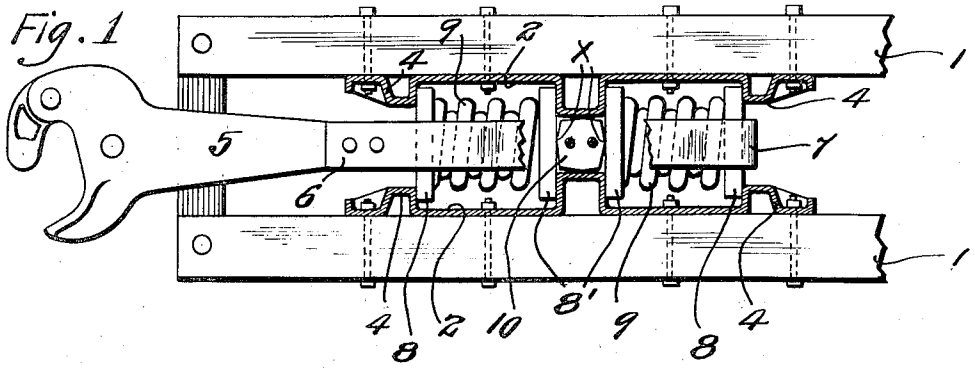
P. M. BEARD.

DRAFT GEAR.

APPLICATION FILED JULY 22, 1914.

1,183,944. Patented May 23, 1916.

Fig. 1



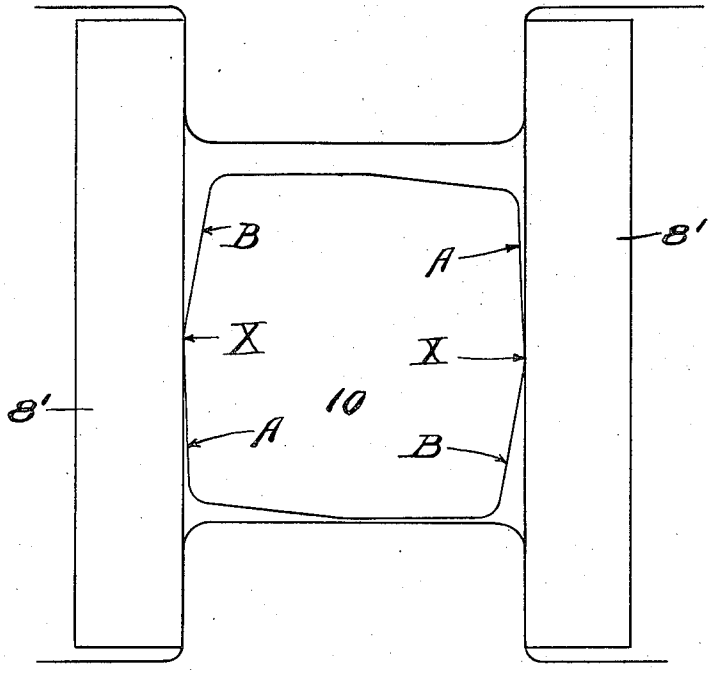


Fig. 2

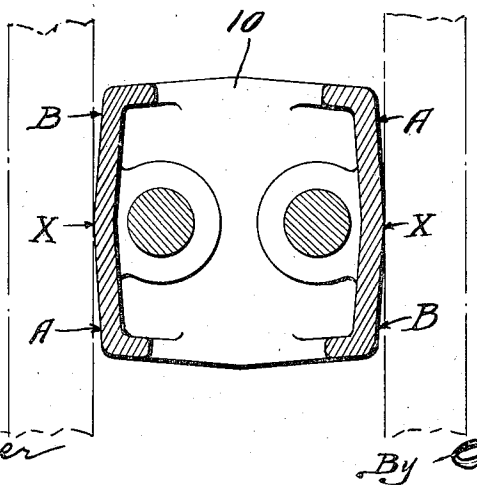


Fig. 3.

Witnesses
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By F. R. Conrad Atty.

UNITED STATES PATENT OFFICE.

PAUL M. BEARD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

DRAFT-GEAR.

1,183,944. Specification of Letters Patent. Patented May 23, 1916.

Application filed July 22, 1914. Serial No. 852,448.

To all whom it may concern:

Be it known that I, PAUL M. BEARD, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Draft-Gear, of which the following is 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, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top view partly in section of a tandem draft gear embodying my improvement. Fig. 2 is a diagrammatic top view illustrating the operation of my improved gear. Fig. 3 is a horizontal sectional view of the thimble constituting an essential feature of my invention.

This invention relates to certain features of a tandem spring draft gear for railway cars, and has for its main purpose the provision of a construction which will permit the necessary lateral movement of the draw head without causing any distortion of the draft springs or any displacement of the follower blocks.

Other purposes of my invention will be obvious or hereinafter pointed out.

As illustrated in the drawings, it will be understood that 1 indicates the draft sills forming a portion of the car underframe structure.

2 illustrates the cheek plates having the draft lugs 4.

5 is a draw bar having draw bar extension 6 which carries the yoke 7 embracing the followers 8 and 8′ and the draft springs 9. The thimble 10 is secured between the upper and lower legs of the yoke, and has contact, front and back, with the inner followers 8′. The construction is such as to admit of a limited lateral swing of the draw bar 5, to accommodate movement in rounding curves, and it will be seen that the effect of such lateral movement of the draw bar will be to swing the yoke laterally relative to the cheek plates and the followers.

The thimble 10 forms the pivot upon which the yoke swings, the yoke being fulcrumed by means of the thimble 10 upon one or the other of the inner followers 8′, depending upon whether the draw bar is under a pulling or a buffing stress.

In the use of various forms of thimbles customarily employed, the lateral swing of the yoke causes a displacement of the followers 8′, due to the fact that as the thimble is swung, its points of bearing on the followers become farther removed from each other longitudinally of the gear. As a result, the followers are displaced in one fashion or another, and unnecessary compression put upon the draft springs, with the result that the latter are distorted, and upon the straightening out of the draw bar, will spring back into place with a recoil causing an undesirable vibration.

It is the purpose of my invention to obviate entirely the displacement of the followers by the pivotal or swinging movement of the thimble. To this end, I make the thimble of general octagonal form having the diagonally opposite faces A and B parallel to each other, said faces where adjacent converging at the apices X. These apices X form the normal bearing points of the thimble upon the followers 8′, and it will be seen that they are farther apart than are the parallel faces A on a right line and the parallel faces B on a right line. The angular relationship of adjacent faces A and B is sufficient to permit of a suitable degree of movement of the draw bar, at the limit of which movement, either a face A or a face B will lie flat on its coöperating follower.

With this arrangement, it will be seen that upon the lateral movement of the draw bar, either the faces A or the faces B will be brought more nearly into contact with the followers. However, by virtue of the fact that the distance between the apices X is greater than the right line distance between the parallel faces A or the parallel faces B, there will be no increase in distance between the bearing points of the thimble on the followers longitudinally of the draft gear, and consequently, there will be no displacement of the followers by the thimble. On the contrary, by virtue of the fact that the perpendicular distance between face A or face B is less than the distance between the apices X, there will actually be a decrease in distance between the possible bearing points of the thimble on the followers. As a result, there will be no unnatural compression of the draft springs, and hence no irregular vibration upon the centering of the draw bar. The actual center upon which

the thimble rotates during the lateral movement of the draw bar, of course varies according to the amount of friction between its bearing points and the followers, as it will swing upon the point having the most friction, and the side having the lesser friction will move laterally on its coöperating follower.

It may be desirable to form the sides of the thimble having coöperation with the center stops 11 in a similar fashion, as illustrated, whereby to provide for the necessary lateral swing and to give a stopping effect when the thimble has reached the limit of its rotation.

I am aware that the invention may be embodied in forms other than that illustrated, and therefore, I do not desire it to be limited to that specific form, but intend it to include all obvious changes and modifications properly within its spirit and scope.

What I claim is:

1. A draft gear comprising a laterally movable draw bar, a yoke member movable thereby, draft springs, followers coöperating with said draft springs, and a thimble member movable by said yoke and adapted to coöperate with said followers, said thimble having normal bearing points adapted to coöperate with said followers, and bearing faces adapted to coöperate with said followers when said yoke is swung laterally, the perpendicular distance between said bearing faces being less than the distance between said bearing points.

2. In a draft gear, followers, a movable thimble having bearing portions adapted to coöperate with opposite followers, the bearing portions having the greatest separation longitudinally of the draft gear being those adapted to coöperate with the followers when the thimble is in its normal position relative to the followers.

3. In a tandem draft gear, draft springs, followers coöperating with said draft springs, a laterally movable draw bar, a yoke secured to said draw bar, a thimble secured to said yoke and between certain of said followers, said thimble being provided on its follower engaging portion with faces diverging from the center line of said yoke and meeting in a vertical line intersecting said center line and which vertical line constitutes the sole line of contact with the adjacent follower.

4. A draft gear mechanism comprising a laterally movable draw bar, draft springs, followers coöperating with said draft springs, follower stops for limiting the movement of said followers, a yoke, and a thimble secured to said yoke, the follower engaging face of said thimble being formed by the intersection of two substantially flat surfaces that meet on the vertical center plane of the thimble.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 20th day of July, 1914.

PAUL M. BEARD.

Witnesses:

OSCAR HOCHBERG,

JAMES J. COOPER.