(No Model.) 2 Sheets—Sheet 1.

F. W. DUNTON.

RAILWAY CAR.

No. 562,290. Patented June 16, 1896.

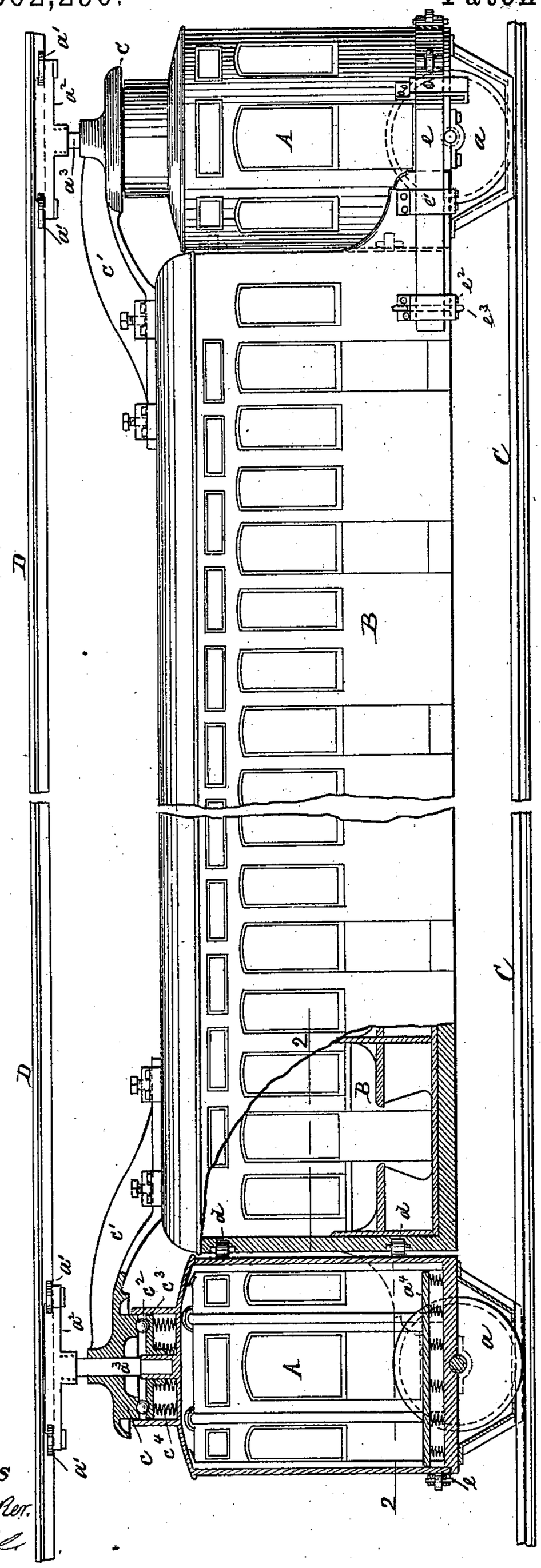

FIG. 1.

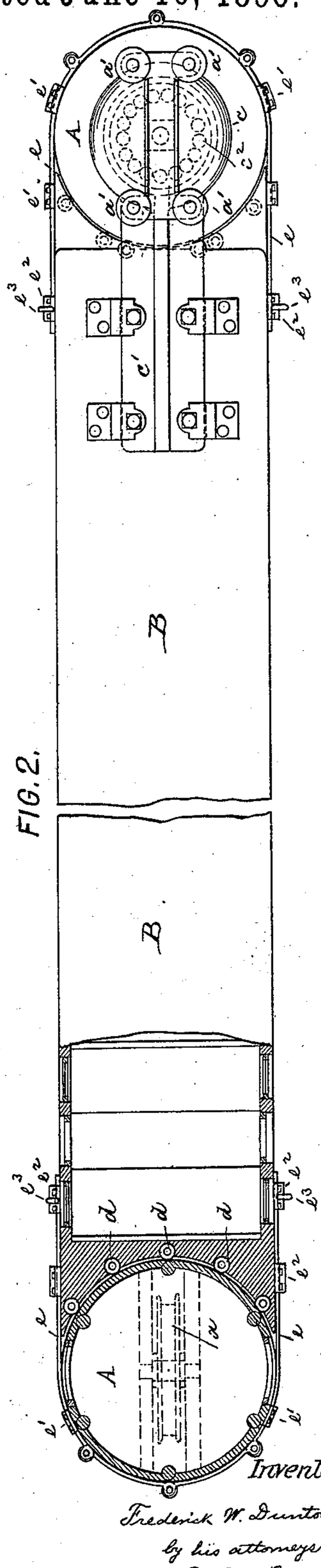

FIG. 2.

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(No Model.) 2 Sheets—Sheet 2.

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RAILWAY CAR.

No. 562,290. Patented June 16, 1896.

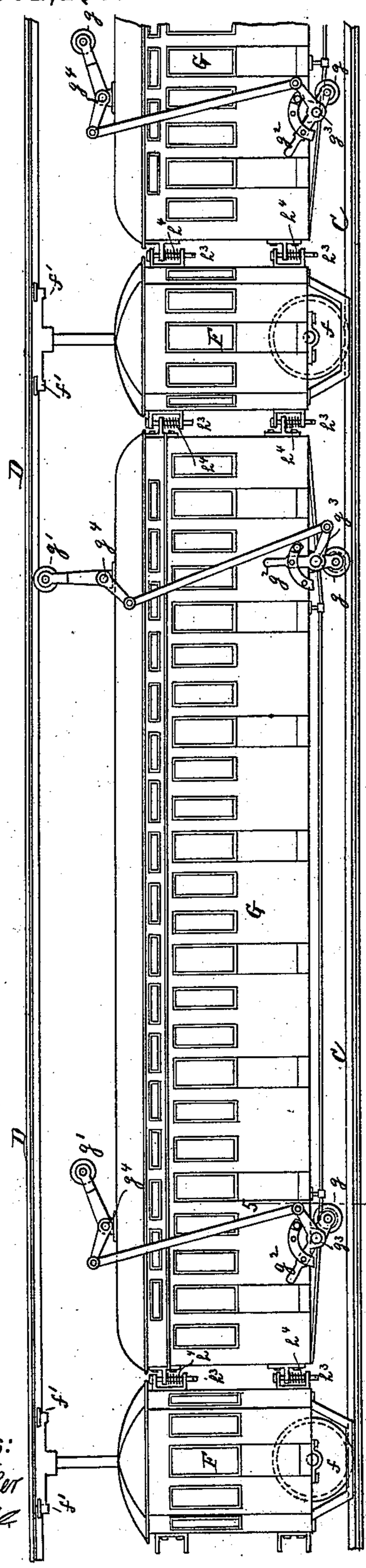

FIG. 3.

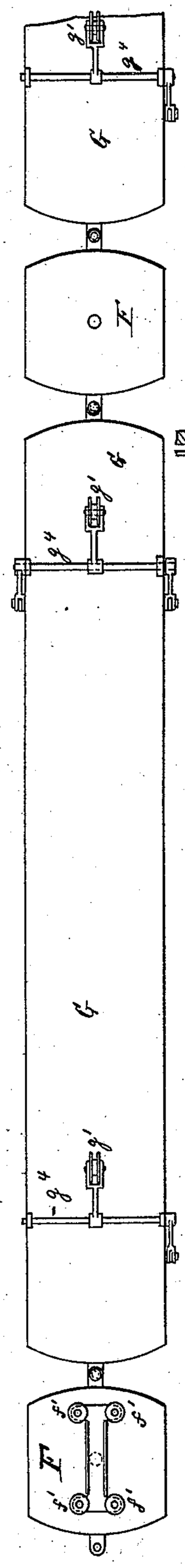

FIG. 4.

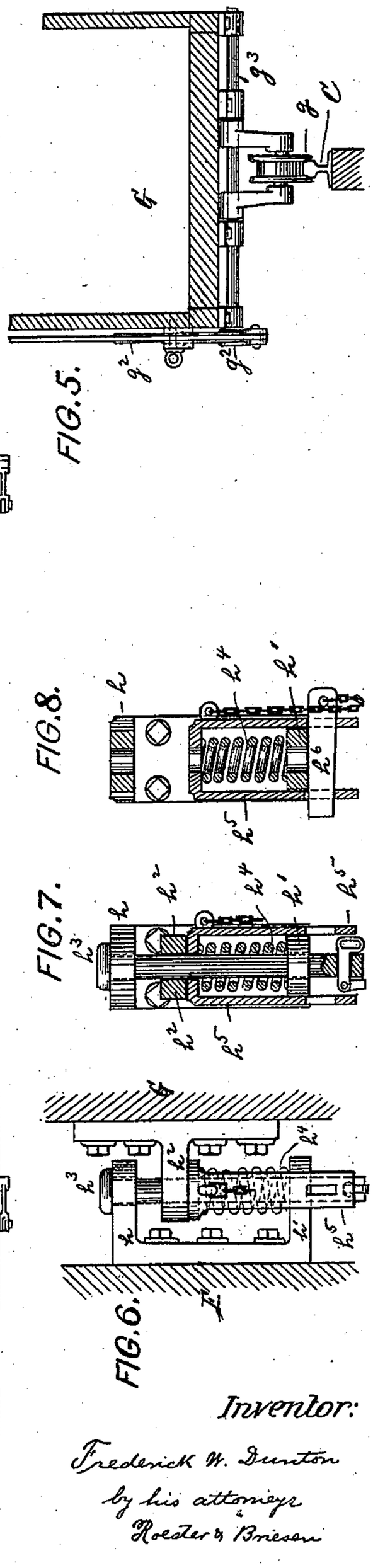

FIG. 5.

FIG. 8.

FIG. 7.

FIG. 6.

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UNITED STATES PATENT OFFICE.

FREDERICK W. DUNTON, OF HOLLIS, NEW YORK, ASSIGNOR TO EMILY M. DUNTON, OF SAME PLACE.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 562,290, dated June 16, 1896.

Application filed October 21, 1895. Serial No. 566,301. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. DUNTON, of Hollis, Queens county, New York, have invented an Improved Railway-Car, of which the following is a specification.

This invention relates to a railway-car adapted for use on that class of railways in which the rolling-stock is supported and sustained upon a single lower rail by means of a single overhead rail.

The rolling-stock is provided with lower traction-wheels engaging the lower rail, and with upper guide wheels or rollers engaging the upper rail. With this class of railways it is of course necessary that the distance between these lower and upper wheels remains constant, so that derailment at the upper rail by jolting or spring action cannot take place. It is also necessary that the body of the car be spring-hung and that it has a free movement in response to the action of the springs. To combine these two necessary factors, complicated cars have been constructed in which a rigid frame engaging the rails was surrounded by a car-body yieldingly supported upon such frame. I propose to obtain the result desired, in an entirely different and very practical manner, by dividing the car into two separate or distinct sections, of which one section is designed solely as a means for supporting or propelling the car, while the other section is designed solely for the accommodation of the passengers.

The first section, which I term a "cab," is entirely rigid from top to bottom and is provided with the lower traction-wheel and the upper guide-wheels to engage the bottom and top rails.

The second section or car-body proper is connected at each end by a spring-coupling to one of the cabs, so that the car-body itself need not have any traction or guide wheels whatever, but is suspended between the cabs. Thus it will be seen that while the car-body is spring-hung and is not encumbered by any interior rigid supporting-frames, the cabs are in positive engagement with the rails, and cannot become derailed by a jolting or other motion.

Additional advantages possessed by my car are, among others, simplicity of construction, durability, roominess, accessibility to motor and faculty of freely taking the curves of the road.

The accompanying drawings show two embodiments of my invention.

Figure 1 is an elevation, partly in section, of one embodiment of my invention. Fig. 2 is a plan thereof, partly in section, on line 2 2, Fig. 1; Fig. 3, an elevation of the second embodiment of my invention; Fig. 4, a plan of Fig. 3; Fig. 5, an enlarged cross-section through the lower part of the car, on line 5 5, Fig. 3; Fig. 6, a detail elevation of the spring-coupling; Fig. 7, a section thereof, showing the bolt inserted; and Fig. 8, a similar section with the bolt withdrawn.

In Figs. 1 and 2 the letters A A represent the two cabs of my improved railway-car, and B is the car-body yieldingly suspended from such cabs.

Each cab A is provided with a lower traction-wheel a, adapted to engage the single lower rail C, and a set of upper wheels or rollers a', adapted to engage the single overhead rail D. The entire body of the cab A, from the journals of its lower wheel a to the journals of its upper wheels a', is entirely rigid, so that the distance between such wheels is constant, and a derailment owing to a jolting or spring motion cannot take place. The upper wheels a' are journaled, preferably, to the front and rear end of a horizontal arm a^2, supported by a bolt or bar a^3, that extends upwardly from the cab-roof.

Within the cab itself any suitable electric or other motor may be placed, and to protect the motorman against the jolting motion the cab may be provided with a false spring-floor a^4. Of course only some of the cabs in a train contain a motor, while the other cabs are idle and serve merely to support the car. Thus in a train the first cab and such others as may be necessary are motors, while the other cabs are idlers.

To suspend the car-body B between the cabs, various forms of couplings will readily suggest themselves.

I have shown in Figs. 1 and 2 one cab to be attached to each end of the car-body, so that when all the parts are properly coupled a complete and operative car is obtained.

The coupling is shown to consist of a horizontal disk or fifth-wheel c, turning freely on

the shaft a^3, and connected to the car-body B by means of an arm c', attached to the roof of the car-body. The fifth-wheel in turn is supported revolubly by ball-bearings c^2 upon a yielding base-plate c^3, which is supported upon the roof of the cab A by springs c^4. Thus it will be seen that the car-body is connected to the cabs as by a king-bolt, and that the car being thus jointed can readily round the curves of the road, though the usual trucks are entirely dispensed with.

The ends of the car-body B may be made concave, as shown, to partly embrace the cabs, while friction-rolls d, interposed between car-body and cab, permit a free rotation of the latter. At its lower end the cab may be connected to the car-body in suitable manner, such as by a band or strap e, embracing the cab and attached at its ends to the car-body. This strap is supported by suitable staples e' e^2 on the cab and car-body, and its ends are locked to the staples e^2 by means of coupling-pins e^3.

It will be seen that the entire car-body B may be devoted to the accommodation and comfort of the passengers, and that it need not be encumbered by any mechanism designed to support or sustain it. Thus the car-body may be lightly constructed, and though it may be built comparatively narrow it will hold its full complement of passengers. Furthermore, as there are no trucks under the car-floor the car will run easy and will have a free action in response to the play of its springs. The doors of the car-body should preferably open toward the sides, as the use of the end platforms is evidently not feasible.

In the construction illustrated in Figs. 3 to 8 the principle of the invention is maintained; but the construction is so modified that a single cab supports the adjoining ends of two car-bodies. The cabs F possess the characteristics of the cabs A, that is to say, they have the lower and upper wheels $f f'$, adapted to engage the rails C D, and they are entirely rigid from top to bottom, so that the distance between such wheels remains constant and a derailment cannot take place. At the front and rear, each cab is adapted to be attached by a suitable coupling to the end of one of the car-bodies G, so that in this way each car-body is suspended from two of the cabs. In order to render the car-bodies self-sustaining when disconnected from the cabs, I provide them with lower and upper wheels $g g'$, adapted to be thrown into simultaneous engagement with the rails C D. With the example shown, the wheels g g' are manipulated by a hand-lever g^2, that controls the rock-shafts g^3 g^4, to which such wheels are connected; but it is evident that this construction may be readily modified.

When the car-bodies are made up into a train or when they are put out of commission, the wheels g g' are thrown outward to engage the rails C D; but after the car-bodies are coupled to their cabs F the wheels g g' are thrown inward and their function has ceased as long as the train is in commission. The wheels g g' therefore facilitate the coupling of the car-bodies to the cabs and the storage of the car-bodies in the yards.

The coupling between car-bodies and cabs should be such that the car-bodies have a free spring action at their points of support. I have shown the coupling to be composed of a pair of perforated lugs h h', projecting from the cab, and a single intermediate lug h^2, projecting from the car-body. A coupling-pin h^3, passing through the lugs and through a coiled spring h^4, interposed between the lugs h^2 h', properly connects the parts.

It is clear that it is desirable for the spring h^4 to remain compressed when the car-body is uncoupled from its cabs, for otherwise the spring would have to be separately compressed before the parts could be recoupled. To effect this result, I surround the spring by a yoke h^5, that plays up and down with the spring and projects beneath the bottom lug h'. The shanks of the yoke are perforated beneath the lug h' and are thus adapted for the reception of a pin or key h^6. Before the car-body is uncoupled from its cab the key h^6 is introduced, Fig. 8, to hold the spring in its compressed position as long as the cab thus remains uncoupled. As soon, however, as the cab has again been coupled to its car-body, the key h^6 is withdrawn, when the spring is liberated and thus again constitutes a yielding support for the car-body.

It will be seen that in both embodiments of my invention a pair of rigid cabs sustain a spring-actuated car-body between them. The entire car, considered as a whole, consists therefore of essentially three sections—viz., a rigid front cab, a rigid rear cab and an intermediate car-body, pivoted to and spring-supported by said cabs.

What I claim is—

1. The combination of a pair of rigid cabs having upper and lower wheels, with a car-body and with spring-couplings for yieldingly connecting the ends of the car-body to the cabs, substantially as specified.

2. The combination of a pair of cabs having lower traction-wheels, upper horizontal arms and upper guide-rollers pivoted to opposite ends of said arms, with a car-body and with spring-couplings for yieldingly connecting the car-body to the cabs, substantially as specified.

3. The combination of a pair of rigid cabs having upper and lower wheels, with a car-body adapted to be yieldingly connected to said cabs, and with wheels on said car-body adapted to be swung into or out of engagement with an upper and lower rail, substantially as specified.

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