No. 688,485. Patented Dec. 10, 1901.

# Z. C. ROBBINS.

## CAR TRUCK.

(Application filed June 26, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

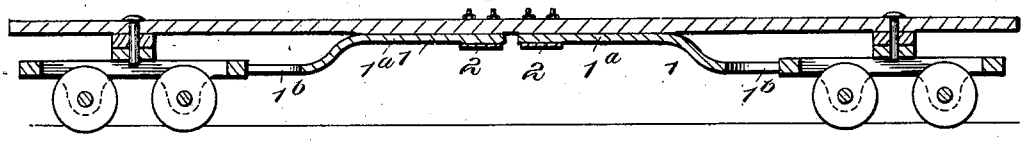



Fig. 2

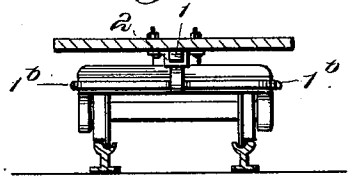
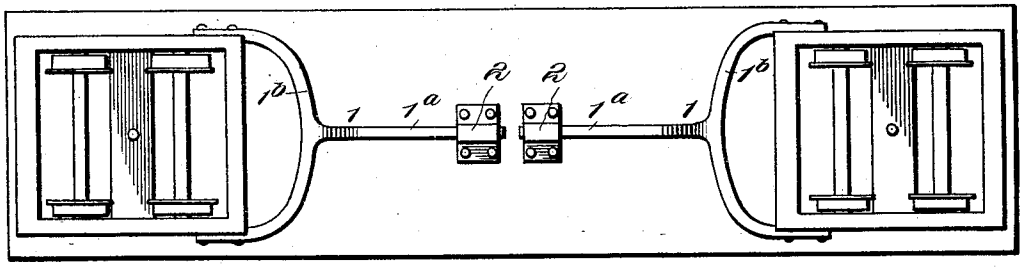



Fig. 3




Witnesses
Edwin Tait. Power, Jr. by:
W. Perry Hahn

Inventor:
Zenas C. Robbins
Edson Brot
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(Application filed June 26, 1901.)

(No Model.) 2 Sheets—Sheet 2.

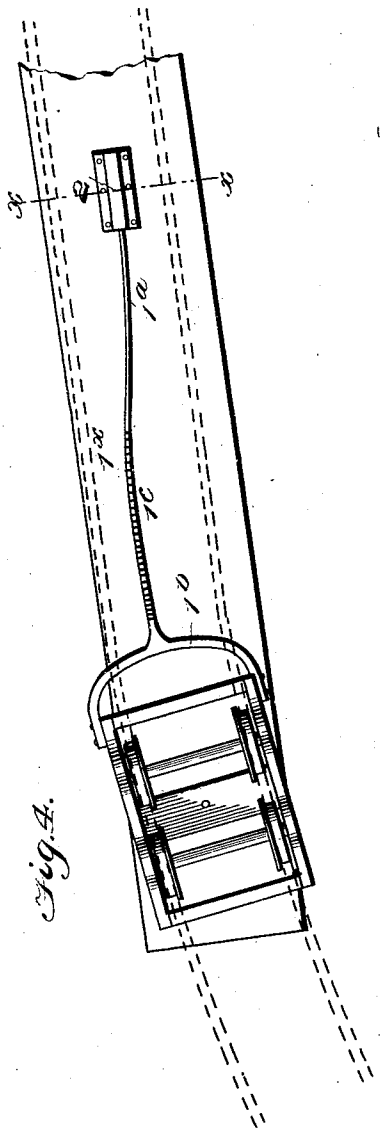



Fig. 4.

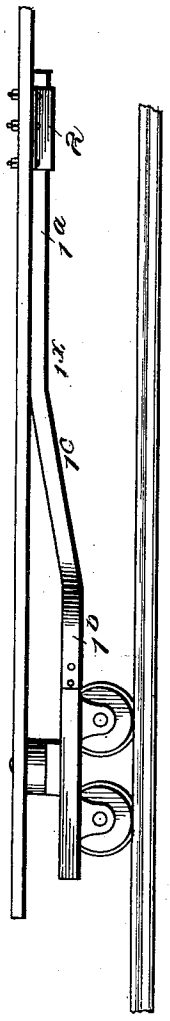



Fig. 5.




Fig. 6.

Witnesses
Edwin B. H. Turner, Jr. by
M. P. Galvin.

Inventor:
Zenas C. Robbins
Edson Bros.
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

ZENAS C. ROBBINS, OF WASHINGTON, DISTRICT OF COLUMBIA.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 688,485, dated December 10, 1901.

Application filed June 26, 1901. Serial No. 66,128. (No model.)

*To all whom it may concern:*

Be it known that I, ZENAS C. ROBBINS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Car-Trucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in railroad-cars, more especially trucks therefor.

In the lengthy cars, especially of the American railway system, being supported upon or carried by trucks, two or more to a car, with the connection therebetween effected, as near as possible, at the center of the trucks by means of a single bolt, said trucks necessarily have a violent, jerky, and unsteady motion and sway to a greater or less extent laterally, transmitting to their carrying-wheels a corresponding motion, jamming the flanges of said wheels against the track-rails. As there is no means to guide said truck-wheels and keep them in position upon said rails but the lateral flanges of said wheels, which depend but a short distance below the treads of said rails, said violent jerking and unsteady movements of the car-trucks add greatly to the friction and wear of the wheel-flanges against the inner sides of the rails, which is attended with the constant liability or danger of the spreading of the rails. Furthermore, any obstructions which should lift the truck-wheel flanges above the treads or tops of the rails would necessarily result in throwing said wheels from said rails. It is also noted that the jerky or swaying motion of the car-trucks imparts an unpleasant tremulous motion to their superincumbent cars. Now I propose to remedy all these serious objection principally by equipping or providing each car-truck with a reach-like attachment, comprising, preferably, a controlling or retaining bar or lever, with its inner end received in a keeper attached to the framework of the car. This lever or bar is designed to so accurately guide its respective car-truck that it will prevent all friction of the wheel-flanges upon the sides of the rails and will also retain them normally with relation to the track-rails whenever an obstruction shall lift the truck-wheels above the rail-treads. Said lever or bar should be of steel and so constructed or proportioned as to possess the requisite degree of elasticity, to allow it to readily yield or flex, as when the car passes around a curve, greater or less, and in running at a very high speed—as, for instance, at the rate of one hundred miles per day.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a longitudinal section thereof. Fig. 2 is a cross-section. Fig. 3 is an inverted view of the same. Figs. 4 and 5 are a broken inverted view and a corresponding side view of an additional modification, respectively; and Fig. 6 is a cross-section on the line $x$ $x$ of Fig. 5.

Latitude is allowed herein as to details, as they may be changed or varied at will without departing from the spirit of my invention and the same yet remain intact and be protected.

In carrying out my invention I employ a reach-like attachment for each wheel-truck of the car, comprising a preferably steel bar or lever 1, preferably angular in cross-section. One portion thereof extends horizontally or substantially parallel, as at $1^a$, to the under side of the car-frame, and the outer portion thereof is preferably forked or bifurcated, with the preferably horizontally-curved arms $1^b$ thus formed fixed laterally to the truck-frame, said portion $1^a$ and arms $1^b$ being continuously connected together by a preferably inclined portion $1^c$, integral therewith. The horizontal portion $1^a$ of said bar or lever is received within a keeper 2, secured to the car-frame or otherwise held as against lateral movement, said bar or lever, however, having longitudinal play or movement within said keeper.

From the foregoing construction and arrangement of parts it will be seen that the truck, with its wheels, will be held as against any skewing or lateral movement, consequently preventing the binding of the wheel-flanges against the rails, being maintained in proper position, to which they have been previously adjusted; also, that in event of a wheel coming in contact with an obstruction upon the rail, though its flange may clear

the top or tread thereof, the wheel will be retained in vertical alinement with the rail, and thus be permitted to return to its proper position thereon and be prevented from derailment. In rounding a curve the bar or reach will automatically yield or flex sufficiently by reason of its native spring or elasticity to allow the truck-frame, with its wheels, to conform to the curvature and after passing such curve permit said bar or lever to return to its normal position, as will be readily appreciated. Also, as embodied in the modification of Figs. 5, 6, and 7, I may substitute for the form of lever or bar above described an elongated bar or lever $1^{\times}$ somewhat lighter or thinner than the former, the keeper receiving the same being accordingly adapted thereto, to promote its elasticity or flexibility, and to facilitate the movement of the car-truck, with its wheels, as in rounding curves of whatever extent.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a railway-car, a flexible lever or reach, having fixed connection with the truck, at one end, and means for connection between the opposite end of said lever and the car-body, adapted to permit said last-referred-to end to slide longitudinally and yet prevent lateral movement bodily of said lever, substantially as described.

2. In a railway-car, a lever or reach of sufficient elasticity or flexibility to yield as the car turns a curve in the track, having arms fixed to the truck, and a keeper fixed to the car-body, adapted to receive one end of said lever and permit it to slide longitudinally, and yet prevent lateral movement of said lever, substantially as described.

3. As a new article of manufacture, a self-guiding railroad-car, comprising a body, wheel-trucks, each connected to said body by a central king-bolt, and elastic guiding levers or bars having fixed connection with said trucks, and means of connection between the inner ends of said levers or bars adapted to permit longitudinal movement of said levers and yet prevent lateral movement bodily of said levers, substantially as described.

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

ZENAS C. ROBBINS.

Witnesses:

MORVEN THOMPSON,

EDWIN B. M. TURNER, Jr.