

No. 859,493.

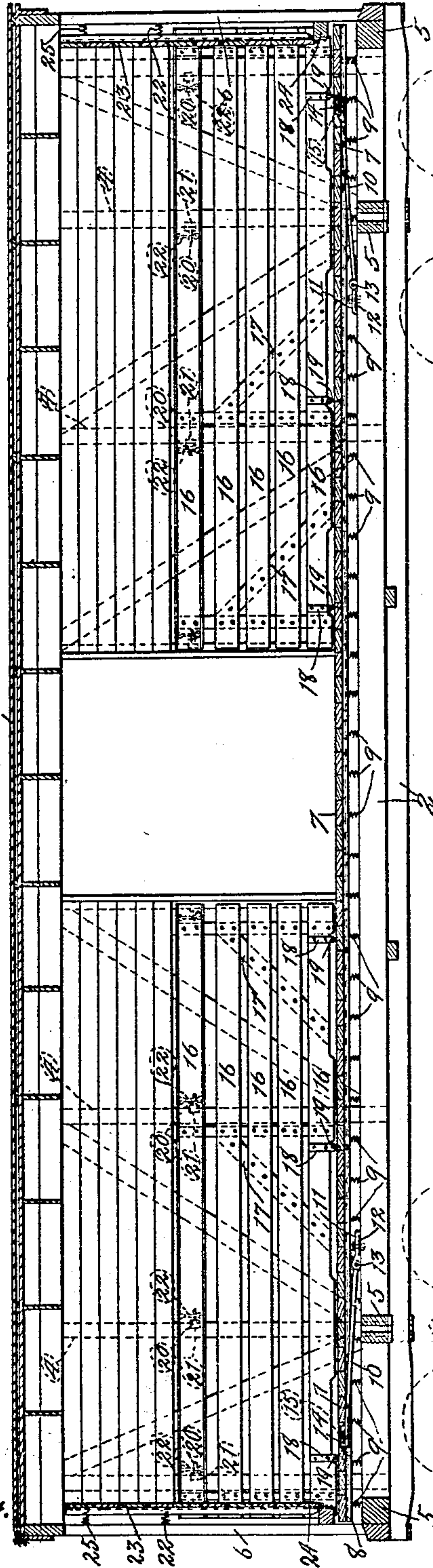
PATENTED JULY 9, 1907.

W. FORSYTH.
RAILWAY CAR.

APPLICATION FILED FEB. 18, 1907.

3 SHEETS—SHEET 1.

Fig. 1.

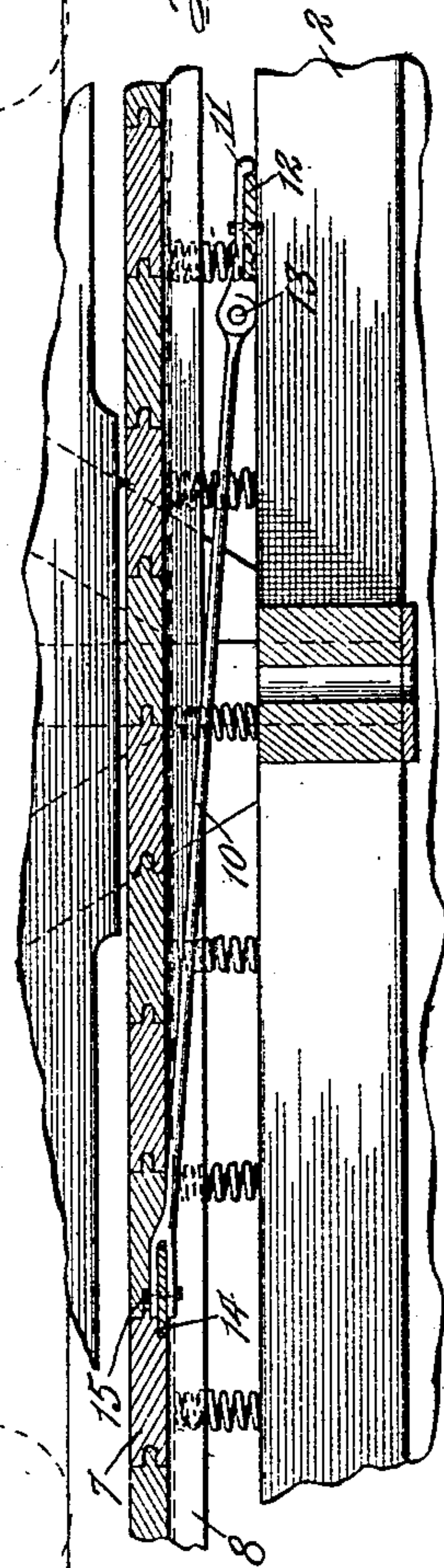


Witnesses:

Edw. Perry

John H. Nelson Jr.

Fig. 2.



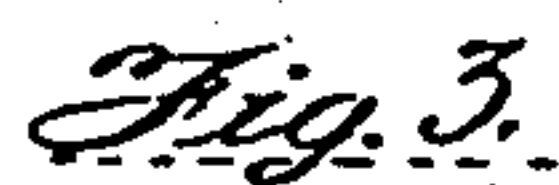
Inventor:

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PATENTED JULY 9, 1907.

3 SHEETS—SHEET 2.



Inventor:
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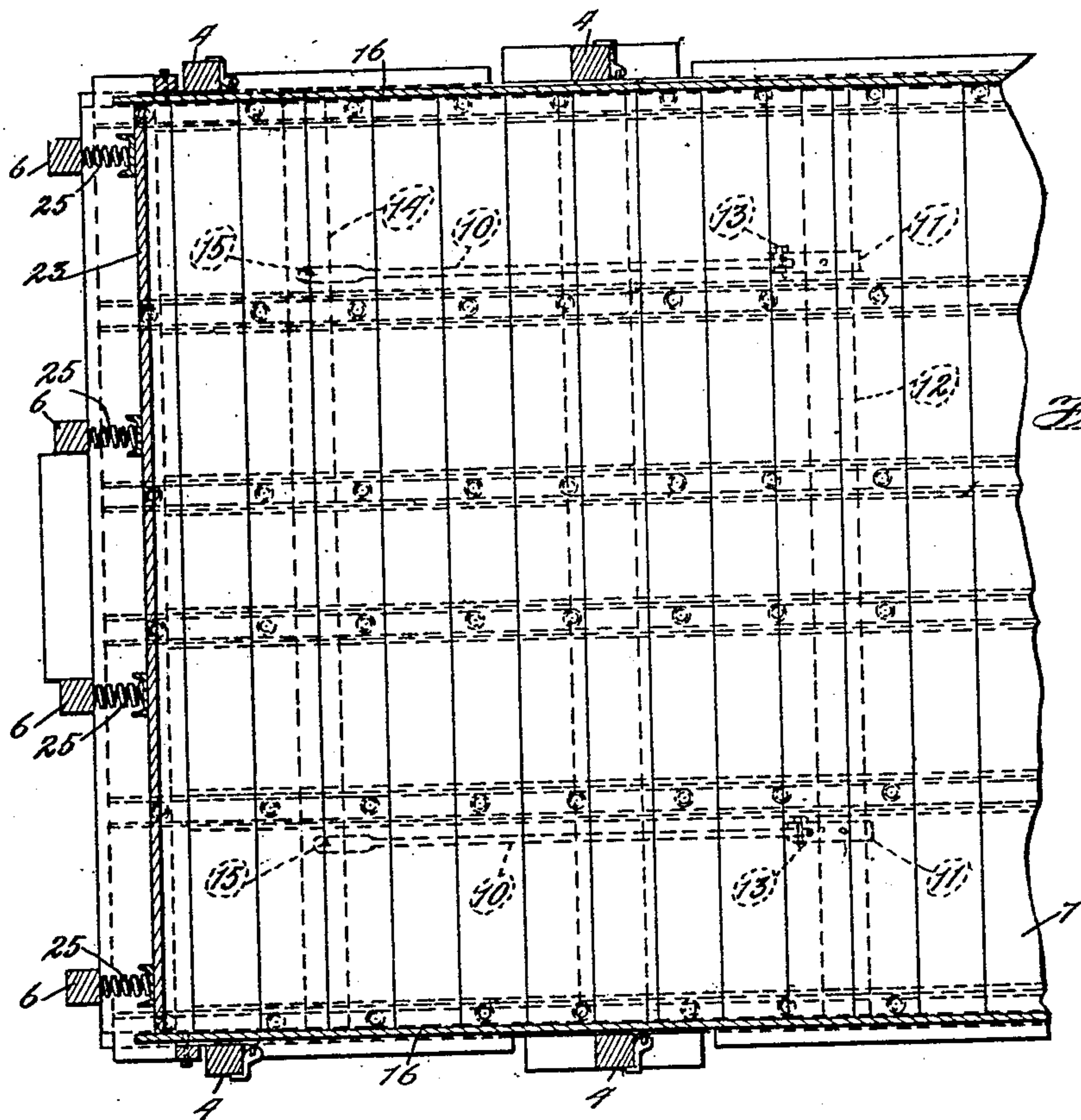


Fig. 6.

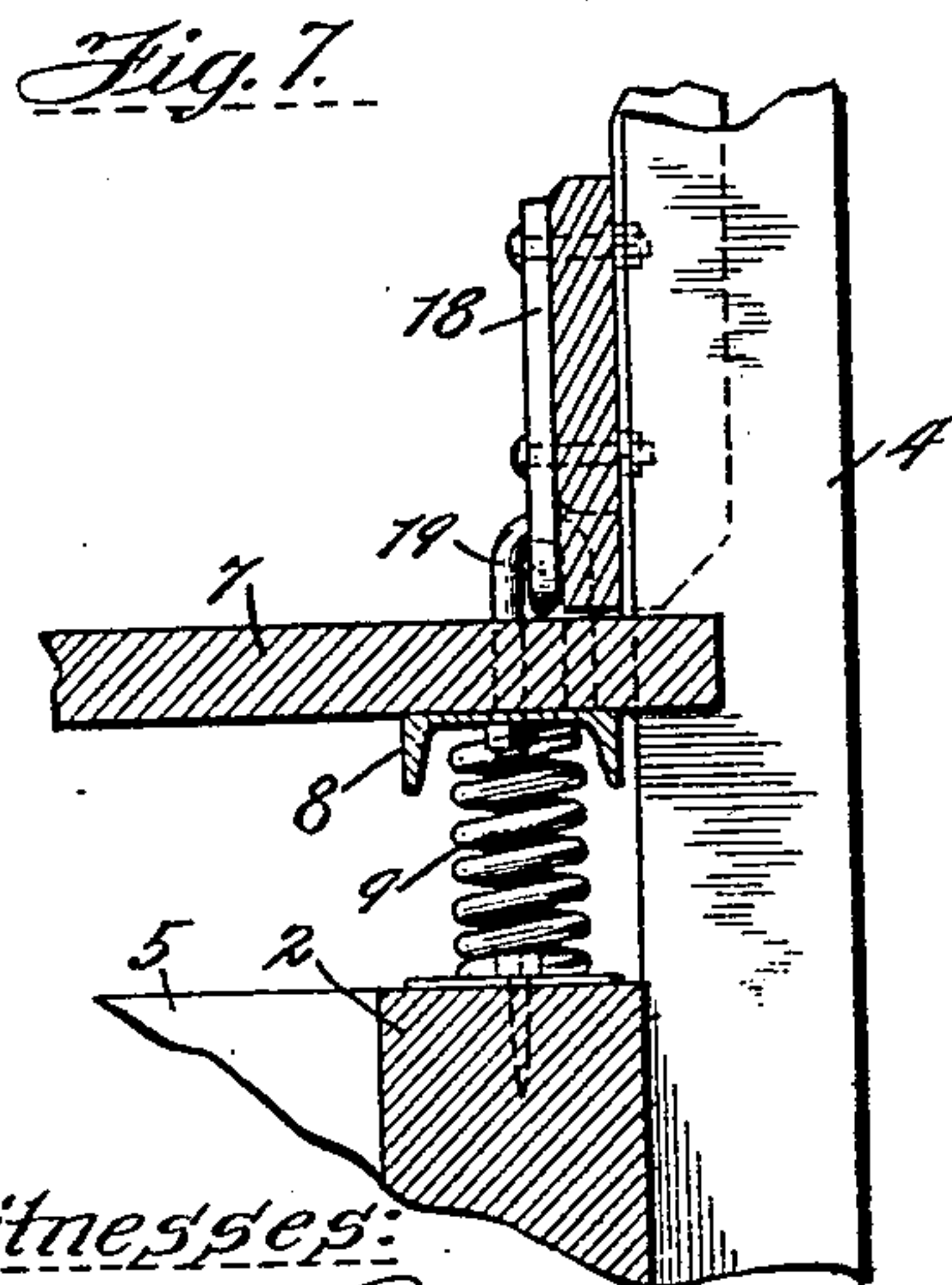


Fig. 7.

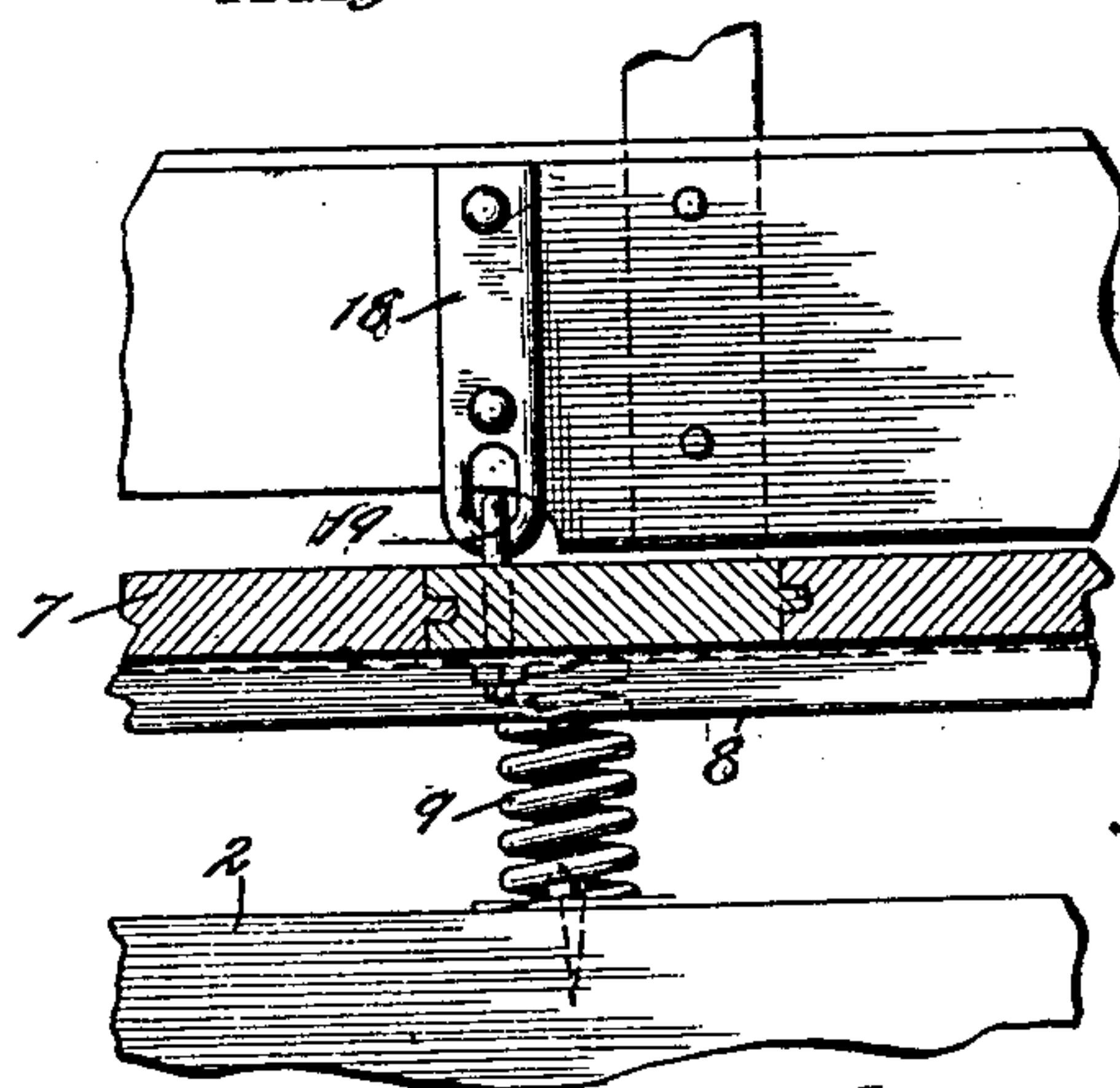


Fig. 8.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM FORSYTH, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO TRANS-CONTINENTAL CAR COMPANY, OF PHOENIX, ARIZONA TERRITORY, A CORPORATION OF ARIZONA TERRITORY.

RAILWAY-CAR.

No. 859,493.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 18, 1907. Serial No. 357,832.

To all whom it may concern:

Be it known that I, WILLIAM FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain
5 new and useful Improvement in Railway-Cars, of which the following is a specification.

My invention relates to improvements in railway cars more particularly those designed to transport stock.

10 The particular type of stock car to which this invention relates is the type wherein the floor is vertically yieldable to thereby relieve the stock of the greater portion of the jar incident to transportation. In this type of car it is desirable although not necessarily an
15 essential feature that the sides shall be vertically movable in unison with the car floor.

The objects of the invention are: 1st to provide an improved construction whereby the yieldable floor is prevented from horizontal displacement relatively to
20 the car body; 2nd to provide means for guiding the car-sides in their vertical movement and 3rd, to provide other details of construction hereinafter set forth.

I obtain my objects by the mechanism illustrated in the accompanying drawings in which:

25 Figure 1 is a longitudinal sectional elevation of a car embodying my invention. Fig. 2 is a fragmentary view in sectional elevation showing on a larger scale, the construction of the retaining rods. Fig. 3 is a transverse sectional elevation of the lower portion of the
30 car body. Figs. 4 and 5 are edge and face views respectively of the guiding means for the car-sides. Fig. 6 is a plan section of one end of the car indicating the disposition of the retaining rods. Figs. 7 and 8 are edge and face views respectively of the preferred man-
35 ner of connecting the movable car-sides to the yieldable floor.

Similar numerals refer to similar parts throughout the several views.

Upon the running gear 1 which may be of any suitable construction are mounted sills 2 which run
40 lengthwise of the car and constitute an integral part of the car body as in the ordinary construction. Under ordinary circumstances in a car designed for the transportation of stock, a car roof 3 is supported by
45 means of suitable uprights 4 located at the sides of the car and rigidly connected to the sills 2 in any suitable manner. In the particular design of car here shown, the end sills 5 extend across the end of the car and carry
50 the end uprights 6. The flooring 7 of the car is yield- ingly supported, and in the preferred manner of mounting it said flooring is secured to a number of channel bars 8, one of which is located directly over each one of the sills 2. Between each channel bar and its re-

spective sill is interposed a number of springs 9. These springs by preference are helical springs arranged in
55 upright position, the number of springs depending upon their size and stiffness and the load which the car is expected to carry. By arranging the flanges of the channel bars as shown said flanges serve to retain the upper end of the springs in proper position. I do not
60 wish to be understood however as limiting my claims to the use of helical springs nor to the use of channel bars for supporting the flooring upon said springs. Any other construction wherein the floor is yieldingly supported upon the car body will lie within the spirit
65 of my invention, broadly considered.

In order to prevent the floor from becoming displaced during the sudden starting and stopping of the car, I provide means for anchoring the floor in such a manner that its vertical movement will not be inter-
70 fered with. For this purpose I employ rods 10 which may be round or flat or of any other desired cross section. Each rod is secured at one end to some portion of the car body and at the other end to some portion of the vertically movable floor; and in order that the said rods
75 shall not prevent the free vertical movement of the floor they are arranged in approximately horizontal position as best shown in Figs. 1 and 3. In the preferred construction each rod is connected to the car body by means of a plate 11 mounted upon a cross beam 12
80 extending crosswise of the car and fastened to the top of the sills 2. In order to permit free movement of the rod relatively to the car body it is desirable that the rod should be pivoted to the plate as best shown at 13 Fig. 2. Any other suitable attaching means
85 may however be substituted for the plate 11 and beam 12 just described.

The preferred construction for securing the anchor rods 10 to the flooring is best shown in Fig. 2. Here the upper extremity of the rod is forked so as to receive
90 the beam 14. It is desirable that beams 14 should extend across the car in order to knit the structure together. The rods 10 are secured to said beam by means of bolts 15 or other suitable device. It will be understood that the vertical movement of the car floor is
95 comparatively slight under actual operative conditions and it is therefore unnecessary to provide a completely articulate construction at both ends of the anchor rods 10. Under certain circumstances however an articu-
100 late connection such as that shown at 13, Fig. 2, may be employed at the upper as well as the lower end of said rod.

It will be noted that the anchor rods 10 in this the preferred form of my invention extend in opposite
105 directions from the point of attachment to the car body. As a result if the floor tends to move in one

direction it will put one set of rods under tension and if it tends to move in the opposite direction it will put the other set of rods under tension, consequently the major portion of the strain comes upon rods which are in tension. For this reason the rods may be much smaller in diameter than if they were depended upon to act under compression.

It is desirable that the sides of the car, or at least the lower portion thereof, should move vertically in unison with the floor. With this end in view the car-sides in the present design consists of horizontal slats 16 secured together by means of braces 17, and fastened to the floor by means of straps 18 apertured at their lower extremities to receive the U bolts 19, as best shown in Figs. 7 and 8. The manner of constructing the sides however is not an essential characteristic and the same is true of the manner of fastening the sides to the vertically movable floor.

My improved means for holding the sides in upright position and at the same time admitting vertical play is shown in detail in Figs. 4 and 5. These guiding means consist of an eye 20 secured to the fixed uprights 4 by means of the plate 21 to which said eye is connected. A rod 22, rigidly connected to the uppermost slat 16, is arranged in upright position and passes through said eye. I am aware however that the same purpose may be accomplished by attaching the eyes 20 to the car-side and attaching the rod 22 to the uprights 4.

It is desirable that the ends 23 of the car should be yieldable in a direction lengthwise of the car. For this purpose said ends may be hinged to a horizontal beam 24 of the car and springs 25 may be interposed between said ends and the end uprights 6. A similar construction for the end of the car is, however, already known in the art.

What I claim as new and desire to secure by Letters Patent, is:

1. A railway car having a vertically yieldable floor and a plurality of rods connected to said floor and to the car body for preventing longitudinal displacement of said floor, said rods being distributed at different points across the car for preventing rotary movement of said floor within the car.

2. A railway car having a vertically yieldable floor and a plurality of rods articulately connected at one end to the car body and at the other end to said floor, said rods extending in opposite directions from their point of attach-

ment to the car body whereby one or the other of said rods is subjected to tension in preventing the displacement of said floor.

3. In combination, a car body, a car floor, springs for yieldingly supporting said floor on said car body and rods beneath said floor connected at one end to said car body and at the other end to said floor, said rods lying approximately horizontally whereby the displacement of the car on the floor and the vertical movement of said floor is permitted and said rods extending in opposite directions from the point of attachment to the car body whereby the restraint of the car floor against horizontal displacement is effected through the agency of rods under tension.

4. In combination, a car body, a car floor, springs for yieldingly supporting said floor on said car body and rods beneath said floor connected at one end to the car body and at the other end to said floor, said rods lying approximately horizontally and there being one set of rods extending from the car body to the car floor in one direction and another set in the opposite direction and the rods of each set being distributed transversely to the car for the purpose described.

5. In a railway car, the combination with the running gear of a car body mounted thereon and including sills running longitudinally of the car, a car floor yieldingly mounted upon said sills, rods pivotally attached to said sills, said rods lying approximately horizontally, and having forked extremities, and a plate running crosswise of the car and attached to said flooring, the forked extremities of said rods being secured to said plate substantially as described.

6. In a railway car, the combination of a car body including fixed uprights, vertically movable sides adjacent to said uprights and means for guiding said sides in their vertical movement, said guiding means including an eye and a rod passing through it in a vertical direction, one part of said guiding means being secured to an upright and the other part of said guiding means being secured to the movable car-side adjacent to said upright.

7. In a railway car, the combination with the car body including fixed uprights, of a vertically yieldable floor, rods connected to said car body and said floor and arranged longitudinally of the car and approximately horizontally for permitting vertical and preventing longitudinal movement of said floor relatively to said car body, sides connected to said floor and movable vertically with it, and guiding means for guiding the upper portion of said car sides, said guiding means comprising vertically arranged rods, and eyes for guiding said rods, one part of said guiding means being attached to each of said uprights and the other part to said car-sides.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM FORSYTH.

Witnesses:

MARTIN CONNOR,
RANSOM E. WALKER.