

(No Model.)

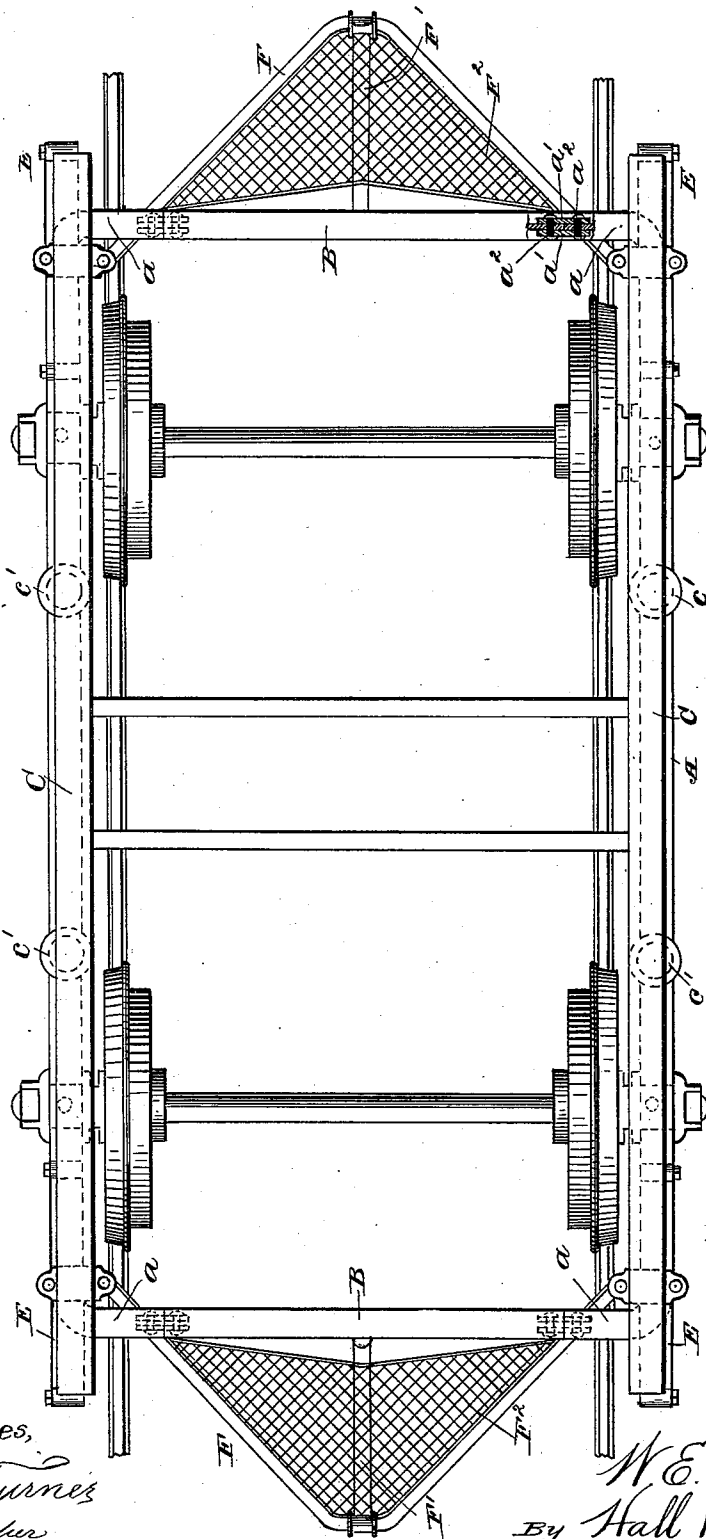
2 Sheets—Sheet 1.

W. E. HAYCOX.  
STREET CAR TRUCK.

No. 549,787.

Patented Nov. 12, 1895.

--FIG. 1--



Witnesses,  
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By *Hall & Fox* Attys.

(No Model.)

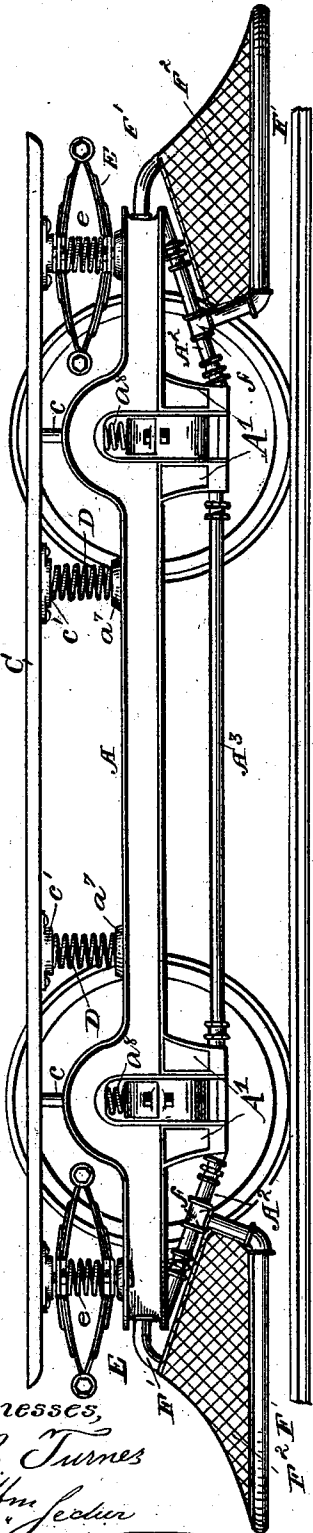
2 Sheets—Sheet 2.

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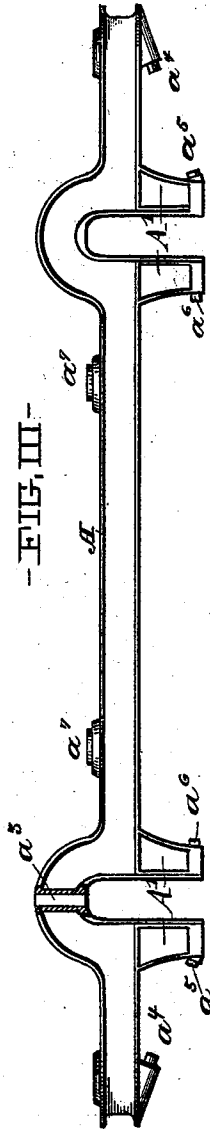
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- FIG. II -

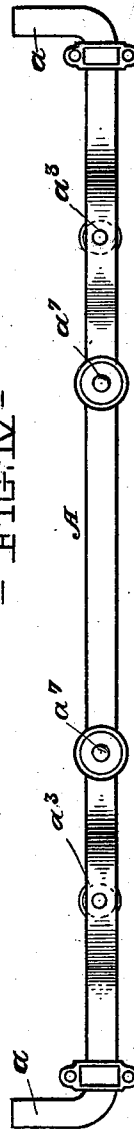


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- FIG. III -



- FIG. IV -



Inventor,  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. HAYCOX, OF CLEVELAND, OHIO.

## STREET-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 549,787, dated November 12, 1895.

Application filed October 15, 1894. Serial No. 525,865. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. HAYCOX, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Street-Car Trucks, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a top plan view of my improved car-truck; Fig. II, a side elevation of the truck; Fig. III, a side elevation of one side piece of the frame of the truck, and Fig. IV a top plan view of said side piece of the frame.

The frame of the truck consists of two side pieces A A and two end pieces B B. The side pieces are steel castings, shaped in cross-section like an I-beam, and are cast with round corners  $a$ , which extend at right angles to the side pieces, so that the end pieces may be joined, by means of fish-plates  $a$  and bolts  $a^2$ , to the ends of said corner-pieces. Jaws A' are cast in the side pieces to accommodate the journal-boxes, and have vertical holes  $a^3$  for the accommodation of steady-pins.

Inclined lugs  $a^4$  are cast at the corners of the side pieces, and lugs  $a^5$  are cast upon the outer jaws, so that oblique and tubular braces A<sup>2</sup> of the under truss may have their ends secured to said lugs. Lugs  $a^6$  are formed upon the inner jaws, so that the straight central portions A<sup>3</sup> of the under truss may have their ends secured to the lugs. The ends of the tubes which form the under truss are preferably provided with couplings, which are screwed upon the braces of the truss and fitted upon the lugs and secured by means of lock-nuts. The truck is provided with subsills C, which have steady-pins  $c$ , passing through the holes  $a^3$  in the arches of the journal-box jaws, and the subsills are formed with cups  $c'$  upon their under sides, which register with cups  $a^7$  upon the upper sides of the side pieces of the

truck, so that coiled springs D may be interposed between the subsills and the side pieces at points between the journal-box jaws. The steady-pins  $c$  have free up-and-down play in their holes in the arches of the journal-box jaws, and are of such length that they will not interfere with or be interfered with by the journal-boxes, which are cushioned in the jaws by means of springs  $a^8$ , interposed between the top of the jaws and the journal-boxes. Elliptic springs E are secured to the upper sides of the side-pieces near the corners and to the under sides of the subsills, and said elliptic springs have coiled springs  $e$  between the middles of their members. Life-guards are provided at the ends of the truck, and consist of triangularly-bent bottom-pieces F, having their upturned ends secured, by means of T-couplings  $f$ , to the middles of the brace portions of the under truss, and of central braces F', which are secured to the points of the triangularly-bent bottom pieces and to the middles of the end pieces of the truck-frame. The life-guards are covered with wire-netting F<sup>2</sup>.

All of the parts of the under truss and the frame-pieces of the life-guards are formed of metal pipe, the several parts of which are joined by suitable pipe-couplings.

By casting the side pieces with the solid corners projecting inward, and to which the cross-pieces may be secured, the corners of the truck will be solid, so that the truck cannot get out of line from hard usage. All the portions of the truck which hold the journal-boxes and receive springs or under truss are cast in one with the side pieces, so that the entire structure is rigid. The under truss is not in the way of removing the journal-boxes from the jaws in the frame-pieces, as its parts are connected to the outsides of the jaws, and yet the under truss is unbroken, inasmuch as the jaws are integral. The subsills upon which the car body is secured are prevented from endwise and transverse movement in their relation to the truck by the steady-pins, and the ends and middles of the subsills are thoroughly cushioned by the springs interposed between the subsills and the truck-frame. The coiled springs within the elliptic springs take the strain off from the elliptic springs and likewise assist in forcing said

springs to assume their normal position. The life-guards are rigidly connected to the truck-frame, and are sufficiently light to not materially increase the weight of the structure.  
 5 Their shape will tend to remove obstacles from between the rails and throw them toward the sides of the track.

Other modes of applying the principle of my invention may be employed for the mode  
 10 herein explained. Change may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth, respectively, in the following claims are employed.

15 I therefore particularly point out and distinctly claim as my invention—

1. In a car truck, an integrally cast side piece formed with journal box jaws and with inwardly projecting ends and integrally cast  
 20 lugs and cups which, respectively, form the points of attachment for the under truss and for the springs, substantially as set forth.

2. In a car truck, the combination of a side piece having integral journal box jaws and  
 25 formed with oblique lugs at the ends and upon the outer journal box jaws and lugs upon the inner journal box jaws, oblique braces having their ends secured upon the oblique lugs, and a truss rod having its ends  
 30 secured to the lugs upon the inner journal box jaws, substantially as set forth.

3. In a car truck, the combination of side pieces having inwardly projecting and integral ends at right angles to the side pieces  
 35 and having integral journal box jaws formed with vertical holes in the tops of their arches and having integral lugs at the ends of the side pieces and upon the journal box jaws, end pieces having their ends secured to the  
 40 inwardly projecting ends of the side pieces, tubular braces and tubular truss rods respectively having their ends secured to the

lugs upon the ends of the side pieces and the lugs upon the outer jaws of the journal boxes and secured to the lugs upon the inner jour- 45  
 nal box jaws, sub-sills having steady-pins sliding in the vertical holes of the arches of the journal box jaws, and springs interposed between the sub-sills and the side pieces, substantially as set forth. 50

4. In a car truck, the combination with tubular oblique braces at the ends of the truck frame and each formed with a T-coupling, of a guard having a triangularly bent tubular  
 55 bottom piece formed with upwardly bent ends secured in said couplings, substantially as set forth.

5. In a car truck, the combination of side pieces having integral ends projecting inward and having integral journal box jaws formed 60  
 with vertical holes in the tops of their arches and integral lugs upon the under sides of their ends and upon the journal box jaws, tubular truss rods having their ends secured to the lugs upon the inner journal box jaws, 65  
 oblique and tubular brace rods between the end lugs and the lugs upon the outer journal box jaws, end pieces having their ends secured to the inwardly projecting ends of the side pieces, sub-sills having steady-pins slid- 70  
 ing in the vertical holes of the arches of the journal box jaws, coiled springs between the middle portions of the side pieces and the sub-sills, and elliptical springs between the ends of the sub-sills and side pieces and hav- 75  
 ing coiled springs between the middles of their members, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 11th day of October, A. D. 1894.

WM. E. HAYCOX.

Witnesses:

WM. SECHER,  
 DAVID B. DAVIES.