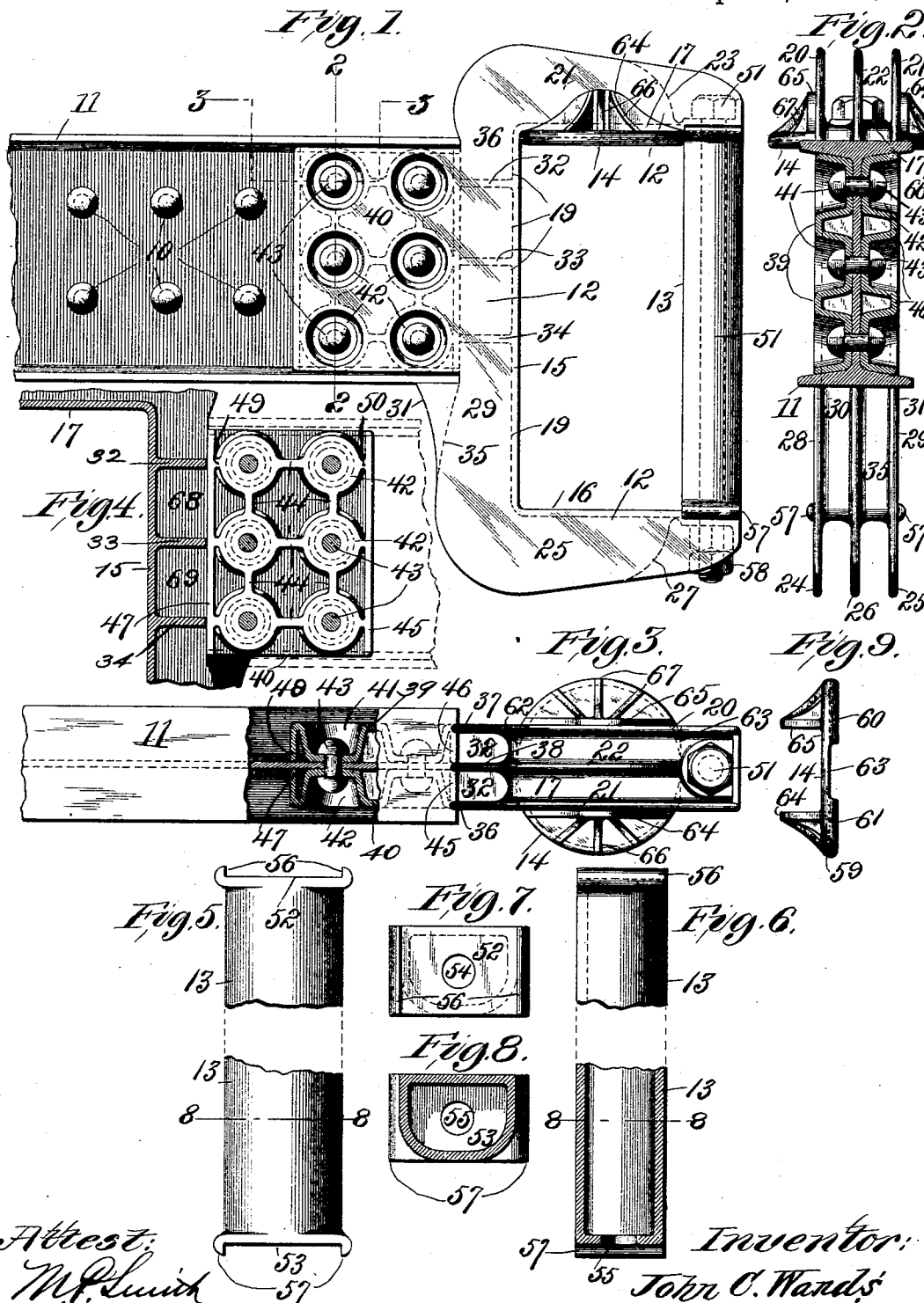


(No Model.)

J. C. WANDS.
CAR TRUCK.

No. 580,241.

Patented Apr. 6, 1897.



Attest:
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UNITED STATES PATENT OFFICE.

JOHN C. WANDS, OF ST. LOUIS, MISSOURI.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 580,241, dated April 6, 1897.

Application filed July 6, 1896. Serial No. 598,073. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WANDS, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Car-Trucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My present invention relates to car-trucks, and especially to housings for the oil-boxes and springs of a car-truck, and is an improvement upon my former invention shown in United States Letters Patent No. 562,262, dated June 16, 1896; and it consists in the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

Figure 1 is an outside elevation of one of my improved housings for the oil-boxes and springs of a car-truck, the same being shown in position for use upon the end of an I-beam side beam of the car-truck. Fig. 2 is a transverse vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a top plan view of the part shown in Fig. 1, the parts being broken away on the line 3 3 to more clearly illustrate the same. Fig. 4 is a vertical sectional view of a piece of the housing, taken on the line of one surface of the web of the I-beam and illustrating the parts of the housing which contact with the side and end of the web of the I-beam. Fig. 5 is a view in elevation of the outside face of the outer housing-column, the same being broken away in the center to economize space. Fig. 6 is a view in elevation, partly in section, of the inner face of the outer housing-column, the same being broken away in the center to economize space. Fig. 7 is a top plan view of the outer housing-column, and said column would appear the same in a bottom plan view. Fig. 8 is a horizontal sectional view of the outer housing-column on the lines 8 8 of Figs. 5 and 6. Fig. 9 is an end view of the upper spring-seat of which I make use.

My present invention is especially applicable to the class of car-trucks shown in my patent above referred to, in which I-beams are used for the side beams of the truck.

The rivets 10 (shown in Fig. 1) hold the I-beam side beam 11 securely in position relative to the cross-beams of the truck. My improved housing is attached to the ends of the

side beam 11 and consists of the three pieces which I designate as the "inner housing-column" 12, the "outer housing-column" 13, and the "upper spring-seat" 14. The inner housing-column 12 consists of the vertical housing-plate 15, to the lower end of which is attached the lower housing-plate 16, which plate projects outwardly at right angles to said plate 15. The upper housing-plate 17 is attached to the upper end of the plate 15 and projects outwardly at right angles to said plate and in a line parallel with the plate 16. The plates 15, 16, and 17 are formed integral, and their general outline is indicated by the dotted line 19 in Fig. 1. Projecting upwardly from the edges of the upper housing-plate 17 are the outer strengthening-ribs 20 and 21, said ribs running the entire length of said plate. Projecting upwardly from the center of said plate 17 and between the ribs 20 and 21 is a rib 22. The rib 22 extends parallel with the ribs 21 and 20, but it is cut short at its outer end, as shown by dotted line 23 in Fig. 1.

Projecting downwardly from the edges of the plate 16 are the outer strengthening-ribs 24 and 25, which extend the entire length of said plate 16, and projecting downwardly from the center of said plate is the strengthening-rib 26, which extends parallel with said ribs 24 and 25, but is cut short at its front end, as shown by the dotted line 27 in Fig. 1.

Extending inwardly from the edges of the plate 15 are the strengthening-ribs 28 and 29, the upper ends of which are attached to the inner ends of the ribs 20 and 21, respectively, and the lower ends of which are attached to the inner ends of the ribs 24 and 25, respectively. Extending inwardly from the lower ends of the ribs 28 and 29 are the lugs 30 and 31, which lugs engage under the lower corners of the I-beam. Between the ribs 28 and 29 and attached to the inner face of the plate 15 are the horizontal strengthening-walls 32, 33, and 34. Extending inwardly from the lower end of the plate 15 and between the ribs 28 and 29 is a strengthening-rib 35, the lower end of which is attached to the rib 26, and the upper end of which is attached to the lower side of the horizontal wall 34.

Extending inwardly from the edges of the upper end of the plate 15 are the strengthening-ribs 36 and 37, the lower ends of which are

attached to the horizontal wall 32 and the upper ends of which are attached to the ribs 20 and 21, respectively. Extending inwardly from the center of the upper end of the plate 15 and between the ribs 36 and 37 is a rib 38, the lower end of which is attached to the upper side of the wall 32 and the upper end of which is attached to the rib 22. Extending inwardly from the edges of the ribs 28 and 29 and above the lugs 30 and 31 are the riveting-plates 39 and 40, between which plates is positioned the end of the I-beam 11. The plates 39 and 40 are of such a width that they will fit closely between the flanges of the I-beam, and their outer surfaces are in a plane with the outer surfaces of the ribs 28 and 29.

The plates 39 and 40 are of substantially a uniform thickness, and when seen in cross-section, as in Fig. 2, they present a wavy appearance.

Formed in the plates 39 and 40 at regular intervals and in horizontal alinement are the circular flaring depressions 41 and 42, respectively, and the inner surfaces of the material which form said depressions engage upon opposite sides of the web of the I-beam, and in the centers of said depressions are apertures registering with similar apertures through said web, and the rivets 43 are inserted through said apertures, thus holding said plates firmly in position relative to the I-beam. The inner face of one of the riveting-plates is shown in Fig. 4.

Strengthening-walls 44 are inserted between the depressions 41 and 42, and from the outer edges of the plates 39 and 40 ribs 45 and 46 project toward each other and engage upon opposite sides of the web of the I-beam. Similar ribs 47 and 48 project toward each other from the inner edges of the plates 39 and 40 and engage upon opposite sides of the web of the I-beam.

As will be seen by reference to Fig. 2, the upper walls of the upper depressions 41 and 42 engage closely under the upper flanges of the I-beam, while the lower walls of the lower depressions 41 and 42 engage closely against the lower flanges of the I-beam.

Strengthening-walls 49 connect the walls of the adjacent circular depressions 41 and 42 with the ribs 45 and 46, and similar walls 50 connect the walls of the adjacent circular depressions with the ribs 47 and 48. The end edge of the I-beam engages directly against the free edges of the horizontal walls 32, 33, and 34, and the end of the lower flanges of the I-beam engages against the edges of the ribs 30, 31, and 35, while the end of the upper flanges of the I-beam engages against the edges of the ribs 36, 37, and 38.

In the outer ends of the plates 16 and 17 and in vertical alinement with each other and between the outer ends of the ribs projecting, respectively, upwardly and downwardly from

said plates are vertically-alined openings, designed to receive the bolt 51. (Shown in dotted lines in Fig. 1.)

The outer housing-column 13 is a hollow casting, which is substantially rectangular in cross-section, as shown in Fig. 8, with its two outer corners rounded. Webs 52 and 53, having the apertures 54 and 55, form the ends of the column. The lugs 56 project upwardly from the web 52 and engage upon each side of the free end of the plate 17, while the web 52 engages the under side of said end of said plate. The web 53 engages the outer end of the plate 16 and the lugs 57 project downwardly from said web and engage on opposite sides of said plate. The bolt 51, after passing through the end of the plate 17, passes through the opening 54 and downwardly through the column 13, through the opening 55, and thence through the opening in the outer end of the plate 16, and nuts 58 are placed upon the lower end of said bolt, and said column is held firmly in position.

The upper spring-seat 14 consists of a disk 59, which is of such a size that it will fit between the outer and inner housing-columns, as shown in Fig. 1. Flanges 60 and 61 project upwardly and downwardly from the edge of said disk and are designed to have the upper end of the spring inserted between them. The ends of the flanges 60 and 61 do not meet, thus forming recesses 62 and 63 between said ends, thus allowing the housing-columns 12 and 13 to come directly against the opposite edges of the disk 59. By this means it is possible to use a spring as large as can be easily inserted between said housing-columns.

Projecting upwardly from the upper face of the disk 59 are parallel vertical walls 64 and 65, designed to engage upon opposite sides of the plate 17 and the ribs 20 and 21, as shown in Fig. 2. The walls 64 and 65 are highest at the center and slope both ways.

Strengthening-ribs 66 and 67 are inserted upon the upper surface of the disk 59 and against the outer faces of the walls 64 and 65, respectively.

Broadly speaking, the inner housing-column 12 consists of the vertical housing-plate 15, the lower housing-plate 16, the upper housing-plate 17, the outer ribs 20 and 21, the rib 22, the outer ribs 24 and 25, the rib 26, the ribs 28 and 29, the lugs 30 and 31, the walls 32, 33, and 34, the rib 35, the ribs 36 and 37, the rib 38, the riveting-plates 39 and 40, the walls 44, the ribs 45 and 46, the ribs 47 and 48, and the walls 49 and 50, all formed integral.

The pocket or hollow 68 formed between the ribs 28 and 29 and between the walls 32 and 33 and the similar pocket or hollow 69 formed between the walls 33 and 34 communicate with the space between the riveting-plates 41 and 42 through the opening between the ribs 45 and 46, and they are formed by

the same core which forms the space between and the contour of the inner faces of the riveting-plates 41 and 42.

When the inner housing-column 12, having the elements and configurations described, is properly cast and suitably annealed, it forms a very strong and durable job and at the same time is light and inexpensive.

The webs 52 and 53 and the lugs 56 and 57 are formed integral with the outer housing-column 13, and when said column has been properly cast, having the outer form and the inner hollow, as described, it is then thoroughly annealed and is ready for use.

The spring-seat 14 consists of the disk 59, the flanges 60 and 61, the walls 64 and 65, and the ribs 66 and 67, all cast integral in the usual way and annealed.

My improved housings for the oil-boxes and springs of car-trucks possess all the essentials of a first-class job and at the same time possess many advantages over the devices heretofore in use for the same purpose.

By changing or modifying the form of riveting-plates my improved housing may be attached to other forms of side beams than I-beams, and this may be done without departing from the spirit of my invention.

The feature to which I wish to call especial attention is the construction which allows the oil-boxes and springs to be removed from the car-truck through the outer sides of the housings instead of through the lower sides of the housings, as has been the practice heretofore. This operation is made possible by the use of the outer housing-columns interposed between the outer ends of the top and bottom plates, as shown and described. It has been the practice heretofore to make the bottoms of the housings removable to permit of removing and replacing the oil-boxes and springs, and I believe that I am the first to make the outer housing-columns removable for this purpose. In this connection I do not wish to limit myself to the construction shown, as the outer housing-columns may be made in a great variety of forms and may be applied to many different styles of side beams, and it is not essential to the success of this feature that my specific form of inner housing-column should be used. It is only essential that the outer vertical housing-column should be removable and replaceable without disturbing the other parts of the housing. By this construction when it is desired to remove the oil-boxes and springs from the housing the bolt 51 is first removed from its position, and then the outer housing-column 13 is removed from its position between the outer ends of the upper and lower plates. Then by jacking up the side beams until the weight of the truck is removed from the wheels the oil-boxes may be readily removed from the housings, and after being repaired may be replaced or other boxes may be substituted with much less trouble and labor than have heretofore been required where it was neces-

sary to remove the oil-boxes by removing the lower sides of the housings.

By following the principles of my invention housings may be made with removable outer columns and applied to trucks having diamond-shaped arch-bar side beams, channel-bar side beams, cast-steel side beams, and to all the other ordinary constructions of side beams, as well as to the side beams which I show.

I claim—

1. In a car-truck, I-beam side beams, the riveting-plates 39 and 40 attached to the ends of said side beams, inner housing-columns attached to and formed integral with said riveting-plates, lugs projecting inwardly from said inner housing-columns and supporting the lower corners of said I-beams, horizontal walls projecting inwardly from said inner housing-columns and abutting against the end edges of the webs of said I-beams, upper housing-plates attached to and formed integral with the upper ends of said inner housing-columns, lower housing-plates attached to and formed integral with the lower ends of said inner housing-columns, and outer housing-columns removably inserted between the outer ends of said upper and lower housing-plates, substantially as specified.

2. In a car-truck, I-beam side beams, means of holding said side beams in position relative to the cross-beam, riveting-plates attached to each end of each of the side beams, inner housing-columns attached to and formed integral with said riveting-plates, upper housing-plates attached to and formed integral with the upper ends of said housing-columns, lower housing-plates attached to and formed integral with the lower ends of said housing-columns, strengthening-ribs formed integral with the upper sides of said upper plates, strengthening-ribs formed integral with the lower sides of said lower plates, horizontal walls projecting inwardly from said inner housing-columns and abutting against the end edges of the webs of said I-beams, and ribs formed integral with said inner housing-columns and connecting the inner ends of said upper ribs with the inner ends of said lower ribs and with said riveting-plates, substantially as specified.

3. In a car-truck, I-beam side beams, riveting-plates attached to each end of each of said side beams, inner housing-columns attached to said riveting-plates and formed integral therewith, the upper housing-plates formed integral with the upper ends of said inner housing-columns, lower housing-plates formed integral with the lower ends of said inner housing-columns, ribs upon the upper side of and formed integral with said upper housing-plates, ribs upon the lower side of and formed integral with said lower housing-plates, ribs projecting inwardly from said inner housing-columns and connecting the inner ends of said upper ribs with said riveting-plates and the lower ends of said lower

ribs with said riveting-plates, lugs projecting inwardly from said last-mentioned ribs and engaging the lower corners of said I-beams, substantially as specified.

5 4. In a car-truck, I-beam side beams, riveting-plates attached to each end of each of said side beams, inner housing-columns attached to said riveting-plates and formed integral therewith, the upper housing-plates
10 formed integral with the upper ends of said inner housing-columns, lower housing-plates formed integral with the lower ends of said inner housing-columns, ribs upon the upper side of and formed integral with said upper
15 housing-plates, ribs upon the lower side of and formed integral with said lower housing-plates, ribs projecting inwardly from said inner housing-columns and connecting the inner ends of said upper ribs with said riveting-plates and the lower ends of said lower
20 ribs with said riveting-plates, lugs projecting inwardly from said last-mentioned ribs and engaging the lower corners of said I-beams, and horizontal walls projecting inwardly from
25 said inner housing-columns and abutting against the end edges of the webs of said I-beams, substantially as specified.

5. In a car-truck, I-beam side beams, the riveting-plates 39 and 40 attached to said side
30 beams, inner housing-columns formed integral with said riveting-plates, lugs projecting inwardly from said inner housing-columns and supporting the lower corners of said I-beams, upper housing-plates formed integral
35 with said inner housing-columns, lower housing-plates formed integral with said inner housing-columns, and the outer housing-columns 13 removably inserted between the outer ends of said upper and lower housing-plates,
40 substantially as specified.

6. In a car-truck, I-beam side beams, the riveting-plates 39 and 40 attached to said I-beam side beams, inner housing-columns formed integral with said riveting-plates, upper
45 housing-plates formed integral with said inner housing-columns, lower housing-plates formed integral with said inner housing-columns, outer housing-columns interposed between the outer ends of said upper and lower
50 housing-plates, and the upper spring-seats 14 interposed against the under sides of said upper housing-plates and between the upper ends of said inner and said outer housing-columns, substantially as specified.

55 7. In a car-truck, I-beam side beams, riveting-plates attached to said side beams, inner housing-columns formed integral with said riveting-plates, upper housing-plates formed integral with said inner housing-columns, lower housing-plates formed integral
60 with said inner housing-columns, outer housing-columns interposed between the outer ends of said upper and lower housing-plates, ribs upon the upper sides of said upper housing-plates, ribs upon the lower sides of said
65 lower housing-plates, ribs connecting said upper ribs with said riveting-plates, ribs con-

necting said lower ribs with said riveting-plates, lugs upon said last-mentioned ribs and engaging the lower corners of said I-beams, substantially as specified. 70

8. In a car-truck, I-beam side beams, riveting-plates attached to said side beams, inner housing-columns formed integral with said riveting-plates, upper housing-plates formed
75 integral with said inner housing-columns, lower housing-plates formed integral with said inner housing-columns, outer housing-columns interposed between the outer ends of said upper and lower housing-plates, ribs
80 upon the upper sides of said upper housing-plates, ribs upon the lower sides of said lower housing-plates, ribs connecting said upper ribs with said riveting-plates, ribs connecting said lower ribs with said riveting-plates, lugs
85 upon said last-mentioned ribs and engaging the lower corners of said I-beams, and horizontal walls projecting inwardly from said inner housing-columns and engaging the end edges of the webs of said I-beams, substantially as specified. 90

9. In a car-truck, I-beam side beams, riveting-plates attached to said side beams, inner housing-columns formed integral with said riveting-plates, upper housing-plates formed
95 integral with said inner housing-columns, lower housing-plates formed integral with said inner housing-columns, outer housing-columns interposed between the outer ends of said upper and lower housing-plates, ribs
100 upon the upper sides of said upper housing-plates, ribs upon the lower sides of said lower housing-plates, ribs connecting said upper ribs with said riveting-plates, ribs connecting said lower ribs with said riveting-plates, lugs
105 upon said last-mentioned ribs and engaging the lower corners of said I-beams, horizontal walls projecting inwardly from said inner housing-columns and engaging the end edges of the webs of said I-beams, and plates interposed
110 against the under sides of said upper housing-plates and between the upper ends of said inner and said outer housing-columns, flanges projecting outwardly and downwardly from the edges of said plates and guide-walls
115 projecting upwardly from said interposed plates and outside of said upper housing-plates, substantially as specified.

10. In a housing for the oil-boxes and springs of a car-truck, the inner housing-plate 15, the
120 lower housing-plate 16 and the upper housing-plate 17 all formed integral, the strengthening-ribs 20, 21 and 22 upon said upper housing-plate, the strengthening-ribs 24, 25 and 26 upon said lower housing-plate, the ribs 28
125 and 29 extending inwardly from the edges of the plate 15 and connecting the inner ends of the upper ribs 20 and 21 with the inner ends of the lower ribs 24 and 25, the horizontal walls 32, 33 and 34 extending inwardly from
130 the plate 15 and between the ribs 28 and 29 and the riveting-plates 39 and 40 extending inwardly from the ribs 28 and 29, all formed integral, substantially as specified.

11. In a housing for the oil-boxes and springs of a car-truck, the inner housing-plate 15, the lower housing-plate 16 and the upper housing-plate 17, all formed integral, the ribs 20, 21 and 22 upon the upper side of the upper housing-plate 17, the ribs 24, 25 and 26 upon the lower side of the lower housing-plate 16, the ribs 28, 29 and 35 extending inwardly from the lower end of said plate 15, the lugs 30 and 31 extending inwardly from said ribs 28 and 29, respectively, the ribs 36, 37 and 38 extending inwardly from the upper end of said plate 15, the horizontal walls 32, 33 and 34 extending inwardly from said plate 15 and the riveting-plates 39 and 40 connected with said plate 15, all formed integral, substantially as specified.

12. In a housing for the oil-boxes and springs of a car-truck, the inner housing-plate 15, the lower housing-plate 16 and the upper housing-plate 17, all formed integral, the ribs 20, 21 and 22 upon the upper side of the upper housing-plate 17, the ribs 24, 25 and 26 upon the lower side of the lower housing-plate 16, the ribs 28, 29 and 35 extending inwardly from the lower end of said plate 15, the lugs 30 and 31 extending inwardly from said ribs 28 and 29, respectively, the ribs 36, 37 and 38 extending inwardly from the upper end of said plate 15, the horizontal walls 32, 33 and 34 extending inwardly from said plate 15, the riveting-plates 39 and 40 connecting with said plate 15, all formed integral, said riveting-plates having the circular depressions 41 and 42, the ribs 45 and 46 extending toward each other from the outer edges of said riveting-plates 39 and 40, the ribs 47 and 48 extending inwardly toward each other from the inner edges of said plates 39 and 40, the walls

44 connecting said circular depressions 41 and 42, the walls 49 connecting said circular depressions with the ribs 45 and 46, respectively, the walls 50 connecting said circular depressions with the ribs 47 and 48, respectively, all cast integral and annealed, substantially as specified.

13. In a housing for the oil-boxes and springs of a car-truck, the outer housing-column 13; which column is hollow and substantially rectangular in cross-section with its two outer corners rounded; the web 52 closing the upper end of the opening in said column and having the small aperture 54 in its center, the web 53 closing the lower end of the opening in said column and having the small aperture 55 in its center, the lugs 56 projecting upwardly from said web 52 and the lugs 57 projecting downwardly from said web 53, all cast integral and annealed, substantially as specified.

14. In a housing for the oil-boxes and springs of a car-truck, the upper spring-seat 14 consisting of the disk 59, the flanges 60 and 61 extending outwardly and downwardly from the edge of said disk and leaving the recesses 62 and 63 upon opposite sides of said disk, the walls 64 and 65 projecting upwardly from said disk and the strengthening-ribs 66 and 67 against the outer sides of said walls and upon the upper face of said disk 59, all cast integral, substantially as specified.

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

JOHN C. WANDS.

Witnesses:

S. G. WELLS,
MAUD GRIFFIN.