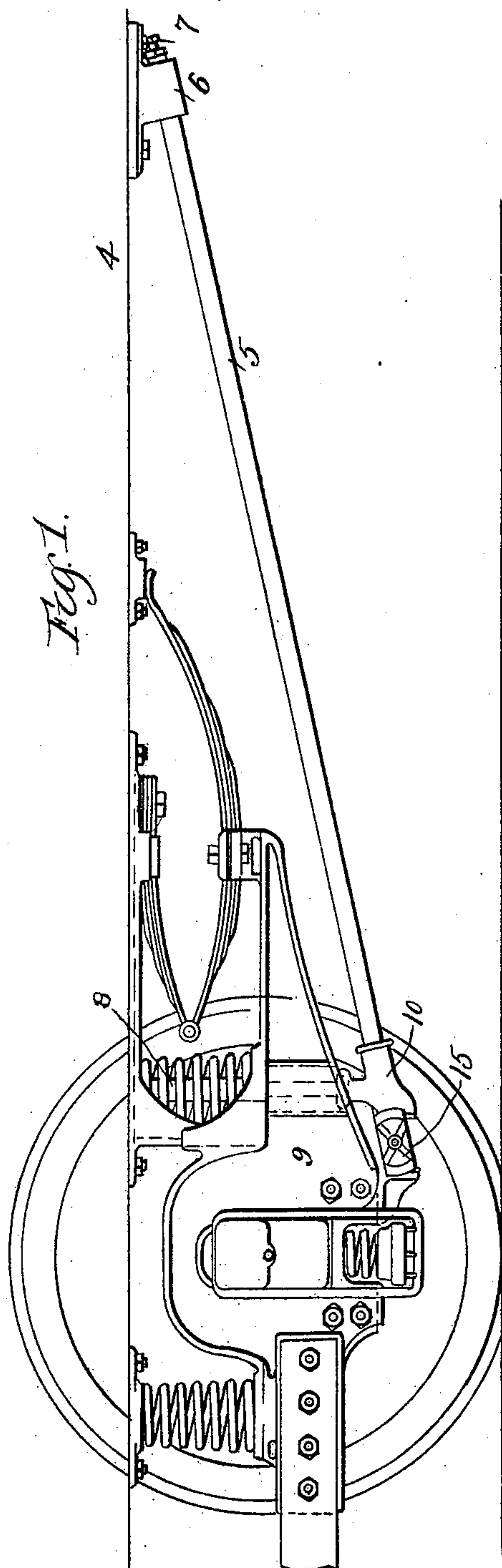


(No Model.)

M. G. HUBBARD, Jr.  
TRUSS BRACE FOR RAILWAY CARS.

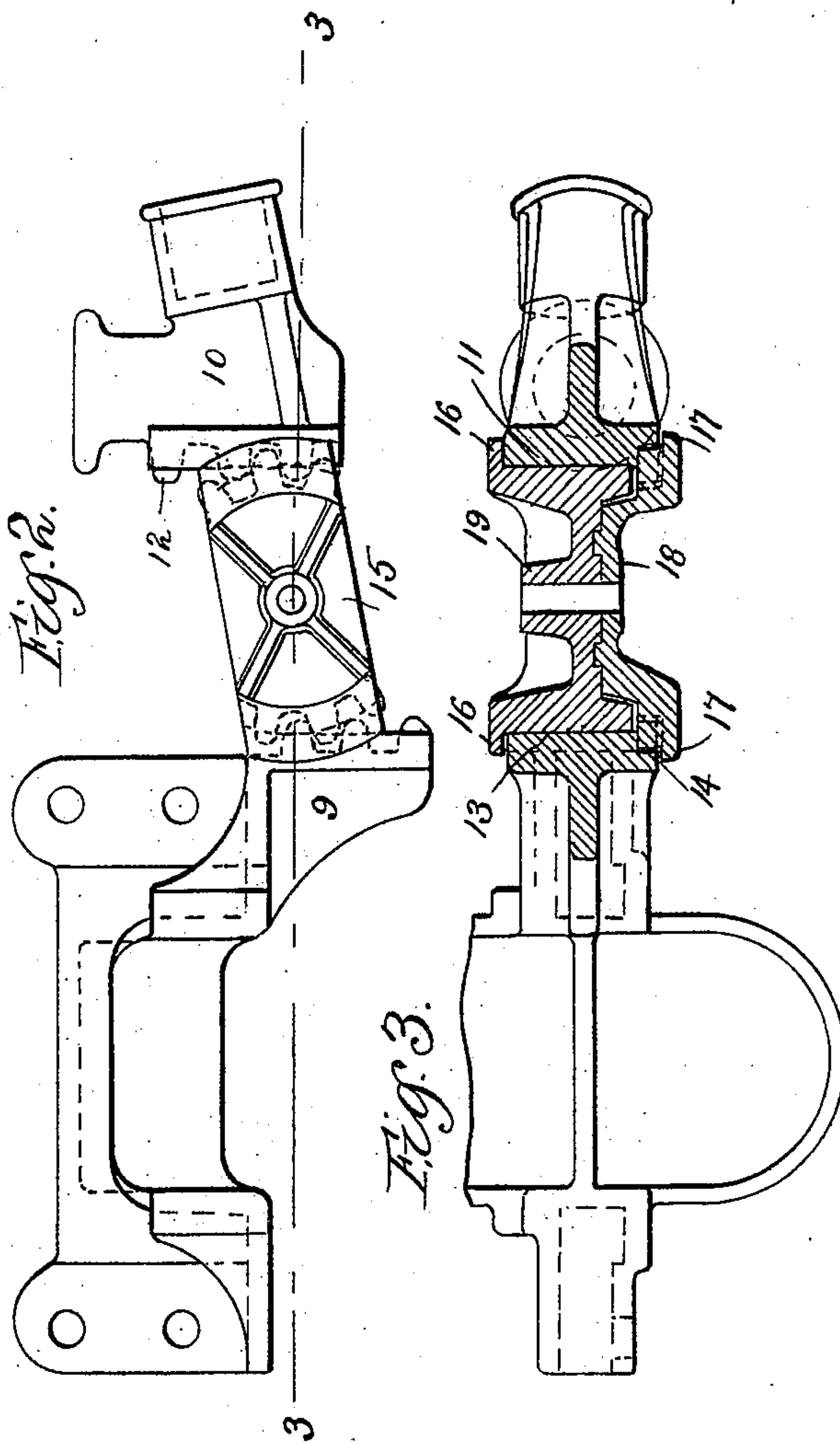
No. 594,798.

Patented Nov. 30, 1897.



Witnesses

*Wm. M. Rheem*  
*Ray White,*



Inventors

*Moses G. Hubbard Jr*  
*by Bond & Samuel P. Johnson*  
*Attys*



# UNITED STATES PATENT OFFICE.

MOSES G. HUBBARD, JR., OF CHICAGO, ILLINOIS, ASSIGNOR TO THE  
McGUIRE MANUFACTURING COMPANY, OF SAME PLACE.

## TRUSS-BRACE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 594,798, dated November 30, 1897.

Application filed June 6, 1895. Serial No. 551,850. (No model.)

*To all whom it may concern:*

Be it known that I, MOSES G. HUBBARD, Jr., a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Truss-Braces for Railway-Cars, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a partial side elevation. Fig. 2 is an enlarged detail, being a side elevation of portions of the truss-brace. Fig. 3 is a horizontal section on line 3 3 of Fig. 2.

My invention relates to truss-bracings especially designed for railway-cars.

The only successful external truss or bracing for four-wheeled cars designed to hold up the ends of the car-bodies extending beyond the truck-frame is one which extends from near one end nearly to the opposite end of the car-body, embracing the truck-frame, but not connected to or dependent upon it. This bracing is complicated and expensive and cannot be used with many of the best forms of motor-trucks. Other braces have been made which were dependent upon the truck-frame for their base, but they have proven to be unsatisfactory because they lengthened and shortened by the vertical action of the car-body and were not sufficiently durable, as they were dependent for their support upon pivots or rocking journals, which soon cut out because of the dirt and constant motion under heavy pressure.

The object of my invention is to overcome the objections incident to the constructions heretofore used; and it consists in providing a diagonal bracing at each corner of the car-body, said braces being supported by the truck-frame in such manner that they will not lengthen or shorten by the vertical movement of the car-body upon the truck, as will be hereinafter more fully set forth.

That which I regard as new and of my invention will be set forth in the claims.

In the drawings, 4 indicates the car-sill, to which is connected a brace 5, arranged in a diagonal position, said brace being preferably tubular in form, and being connected to the car-sill by a bracket 6 or other suitable device, an adjusting device, such as a nut

7, being provided for adjusting the tension upon said brace. The lower end of the brace 5 is connected to a vertical member or support 8, the upper end of which is secured to the car-sill, as shown in Fig. 1. The vertical support 8 is preferably a check-post of the truck, but it moves with the car-body and is independent of the truck-frame 9. The brace 5 is secured to the support 8 by means of a pocket 10, which is screwed upon said support and into which the end of the tube-brace 5 fits. At the back of the pocket 10 is provided a flat bearing-face 11, and at one side of said flat bearing-face is formed a narrow rack 12, which extends substantially parallel with the support 8, as shown in Figs. 2 and 3. 13 14 indicate similar flat and rack bearing-faces secured to the truck-frame 9, as shown in Figs. 2 and 3. Between said flat and rack bearing-faces at each corner of the truck are interposed traveling rollers 15, which have corresponding plane and rack bearing-faces for engaging the bearing-faces of the truck-frame and pocket 10, as best shown in Fig. 2. The plane faces of said rollers are intended to engage the plane faces on the pocket 10 and on the truck-frame to support the strain upon the brace, and the gear-teeth on said rollers are intended to engage the rack bearing-faces to maintain said rollers in their proper position and to insure their rotation under all circumstances.

It will be noted that the rollers 15 are arranged to travel vertically and are not mounted upon fixed pivots, the result being that the point at which the end thrust is sustained is automatically adjusted to correspond with the vertical movement of the car-body.

To prevent the rollers 15 from getting out of place, flanges 16 17 are formed at each side of said rollers and embrace the bearing-faces on the pocket 10 and truck-frame, as shown in Fig. 3.

To facilitate the assembling or removal of the truss, the rollers 15 are formed in two parts 18 19, as shown in Fig. 3, the division being on a line between the rack and plane-faced portions of said rollers. It should, of course, be understood that all the plane bearing-faces above referred to are formed on the pitch-line of the rack bearing-faces.



My invention is not limited to the specific construction described herein, as many modifications may be made without departing from the spirit of my invention, which consists, broadly, in providing a brace to support the ends of the car with a support which is automatically adjusted with the movements of the car-body in such manner that the point at which the end thrust is received and resisted will preserve its position relatively to the brace, thereby maintaining practically constant the length of the brace.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a truck-frame, of a brace supporting the end portion of the car-body, and vertically-movable mechanism co-acting with the truck-frame to resist the end thrust of said brace and moving vertically with said brace, whereby the resistance to the end thrust of said brace is uniformly applied to said brace at substantially the same point, substantially as described.

2. The combination with a truck-frame, of a brace supporting the end portion of the car-body, and vertically-movable mechanism interposed between the truck-frame and said brace and coacting with the truck-frame to resist the end thrust of said brace, and moving vertically with said brace, whereby the resistance to the end thrust of said brace is uniformly applied to said brace at substantially the same point, substantially as described.

3. The combination with a truck-frame, and a brace supporting the end of the car-body, of a revoluble bearing between the lower end of said brace and the truck-frame, said bearing being vertically movable with said brace, substantially as described.

4. In a brace for cars, the combination with the truck-frame and a brace attached to the car-body, of a revoluble bearing between the lower end of said brace and the truck-frame and supported by the brace, substantially as set forth.

5. In a brace for cars, the combination with a truck-frame, and a brace attached to the car-body, of a roller arranged to travel vertically with the brace and interposed between the truck-frame and said brace, substantially as described.

6. In a truss or bracing for four-wheeled cars, the combination with a vertical member secured to the car-body, and a truck-frame, of a flanged traveling roller interposed between said vertical member and the truck-frame, substantially as described.

7. In a truss or bracing for four-wheeled cars, the combination with a vertical member secured to the car-body, and a truck-frame, of a flanged and partly-toothed traveling roller interposed between said vertical member and the truck-frame, substantially as described.

8. In a truss or bracing for four-wheeled

cars, the combination with a vertical member secured to the car-body, and a truck-frame, of a flanged and partly-toothed traveling roller interposed between said vertical member and said truck-frame, said roller being formed in two parts, substantially as described.

9. In a truss or bracing for four-wheeled cars, the combination with the truck-frame, of a vertical member rigidly attached to the car-body, a diagonal member, one end of which is rigidly attached to the car-body and the other end of which is rigidly attached to said vertical member, with a roller interposed between said vertical member and the truck-frame, one side of the periphery of which engages said vertical member and the opposite side of the periphery of which engages the truck-frame, substantially as described.

10. In a truss or bracing for four-wheeled cars, a truck-frame, a vertical member attached to the car-body, a roller arranged to travel vertically and interposed between said vertical member and the truck-frame, and a diagonal member interposed between said vertical member and the car-body, substantially as described.

11. In a truss or bracing for cars, the combination with a truck-frame, of a vertical member attached to the car-body, a traveling roller having part of the face of its periphery toothed and part plane, a corresponding plane and toothed surface upon both the vertical member and the truck-frame arranged to engage said roller, and a diagonal member interposed between the lower end of said vertical member and the car-body, substantially as described.

12. In a truss or bracing for railway-cars, the combination of a truck-frame, a vertical member attached to the car-body at one end, a diagonal member attached to the car-body at one end and connected to the lower part of said vertical member at the other end, and a traveling journalless roller interposed between said vertical member and the truck-frame, substantially as described.

13. In a brace for cars, the combination with a truck-frame, and a brace attached to the car-body, of a vertically-movable support connected with the brace and truck-frame which receives the end thrust of said brace, substantially as described.

14. In a brace for cars, the combination with a truck-frame, and a brace attached to the car-body, of a vertically-movable support connected with the brace and truck-frame which receives the end thrust of said brace, and means for vertically adjusting said support to correspond to the vertical movements of the car.

MOSES G. HUBBARD, JR.

Witnesses:

JOHN L. JACKSON,  
A. H. ADAMS.