(No Model.) 2 Sheets—Sheet 1.

J. C. BARBER.

CAR TRUCK.

No. 588,810. Patented Aug. 24, 1897.

Fig. 1

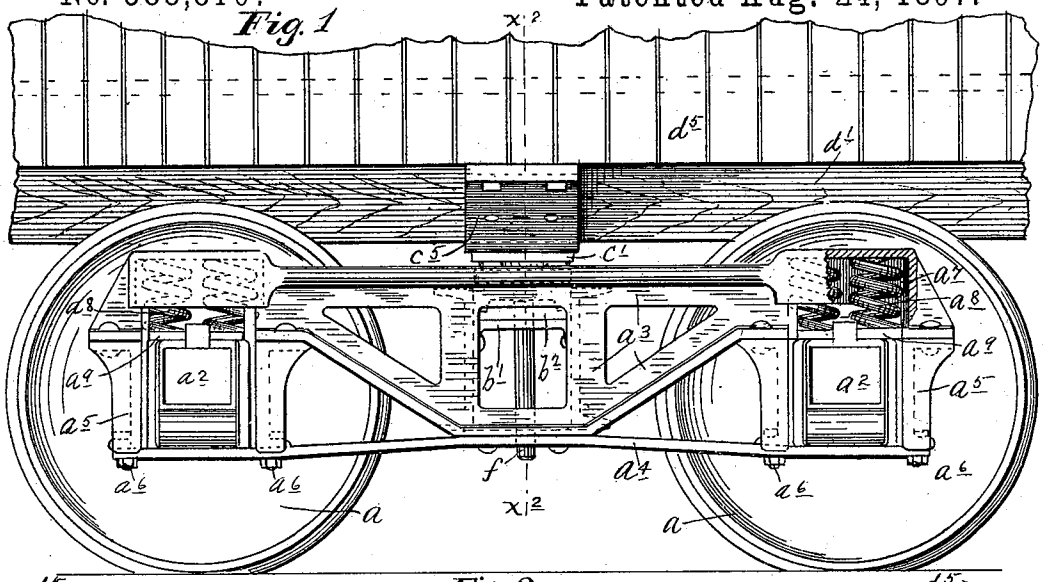


Fig. 2.

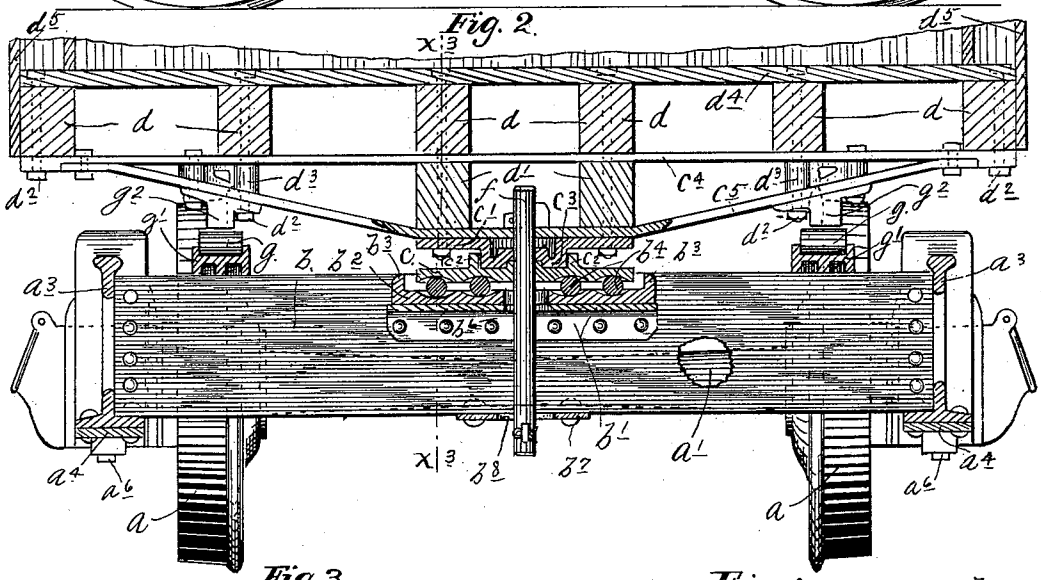


Fig. 3.

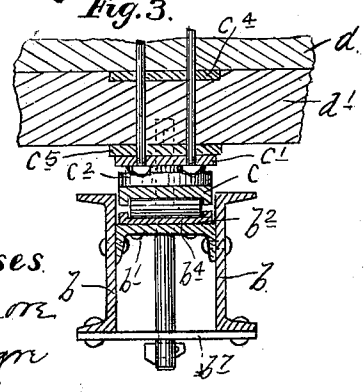
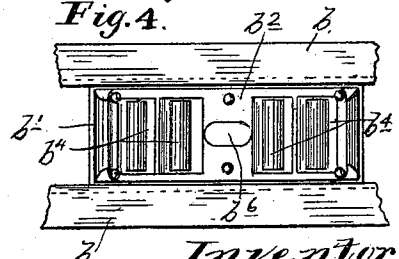


Fig. 4.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

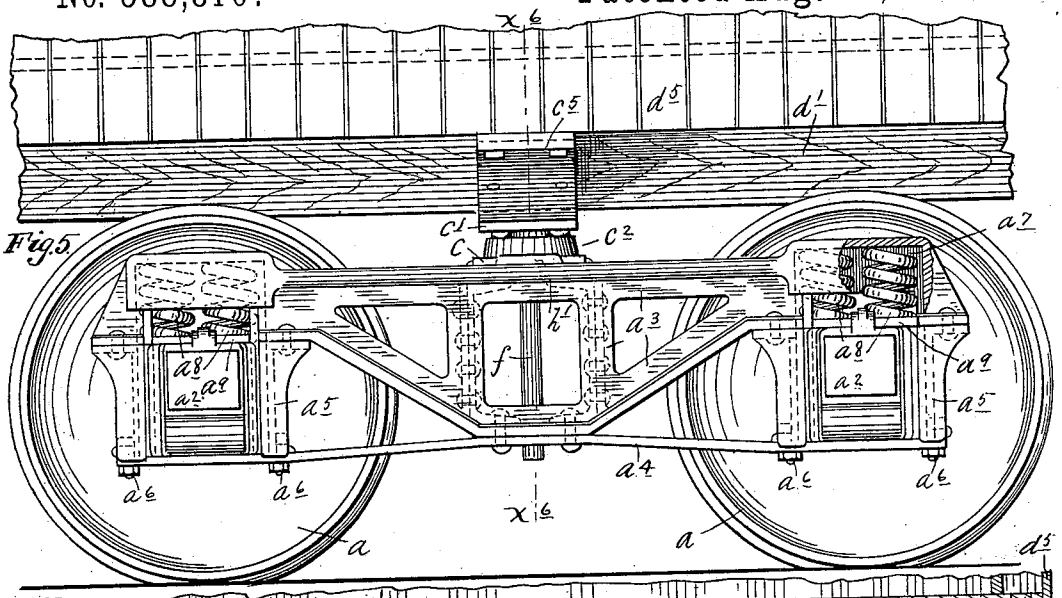


Fig 6.

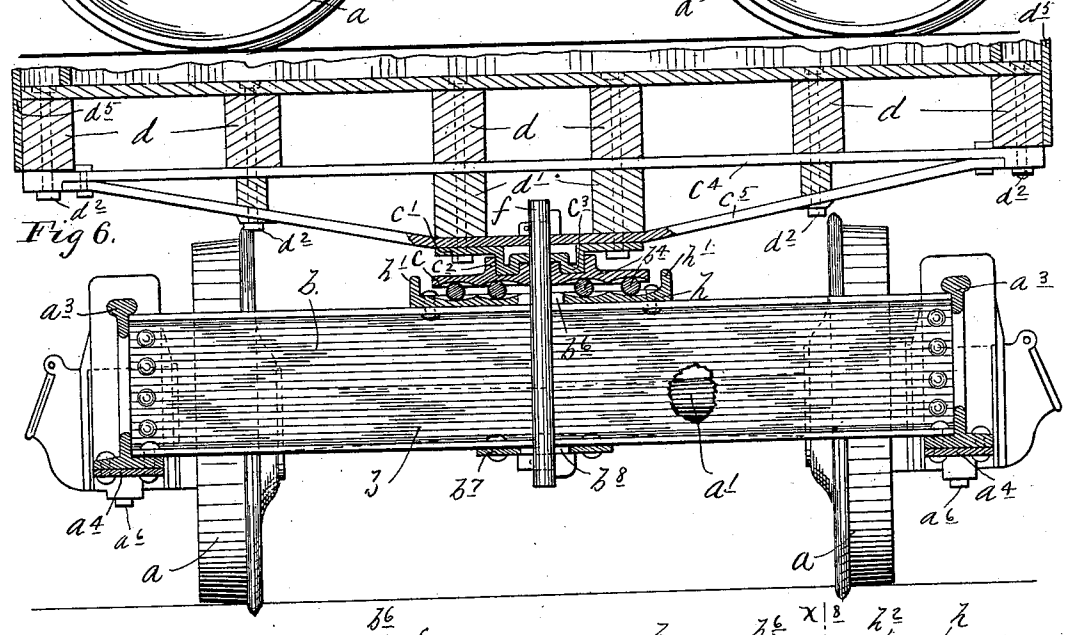


Fig. 8.

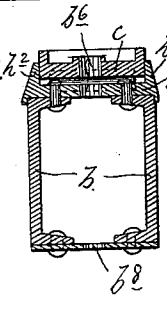
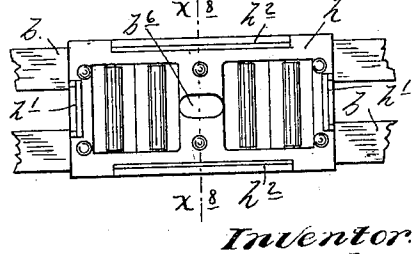


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN C. BARBER, OF ST. PAUL, MINNESOTA.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 588,810, dated August 24, 1897.

Application filed March 21, 1896. Serial No. 584,224. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BARBER, a citizen of the United States, residing at St. Paul, in the county of Ramsay 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 an improved car-truck suitable for freight purposes.

Hitherto, so far as I am aware, it has been the custom to provide for the necessary lateral motion of the truck relative to the car-body by mounting the truck-bolster in such a way that it can move laterally on the truck-frame, or, in other words, the ordinary swing-motion truck-bolster has been employed.

By my invention I provide a means whereby the truck-frame may be rigid throughout, or, otherwise stated, wherein the truck-bolster may be rigid with the side frames of the truck, and, nevertheless, lateral motion of the car-body relative to the truck be permitted. I accomplish this result by connecting the truck-bolster with the car-bolster in such a way as to permit the latter to travel or move sidewise on the former, and provide roller-bearings for sustaining the weight of the car-body in its lateral traveling motion.

Various constructions may be provided according to the principle of my invention for securing the result above noted.

The accompanying drawings illustrate the means preferred by me for the purpose.

In the said drawings like letters refer to like parts throughout the several views.

Figure 1 is a side elevation of my improved truck and part of the car-body with some portions broken away. Fig. 2 is a vertical cross-section on the line x^2 x^2 of Fig. 1. Fig. 3 is a vertical section on the line x^3 x^3 of Fig. 2, and Fig. 4 is a plan view of a part of the truck-bolster and the lower bearing-plate detached. Figs. 5 and 6 are views corresponding, respectively, to Figs. 1 and 2, illustrating a slight modification of the said connections between the truck and the body bolsters, the said Fig. 6 being a vertical cross-section on the line x^6 x^6 of Fig. 5. Fig. 7 is a plan view of a part of the truck-bolster and lower bearing-plate shown in Figs. 5 and 6, and Fig. 8 is a vertical section on the line x^8 x^8 of Fig. 7.

For the purpose of illustrating this invention the details of the truck-frame are immaterial. Any truck-frame may be employed so long as the truck-bolster is rigid with the side frames of the truck.

As shown, a a' a^2 represent, respectively, the wheels, the axles, and the journal-boxes of the trucks. The side frames are shown as composed of body-castings a^3, truss-bars a^4, and journal-box pedestals a^5, connected to the parts a^3 a^4 by nutted tie-bolts a^6. The side-frame castings a^3 are provided with spring-pockets a^7, the walls of which aline with the pedestals a^5 and serve also as part of the guideways for the journal-boxes a^2. In the said pockets a^7 are located the springs a^8 on base-plates a^9, carried by the boxes a^2.

The side frames of the truck are connected by channel-transoms b, which are riveted or otherwise rigidly secured to the side frames and constitute the truck-bolster. The said transoms b b are spaced apart from each other and are connected at their center by a suitable tie-plate b' or h, the former being shown in Figs. 1 to 4 and the latter in Figs. 5 to 7. The tie-plate b', as shown in Figs. 1 to 4, is in the form of an inverted channel located below the tops of the transoms b and having its flanges riveted or otherwise rigidly secured to the transoms. On the tie-plate b' is riveted or otherwise rigidly secured a roller-bearing plate b^2, with upturned flanges b^3. Roller-bearings b^4 rest in suitable seats on the bearing-plate b^2, disposed crosswise of said plate or longitudinally of the truck. On the roller-bearings b^4 is mounted the lower half or section of the divided or two-part center plate c c'. The said lower section c of the center plate is provided with an upturned flange c^2, which is engaged by the pintle portion c^3 of the upper section c', which is bolted or otherwise made fast to the car-body bolster c^4 c^5. The relation of the center-plate sections c c' permits the ordinary swiveling motion in the horizontal plane. The body-bolster is shown as made up of the horizontal bar c^4 and the truss-bar c^5, riveted together at their outer ends and bolted fast to the car-body sills d and the draft-timbers d' by nutted bolts d^2, certain of which pass through suitable spacing-thimbles d^3. A part of the floor of the car-body is shown at

d^4 and part of the siding at d^5. The king-bolt f works through the truss-bar c^5 and the two sections c c' of the center plate in the usual way, but the bearing-plate b^2 and its supporting tie-plate b' are provided with laterally-elongated passages b^6, and the lower end guide-plate b^7 for the king-bolt is provided with a laterally-elongated passage b^8. This guide-plate b^7 is riveted to the lower flanges of the transoms b. In virtue of this construction the center plate and the king-bolt f are free for lateral traveling motion on the bearing-plate b^2 of the rigid truck-bolster, with the weight of the car-body taken on the roller-bearings b^4. The upturned flanges b^3 of the bearing-plate b^2 on the truck-bolster serve to intercept and limit the sidewise traveling motion of the center plate and the body-bolster, and in virtue of the fact that the bearing-plate b^2 is set down between the transoms b to a point which will permit the lower section c of the center plate to work between the upper portions of the transoms the said transoms will serve to hold the lower section c of the center plate in its proper working position and guide the same in the lateral motion of the center plate. In virtue of the relation of the lower section c of the center plate to the roller-bearings b^4 and the transoms b the forward and backward thrust will be transmitted to the transoms b partly through the roller-bearings instead of entirely through the king-bolt.

In Fig. 2 I have shown the customary side bearings, comprising the rollers g, the seat-lugs g' for the same, fixed to the truck-bolster, and the lugs g^2, fixed to the body-bolster.

The construction shown in Figs. 5 to 8, inclusive, differs from the construction shown in Figs. 1 to 4 in the use of the plate h, made of the proper form to serve as the lower bearing-plate and applied to the top of the transoms b instead of being set down between the same, as was the case with the parts b' and b^2. (Shown in Figs. 1 to 4.) The transoms b in Figs. 5 to 7 are applied with their flanges facing inward instead of outward. The said bearing-plate h is riveted or otherwise rigidly secured to the transoms b and is provided with upturned end flanges h', which serve to limit the lateral traveling motion of the center plate in the same way as the corresponding part in the form shown in Figs. 1 to 4. The bearing-plate h is also provided with upwardly-extended side flanges h^2, which serve as the guides for the lower member c of the divided or two-part center plate c c'.

The action of the form shown in Figs. 5 to 7 is substantially the same as the action of the form shown in Figs. 1 to 4. The material difference in effect is that with the form shown in Figs. 1 to 4 the car-body will ride at a lower level.

From the drawings and the foregoing descriptive statements it must be obvious that by my invention I secure a car-truck and car-body connections which are of extremely simple form, but will, nevertheless, permit the necessary lateral movement of the car-body relative to the truck with the use of a truck-bolster or truck-frame which is rigid throughout. At the same time the connections between the truck-bolster and the car-body bolster permit the ordinary swiveling movement required and are well adapted to sustain the backward and forward thrusts and all the strains to which the same are subjected in the service.

It will be understood that various minor changes in the details of construction above set forth may be made without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a center piece secured to the cross-pieces or bolster of the truck, of a transversely-movable center plate mounted thereon, and two plain cylindrical rollers interposed between said center piece and center plate, said center piece and center plate, one or both, having separate oppositely inclined or curved bearing faces or seats to receive each of said rollers, and cause the center plate to return to its central position, substantially as specified.

2. The combination with a center piece secured to the cross-pieces or bolster of the truck, of a transversely-movable center plate mounted thereon, and plain cylindrical rollers interposed between said center piece and center plate, said center piece and center plate, one or both, having inclined or curved bearing faces or seats to receive said rollers and cause the center plate to return to its central position, and stops to limit the transverse movement of the center plate on the center piece, substantially as specified.

3. The combination with the transoms rigidly secured to the truck side frame and constituting the truck-bolster, of the tie-plate rigidly secured to said transoms below the tops of the central portions of the same, the roller bearing-plate supported by said tie-plate, roller-bearings working on said bearing-plate, and a center plate mounted for lateral movement over said roller-bearings, and guided by the upper portions of said transoms, substantially as described.

4. The combination with a rigid car-truck bolster, and a rigid car-body bolster, of a bearing-plate with concave roller-seats fixed on the bolster, a divided or two-part center plate, the upper section of which is carried by the body bolster, and the lower section of which is provided with concave roller-seats, roller-bearings working between said concave seats, and stops formed by the upturned lateral extremities of said fixed bearing-plate, substantially as described.

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

JOHN C. BARBER.

Witnesses:
B. F. COONKRITE,
JOHN T. WILSON.