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

CONSTRUCTION OF CAR TRUCKS.

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944,119. Patented Dec. 21, 1909.

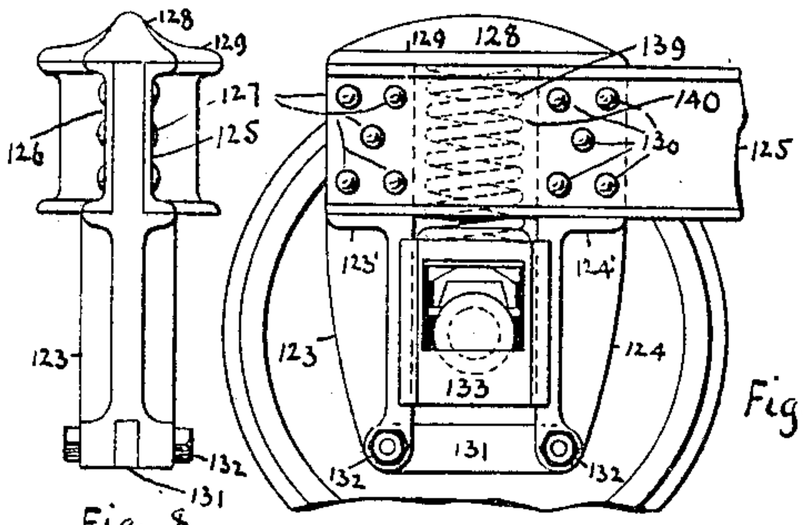

Fig. 8

Fig. 7

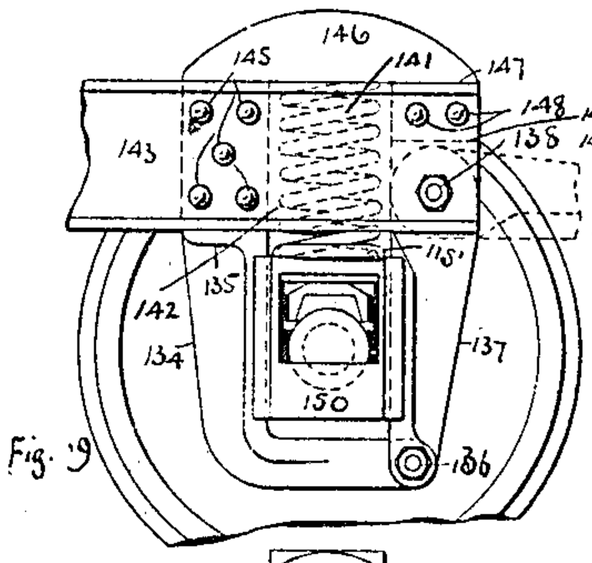

Fig. 9

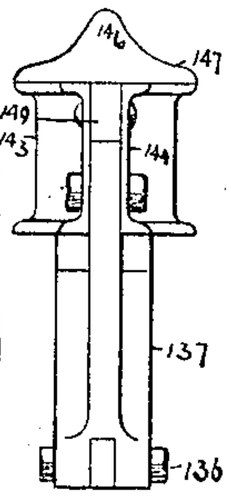

Fig. 10

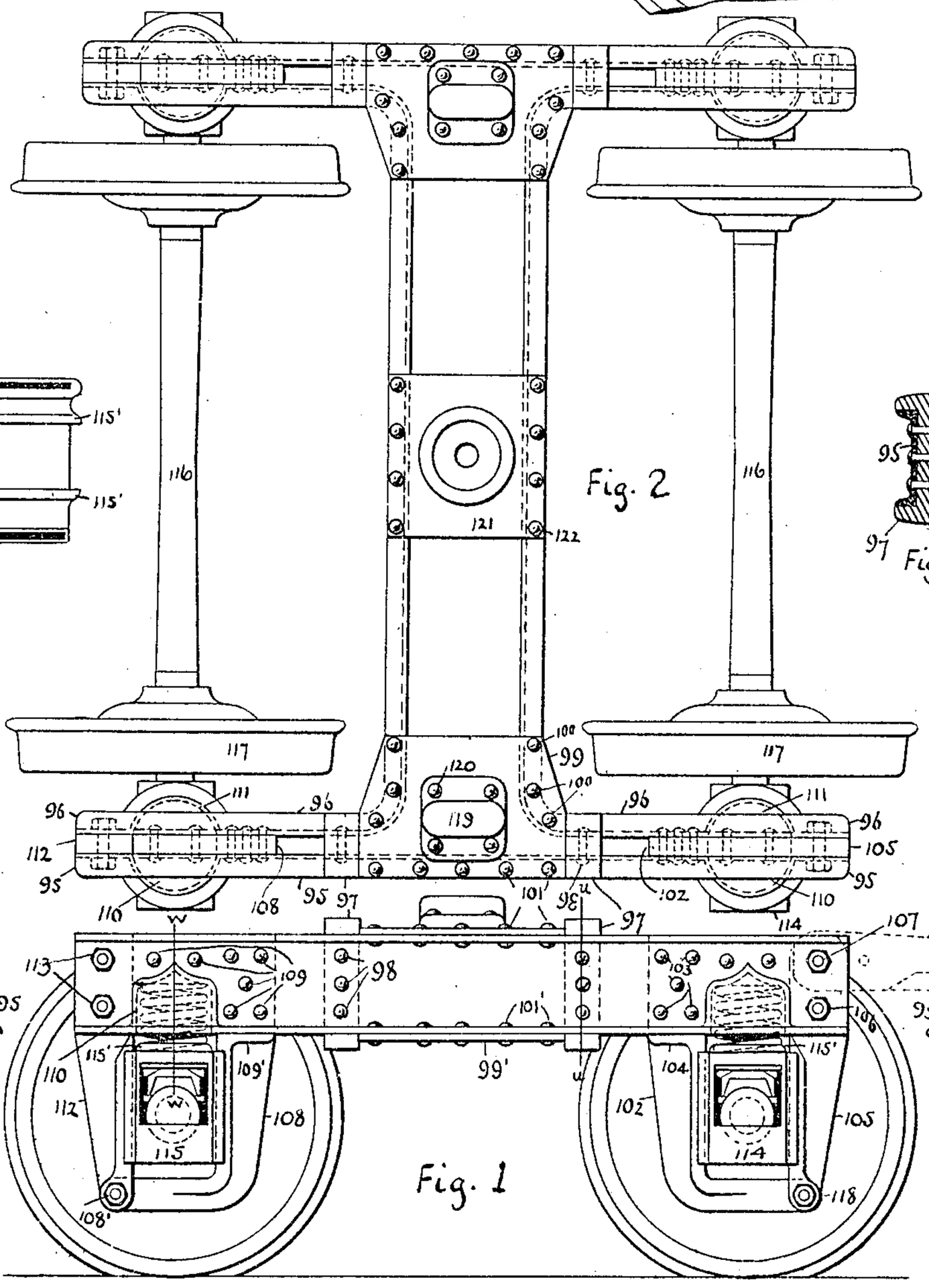

Fig. 2

Fig. 6

Fig. 5

Fig. 3

Fig. 1

Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

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CONSTRUCTION OF CAR-TRUCKS.

944,119. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed April 9, 1897, Serial No. 631,473. Renewed November 6, 1908. Serial No. 461,383.

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 at Washington, District of Columbia, respectively, have invented certain new and useful Improvements in the Construction of Car-Trucks; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

The object of our invention is the production of a car truck which shall have the transoms and sides made of metallic beams preferably flanged and of channel section, and the pedestals of cast metal; which shall be stiff and rigid at the points where the transoms join the sides; and which in one example shall have one leg of each pedestal removable so that a pair of wheels, an axle, and the journal boxes may be rolled out at the end of the frame when the weight is taken off the springs, when springs are used, and without removing the entire frame from the pairs of wheels and axles.

Our invention consists in a car truck having metallic side pieces and transoms with bent or turned ends extended over the journal boxes.

Further, it consists in a car truck having at the ends inner pedestal legs extending under the journal boxes, spring pockets, and outer pedestal legs which are removable.

Further, it consists in a car truck having at the ends inner pedestal legs, and outer pedestal legs the upper end of each of which is secured in place by two or more bolts.

Finally, it consists in certain novelties of construction and combinations of parts, especially relating to the pedestals, receptacles above the journal boxes for the springs, and the end portions of the frame, as hereinafter set forth and claimed.

The accompanying drawing illustrates one complete example of the physical embodiment of our invention relating to the frame, and two modified examples of the pedestal and end frame constructions, all constructed according to the best modes we have so far devised for the practical application of the principles.

Figure 1 is a side view in elevation of the complete truck. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a section on line W—W. Fig. 4 is an end view of the pedestal, Fig. 1, in elevation. Fig. 5 is a section on line U—U. Fig. 6 is a view of a journal box. Figs. 7 and 8 are side and end views of a modified construction of the pedestal and end of the frame. Figs. 9 and 10 are side and end views of another modification of pedestal and end frame construction.

Referring to the figures of the drawing, and especially to Figs. 1 to 6, the number 95 designates the metallic side pieces of channel shape is cross section, and 96 the transoms extending across the truck frame between the pairs of wheels and thereafter parallel with and to the same distance as the side channel pieces, these transoms being also of channel shape in cross section. The outer pedestal legs are removable, the leg 108 extending downward from the frame and thereafter outwardly and under the axle box 115 and united by bolt 108′, to the removable leg 112, said leg 112 extending upwardly and being secured between the side piece 95 and the piece 96 by removable bolts 113; the leg 108 also is secured between and to the side piece 95 and piece 96 by rivets 109, the top horizontally extended part of the same being cut away at its lower central surface above the axle box to form a spring bearing surface within the pocket.

The side channel 95 and the side 96 are pressed outwardly, as shown at 110 and 111, Fig. 3, which is a section on line W—W, Fig. 1, to form about a half pocket in each, and flanges 109′ are formed to bear under the lower flanges of the channel side pieces. At the opposite end of the track, Fig. 1, is a similar fixed leg 102 extending downwardly from the frame below the axle box 114, secured to swing leg 105 by bolt 118, having its upper part located between the side channel 95 and channel 96 and held in position by rivets 103, flanges 104 being provided below the lower flanges of the side frame pieces, and half spring pockets 110, 111 being formed for the reception of a spring and by pressing out the metal of the channel beams. The swing leg 105 is hinged by a bolt 107, and is locked by bolt 106 as well as by bolt 118, the dotted line showing

the position of the leg when swung upwardly to allow the removal of the boxes 114.

To facilitate the removal of the axle boxes 114, 115, the springs will, when in use, be held only upon their inner and outer sides by the ribs 115′, as shown in Fig. 6. This permits the box to move outwardly under the spring when the spring is released of its load. Transoms 96 are still further secured to side channels 95 by the double headed T pieces, a section of which taken through line U—U, Fig. 1, is shown in Fig. 5, where it will be seen to engage the insides of the webs and the upper and lower flanges of the side channel pieces and transoms and secured by rivets 98. The transoms and side pieces are further held together by a gusset plate 99 at the top and a gusset plate 99′ at the bottom and secured to the flanges of the channels by rivets 100, 101 and 101′. Side bearings 119 are secured to the gusset plates by rivets 120, and a center plate 121 is riveted to the transoms 96 by the rivets 122.

Figs. 7 and 8 show a modification of a pedestal and end frame construction wherein both legs are stationary and fixed. These legs 123, 124 extend vertically downward from the frame on either side of the axle box 133, being united below by tie piece 131 secured by bolts 132. The ends of the side frame are designated by 125 and 126 and each is pressed outwardly directly above the axle box to form a spring pocket 140 in which is located spring 139. Below the lower flanges of the end frame flanges 124′ and 125′ are formed on legs 123, 124 which bear against the flanges of the channels. The legs extend upwardly into the space between the channel pieces at each side of the spring pocket 140, then broaden into flanges 129 above the upper flanges of the side frame, and above the channels is an arched stiffening rib 128, all being secured to the frame by rivets 127 and 130.

Figs. 9 and 10 show a second modification of construction with a swinging pedestal leg at the outer side. The numbers 143 and 144 are the ends of the side frame, 134 the fixed leg having under flanges 135 below the side frame, which leg at its upper end is located between the channels and broadens into ribs 147 above the upper flanges of the frame and has an arched central stiffening rib 146. The leg at the top extends downwardly beyond spring pocket 142 into the space between the side channels and is secured by rivets 145, 148. The leg 134 extends under axle box 150 and is joined to a swinging leg 137 by a bolt 136. This leg 137 is hinged between the side pieces 143 and 144 by a bolt 138. Axle box 150 will be provided with spring ledges or ribs 115′, as shown in Fig. 6, to facilitate the removal of the box.

From the foregoing description taken in connection with the drawing it becomes obvious that we have produced a car truck and frame which fulfils the conditions set forth by the purpose of our invention. The frame is very rigid at the points where the transoms join the sides, and the pedestals, or parts thereof, may be easily replaced should the same become broken. We have shown in Fig. 1 the removable pedestal legs each secured in place within a slot in the frame at the top end by two bolts. The advantage of this arrangement is clear, for the reason that should the lower end of the pedestal leg become detached or loose the two upper bolts will by taking the strains imparted by the journal box in opposite directions hold the leg in place. These bolts can, of course, be located in any position so long as they perform the desired functions. However, the outer legs may be made simply detachable and not pivoted to swing when so desired, as shown at the left in Fig. 1, where the upper end is angular.

We have also illustrated the spring pockets in the modified examples as extending the full depth of the beams, whereas in the main view they are somewhat more shallow. The depth of the pocket may be varied to suit conditions and, when desired, may be extended above the side pieces.

Various modifications may, of course, be introduced in practice which will not constitute substantial departures.

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

1. The combination in a truck, of flanged beams fashioned or bent to a U shape, constituting the transoms and portions of the side frames; plates forming other portions of the side frames; pedestals; and journal boxes; the ends of the said flanged beams and plates being extended over the journal boxes.

2. The combination in a truck, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; plates forming other portions of the side frames and secured to the flanged beams; pedestals; and journal boxes; the ends of the said flanged beams and plates being extended over the journal boxes.

3. A metallic truck frame consisting of the following elements in combination, to wit: side pieces extending over the journal boxes; flanged transoms, each transom having its ends bent and each end extending parallel with a side piece and over a journal box; and pedestals for holding the journal boxes.

4. A metallic truck frame consisting of side pieces extending over the journal boxes; flanged transoms, each transom having its ends bent, and each end extending parallel with a side piece and over a journal box; means for securing the transoms to the side

pieces; and pedestals for holding the journal boxes.

5. The combination in a truck, of flanged beams fashioned to a U-shape constituting the transoms and portions of the side frames; flanged beams forming other portions of the side frames; pedestals; and journal boxes; the ends of the side frames being extended over the journal boxes.

6. The combination in a truck, of flanged beams fashioned or bent to a U-shape constituting the transoms and portions of the side frames; flanged beams forming other portions of the side frames and secured to the U-shape flanged beams; pedestals and journal boxes; the ends of the side frames being extended over the journal boxes.

7. The combination in a truck of channel beams fashioned or bent to a U-shape constituting the transoms and portions of the side frames, flanged beams forming other portions of the side frames and secured to the bent U-shaped flanged beams; pedestals and journal boxes; the side frames being extended over the journal boxes.

8. The combination in a truck, of flanged beams fashioned or bent to a U-shape constituting the transoms and portions of the side frames; side beams; journal boxes; pedestals and supplemental means uniting the said flanged beams and the said side beams; the side frames being extended over the journal boxes.

9. The combination in a truck structure, of beams fashioned to a U-shape; side beams or plates; and means for uniting the U-shaped beams and the side beams; said U-shaped beams and said side beams extending over the journal boxes, and being so relatively located that they are not in direct frictional contact.

10. The combination in a truck structure, of U-shape beams; side beams or plates; and filling pieces between the U-shape beams and side beams or plates; the ends of the side plates extending over the journal boxes.

11. The combination in a truck structure, of U-shaped beams; side beams; plates secured to the structure at the junction of the U beams and the side beams; pedestals; and journal boxes; the ends of the U shaped beams and side beams being extended over the journal boxes.

12. The combination in a truck structure, of flanged beams fashioned to a U-shape constituting the transoms and portions of the side frames; side plates or beams; a flat plate secured to the U shaped beams and the side plates or beams; pedestals; and journal boxes; said side frames being extended over the journal boxes.

13. The combination in a truck structure of U shape beams constituting the transoms and portions of the side frames; beams constituting other portions of the side frames; pedestals; journal boxes; and means uniting the transoms adjacent the side frames; said side frames extended over the journal boxes.

14. The combination in a truck structure, of the channel beams fashioned or bent to form the transoms and portions of the side frames; side beams; and filling pieces having flanges; the ends of the side frames extending over the journal boxes.

15. The combination in a truck structure, of the channel beams fashioned or bent to form the transoms and portions of the side frames; side beams; plates secured to and uniting the said transom beams and side beams; pedestals; and journal boxes; the ends of the side frames being extended over the journal boxes.

16. The combination in a truck structure, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; plates forming other portions of the side frames; suitable pedestals having seats for springs secured to the side frames; and journal boxes; the ends of the side frames extending over the journal boxes.

17. The combination in a truck structure, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; plates forming other portions of the side frames and secured to the flanged beams; pedestals secured to the side frames; and journal boxes; the ends of the side frames extending over the journal boxes.

18. The combination in a truck structure, of flanged beams fashioned or bent to U shape constituting the transoms and portions of the sides; side beams forming other portions of the side frames; pedestals secured to the side beams of the side frames; and journal boxes; the ends of the side frames extending over the journal boxes.

19. The combination in a truck structure, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; beams forming other portions of the side frames; pedestals secured to the U shape beams; and journal boxes; the ends of the side frames extending over the journal boxes.

20. The combination in a truck structure, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; beams or plates forming other portions of the side frames; cast pedestals secured to the U shaped beams and the beams or plates forming portions of the side frames; and journal boxes; the ends of the side frames extending over the journal boxes.

21. The combination in a truck structure, of flanged beams fashioned or bent to a U shape constituting the transoms; side beams secured to the ends of the U shaped tran-

soms; pedestals secured to the ends of the side frames; journal boxes; and springs; the ends of the frames being fashioned to receive the pedestals and springs.

22. The combination in a truck structure, of channel beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; side beams forming other portions of the side frames; pedestals secured to the ends of the channel beams and side beams; and journal boxes; the ends of the side frames being fashioned to receive the springs and pedestals.

23. The combination in a truck, of channel beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; channel beams forming other portions of the side frames; pedestals secured to the ends of the U shaped channel beams and channel side beams; and journal boxes the ends of the side frames being fashioned to form recesses for the springs.

24. The combination in a truck of flanged beams of a U shape forming the transoms and portions of the side frames; beams forming other portions of the side frames; pedestals secured to the ends of the side frames; journal boxes; and springs interposed between the journal boxes and the side frames.

25. The combination in a truck, of beams of a U shape forming the transoms and portions of the side frames; beams forming other portions of the side frames; pedestals secured to the ends of the side frames; journal boxes; and springs between the side frames and journal boxes.

26. The combination in a truck of flanged beams of a U shape forming the transoms and portions of the side frames; flanged beams forming other portions of the side frames; pedestals secured to the ends of the side frames; journal boxes; and springs between the side frames and journal boxes.

27. A metallic truck frame consisting of side pieces extending over the journal boxes; flanged transoms each transom having its ends bent and each end extending parallel to a side piece and over a journal box; and pedestals for the journal boxes.

28. A metallic truck frame having side pieces extending over the journal boxes; transoms reinforced by flanges and with bent ends, each end extending parallel with a side piece and over a journal box; and pedestals; in combination with journal boxes and springs located upon the said boxes and supporting the frame.

29. A metallic truck frame consisting of side pieces extending over the journal boxes; transoms having bent ends extending over the journal boxes and secured to the side pieces; and pedestals one leg of each pedestal being movable.

30. A metallic truck frame consisting of side pieces extending substantially from one journal box to the other; flanged transoms, each transom having bent ends and each end extending parallel with and secured to a side piece and over a journal box; and pedestals secured to the ends of the transoms.

31. A metallic truck frame consisting of channel side pieces extending over the journal boxes; transoms of channel iron having their ends bent, and each end extending parallel with a channel side piece and over a journal box; and pedestals for receiving journal boxes.

32. A metallic truck frame consisting of channel side pieces extending over the journal boxes; transoms of channel iron having their ends bent and each end extending parallel to the side piece and over a journal box; and pedestals; in combination with journal boxes and springs between the said boxes and frame.

33. The combination in a truck of flanged beams fashioned to a U shape constituting the transoms and portions of the side frames; beams or plates forming other portions of the side frames; pedestals; and journal boxes; said side frames having pockets or recesses or open spaces for springs at their ends.

34. A truck having side frames, a transom or transoms, cast metal pedestals, journal boxes, coil springs, and means for supporting the upper end of each spring which rests upon a journal box; each end of the said side frames comprising two metallic beams having their webs vertically disposed, spaced apart with a recess between them within which is located the spring, and the upper portions of the pedestal also located and secured between said beams and each side of the spring.

35. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, journal boxes, and coil springs; each end of the side frames comprising two channel beams spaced apart to form a recess or pocket for a spring between them and within which the spring is located, the pedestal being riveted to the channel beams.

36. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, journal boxes, and springs; each end of the side frames comprising two flanged beams with a spring between them, and a pedestal secured between the said flanged beams, and a horizontal extension at the upper part of said pedestal serving as a bearing for the top end of the spring which rests on the journal box.

37. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, springs, and

journal boxes; each end of the side frames comprising two channel beams spaced apart to form a recess, a spring within the recess, means riveted at the top of the recess constituting a bearing for the upper end of the spring, and a pedestal riveted to the said two channel beams.

38. A truck having side frames, means connecting the side frames for holding them parallel, pedestals, journal boxes, and springs; each end of the side frames comprising two parallel parts, one of which is flanged, with a recess between them within which a spring is located and which bears upon a journal box.

39. A truck having side frames, transoms, pedestals, journal boxes and springs; each end of each side frame comprising two parallel parts with a recess between them within which is located a spring and parts of a pedestal.

40. A truck having side frames, transoms, pedestals, journal boxes, and springs; each end of each side frame comprising two parallel parts with a recess between them within which is located a spring and parts of a pedestal; and each pedestal having a removable leg.

41. A truck having side frames, transoms, pedestals, journal boxes, and springs; each end of each side frame comprising two parallel parts which are fashioned or pressed out to form a recess or pocket for a spring; the pedestal jaws being secured to the said two parallel parts.

42. A truck having the ends of the side frames extending over the journal boxes, said side frames comprising two parts and the ends of said parts fashioned or pressed out to form pockets for springs, in combination with flanged transoms, pedestals, and journal boxes; the jaws of the pedestals being secured to the said side frames.

43. The combination in a truck, of side frames having their ends pressed out to form pockets for springs, the end of each side frame comprising two parallel elements, to which the pedestal jaws are secured.

44. The combination in a truck, of flanged beams fashioned or bent to a U shape constituting the transoms and portions of the side frames; beams forming other portions of the side frames; pedestals; and journal boxes; the ends of the side frames being fashioned to receive pedestals and springs, whereby the frame may be entirely supported by the springs.

45. The combination in a truck of channel beams fashioned or bent to a U shape constituting the transoms and portions of the side frames, channel beams forming other portions of the side frames; pedestals; and journal boxes; the ends of the side frames being fashioned to receive the pedestals which receive the journal boxes.

46. The combination with a car truck, of pedestals, each pedestal having a rigid horizontal portion extending under the journal box, and a removable outer leg detachably secured in position at its lower end to the said horizontal portion and at its upper end by a plurality of horizontally disposed bolts.

47. The combination with a car truck, of cast metal pedestals, each pedestal having inner and outer jaws or legs, the outer leg or jaw being detachably secured at its lower end to the inner jaw or leg and at its upper end by two bolts.

48. The combination with a car truck, of pedestals, each pedestal having a rigid horizontal portion extending under the journal box, and a removable outer leg detachably secured at its lower end to the said horizontal portion and at its upper end by two horizontally disposed bolts; a pocket for a spring above the journal box; and a spring seated within the pocket and bearing upon the journal box.

49. The combination in a car truck, of flanged beam side frames; a transom or transoms joining the side frames; journal boxes; springs; and pedestals; the ends of the side frames extending over the journal boxes, and each pedestal having a cast metal inner jaw secured to the end of the frame and extended over the top of the spring, and an outer cast metal leg removably secured at its top end to the frame and at its lower end to a fixed rigid extension beneath the journal box.

50. The combination in a car truck frame having each end comprised of two metallic beams with their webs in vertical planes and spaced apart, of journal boxes, springs, and cast metal pedestals with jaws or legs; the inner of the said legs being rigidly secured to the beams, and the lower end of the outer leg secured to the inner leg at the bottom, and at the top end secured between the said beams by a plurality of removable bolts.

51. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, means for uniting the pedestal jaws at the bottom, journal boxes, springs, and bearing means to receive the upper ends of the springs; each end of the said side frames comprising two metallic beams having their webs vertically disposed, spaced apart and dished outwardly to form a recess for a spring between them within which the spring is located, and the upper portions of the pedestal located and secured between the said beams.

52. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, means for uniting the pedestal jaws at the bottom, journal boxes, springs, and bearing means to receive the upper ends of the springs; each end of the said side frames comprising

two channel or flanged beams having their webs vertically disposed, spaced apart and dished outwardly to form a recess for a spring between them within which the spring is located, and the upper portions of the pedestal located and secured between the said beams.

53. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, means for uniting the pedestal legs at the bottom, journal boxes, coil springs, and means having bearings for the upper ends of the springs; each end of the said side frames comprising two metallic channel or flanged beams having their webs vertically disposed, spaced apart to provide a recess for the upper end of a spring located between them and with its top end engaging the bearing, and the upper portions of the pedestal riveted to the said channel or flanged beams, whereby the side frames may be located near the journal boxes.

54. A truck having side frames, means connecting the side frames for holding them parallel, cast metal pedestals, journal boxes, and coil springs; each end of said side frames comprising two metallic beams spaced apart to form a recess for the top end of a spring located between them, and the upper portions of the pedestal located and secured between said beams; bearing means being provided at the top of the recess between the two beams for the top end of the spring.

55. The combination in a car truck frame having each end comprised of two channel beams spaced apart or dished outwardly to form a recess for the top end of a spring between them, of journal boxes, cast metal pedestals secured to the channel beams, and bearings for the upper ends of the springs, which rest upon the journal boxes and have their upper ends between the channel beams.

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

RANSOM C. WRIGHT.
FRANK E. STEBBINS.

Witnesses as to Ransom C. Wright:
WILLIAM C. GROEVER,
DAVID CLAGETT.

Witnesses as to Frank E. Stebbins:
EMMA M. GILLETT,
WATSON J. NEWTON.