

(No Model.)

3 Sheets—Sheet 1.

G. WESTINGHOUSE, Jr.

CAR BRAKE.

No. 345,093.

Patented July 6, 1886.

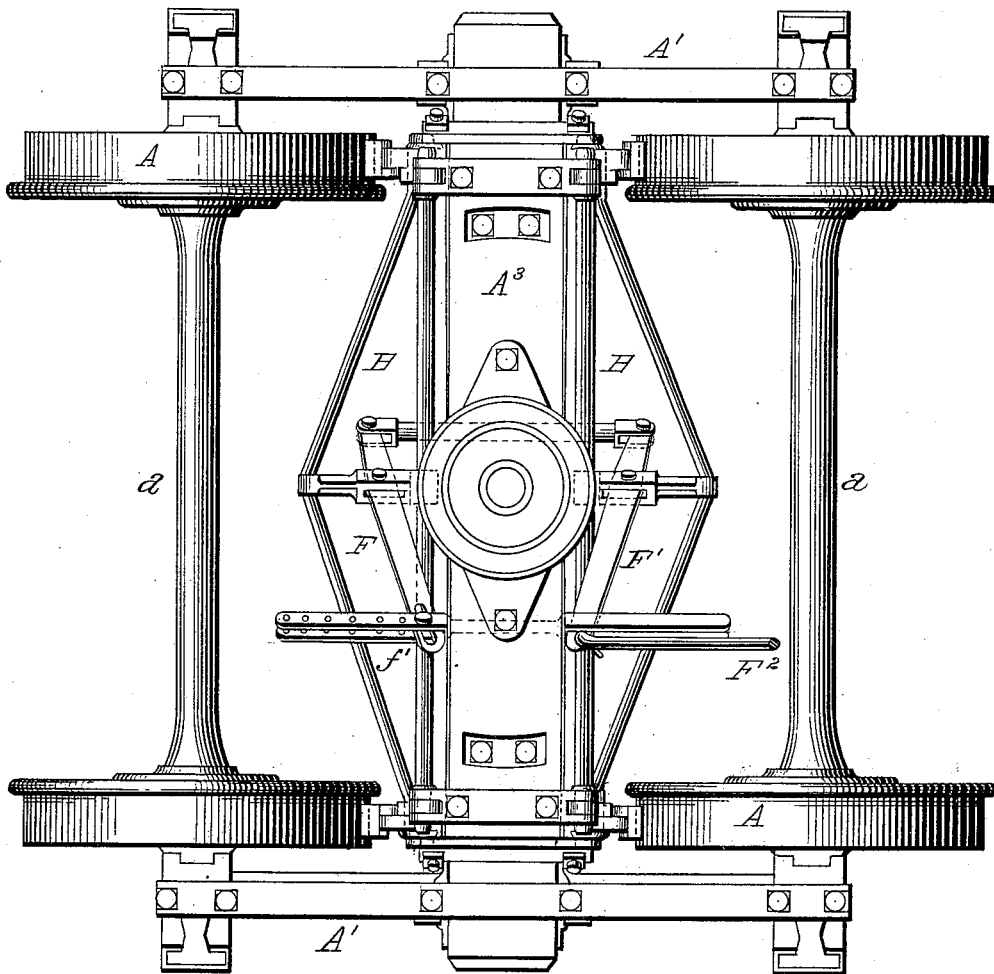


Fig. 1.

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Fig. 3.

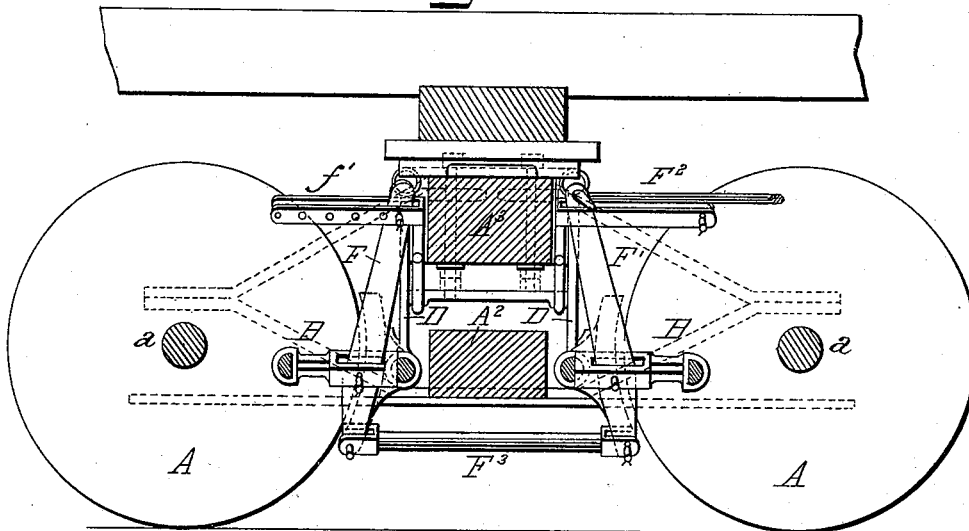
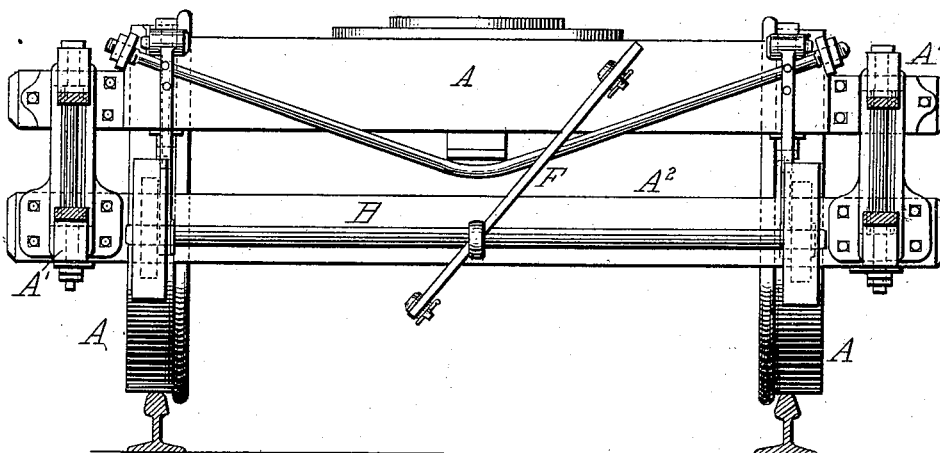


Fig. 2.



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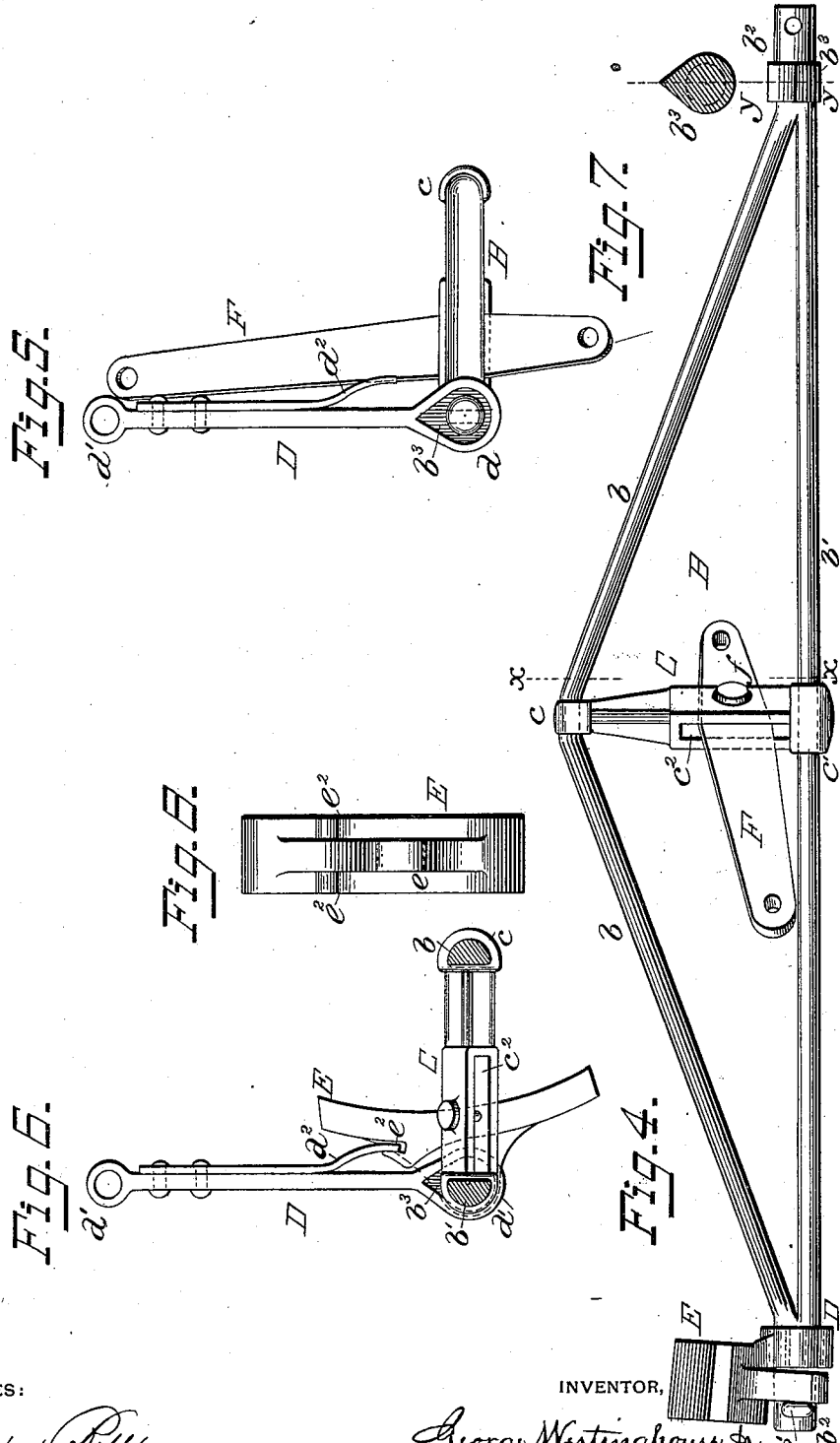
3 Sheets—Sheet 3.

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GEORGE WESTINGHOUSE, JR., OF PITTSBURG, PENNSYLVANIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 345,093, dated July 6, 1886.

Application filed May 18, 1886. Serial No. 202,498. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WESTINGHOUSE, Jr., residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered a certain new and useful Improvement in Railway Brakes, of which improvement the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1, Sheet 1, is a plan or top view of a car-truck embodying my invention; Fig. 2, Sheet 2, a vertical transverse sectional elevation of the same; Fig. 3, a vertical longitudinal sectional elevation of the same; Fig. 4, Sheet 3, a plan or top view, on an enlarged scale, of a brake-beam detached; Fig. 5, an end view, in elevation, of the same; Fig. 6, a sectional elevation of the same at the line *x x* of Fig. 4; Fig. 7, a transverse section through the same at the line *y y* of Fig. 4, and Fig. 8 a rear view in elevation of a brake-block detached.

My invention relates more particularly to an improved construction of brake beams and blocks, and to the combination thereof with each other and with a car-truck.

The improvements claimed are hereinafter fully set forth.

My invention is herein illustrated as applied in a four-wheeled car or tender-truck of the ordinary "diamond" pattern, the wheels A of which are fixed on axles *a*, which rotate in boxes fitting pedestals in side frames, A', connected by a spring-plank, A², on which a bolster, A³, is supported in the usual manner.

The brake-beam B is of the trussed description, and the object of its construction under my present invention is to combine strength and lightness with the presentation of desirable and convenient means for the connection of the accessories required in its employment upon a truck.

In the manufacture of the brake-beam I employ two rods or bars of metal, which, as shown, are of D or nearly semi-cylindrical transverse section, but which may be semi-elliptical, triangular, or of any other preferred form. One of said bars, *b*, is bent in the direction of its flat side into a flattened-V form, as shown in Figs. 1 and 4, and an eye, *c*, on one

end of a post or strut, C, preferably of malleable or cast steel, the opening of which eye corresponds with the section of the bar *b*, is slipped over one of the ends of said bar and brought to its center. The bar *b* is next slipped through an eye, *c'*, of corresponding form in the opposite end of the post C, with its flat side next the flat side of the bar *b*, and the ends of the bars *b* and *b'* are united by welding, thereby producing a trussed skeleton frame-beam in which the bar *b* acts as the truss-rod, the bar *b'* as the tie-rod, and the post C as the king-post or strut.

In and by the connection of the ends of the bars *b* and *b'* a cylindrical bearing, *b²*, is formed on each end of the brake-beam for the reception of a brake-hanger, D, and a brake-head, E, or a brake block and shoe.

In order to provide such bearings for the brake-hangers D as will prevent the brake-beam from turning or tilting thereon, as well as to afford additional strength at the welded ends, a ring or clasp, *b³*, Fig. 7, the opening of which corresponds in form with the section of said ends and the periphery of which is other than circular, as in the instance shown, an irregular figure having two flat sides is slipped over each end of the beam and united thereto in the welding together of the bars *b* and *b'*. A ring of circular outline but eccentric to the end bearing, *b²*, would be the equivalent of that shown in preventing the tilting of the brake-beam, or if the bars are of triangular section a square may be left adjacent to their meeting-point at each end to receive the hanger. The rings *b³* facilitate the connection of the bars by holding them together in the welding operation and impart additional strength to the finished beam by being united thereto. The hangers D are provided at their lower ends with eyes *d* fitting the rings *b³*, and at their upper ends with eyes *d'*, through which are passed the pivots by which they are connected to the bolster or the transoms of the truck, as the case may be.

To obviate the necessity of using right and left brake-heads, the end bearings, *b²*, of the brake-beam may be bent or inclined in the direction of the truss-bar thereof in or about in conformity with the coning of the wheels of

the truck, as shown in Fig. 4, by which construction it will be seen that only a single pattern of brake-head is required, and that the same may be applied with equal facility and in proper relation to the tread of the wheel on either end of the beam.

The construction described enables the brake-heads E to be supported wholly by the brake-beam without necessitating the employment of separate hangers, and to this end the brake-heads are provided with eyes *e*, fitting over the bearings *b*² of the brake-beam adjacent to the hangers D, and are maintained in position longitudinally thereon by the collars *b*³ and by split pins *e'* or other suitable fastenings, which split pins may be attached to chains to prevent loss. Recesses *e*² are formed in the brake-head on each side of its central web in such position as to be engaged by the free end of a plate-spring, *x*, secured to the adjacent brake-hanger D, the tension of which spring serves to maintain the rubbing-face of the brake-head (or the brake-shoe, if a separate shoe be employed) substantially parallel with the tread of the wheel upon which it acts when in service. I am however aware that a pivoted brake-shoe and a spring connected therewith, but in a manner different from that herein shown have been heretofore known, and such, therefore, I do not broadly claim.

The brake-levers F F' are pivoted by pins *f* in slots *e*², formed in the posts C of the brake-beams, and the levers of each truck are coupled at their lower ends one to the other by a link, F³. The upper end of one of the brake-levers, as F', is coupled to a brake-rod, F², actuated by any suitable power or hand mechanism, and that of the other, F, to a fulcrum, *f'*, secured to the frame of the truck.

The coupling-pin of the lever F fits in any one of a series of holes in the fulcrum *f'*, to allow of adjustment to compensate for wear of the shoes.

I claim herein as my invention—

1. A brake-beam in which are combined a tie-bar and a double inclined truss-bar, said bars having their ends welded together into cylindrical bearings adapted to receive a brake-hanger and a brake-block, substantially as set forth.

2. In a brake-beam, the combination, substantially as set forth, of a tie-bar and a double inclined truss-bar, each of such transverse section as, when united at their ends, to form cylindrical bearings adapted to receive a brake-hanger and a brake-block.

3. In a brake-beam, the combination of a tie-bar and a double inclined truss-bar united at their ends to form bearings which are in-

clined relatively to the line of the tie-bar, substantially as and for the purpose set forth.

4. In a brake-beam, the combination, substantially as set forth, of a tie-bar and a double inclined truss-bar, the ends of which are welded together into bearings, and rings or clasps fitting over and united to said end bearings.

5. In a brake-beam, the combination of a tie-bar and a double inclined truss-bar united at their ends into bearings, and rings or clasps fitting over said bearings and flattened or eccentric on their peripheries relatively thereto, substantially as and for the purpose set forth.

6. In a brake-beam, the combination, substantially as set forth, of a tie-bar, a double inclined truss-bar, and an interposed king-post or strut, having a slot for the reception of a brake-lever between the tie-bar and the truss-bar.

7. The combination, substantially as set forth, of a brake-beam having cylindrical bearings on its ends, suspending hangers coupled to said bearings, and brake-blocks fitting on and supported by said bearings.

8. The combination, substantially as set forth, of a brake-beam having end bearings inclined from its longitudinal line, and brake blocks or heads suspended upon said bearings.

9. The combination of a trussed brake-beam having bearings upon its ends, rings or clasps fitting over and united to said end bearings, and having one or more sides which are flattened or eccentric thereto, and brake-hangers having eyes fitting over said rings or clasps, substantially as and for the purpose set forth.

10. The combination of a brake-beam, a brake-hanger, a brake-block having a recess on its rear side, and a spring connected at one end to the brake-hanger and at the other engaging the recess of the brake-block, substantially as and for the purpose set forth.

11. The combination, with a car-truck, of a brake-beam having end bearings inclined substantially parallel to the coning or inclination of a pair of wheels in the truck, hangers suspending said brake-beam from the truck-frame, brake-blocks suspended upon the end journals of the brake-beam, and springs connected to the brake-hangers and engaging recesses in the brake-blocks, these members being combined for joint operation substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand.

GEO. WESTINGHOUSE, JR.

Witnesses:

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