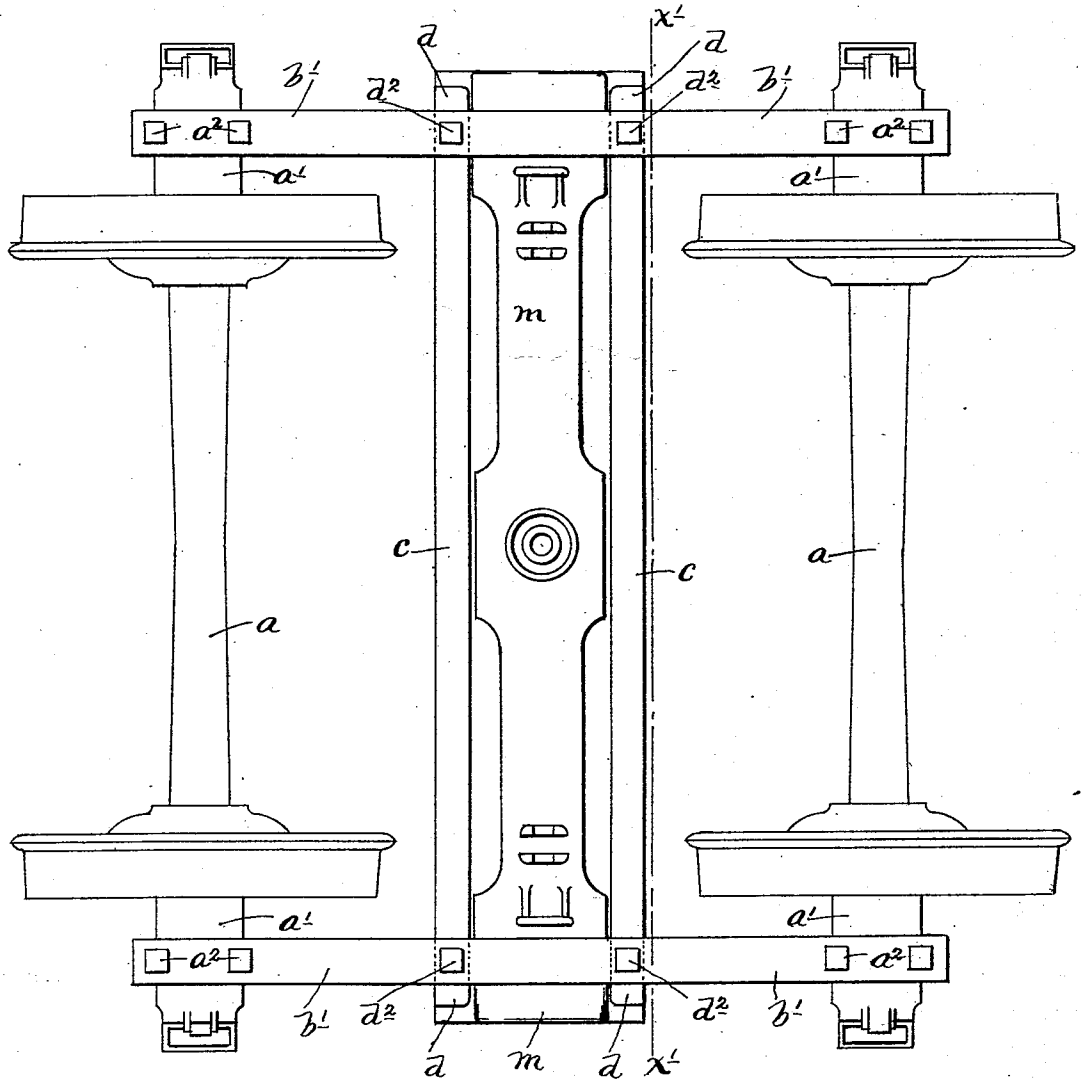
(No Model.) 3 Sheets—Sheet 1.

J. C. BARBER.

CAR TRUCK.

No. 569,077. Patented Oct. 6, 1896.

Fig. 1.



Witnesses.
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R. D. Merchant.

Inventor.
By his Attorney John C. Barber.
Jas. F. Williamson.

(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

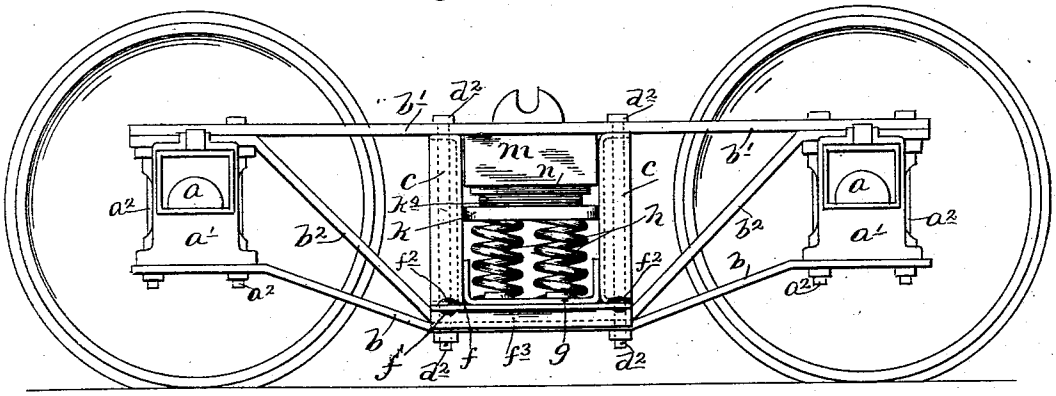

Fig. 3.

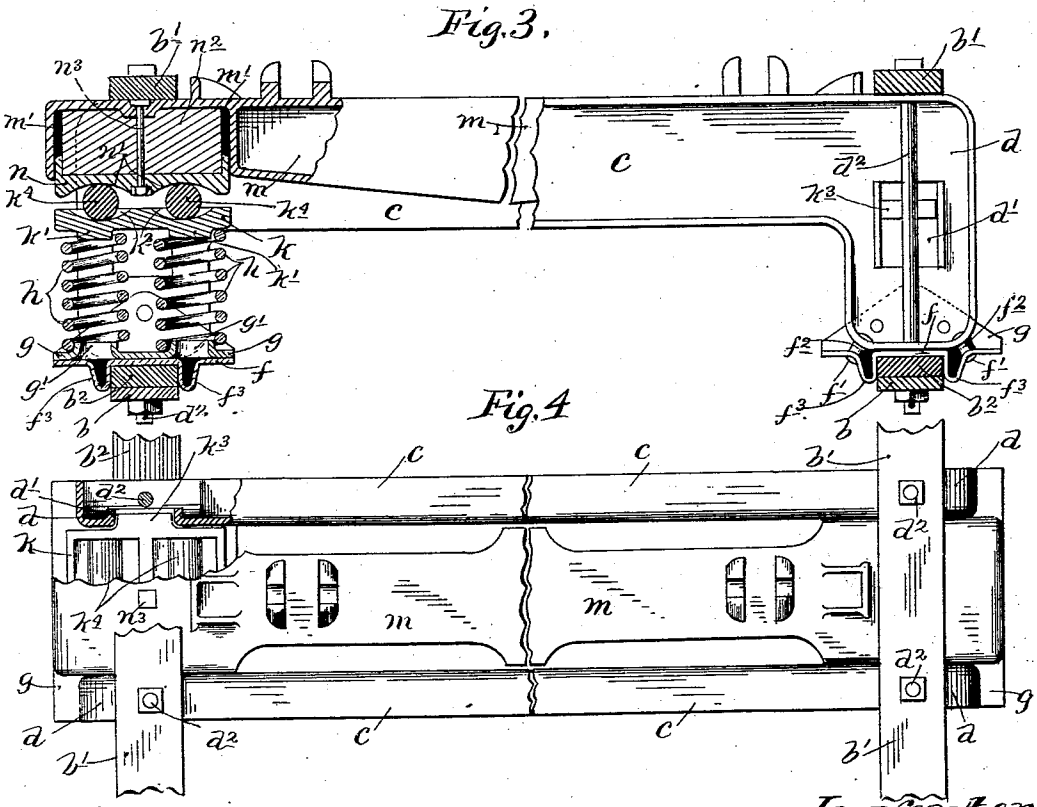

Fig. 4

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(No Model.) 3 Sheets—Sheet 3.

J. C. BARBER.

CAR TRUCK.

No. 569,077. Patented Oct. 6, 1896.

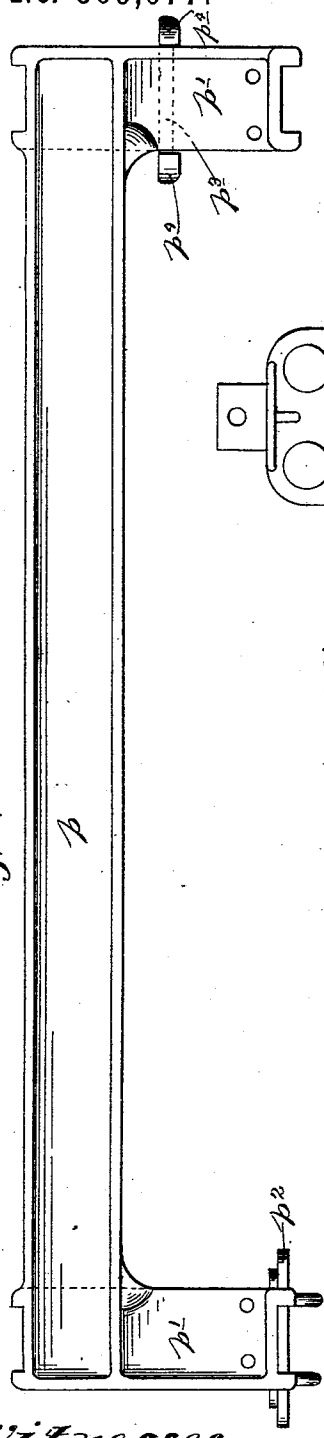

Fig. 6.

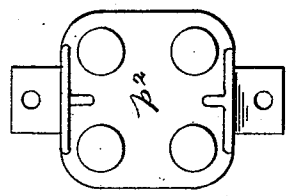

Fig. 7.

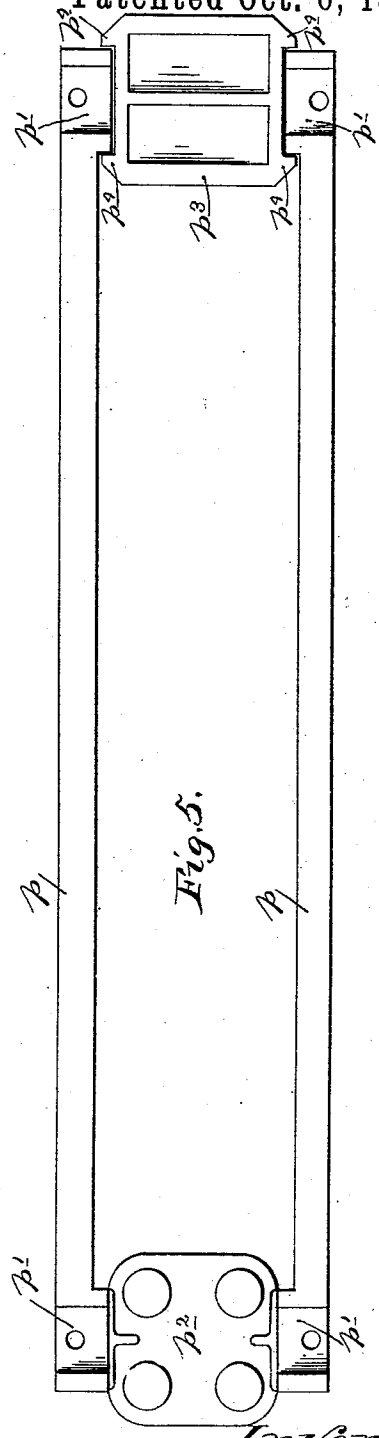

Fig. 5.

Witnesses.
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Inventor.
John C. Barber,
By his Attorney
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UNITED STATES PATENT OFFICE.

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

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 569,077, dated October 6, 1896.

Application filed December 12, 1895. Serial No. 571,851. (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 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 relates to car-trucks, and has for its object to improve the construction of the same in point of strength, durability, convenience for certain adjustments, cheapness of first cost, and neatness of appearance.

To these ends I employ the devices and combinations of devices hereinafter described, and defined in the claims.

My invention herein disclosed involves two important features. As one feature the transoms and the bolster-columns are formed integral with each other, being stamped or pressed or forged from a single piece or blank into the desired form, or cast into the desired form as a single casting, with the transoms proper so related to the bolster-columns that the latter project downward below the body of the transoms. As the other feature the truck-bolster is provided with removable or changeable adjusting-blocks for coöperation with the spring-supporting devices, whereby the truck-bolster, and hence the body of the car, may be vertically adjusted at will by simply changing or varying the thickness of said adjusting-blocks. This adjusting feature is a great convenience and advantage for adjusting the car-bodies in height, as may be required from time to time, to the proper alinement required for the coöperation of the couplings.

The great advantage derived from the integrally-formed transoms and bolster-columns with the columns projecting below the transoms will be readily appreciated by those familiar with car construction. The use of bolster-columns and transoms in separate pieces united by bolts or rivets is objectionable, because under the pounding or jarring action incidental to the service the rivets or bolts are liable to become loose, sheared off, crystallized, and broken.

The sidewise strains between the transoms and the bolsters are delivered chiefly at the lower ends of the bolster-columns, and hence the greatest leverage and consequently the greatest breaking strain is received at the riveted junction or angle formed by said parts. From a consideration of the above it must be evident that the joints between the transoms and the connected bolster-columns should be the strongest point in said parts. It is thought that this can be practically accomplished by forming the said transoms and bolster-columns integral or from a single piece of metal, as set forth.

The above-noted features, as well as other novel details of construction, will be hereinafter fully described, and be defined in the claims.

The accompanying drawings illustrate my improved truck, wherein, like letters referring to like parts—

Figure 1 is a plan view of the truck. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section taken substantially on the line x' x' of Fig. 1, looking toward the left, some parts being broken away and others shown in section. Fig. 4 is a plan view of the bolster, transoms, bolster-columns, &c., some parts being broken away. Fig. 5 is a plan view illustrating a modification in the form of the combined transom and bolster-columns, together with certain of their connected parts. Fig. 6 is a side elevation of the parts shown in Fig. 5, and Fig. 7 is a detail plan of one of the spring-seats used in connection with the construction shown in Figs. 5 and 6.

Referring to Figs. 1 to 4, inclusive, a are the truck-axles, on the journals of which are mounted journal-boxes a', held in place by tie-bolts a^2, passing through seats in said boxes and securing the same to the tie-bars b b' and truss-bars b^2, which together constitute the trussed side frames of the truck.

c d are the combined transoms and bolster-columns, which in this particular instance are shown as stamped or pressed into the desired form from a flat blank or sheet of metal. The bolster-column portions d are each provided with vertical guide-seats d', which are also stamped out, preferably, at the same time with the combined transom and bolster, and which serve as guides for the vertically-

movable spring-caps of the bolster-springs. These combined transoms and bolster-columns c d are located parallel with each other, at equidistant points, on the opposite sides of the longitudinal center of the truck. At their lower ends the pairs of bolster-columns d are tied together and reinforced by saddle irons or plates f, secured thereto by means of rivets f' and thimbles f^2. These saddle-plates f are formed each with a pair of longitudinal depending-ribs f^3, which are spaced apart to form a seat for the frame-bars b b^2.

When the above parts are tied together, as shown in Figs. 1 to 4, inclusive, the upper frame-bar b' is secured to the tops of the bolster-columns, and the bars b b^2 are securely clamped in the channel formed between the ribs f^3 of the saddle-plates f by means of column-bolts d^2, passing through said bolster-columns d and bars b b' b^2. As shown, the pairs of bolster-columns d are also connected at their lower ends by spring-seats g, which rest on the upper faces of the saddle-plates f, and have upturned ends, which are riveted to the insides of said bolster-columns. These spring-seats are also stamped into the desired form, and, as shown, are provided with four upturned annular projections g', which serve as spring-retaining lugs.

h are coiled springs, as shown, four at each side of the truck-frame, resting on said spring-seats g and held in position by the lugs g'. Supported by each of these sets of four springs h are vertically-movable spring-caps k, having spring-retaining lugs k', roller-seats k^2, and guide-lugs k^3. The lugs k' engage the upper ends of the springs h and hold the same in place. The guide-lugs k^3 engage in the guide-seats d' of the bolster-columns d for permitting the vertical movement of said spring-cap k and preventing lateral displacement of the same.

m indicates the truck-bolster, which, as shown, is in the form of a casting, preferably of steel. This truck-bolster m is provided at its outer ends with seats m', into which telescope the sides or flanges of roller-bearing blocks n, provided with roller-seats n'. Within the seats m', between the upper wall of the same and the roller-bearing block n, are removable adjusting or take-up blocks n^2. As shown, the bearing-block n and take-up block n^2 are removably secured in the seat m' of the truck-bolster n by means of a small nutted bolt n^3, connecting said parts with the bolster.

k^4 indicates the roller-bearings located between the spring-cap k and bearing-block n.

The adjusting or take-up blocks n^2 are preferably made of wood or other hard material, but they might, if desired, be made of rubber or similar elastic material, in which latter case the blocks would act as auxiliary spring devices. The importance of these blocks n^2, however, resides in the fact that the same may be readily removed and the thickness of the same varied, either by taking from or adding thereto, or new blocks be substituted therefor, whereby the truck-bolster, and hence the body of the car, may be raised or lowered, as may be found necessary to bring all the cars employed to a proper height for coupling with each other.

It must be obvious that some such provision is extremely desirable, inasmuch as cars, even when constructed on the same plan, will, after they are set up, inevitably vary more or less in the heights of their coupling-parts, and even after they are once properly adjusted will, in the course of time, again sag away from the standard or desired height.

My adjusting-block is thought to be an extremely simple and satisfactory means for leveling up the cars, as above noted.

The modification shown in Figs. 5, 6, and 7 illustrates the combined transom and bolster-column in the form of a single casting, preferably of steel. In this construction p represents the transoms, and p' the bolster-columns. p^2 are the spring-seats connecting the pairs of bolster-columns. It will be noted that in this construction the bolster-columns project inward from the transoms toward the longitudinal center of the truck, and that the vertically movable spring-cap p^3 is provided with pairs of lugs p^4, which embrace the projecting portion of said bolster-columns to guide and hold said cap p^3 in working position.

From the above it must be evident that the combined transom and bolster-column may be made in several ways, and may be made to assume, in its details of construction, several different forms. However, I prefer to form the same from a sheet of steel, stamped into the form of a channel-iron with an endless flange or rim, as set forth and shown in connection with Figs. 1, 2, 3, and 4.

In whatever way the combined transom and bolster-columns may be formed it will be noted that in all cases the columns extend downward below the body of the transom. This is a material advantage, in that the requisite strength is afforded with less mass or weight and with increased clearance under the transoms.

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

1. In a car-truck, a transom and bolster-columns formed integral with each other, with the columns extending downward below the body of the transom, substantially as described.

2. In a car-truck, a transom and bolster-columns stamped or pressed up, integral with each other, from a single piece of sheet metal into the form of a channel, with the columns extending below the body of the transom, substantially as described.

3. In a car-truck, the transom c and bolster-columns d integrally formed from a single piece of sheet metal, stamped or pressed into the form of a channel-iron, having an endless marginal flange and provided with the guide-seats d', substantially as described.

4. In a car-truck, the combination with spring-supporters for the bolster, having their base of resistance on the truck-frame, of the truck-bolster, supported by said spring-supports, having adjustable bearing-blocks engaging said spring-supports, and provided with removable adjusting or take-up blocks between said bearing-blocks and said truck-bolsters, whereby, by changing or varying the thickness of the adjusting-blocks employed, said truck-bolster may be vertically adjusted, substantially as described.

5. In a car-truck, the combination with the spring-supports for the truck-bolster having their base of resistance on the truck-frame, of the truck-bolster, having at its opposite ends, the seats m', the bearing-blocks n telescoping into said seats m', and the removable adjusting or take-up blocks m^2, working within said seats m' between said blocks n and the upper wall of said bolster, substantially as, and for the purposes set forth.

6. In a car-truck, the combination with the integrally-formed transoms and bolster-columns c, d, of the saddle-plates $f\,f^3$, secured to and tying together the pairs of bolster-columns, longitudinally of the truck, and the spring-seats g, resting on the saddle-plates, and having upturned ends also secured to and connecting said pairs of bolster-columns, substantially as described.

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

JOHN C. BARBER.

Witnesses:
JAS. F. WILLIAMSON,
F. D. MERCHANT.