

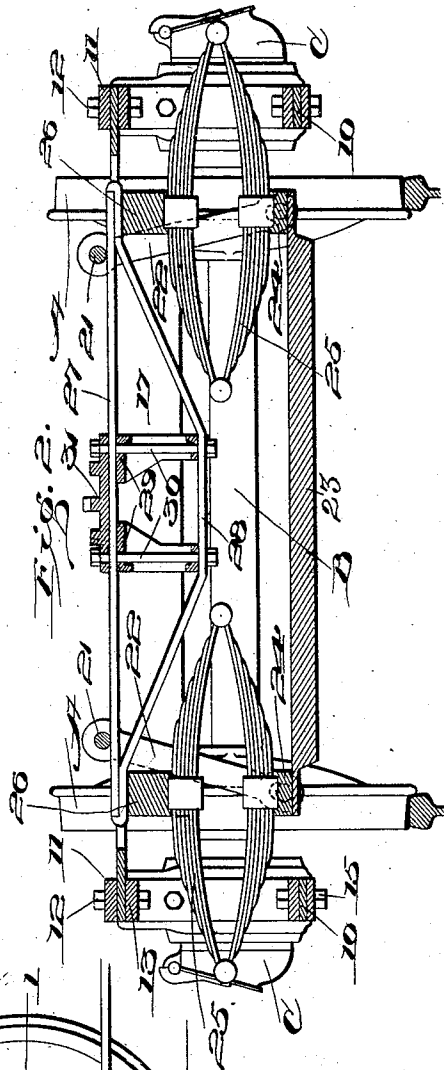
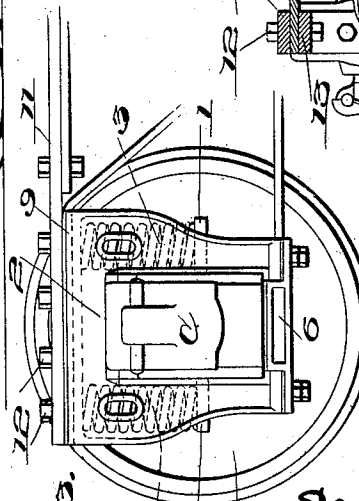
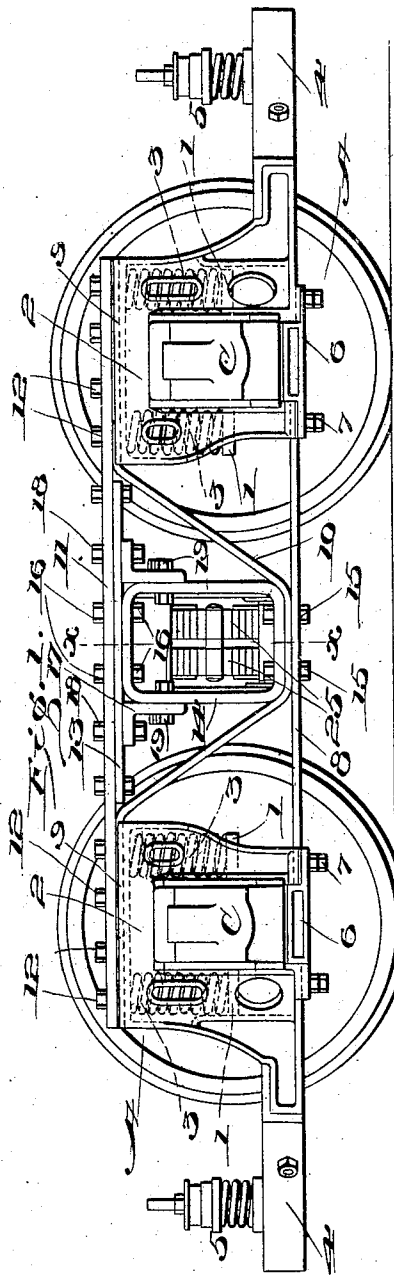
No. 845,977.

PATENTED MAR. 5, 1907.

E. PECKHAM.
TRUCK.

APPLICATION FILED JULY 29, 1904.

3 SHEETS—SHEET 1.



WITNESSES:

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Fig. 3.

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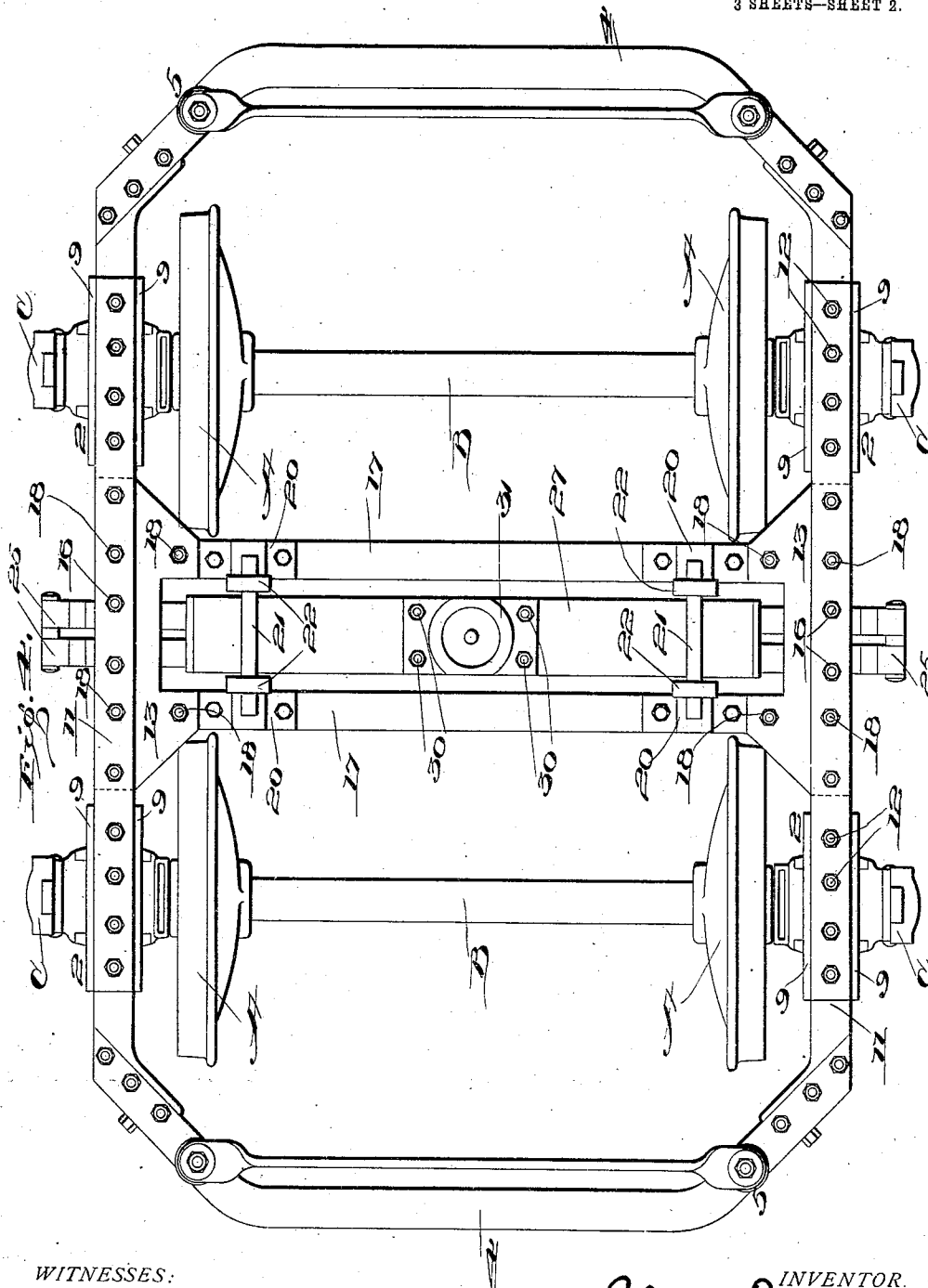
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3 SHEETS--SHEET 2.



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3 SHEETS—SHEET 3.

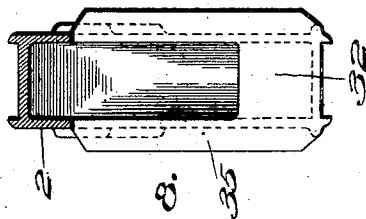


Fig. 8.

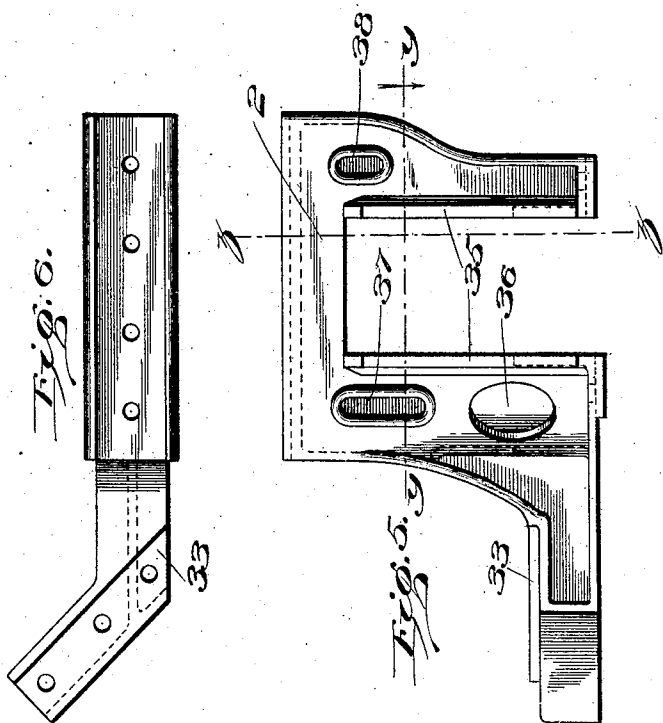


Fig. 5.

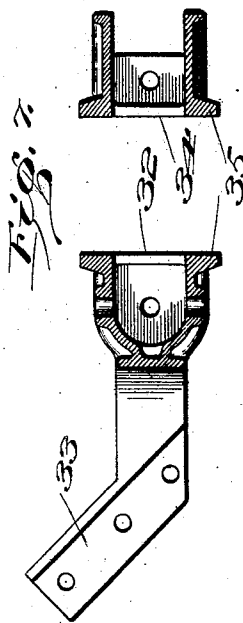


Fig. 7.

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UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF KINGSTON, NEW YORK.

TRUCK.

No. 845,977.

Specification of Letters Patent.

Patented March 5, 1907.

Application filed July 29, 1904. Serial No. 218,638.

To all whom it may concern:

Be it known that I, EDGAR PECKHAM, residing at Kingston, in the county of Ulster and State of New York, have invented certain new and useful Improvements in Trucks, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the construction of trucks.

One of the objects of this invention is to provide a truck of the general construction known in the art as the "Master Car-Builders'" type, in which such changes are made as to obviate the necessity of using equalizer-bars and result in a stronger, lighter, and easier-riding truck.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be hereinafter illustrated, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, which illustrate two of various possible embodiments of my invention, Figure 1 is a side elevation of a truck embodying my invention. Fig. 2 is a cross-section of the same, taken on the line *x x* of Fig. 1. Fig. 3 is a side elevation of a portion of a slightly different embodiment of my invention. Fig. 4 is a plan view of the embodiment shown in Fig. 1. Fig. 5 is an enlarged detail elevation of the pedestal shown in Fig. 1. Fig. 6 is a plan of the same. Fig. 7 is a cross-section on the line *y y* of Fig. 5. Fig. 8 is a cross-section taken on the line *z z* of Fig. 5.

Similar reference characters refer to similar parts throughout the several views.

It may here be noted that in former trucks of this general type it has been considered necessary to use equalizer-bars in order to attain the best results in the matter of strength and ease of riding. These parts are heavy and expensive and occupy so great a space upon the axle-boxes that any springs mounted thereupon are necessarily small.

In constructions of the general nature of that hereinafter described the above and other defects are remedied by supporting the truck-frame directly upon the axle-boxes by means of heavy spiral springs. Such an arrangement with its many advantageous

features, including a long spring-base and a low-hung car-body, is rendered practicable by reason of the peculiar construction and arrangement of the several parts, as herein- after described.

Another object is to provide a pedestal construction which shall be adapted to inclose heavy spiral springs and yet possess strength and stiffness to a marked degree.

Referring now to Figs. 1 and 2, A represents the wheels of a truck mounted upon axles B, having axle-boxes C. Positioned upon the latter are saddles 1, which serve to support pedestals 2 by means of spiral springs 3. These springs are preferably two in number upon each axle-box and extend into partially-inclosed recesses or "chambers" in the pedestals 2. With this construction it will be noted that if one of these springs should break the remaining spring alone will tend to support the load which was borne by both of them, and thus prevent the entire disabling of the truck. Upon the outer projecting ends of pedestals 2 are mounted end bars 4, having thereon the spring-supports 5 for outside-hung motors. It will be obvious that several of the features of this invention may be used in connection with a construction which permits of inside-hung motors or, if desired, in a "trailer-truck," as hereinafter more particularly described. The legs of the pedestals 2 are connected by repair-pieces 6, and stretched between the lower ends of the inner legs on each side of the truck and secured within slots therein by means of bolts 7 is a tie-bar 8. Mounted upon pedestals 2 between the parallel flanges 9 and secured at its depressed central portion to tie-bar 8 is a truss or "stiffening" member 10. A side bar 11 is supported at its ends upon pedestals 2, resting upon member 10 and secured to the same and to the pedestals by means of bolts 12. It may here be noted that the pedestals, side bars, and tie-bars, together with the stiffening member 10, form a light and yet strong and rigid truss construction for the side frame of the truck. Secured to the lower surface of side bar 11 is a plate 13, shaped substantially as shown in Fig. 4 and having two inwardly-projecting portions for a purpose hereinafter described. Extending from the lower surface of this plate to the upper surface of member 10 is a rectangular frame 14, preferably formed of one piece of metal. This frame is secured at its lower end by means of bolts 15 passing through

stiffening member 10 and tie-bar 8 and at its upper end by means of bolt 16 passing through plate 13 and side bar 11 and contributes materially to the above-mentioned stiffness and strength of the truck-frame. Transoms 17 are preferably formed of angle-iron with their flanges extending outwardly and project under the before-mentioned plate 13 and rest against frame 14 and are secured to these parts by bolts 18 and 19, respectively. This construction, by reason of the use of the integral plate 13 in place of separate gussets, adds to the stiffness of the connection of the transoms with the side bars and simplifies the construction of this portion of the truck. Mounted upon the transoms by means of brackets 20 is a pin 21, from which depend the hanger-links 22. Pivotaly connected to these links is a spring-plank 23, formed of substantially I cross-section with the web arranged horizontally, and between the upper flanges of this plank is a spring-block 24. It will be noted that the preceding description applies to one side only of the truck, it being understood that both sides thereof are identical. Full elliptic springs 25 are mounted upon blocks 24 and project through the frames 14, as shown in Fig. 2, this construction permitting the springs to be placed at such a distance apart as to give the bolster a long spring-base, and hence materially increase the stability thereof. The bolster is mounted upon springs 25 by means of chairs 26 and comprises an upper member 27 and a lower member 28, spaced at their central portions by means of chairs 29, to which they are secured by bolts 30 passing therethrough. Upper member 27 is horizontal, and the lower member 28 is inclined upwardly toward its ends and flanged, so as to form abutments, against which the ends of the upper member are adapted to rest. This construction results in a light and yet strong bolster in which the horizontal form of the upper member is advantageous, in that it permits the desirable feature of a low-hung car-body. Upon the bolster are mounted the customary center plate 31, secured in place by the above-mentioned bolts 30, and also any desired form of side bearings.

In Fig. 3 is shown a slightly different embodiment of my invention, in which several features thereof are used in connection with a truck without motors or trailer truck. This embodiment differs from that previously described merely in the end construction and in the form of the pedestals. As no motor-supports are required, the end bar 4 is done away with, and the outer legs of pedestals 2 extend downwardly in a form substantially identical with that of the inner legs.

Referring now to the construction of the pedestal, as shown in detail in Figs. 5, 6, 7, and 8, the outer depending leg of the same is

hollow and is open on its inner face adjacent axle-box C, except at the lower portion, which is closed by a web 32, as shown in Fig. 8. This permits the insertion of a spring above web 32, in which position it rests upon the saddle 1, as shown in Fig. 1 of the drawings. The outward extension of this leg of the pedestal is of flanged construction, and the end bar 4 is supported upon the same, resting within a recess 33. The inner leg of the pedestal is also hollow and is provided with a web 34 similar to the web 32 and serving to stiffen the same. Both legs of the pedestals are preferably provided with stiffening ribs or flanges 35, which also serve as guides for the axle-box C in its movement between the same. The metal is cut away, as is shown at 36, 37, and 38, so as to lighten the structure without materially weakening the pedestal.

The operation of the above-described embodiment of my invention is as follows: The spiral spring 3 within the outer leg of the pedestal 2 is first placed in position, and saddle 1 is inserted beneath the same. The spiral spring within the inner leg is then placed between the saddle 1 and that portion of the pedestal above this leg, the same being readily accomplished in view of the fact that the inner leg of the pedestal is opened upon the inner side, as is shown in Fig. 7 of the drawings. The pedestal may now be mounted upon the axle-box C, the saddle 1 resting upon the box, as will be apparent from the drawing. The remaining parts of the truck are assembled in a manner which should be largely obvious from the above description. It may here be noted that the words "outer" and "inner" are used in this description and throughout the following claims to designate position with reference to the center of the truck as the central or innermost point. The weight of the car-body upon the center plate 31 is transmitted through the bolster and the full elliptic springs 25 to the spring-plank 23. This construction permits the bolster any necessary vertical movement, guided by the hanger-links 22, and the full resiliency of the springs is thus utilized. From the spring-plank 23 the load is transmitted by the hanger-links 22 and pin 21 to the transoms 17 and thence by means of the previously-described rigid connection to the side truck-frame. From the side frame the weight is transmitted to the upper surfaces of the pedestals and thence through the spiral springs 3 and saddles 1 directly to the axle-boxes C.

It will thus be seen that I have provided a simple and efficient construction in which a maximum of strength for the weight of the metal is attained and the necessity for the use of equalizer-bars and consequent raising of the car-body and increase of the cost of the truck is obviated.

Among the many advantageous features of constructions of the nature of that above described it may be noted that the peculiar arrangement of springs not only increases the length of the spring-base, thus lessening the tendency to rock or "gallop," but also, on account of the plurality of springs, decreases the effect of the possible breaking of one of them, as such an accident with this construction would not result in the dropping of the car-body or even prevent the running of the car. Moreover, as above noted, the bolster construction is not only light and rigid, but permits the same to hang down between the springs, and thus results in the desirable feature of a low-hung car-body. It will also be noted that as the axle-boxes are not encumbered by equalizer-bars larger spiral supporting-springs may be used than would otherwise be practicable. This is a feature of importance, as in this manner spiral springs may be used of such dimensions as safely to perform the functions of main carrying-springs and not act merely as auxiliary springs, as in many constructions in which spiral axle-box springs are used. The ease with which the several parts may be assembled and the security with which they are held in assembled position will also be clear to those skilled in this art. The structure of the pedestal also possesses marked advantages in the matters of lightness and stiffness of construction and the ease with which the several parts associated therewith may be assembled. It will be noted that this lightness is attained without materially weakening the structure of the pedestal, the portions cut away being those which would be subjected to a relatively slight stress and the upper portion of the outer leg being preserved intact, thereby providing a strong and rigid support for the end bar and the parts resting upon the same.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a side frame comprising upper and lower members and stiffening means interposed therebetween, pedestals secured to the upper and lower members of

said side frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, saddles upon said axles, and means whereby each pedestal is supported upon a saddle upon the corresponding axle.

2. In combination, a side frame comprising upper and lower member and stiffening means interposed therebetween and secured to each of the same, a pedestal secured to said side frame, an axle-box, a saddle upon said axle-box, chambers in said pedestal, and springs adapted to fit in said chambers and rest upon said saddle upon either side of said axle-box.

3. In combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, pedestals secured to said side frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, saddles upon said axles, chambers in said pedestals, and springs in said chambers whereby each pedestal is supported upon a saddle upon the corresponding axle.

4. In combination, a bolster comprising an upper and a lower member and spacing-blocks mounted between said members, said upper member being horizontal and said lower member extending under said spacing-blocks and upwardly on either side thereof, projecting shoulders upon said lower member against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said frame, a plurality of axles, and means whereby the load upon said frame is transmitted to each of said axles in four substantially equal components.

5. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-blocks and inclined upwardly on either side thereof and provided with integral shoulders against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said truck-frame, a plurality of axles, pedestals upon said axles, and means whereby the entire load upon said truck-frame is transmitted through said pedestals to said axles in four substantially equal components.

6. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-blocks and upwardly on either side thereof and provided with integral shoulders against which the ends of said upper member are adapted to abut, pedestals, means whereby the load upon said bolster is transmitted to said pedestals, axle-boxes, saddles on said axle-boxes, cham-

bers in said pedestals, and springs adapted to fit in said chambers and rest upon said saddles on either side of said axle-boxes.

7. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-boxes and upwardly on either side thereof and provided with integral shoulders against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said truck-frame, pedestals secured to said frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, chambers in said pedestals, springs in said chambers, and means whereby each pedestal is supported upon either side of the corresponding axle.

8. In combination, a bolster, springs upon which said bolster is supported, transoms, links supporting said springs upon said transoms, side bars to which said transoms are secured, pedestals, tie-bars connecting said pedestals, stiffening members extending over said pedestals, and secured to said side bars and abutting against said tie-bars, rectangular members interposed between said stiffening members and said side bars and secured to said transoms, and axles upon which said pedestals are mounted, said parts being so constructed and related as to transmit the entire load upon said bolster to said axles through said pedestals.

9. In combination, a side bar, a plurality of transoms and an integral plate secured to said side bar and projecting beyond the inner edge thereof and having further projections adapted to be secured to said transoms.

10. In combination, a side bar, a plurality of transoms, and an integral plate secured to the lower surface of said side bar and having projections adapted to be secured to said transoms.

11. In combination, a bolster, springs upon which said bolster is supported, transoms, a spring-plank of substantially I cross-section, links supporting said spring-plank upon said transoms, side bars to which said transoms are secured, pedestals, and axles upon which said pedestals are mounted, said parts being so constructed and related as to transmit the entire load upon said bolsters to said axles through said pedestals.

12. In a truck, a pedestal, the inner leg of which is hollow and is provided with openings upon two opposite sides and the outer leg of which is hollow and is provided with an opening upon the side toward said inner leg and closed upon the opposite side.

13. In a truck, a pedestal of flanged construction, the inner leg of which is comprised of two substantially parallel members connected at their lower portions and the outer

leg of which is hollow and is inclosed upon three sides.

14. In combination, a bolster, springs upon which said bolster is supported, transoms, links supporting said springs upon said transoms, side bars to which said transoms are secured, pedestals, tie-bars connecting said pedestals, stiffening members between said tie-bars and said side bars and connected with the transoms, axles, and springs mounted upon said axles and positioned within and adapted to support said pedestals, said parts being so constructed and related as to transmit the entire load upon said bolster to said axles through said last-mentioned springs.

15. In a truck, in combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, a plurality of transoms, and an integral plate secured to said side frame and having projections one of which is secured to each of said transoms.

16. In a truck, in combination, a side frame comprising upper and lower members, and stiffening means interposed therebetween and secured to each of the same, a plurality of transoms, and an integral plate secured to the lower surface of said upper member and having projections one of which is secured to each of said transoms.

17. In a truck, in combination, a side frame comprising an upper and a lower member and an intermediate member secured at each end to said upper member and extending downwardly from each end and secured adjacent its central portion to said lower member, a plurality of transoms, and an integral plate secured to said upper member and having projections one of which is secured to each of said transoms.

18. In a truck, in combination, an upper side member, a lower side member, an intermediate member interposed between the same and secured at each end to said upper side member and extending downwardly from each end portion to said lower side member, a plurality of transoms, a plate secured to the lower surface of the upper side member and having projections secured to said transoms, and a member interposed between said transoms, said plate and the lower portion of said intermediate member and secured to each of the same.

19. In a truck, in combination, an upper side member, a lower side member, an intermediate member secured adjacent each end to said upper side member and having a depending portion secured to said lower side member, a plurality of transoms secured to said upper side member, and a member interposed between said transoms, said upper side member, and the depending portion of said lower side member and secured to each of the same.

20. In a truck, in combination, an upper side member, a lower side member, an intermediate member secured adjacent each end to said upper side member and having a depending portion secured to said lower side member, a plate secured underneath said upper member, a plurality of transoms secured to said plate and to said upper side member, and a substantially rectangular member interposed between said transoms, said plate, and the depending portion which is secured to said lower side member and secured to each of the same.

21. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to the ends of said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to the central portion of said stiffening member, a plate secured underneath said side bar, transoms secured to said plate and to said side bar, and a member interposed between and secured to said transoms, said plate, and the depending portion of said stiffening member.

22. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to the ends of said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to the central portion of said stiffening member, a plate secured underneath said side bar, transoms secured to said plate, a member interposed between and secured to said transoms, side bar, and the depending portion of said stiffening member, springs housed within said pedestals, axles, and means upon said axles supporting the entire load upon said transoms through said springs.

23. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to said stiffening member adjacent the central portion thereof, transoms, an integral plate se-

cured to said side bar having projections each of which is secured to one of said transoms, and a member interposed between and secured to said transoms, said side bar, and the central portion of said stiffening member.

24. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to said stiffening member adjacent the central portion thereof, transoms, a plate secured to said side bar having projections secured to said transoms, a member interposed between and secured to said transoms, said side bar, and the central portion of said stiffening member, springs housed within said pedestals, axles, and saddles upon said axles adapted to support the entire load upon said transoms through said springs.

25. In a truck, in combination, a side bar, a plurality of transoms, a plate secured to said side bar and adapted to be secured to both of said transoms, a tie-bar, a rectangular stiffening member connected therewith and also connected with said plate, and stiffening means connected with said tie-bar and interposed between the same and said rectangular member, said stiffening means being directly secured to said side bar.

26. In a truck, in combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, a plate upon said upper member, a rectangular supporting member seated upon said stiffening means and connected with said plate, and a plurality of transoms connected with said plate and with said upper member and also with said rectangular supporting member.

In testimony whereof I affix my signature in the presence of two witnesses.

EDGAR PECKHAM.

Witnesses:

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WM. SPITZMILLER.