

J. REPETTO.
FIFTH WHEEL CONSTRUCTION.
APPLICATION FILED NOV. 21, 1906.

934,757.

Patented Sept. 21, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

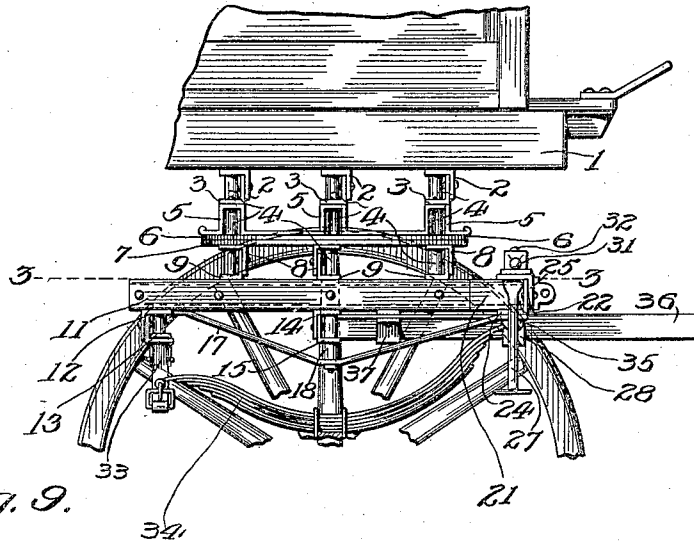


Fig. 9.

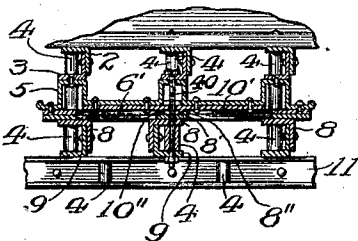


Fig. 2.

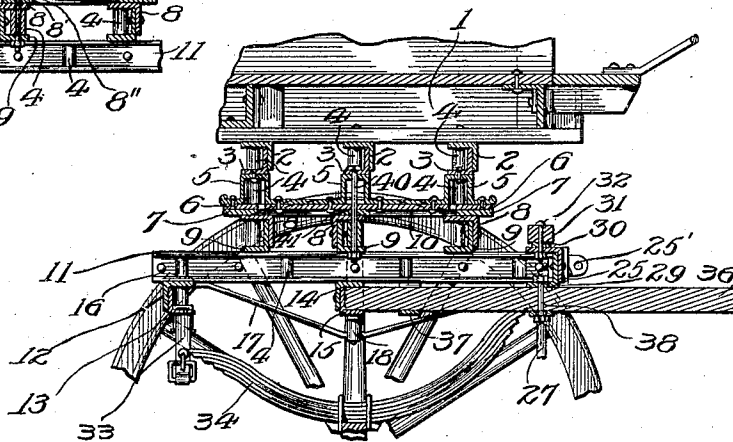
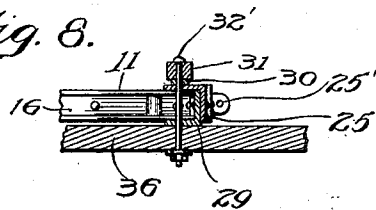


Fig. 8.



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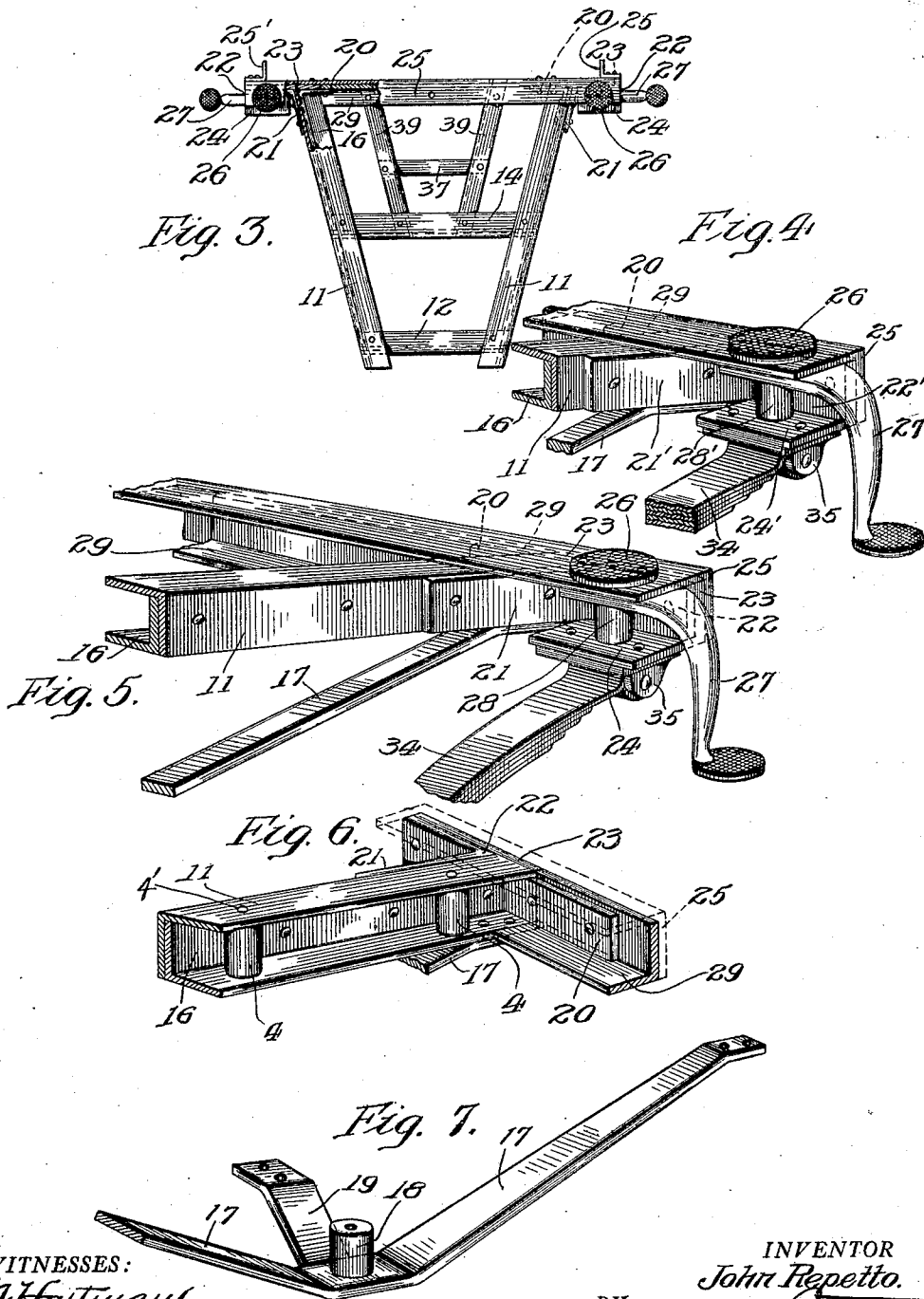
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN REPETTO, OF PHILADELPHIA, PENNSYLVANIA.

FIFTH-WHEEL CONSTRUCTION.

934,757.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed November 21, 1906. Serial No. 344,464.

To all whom it may concern:

Be it known that I, JOHN REPETTO, a citizen of the United States, and a resident of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Fifth-Wheel Constructions, of which the following is a full, clear, and complete disclosure.

My invention relates to vehicles and particularly to that class of the same having fifth wheel constructions.

The main objects of my invention are to provide a light, strong and durable fifth wheel construction, made principally of metallic strips and angle irons; to provide an improved mounting for a traction pole; to provide improved mountings for the springs of a vehicle; and to provide other improvements as will appear hereinafter.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of a vehicle constructed in accordance with this invention; Fig. 2 a longitudinally vertical central section of Fig. 1; Fig. 3 a fragmentary top plan view taken on line 3—3 of Fig. 1; Fig. 4 an enlarged perspective fragmentary view of a modified form of a portion of the vehicle; Figs. 5, 6, and 7 are enlarged perspective views of details of the vehicle; and Figs. 8 and 9 are fragmentary longitudinal vertical sections of modified forms of portions of the vehicle.

The body portion of the vehicle is carried on the longitudinal angle beams 1—1. To the under side of the forward end of the same are the transverse angle bars 2, bolted to which are similar angle bars 3. Between the angle bars 2 and 3 are placed posts 4 of a length equal to the space between said bars, and through said posts are passed bolts securing the same together. Secured to the under side of the angle bar 3 is a strip 5, bent to present horizontal webs in two planes. Wherever two angle bars are bolted together by one web of each and it is desired to stiffen the channel bar so formed, I use these posts 4 through which and the webs passes the bolt 4', the construction being shown very plainly in Fig. 6. The posts 4 by means of bolts 4' and the strip 5 are riveted to the ring 6, on the under side of and concentric with which is the ring 7, bolted to the under side of which are the angle bars 8 and to the latter are bolted simi-

lar angle bars 9. Bolted to the under side of the strip 5, is a stiffening bar 10 and to the under side of the latter is a small rectangular plate 41.

The angle bars 9 extend transversely across the under side of the annular ring 7 and are supported upon and bolted to the angle bars 11—11 which diverge forwardly. To the under side and at the rear of the angle bars 11—11 is bolted the angle plate 12, bolted to which are similar angle plates 13. To the intermediate portions of said angle bars 11—11 is bolted the angle bar 14 to which latter is bolted a similar angle bar 15. Each of the angle bars 11—11 is bolted to a similar angle bar 16 and to the under sides of these latter are bolted the trusses 17—17 respectively, each of which supports a post 18 on its intermediate portion, which post bears on the under side of its respective angle plate 15. Further trusses 19—19 connect the trusses 17—17 respectively with the under side of the angle bars 15.

The forward end of each angle bar 16 has its vertical portion turned at right angles to form a tongue 20. Bolted to the forward end of the vertical web of each angle bar 11 is the angle plate 21, which is turned outwardly to form a tongue 22, which tongue is in the same plane as the tongue 20. The forward ends respectively of each of the angle bars 11 and 16 are sheared off so as to be in the same plane with the outer surfaces of the tongues 20 and 22.

Referring to Figs. 5 and 6, reinforcing pieces 23 are bolted to the tongues 20 and 22, the said reinforcing pieces having their outer ends flush with the tongues 22 and their inner ends flush with the edges of the horizontal webs of the angle bars 11 and 16 respectively. These reinforcing pieces are turned inwardly under the tongues 22 respectively forming tongues 24.

Bolted to the front surfaces of the tongues 20 and 22 is the front angle bar 25 of the vehicle, having its horizontal web overlapping the forward ends respectively of the horizontal webs of the angle bars 11.

Upon each extremity of the horizontal web of the front angle bar 25, is fastened the corrugated step 26 and bolted to the under side of said web is the hanging step 27. Between the flattened upper portion of the step 27 and the tongue 24 is a strength-

ening post 28. To the rear of the intermediate portion of the front angle bar 25 is bolted the angle bar 29, having its extremities terminating and abutting against the reinforcing pieces 23 and the edge of the horizontal web of the angle bar 16, as shown in the modification shown in Fig. 6.

In Fig. 4, of the junction between the forward extremities of the angle bars 11 and 16 respectively and the front angle bar or draw-bar 25 of the vehicle, the reinforcing pieces 23, together with the rearwardly bent tongues 24 are omitted and the tongues 20 and 22' respectively are bolted directly to the vertical web of the angle bar 25. A tongue 24' is turned rearwardly from the bottom of the tongue 22', thus making the junction complete but omitting the hereinbefore mentioned reinforcing pieces. Otherwise the construction is the same as that disclosed in Figs. 5 and 6, the plate 21' corresponding to the plate 21 and the post 28' corresponding to the post 28.

On the middle portion of the top web of the front angle bar 25, is the apertured metallic plate 30, on the top of which is bolted a double tree 31 by means of the bolt and nut 32. To the extremities of the double tree 31 may be fastened the usual whiffle trees. To the front of the angle bar 25, is attached a pair of lugs 25' which may be utilized as an attaching means for shafts.

A transverse end spring 33 is attached centrally to the under side of the angle bar 13 and has its ends suitably connected respectively to the rear ends of a pair of side springs 34, which in turn have their forward ends journaled in lugs 35 bolted to the tongues or flanges 24 respectively. The intermediate portions of the side springs are attached to journal boxes on the front axle by any well known means.

Between the angle bars 11—11 and terminating in a position under the center of the annular plates 6 and 7 is the pole 36. The inner end of this pole is embraced by the angle bars 39 and 39 respectively, the vertical webs of the bars overlapping the top surface of the pole, under which latter and secured to these angle bars is the strap 37. The inner extremity of the pole is thus securely embraced and is wedge-shaped to conform to the diverging of the angle bars 39—39. The rear end of the pole fits in between the horizontal webs of the angle bars 14 and 15. It will be seen that the parts above the annular plate 6 are all rigid with one another, but not connected with the annular plate 7, which latter is rigidly connected with all the parts located below the same, the entire set of parts being supported by the springs on the axle of the vehicle. The two parts, however, are connected by a king-bolt 40 passing through the angle plates 3 and 5 and the annular plates 6 and 7 may

be revolved relatively to one another in the usual manner of a fifth wheel construction.

In the modification illustrated in Fig. 8 of the mounting of the double tree a bolt 32' extends entirely through the webs of the angle bars 11, 16 and 29, and also through the pole 36, being secured in place by a nut upon its lower end.

In the modification illustrated in Fig. 9, the strip 5 has secured to the end thereof a bar 10', shorter than the stiffening bar 10 shown in Fig. 2, and around the king-bolt 40 it is provided with a downwardly extending cylindrical cup 10'', around the outside of which is fitted a larger but similar cylindrical cup 8'', secured to the plate or bar 8', which in turn is fastened to the top of the angle bar 8 and extends lengthwise of the same. By this construction, the king-bolt 40 is relieved from all shearing strains, the function of the king-bolt being merely to prevent the separation of the said cups.

In certain locations any shaped structural channel bars may be substituted for the single or double angle bars, and either web of the latter may be utilized to effect the same result. Throughout the construction of my apparatus, wherever two angle bars are bolted together so that they present two parallel webs having a space between them, metal posts 4, may be interposed between the webs; each of these posts has a passage, through which may pass a bolt, and thus serve to resist the compression of an inward bending of the webs when the bolts are tightened, as in a draw-bolt construction, as illustrated in the case of the king-bolt 40 in Fig. 2, or when any other force is applied to the outside of the webs. When converging bars are made up of two angle bars, as shown in Fig. 6, the said posts 4 add greatly to the strength and stiffness of the bars. The bolts passing through these posts and those used throughout the vehicle may be of any suitable construction, and may have angular or round shoulders, and their heads may be countersunk. Wherever desirable the extremities of the bolts may be screw-threaded to receive nuts, or may be struck or swaged into a rivet like head.

While I have described specifically certain modifications of my invention, I do not wish to be construed as limiting myself to the details illustrated, since it is apparent that many changes and modifications which might arise, or be necessitated by the application of my improved fifth wheel to different kinds and styles of vehicles, are fully within the aim and scope of my invention.

Having now described my invention, what I claim and desire to protect by Letters Patent of the United States, is:

1. In a vehicle, longitudinal L-shaped bars forming a part of the body portion and hav-

ing attached thereto transversely extending angle bars, a strip bent to present horizontal webs in two planes, the upper webs being rigidly connected with said angle bars and the lower webs being secured to a ring, and another ring supported by angle bars on the axial spring, the said rings being held in rotatable relation by a king-bolt.

2. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric therewith and arranged on the under side of the same, the said rings forming the rotatable bearing of said fifth wheel, converging angle bars fixed in rigid relation with the lower ring, a forward transverse angle bar, each of said converging angle bars having the end of its horizontal web secured to the horizontal web of the transverse bar, an angle piece connecting the vertical webs of the said bars, the said angle piece having a rearwardly projecting tongue, and means for connecting the forward end of the side spring to said tongue.

3. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric therewith and arranged on the under side of the same, the said rings forming the rotatable bearing of said fifth wheel, converging angle bars fixed in rigid relation with the lower ring, a forward transverse angle bar, each of said converging angle bars having the end of its horizontal web secured to the horizontal web of the transverse bar, an angle piece connecting the vertical webs of the said bars, the said angle piece having a rearwardly projecting tongue, a hanging step having a web portion secured to the under side of the horizontal web of the transverse bar, and means for connecting the forward end of the side spring to said tongue.

4. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric therewith and arranged on the under side of the same, the said rings forming the rotatable bearing of said fifth wheel, converging angle bars fixed in rigid relation with the lower ring, a forward transverse angle bar, each of said converging angle bars having the end of its horizontal web secured to the horizontal web of the transverse bar, an angle piece connecting the vertical webs of the said bars, the said angle piece having a rearwardly projecting tongue, a hanging step having a web portion secured to the under side and a step plate secured to the upper side of the horizontal web of the transverse bar, and means for connecting the forward end of the side spring to said tongue.

5. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric therewith and arranged on the under side of the same,

the said rings forming the rotatable bearing of said fifth wheel, converging angle bars fixed in rigid relation with the lower ring, a forward transverse angle bar, each of said converging angle bars having the end of its horizontal web secured to the horizontal web of the transverse bar, an angle piece connecting the vertical webs of the said bars, the said angle piece having a rearwardly projecting tongue, a hanging step having a web portion secured to the under side and a step plate secured to the upper side of the horizontal web of the transverse bar, a metal post resting on said tongue and supporting said web, and means for connecting the forward end of the side spring to said tongue.

6. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric with and arranged on the under side of the same, said rings forming the rotatable bearing of said fifth wheel, converging angle bars fixed in rigid relation to the lower ring, a forward transverse angle bar, each converging angle bar having secured to its vertical web the web of another angle bar, the forward portion of the latter being turned at an angle, forming a tongue which is secured to the front web of the transverse angle bar.

7. In a fifth wheel construction of a vehicle, a ring fixed in relation to the body portion, another ring concentric therewith and arranged on the under side of the same, the said rings forming the rotatable bearing of the fifth wheel, converging angle bars fixed in rigid relation to the lower ring, a forward transverse angle bar, an angle piece connecting the vertical webs of said converging bars and said transverse bar, the said angle piece having a rearwardly projecting tongue, and means for connecting the forward end of the side spring to said tongue.

8. In a fifth wheel construction, a ring, a draw-bar made of substantially channel shape, and having a tongue secured thereto, of longitudinal bars also of substantially channel shape, having their ends fitted within the channel of said draw-bar and secured thereto by said tongue.

9. In a vehicle, longitudinal L-shaped bars forming a part of the body portion and having attached thereto transversely extending bars, a bar bent to present horizontal webs in two planes, the upper webs being rigidly connected with said transverse bars, a ring secured to the lower webs of said bar, an axle spring, a second ring supported by bars on the axle spring, and a king-bolt for holding said rings in rotatable relation.

10. In a fifth wheel, the combination with two rings forming the rotatable bearing of the said fifth wheel, of converging bars fixed in rigid relation with the lower of said rings,

a draw bar, each of said converging bars having its end secured to the said draw bar, an angle piece having a rearwardly projecting tongue and a side spring having its forward end connected to said tongue.

11. In a fifth wheel construction, a pair of concentric rings forming the rotatable bearing of said fifth wheel, a transverse channel shaped draw bar, longitudinal bars and cross bars rigidly connecting said draw bar to the lower of said rings, a spring and a step and a bolt securing said spring and step to the end of said draw bar.

12. In a fifth wheel construction a pair of concentric rings forming the rotatable bearing of said fifth wheel, a transverse draw bar rigid with the lower of said rings, an angle piece having an integral tongue, and a side spring having one of its ends secured to said tongue.

13. In a fifth wheel construction, a pair of concentric rings forming the rotatable bearing of said fifth wheel, longitudinal bars, fixed in rigid relation with the lower of said rings, a substantially horizontal transverse channel-shaped draw bar, an angle bar connecting said draw bar to said longitudinal bars and a spring having its forward end connected to said angle bar.

14. In a fifth wheel construction, a draw bar formed of angle bars having their webs connected to form a channel bar, a spring having its forward end connected to said draw bar, a step also connected to said draw bar, a bolt for securing said step and spring to said draw bar, and a hollow post encircling said bolt and filling the space between said step and said angle bar.

15. In a fifth wheel construction, a pair of rings forming the rotatable bearing of said fifth wheel, transverse bars of substantially channel shape for holding each ring in position, bolts passing through both webs of each bar to hold said bars in position, and hollow posts encircling said bolts between the webs of each bar to prevent said webs from springing when said bolts are tightened.

16. In a fifth wheel construction, a pair of rings forming the rotatable bearing of said fifth wheel, transverse bars of substantially channel shape connecting each ring respectively with the body portion of the vehicle and the axle spring, bolts passing through both webs of each bar to hold said bars in position, and means filling the space between the webs of each bar to prevent said webs from springing when said bolts are tightened.

17. In a fifth wheel construction, a pair of rings forming the rotatable bearing of said fifth wheel, transverse bars of substantially channel shape connecting each ring respectively with the body portion of the vehicle and the axle spring, bolts passing through both webs of each bar to hold said bars in

position, and means filling the space between the webs of each bar and around said bolts to prevent said webs from springing when said bolts are tightened.

18. In a fifth wheel construction of a vehicle, a pair of concentric rings forming the rotatable bearing of the fifth wheel, a pair of converging bars fixed in rigid relation with the lower of said rings, a draw bar formed of angle iron, each of said converging bars having the end of its horizontal web secured to the horizontal web of the draw bar, and an angle piece connecting the vertical webs of said converging bars and said draw bar, the said angle pieces having rearwardly converging tongues.

19. In a fifth wheel construction of a vehicle, a pair of rings forming the fifth wheel of the same, angle bars fixed in rigid relation with the lower of said rings, a draw bar formed of angle iron, each of said first mentioned angle bars having either end of its horizontal web secured to the horizontal web of said draw bar, a plate connecting the vertical webs of said bars to said draw bar and a step having a web portion secured to the horizontal web of said draw bar.

20. In a fifth wheel construction of a vehicle, a pair of rings forming the fifth wheel of the same, angle bars fixed in rigid relation with the lower of said rings, a draw bar formed of angle iron, each of said first mentioned angle bars having either end of its horizontal web secured to the horizontal web of said draw bar, a plate connecting the vertical webs of said bars to said draw bar and step having a web portion secured to the horizontal web of said draw bar, and a side spring connected to said angle piece.

21. In a fifth wheel construction, a ring forming a bearing for the fifth wheel, bars of substantially channel shape connecting said ring with the body portion of the vehicle, a bolt passing through the webs of each bar and through the body portion of the vehicle, and means filling the space between the webs of each bar around said bolts to prevent said bars from springing when said bolts are tightened.

22. In a fifth wheel construction, a draw bar of substantially channel shape in cross section, a pole support secured to one of the webs of said draw bar, said pole support being formed of structural iron, converging rearwardly from said draw bar and a transverse channel-shaped bar inclosing and supporting the inner end of said pole support.

23. In a fifth wheel construction, a ring forming one of the rotatable bearings of said fifth wheel, a plurality of transverse bars, means connecting said bars to one side of said ring, a plurality of longitudinal bars attached to the opposite side of said transverse bars, a draw bar of substantially channel shape in cross section connected to the

forward ends of said longitudinal bars, and a pole support having its forward end rigidly secured to one of the webs of said draw bar, and its rear ends connected to and inclosed by a transverse channel-shaped bar attached to said longitudinal bars.

24. In a fifth wheel construction, a plurality of longitudinally extending bars of substantially channel shape, a draw bar of channel shape rigidly connected to the forward ends of said longitudinal bars, a pole support having its forward end rigidly attached to one of the ribs of said draw bar, and a transverse channel bar connected to said longitudinal bars and connected to and inclosing the rear ends of the bars forming said pole support.

25. In a fifth wheel construction, the combination with a draw bar of substantially channel shape in cross section, of a pole support comprising a pair of bars having their forward ends rigidly connected to one of the webs of said draw bar and arranged with their inner ends converging together, of means to connect the inner ends of said converging bars to the main or body portion of said fifth wheel, and a strap arranged parallel to said draw bar and on the side of said converging bars opposite to that to which said draw bar is connected, said draw bar and said strap being provided with alined holes, and a bolt passing through said holes to secure the pole in said pole support.

26. In a fifth wheel construction, the combination with a pair of concentric rings of a transverse draw bar, longitudinal bars and cross bars rigidly connecting said draw bar to one of said rings, a spring, a hanging step and means for securing one end of said spring and said step to said draw bar.

27. In a fifth wheel, a pair of concentric rings, a transverse draw bar having a flange, longitudinal bars and cross bars rigidly connecting said draw bar to one of said rings,

one of the sides of said draw bar being substantially horizontal, a depending step having its upper end connected to said draw bar, a spring having one end secured to the under side of said draw bar, and a bolt passing through said draw bar for holding said step and spring in position.

28. In a vehicle, the combination with a body portion, of a bar bent to present horizontal webs in two planes, the upper webs being rigidly connected with said body, a ring secured to the lower webs of said bar, an axle spring, a second ring connected to said spring, and a king bolt for holding said rings in rotatable relation.

29. In a fifth wheel construction, the combination with a channel-shaped draw bar comprising angle bars rigidly secured together, of a step depending from said draw bar, a side spring, and a bolt securing said step and said side spring to said draw bar.

30. In a vehicle, the combination with a transverse substantially straight draw bar, of a pole support having its forward end rigidly secured to the under side of said draw bar, said pole support being formed of rearwardly converging bars, and an angle iron for holding the rear end of said pole support in position.

31. In a vehicle, the combination with a transverse bar, of a pole support having its forward end rigidly secured to said bar, said pole support being formed of rearwardly converging bars, and a transverse bar having a flange for holding the rear end of said pole support in position.

In testimony whereof, I have hereunto set my hand this twentieth day of November, 1906.

JOHN REPETTO.

Witnesses:

ALEXANDER PARK,
ALSTON B. MOULTON.

Correction in Letters Patent No. 934,757.

It is hereby certified that in Letters Patent No. 934,757, granted September 21, 1909, upon the application of John Repetto, of Philadelphia, Pennsylvania, for an improvement in "Fifth-Wheel Constructions," errors appear in the printed specification requiring correction, as follows: Page 2, line 7, the words "in the modification shown" should be stricken out, and line 8, after the word "In" the words *the modification shown in* should be inserted; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 26th day of October, A. D., 1909.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.