

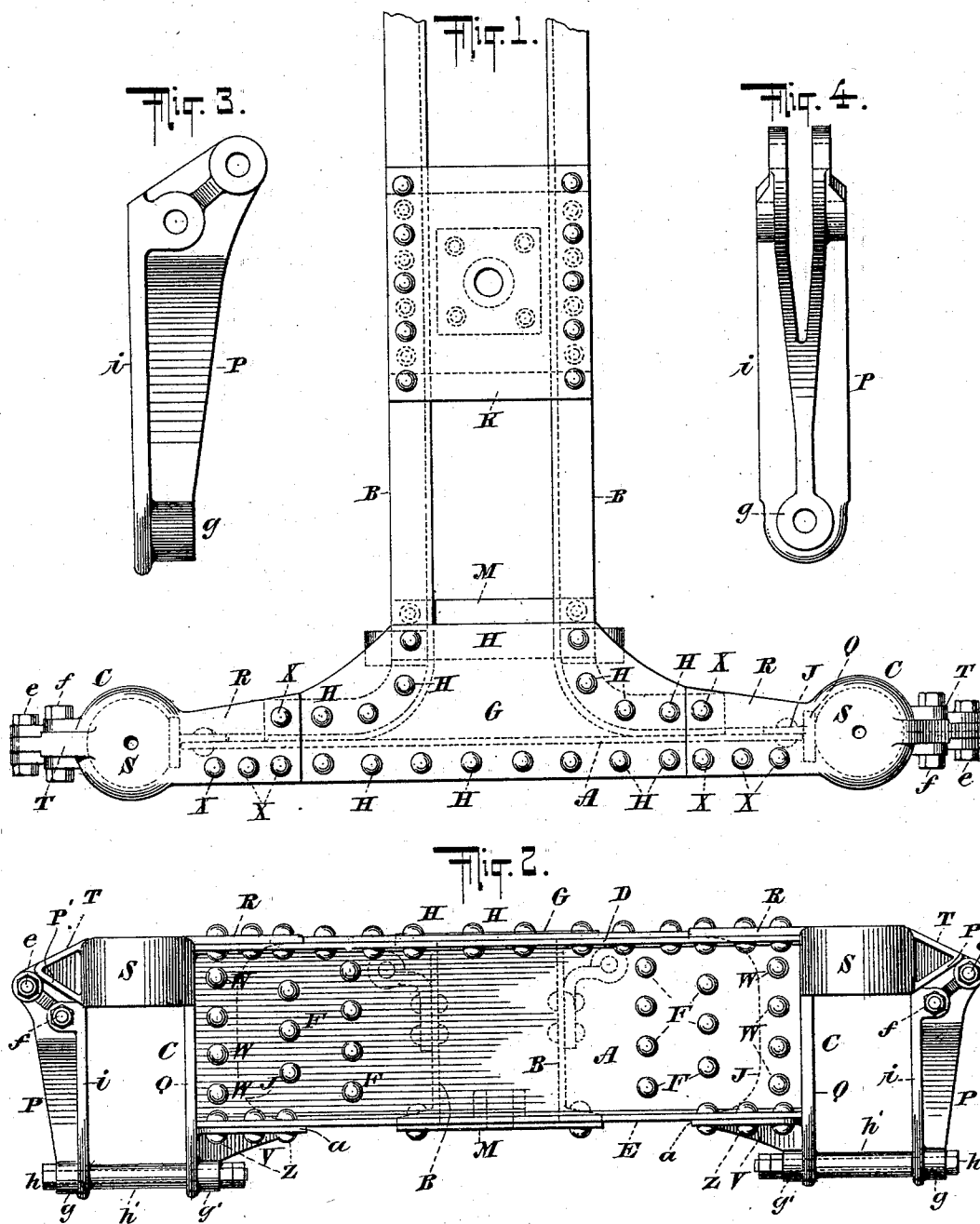
(No Model.)

2 Sheets—Sheet 1.

E. CLIFF.
CAR TRUCK.

No. 578,814.

Patented Mar. 16, 1897.



WITNESSES:

Gustave Dietrich.
John Fehlenbeck.

INVENTOR

Edward Cliff

BY

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ATTORNEY.

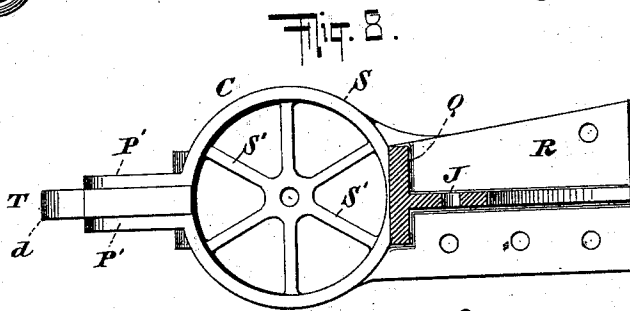
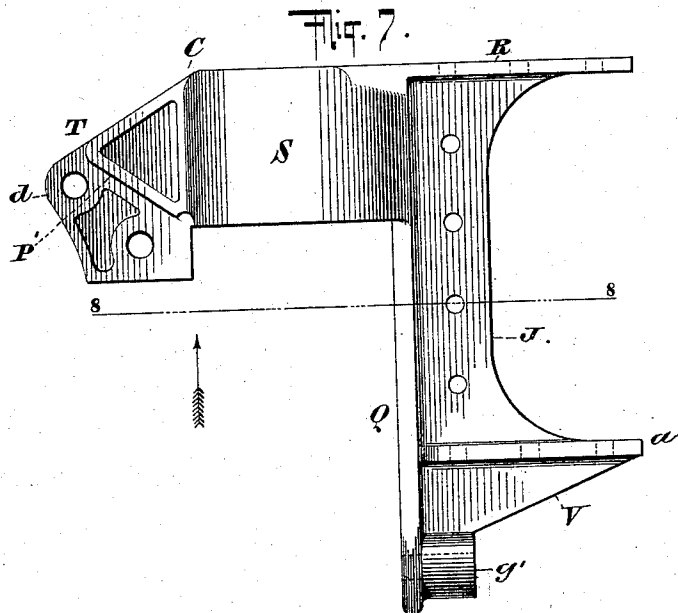
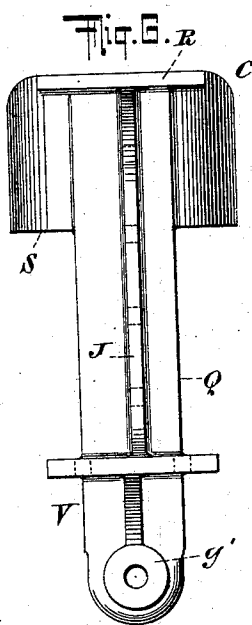
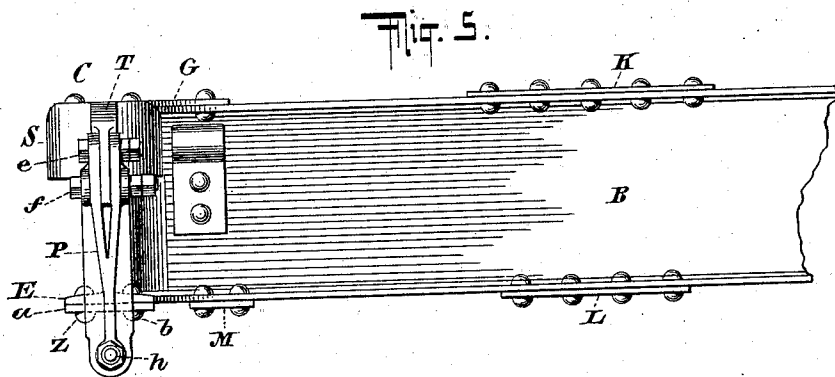
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UNITED STATES PATENT OFFICE.

EDWARD CLIFF, OF NEWARK, NEW JERSEY.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 578,814, dated March 16, 1897.

Application filed November 2, 1896. Serial No. 610,790. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CLIFF, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

The invention relates to improvements in car-truck frames; and it consists in the novel features hereinafter described and claimed.

The car-truck frame hereinafter described and in which is embraced an embodiment of my invention comprises channel-iron side beams, channel-iron bolster-beams connecting said side beams and secured to the webs thereof, top plates connecting the side beams and bolster-beams, and cast pedestal-frames and spring-sockets of novel construction secured at the ends of the side beams and provided, preferably, with outwardly-movable or removable outer sides or jaws to permit, when desired, the escape of the axle-boxes.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of a portion of a car-truck frame embodying the invention. Fig. 2 is a side elevation of same. Fig. 3 is an enlarged detached side elevation of the outwardly-movable pedestal jaw or side. Fig. 4 is an enlarged detached end view of same. Fig. 5 is an end view of a portion of said truck-frame. Fig. 6 is an enlarged detached end view of the pedestal-frame and spring socket or receptacle. Fig. 7 is a side elevation of same, and Fig. 8 is a transverse section of same on the dotted line 8 8 of Fig. 7.

In the drawings, A designates the channel-beam sides of the truck, B B the channel-iron bolster-beams connecting said sides, and C C the cast pedestal-frames at the ends of the channel-beam sides A to receive the axle-boxes and their springs, the pedestal-frames being of sufficient height to permit of a vertical movement of said boxes therein.

The side rolled channel-beams A are continuous beams having parallel upper and lower edges and parallel vertical end edges, and the upper and lower flanges D E of said beams turn outward. It will be observed

that the beams A are not weakened by any cutting operations and that only the minimum amount of manual labor is required for their production. The beams A are commercial-rolled beams or plates and preferably of channel shape.

The bolster-beams B B are also commercial-rolled channel-beams having their upper and lower flanges turned outward toward the ends of the truck and their opposite ends turned outward at right angles sufficiently to permit the webs of the said ends to contact with the webs of the side beams A and be securely riveted or bolted thereto, the upper and lower flanges on the beams B B being, respectively, on the same horizontal plane with the upper and lower flanges of the side beams A. The rivets securing the webs of the bolster-beams B to the web of the side beam A are designated by the letter F.

Upon each side of the truck and connecting the side beam A with the bolster-beams B B is secured the top plate G, which has an inward extension H, and extends from the pedestal-frame C, at one end of the side beam A, to the like pedestal-frame C at the other end of said beam. The top plate G is securely riveted to the upper flanges of the said beam A and the upper flanges of the bolster-beams B B and materially strengthens the truck. The rivets securing the top plate G to the side beam A and bolster-beams B B are denoted by the letter H. The ends of the top plate G terminate in line with the inner vertical edges of the upper flanges on the pedestal-frames C C, as shown in Figs. 1 and 2.

The bolster-beams B B are connected at their center by the top plate K, which is riveted at its edges to the upper flanges of the side beams B B, and said plate K is provided with a central aperture to receive the king-bolt. The lower central portions of the bolster-beams B B are connected together by means of the plate L, and at their opposite ends the bolster-beams B B will be further secured by the connecting-plates M.

Upon the opposite ends of each side beam or frame of the truck are secured the cast pedestal-frames C C to receive the axle-boxes and their springs, and, as illustrated, said pedestal-frames will preferably each be in

two parts, one of the parts being the main frame and the other part a movable or removable outer side, (lettered P,) which is adapted to be swung outward for the purpose of permitting the withdrawal of the axle-boxes.

The pedestal-frames C C each comprise, in addition to the removable side P, the vertical rubbing-flange Q for the inner side of the axle-boxes, the vertical web-flange J, which engages the inner plain face of the channel-beam A, the upper horizontal flange R, which engages the upper end portion of the surface of the upper flange D of the side frame and the end of the bolster-beam, the centrally-disposed inverted box or socket S for the usual coiled springs, which act downward upon the axle-boxes, the outwardly-extending flange T, which extends outward and downward from the top of the inverted box or spring-socket S and thence extends downward along the outer side of and to a suitable distance below the lower edge of said inverted box or spring-socket S, and the bracket V, which extends inward from the vertical rubbing-flange Q and engages the lower surface of the lower flange of the side beam A and the lower surface of the lower flange of the bolster-beam B, all of the parts mentioned as comprising the pedestal-frame being cast in one integral piece and being secured to the end of the side frame by the rivets W, passing through the vertical web-flange J and vertical web of the side beam A, the rivets X, passing downward through the upper flange R and upper flange D of the side beam A and top flange of the bolster-beam, the rivets Z, which at the outer side of the beam A pass through the lower flange E of the side beam and the horizontal flange *a* of the bracket V, and the rivet *b*, which passes through the lower flange E at the end of the bolster-beam B and the inner portion of the said flange *a*, forming an integral part of the bracket V.

The upper flange R of the pedestal-frame C is coextensive in width at its inner end with the end edge of the top plate G and covers the upper flanges at the ends of the side beam A and bolster-beam B, as shown, and the flange *a* of the bracket V is coextensive in width with the combined widths of the lower flanges of the beams A B. The flange T of the pedestal-frame C extends centrally outward from the inverted boxes or spring-sockets S and has the angular extension *d*, Fig. 7, which upon the removable frame P being applied to the flange T will receive the bolt *e*, which is on a higher plane than the bolt *f*, connecting said removable frame P with the flange T and being adjacent to the lower edge of the inverted box or socket S.

I designate the bolt *f* as the "safety-bolt" for the removable side P and the bolt *e* as the "hinge-bolt," but neither of said bolts need necessarily be used as a hinge-bolt, since both may be withdrawn for the purpose of detaching the frame P when it is desired that

the axle-boxes shall leave the pedestal-frames. The upper end of the frame P is bifurcated to straddle the depending portion of the flange T, and said frame P is formed with the horizontal integral hub *g*, which receives one end of the bolt *h*, whose other end is held in the hub *g'*, formed on the lower edge of the bracket V. The bolt *h* supports the sleeve *h'*, which with said bolt closes the lower part of the pedestal-frame C. The inner vertical edge of the frame P is provided with the rubbing-flange *i*, which is coextensive in width with the vertical rubbing-flange Q, and between the flanges *i* Q the usual axle-boxes are permitted to have their vertical movement.

The inverted box or receptacle S is circular in outline, and its center is in line with the inner vertical edge of the beam A. Thus the opposite sides of said inverted box or socket S are upon opposite sides of the central line through the side frames and are adapted to suitably receive the usual coiled springs, which act upon the axle-boxes located within the pedestal-frames. The vertical web-flanges J are in contact with the inner plain vertical face of the end of said beam A and extend inward upon said side beam sufficiently to enable the rigid securing of the pedestal-frame to the said side beam.

The truck-frame as a whole is entirely durable in every particular and in every point of its structure. The truck-frame, less the pedestal-frames C, is of novel construction in that the side beams A and bolster-beams B are of channel iron or steel and that the web portions of the beams B contact with the web portion of said beams A and are riveted thereto, whereby great durability is secured and all tendency of the parts to loosen is prevented. The pedestal-frames C, constructed and applied to the truck-frame as shown and described, are of great durability and are capable of withstanding all the rough usage to which they may be subjected.

The upper flanges R of the frames C are connected with both the upper flanges of said beams A and the upper flanges of the bolster-beams B, and said upper flanges R are substantially coextensive with the lower flanges *a* of said pedestal-frames, which lower flanges are securely riveted to the lower flanges of the said beams A and the lower flanges of the bolster-beams B.

The form of the flanges T of the pedestal-frames insures strength, durability, and convenience of operation, and the movable or removable sides P of said pedestal-frames are constructed with a view of securing great durability. The sleeve *h'* on the bolt *h*, closing the lower end of the pedestal-frames, will afford proper support for the axle-boxes and operate as a stop, against which the movable frames P may be tightly drawn under the action of the nuts on the bolt *h*. Thus all the parts of the pedestal-frame may in use be drawn tightly together and all rattling or jarring prevented. The upper inclined edges of

said frames P may also abut against the inclined shoulders P', formed on the opposite sides of the flange T.

Upon the upper inner surface of the receptacles or sockets S are provided the radial ribs S', (shown more clearly in Fig. 8,) which not only afford strength to the pedestal-frame, but operate as bearings for the upper end of the usual coiled springs, which in use will be placed within said boxes.

The top plates G not only increase the strength of the truck-frame by connecting the side frame and bolster-beams together, but afford proper space for the reception of the side frames which are customarily used upon trucks, and the fact that the ends of the plate G abut against the inner edges of the upper pedestal-frame flanges R aid in providing the effectual strength and capacity of resisting strains desired in the connection of the cast pedestal-frames to the ends of the side beams.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a car-truck the side beams having flanges at their upper and lower edges, combined with the flanged pedestal-frames secured to the web of said side beams and having movable outer sides, and channel transom-beams extending transversely across the truck and having their flanges turned outward from one another and their ends turned toward the ends of the truck with their web portions in contact with the web portions of the side beams to which they are riveted, said channel transom-beams only extending part way toward the ends of the side beams; substantially as set forth.

2. In a car-truck, the flanged side beams, combined with pedestal-frames at the ends of the said side beams, said pedestal-frames comprising in an integral piece the upper horizontal flange, the inner vertical rubbing-flange, the inner vertical web-flange, the lower horizontal flange, the outwardly-extending flange, the outer movable frame secured to said last-mentioned flange and having the vertical rubbing-flange along its inner edge, the bolt closing the lower end of the pedestal, and the hinge and safety bolts securing the upper end of said movable frame; substantially as set forth.

3. In a car-truck, the channel side beams having their upper and lower flanges turned outward, and the pedestal-frames at the ends of said side beams, combined with the flanged bolster-beams whose flanges turn outward from one another and which extend transversely across the truck and have their web ends turned to contact with the webs of the side beams, whereby the plain surfaces of the side beams and the plain surfaces of the said bolster-beams are brought into close contact and are riveted together; substantially as set forth.

4. In a car-truck, the channel-iron side beams, having their upper and lower flanges turned outward, and the flanged bolster-beams extending across the truck and having their flanges turned outward from one another and their ends turned so that the web portion of the bolster-beams will contact with the web portion of the side beams, combined with the pedestal-frames at the ends of the side beams and the top plate connecting the side and bolster beams; substantially as set forth.

5. In a car-truck the rolled solid side beams, combined with pedestal-frames secured to said side beams and adapted to permit the axle-boxes to have a vertical movement therein, and the rolled channel transom-beams extending transversely across the truck and having their flanges turned outward from one another and their ends turned outward toward the ends of the truck but extending only part way to said ends of the truck, the web portions of the outwardly-turned ends of the said transom-beams being in contact with and riveted to the webs of the side beams; substantially as set forth.

6. In a car-truck, the side frames, combined with the pedestal-frames at each end of said side frames and each comprising the upper flange, the inverted spring-socket, the inner vertical rubbing-flange, the vertical web, the lower flanged bracket, the outer flange extending from said socket and forming an angular outer extension and thence depending downward below said socket, and the movable frame having rubbing surfaces and secured to the depending portion of said outer flange, and the two bolts securing the upper end of said movable frame, one bolt being below and inward from the vertical plane of the other; substantially as set forth.

7. In a car-truck, the commercial-rolled beam side frames having substantially vertical ends, combined with cast-metal flanged pedestal-frames secured to said vertical ends and having outer movable sides and the hinge and safety bolts securing said movable sides at their upper ends; substantially as set forth.

8. In a car-truck, the side beams, combined with the cast pedestal-frames secured thereto and having the flanges T provided with inclined shoulders P', and the movable outer frames P bifurcated at their upper ends to straddle said flange and having inclined edges to abut against said shoulders, and a bolt securing said side frame P to said flange T; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 31st day of October, A. D. 1896.

EDWARD CLIFF.

Witnesses:

CHAS. C. GILL,
WILLIAM B. ELLISON.