(No Model.)

E. CLIFF.

FREIGHT CAR TRUCK.

No. 560,780. Patented May 26, 1896.

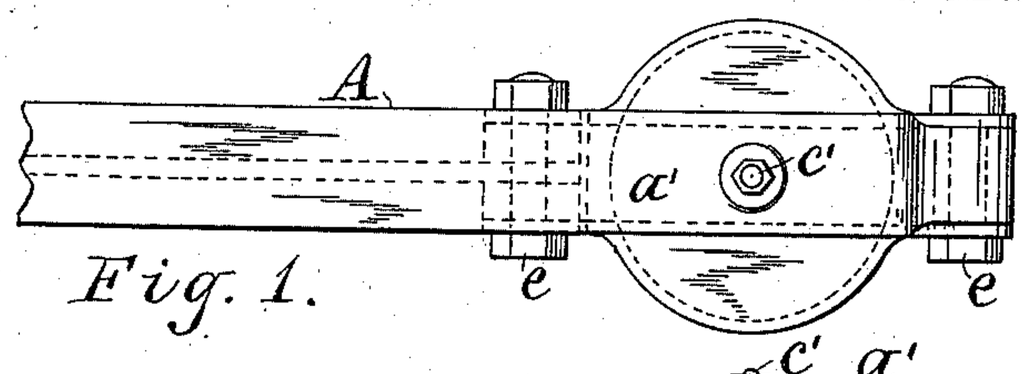

Fig. 1.

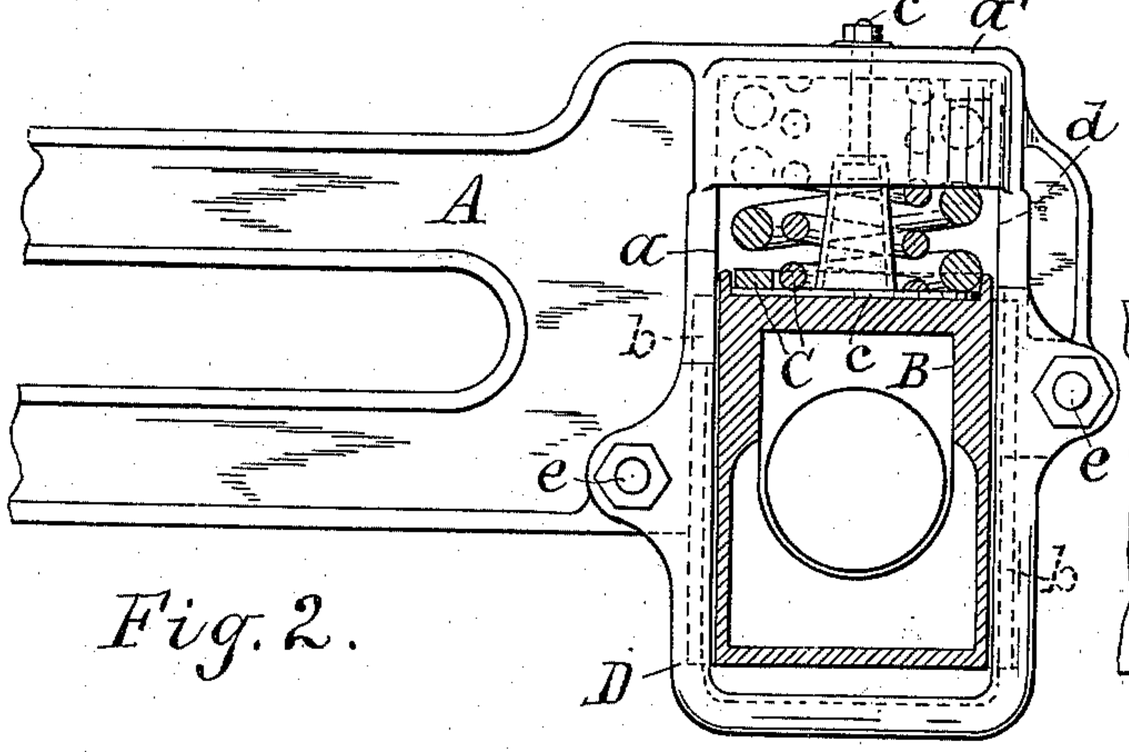

Fig. 2.

Fig. 3.

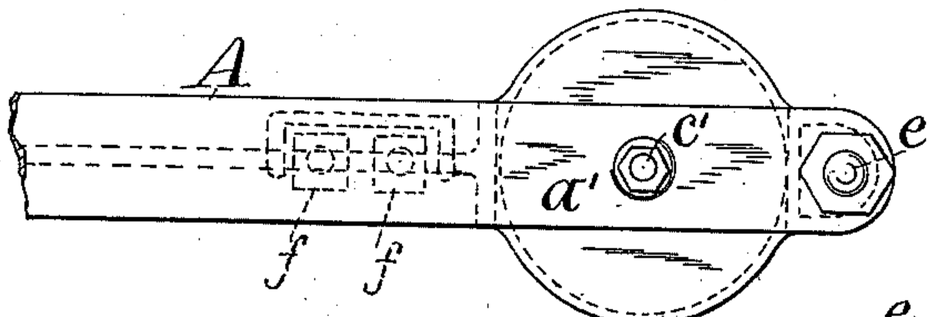

Fig. 4.

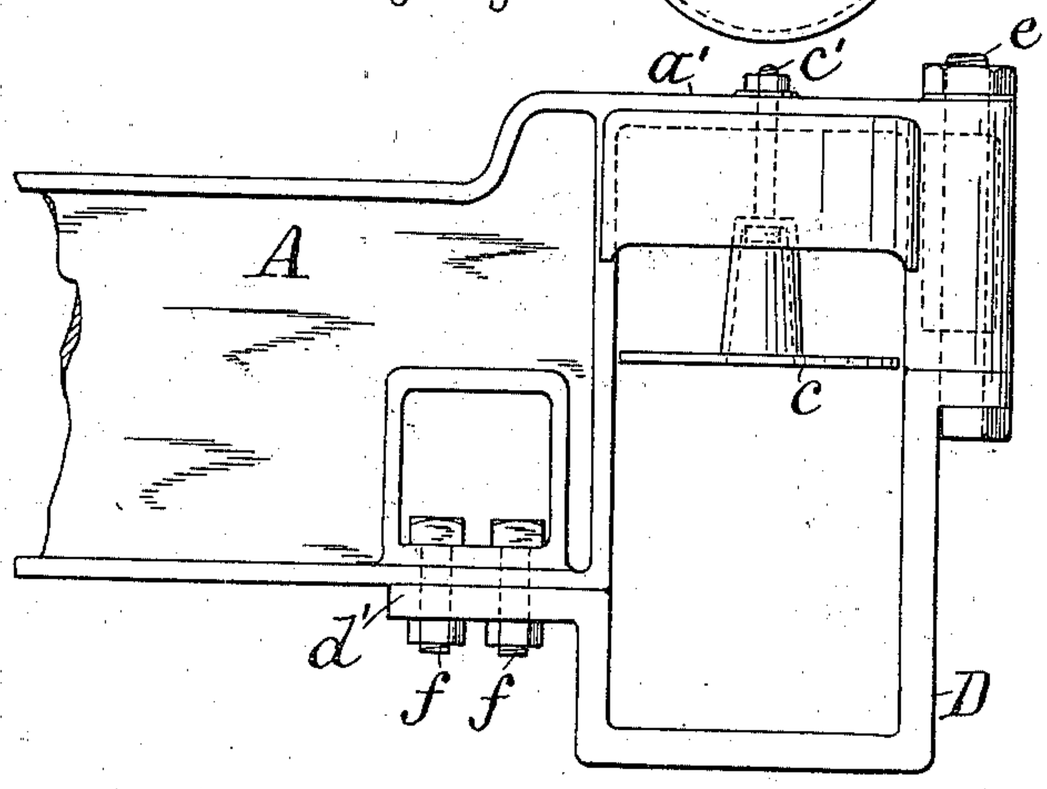

Fig. 5.

Witnesses.
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UNITED STATES PATENT OFFICE.

EDWARD CLIFF, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO GEORGE R. JOUGHINS, OF BERKLEY, VIRGINIA.

FREIGHT-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 560,780, dated May 26, 1896.

Application filed March 20, 1896. Serial No. 584,043. (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 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 certain improvements in car-trucks, particularly freight-car trucks, and the object is to provide means whereby the axle-box may be easily and quickly removed from the side frame, similar to the devices shown and described in my Letters Patent, dated January 14, 1896, No. 553,103.

My invention consists in the combination, with the axle-box, of the side frame, an extension of the said frame extending horizontally above the axle-box and integral with the frame, and a rectangular part secured removably to the said extension and to the body of the side frame to inclose and form side guides for the axle-box; and my invention consists in certain 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 top plan view of an end portion of a side frame embodying my invention. Fig. 2 is a side elevation of the same, the axle-box being shown in section. Fig. 3 is an end elevation. Figs. 4 and 5 show a top plan view and a side elevation, respectively, of a modified form embodying my invention.

Referring specifically to the drawings, A is the body of the side frame, which extends between the axle-boxes on one side of the truck; but as my invention relates entirely to the end portions of this frame, and as both ends are alike, although reversed, only one end is shown. The side frame is preferably formed of malleable iron, **I**-shaped in section and perforated, as shown. The end of the frame is vertical and forms a portion of the inner side guide *a* for the axle-box B. Projecting outward horizontally from the upper end of the guide *a* is an extension *a'*, which forms the upper side of the pedestal or yoke for the axle-box. In the lower side of this extension is a socket for the upper ends of two coiled springs C, which rest with their lower ends in a socket in the upper side of the axle-box. The usual plate *c* lies between the box and the springs and is supported by a bolt *c'*, extending through the said extension to retain the springs in place when the box B is removed from the pedestal. The outer end of the extension *a'* extends downwardly a short distance, forming a portion of the outer guide *d* for the axle-box.

In order to complete the inclosure or rectangular frame for the axle-box, I provide a rectangular press-steel yoke D, which forms the lower horizontal portion of the frame, together with the side portions, to complete the side guides *a* and *d*. This press-steel yoke contains two right angles, hangs below the body of the side frame, and is secured removably at its ends to the body A and extension *a'* by bolts. In the first three figures of the drawings the removable yoke D is adapted to enter between and is grooved at its ends to surround the guides *a* and *d*, but when in place forms, with the stationary part, two plain smooth vertical guides for the box to move between. The box is of course provided with flanges *b b* on each side, as usual, to retain it in position in the frame. In the construction shown in these figures the removable part is secured in place by two bolts *e e*, extending horizontally through the removable part and the stationary part. The outer bolt is somewhat higher than the inner bolt. After the bolts are withdrawn the removable part is drawn downward before it is entirely released.

The construction shown in Figs. 4 and 5 is similar in most respects to that already described, the only difference being that the parts are shaped and adapted to be secured together by bolts extending vertically through the parts instead of horizontally. To effect this, I preferably perforate the web of the side frame near the inner guide, and pass a pair of short bolts *f f* down through the broad lower side of the frame and through a horizontal extension *d'* of the removable yoke lying beneath the said lower side. When the side frame is jacked up slightly and the bolts in either construction are removed, the re-

movable rectangular yoke D is removed and the axle-box is free to be withdrawn from the truck. The springs are retained in place by the plate *c* and bolt *c'*, as before mentioned.

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

1. In a freight-car truck, the combination with the axle-box, of the side frame, an extension of the said frame extending horizontally above the axle-box and integral with the frame, and a rectangular part secured removably to the body of the frame and the said extension, to form a rectangular inclosure for the axle-box, as set forth.

2. In a freight-car truck, the combination with the axle-box, of the side frame, an extension of the said frame extending horizontally above the axle-box and integral with the frame, a rectangular part secured removably to the body of the frame and the said extension, a spring between the axle-box and the said extension, a plate below the spring, and a bolt to secure the plate to the extension, as and for the purpose described.

3. In a freight-car truck, the combination with the axle-box, of the side frame, an integral extension of the said frame extending horizontally above the axle-box, and having a downward projection at its end, a removable yoke containing two right angles secured at its ends to the body of the frame and the said projection and adapted to form with the stationary part a rectangular yoke with vertical guides to inclose the axle-box, as set forth.

4. In a freight-car truck, the combination with the axle-box, of the side frame, an integral extension of the said frame extending horizontally above the axle-box, and having a downward projection at its end, a removable yoke containing two right angles secured at its ends to the body of the frame and the said projection and adapted to form with the stationary part a rectangular yoke with vertical guides to inclose the axle-box, and a spring between the axle-box and the extension, and means to retain the spring in place when the axle-box is removed, as set forth.

5. In a freight-car truck, the combination with the axle-box, of the side frame having an integral horizontal extension above the box, said extension having a downward projection at its end, a removable yoke containing two right angles below the side frame, bolts extending horizontally through the ends of the said yoke and securing the same to the body of the frame and the projection, said yoke together with the stationary part forming a rectangular inclosure for the axle-box having two plain vertical guides, as set forth.

6. In a freight-car truck, the combination with the axle-box of the side frame having an integral horizontal extension above the box, said extension having a downward projection at its end, a removable yoke containing two right angles below the side frame, bolts extending horizontally and transversely through the ends of the said yoke and securing the same to the body of the frame and the projection, said ends of the yoke extending between the said body and the projection, the yoke together with the stationary part forming a rectangular inclosure for the axle-box having two plain vertical guides for the box to move between, as set forth.

In testimony whereof I have hereunto signed my name.

EDWARD CLIFF. [L. S.]

Witnesses:

W. L. SAWYER,

JOHN E. INGERSOLL.