

No. 798,629.

PATENTED SEPT. 5, 1905.

E. J. SATTLER.
RAILWAY CAR.
APPLICATION FILED MAR. 11, 1905.

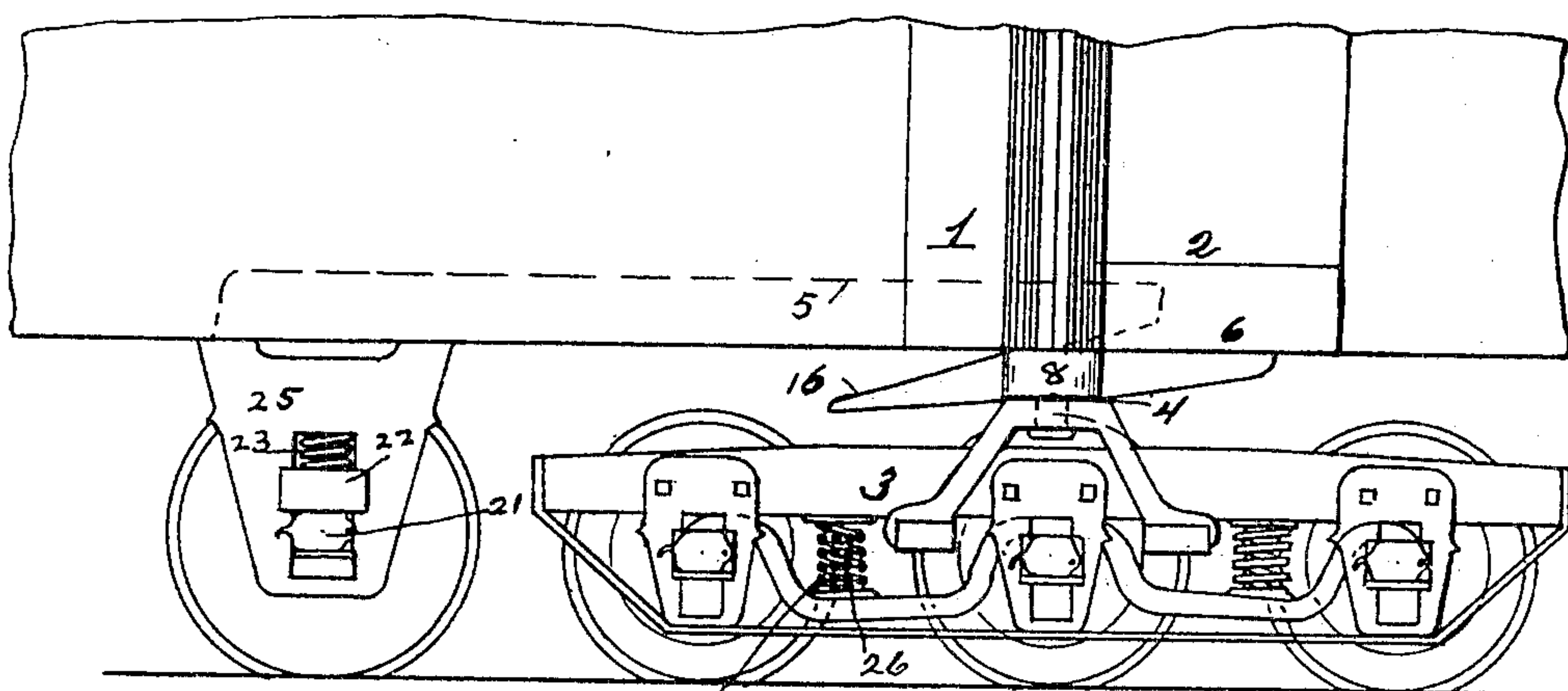


Fig. 1

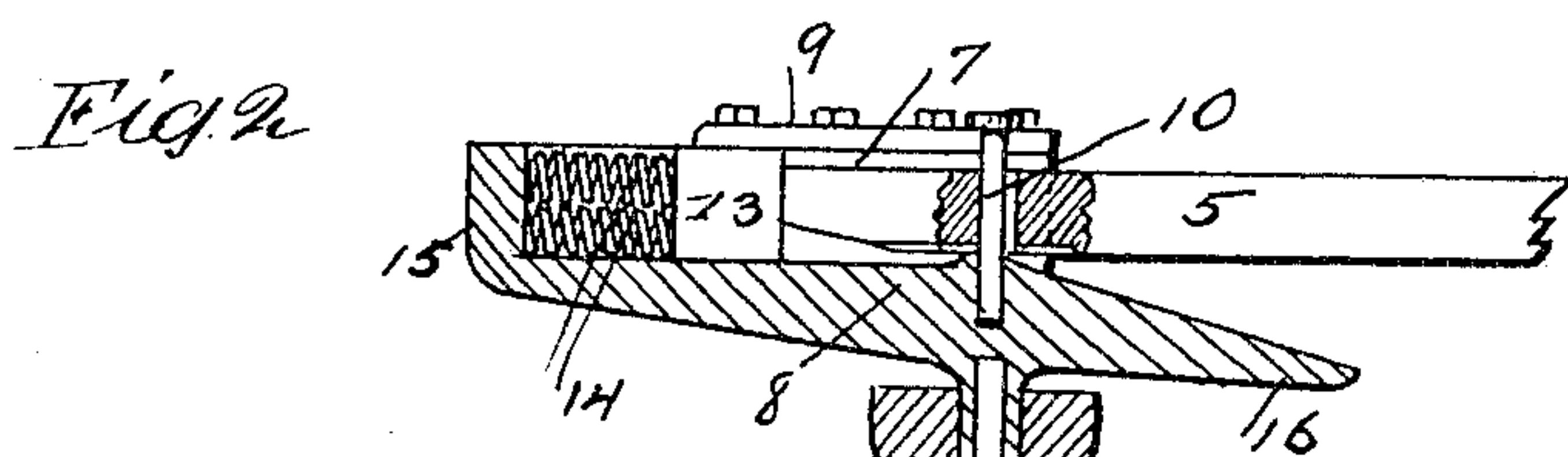


Fig. 2

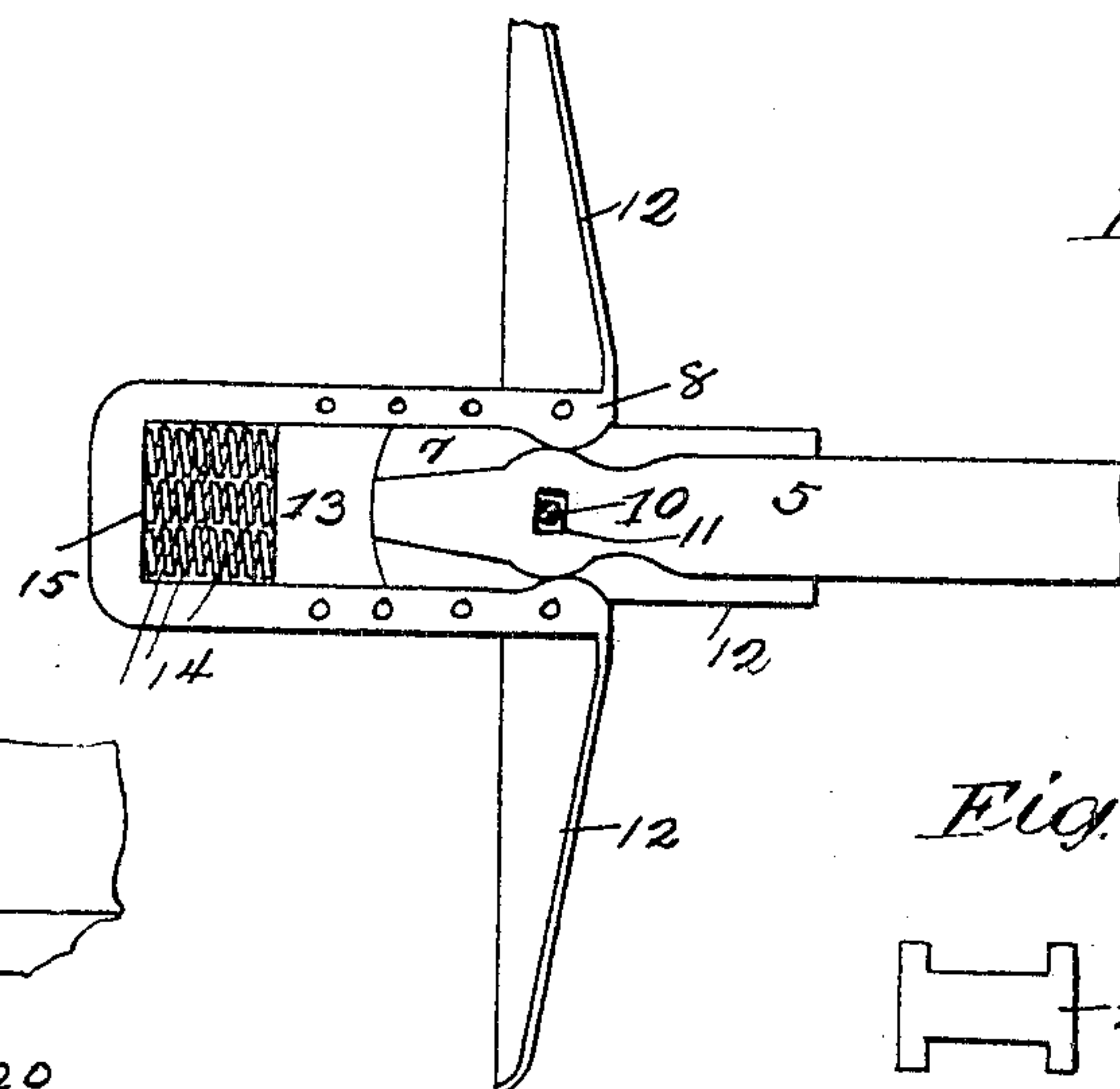


Fig. 3

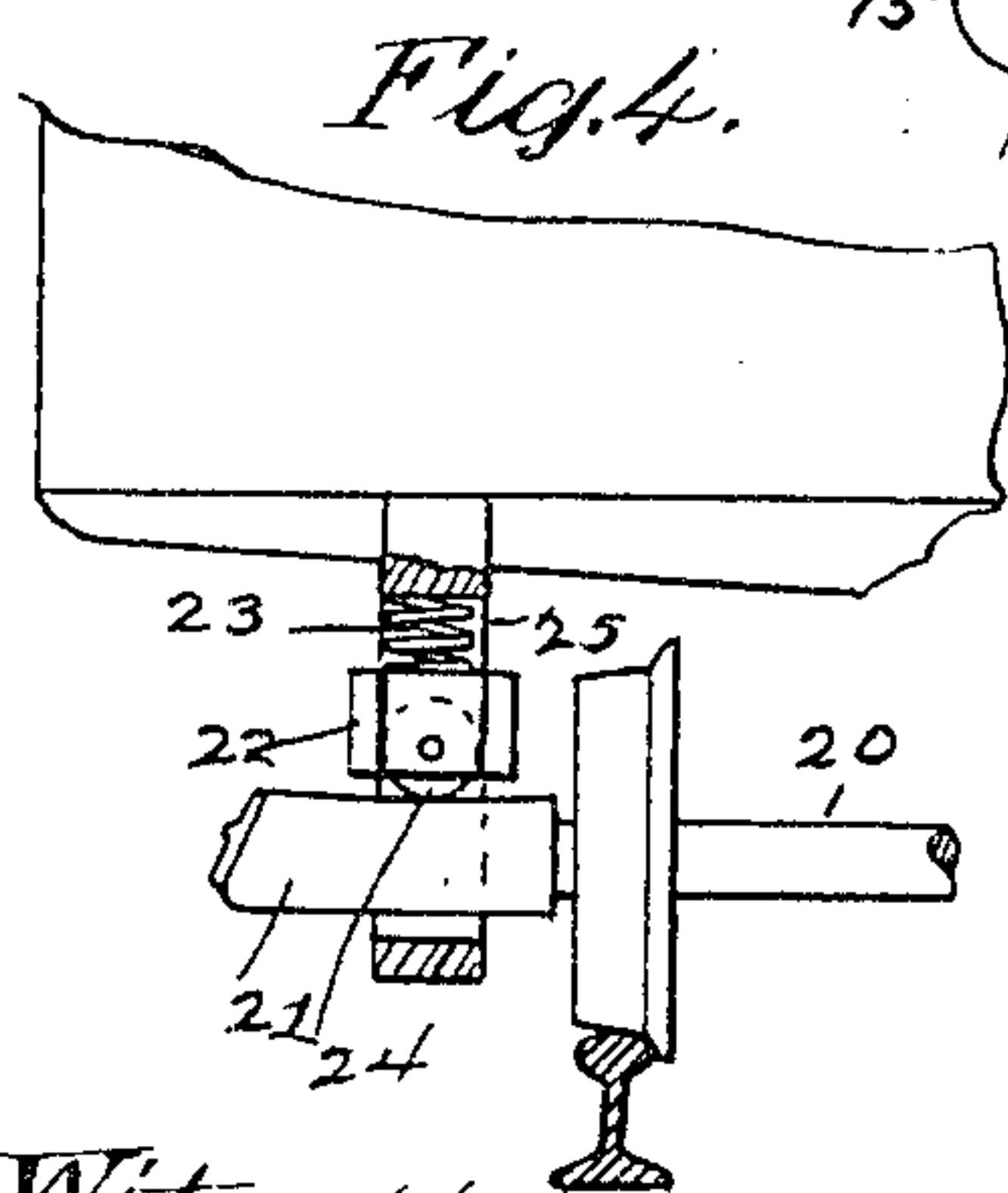


Fig. 4.

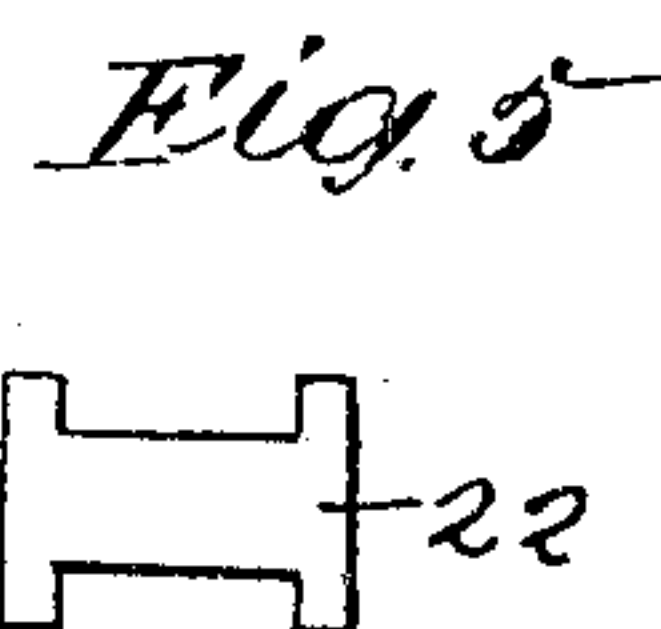


Fig. 5

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RAILWAY-CAR.

No. 798,629.

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed March 11, 1905. Serial No. 249,512.

To all whom it may concern:

Be it known that I, EDWARD J. SATTLER, a citizen of the United States, and a resident of Mineral City, county of Tuscarawas, State of Ohio, have invented certain new and useful Improvements in Railway-Cars, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to improvements in the means for attachment and support of railway-cars, particularly those for passenger service; and its objects are, first, to provide an increased length of wheel-base, whereby the comfort and ease of riding is greatly increased; second, to form a "solid" or unyielding train of cars and a form of coupling whereby the loose motion and subsequent jar in starting and stopping the several cars will be largely eliminated; third, to insure a common level for the adjacent extremities of the car-floors under all variations in track-level, whereby the dangers of telescoping or raising of one floor above another is prevented, as well as irregular alinement of cars; fourth, to prevent the separation and irregular movement of the several cars, and thus insure a uniform rate of speed thereof; fifth, to lessen the combined weight of the trucks upon the rails while preserving the actual weight and relative immobility of each truck; sixth, to reduce the platform space required to the minimum. To obtain these results, I employ a single truck having a broad wheel-base for each car and pivot the truck at the extreme rear extremity of the car. In connection with the truck I employ a rigid supporting instrumentality for the front end of the adjacent car in the train and in connection therewith the various means for coupling the cars together and for preventing irregular motion thereof and for temporarily supporting the unsupported front end of the car when the car is detached from its neighbor, as herein-after described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the front end of one car and the rear end of another, showing the position of the main and auxiliary trucks and other details in dotted lines. Fig. 2 is a plan view of coupling device. Fig. 3 is a longitu-

dinal section thereof. Fig. 4 is a transverse section showing the construction of one of the auxiliary trucks. Fig. 5 is a plan view of bearing-block for auxiliary truck.

In the views, 1 is the front end of a car; 2, the rear end of the adjacent car; 3, a six-wheel truck having a pivotal bearing at 4 upon the extreme rear end of one car. It will be seen from the drawings that this truck is the only one of that character secured to the car and that the front end of this car is supported upon the projecting bar 5, which is rigidly attached to the adjacent car in front, the rear end of which is mounted upon a similar truck 3. The rear platform 6 of one car is brought into close proximity to the adjacent car and the pivotal point of support of the truck is brought as near to the meeting lower edges of the cars as is possible. The heavy bar 5, upon which the front end of the rear car is supported, is inserted into the opening 7 in a solid bolster 8, and the heavy plate 9 secured upon it covers the opening. The bar 5 serves also as a coupling or draw-bar, and a coupling-pin 10 is passed through an opening 11 therein and through the heavy bolster. This bolster is extended at 12 on either side to cover the exposed edge of the car. The opening 11 for the coupling-pin is somewhat elongated, and the pin and the edge of the opening are maintained in close engagement by means of a sliding block 13, which abuts against the outer end of the bar 5 and is pressed by the heavy springs 14, which engage the abutment 15 in the end of the casing. These springs prevent gaining or losing speed in the individual car, as when the track is uneven and the cars would have a tendency to gain or lose in speed and separate one from another, or in starting or stopping the train, when if the cars are not tightly engaging one another they will be taken up one after another with a disagreeable jolt which gradually increases toward the latter end of the train. Putting on the brakes will also have the result of tipping a truck, and the gain of the car will cause a jolt as it afterward settles to place. To give freedom of movement to the cars upon curves, the engaging surface of the holding-block 13 is curved in an arc, so that the end of the bar can move freely over it, and a circular shape is given the sides of the bar about the opening for the coupling-pin, so that it can move freely in the narrow neck

of the opening. The main casting 8, which serves also as the rear bolster, is provided with a downwardly-extending tongue 16, upon which the coupling-bar readily slides into the mouth of the opening when the cars are brought together. The main casting or bolster, the side extensions, and the tongue and portion containing the sliding block and springs are all in one piece. The draw-bar is also curved upwardly at the end to facilitate its entrance into this opening and curved on the bottom, so as to permit a slight roll where one track is higher than the other. By this form of construction the floors of the adjoining cars are always level and one cannot rise above the other or the cars get out of alinement. Only one pair of steps and only one platform will be necessary for each car, since the cars can run only in one direction and since the end of the car which is provided with platform and steps always joins the end of the car having no such provision. When the cars are separated, a temporary support is required for the front end of each car, so that it can be switched and moved independently of the train.

In Fig. 4 a sectional view of the axle-bearing for this single-wheel truck is seen. Here 20 is the axle, 21 the axle-box, 22 a vertically-movable bearing-block, and 23 represents springs which relieve the pressure. A roller 24 is pivoted in the block 22 and rests upon the longitudinally-curved surface of the box 21, the effect of which is to give some freedom of movement to the car in a lateral direction upon curves; but the weight will always bring the rollers to the center again. This is a valuable consideration, since the single truck is not pivoted and the heavy vertical guards 25 are not capable of motion. It is of course obvious that this special construction can be dispensed with on the front car next to the engine, if desired, and so avoid change of engine or tender couplings.

It will be seen in Fig. 1 that one of the truck-springs is shown in section and the spring is double, the inner one, 26, being shorter than the outer one, 27. This arrangement is to afford increased resistance when the cars are joined together, the pressure being then received upon both springs.

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

1. The combination with adjoining railway-cars, of a broad-based truck, pivoted underneath the rear extremity of one car, and a heavy longitudinally-projecting bar secured rigidly on the front end of the adjoining car, the said bar resting upon said rear extremity of the forward car, and adapted to support the end of the car to which it is attached.

2. The combination with adjoining railway-cars, of a broad-based truck pivoted

underneath the rear extremity of one car, and a heavy longitudinally-projecting bar secured rigidly on the front end of the adjoining car, the said bar resting upon said rear extremity of the forward car, and adapted to support the end of the car to which it is attached, and a device for coupling said bar with the adjoining car—substantially as described.

3. The combination with a railway-car, of a bolster at one extremity thereof, having a solid portion, a broad-based truck pivoted in said solid portion of the bolster, a longitudinal opening in said solid portion, a projecting tongue underneath said opening, a longitudinally-sliding spring-pressed block in said opening, and a solid cover for said opening, substantially as described.

4. The combination with two adjoining railway-cars, of a bolster at the rear end of one car provided with an opening in the rear, a truck pivoted underneath said bolster, and means for supporting the adjacent end of the adjoining car comprising a draw-bar rigidly secured to the front end of said adjoining car, and projecting into the said opening in the said bolster above said truck, substantially as described.

5. The combination with the front extremity of a railway-car, and rear extremity of the adjoining car, of a bolster upon the rear end of the forward car, a truck pivoted thereunder, the said bolster being provided with an opening in the rear, closed upon the upper side, a heavy bar rigidly secured to the front of the rear car, in line with said opening in the bolster and adapted to extend therein and means for pivotally securing said bar to said bolster, substantially as described.

6. The combination with adjoining railway-cars, of a bolster for each car at the rear extremity thereof, a truck under each bolster, a covered opening in each of said bolsters, a fixed bar on the front end of each car adapted to enter said opening, a coupling-pin passing through each bolster and bar entering therein, and a sliding block in each of said openings and tension-springs therefor, the end of each of said bars abutting against one of said blocks, substantially as described.

7. The combination with a railway-car, and a rear truck therefor, of means for supporting the front end thereof, comprising an adjoining car in front of said railway-car, a bolster on the rear end of said car provided with an opening, and a draw-bar rigidly secured to the front of said first-mentioned car and adapted for insertion in said opening and support upon said bolster, substantially as described.

8. In a train of railway-cars, a rear bolster for each car, a rear truck thereunder, a projecting draw-bar rigidly secured to the front end of each car, arranged to rest upon the

bolster of the car next ahead, and a coupling device for each draw-bar with the next preceding car, substantially as described.

9. In a railway-car, a rear bolster and broad-based truck, a rigid draw-bar projecting from the front of the car, and an auxiliary narrow-based truck for temporary support of the front end of the car, substantially as described.

10. The combination with a railway-car of means for supporting the front end of the car upon the rear end of the next preceding car, consisting of a bar rigidly secured to the front of the one car and adapted to rest upon the rear end of the preceding car, a truck underneath the rear end of each car, and an auxiliary truck at the front end of the car adapted to temporarily support said front end when the said cars are detached.

11. An auxiliary car-support for the purpose described, consisting of, in combination, an axle and wheels, an elongated axle-box at each end of the axle, having a curved upper surface, a rigid boxing upon the car for each axle-box, having a vertical opening, spring-pressed block therein, and a roller in said block, engaging the curved surface of the said axle-box, substantially as described.

12. In a car-coupling device, a draw-bar rigidly secured to the front end of a car, a solid bolster upon the rear end of the next preceding car, provided with an opening in its rear, a projecting tongue upon the bolster underneath said opening provided with an upwardly-sloping upper surface, a sliding block in said opening provided with an inwardly-curved outer end, springs between said block and the forward end of said opening, and a coupling-pin, passing through open-

ings in said bolster, and rigid bar, substantially as described.

13. The combination with a bolster secured to the rear end of a car, of a truck pivoted thereto, a rear car provided with a projecting tongue inserted in said bolster for the support of said rear car—and double-truck springs in said truck, one set of such springs being shorter than the other set, substantially as and for the purpose set forth.

14. The combination with adjacent railway-cars, of a truck underneath the end of one car, and a heavy projecting bar at the adjacent end of the adjoining car, the said bar adapted to extend underneath the ends of both cars, and support one of them, substantially as described.

15. The combination with adjacent railway-cars, of a truck underneath the end of one car, a heavy projecting bar underneath the end of the adjacent car, and adapted to support the same, and an auxiliary truck underneath the end of the car carrying the bar, said auxiliary truck being adapted for use, when the cars are disconnected, substantially as described.

16. The combination with a railway-car, of means for supporting one end, consisting of a heavy truck thereunder and means for supporting the car at the other end, consisting of an auxiliary truck, and a projecting bar, adapted to engage with the end of the adjacent car, substantially as described.

In testimony whereof I hereunto set my hand this 3d day of February, 1905.

EDWARD J. SATTLER.

Witnesses:

WM. M. MONROE,
E. T. HALL.