No. 860,267. PATENTED JULY 16, 1907.

W. E. SYMONS.

CAR TRUCK.

APPLICATION FILED FEB. 14, 1907.

3 SHEETS—SHEET 1.

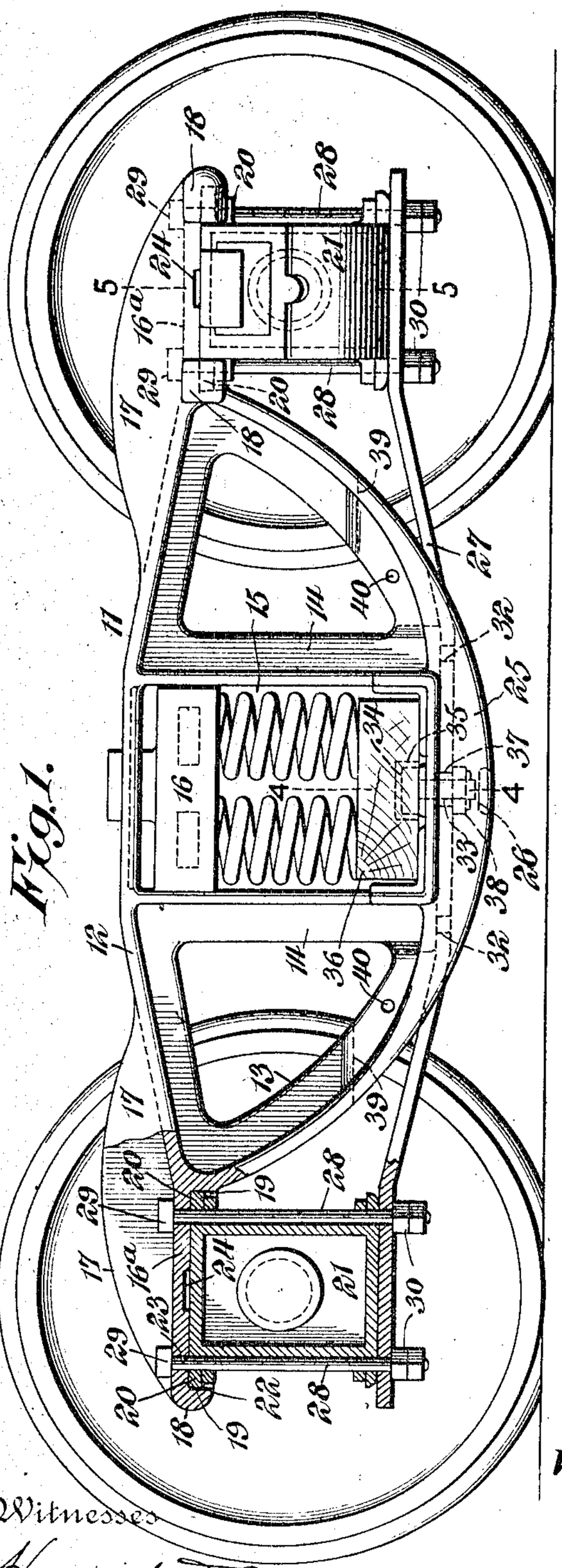

Fig. 1.

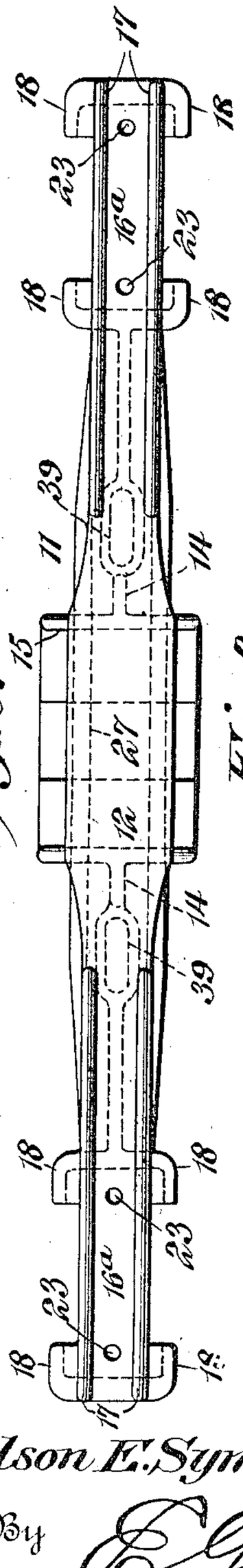

Fig. 2.

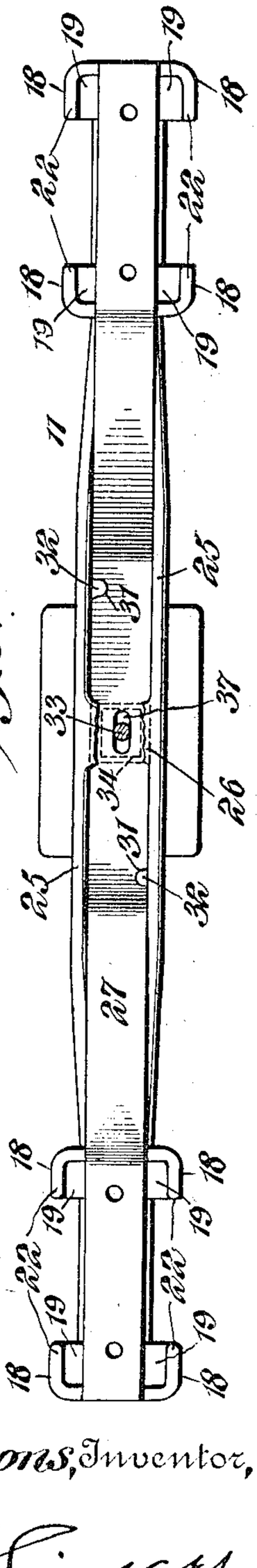

Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 9.

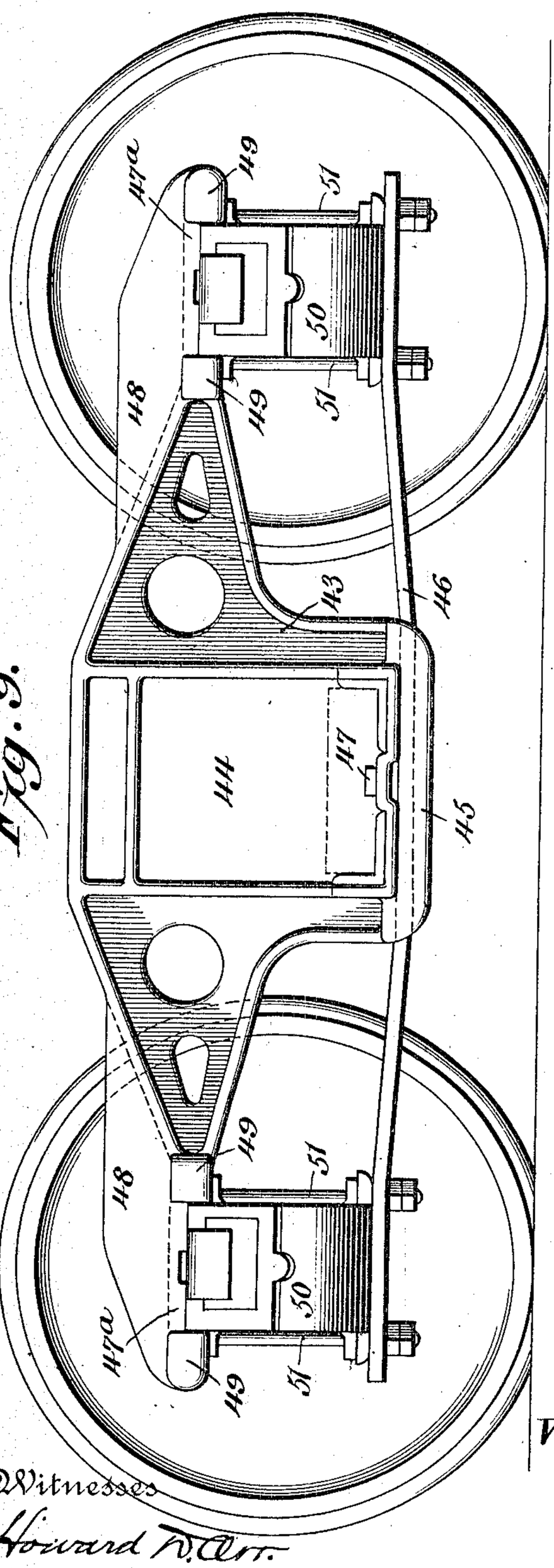


Fig. 8.

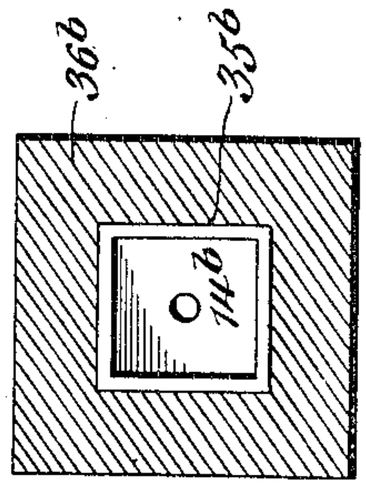


Fig. 7.

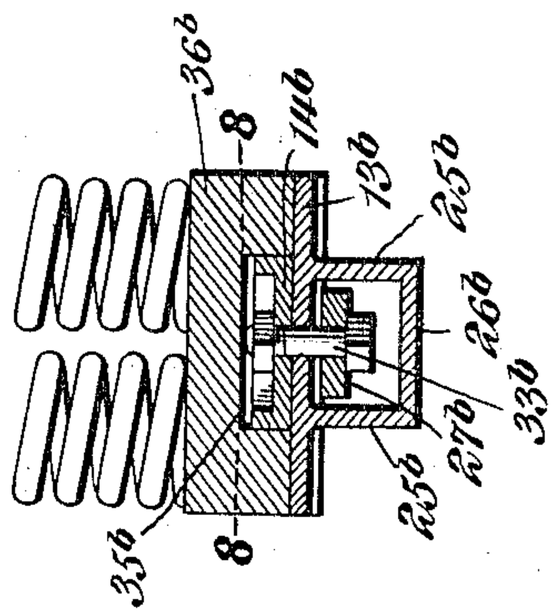
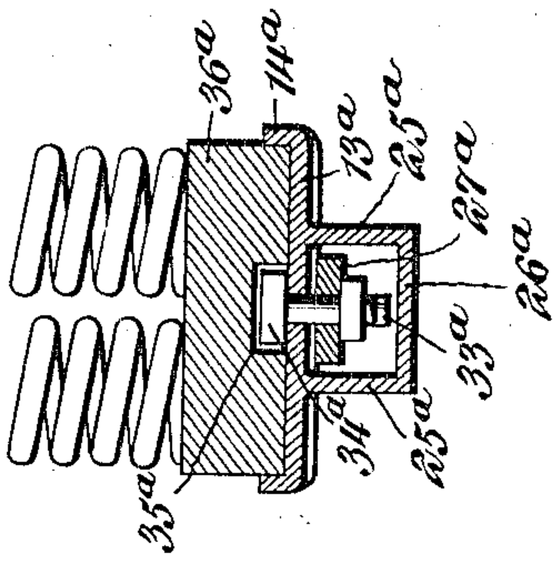


Fig. 6.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 10.

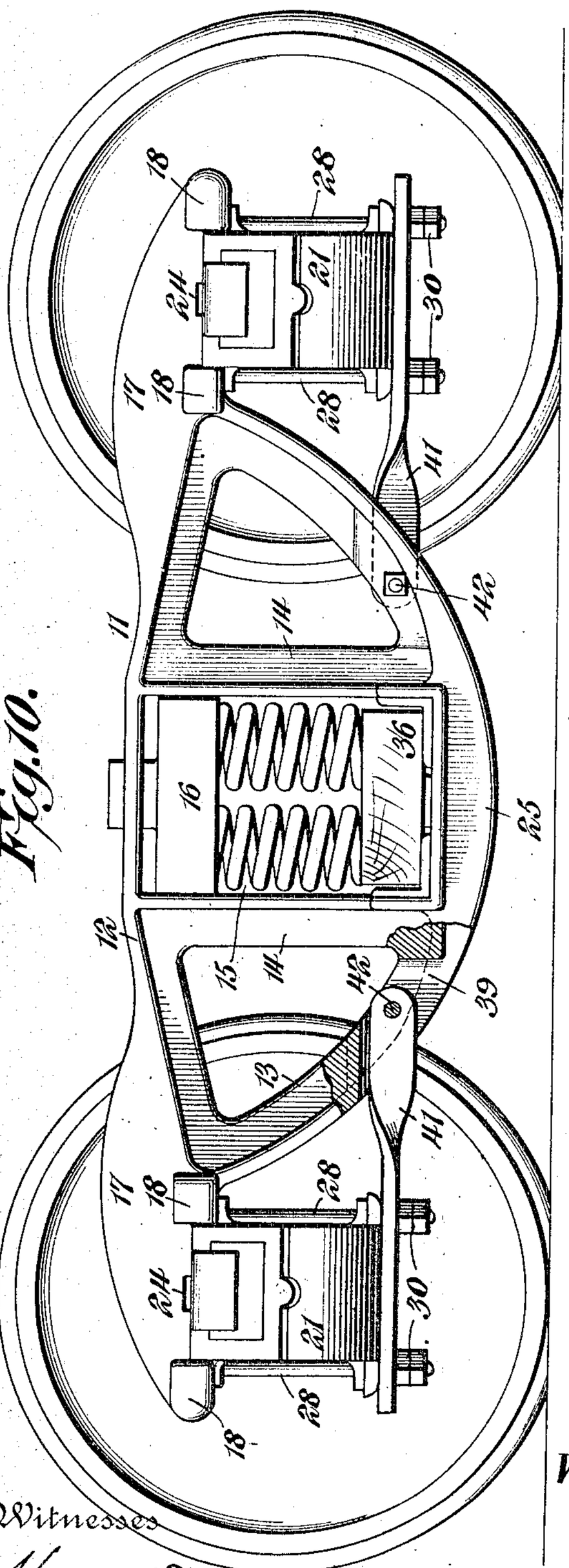


Fig. 3.

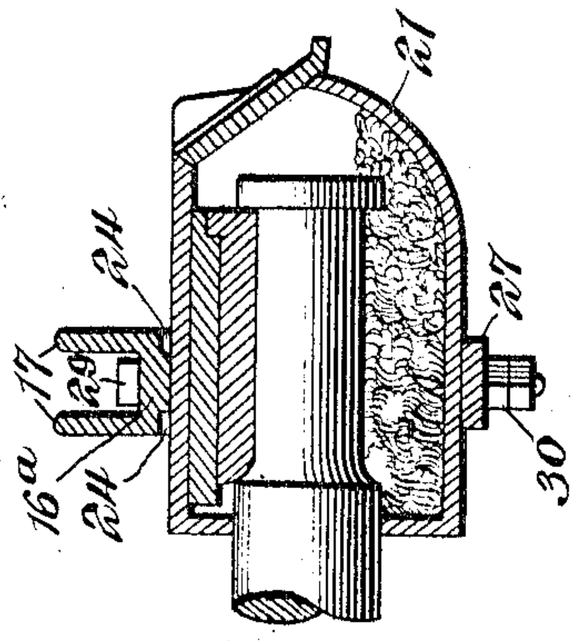
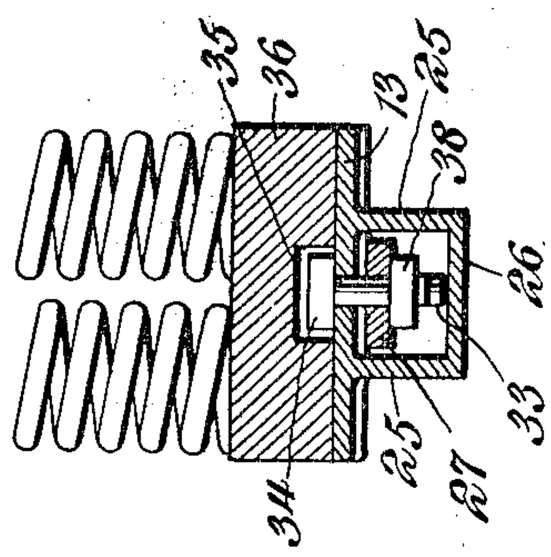


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

WILSON E. SYMONS, OF CHICAGO, ILLINOIS.

CAR-TRUCK.

No. 860,267. Specification of Letters Patent. Patented July 16, 1907.

Application filed February 14, 1907. Serial No. 357,405.

To all whom it may concern:

Be it known that I, WILSON E. SYMONS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Car-Truck, of which the following is a specification.

One of the drawbacks to the more general and rapid introduction of cast steel trucks appears to be the necessity for equipping the majority of said trucks with oil boxes that are not interchangeable with those employed in the ordinary truck. As this interchangeability of oil boxes is a great desideratum in railway rolling stock equipment, the above has proven to be a serious objection to the cast steel trucks.

The present invention therefore has for its object, the provision of a novel truck wherein the side members may be of cast steel, provision being made for the employment of practically any well known type of oil box, the structure moreover being such that these oil boxes may be removed and replaced with a minimum amount of trouble, and the arrangement furthermore being such that when in place, the oil-box-retaining bolts, are relieved to a great extent from the shearing strain incident to the braking or other lateral force transmitted to the wheels.

In the accompanying drawings:—Figure 1 is a side elevation of the preferred form of construction, parts being shown in section. Fig. 2 is a top plan view of one of the side members of the truck. Fig. 3 is a bottom plan view of the same, showing the tie bar in place. Fig. 4 is a cross sectional view on the line 4—4 of Fig. 1. Fig. 5 is a detail sectional view on the line 5—5 of Fig. 1. Fig. 6 is a sectional view similar to Fig. 4, but showing a slight modified form of construction. Fig. 7 is still another modification of the same portion of the structure. Fig. 8 is a horizontal sectional view on the line 8—8 of Fig. 7. Fig. 9 is a side elevation of a slightly modified form of side member. Fig. 10 is a view similar to Fig. 1, but showing a sectional tie bar instead of a continuous one.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

Referring first to the embodiment disclosed in Figs. 1—5 inclusive, the cast steel side member of the truck is designated generally by the reference numeral 11, and comprises an upper arch bar 12 and a lower reverse arch bar 13, these arch bars being connected by intermediate columns 14, defining a bolster-receiving opening 15 between them. The end of the bolster that engages in this opening, is shown at 16, and may be of any well known type. The frame thus produced, is provided at its ends with upper longitudinally disposed extensions 16^a, reinforced by spaced upstanding ribs 17 that extend longitudinally along the upper side of the upper bar 12, and terminate at the outer ends of the extensions, being preferably arched or curved, as shown to provide the necessary strength with a minimum amount of material.

The extensions, as shown more particularly in Figs. 2 and 3, are provided with spaced sets of outwardly and rearwardly extending ears 18 that are provided in their under sides with recessed seats 19, said seats receiving the ears 20 of any well known type of oil box, as 21, said oil box thus supporting the extensions 16, and being held against movement both longitudinally and laterally of the side members by the depending flanges 22 formed by the recessed seats. The extensions 16^a are provided with bolt-receiving openings 23 located between the reinforcing ribs 17 and opening centrally into the seats 19. Sockets 24 are formed in the under sides of the extensions 16^a between the sets of ears 18, said sockets being adapted to receive a pinch bar or other tool, for the purpose of disengaging the boxes should they from any cause stick in place when unfastened.

The side member or frame is furthermore provided with depending spaced and longitudinally disposed flanges 25 carried by the lower arch bar 13, and extending beneath the bolster-receiving opening 15. The central portions of the flanges are connected by a transverse web 26. In the form shown in Fig. 1, a continuous tie bar 27 is employed that extends longitudinally between the flanges 25 and above the web 26, the ends of said tie bars being disposed against the under sides of the oil boxes 21, as clearly shown in Fig. 1. Vertical bolts 28, located on opposite sides of said oil boxes, pass through the upper openings 23, and have their heads 29 arranged between the reinforcing ribs 17, the lower ends of said bolts passing through the ends of the tie bar, and being secured by suitable nuts or other fasteners, as 30. The portions of the tie bar 27 that are located between the ribs 25, are provided in their opposite edges with sockets 31, these sockets being disposed out of alinement, as shown in Fig. 3, and said sockets receive lugs 32 formed upon the lower bar 13 and flanges 25, and integral with the same. A holding bolt 33, has its head 34 located in a socket 35, formed in the under side of the usual spring seat 36, and said bolt extends downwardly through a longitudinal slot 37 formed in the tie bar. Suitable holding means, as a nut 38, is located on the lower end of the bolt, beneath the tie bar and above the web 26.

With this structure, the side members can be made of cast steel, while practically any well known type of oil box can be employed in connection therewith, these oil boxes being effectively secured in place and yet readily detachable. Moreover, it will be observed that inasmuch as the upper ends of the oil boxes, and their ears are located in the recessed seats 19, the lateral strains due to the application of the brakes or any other cause,

instead of being transmitted to the bolts 28, are taken by end flanges 19, thus relieving said bolts to a very great extent of the shearing strains. When unfastened, if the boxes are stuck, they may be readily released by inserting a small pinch bar or other suitable tool in the sockets 24 so that they can be pried loose. The tie bars are also important features of the invention. Thus when a continuous bar is employed, the intermediate portions thereof are secured against longitudinal movement by the lugs 32, which relieve the bolt 33 of any shearing strain, and consequently the function of said bolt is merely to hold the tie bar in place or in interlocking engagement with the lugs. If through any cause, the bolt should become broken or the nut lost, or if the tie bar should break, it cannot drop as the web 26 will constitute a support. Moreover the head of the bolt will assist in preventing the detachment of the spring seat 36 from its position in the bolster-receiving opening 15.

In some cases, instead of a continuous tie bar as 27, a sectional tie bar may be advantageously used, and the side member is therefore provided with means whereby such sectional tie bar may be substituted for the continuous bar. To this end, the portions of the lower arch bar 13 directly on the outer sides of the columns 14 are provided with sockets or openings 39, shown more particularly in Fig. 10. Transverse openings 40 are located in the bar transversely of the sockets. The tie bar sections are in the form of twisted straps or strips 41, their ends being located in the sockets 39, and pivotally held in place by bolts 42, their outer ends being disposed below the oil boxes 21 and secured thereto by the usual bolts 28. It will be evident that with the sectional bars, as shown in Fig. 10, practically the same results are secured as with the continuous bar, as shown in Fig. 1.

In order to relieve the continuous tie bar holding bolt of strain, due to any displacement of the spring seat, the structure shown in Fig. 6 may be employed. In this embodiment, the lower bar of the frame is designated 13^a, and is provided with opposite outstanding ribs 14^a that receive between them the spring seat 36^a. Said seat has in its under side a socket 35^a that receives the head 34^a of the bolt 33^a. This bolt secures in place the usual tie bar 27^a, and is located above the web 26^a that connects the flanges 25^a. Still another embodiment of this feature of the invention is disclosed in Fig. 7. In this form of construction, the lower frame member 13^b is provided with the usual depending flanges 25^b connected by a transverse web 26^b, and holding bolt 33^b passing through the tie bar 27^b, has its upper end passing through a washer or holding plate 14^b that is located in a socket 35^b in the spring seat 36^b.

That the invention is not limited to the particular style of truck disclosed in Figs. 1 and 10, will be evident by reference to Fig. 9, wherein the side member is of a slight conformation. In this embodiment, the side member may still be of cast steel, and comprises a frame 43 having a central bolster-receiving opening 44, the portion of the frame beneath said opening having the usual flanges 45, between which is secured the tie bar 46, by a bolt 47 in the manner already described. The ends of this frame are provided with extensions 47^a reinforced by spaced ribs 48 and having ears 49 similar in construction to the ears 18 of the structure already described. The boxes 50, interposed between the extensions 47 and the ends of the tie bar 46, are held in place by the usual bolts 51. It will be evident that this structure so far as the novel holding means for the boxes, is concerned, corresponds to that of the first described embodiment.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a car truck, a side member having an extension, and inner and outer sets of ears carried by the extension and projecting on opposite sides of the same, said sets of ears being spaced apart to receive an oil box between them and being provided in their under sides with recessed seats to receive the oil box ears.

2. In a car truck, a side member having an extension, inner and outer sets of ears carried by the extension and projecting on opposite sides of the same, said ears being provided in their under sides with recessed oil box-receiving seats, and inner and outer upright bolt-receiving openings formed in the extensions and opening centrally in the seats between the ears of the different sets.

3. In a car truck, a cast steel side member having extensions at its ends, each of the extensions having spaced sets of depending and oppositely extending ears provided with recessed seats in their under sides that receive the ears of the oil boxes, and said extensions being furthermore provided with upright bolt-receiving openings that open centrally in the seats.

4. In a car truck, a side member having an oil box engaging seat, and a pinch bar receiving socket formed above the said seat.

5. In a car truck, a side member having an extension, ears carried by the extension and projecting on opposite sides of the same, said ears being provided in their under sides with recessed oil box receiving seats, and said extension being furthermore provided with a pinch bar receiving socket formed between the ears.

6. In a car truck, a cast steel side member having extensions at its ends, each of the extensions having spaced sets of depending and oppositely extending ears provided with recessed seats in their under sides that receive the ears of the oil boxes, said extensions being provided with upright bolt-receiving openings communicating with the seats, and with pinch bar receiving sockets formed between the ears.

7. In a car truck, a cast steel side member having extensions at its ends, spaced reinforcing ribs located on the upper side of the member and along the upper sides of the extension, spaced sets of depending and oppositely extending ears provided with recessed seats in their under sides that receive the ears of oil boxes, and upright bolt-receiving openings formed in the extensions between the ribs and opening into the seats.

8. In a car truck, a side member having a bolster-receiving opening, a spring seat in the opening having a socket in its under side, a tie bar extending longitudinally along the lower side of the side member, and a holding bolt for the tie bar having a head located in the socket of the spring seat.

9. In a car truck, a side member having spaced depending flanges, and a tie bar that extends between said flanges.

10. In a car truck, a side member having spaced depending flanges, a tie bar that extends between said flanges, and means engaging the tie bar between the flanges for securing said tie bar to the side member.

11. In a car truck, a side member having spaced depending flanges, and a tie bar that extends between said flanges, said tie bar and member being provided one with a socket, and the other with a lug that engages in the socket.

12. In a car truck, a side member having spaced depending flanges, and a tie bar that extends between said flanges, said tie bar and member being provided one with a plurality of sockets, and the other with a plurality of lugs that engage in the sockets, said socket being disposed out of alinement.

13. In a car truck, a side member having spaced depending flanges, and a tie bar that extends between said flanges, said side member being provided between the flanges with lugs, and a tie bar having sockets that receive the lugs.

14. In a car truck, a side member having spaced depending flanges, a tie bar that extends between said flanges, and a bolt engaging the tie bar between the flanges for securing said tie bar to the side member.

15. In a car truck, a side member having spaced depending flanges, a tie bar that extends between said flanges, and a web connecting the flanges beneath the tie bar.

16. In a car truck, a side member having spaced depending flanges, a tie bar that extends between said flanges, lugs carried by the side member between the flanges, said tie bar having sockets that receive the lugs and being also provided with a longitudinal slot, and a bolt that engages in the slot for securing the tie bar to the side member.

17. In a car truck, a cast steel side member having a bolster-receiving opening, a spring seat located in the opening and having a socket in its under side, spaced depending flanges carried by the side member, a web connecting the flanges, a tie bar extending between the flanges above the web, said tie bar having sockets and an opening therethrough, lugs carried by the side member and engaging in the sockets, and a holding bolt having its head in the socket of the spring seat, said bolt passing through the opening in the tie bar and being disposed above the web.

18. In a car truck, a side member having oil box engaging extensions, means for securing a continuous tie bar to the side member, and means for securing the sections of a sectional tie bar thereto.

19. In a car truck, a side member having a lower arch bar provided with spaced depending flanges arranged to receive a tie bar between them, and means for securing a tie bar between the flanges, said arch bar being also provided with sockets to receive the inner ends of a sectional tie bar.

20. In a car truck, a side member comprising an upper arch bar, a lower continuously curved reverse arch bar, spaced columns interposed between the bars, and spaced flanges depending from the lower face of the lower arch bar and extending longitudinally along the same and between and beyond the outer sides of the columns.

21. In a car truck, a side member comprising an upper arch bar, a lower continuously curved reverse arch bar, spaced columns interposed between the bars, spaced flanges depending from the lower face of the lower arch bar and extending longitudinally along the same and between and beyond the outer sides of the columns, oil box engaging extensions projecting beyond the arch bars at their juncture, and spaced upstanding ribs extending longitudinally along the upper side of the upper bar and along the extensions.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILSON E. SYMONS.

Witnesses:
C. H. WARDEN,
M. SCOTT.