

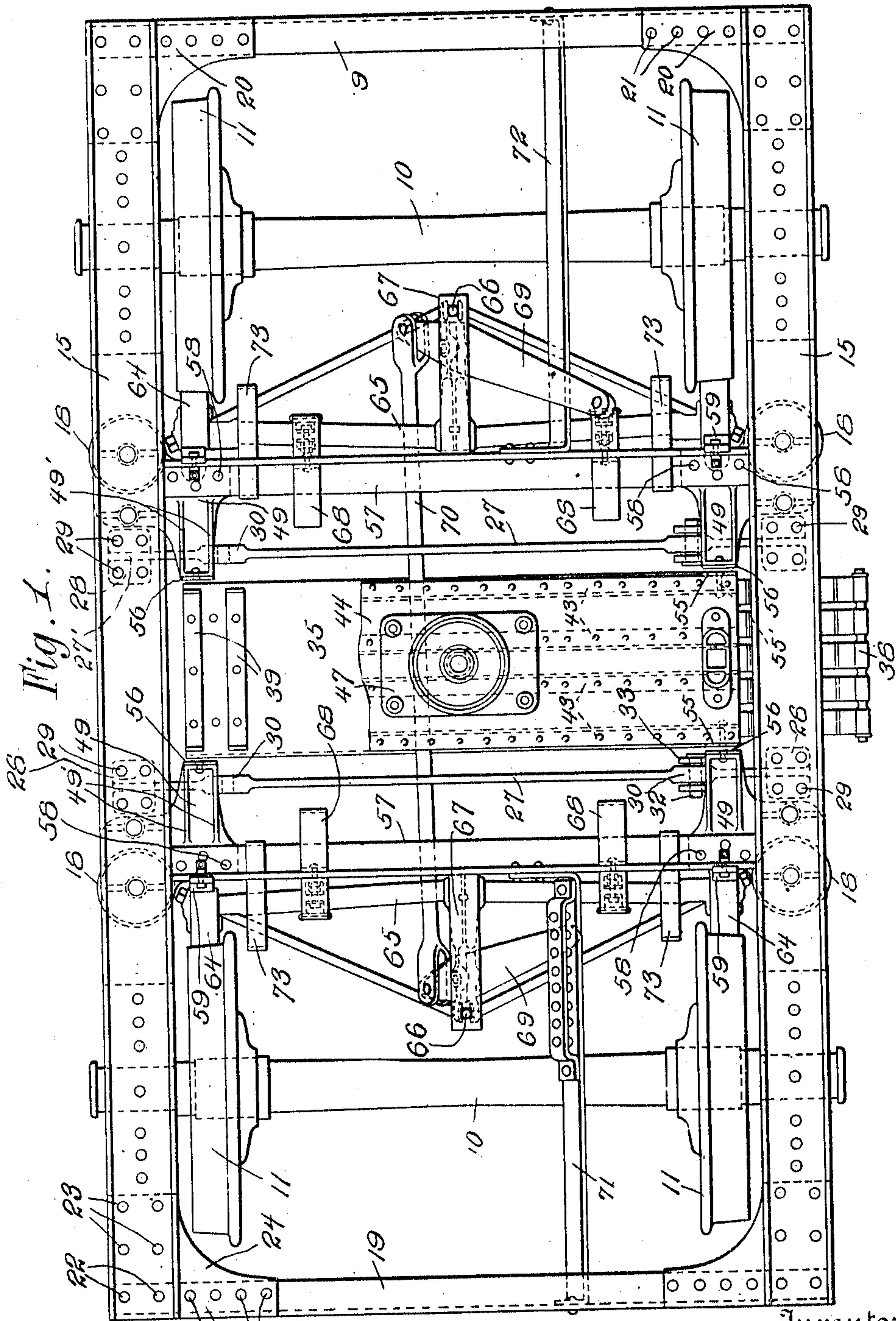
W. VOSS.
TRUCK.

APPLICATION FILED AUG. 27, 1910.

Patented Dec. 13, 1910

4 SHEETS-SHEET 1.

978,242.



Witnesses:
J. A. Kelle
C. W. Kitchin

William Voss Inventor
By his Attorney F. H. Gibbs

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4 SHEETS-SHEET 2.

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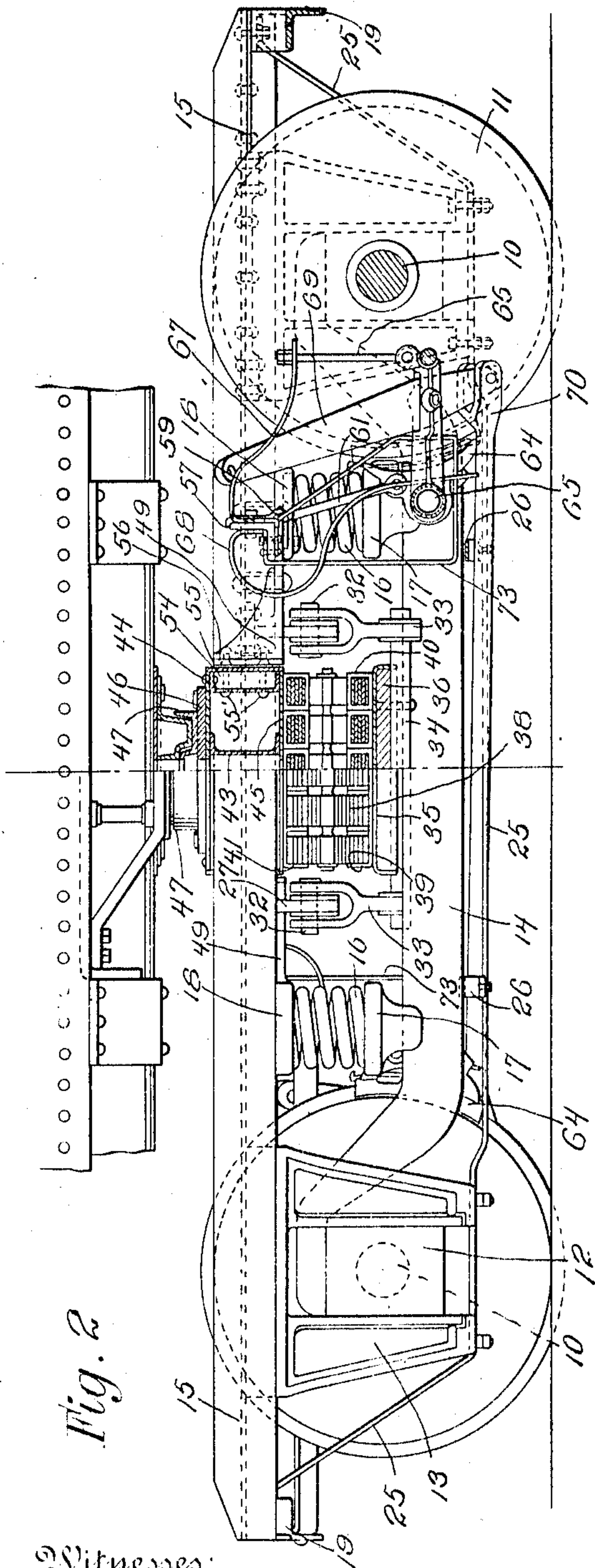


Fig. 2

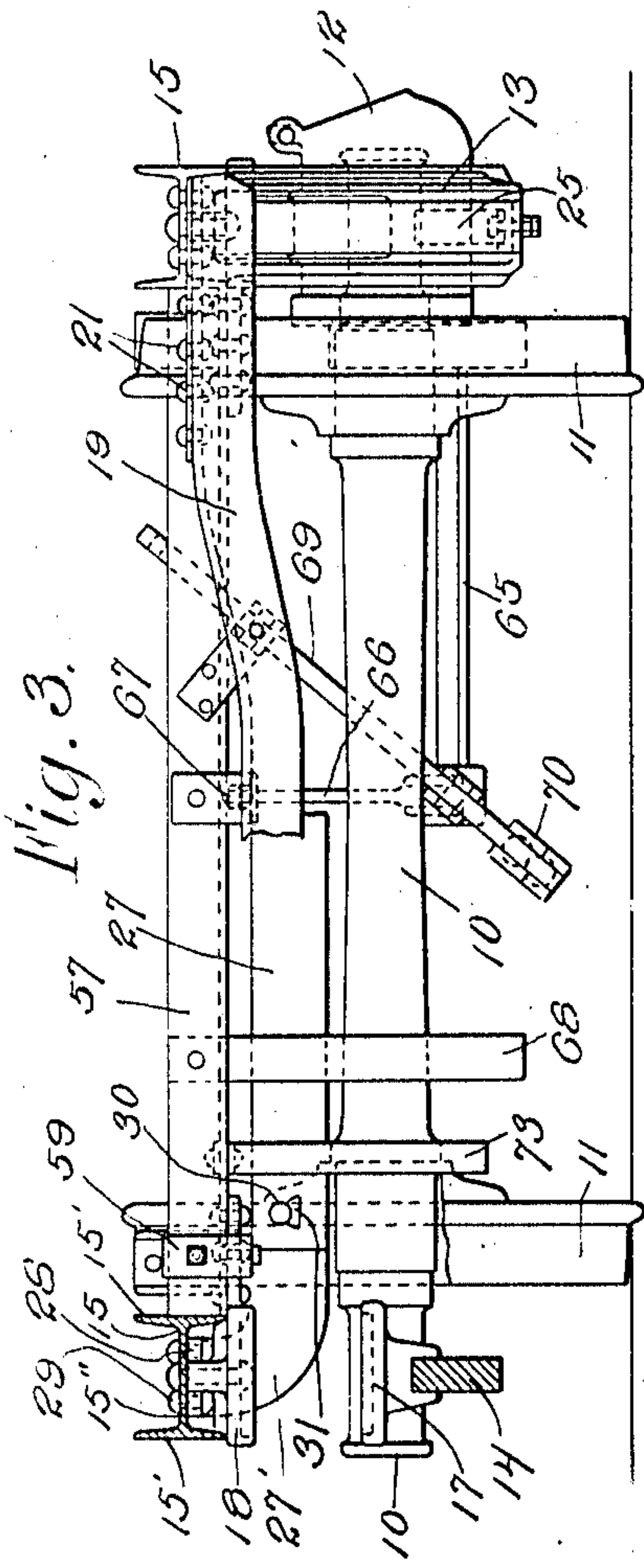


Fig. 3

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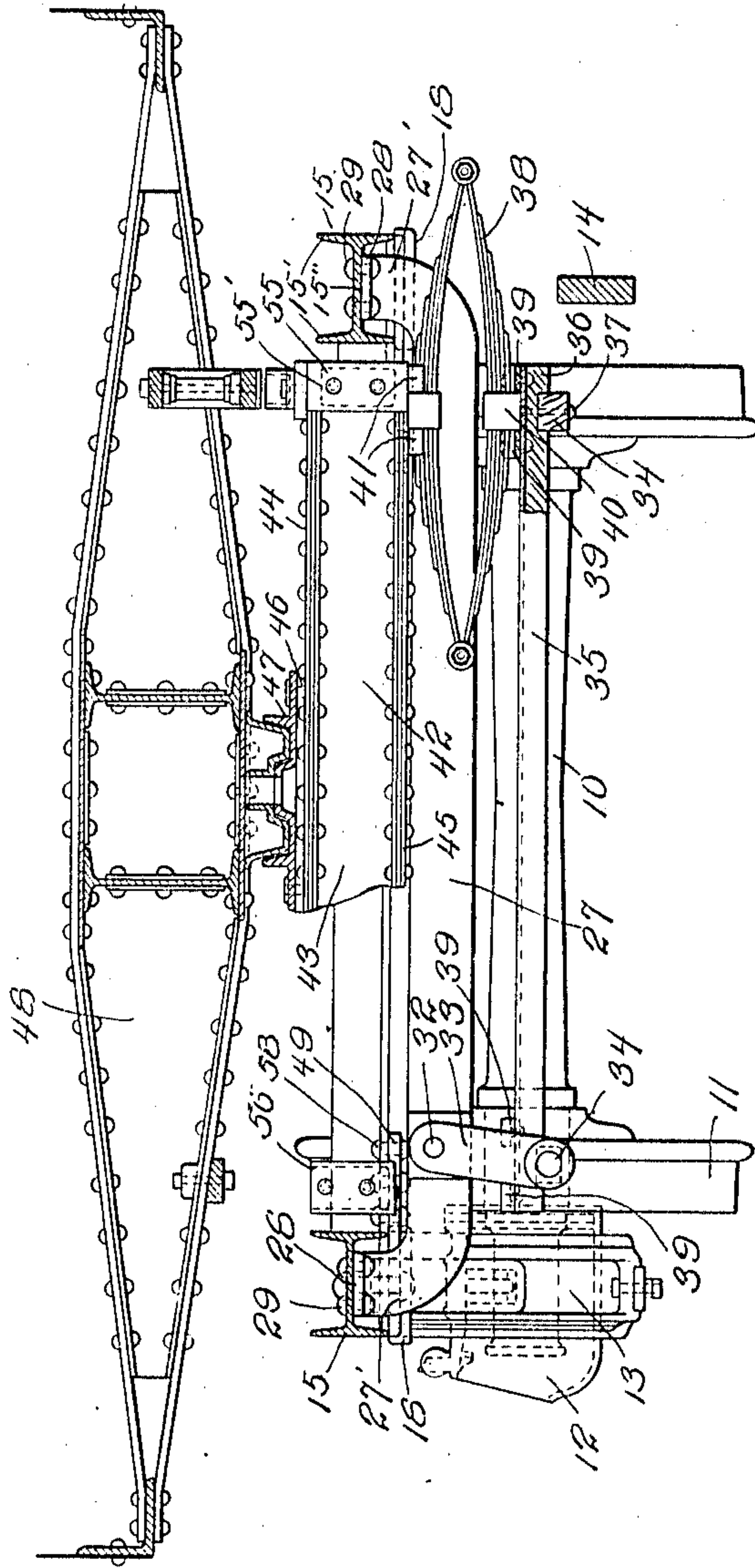
TRUCK.

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4 SHEETS-SHEET 3.

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4 SHEETS—SHEET 4.

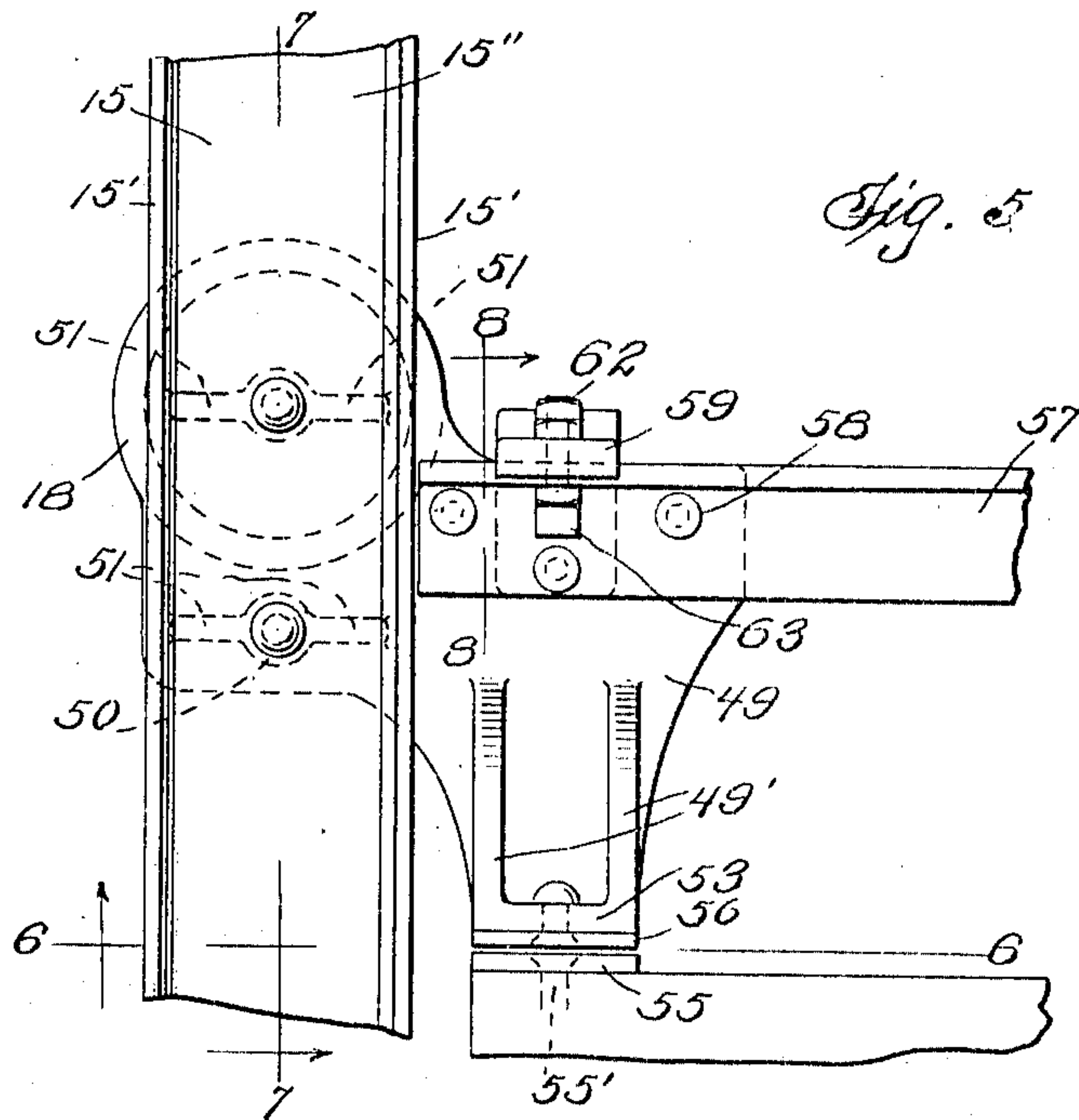


Fig. 5.

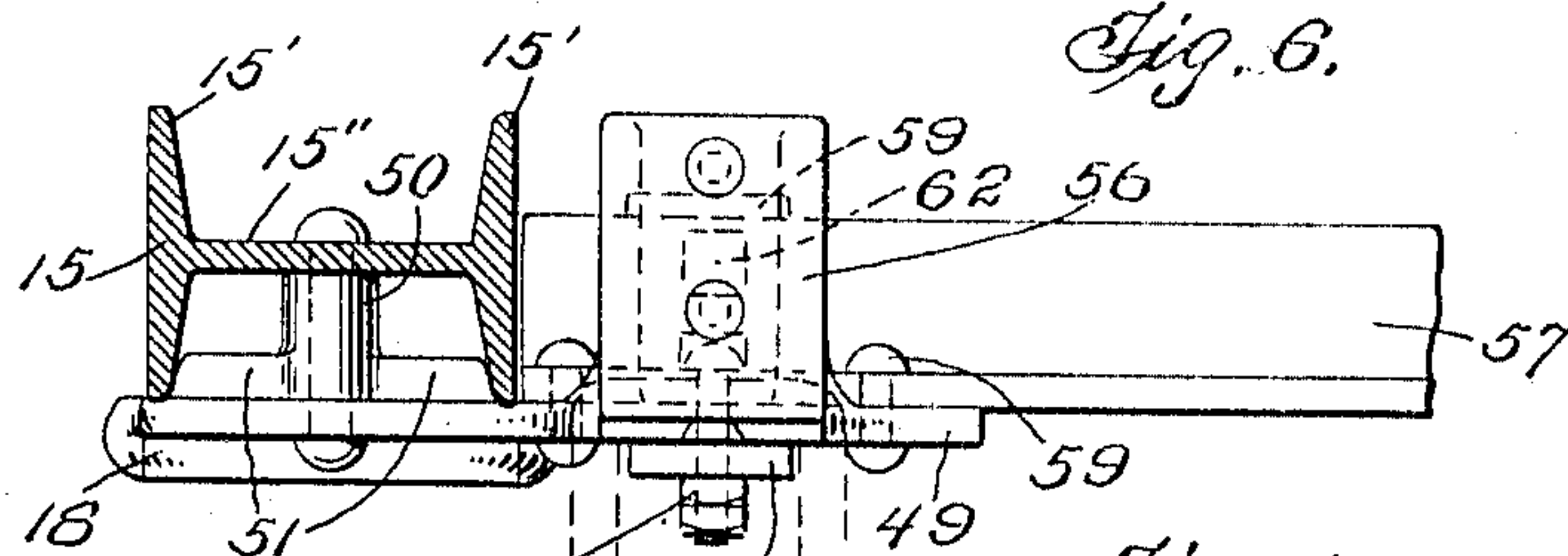


Fig. 6.

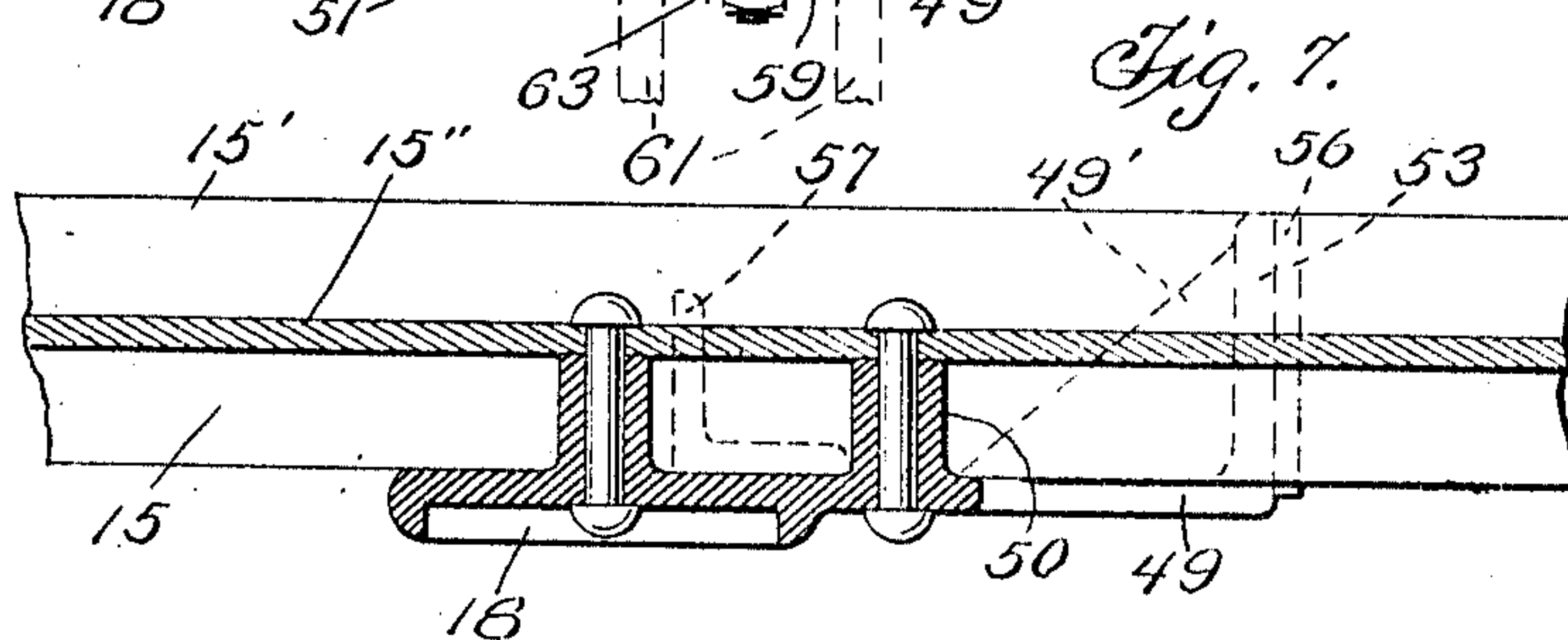


Fig. 7.

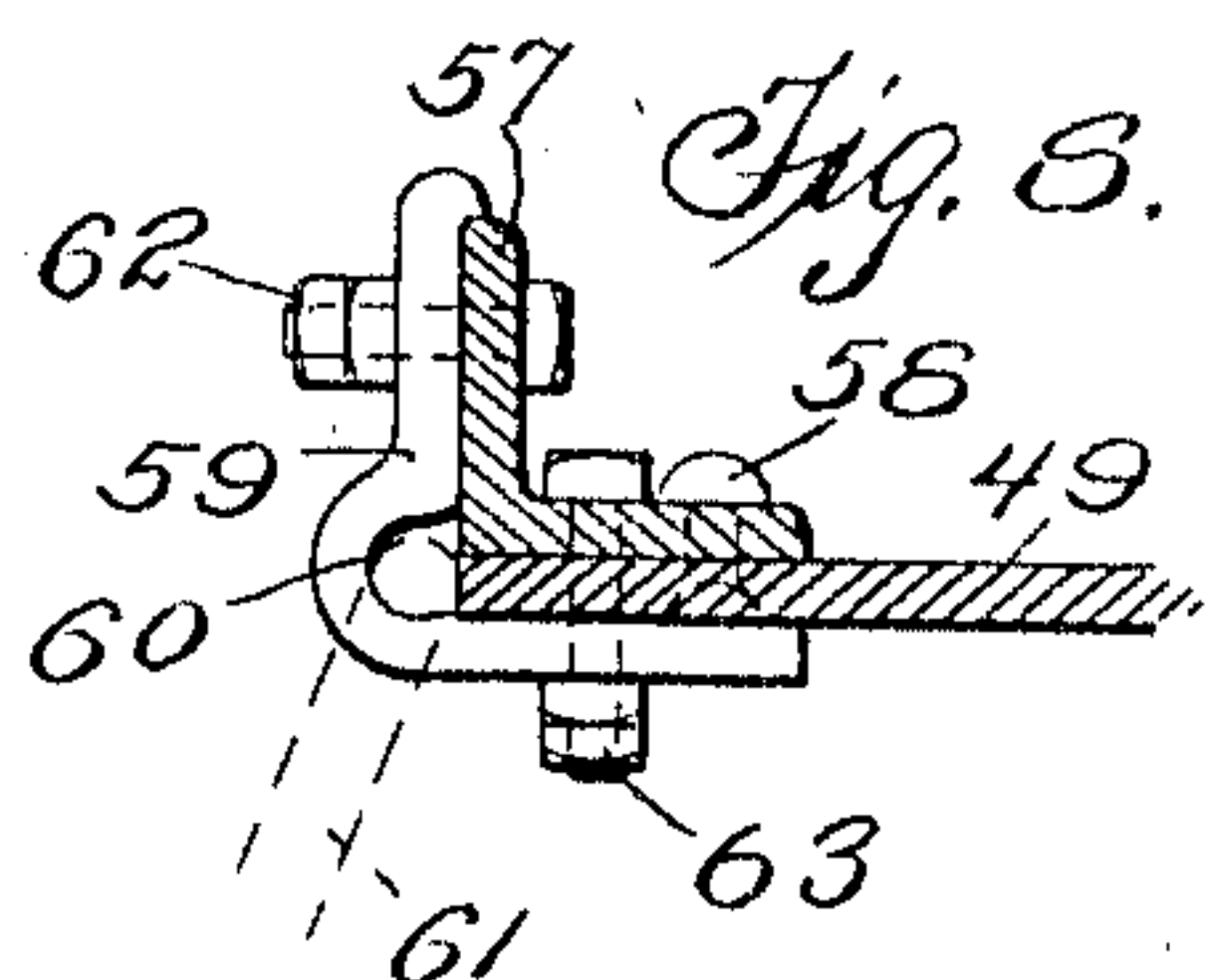


Fig. 8.

WITNESSES

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TRUCK.

978,242.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed August 27, 1910. Serial No. 579,321.

To all whom it may concern:

Be it known that I, WILLIAM VOSS, residing at Wilmington, Delaware, and being a citizen of the United States, 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 to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a top plan view of the truck embodying the features of the present invention, a fragment of the bolster being broken away for disclosing a portion of the spring plank. Fig. 2 is a view of the same in one-half elevation and one-half vertical central section, parts being seen in elevation in the sectional half. Fig. 3 is an end elevation thereof with a fragment broken away and showing parts in section. Fig. 4 is a transverse central section, a portion of the bolster being seen in elevation and a fragment being broken away and other parts being seen in elevation. Fig. 5 is an enlarged detail view of one of the chafing plates or dampers, a fragment of the cross tie bar, bolster and wheel piece being seen in plan. Fig. 6 is a transverse, vertical section taken on the plane indicated by line 6, 6, of Fig. 5, and looking in the direction of the arrow. Fig. 7 is a longitudinal, vertical section taken on the plane indicated by line 7, 7, of Fig. 5, looking in the direction of the arrow. Fig. 8 is a transverse, vertical fragmental section taken on the plane indicated by line 8, 8, of Fig. 5.

Referring to the drawing by numerals, 10, 10, indicate ordinary axles for the usual wheels 11, the boxes 12 thereof being engaged by pedestals 13 and equalizer bars 14 in the usual manner. Pedestals 13 are riveted or otherwise suitably secured to and carried by the wheel pieces 15, 15, and said wheel pieces are mounted upon springs 16, 16, sustained by the equalizer bars 14 each spring 16 being held in position at its lower end by the ordinary seat 17, and at its upper end by cap 18, hereinafter mentioned. Each

wheel piece, as best seen in Fig. 6, is formed of an H-section, each of the vertical flanges 15' of which is of a width equal or substantially equal to the width of the connecting or horizontal web 15".

Connecting the respective ends of the wheel pieces 15 and completing the main portion of the truck frame are the end pieces 19, 19, each of which is connected at its ends with the corresponding ends of the wheel pieces, in the manner best seen in Figs. 1 and 3. A corner web plate 20 is fixed to each end of each piece 19, and extends a suitable distance longitudinally of the respective wheel piece and has a right-angular outer edge, corresponding to the angular relation of the end piece and wheel piece, the web plate lying between the horizontal flange of the respective end piece 19 and the horizontal web of the wheel piece 15. As clearly indicated in Fig. 3, the lower half of the inner flange of the respective wheel piece is cut away for accommodating the web plate 20, the end of the respective end piece 19 extending to the outer vertical flange of the wheel piece, as indicated in full lines in Fig. 3 and dotted lines in Fig. 1. Each web plate 20 is secured by rivets 21 to the horizontal flange of end piece 19, rivets 22, 22, extending through the horizontal web of wheel piece 15, through web 20, and through the horizontal flange of end piece 19 for connecting the parts together. The web plate 20 is further riveted to the horizontal web of wheel piece 15, as at 23, 23. The web plate 20 may be in the form of an angle but is preferably provided with a bracing fillet 24.

At each side of the truck frame, a tension strap 25 is arranged, the same being bolted or otherwise suitably secured at its ends to the respective ends of the corresponding wheel piece 15, and extending beneath and connecting the pedestals 13 of the respective side of the frame, each strap 25 being preferably bolted or otherwise suitably attached to each of such pedestals. The straps 25 are connected by cross ties 26, 26.

Spaced apart, longitudinally of the truck frame, and extending transversely of said frame are transoms 27, 27, each having each of its ends bent or turned upwardly at substantially right angles, as indicated at 27', and clearly seen in Fig. 4, the turned portion 27' terminating in a T-head 28, riveted

or otherwise suitably secured, as at 29, to the horizontal web of the respective wheel piece 15. Near each end of each transom 27, the same is provided with a bearing 30 preferably having the hardened bearing piece 31. Mounted in each bearing 30 is a pin 32 sustaining swinging hanger 33, the hangers being thus arranged in pairs at the opposite ends of the transoms, and each pair of hangers carrying a cross bar 34. Mounted upon the cross bars 34, is a spring plank 35 consisting preferably of a channel plate having at each end a filler block 36 engaged by the respective cross bar 34. Blocks 36 are preferably of wood. Each of the cross bars may be bolted to the spring plank 35, as indicated at 37. It is to be noted that the filler blocks 36 may be formed of any thickness desired, and blocks of different thicknesses may be used as desired for altering the elevation of the spring plank, and thereby altering the elevation of the superposed structure, and thus adjusting the relative position of the draft rigging.

Mounted at each end of the spring plank 35 and preferably immediately above cross bar 34 is an elliptical spring 38, which may be retained in position in any ordinary manner. Strips 39, 39, extend across and are riveted to plank 35 at each end thereof, each of the ends of the strips 39 being upturned for engaging the spring, and the central clips 40 of the spring being disposed between the strips 39. A similar pair of strips 41 engages the upper part of the spring and is carried at each end of the truck bolster 42.

As best seen in Figs. 2 and 4, bolster 42 consists of four channels 43, arranged parallel to each other and extending transversely of the truck frame and provided with an upper cover plate 44 and a lower cover plate 45, each of the cover plates being suitably riveted or otherwise suitably attached to the flanges of channels 43. The channels 43 are spaced apart, and the flanges of the set of channel beams at one side of the median line of the bolster are disposed outwardly in one direction, and the flanges of the other set of channel beams at the other side are disposed outwardly in the other direction. Arranged centrally of and resting upon bolster 42, is a filler plate 46 upon which is mounted center bearing plate 47, said bearing plate and filler being bolted or otherwise suitably fixed to the bolster, and plate 47 being adapted to be engaged by the center bearing of the body bolster 48. Obviously, the filler plate 46 may be made of greater or less thickness and thus the elevation of the center bearing be varied for altering the elevation of the couplers or draft rigging.

As thus constructed it is obvious that the bolster 42 may swing vertically and transversely of the truck in the absorbing of

shocks, and it is well known that the movement of the bolster when unrestricted is liable to become violent or at least menacing, and, in order to avoid this difficulty, various forms of more or less efficient and more or less expensive dampers have been heretofore proposed, and the present invention involves simple and relatively cheap and efficient means to this end. Preferably formed integral with each cap 18 is a plate 49 which may be a steel casting or other suitable material. As clearly seen in Fig. 7, that portion of plate 49 extending beneath the respective wheel piece 15, is provided with an upstanding tubular extension or sleeve 50, a similar extension or sleeve being formed on the upper surface of cap 18, said cap being part of plate 49. That portion of said plate which underlaps the respective wheel piece 15 rests against the lower edges of the vertical flanges of the wheel piece, and sleeves 50 serve as fillers. Said underlapping portion of plate 49 is strengthened by ribs 51, 51, extending upwardly between the vertical flanges of the wheel piece. A rivet or other suitable securing means is passed through each sleeve 50, and through the underlapping portion of plate 49, and through the horizontal web of the H-section constituting the wheel piece. Thus each plate 49 is firmly and rigidly held in position and sustained by the respective contiguous wheel piece, and the plate extends inwardly from the wheel piece and tapers to a plate 53, backed by suitable webs 49' formed integral with plate 49. Plate 53 is formed with a vertical, flat face presented toward and disposed contiguous to the bolster 42. The respective end of the corresponding outer channel beam 43 of the bolster is provided with a filler block 54, faced by a preferably spring steel wearing plate 55, disposed to contact with a similar plate 56 fixed to the plate 53. The plate 56 is riveted or otherwise suitably secured to plate 53, and plate 55 is secured in position by rivets, or other suitable attaching means, 55', extending through the filler plate 54 and through the vertical flange of the respective channel beam 43. Thus, at each end of the bolster is engaged by a friction plate at each side, the vibration of the bolster will be damped and maintained within limits, and at the same time the chafing plates will be liable to but a minimum amount of wear, and when worn may be readily replaced. Of course the renewal of the chafing plates simply involves the supplying of new plates 55 and 56.

A cross-tie bar 57 is arranged at each side of the bolster and spaced outwardly from the respective transom 27, and the opposite ends of each bar 57 are riveted or otherwise suitably secured, as at 58, 58, to the respective plate 49. Each bar 57 is preferably of angle section. Each bar 57, at each end, car-

ries a bracket 59 in the form of an angle adapted to fit against the flat outer face of the vertical web of bar 57 and against the under flat face of the respective plate 49, the corner of bracket 59 being formed with a fold, providing bearing 60, in which is mounted the brake shoe hanger 61. Each bracket 59 is secured in place by bolts or other suitable attaching means, 62 and 63, extending respectively through the bracket and vertical flange of the bar 57, and through the bracket plate 49 and horizontal web of bar 57. Movably sustained by hangers 61, are the brake shoes 64, which are connected to and adapted to be operated by the trussed brake beams 65. Each beam 65 has its tension member sustained in the usual manner by a bolt 66 and a spring 67, the latter being suitably attached to bar 57. A pair of brake release springs 68 is fixed to each bar 57 and engages the respective brake beam for retaining the shoes in the normal, released condition. A brake lever 69 is pivotally connected with the strut of each of brake beams 65, and the lower ends of the said levers are connected by the usual link 70, one of the levers 69 being designed to be engaged by the brake draft appliance, and the other being adapted to have its free end adjustably secured to a longitudinally disposed tie beam 71, fixed to and extending from one of the bars 57 and connected with one of the end pieces 19. The other bar 57 is engaged similarly by a similar tie bar 72. Hanger brackets 73, 73, depend from each of the bars 57 and surround the respective brake beams 65 as safety devices for avoiding damage when the regular brake beam support becomes broken or ineffectual.

What I claim is:

1. In a truck frame, the combination of wheel pieces, each comprising an H-section, and means connecting the webs of the said wheel pieces said webs being disposed horizontally and the H-section being of substantially uniform cross section throughout its length.

2. In a truck frame, the combination of H-section wheel pieces, transoms, and means connecting the transoms to the web of the H-sections each of said H-sections being of substantially uniform cross section throughout its length.

3. In a truck frame, the combination of H-section wheel pieces, and transoms connected to the horizontal webs of the H-sections each of said H-sections being of substantially uniform cross section throughout its length and extending substantially throughout the length of the truck.

4. In a truck frame, the combination of H-section wheel pieces, and transoms having flanged ends connected to the horizontal webs of the H-section.

5. In a truck frame, the combination of

H-section wheel pieces, and transoms having T-head ends connected to the H-sections.

6. In a truck, an H-section wheel piece, and a transom disposed beneath the wheel piece, and having an upturned end connected to the wheel piece.

7. In a truck frame, the combination of H-section wheel pieces, and transoms disposed beneath the wheel pieces and having upturned T-head ends connected to the horizontal webs of the H-sections.

8. In a truck, a bolster damper plate comprising wheel piece engaging means, an integral portion extending inwardly therefrom, and a chafing surface presented by said plate from the inwardly extending portion toward the bolster.

9. In a truck, a bolster damper plate comprising a spring cap, wheel piece engaging means for the cap, and a chafing surface formed integral with and extending from said cap and presented toward the bolster.

10. In a truck, a bolster damper plate comprising a spring cap, wheel piece engaging means for the cap, wheel piece engaging means additional to the cap engaging means, and a chafing surface extending from both said engaging means and presented toward the bolster.

11. In a truck, a bolster damper plate comprising wheel piece engaging means, cross tie bar engaging means, and a chafing surface extending from both said engaging means and presented toward the bolster.

12. In a truck, a bolster damper comprising a plate formed with a wheel piece engaging substantially horizontal portion and an upstanding flattened chafing portion extending from the horizontal portion and presented toward the bolster.

13. In a truck, a bolster damper comprising a plate formed with a substantially flat, horizontal, wheel piece engaging portion and a substantially flat vertical portion extending therefrom and presented toward the bolster.

14. In a truck, a bolster damper comprising a plate having a wheel piece engaging portion formed in part into an equalizer spring cap, and a portion extending inwardly beyond the longitudinal planes of the wheel piece and terminating in a vertically flattened portion presented toward the bolster.

15. In a truck, the combination with wheel pieces, and a bolster movably sustained thereby, of dampers engaging both sides of each end of the bolster, a spring cap formed integral with each damper and fixed to the respective contiguous wheel piece, and cross tie bars engaging and connecting the respective dampers at the corresponding sides of the bolster.

16. In a truck, the combination with wheel pieces, and a bolster movably sus-

tained thereby, chafing plates engaging both sides of each end of the bolster, cross tie bars fixed to and connecting the chafing plates on the respective corresponding sides of the bolster, and means securing each of the chafing plates to its respective, contiguous wheel piece.

17. In a truck, the combination with H-section wheel pieces, and a bolster movably sustained thereby, of a chafing plate for each side of each end of the bolster, and a plate formed integral with each chafing plate and extending outwardly and laterally therefrom and lapping the respective contiguous H-section, a filler between the lapping portion of said integral plate and the horizontal web of the H-section, and means connecting said integral plate to the H-section.

18. In a truck, the combination with wheel pieces, of a bolster movably sustained thereby, and comprising side beams having outwardly opening channels, a filler for each channel contiguous to each end thereof, a wearing plate outside each filler, and a chafing plate for each wearing plate fixed independently of the bolster for damping movements thereof.

19. In a truck, the combination with wheel pieces and a chafing plate carried thereby, of a bolster movably sustained by the wheel pieces and comprising an outwardly opening channel, a filler for said channel, and a wearing plate outside the filler adapted to engage said chafing plate for damping movement of the bolster.

20. In a truck, the combination of wheel pieces, transoms connecting the same, and a bolster movably sustained by the transoms between the same, of a plate fixed to the respective wheel piece at each side of each end of the bolster and extending outwardly beyond the respective transom, a portion of said plate extending inwardly above the transom and formed with a chafing surface presented toward and adapted to be engaged by the bolster, and cross tie bars fixed to and connecting the plates at the respective opposite side of the bolster, each cross tie bar being disposed outside of the corresponding transom.

21. In a truck, the combination with wheel pieces, of cross tie bars connecting the same and an angle bracket secured to each bar contiguous to each end thereof, and formed with a fold at its angle adapted to serve as a bearing for a brake shoe hanger.

22. In a truck, an angle cross tie, an angle bracket connected to the flanges of the cross tie and having a fold at its angle adapted to serve as a bearing for a brake shoe hanger.

23. In a car truck, the combination of H-

section wheel pieces, and end pieces lapping the ends of the wheel pieces, and connected thereto.

24. In a truck, the combination of H-section wheel pieces, and end pieces having their ends extending across the ends of the wheel pieces to the outer flanges thereof, the end pieces being connected to the wheel pieces.

25. In a truck, the combination of H-section wheel pieces, each having a portion of its inner flange at each end cut away, end pieces lapping the ends of the wheel pieces, contiguous to the horizontal web of the respective wheel piece and accommodated by the cut-away portion of the flange, and means securing the end pieces and wheel pieces together.

26. In a truck, the combination of H-section, wheel pieces, and end pieces lapping the ends of the wheel pieces and connected thereto, portions of one of the flanges of each wheel piece being cut away for accommodating the end pieces.

27. In a truck, the combination of H-section wheel pieces, each having the lower portion of its inner flange cut away at each end, end pieces underlapping the horizontal web of the wheel pieces at the ends thereof and accommodated by the cut-away portions of the flanges, and means securing the end pieces and the wheel pieces together.

28. In a truck, the combination of H-section wheel pieces, end pieces lapping the ends of said wheel pieces, corner web plates interposed between and fixed to the end pieces and wheel pieces.

29. In a truck, the combination of H-section wheel pieces, each formed with a portion of its inner flange cut away at each end, corner web plates fitting into said cut-away portions, and lapping the horizontal web of the respective H-section wheel pieces, and end pieces lapping the corner web plates, the corner web plates being fixed to the wheel pieces, and the end pieces to the corner web plates.

30. In a truck, the combination of H-section wheel pieces, each having a portion of its inner flange cut away at each end, corner web plates fitted into the cut-away portions and each lapping the horizontal web of the respective H-section, and end pieces lapping the corner web plates and the webs of the H-sections, said corner web plates being secured to said end pieces and wheel pieces, and the wheel and end pieces being secured together.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM VOSS.

Witnesses:

P. E. WILSON,
JAMES H. SCOTT.