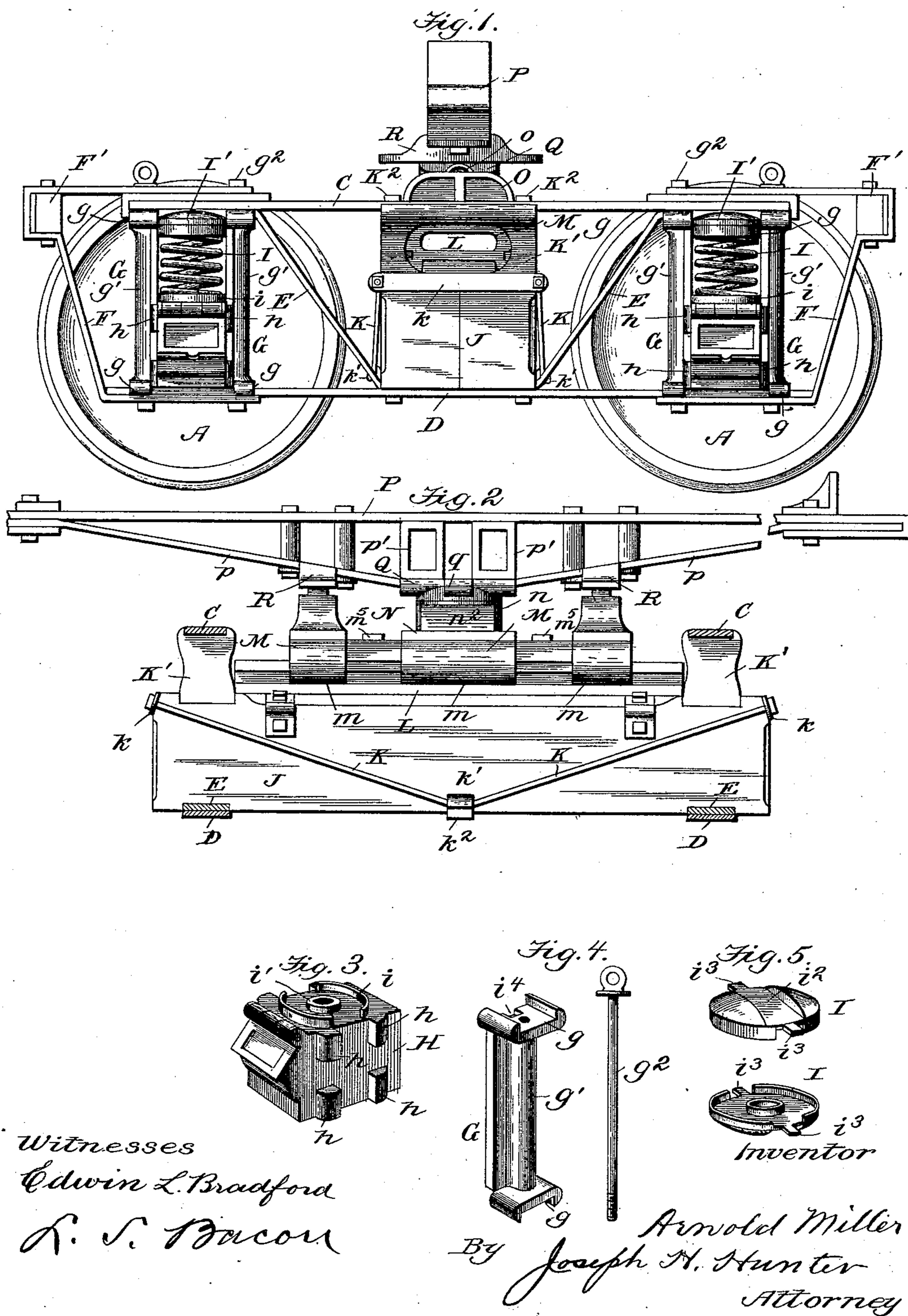


2 Sheets—Sheet 1.

No. 477,765.

Patented June 28, 1892.



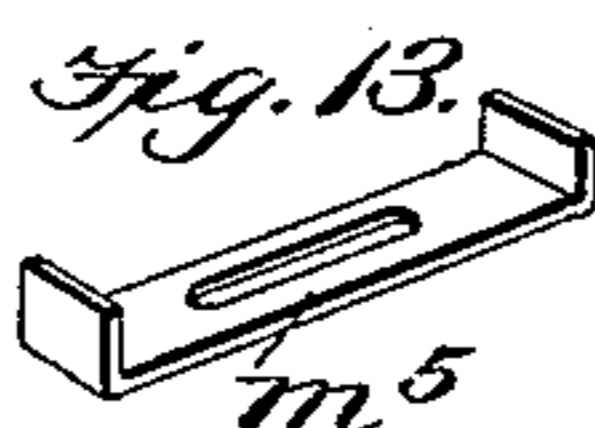
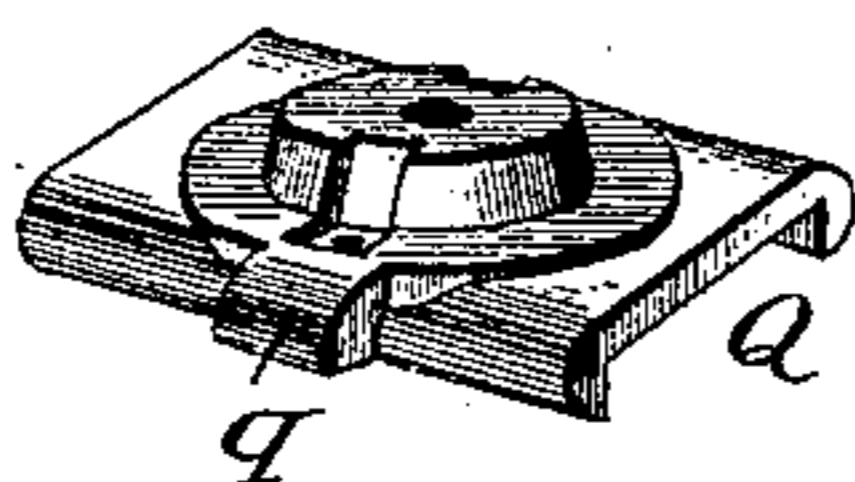
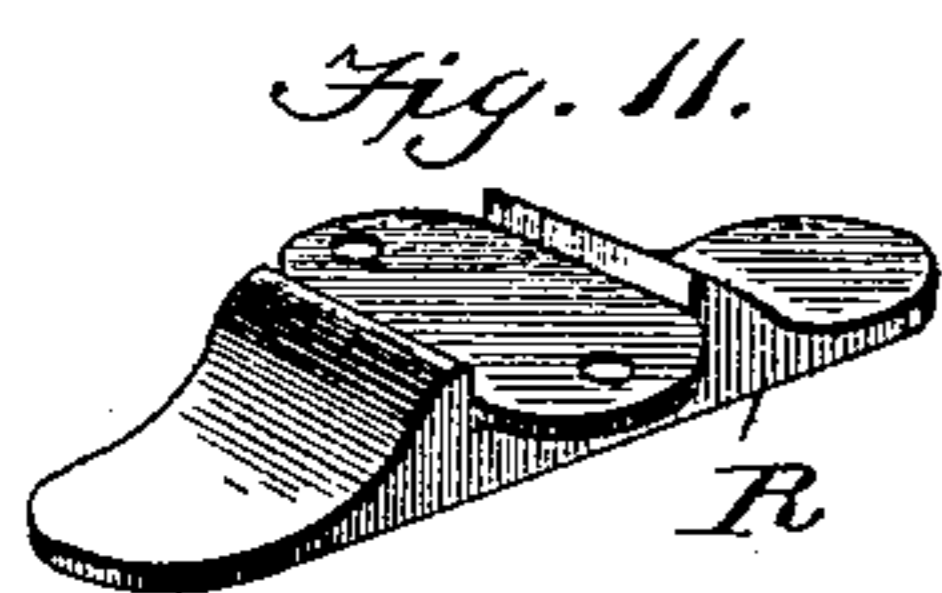
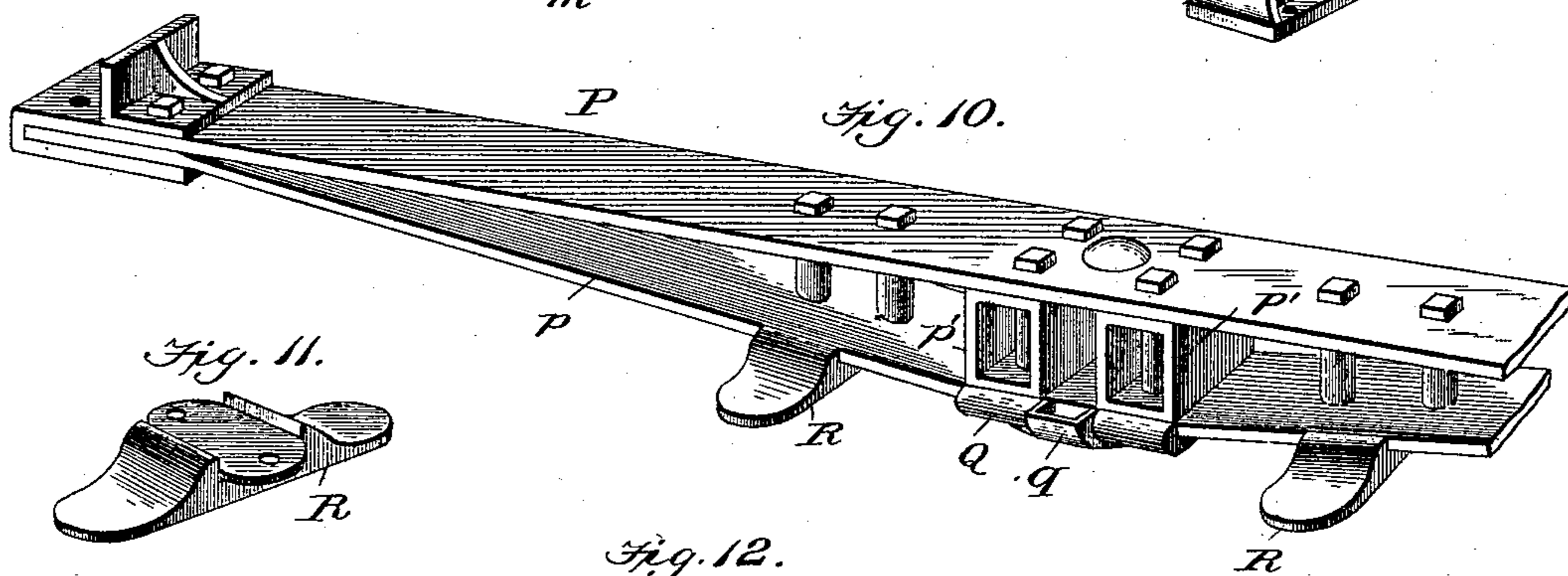
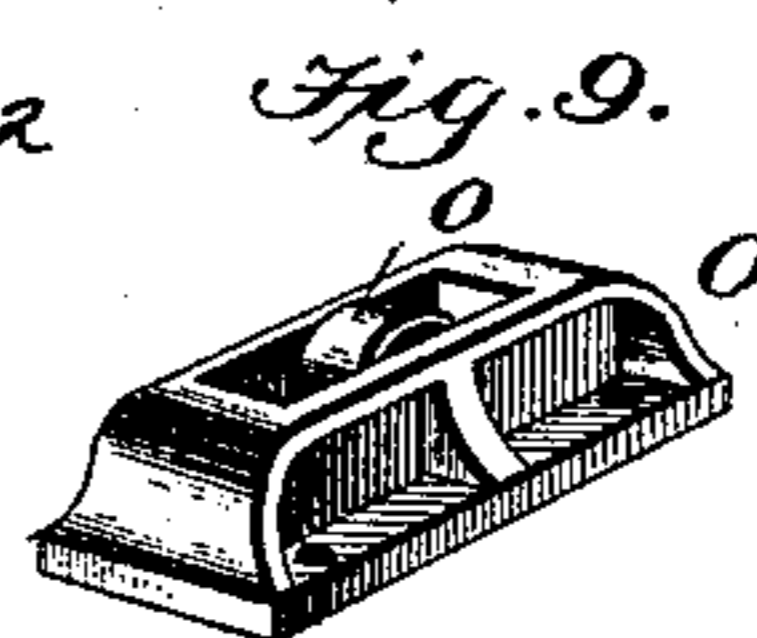
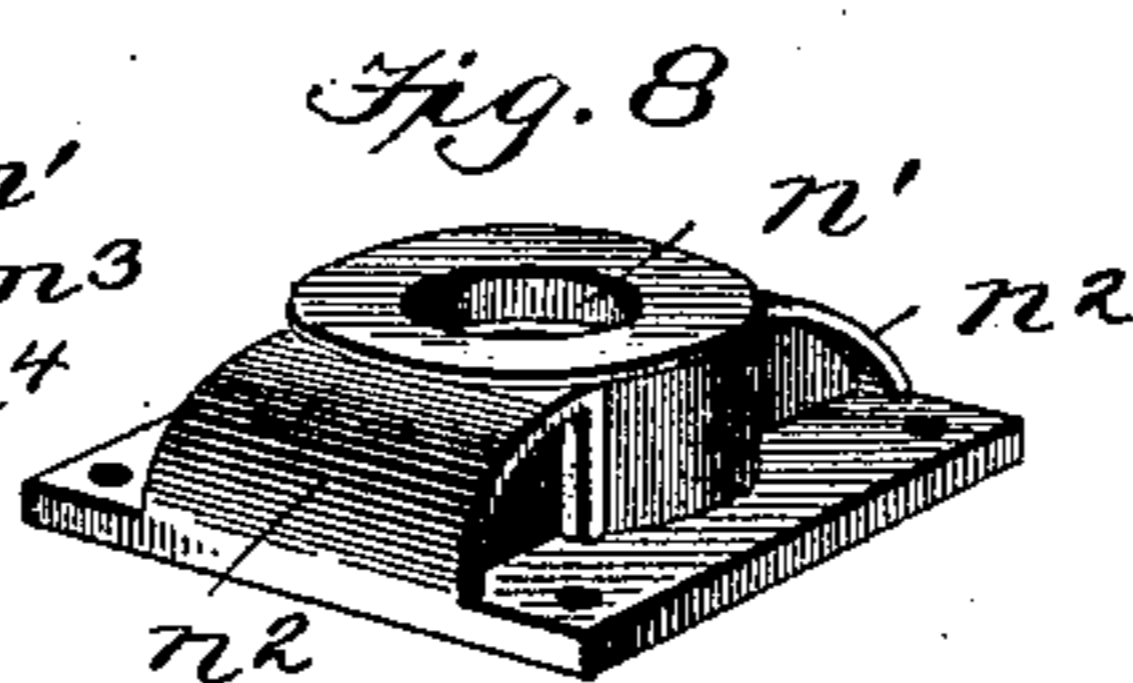
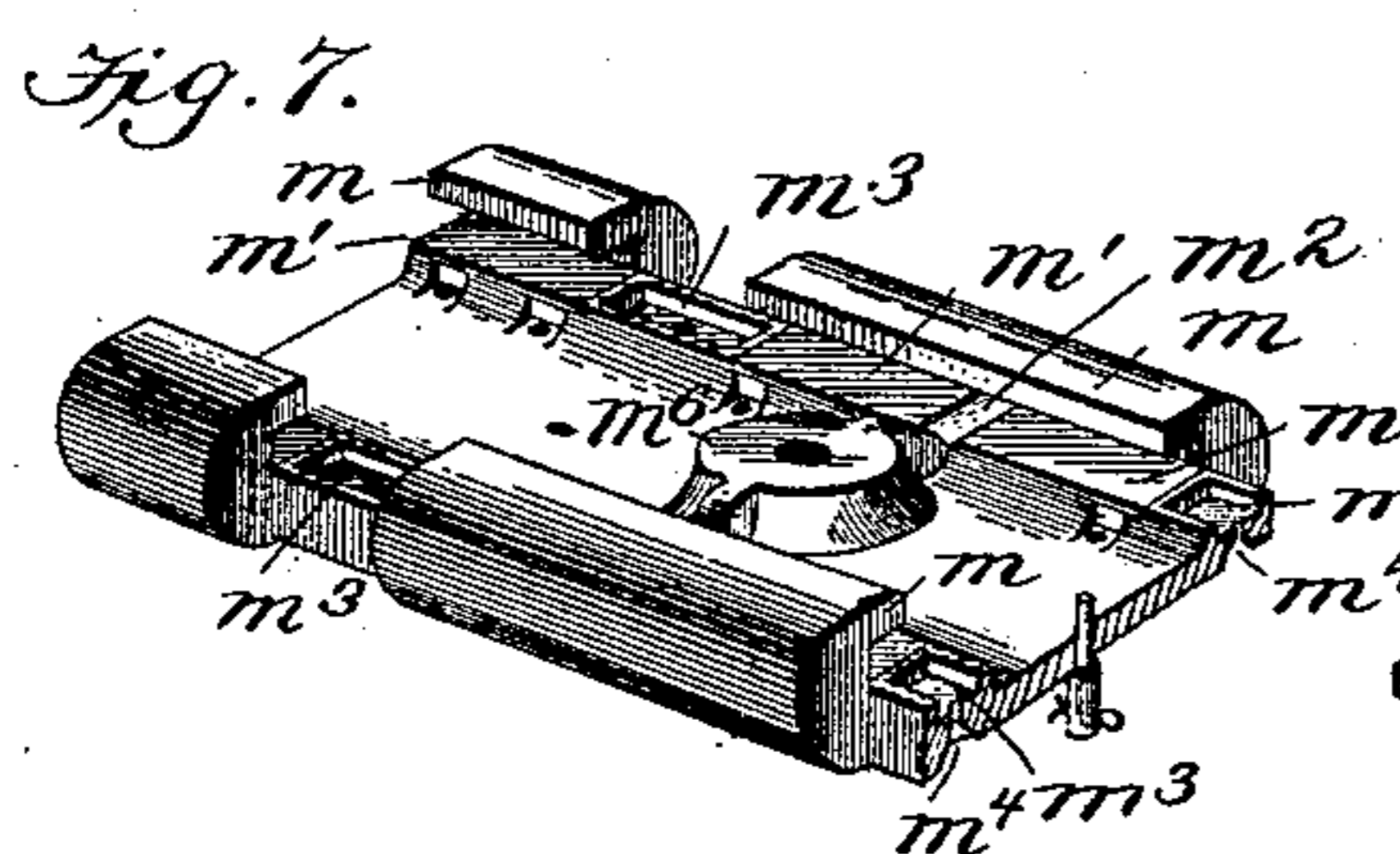
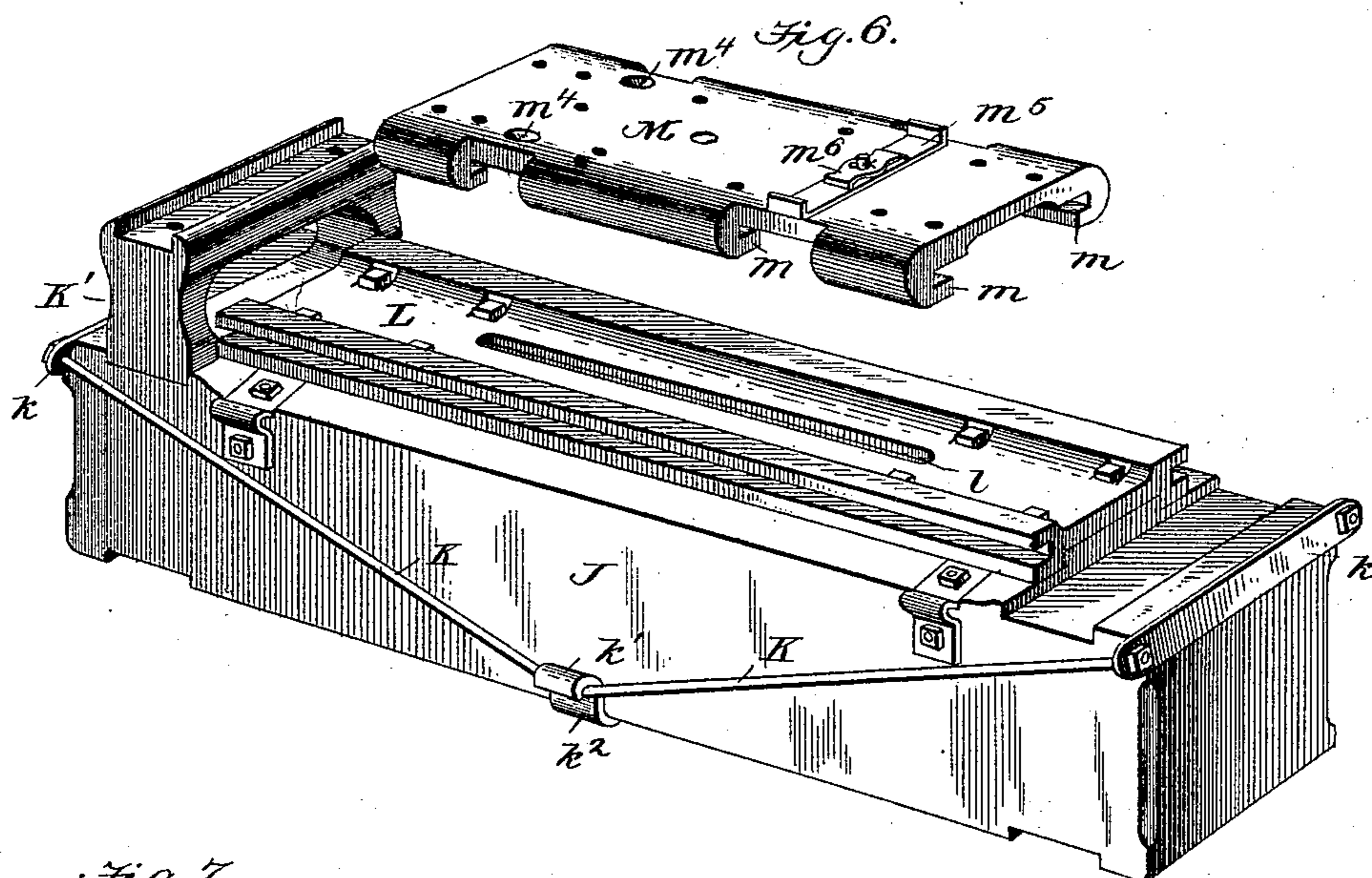
(No Model.)

2 Sheets—Sheet 2.

A. MILLER.
CAR TRUCK.

No. 477,765.

Patented June 28, 1892.



Witnesses

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UNITED STATES PATENT OFFICE.

ARNOLD MILLER, OF MEDFORD, WISCONSIN.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 477,765, dated June 28, 1892.

Application filed March 4, 1892. Serial No. 423,691. (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 car-truck adapted more especially for the center of a car and embodying, in addition to other features hereinafter specified, a lateral moving bolster plate or beam. This object I attain by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate like parts in the several views, and in which—

Figure 1 is a side elevation of a truck. Fig. 2 is an end of the supporting-beam and its connections. Fig. 3 is a detail perspective view of an axle-box. Fig. 4 is a detail perspective view of a guide and locking pin for the axle-box. Fig. 5 are detail perspective views of the spring-supporting plate. Fig. 6 is a detail perspective view of the supporting-beam, showing the sliding plate detached. Fig. 7 is a detail perspective view of a portion of the sliding plate. Figs. 8 and 9 are detail views of the bearing member of the sliding plate. Fig. 10 is a perspective view of the bolster. Fig. 11 is a detail view of the shoe. Fig. 12 is a detail view of the central supporting-plate of the bolster, and Fig. 13 is a detail view of the oil-cap.

In the drawings, A represents the truck-wheels, and B the axles; C an upper and D a lower plate, and E the truss-plate, having a straight lower face connected with the plate D, its ends extending up in opposite directions and bent around the ends of the plate C.

F represents an end plate fitted to the under side of the plate D, extending upwardly, and formed with a pocket at its upper end, its extreme end being bent in and secured to the top plate E. A brake-bar or cross-beam F', which is suitably reinforced, is secured in

the pockets of the plate F, there being a plate at each corner of the truck. The overlapping ends of the plate E are intended to reinforce and strengthen the plate C and to closely unite the two plates.

G represents a series of vertical guides having flat faces and extended ends, in which suitable seats g are formed, in which the plates D and E rest and are secured. On the outer faces of these guides are formed hollow ribs g' , through which suitable tie-bolts g^2 pass to unite the plates C, D, and E rigidly together and to prevent the displacement of the guides. Between the flat faces of the guides the axle-boxes H are placed, they being formed with offsets h on their sides, which project over and against the outer edges of the guides, thereby preventing all movements, excepting vertical.

On top of the boxes H are mounted coil-springs or cushions I, the top of the box being formed with two semicircular outer ribs i and an inner annular rib i' . These springs I preferably compose of three members, the outer member fitting against the rib i , the inner member within the rib i' , and the intermediate member fitting around and against rib i' . The springs are capped by a suitable cap I', having ribs on its under face corresponding to the ribs on the axle-box and a groove or seat i^2 on its upper face, in which the horizontal end of the bar E is fitted, thereby preventing any movement of the cap. On opposite sides of the cap are formed outwardly-extending ears i^3 , which are arranged to fit in depressions i^4 in the upper ends of the guides. The plates are thereby held firmly in place. By this construction it will be noticed that the guides form a rigid connection between the plates C, D, and E and also serve as guides and holders for the axle-boxes. The top of one of the tie-rods g^2 may have a suitable chain attached thereto for making connection between the truck and body of the car.

On a horizontal portion at the lowermost end of the plate E between the oppositely-extended portions is a cross-beam or bunk J, extending across the truck laterally, and preferably divided into two parts, with an elongated central slot formed at the meeting

edges. These beams are secured by suitable cross-bolts and are trussed by the two oppositely-inclined braces K, having their outer ends secured to cross-plates k on the ends of the beam, and the lower ends or central portions engaging with hooks k' on the outer ends of a cross-plate k^2 , which projects entirely across the under side of the beam. On the upper faces, as well as the lower faces of the ends of the beam, suitable seats are formed, the plates D and E fitting in the lowermost, while supporting-blocks K' are fitted in the upper ones. The blocks have grooves in their upper faces, in which the plates C rest, and have apertures in their ends through which the bolts K^2 pass for uniting the respective plates C, D, and E, the blocks K' , and the cross-beams.

On the upper face of the cross-beam is secured a guide-rail L, having T-flanges on their outer edges with grooved outer faces and having a central elongated slot l , corresponding to the slot in the beam. On the guide-rail L is fitted a plate M, having locking-flanges m thereon, which engage with the grooves of the outer faces of the guide-rail. Below these flanges m are placed steel friction-plates m' , separated by steel rollers m^2 , which bear against the upper face of the guide-rail.

At the end of the plates m' are formed lubricating-boxes m^3 , having openings m^4 on the outer face of the plate M. The lubricant is taken from these boxes as the plate M is moved, and keeps the guide-rail well lubricated, so that a perfect and easy movement may be had at all times.

To cover the oil-opening m^4 , a longitudinal sliding plate m^5 , having upturned ends and an elongated slot at the center, through which a suitable bolt is passed, there being a spring-plate m^6 interposed between the cap of the bolt and the covering-plate, so that all that is necessary is to move the plate m^5 slightly longitudinal and one of the oil-holes is exposed, a reverse movement exposing the other oil-hole.

At the center of the under side of the plate M is formed a burr or crown m^6 , which rests on the flat central face of the guide-rail L. Through this burr and through the plate is formed a perforation for the passage of a king-bolt. The plate M is surmounted by a bearing-block N, consisting of a base-plate secured by suitable bolts to the plate M and having an upwardly-extending bearing n with an enlarged opening n' in its center and side braces n^2 . The upper face of the bearing n has a steel-hardened bearing-ring thereon, while the lower part of the plate has a king-bolt aperture formed therein of a diameter less than the diameter n' . On opposite sides of the bearing-block N, near the ends of the plate M, are the anti-friction bearing-blocks O, bolted to the plate M and formed with grooves in their upper faces, in which the anti-friction rollers o are placed and allowed a limited longitudinal movement therein.

P represents the bolster, formed of a hori-

zontal upper plate having U-shaped outer ends and truss-plate p , having its ends secured in the U portions of the upper plate. These plates are secured together and held in position by the interposed blocks p' , through which suitable bolts are arranged on opposite sides of the king-bolt passage. The bolts securing and passing through these blocks p' also pass through and secure the turn-plate Q, located on the bottom of the truck. This turn-plate has an aperture through which the king-bolt passes and flanges on its edge engaging the opposite sides of the truss. It is also formed on its under side with a suitable steel-bearing ring and a cylindrical projection arranged to fit in the opening n' of the plate N.

q represents an oil-box having duct leading into the parts above mentioned for lubricating purposes. On the under side of the truss-plate p are secured bearing-shoes R, arranged to engage and rest on the anti-friction rolls O. They have a recess or seat formed in their upper faces, in which the plate p fits, and are secured in position by bolts passing through extensions on the sides thereof and up through the bolster, suitable sleeves being interposed between the plate p and the top plate of the bolster, through which the bolts pass, so that the plates will not be drawn together or bent as the shoes R are secured in place.

Near the outer ends of the bolster are secured angular offsets, forming side bearings for the car-beams.

From the above-described construction it will be seen that my invention is adapted more particularly to a car employing three trucks and to the central truck of the three, the bolster being permitted an easy lateral movement as well as a pivotal movement.

The arrangement and construction of the several parts dispenses with a great amount of friction, while increasing the strength and rigidity of the structure.

The construction of the truck-frame is such that the use of wood is practically dispensed with, the manner and arrangement of the plates forming a strongly-trussed frame for the truck.

I am aware that many minor changes in the construction and arrangement of the parts of my invention can be made and substituted for those herein shown and described.

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 side frames consisting of an upper and a lower plate and an intermediate plate extending up from the lower plate in opposite directions to and parallel with the upper plate and bent over the upper plate, of the end plates F, having pockets therein and projecting above and below the upper and lower plates, respectively, and tie-bolts rigidly uniting the several plates, substantially as described.

2. In a car-truck, the combination, with the

frame of the truck, of a trussed cross-beam secured thereon, having an elongated central slot, a guide-rail on said beam, formed with grooves in its outer edges and an elongated
 5 central slot, a sliding plate fitted on said rail, having depending tongues engaging in said grooves, bearings formed in said sliding plates, a central bearing-block on the sliding plate, anti-friction bearing-blocks on the
 10 outer ends of the sliding plate, a bolster, a bearing secured on the lower side thereof engaging the bearing on the sliding plate, shoes on the bolster, resting on the anti-friction blocks, and a king-bolt passing through the
 15 bolster, sliding plate, and rail, substantially as described.

3. In a car-truck, the combination, with a supporting-beam, of a guide-rail mounted thereon, having longitudinal grooves in its
 20 outer edges, a sliding plate mounted on said rail, formed with depending flanges engaging in said grooves, a bearing-block centrally arranged on said plate, anti-friction blocks arranged on the opposite sides of said bearing-
 25 block, a bolster having a bearing-plate on its lower edge, engaging with said bearing-block, and shoes on the bolster, resting on said anti-friction blocks, substantially as described.

4. In a car-truck, the combination, with a
 30 supporting-beam, of a guide-rail thereon, a sliding plate on the rail, having oil-boxes formed therein, a bolster mounted on said plate, and longitudinally-sliding covers on the plate over the apertures leading to the oil-
 35 boxes, formed with elongated slots in their centers and upturned ends, a bolt passing through said cover and plate, and a spring

interposed between the cover and cap of the bolt, substantially as described.

5. In a car-truck, the combination, with the
 40 supporting-beam, of a guide-rail thereon, having bearing-surfaces at its edges and grooves in the outer faces of the bearing-surfaces, a sliding plate having tongues engaging in said grooves, a bearing-block on the plate,
 45 having a central bearing and an aperture therein, anti-friction bearing-blocks on the outer edges of the plates, rolls in said blocks, a bolster consisting of an upper plate and a
 50 truss-plate, means for uniting the two plates, a bearing on the truss-plate, having an extension fitting in the bearing of the bearing-block, and shoes on the bolster, resting on
 55 said anti-friction blocks, substantially as described.

6. In a car-truck, the combination, with a
 supporting-beam, of a laterally-moving plate on the beam, bearings on the plate, a bolster
 consisting of two plates, the upper plate hav-
 60 ing its ends bent down and around the lower plate, a bearing on the lower plate, suitable supports interposed between the plates, bolts
 passing through the plates, supports, and bearings, sleeves interposed between the
 65 plates, shoes on the lower plate, and bolts passing through said plates, sleeves, and shoes, substantially as described.

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

ARNOLD MILLER.

Witnesses:

E. H. SCHWEPPE,
 ALBERT PRIES.