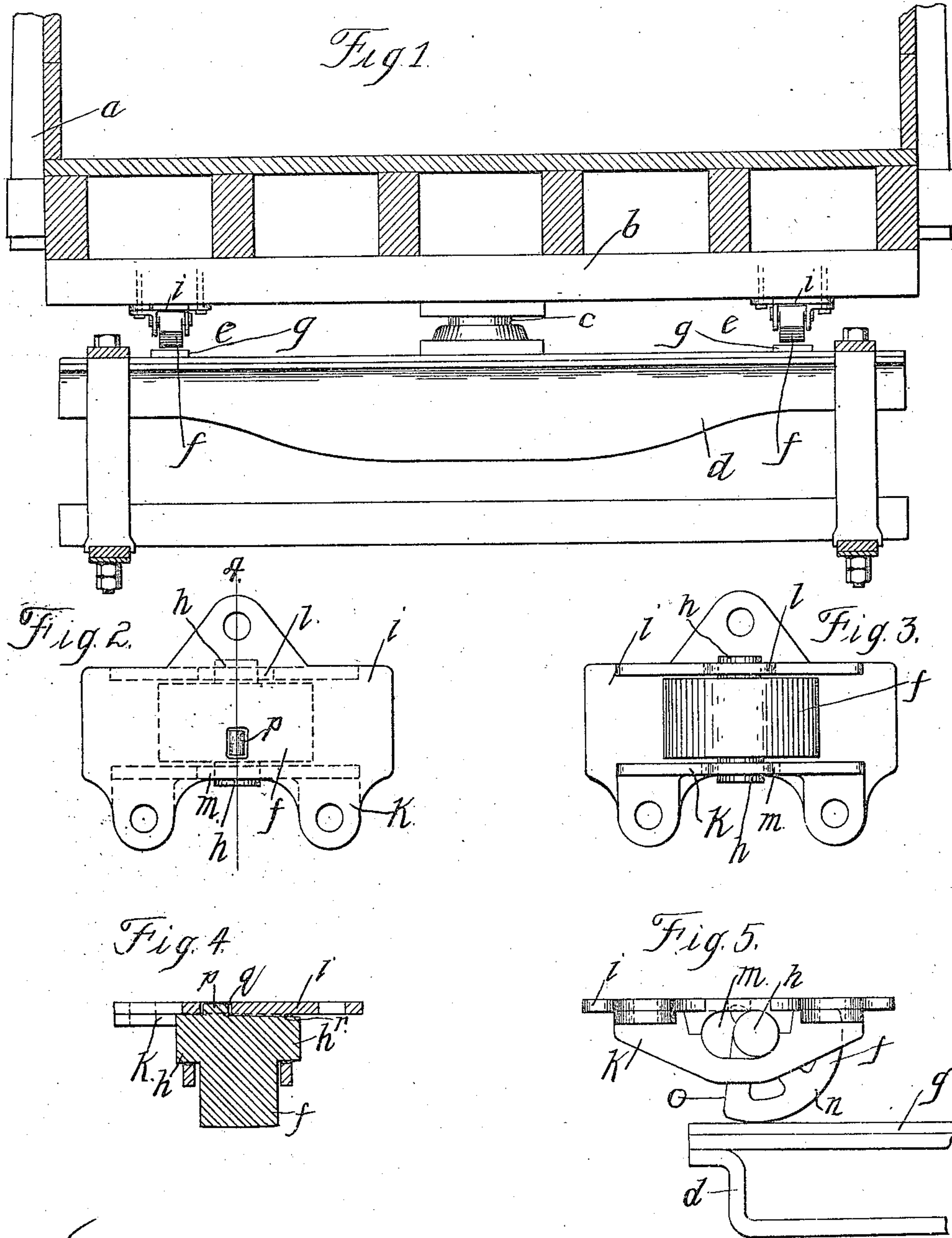


No. 840,910.

PATENTED JAN. 8, 1907.

J. R. CARDWELL.
CAR CONSTRUCTION.
APPLICATION FILED MAR. 24, 1906.

2 SHEETS—SHEET 1.



Witnesses
Leon Stroch
Walter E. Krauser.

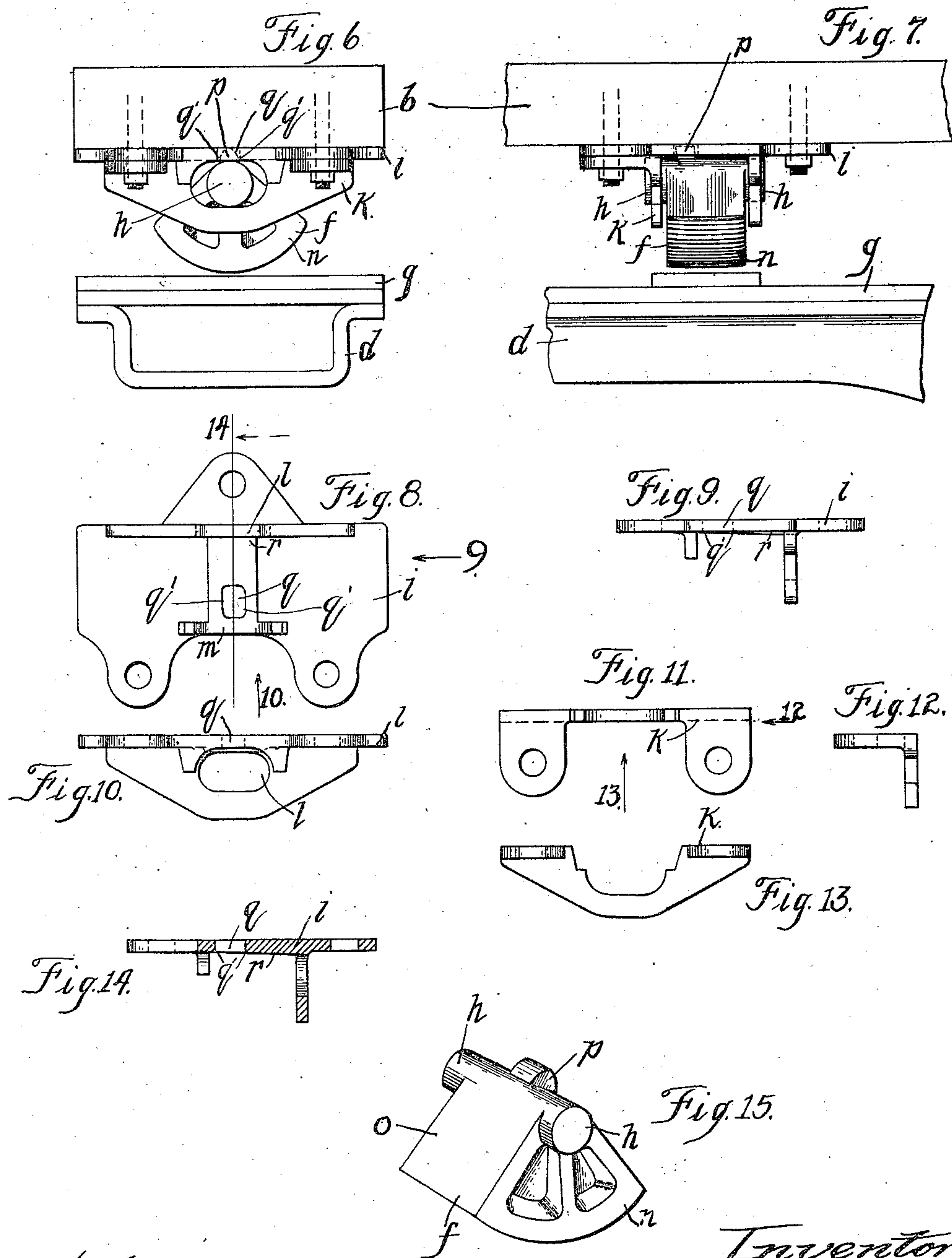
Inventor:
James R. Cardwell,
By G. L. Cragg
Attorney.

No. 840,910.

PATENTED JAN. 8, 1907.

J. R. CARDWELL.
CAR CONSTRUCTION.
APPLICATION FILED MAR. 24, 1906.

2 SHEETS—SHEET 2.



Witnesses
Leon Stroh
Wm. E. Krauser.

Inventor
James R. Cardwell
By G. L. Cragg
Attorney

UNITED STATES PATENT OFFICE.

JAMES R. CARDWELL, OF CHICAGO, ILLINOIS.

CAR CONSTRUCTION.

No. 840,910.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed March 24, 1906. Serial No. 307,876.

To all whom it may concern:

Be it known that I, JAMES R. CARDWELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Car Construction, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to car construction in which side bearings are employed, and has for its object the improvement in the construction and disposition of the side bearings whereby they may be simplified in their formation and have their efficacy increased.

My invention is realized by the combination of a car-body with rockers carried thereby and adapted to engage with some portions of the trucks supporting the car-body.

In the preferred embodiment of the invention the rockers are swingingly mounted upon the car-body bolsters near their outer ends, the said rockers serving to engage the top faces of the truck-bolsters with which the body-bolsters have pivotal connection. The shafts of the rockers are not only so mounted beneath the body-bolsters as to permit the rocking action of the rockers, but said shafts are desirably so mounted that they may travel bodily to a limited extent, whereby the rockers may by a simple construction be permitted to assume normal central positions with respect to their mountings when relieved of engagement with the truck-bolsters. In order that this normal central position on the part of each rocker may be assured, I provide means supplementing the natural action of the rocker for forcing this return to normal, this means desirably residing in a lug or tooth provided upon a peripheral portion of the rocker-shaft and projecting into a slot located above the rocker-shaft, the parallel ends of the slot affording fulcrum, about either of which the rocker is moved by the force of its own weight when relieved of engagement with the corresponding truck-bolster.

I will explain my invention more fully by reference to the accompanying drawings, illustrating a preferred embodiment thereof, in which—

Figure 1 is a cross-sectional view of so much of a car-body, its bolster, the truck-bolster, and parts associated therewith as to show one embodiment of the invention. Fig. 2 is a plan view of a side bearing, taken

just above the plane of attachment of the side bearing with the body-bolster. Fig. 3 is a bottom view of the structure shown in Fig. 2. Fig. 4 is a sectional view on line 4 of Fig. 2. Fig. 5 is a view looking toward the side of the car, showing the position of the rocker of one of the side bearings which it may be caused to occupy in riding upon the truck. Fig. 6 is a view similar to Fig. 5, illustrating the normal position of the side bearing. Fig. 7 is a view of the device taken at right angles to Fig. 6. Fig. 8 is a view from beneath showing that plate which is attached to the car-body or body-bolster for supporting both a rock-shaft and another plate to cooperate with it in supporting said shaft. Fig. 9 is a view in the direction of arrow 9 of Fig. 8. Fig. 10 is a view in the direction of arrow 10 of Fig. 8. Fig. 11 is one elevation of the additional plate mentioned in the short description of Fig. 8. Fig. 12 is a view in the direction of arrow 12 of Fig. 11. Fig. 13 is a view in the direction of arrow 13 of Fig. 11. Fig. 14 is a sectional view on line 14 of Fig. 8. Fig. 15 is a perspective view of the rocker.

Like parts are indicated by similar characters of reference throughout the different figures.

Inasmuch as the side bearings are generally immediately associated with the body-bolsters and truck-bolsters, the following description will be had with reference to such an arrangement, though I do not wish to be limited thereto.

In Fig. 1 I have indicated a portion of a car-body *a* of any suitable construction, one of its body-bolsters *b* being attached thereto beneath the same and having pivotal mounting at *c* with the truck-bolster *d* in accordance with any suitable practice. Near the sides of the car and underneath the bolsters *b* there are provided in the ends of said bolsters my improved side bearings *e*, that include rockers *f*, adapted to ride upon plates *g*, carried by the truck-bolster *d*, when the car-body is tilted with respect to the truck-bolster, one rocker *f* or the other being engaged with the truck-bolster, according to the direction in which the car-body slants. The rockers *f* are desirably normally separated from engagement with the truck-bolster. The rockers *f* are provided with shafts *h*, that are mounted between plates *i* *k*, the plates *i* being secured directly to the bottom of the bolster *b*, while the plates *k* are secured to the plates *i* by some of the bolts that fasten said

plate *i* to the body-bolster. The plates *i* *k* are separately made in order that the rockers *f* may be disposed between the same in assembly, the shafts *h* being desirably integrally formed with said rockers. In the assembly of the parts, the ends of the shafts are projected through openings *l m* in the plates, margins of said openings affording means whereby the rockers are given swinging mounting. The segmental or riding surfaces *n* of the rockers are given a length that will suit the maximum swing of the truck-bolsters that is likely to occur. The flat sides *o* of the rockers are adapted to limit the extent to which said rockers may be swung, these flat sides serving to engage the plates *i* when the rockers are moved excessively, as is shown in Fig. 5. The axis of rotation of each shaft *h* desirably shifts as the rocker is rolled, whereby I am enabled to provide improved means for enabling the rocker to return to normal or central position when said rocker is free from the truck-bolster and whereby the range of travel of the rocker is increased. The shifting of this axis is preferably permitted by horizontally-elongated openings *l m*, into which the shaft ends project.

Assuming that the shaft and rocker are in the position indicated in Fig. 6, it will be seen that when the truck-bolster is brought into moving engagement with the rocker the top of the shaft *h* will ride upon the top horizontal margins of the openings *l m* and the metal of the plate *i* intervening between said openings, whereby said shaft is rolled toward one end or the other of each of said openings, according to the direction of movement of the truck-bolster. In order that the said shaft may be forced to roll back to the normal position (indicated in Fig. 6) after the corresponding rocker is removed from the truck-bolster, I provide a tooth or lug or cam formation *p*, which projects into a slot *q*, provided in the plate *i*. This tooth *p* is desirably so curved and is of such a size that it is bound to engage somewhere between its apex and its base with one edge *q'* or the other of the slot *q*, according to the direction of bodily movement of the rocker, so that whether the rocker travels much or little upon the truck-bolster a fulcrum will be immediately afforded at *q'*, about which the rocker *f* is immediately turned to restore it to normal or central position when the truck-bolster is freed from the rocker. In order that there may be the requisite freedom of movement of the shaft *h* within the openings *l m* corresponding thereto, said openings are made a trifle larger vertically than the engaging portions of the shaft. I preferably cause the rockers to move in planes that are substantially parallel with the vertical sides of the car-truck, to which end the outer end of each shaft *h* is larger than the inner end, while the portion *r* of the plate *i* upon which the shaft *h* rolls is desir-

ably sloped downwardly toward the center of the car in order that this result may be accomplished without improperly shifting the axis of rotation of the shaft *h*.

While I prefer the construction illustrated, whereby the side bearings are depended in the car-body, I do not wish to be limited to the precise construction shown for depending the side bearings from said body.

While I have employed shafts *h* and horizontally-elongated openings *l m* for the purpose hitherto outlined, I do not wish to be limited in all embodiments of the invention to this construction.

While I have herein illustrated the preferred embodiment of my invention, the scope of the invention is apparent from the specification and claims.

I claim—

1. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, said bearings being provided with horizontally-elongated openings into which said shafts project.
2. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, and mountings for carrying the rockers and permitting the rockers to swing to normal position when free of riding engagement and permitting bodily movement of the rockers where mounted.
3. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, there being means for returning the rockers to their normal vertical positions when relieved of riding engagement.
4. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, there being means for returning the rockers to their normal vertical positions when relieved of riding engagement.
5. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, said bearings being provided with horizontally-elongated openings into which said shafts project, there being means for returning the rockers to their normal vertical positions when relieved of riding engagement.
6. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, mountings for the rockers permitting the rockers to swing and permitting bodily movement of the rockers where mounted, there being means for returning the rockers to their normal

vertical positions when relieved of riding engagement.

7. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, said bearings being provided with horizontally-elongated openings into which said shafts project, there being means for returning the rockers to their normal central positions within their bearings.

8. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, mountings for the rockers permitting the rockers to swing and permitting bodily movement of the rockers where mounted, there being means for returning the rockers to their normal central positions within their bearings.

9. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, each rocker being provided with a tooth or projection p , the car-body being provided with a slot q for each tooth, with opposite walls of which slot said tooth may cooperate to return the rocker to its normal central position.

10. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, each rocker being provided with a tooth or projection p , the car-body being provided with a slot q for each tooth, with opposite walls of which slot said tooth may cooperate to return the rocker to its normal central position.

11. The combination with a car-body, of

side bearings in the form of rockers depending therefrom and carried thereby, said rockers having shafts and bearings for the shafts carried by the car-body, said bearings being provided with horizontally-elongated openings into which said shafts project, said rockers having shafts and bearings for the shafts carried by the car-body, each rocker being provided with a tooth or projection p , the car-body being provided with a slot q for each tooth, with opposite walls of which slot said tooth may cooperate to return the rocker to its normal central position.

12. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, and mountings for the rockers permitting the rockers to swing and permitting bodily movement of the rockers where mounted, said rockers having shafts and bearings for the shafts carried by the car-body, each rocker being provided with a tooth or projection p , the car-body being provided with a slot q for each tooth, with opposite walls of which slot said tooth may cooperate to return the rocker to its normal central position.

13. The combination with a car-body, of side bearings in the form of rockers depending therefrom and carried thereby, each rocker being provided with a cam formation and an element cooperating with said cam formation for returning the rocker to its normal position when free of riding engagement.

In witness whereof I hereunto subscribe my name this 20th day of March, A. D. 1906.

JAMES R. CARDWELL.

Witnesses:

LEON STROH,

THOMAS DUNCAN.