

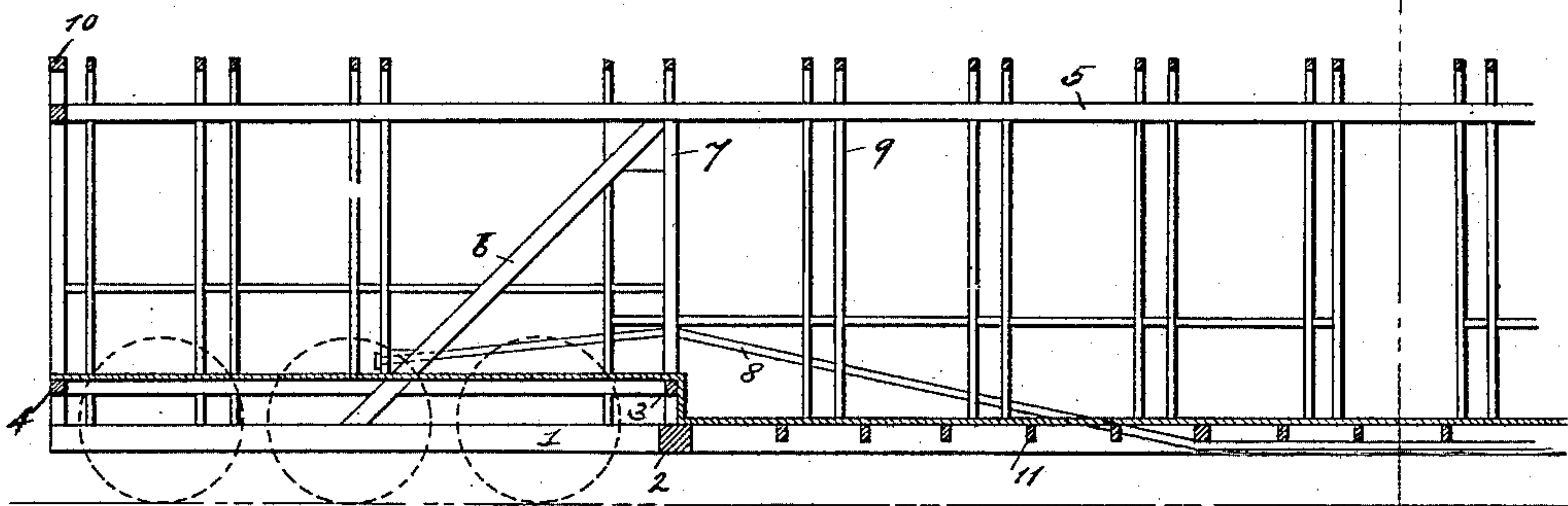
(No Model.)

D. L. BARNES.  
RAILWAY CAR BODY FRAME.

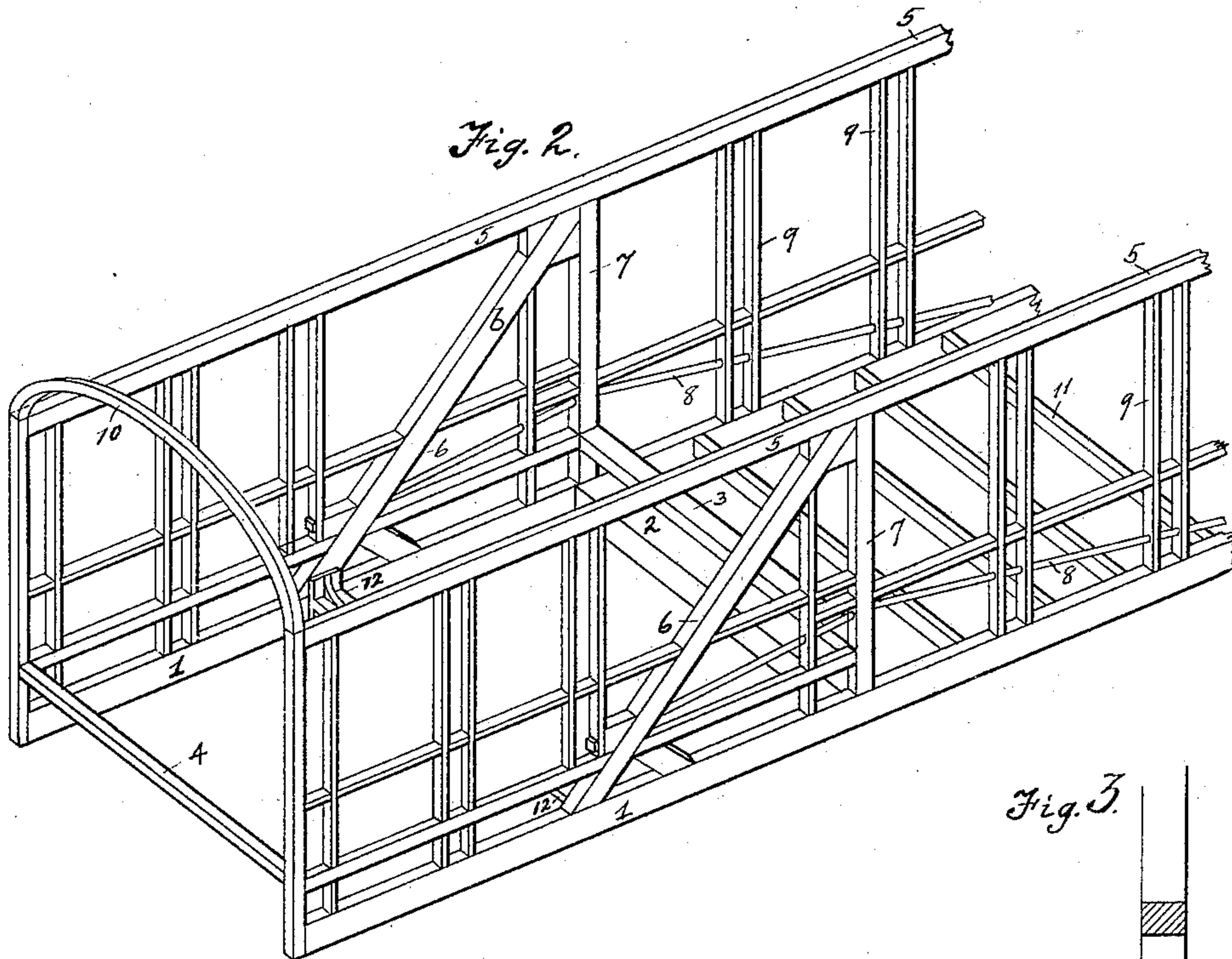
No. 418,151.

Patented Dec. 31, 1889.

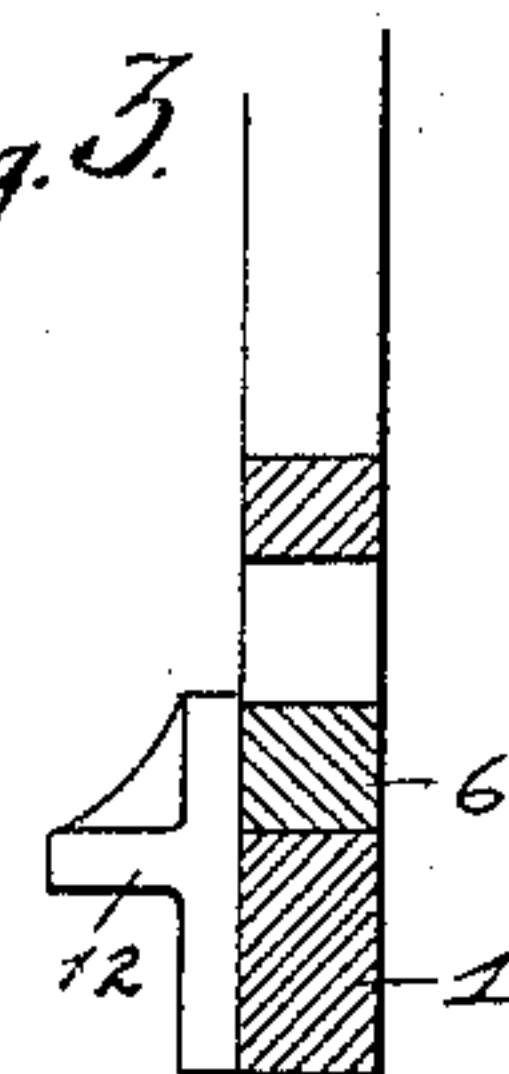
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## RAILWAY-CAR-BODY FRAME.

SPECIFICATION forming part of Letters Patent No. 418,151, dated December 31, 1889.

Application filed May 21, 1889. Serial No. 311,520. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID L. BARNES, a citizen of the United States, and a resident of Chicago, Illinois, have invented a new and useful Improvement in Railway-Car-Body Frames, of which the following is a specification.

My invention relates to railway-car-body frames; and it consists in the several combinations of parts hereinafter described, and pointed out in the claims.

The principal object of my invention is to construct a car-body frame which will permit the floor of the car to be placed as low as possible, even below the horizontal plane of the axles of the truck.

Another object of my invention is to construct a strong car-body frame provided with side and end doors and the usual number of windows, but without end platforms.

In the accompanying drawings, forming part of this specification, Figure 1 represents a longitudinal section of a car-body frame embodying my invention. Fig. 2 is a perspective view of one end of car-framing; and Fig. 3 is a detail view, being a section through side sill at side bearing.

The car-body framing herein described is adapted to be used in connection with my invention of car-truck, described in application Serial No. 304,033.

Referring to the drawings, the reference-numeral 1 indicates the side sills, and 2 the transverse or "end sill," (so called.) It will be noticed that this end sill is not at the extreme end of the car-frame, but is located where the change in height of floor occurs. The end sills are therefore located between the trucks, and all the buffing and pulling strains are received by said end sills through the medium of the draw-bars carried by the truck described in the application hereinbefore referred to. The strains are in turn transmitted to the side sills, and they receive all of the strains, there being no other longitudinal sills in the same horizontal plane. The location of the end sills, as described, also permits the trucks to be placed nearer to the ends of the car, thereby increasing the length of that part of the floor situated between trucks.

The numerals 3 and 4 represent the end-floor beams, and 11 the main-floor beams extending from side sill to side sill, and on which the main floor is supported. The roof-plates 5 and the diagonal braces 6 are firmly held together in proper relation to side sills 1 by means of window-posts 7, which are made exceptionally strong for that purpose.

In order to prevent the deflection of the side sills, I employ the truss-rods 8, placing them as shown in the drawings, and for the purpose of leaving the space below side sills clear I have placed said truss-rods above the side sills instead of below. If the truss-rods were attached to window-posts 7, the strength of said posts would have to be greatly increased in order to bear the transverse load put upon them; but to avoid this I have carried said transverse rods to the points shown in the drawings.

The reference-letter 9 represents window-posts, 10 the roof car-line, and 12 the side bearings, which latter support the car on the truck hereinbefore referred to. It will be seen that each side is practically a girder, supported at each end on said trucks by means of said bearings at the lower ends of the diagonal braces 6. The side sill forms the bottom cord or tension member, and the roof-plate 5 the compression member. It will also be noticed that in this construction there is no body-bolster, the car-body being wholly supported at the sides at bearings 12, and because of this it is possible to lower the floor of the car and bring it nearer to the truck.

In the construction of side framing herein described the parts are placed in the most advantageous positions, the minimum of material is used, and the several vital members of the girder are so arranged that doors can be placed in the sides of the car, together with the usual number of windows.

The location of the truss-rods permits that part of the floor between the trucks to be placed in a much lower position than could be done if said truss-rods were arranged below side sills; further, the main floor being supported by cross-beams obviates the necessity of trussing anything besides the side sills.

Having thus described my invention, what I

claim, and desire to secure by United States Letters Patent, is—

1. A passenger-car framing embracing in its construction side bearings located to rest  
5 on truck outside of truck-frame for supporting the car on the trucks, substantially as described.

2. A passenger-car framing embracing side sills and side bearings secured to the same and  
10 located to rest on truck outside of truck-frame for supporting the car on the trucks, substantially as described.

3. A passenger-car framing embracing in its construction side sills, roof-plates, diago-

nal braces connecting side sills to roof-plates, 15  
window-posts, truss-rods, transverse beams extending from side sill to side sill, and end sills constructed to receive the strains located between the trucks of the car, substantially  
20 as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 18th day of May, 1889.

DAVID L. BARNES.

Witnesses:

B. B. ADAMS, Jr.,  
DANIEL D. WAUGH.