

W. H. WILSON.
CAR TRUCK.
APPLICATION FILED MAY 3, 1913.

1,131,884.

Patented Mar. 16, 1915
2 SHEETS-SHEET 1.

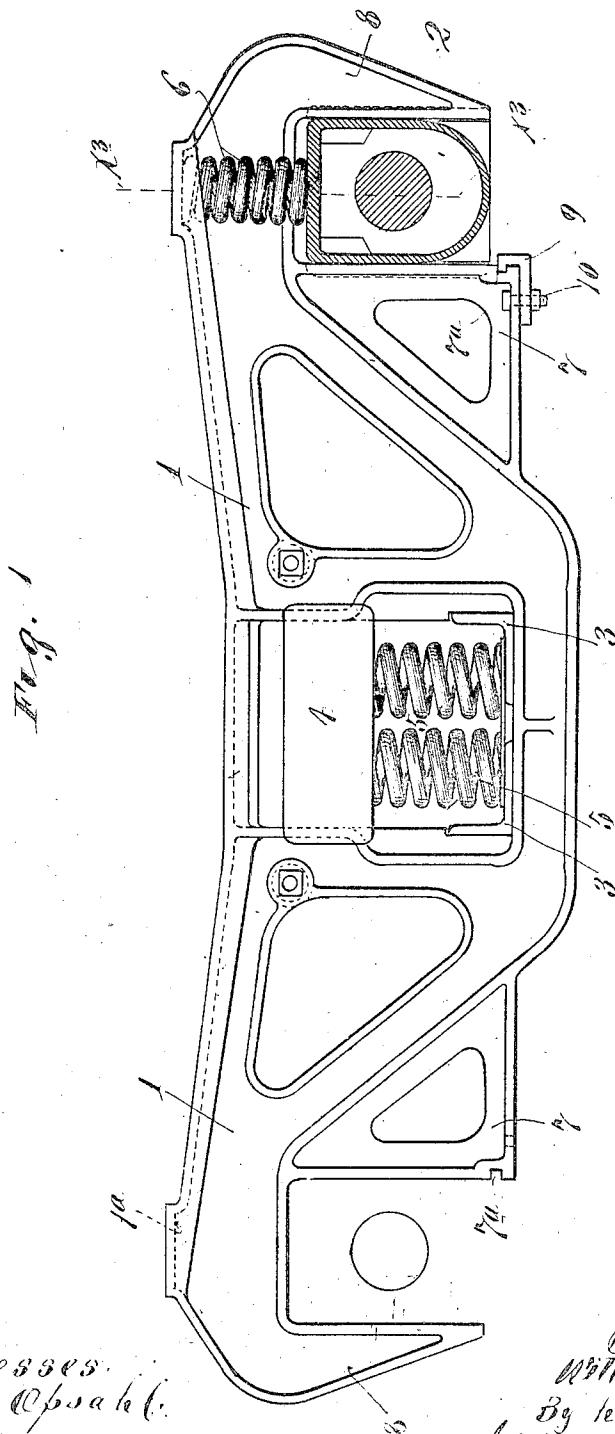
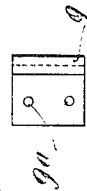


Fig. 2.



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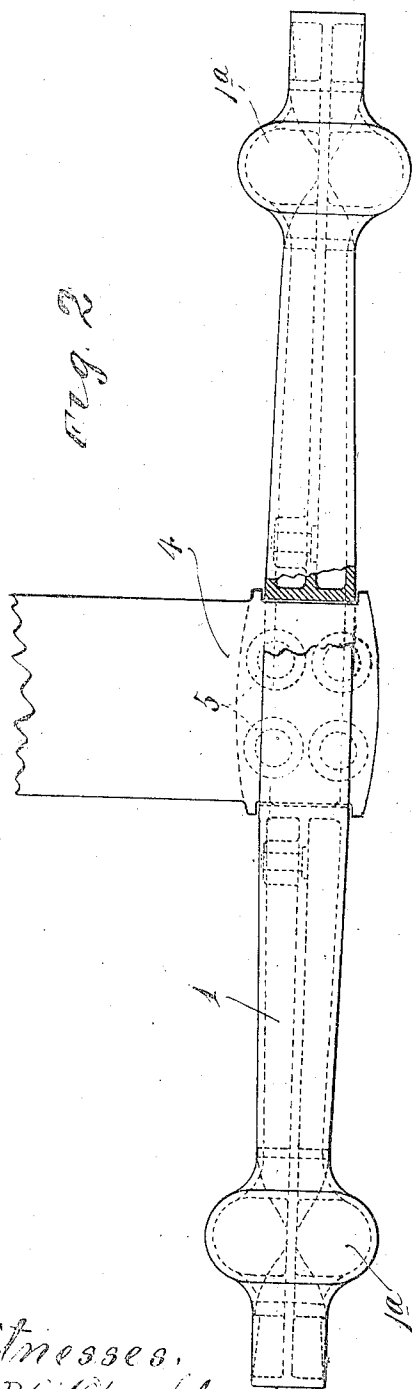


Fig. 6

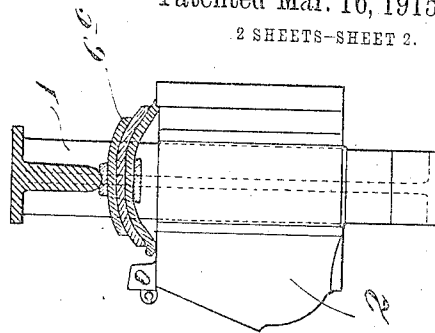


Fig. 5

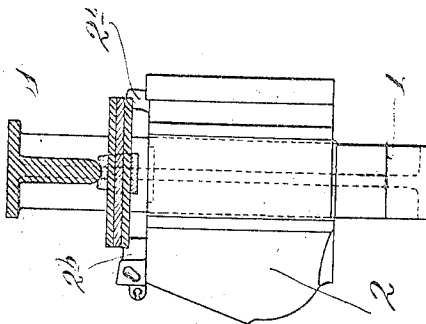


Fig. 4

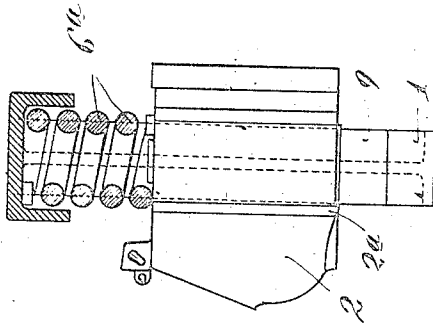
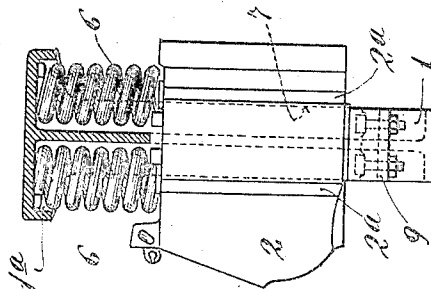


Fig. 3



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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

1,131,954.

Specification of Letters Patent.

Patented Mar. 16, 1915.

Application filed May 2, 1913. Serial No. 765,246.

To all whom it may concern:

Be it known that I, WILLIAM H. WILSON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Car-Trucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a car truck of improved construction, and to such ends, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

Modern railway development, each year, demands heavier and larger cars. The development of the heavy car has made the trucks less flexible and greatly increased the danger of derailments. This is particularly so in steel frame box cars, in all steel construction cars and in refrigerator cars. These heavy and rigid trucks also produce shocks or pounding actions which are not only dangerous but very destructive to the rails and to the rolling stock. In ordinary car construction, it is difficult to remove the axle boxes from their seats in the side frames.

In my improved car truck, the journal boxes are mounted in the side frames for limited vertical movements, and springs are interposed between the journal boxes and the side frames. This provides flexibility between the journal boxes and side frames, which will nearly or quite eliminate shocks due to the uneven tracks, by absorbing such shocks directly in the said springs. Certain other springs are interposed between the side frames and bolster, so that the load will be carried on all of the said springs.

The journal boxes are mounted between pedestals on the side frames of the trucks, so that they may be easily and quickly removed simply by jacking up the side frames. A suitable gib or stop, on certain of the journal box pedestals, serves to normally hold the journal boxes against displacement and in working position between the pedestals.

The invention, which will be hereinafter more fully described is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation with some parts sectioned and with some parts removed, showing a car truck embodying my invention; Fig. 2 is a plan view of the parts shown in Fig. 1, some parts being broken away; Fig. 3 is a vertical section taken on the line x^2-x^2 on Fig. 1 with the springs and box shown in full; Figs. 4, 5 and 6 are views corresponding to Fig. 3, but illustrating a modified arrangement of the springs. Fig. 7 is a plan view of one of the so-called gibs.

Of the parts of the truck, the numeral 1 indicates the truck side frames, the numeral 2 the journal boxes, the numeral 3 the cross transom or spring plank, the numeral 4 the truck bolster, the numeral 5 springs interposed between the side frames and truck bolster, and the numeral 6 springs interposed between the journal boxes and side frames.

The construction so far noted and which will first be fully described is that illustrated in Figs. 1 to 3 inclusive. The side frames 1, as illustrated, are cast structures, preferably cast from steel. The transoms 3 are bolted, riveted or otherwise secured to the side frames in the usual way, and the springs 5, as shown, directly support the ends of the truck bolster, which bolster works vertically in openings in the said side frames. So far as this invention is concerned, it is immaterial whether the springs 5 directly support the bolster 4 or whether they accomplish this through interposed lateral motion devices. The journal boxes 2 are formed with laterally spaced guide ribs 2^a which embrace inner pedestals 7 and outer pedestals 8 of the side frames. The said pedestals 7 and 8 are preferably cast integral with the said side frames, the inner pedestal 7 being formed by approximately triangular extensions of the side frames proper, while the outer pedestals 8 are in the form of downwardly tapered extremities of said side frames. The said pedestals 7 and 8 have parallel opposing faces, but the former extend below the latter and are provided with gibs 9, as shown, in the form of approximately L-shaped stop brackets detachably secured to the said pedestals 7, by short nutted bolts 10. The upturned ends of the gibs 9 are preferably formed to interlock with grooves 7^a in the said pedestals 7. These projecting ends of said gibs 9 project under the journal boxes and prevent the

same from being accidentally moved too far down or from working position from between the pedestals 7 and 8. However, it is a very easy matter to detach the gibs 9 and then the journal box may be removed from the side frames simply by lifting or jacking the said side frames up above the journal boxes.

In the arrangement now being described, four coiled springs 5, are interposed between the side frames and truck bolster, and two coiled springs 6 are interposed between each journal box and the corresponding side frame. The groups of springs 5 and 6 should have approximately the same carrying capacity. With this arrangement, it is evident that shocks produced by rough track, are immediately absorbed by the springs 6, because the journal boxes are very light, as compared with the side frames, and consequently, the inertia of the journal boxes is easily overcome, and the yielding of the springs 6 takes up the shock without overcoming the inertia of the relatively heavy side frames.

By using springs on top of the journal boxes as well as under the bolsters, the height of the car coupler can be maintained more nearly uniform. The design permits the use of lateral motion devices and spread side bearings on the bolster, without the danger of tipping the truck frame and box off the axle, and thereby permitting the journal box wedges to become displaced with resulting hot box or derailment. Because the shocks of rough track are absorbed in the springs over the journal boxes, the journals will run cooler. With play between the flanges of the journal boxes and the pedestals, the springs will insure more equal pressure on top of the journal and, consequently, on the bearings in the box.

In the present construction illustrated in said Figs. 1 to 3 inclusive, the upper flange of the side frame 1, at a point above the spring 6, is widened at 1^a to form pockets that receive the upper ends of the springs and hold them properly positioned. The lower ends of the said springs will preferably be centered or positioned by suitable bosses on the journal box.

By reference to Fig. 1, it will be noted that there is a clearance between the upper edges of the gibs 9 and the bottoms of the journal boxes. Fig. 1, it may be further stated, shows the relative position of the journal boxes and side frames under normal or ordinary load and the journal boxes may move both upward and downward, in respect to the position shown in said Fig. 1. Also, by reference to Fig. 1, it will be not d, that the pedestals 7 and 8 are made to provide a full bearing for the wearing faces of

the boxes and that the wearing faces on the boxes run from the top to the bottom thereof. This construction very greatly reduces the wear and increases the operative life both of the pedestals and journal boxes.

The gibs or stops 9, at both ends of the truck frame, are preferably made alike, and each attached by a single bolt 10, already noted. This bolt 10 is preferably passed through a perforation in the outer portion of the bottom flange of the cooperating pedestal 7, and to avoid making these gibs in rights and lefts, I provide the same with two laterally spaced bolt holes 9^a, shown in detail in Fig. 7. Obviously, the particular bolt hole 9^a which happens to be turned outward, will be used for the application of the bolt 10.

In the modified construction illustrated in Fig. 4, a single coiled spring 6^a of the carrying capacity of two of the springs 6, is interposed between the journal box 2 and the side frame 1. In the construction illustrated in Fig. 5, a flat leaf spring 6^b is seated at its ends on bearing lugs 2^b on the journal box 2, and is provided with a central yoke upon which rests the overlying flange of the frame 1. The construction illustrated in Fig. 6 is the same as that shown in Fig. 5, except that an elliptical leaf spring 6^c is directly rested on the top of the journal box.

What I claim is:

1. In a car truck, the combination with a cast side frame having integrally formed inner and outer journal box guiding pedestals opened at their lower ends for the application and removal of the journal boxes, and approximately L-shaped gibs detachably bolted to the lower extremities of the inner bolster columns and having interlocking engagement therewith and permitting accidental removal of the journal boxes from between the said columns.

2. In a car truck, the combination with a truck side frame having inner and outer journal box guiding pedestals, the said columns being open at their lower ends for the application and removal of the journal boxes, springs interposed between said journal boxes and truck frame, angular gibs or stops detachably applied to the lower ends of said inner columns, having laterally spaced bolt holes adapting them to be used on either end of the truck side frame, and nut-equipped bolts adapted to be passed through flanges of said side frames and through one or the other of the bolt holes of said gibs.

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

WILLIAM H. WILSON.

Witnesses:

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