E. A. CURTIS.

PEDESTAL FOR CAR TRUCKS.

APPLICATION FILED AUG. 16, 1907.

911,575.

Patented Feb. 9, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

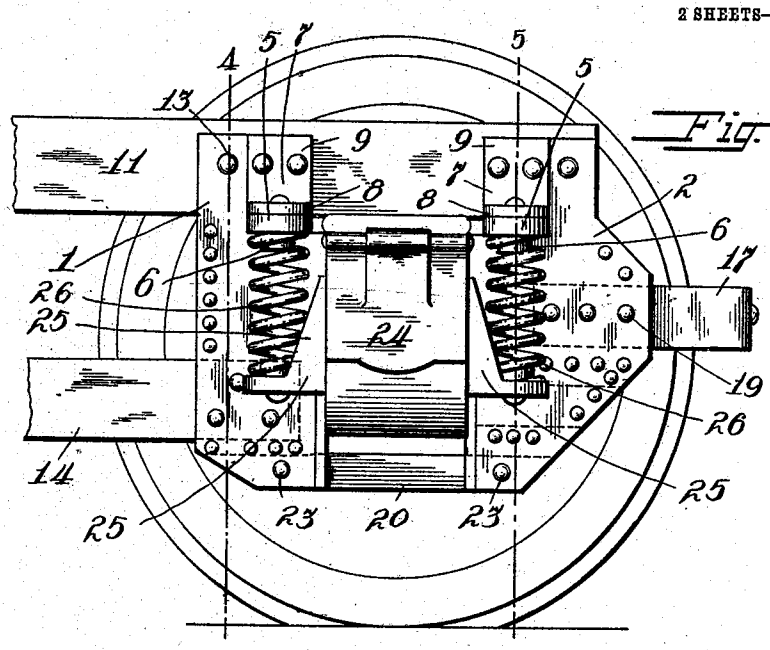


Fig. 2.

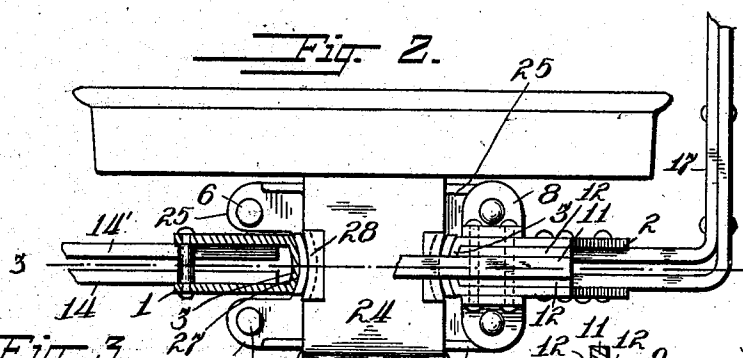


Fig. 3.

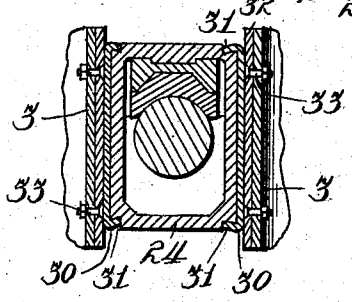


Fig. 4.

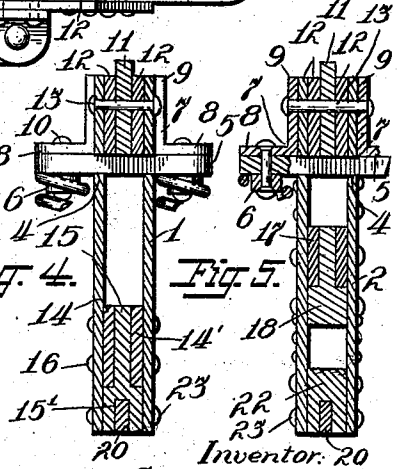


Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 6.

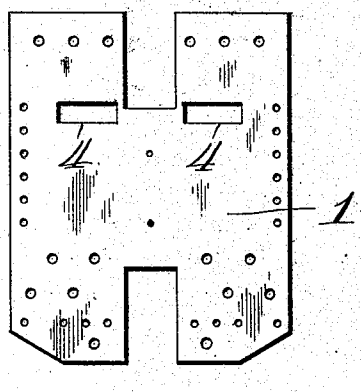


Fig. 7.

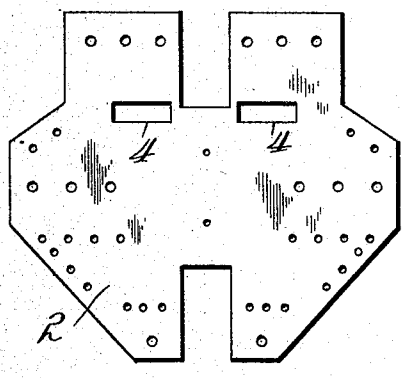


Fig. 8.

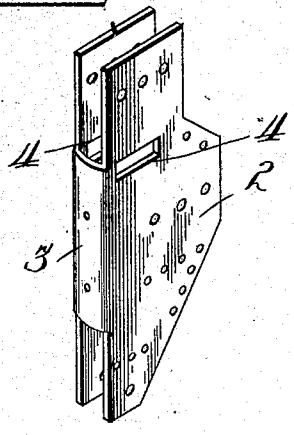
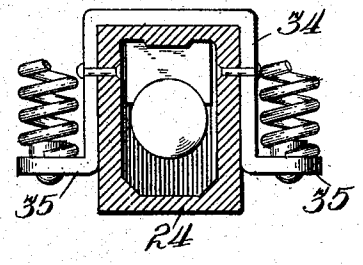


Fig. 9.



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PEDESTAL FOR CAR-TRUCKS.

No. 911,575. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed August 16, 1907. Serial No. 388,798.

To all whom it may concern:

Be it known that I, EDMUND A. CURTIS, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Pedestals for Car-Trucks, of which the following is a specification.

This invention relates to improvements in pedestals for car trucks.

Among the salient objects of the invention are to provide a construction which may be struck out by means of dies and formed up from sheet material in such manner as to economize in cost of construction, reduce the weight of material used, and at the same time produce a stronger and more durable structure; to provide a construction which affords a certain amount of flexibility or yieldability between the connections of the pedestal with the journal box to the end that the truck frame may be relieved of unnecessary racking stresses; to provide improvements in the construction of the parts which are subject to the greatest amount of chafing or wear which prolongs the life of the structure; and in general to provide a construction which is simple, strong, and composed of relatively few and inexpensive parts.

The invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims.

In the drawings—Figure 1 is a view in side elevation of an end portion of a truck frame equipped with a pedestal embodying the invention; Fig. 2 is a view chiefly in top plan but partly in horizontal section of the parts shown in Fig. 1; Fig. 3 is a longitudinal vertical sectional view, taken on line 3—3 of Fig. 2; Figs. 4 and 5 are sectional views taken respectively on lines 4—4 and 5—5 of Fig. 1, and looking in the direction of the arrows; Fig. 6 is a face view of the blank from which the inner one of the main pedestal members is formed; Fig. 7 is a similar view of the blank from which the other main pedestal member is formed; Fig. 8 is a perspective view of the blank shown in Fig. 7 bent into form; Fig. 9 is a detail showing a modification in which the spring supporting lugs of the journal box are formed separately from the latter.

Heretofore it has been the practice to make pedestals of car trucks in the form of castings, and in order to provide the necessary strength and rigidity these castings have necessarily been made heavy and difficult to handle. Moreover, castings are always likely to contain flaws which may or may not be discovered before the truck is put into use and the work of dressing away imperfections, drilling bolt and rivet holes, and other machine work, is such as to make the cost of cast pedestals unduly high while at the same time they are not as safe or durable as when made of forged or rolled metal.

In carrying the present invention into effect I strike out from sheet metal of suitable weight, by means of suitable dies, two main blanks to form the two main members 1 and 2 of the pedestal. These blanks, in making the preferred embodiment shown, are shaped as illustrated in Figs. 6 and 7, and then bent along lines approximately coincident with the vertical sides of the upper central notch, to bring the two sides parallel with each other and with the connecting portion 3 exteriorly slightly convex.

Through the rectangular apertures 4 of each pedestal member is arranged to extend a bar 5, upon the under side of each end of which is mounted a spring centering stud, as 6. In order to unite the bar 5 with each side of the pedestal body, angle pieces 7 are provided, each having its base portion 8 resting upon the upper side of the projecting end of the bar and its upright portion 9 resting against the outer face of the corresponding side of the pedestal. These angle pieces are suitably riveted to the face of the pedestal and to the bar 5, and desirably the same bolts or rivets 10 which secure the centering studs 6 are utilized for uniting the angle pieces with the bar.

The upper end of each pedestal member 1 and 2 is constructed to receive a single upper wheel piece 11; the notch in the upper side of the blank being formed for this purpose and being made coincident in depth with the inset depth of the wheel piece. Usually, and as shown in the drawings, the wheel piece is of less thickness than the distance between the opposed sides of the pedestal members and accordingly filling or space blocks 12 are interposed between the pedestal sides and said wheel piece, as shown clearly in Figs. 4 and 5. Rivets 13 are arranged to extend through the pedestal from side to side and through the interposed wheel piece and space blocks, thereby uniting each ped-

estal member rigidly with the wheel piece. The lower end of the pedestal member 1 also receives and supports the ends of a pair of parallel lower wheel pieces 14 and 14′, a rabbeted space block 15 being interposed between these wheel pieces and the parts rigidly united by through rivets 16, as seen clearly in Figs. 1 and 4.

The pedestal member 2 receives and supports the ends of the front sill member 17 of the truck, which in the construction shown is located about midheight of the pedestal member. The engaging end of this sill member is of duplex construction, as seen clearly in Fig. 2, and between the two members thereof is interposed a space block 18 (see Fig. 5) in general similar to the space block 15 described, and the parts are in this instance united by through rivets 19.

The pedestal members 1 and 2 are tied together at their lower ends by means of a tie-bar 20, and to receive this tie-bar the lower end of the space block 15 in the pedestal member 1 is recessed, as indicated at 15′, while in the pedestal member 2 a special space block 22 is interposed and similarly recessed. The tie-bar is also secured in position by through rivets 23.

The journal box, designated as a whole 24, extends through the pedestal frame in the usual manner, but is constructed in a peculiar manner in so far as its portions which contact with and wear upon the pedestal members are concerned. The journal box is provided at each side with a pair of spring supporting ears 25 which respectively receive the lower ends of coiled springs 26 having their upper ends engaged with the bars 5. The weight of the truck and its load is transmitted to the car journal through these sets of springs, and accordingly the upper wheel piece 11 is normally supported above the top of the journal box far enough to afford free play of the springs without bringing the wheel piece into engagement with the journal box.

As an improved feature of the present invention, I so construct the meeting or contacting portions of the pedestal and sides of the journal box as to afford a slight yielding movement or relief against rigidity between the truck frame and the axles and journal boxes carried thereby; this yielding movement serving to relieve against horizontal diagonal or oblique stresses. To this end I construct the inner faces of the pedestal members which engage the sides of the journal box curved in cross section, and preferably, and as shown in the present instance, convexly curved, as seen clearly at 27 (Fig. 2). The opposed surface portions of the journal box are similarly curved in cross section, as indicated at 28, but preferably the pedestal members are curved on a slightly smaller radius than the opposed meeting surfaces on the journal box, so that the principal points of contact between these parts are normally along lines coincident with the central portions of said meeting parts.

With the parts meeting and engaging each other in this manner it will be obvious that the journal box is susceptible of a limited horizontal oscillatory or rocking movement relatively to the openings in the truck frame or pedestals through which the wheel axle and journal boxes extend. An important result obtained by this construction is that the journal boxes are to a large extent relieved of the twisting stresses brought thereon during the passage of the truck over curved portions of the track, and being so relieved, the wear of the car journals within the journal boxes is made practically uniform so far as horizontally lateral wear is concerned. Moreover, this slight yielding or relief movement between the truck frame and the car journals is of great importance in imparting to the structure enough elasticity to relieve the mechanism of unnecessary stresses without detracting from the proper degree of rigidity for practical purposes.

In order to provide for the yielding movement described, the spring supporting ears 25, which serve to confine the journal box against endwise movement relatively to the truck frame, are from their base portions outwardly inclined slightly away from the sides of the pedestal members, as indicated in a somewhat exaggerated degree as shown in Fig. 2.

As a further feature of improvement I provide renewable chafing plates which overlie and form the curved meeting wear surfaces 27 and 28 of the pedestal and journal box, respectively. The chafing plates 30 upon the journal box have their upper and lower ends crimped into retaining recesses 31, as seen clearly in sectional Fig. 3, while the chafing plates 32 upon the pedestal members may be conveniently secured in position by bolts 33 having their outer heads countersunk flush with the wear surfaces.

In the principal figures of the drawing the spring supporting ears 25 are shown as cast integral with the opposite sides of the journal box; this being a usual construction. If preferred, however, these spring supporting ears may be formed by the lower outturned ends 35 of stirrups or hangers 34 (see Fig. 9) which straddle the journal box, as shown clearly in said figure. These stirrups or hangers are made of wrought metal forged or otherwise formed to shape, and they may be rigidly secured in position in any suitable manner, as, for example, by rivets or bolts extending therethrough and through the sides of the journal box.

It will be obvious that the invention is capable of embodiment in various modified forms and that some of the features of the

invention are capable of utilization independently of others, and the claims hereto appended have been drawn accordingly.

I claim as my invention:

1. In a car truck, a pedestal frame provided with a journal box opening having parallel vertical side walls and a journal box extending through said pedestal opening and movable therein, said vertical side walls having divergent line contact with the sides of said journal box.

2. In a car truck, a horizontally-disposed main truck frame comprising a pedestal frame at each side of the main frame, a journal box seated in each pedestal frame, a wheeled car axle journaled in said journal boxes, and divergent line surfaces providing rocker engagement between the sides of the journal boxes and pedestal members of the truck frame.

3. In a car truck, a pedestal frame provided with a journal box opening having parallel vertical side walls, and a journal box seated in said opening and engaging said vertical side walls, and contact portions of the vertical side walls of the pedestal frame being curved in cross section and of substantially uniform cross sectional size throughout, and the opposed contact portions of said journal box being also curved in cross section, the contact portions of said vertical side walls being formed in arcs of different radii from the opposed contact portions of said journal box.

4. In a car truck, a pedestal frame provided with a journal box opening, the lateral bounding walls of which are convex in cross sectional form, and a journal box extending through said pedestal opening and provided with concavely curved recesses in its sides engaging said convexly curved portions of the pedestal frame, said concave recesses having arcs of different radii from the arcs of said convex portions.

5. In a car truck, a pedestal frame provided with a journal box opening having parallel vertical side walls, a journal box extending through said pedestal opening and seated between said vertical side walls, a chafing plate mounted upon each side of the journal box and coöperating chafing plates mounted upon and overlying each of the vertical side walls which bound the pedestal opening, the contacting wear surfaces of said chafing plates being interfitted to have rocker engagement.

6. In a car truck, a pedestal frame provided at its upper part with four outstanding spring supporting lugs and having a journal box opening provided with parallel vertical side walls, a journal box extending through said pedestal opening and seated between said vertical side walls, chafing plates mounted upon each side of the journal box, coöperating chafing plates mounted upon each of said parallel vertical side walls of the pedestal, the contacting wear surfaces of said chafing plates being interfitted to have rocker engagement with each other, spring supporting ears upon each side of the journal box and arranged to respectively register with the spring supporting lugs of the pedestal frame, and coiled expansion springs interposed between the several pairs of ears and lugs, said spring supporting ears of the journal box being arranged to project at opposite sides of the pedestal frame and confining the latter against bodily movement in the direction of the axis of the journal box.

7. A pedestal frame member comprising a pair of registering sheet metal plates, an interposed wheel piece, and through-bolts or rivets extending through said registering plates and wheel piece and rigidly uniting said parts.

8. A pedestal frame member comprising a pair of spaced apart registering sheet metal plates integrally united with each other at corresponding margins of said plates, space blocks interposed between said plates, a wheel piece likewise interposed between said plates and engaging said space block, and through-bolts or rivets rigidly uniting said parts.

9. In a car truck frame, a pedestal frame comprising two main pedestal frame members, each formed of registering parallel sheet metal plates, integrally united with each other along corresponding margins by a transversely extending portion, a frame bar extending between and secured to the upper portions of each of said members, a tie bar extending between and secured to the lower portions of each of said members, and spring supporting lugs mounted upon upper portions of the respective main pedestal frame members and projecting laterally therefrom at each side thereof.

10. In a car truck frame, a pedestal frame comprising two main pedestal frame members, each formed of two registering parallel sheet metal plates integrally united with each other along those margins of the member which in the assembled frame are proximate, by transversely extending wall portions, a frame bar extending between and rigidly secured to the upper portions of each of said main members, a tie bar extending between and rigidly secured to the lower portions of each of said main pedestal members, said upper bar, tie bar and the uniting wall portions of the main pedestal members together forming the bounding walls of a journal box opening, a spring supporting bar extending at right angles through the upper portion of each of said main pedestal members and projecting at each side thereof, and angle irons secured to each of the several projecting portions of the bars and to

the corresponding proximate side faces of the main pedestal frame members.

11. A pedestal frame member formed from a blank of sheet metal, notched about midwidth at its upper and lower margins, bent upon itself along its central vertical line and provided with registering bar apertures, a bar extending through said apertures and protruding at each side, and angle pieces secured to the protruding portions of the bar and to the proximate side faces of the blank.

12. In a car truck, a pedestal frame provided with a journal box opening having parallel vertical side walls, a journal box extending through said pedestal opening and confined between said side walls, a chafing plate secured to either side of said journal box by having their upper and lower ends crimped over the respective upper and lower ends of said journal box.

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