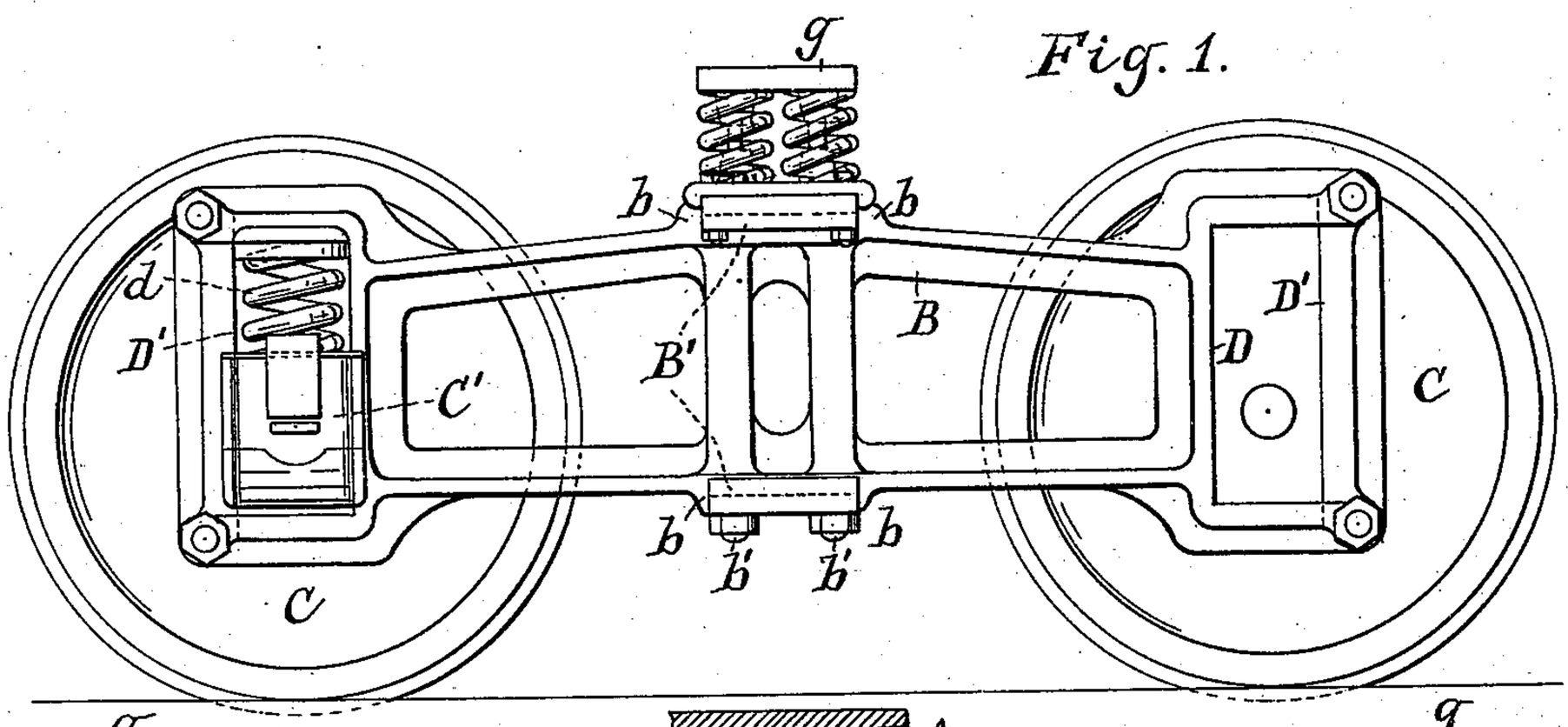
(No Model.)

E. CLIFF.

FREIGHT CAR TRUCK.

No. 548,826. Patented Oct. 29, 1895.

Fig. 1.



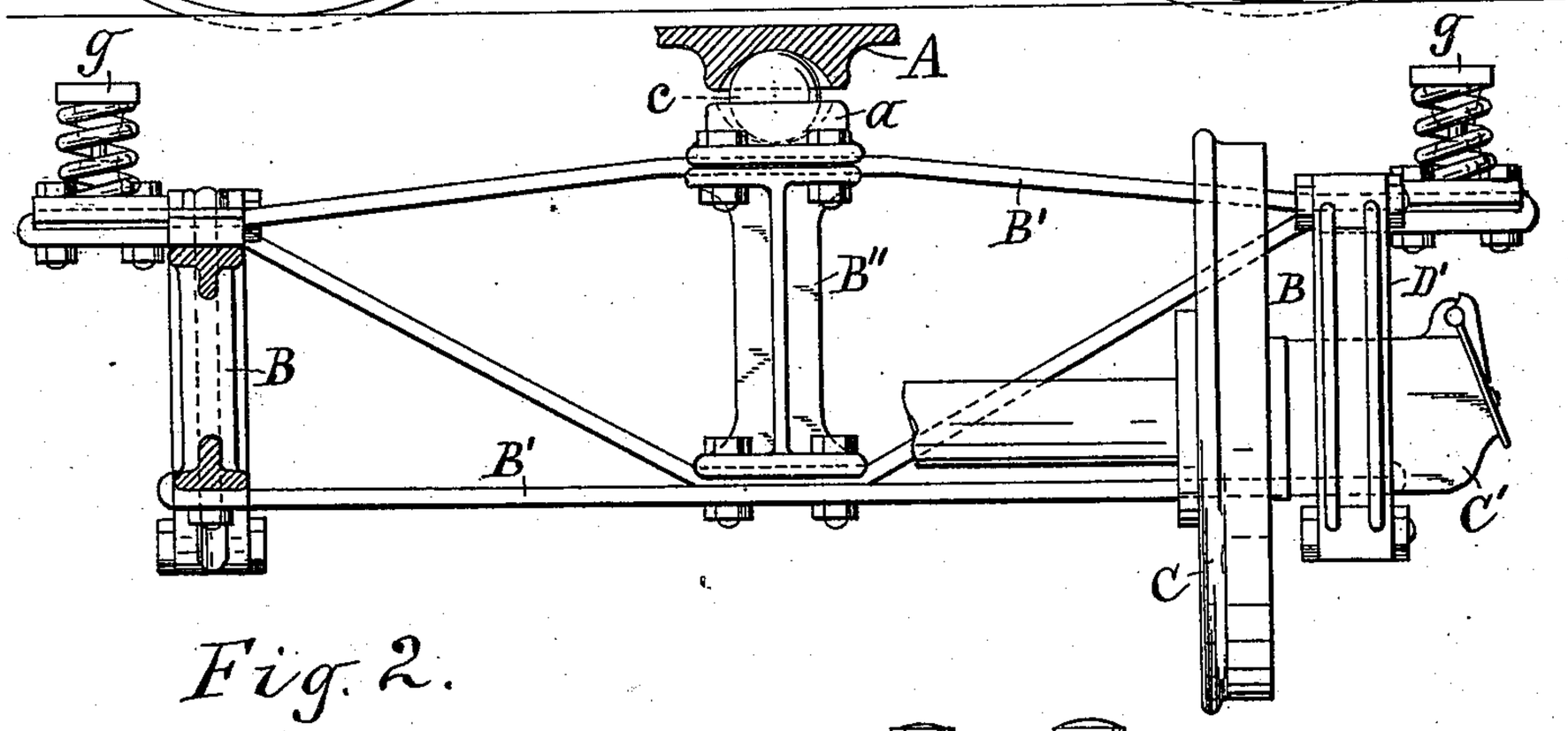


Fig. 2.

Fig. 3.

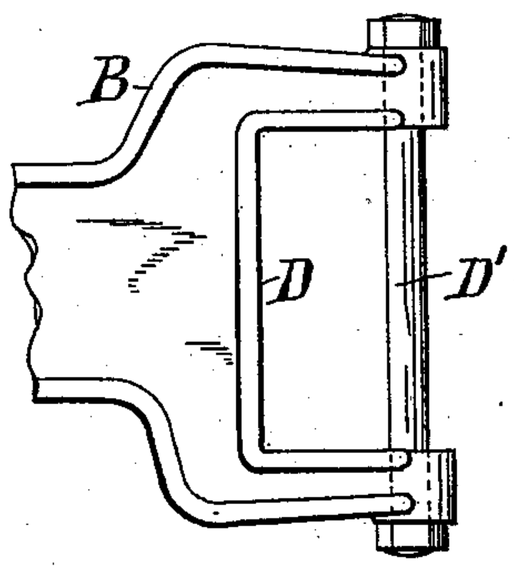


Fig. 4.

Witnesses:

R. S. Dewey.

Mark W. Dewey

Inventor.

Edward Cliff

By C. H. Duell

his Attorney.

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. 548,826, dated October 29, 1895.

Application filed July 29, 1895. Serial No. 557,428. (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 car-trucks, particularly freight-car trucks; and the object is to provide a truck that will be simple, durable, and easy-riding and that will allow the wheels and axles with the axle-boxes to be removed therefrom easily and quickly.

To this end my invention consists in the combination, with the truck-frame and the transom-beam, of a socket in the center of each, a ball in and between the sockets, extensions of the bolster projecting beyond the side frames, and yielding bearings on said projections.

My invention consists, also, in the combination, with steel side frames having recesses in their ends to receive the axle-boxes, of removable guides to hold the boxes in the recesses, a bolster between the side frame having an arch bar, a straight bar, and an angular bar secured at its ends to the arch bar and at its center to the straight bar, and a separator in the center between the said bars and secured thereto; and my invention consists in certain other combinations of parts hereinafter described, and specifically set forth in the claims.

In the drawings, Figure 1 is a side elevation of the truck-frame. Fig. 2 is an end elevation, partly in section, to show the shape of a portion of the side frame more clearly. Fig. 3 is another form of a removable guide in position in a frame, and Fig. 4 shows a square bolt to be used as a guide.

Referring specifically to the drawings, A indicates the transom-beam usually connected to the body.

B is the truck-frame, which is preferably made entirely of iron or steel, and C C are the wheels and axles.

The frame is substantially H-shaped. The cross-bar or truck-bolster B′ is secured to both the upper and lower sides of the side frames and is composed of three bars. The upper bar is slightly arched or raised in its center above the end portions, the lower bar, extending between the lower sides of the side frames, is straight, while the third or central bar is bent to lie with its center in contact with the lower bar and with its ends in contact with the ends of the upper or arch bar, where they are secured together. In the center of the bolster between the bars is a separator B″, formed of a metal casting, which is rigidly secured at each end to the bars by short bolts. Above the separator B″ and secured upon the top side of the arch bar is a plate *a*, formed with a socket to receive a large ball *c*, which forms the central or pivotal bearing of the truck. A socket in the center of the lower side of the transom-beam receives the upper portion of the ball. These sockets are not quite as deep as the diameter of the ball, but they are broader, so that the ball may move or roll slightly transversely, which will allow the transom-beam and bolster to move slightly relatively to each other, so that the great strain that would otherwise come upon these parts will be avoided.

The ends of the arch-bar, together with the ends of the bar below and secured to it, project beyond the outer sides of the side frames. On these projections are mounted yielding side bearings *g*, of any suitable and well-known form of construction. These side bearings are designed to carry a great portion of the weight of the car.

The side frames are provided with ribs or gibs *b b* on both their upper and lower sides to aid in holding the cross-bars firmly and squarely in place. A pair of bolts *b′ b′* passes vertically through each end of the bolster and the frame.

The axle-boxes C′ may be the same as usual, but are provided with vertical grooves in their sides to receive guides D and D′ in the ends of the side frames of the truck. The recesses or openings in the ends of the side frames are made large enough to receive the axle-boxes and coil-springs *d d* extending between the upper side of the boxes and the frame above.

The inner vertical guide for each axle-box C′ is rigid or integral with the frame; but the outer guide is removable or so connected and secured in place that by simply removing one

bolt at one end it may be swung outward, turning on the other bolt. By swinging the guide at each end of an axle the latter may be easily and quickly removed therefrom, together with its axle boxes. One axle-box is omitted in Fig. 1 in order to show the frame and guides more clearly. It will be noticed that there is a space between the lower side of the box and the frame. This allows the box to pass easily and freely from and into the recess. The removable or pivoted guide is ribbed, as shown in the drawings, and is very strong and rigid when secured in place.

Fig. 3 shows the removable guide formed of a round bolt passing vertically through the frame, and Fig. 4 shows a square bolt having a round threaded end for the nut, which may be used for the same purpose.

In the latter case the frame would be provided with square holes to receive the square bolt.

This truck-frame may be provided with any suitable and well-known central bearing instead of the ball and sockets.

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

1. In a car truck, the combination of the side frames and the wheels and axles, with a bolster connecting the side frames together consisting of a bar extending between the top sides of the side frames and projecting beyond the latter, a bar extending between the lower sides of the side frames, an angular bar extending in opposite directions from the center of the lower bar to the ends of the upper bar, a separator between the upper and angular bar at the center of the bolster, a central bearing on the bolster, and yielding side bearings on the projecting ends of the bolster, substantially as described.

2. In a car truck, the combination with the side frames, the wheels and axles, and the axle boxes, of a bolster formed of a plurality of bars, the upper bar being raised in its center and connected and secured to one of the lower bars by a vertical separator, a ball bearing mounted on the center of the bolster, yielding side bearings mounted on the ends of the bolster projecting outside of the side frames, recesses in the ends of the side frames to receive the axle boxes, springs between the axle-boxes and the frame, and a stationary and removable guide for each axle box, as set forth.

In testimony whereof I have hereunto signed my name.

EDWARD CLIFF. [L. S.]

Witnesses:
E. L. TODD,
W. H. GRAHAM.