals secured upon the ends of the side pieces; each of said pedestals having a leg with an outer flange, and a bar with a web and flange of a ⊓ shape secured about the open space for the journal box.

18. A car truck frame having a transom or transoms, flanged side pieces, and forged or pressed steel pedestals secured upon the ends of the side pieces; each of said pedestals having an angle bar with the web riveted to the side of the pedestal and also to the web of a side piece.

19. A detachable forged or pressed steel pedestal having an outer flange extending upwardly from the outer leg and over the head thereof a web for attachment upon the end of a side piece, and a ⊓ shaped flange adapted to engage the journal box.

20. A detachable forged or pressed steel pedestal having a ⊓ shaped flange, an outer flange extended over the head of the pedestal and a strengthening piece at the head.

21. A detachable forged or pressed steel pedestal having an outer integral flange, and a bar with a flange and web riveted about the opening for the journal box; in combination with the vertical ends of a flanged side piece to which it is secured by rivets.

22. A forged or pressed steel pedestal having an outer integral flange, an angle bar riveted about the opening for the journal box, and a strengthening plate.

23. A forged or pressed steel pedestal having a ⊓-shaped flange for engaging a journal box, an outer strengthening flange, and an angular strengthening piece riveted to the head, the flange of which is adapted to be riveted to the top flange of a side piece of the truck frame.

24. The combination in a truck and with the wheels, axles, journals and journal boxes, of a composite frame comprising two flanged transom beams with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms to support the end of a car body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of the side pieces having plain webs and flanges; metallic pedestals, each having vertical jaws with an opening between them for a journal box and spring, said opening being bounded by a ⊓ shaped flange, a web with a strengthening flange or enlargement for the outer jaw and head of the pedestal, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the sides of the pedestals and the webs of the side pieces; removable caps; helical springs located upon the tops of the journal boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal jaws.

25. The combination in a composite car truck frame structure, and with the wheels, axles, and journals, of two flanged transom beams with their webs in vertical planes and located between the pairs of wheels; two flanged side pieces located outside the wheels and secured to the flanged transom, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; metallic pedestals, each having jaws open at the bottoms, a strengthening web and flange for the outer jaw and head, a journal box, spring, and detachable cap located between said jaws, and means for uniting the jaws at the bottom; and said pedestals being secured upon the ends of the side pieces by rivets passed through one side of each pedestal and the webs of the side pieces.

26. The combination in a composite car truck frame structure and with the wheels, axles and journals, of two channel beam transoms, said transoms located between the pairs of wheels and with their webs in vertical planes; two channel side pieces located outside the wheels and secured to the channel transoms, the ends of the said side pieces being cut off through the webs and flanges so as to form plain ends; metallic pedestals each having vertical jaws open at the bottom, a head with a bearing at its under surface to receive a removable cap, a strengthening web and flange or enlargement for the outer jaw and head, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through one side of each pedestal and the ends of the side pieces; a journal box, spring, and spring cap being located between the jaws of each pedestal.

27. The combination in a composite car truck frame structure and with the wheels, axles, and journals, of flanged beam transoms located between the pairs of wheels; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanges or fashioned square; and metallic pedestals, each having jaws open at the bottom, a journal box, spring, and detachable cap located between the jaws, and means for uniting the jaws at the bottom; said pedestals being secured on the extreme ends of the channel side pieces by rivets passed through one side of each pedestal and the webs of the side pieces.

28. The combination in a composite car truck frame structure, and with the wheels, axle, and journals, of a transom or transoms located between the pairs of wheels; two wrought metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and metallic pedestals each having jaws open at the bottom, means for uniting the jaws, a journal box, spring, and detachable cap between the jaws, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through one side of each pedestal and the webs of the side pieces.

29. The combination in a composite car truck frame structure and with the wheels, axles, and journals, of flanged beam transoms with their webs in vertical planes and located between the pairs of wheels; means for supporting the end of a car body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said side pieces being plain and the webs perforated; strengthening or gusset plates riveted to the flanges of the transoms and side pieces adjacent the centers of the latter; and metallic pedestals, each having jaws open at the bottom, means for uniting the jaws, a journal box, spring, and removable cap between the jaws, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through one side of each pedestal and the webs of the side pieces.

30. The combination in a truck and with the wheels, axles, journals and journal boxes, of a composite frame comprising two flanged transom beams with their webs in vertical planes and located between the pairs of wheels; means for supporting the end of a car body; two flanged side pieces located outside of the wheels and secured to the flanged transoms, the ends of the flanged side pieces having plain webs and flanges; metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its undersurface to receive a cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through one side of each pedestal and the webs of the side pieces; removable caps, helical springs and journal boxes located between the pedestal jaws, the spring being between the journal box and the cap; and means for uniting the ends of the pedestal jaws.

31. The combination in a car truck and with the wheels, axles, journals and journal boxes, of a composite frame comprising a flanged transom or transoms located between the pairs of wheels; means for supporting the ends of a car body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; metallic pedestals, each having vertical jaws open at the bottom, a seat for a cap at the under surface of the head, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through one side of each pedestal and the webs of the side pieces; removable caps; helical springs resting upon the journal boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal jaws.

32. The combination with the vertical end of a car truck side piece having flanges and its web in a vertical plane, of a metallic pedestal having a head fashioned at its under surface to receive a cap, two jaws for engaging the sides of the journal box, said jaws being open at the bottom, one side of the pedestal being attached to the web of the side piece by rivets, the other and outer jaw constituting the opposite side of the pedestal and having a strengthening web and flange extending up the outer jaw and over the pedestal head; a cap bearing against the under surface of the pedestal head, a spring, and a journal box; and means for uniting the ends of the pedestal jaws.

33. The combination with the vertical end of a car truck side frame piece having flanges and the web in a vertical plane, of a metallic pedestal having a head provided

with a bearing for a cap, two jaws each having bearings which unite at their upper ends with the bearing for the cap to form a ⊓ shaped bearing, said jaws being open at the bottom, one side and jaw of said pedestal being attached by rivets to the end of the frame side piece, the other and outer jaw constituting the opposite side of the pedestal, a strengthening web and flange or enlargement for the head extending from the upper end of the outer jaw to the side piece; a removable cap, journal box and spring; and means for closing the ends of the pedestal jaws.

34. Side frames for railway car trucks, each side comprising a rolled flanged beam cut off or fashioned square at its ends, and metallic pedestals each riveted upon the extreme ends and to the exterior surface of the end of the beam so as to be in frictional contact therewith, in combination with a flanged transom or transoms uniting the side frames adjacent their central portions; the lower edge of each side beam being located below the tops of the journal boxes.

35. A side frame for railway car trucks comprising a rolled flanged channel beam fashioned substantially square at its ends, and metallic pedestals each provided with ⊓ shaped bearings for a journal box and spring, and each having one side thereof riveted upon the end and to the web of said beam.

36. A side frame for a railway car truck comprising a rolled flanged beam with the ends cut off square, and pedestals fashioned from wrought metal, each pedestal being provided with ⊓ shaped bearings for a journal box and having the web at one of its sides riveted upon the web of the said beam.

37. A detachable pedestal having jaws open at the bottom and a web and flange at one side of the inner jaw for attachment to a flanged beam; the outer jaw and head of the pedestal being channel shaped in cross section.

38. A detachable pedestal having jaws open at the bottom and a web and flange at one side of the inner jaw for attachment to a flanged beam; one face of the pedestal being plain and the other side having projecting flanges.

In testimony whereof we affix our signatures in presence of two witnesses.

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FRANK E. STEBBINS.

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ROBERT U. GEIB,
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