(No Model.)

A. MILLER.

CAR TRUCK.

No. 477,767. Patented June 28, 1892.

Fig 1

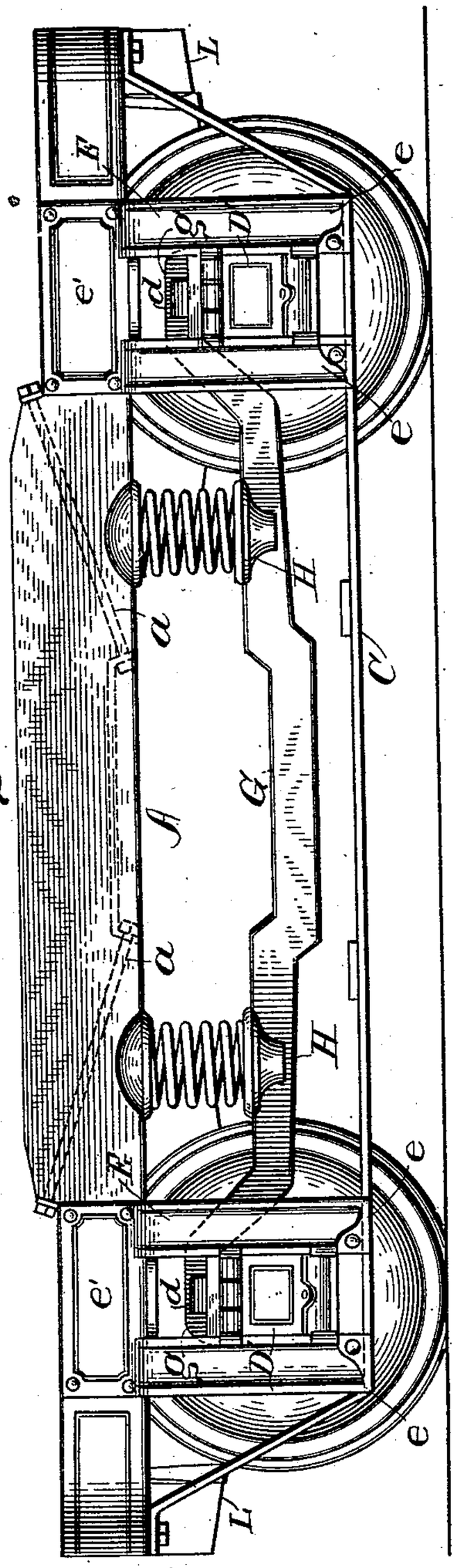


Fig 2

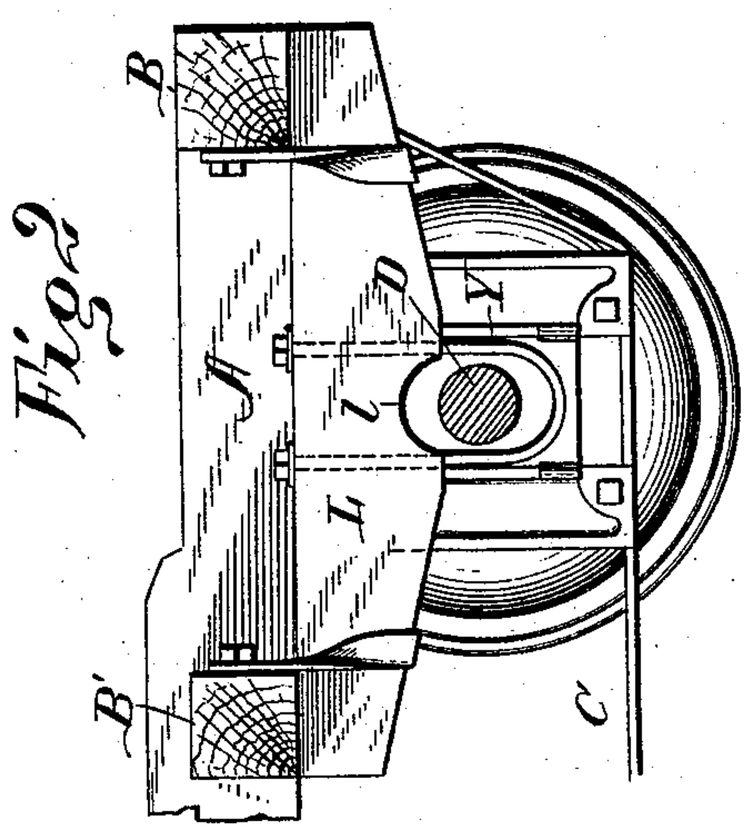


Fig 3

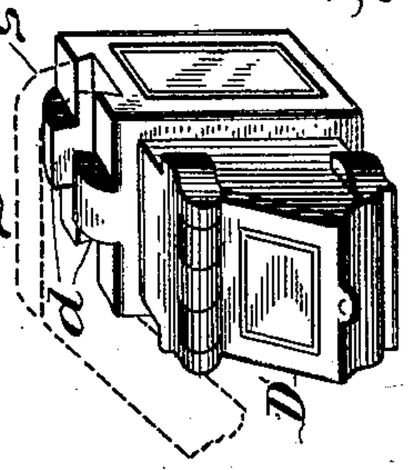


Fig 4

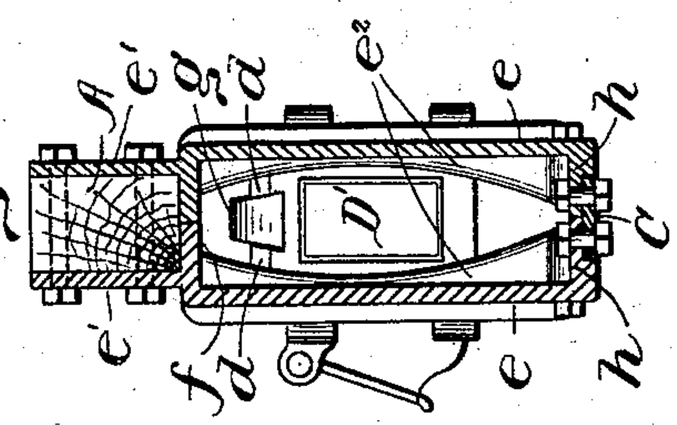
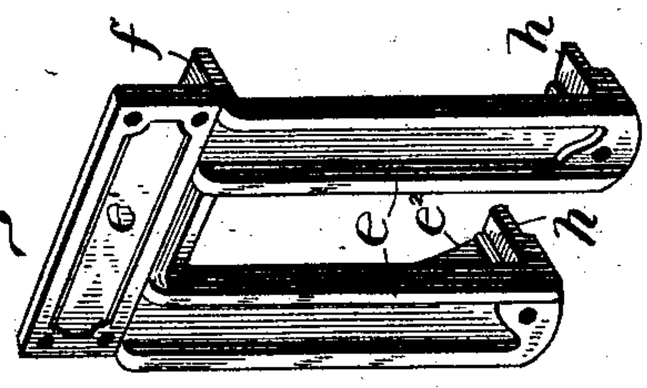


Fig 5



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Att'y.

UNITED STATES PATENT OFFICE.

ARNOLD MILLER, OF MEDFORD, WISCONSIN.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 477,767, dated June 28, 1892.

Application filed March 4, 1892. Serial No. 423,693. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD MILLER, a citizen of the United States, residing at Medford, in the county of Taylor and State of Wisconsin, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in car-trucks; and it consists in the construction and arrangement of parts more fully hereinafter described, and definitely pointed out in the claims.

The object of my invention is to provide an improved truck having the parts so arranged that an equal distribution of the weight is obtained and that will be simple in its construction and the parts readily united and replaced when broken, and, further, in peculiar means in adding safety in the event of a broken axle. This object I attain by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 represents a side elevation of my improvement. Fig. 2 is a longitudinal section of one end of the truck. Fig. 3 is a detail view of the axle-box and the end of the supporting-bar, shown in dotted lines. Fig. 4 is a cross-section through the axle-box, and Fig. 5 is a detail perspective view of one of the guides.

In the drawings, A represents a rectangular frame, formed, preferably, of wood, having truss-rods *a* extending therethrough from the ends of the enlarged central portion thereof.

B represents the end bars, and B′ the intermediate cross-bars, and C the metal frame located below the frame A. This frame C is united centrally by cross-bars and has upwardly-extending outer ends projecting up and secured to frame A.

D represents the car-axles, and D′ the axle-boxes. These boxes are secured between suitable guides E, consisting of castings, with depending arms *e* and a vertical cap-plate *e′*. The guides consist, respectively, on each side of two members having inwardly-projecting flanges *f* at the tops and *h* at the lower ends and are suitably braced by a web e^2, extending from the outer edges of the flanges to the castings. The castings have formed at their upper ends a pocket E′, the outer walls of which are formed by the plates *e′* on the respective members of the castings and the base of which is formed by the inwardly-extending flanges *f*. Through the base of the web e^2 is formed an opening arranged to receive the lateral securing-bolts for the lower ends of the castings. The flanges *h* at the lower ends of the castings are arranged to overlap each other, through which overlapping ends suitable bolts are passed. In the pocket at the upper end of the guide-castings are secured the side beams of the frame A by suitable cross-bolts passing therethrough. These bolts also unite the inner and outer castings. Between the depending arms of the castings E are placed the journal-boxes D′, having offsets on their edges engaging over the edges of the guide-faces of the castings. The boxes are thus allowed a vertical movement; but all lateral movement is prevented. In the tops of the respective axle-boxes are formed suitable dovetail grooves at or near the center on the edges thereof, there being projections *d*, having inclined inner faces forming a continuation of the dovetailed grooves.

G represents the supporting-bars, extending longitudinally below the die-beams of the frame from one axle-box to the other, their outer ends being bent up and outwardly, as at *g*, the sides of the portions *g* being inclined upwardly and inwardly to form a dovetailed projection of the bars G, which projections are fitted in the dovetailed recesses and between the dovetailed projections on the tops of the axle-boxes, and are thereby held firmly in place on the boxes. The extensions *g* project in between the castings and the guides, as shown in Fig. 4.

Located on the cross-bars G, at or near the ends thereof, are disk-shaped supports or plates H, having a grooved lower extension fitting closely over the bars, so that the plates cannot twist or turn. The upper face of this plate has two concentric rings between and in which are placed a nest of coil-springs, the upper ends of which fit in corresponding plates bolted or screwed to the under side of

the side bars of the frame A. By this means it will be seen that the entire weight of the car and truck-frame is carried by the springs mounted on the cross-bars G, supported by the axle-boxes, thus placing the springs nearer the center of the car, so that the cushion effect will be more apparent.

The ends of the side and end bars of the frame A are capped by suitable castings A′ to insure a complete union thereof.

To provide for means to prevent the escapement of the axle if one end thereof should be broken, I secure to the under side of the cross-beams B′ and the end bars G a suitable trussed beam L, the apex of which is located directly over the axle and has formed therein a curved groove *l*, in which the axle plays.

Y represents a yoke, having bolted upper ends passing through the beam L on opposite sides of the groove, the yoke portion surrounding the axle and projecting below the same a distance sufficient to permit the vertical movement of the axle. The ends of the beam L are secured to the cross-beams by suitable looped irons and bolts, so that the beam L will serve as a support and holder for a loose end of the axle should the axle become broken.

It will be seen by the above-described construction that a very strong, durable, and cheaply-manufactured truck is formed, and, further, that should the parts be broken or destroyed they can be readily replaced by others.

I am aware that many minor changes in the construction and arrangement of the parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus 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 truck-frame, of guide-castings secured at opposite ends thereof and consisting of two independent members having depending arms formed with upper and lower flanges thereon projecting inwardly, bolts securing the respective members together on opposite sides of the side beams of the frame, and bolts passing through the frames and upper portions of the castings, and axle-boxes having lateral offsets engaging the sides of the depending arms of the castings, substantially as described.

2. In a car-truck, the combination, with the side bars of the frame, of guide-castings consisting of two like members having depending arms on opposite sides thereof formed with guide-faces, overlapping flanges at the ends of the arms, flanges at the upper ends of the arms arranged to engage each other as the castings are placed in position and forming in conjunction with the castings a pocket in which the side beams are placed, bolts passing through the side beams and castings, bolts securing the lower ends of the castings together, reinforcing-webs on the arms, and axle-boxes having lateral offsets engaging over the edges of the bearing-faces of the arms, whereby the boxes are allowed a vertical movement only, substantially as described.

3. In a car-truck, the combination, with the truck-frame, of guide-castings supported thereby, consisting of two or more members located on opposite sides of the side bars of the frame and bolts passing through the castings and frame for uniting the same together, axle-boxes located within the guides, a longitudinal cross-bar having its ends supported directly by the axle-boxes, and springs on the cross-bar between the boxes and on which the frame of the truck rests, substantially as described.

4. In a car-truck, the combination, with the frame, of the axle-boxes having dovetailed grooves in their upper faces, guides for the boxes, and cross-bars uniting the boxes on the respective sides of the truck, having their ends formed into dovetails and fitted in said grooves of the axle-boxes, and springs supported on said bars at or near their ends and between the boxes and on which the frame rests, substantially as described.

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

ARNOLD MILLER.

Witnesses:
E. H. SCHWEPPE,
ALBERT PRIES.