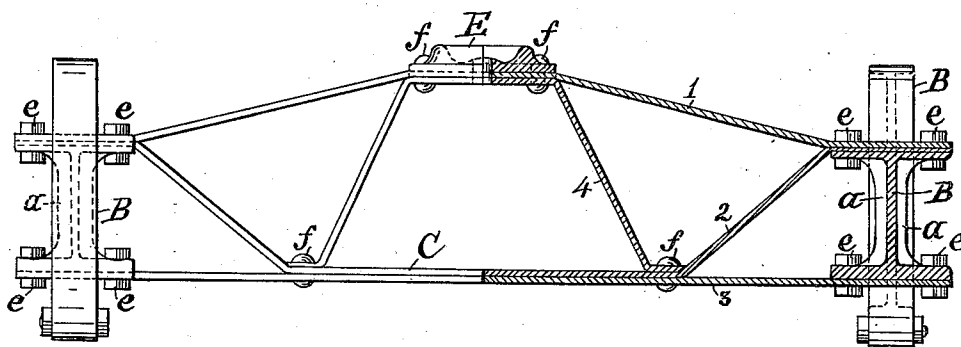
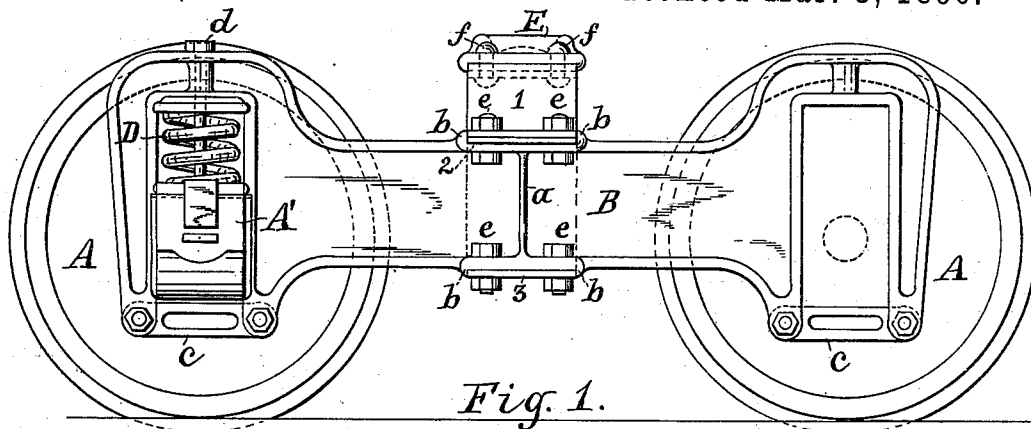


(No Model.)

E. CLIFF.
FREIGHT CAR TRUCK.

No. 555,563.

Patented Mar. 3, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD CLIFF, OF NEWARK, NEW JERSEY.

FREIGHT-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 555,563, dated March 3, 1896.

Application filed January 11, 1896. Serial No. 575,056. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CLIFF, of Newark, in the county of Essex, in the State of New Jersey, have invented new and useful
5 Improvements in Freight-Car Trucks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to car-trucks, particularly freight-car trucks, and the object is to provide a simple and durable truck constructed entirely of metal.

To this end my invention consists in the combination, with the wheels, axles and axle-boxes, of side frames containing pedestals for the axle-boxes to work in, and a bolster extending between the centers of the side frames, said bolster being formed of an upper arch-bar, a lower horizontal bar, a central angular bar having its central portion lying on the upper side of the said lower bar and extending with its end portions upward and lying on the lower sides of the end portions of the arch-bar, and another bar lying with its
25 central portion on the lower side of the center of the arch-bar and with its ends bent to lie on the upper side of the central bar, its ends reaching to and abutting against the angles formed in the said central bar, said bars
30 being secured together and bolted to the flanges of the side frames; and my invention consists in the peculiar form of truck-bolster with any suitable side frames, and also in other combinations of parts hereinafter described and specifically set forth in the claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a side elevation of my improved freight-car truck; and Fig. 2 is a side elevation of the
40 bolster, partly in section.

Referring specifically to the drawings, AA are the axles and wheels, and A' is an axle-box. In Fig. 1 one of the axles and wheels is shown in broken lines and its box is entirely removed to show more clearly the construction of the frame.

B B are the side frames, which are preferably made of cast metal, and C is the bolster extending between and connecting the centers of the side frames together, as herein-
50 after described. The side frames are sub-

stantially I-shaped in cross-section with vertical ribs *a* between the flanges at the center. Gibs *b b* are provided at the center on both the upper and lower sides of the side frames 55 to retain the bars forming the bolster C in place. The ends of the side beams are made deeper than the central portion to form the pedestals. The lower side of each pedestal is formed by a removable bar *c*, bolted at its 60 ends to the frame as usual. A coil-spring D is shown between the upper side of the axle-box and the upper portion of the pedestal upon which the latter is yieldingly supported. A bolt *d* passes vertically through the spring 65 D and the upper horizontal portion of the pedestal.

The bolster or cross-beam C of the truck is formed of four bars, the ends of two being in contact with each other and secured to the 70 upper sides of the side beams, the third being a straight horizontal bar secured to the lower sides of the side beams, and the fourth being a central separator.

The upper bar, 1, is more or less arched or 75 raised at its center above its end portions and the upper sides of the central portions of the side beams. The lower bar, 3, as before mentioned, is straight and horizontal, while the central bar, 2, having its ends in contact with 80 the ends of the arched bar, has its central portion bent down to lie horizontally on the said lower bar. In the center of the bolster between the said bars is another or fourth bar, 85 4, which serves as a separator and brace. This bar lies with its central portion against the lower side of the arched bar 1, has its end portions inclining outwardly and downwardly to the bar 2, and its ends lying in a horizontal position in contact with the latter bar and 90 extending to and abutting against the angles formed in bar 2. The said bars are made of wrought iron or steel, and are bolted to the flanges of the side beams by bolts *e e e*, &c., while they are secured together at other 95 places where they come in contact with each other by either bolts or rivets *f f*, &c., as shown.

E is a bearing-plate secured above the center of the arch-bar, and is perforated together 100 with the bars below it to receive the king-bolt. (Not shown)

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

1. In a car-truck, the combination with the wheels, axles, and axle-boxes, of side frames containing pedestals for the axle-boxes to work in, and a bolster extending between the centers of the side frames, said bolster being formed of an arch-bar, a horizontal bar, a central angular bar having its central portion lying on the upper side of the said horizontal bar and extending with its end portions upward and lying on the lower sides of the end portions of the arch-bar, and another bar lying with its central portion on the lower side of the center of the arch-bar and with its ends bent to lie on the upper side of the central bar, its ends reaching to and abutting against the angles formed in the said central bar, said bars being secured together and bolted to the flanges of the side frames, as set forth.

2. In a car-truck, the combination with the wheels, axles and axle-boxes, of side frames, and a bolster extending between the centers of the side frames, said bolster being formed of an arch-bar, a horizontal bar, a central angular bar having its central portion lying on the upper side of the said horizontal bar and extending with its end portions upward and lying on the lower sides of the end portions of the arch-bar, and another bar lying with its central portion on the lower side of the center of the arch-bar and with its ends bent to lie on the upper side of the central bar, its ends reaching to and abutting against the angles formed in the said central bar, said bars being secured together and bolted to the flanges of the side frames, as set forth.

3. In a car-truck, the combination with the wheels, axles and axle-boxes, of side frames, and a bolster extending between the centers of the side frames, said bolster being formed of an arched bar secured at its ends to the top sides of the side beams, a bar below the arched bar secured at its ends to the lower sides of the side beams, and a pair of angular bars between the first-mentioned bars, making contact with both and rigidly secured thereto, the portions of said angular bars ex-

tending between the two other bars lying in inclined positions, as and for the purpose described.

4. In a car-truck, the combination with the wheels, axles and axle-boxes, of flanged metal side frames provided with gibs on their upper and lower sides, and a bolster extending between the centers of the side frames, said bolster being formed of an arch-bar secured at its ends to the top sides of the side beams between the said gibs, a bar below the arch-bar secured at its ends to the lower sides of the side beams, between the gibs, and a pair of angular bars between the first-mentioned bars, making contact with both, and rigidly secured thereto, the portions of said angular bars extending between the two other bars lying in inclined positions, one of which extends between the ends of the arch-bar and the side frames, between the gibs, and bolts securing the ends of the said bars to the flanges of the side beams, as set forth.

5. In a car-truck, the combination with the wheels, axles and axle-boxes, of flanged metal side frames having the pedestals cast integral with the frames with removable pieces below the axle-boxes and gibs on the upper and lower sides of the side frames, and a bolster extending between the centers of the side frames, said bolster being formed of an arch-bar, a horizontal bar, a central angular bar having its central portion lying on the upper side of the said horizontal bar and extending with its end portions upward and lying on the lower sides of the end portions of the arch-bar, and another bar lying with its central portion on the lower side of the center of the arch-bar and with its ends bent to lie on the upper side of the central bar, its ends reaching to and abutting against the angles formed in the said central bar, said bars being secured together and bolted to the flanges of the side frames, as set forth.

In testimony whereof I have hereunto signed my name.

EDWARD CLIFF. [L. S.]

Witnesses:

GEO. H. GRAHAM,
E. L. TODD.