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PATENTED MAY 8, 1906.

C. T. WESTLAKE & A. R. THOMAS.
DRAFT GEAR FOR LOCOMOTIVES AND RAILROAD CARS.
APPLICATION FILED MAR. 8, 1906.

Fig. 1.

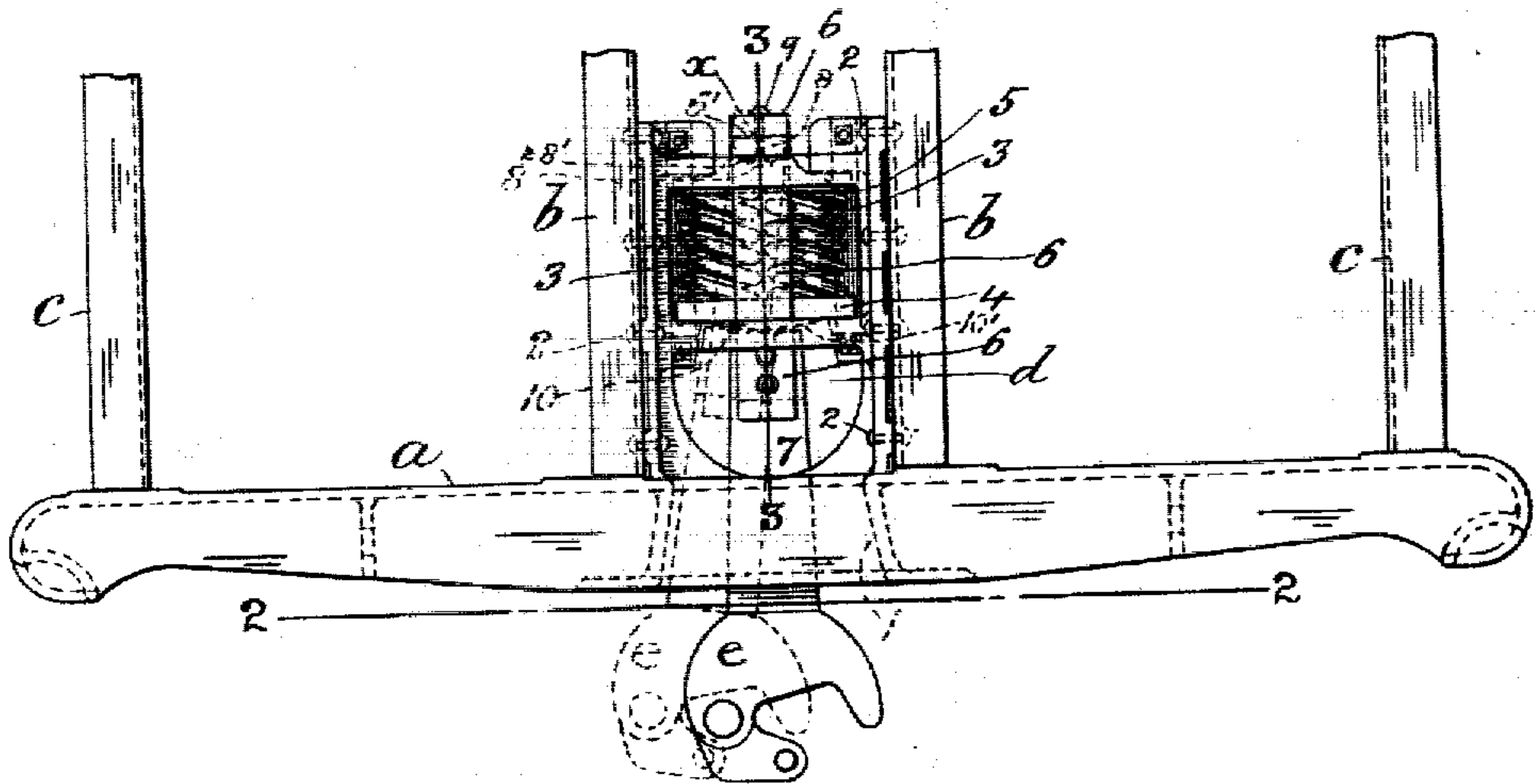


Fig. 2.

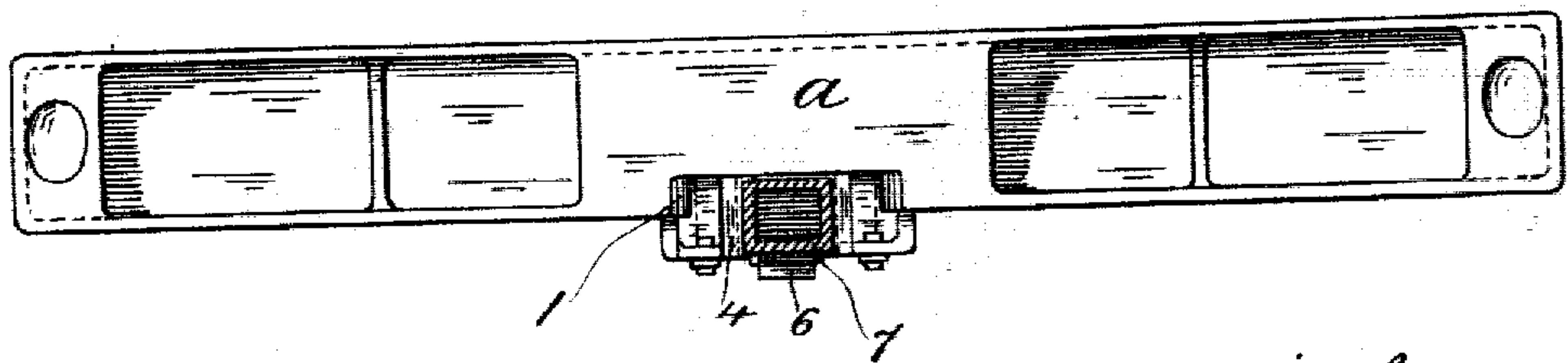


Fig. 3.

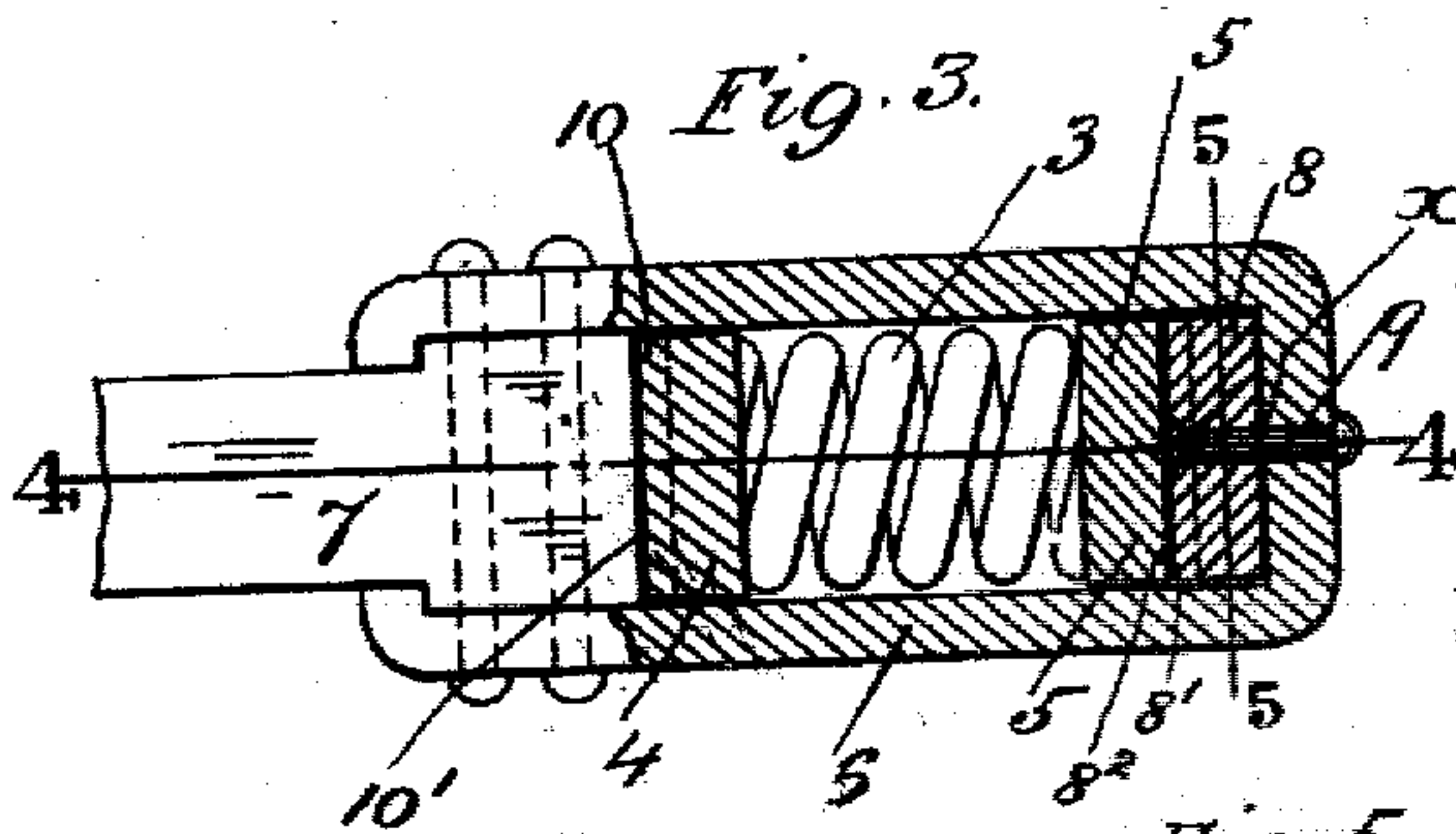


Fig. 4.

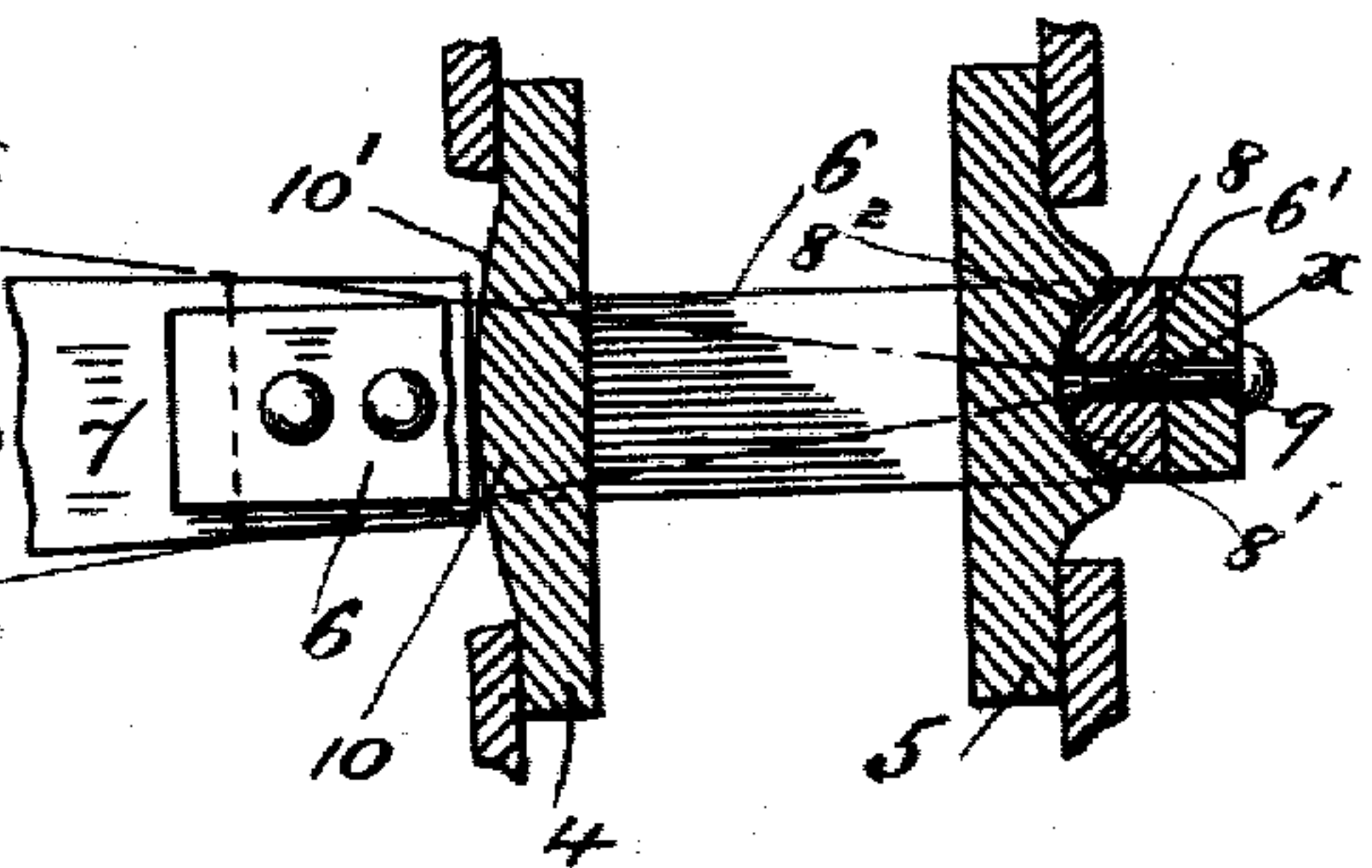
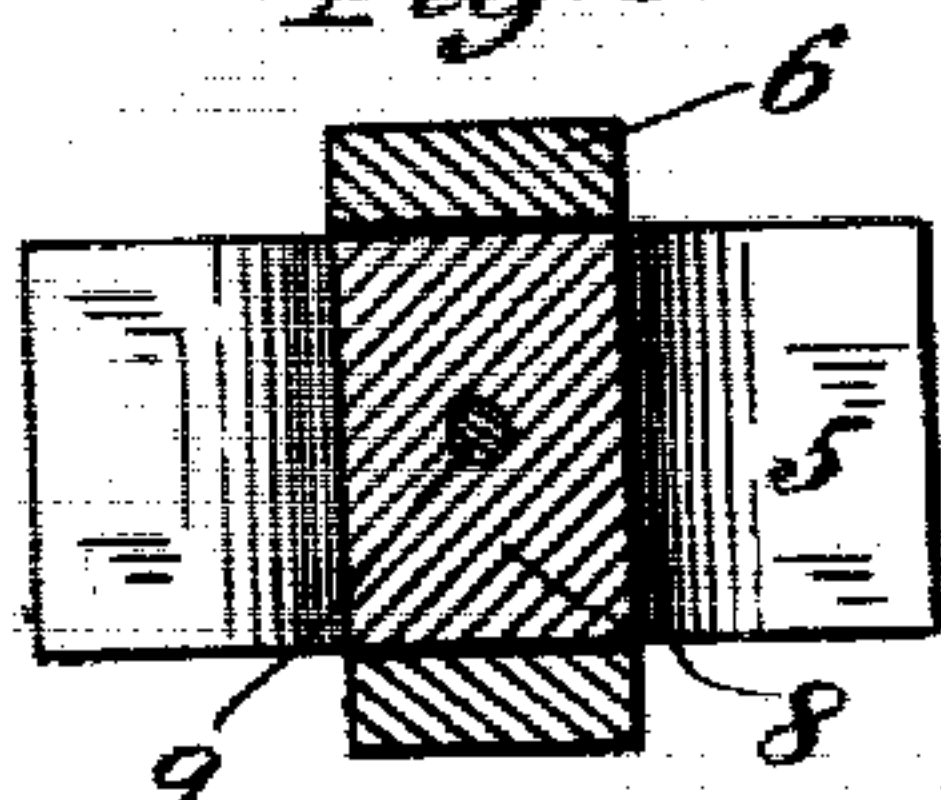


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DRAFT-GEAR FOR LOCOMOTIVES AND RAILROAD-CARS.

No. 820,375.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed March 8, 1906. Serial No. 364,951.

To all whom it may concern:

Be it known that we, CHARLES T. WESTLAKE, residing at St. Louis, in the State of Missouri, and ALBERT R. THOMAS, residing at Granite City, in the county of Madison and State of Illinois, citizens of the United States, have invented a new and useful Improvement in Draft-Gear for Locomotives and Railroad-Cars, of which the following is a specification.

Our invention relates to the draft-gear of a locomotive and railroad-car.

In the ordinary draft-gear of a railroad-car on moving the coupler with its shank and yoke to either side of the longitudinal center line of the car the springs are compressed on that side and expand on the other side, whereby when the pressure is removed the tendency of the springs is to return the coupler and yoke to their normal central position. On the other hand, in the case of a locomotive or tender the coupler is usually formed or provided with a short shank pivoted to or within a pocket in the pilot or buffer-beam, as the case may be, without the use of a yoke with the springs and follower-plates, as in the ordinary car, so that when engaged in switching on moving the coupler about its pivot for coupling with a car on a curve the coupler remains stationary in its adjusted position on removal of the pressure, whereas if fitted with ordinary car draft-gear it would be necessary to use considerable force to move the coupler to one side of its central position and to hold it in the adjusted position until the coupling was made.

Our invention has for its object to enable the coupler and yoke of the ordinary draft-gear on being moved to either side of its longitudinal center line to remain stationary in whatever position it may be placed without being affected by the springs, as before mentioned, and also to obtain a long radius for the coupler when applied to a locomotive or tender, so that on its being moved to either side of the center the angle between the pulling face of the coupler and the longitudinal center line of the tender remains approximately normal, whereas with the ordinary short-shank coupler sufficient lateral movement cannot be obtained without changing

this angle to such a degree as to make the coupling with the car inoperative.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan view of our improved draft-gear applied to the buffer-beam of a locomotive-tender; Fig. 2, a cross-section through the draft-gear on line 2 2 in Fig. 1, showing the buffer-beam in front elevation; Fig. 3, a vertical longitudinal section through the draft-gear on line 3 3 in Fig. 1, broken away and omitting the draw-bar pocket; Fig. 4, a horizontal section thereof on line 4 4 in Fig. 3, broken away and omitting the springs; and Fig. 5, a vertical transverse section through the yoke of the draft-gear and the attachment thereto forming part of our invention on line 5 5 in Fig. 3 looking to the left and showing the back follower-plate in rear elevation.

Like letters and numerals of reference denote like parts in all the figures.

a represents a locomotive-tender buffer-beam, which is preferably metallic and fixed to the ends of the middle and outer longitudinal frame-beams *b* and *c*, respectively, (broken away) of the tender in the usual manner. Across the middle portion of the buffer-beam *a* in its under side is a recess 1, the sides of which taper toward each other from the front of the beam *a* at an inclination corresponding to the maximum radial play of the coupler-shank or draw-bar of the draft-gear from its pivotal point behind the beam *a*, as hereinafter more particularly referred to. From the rear side of the buffer-beam *a* between the middle longitudinal frame-beams *b* projects a draw-bar pocket *d*, which is preferably integral with the beam *a*, as shown, (but may be separately constructed and attached to the beam *a* in any suitable manner,) and laterally secured to the longitudinal beams *b* by rivets (or bolts) 2. The pocket *d* may be of any suitable construction adapted to receive the springs 3, the front and back follower-plates 4 and 5, and the yoke 6 of the draft-gear, the yoke 6 being attached to the shank or draw-bar 7 of the

coupler *e* and the whole arranged and operating, except as modified by our improvement, in the usual well-known manner.

Ordinarily the center of vibration of the coupler corresponds practically to the upright center line of the inner or bearing face of the yoke against the outer side of the back follower-plate, and when the coupler, with its draw-bar and yoke, is moved to either side of the longitudinal center line of the car which passes through the said pivotal center of the draft-gear the springs are compressed on that side and expand on the other side, which, owing to the subsequent recoil of the springs, returns the coupler when released to its normal position. To obviate this effect, especially in the case of applying the ordinary draft-gear to a locomotive or tender, we interpose between the rear side of the back follower-plate 5 and the corresponding ordinary bearing-face 6' of the yoke 6 a block 8, having its outer upright face 8' for the entire depth of the back follower-plate 5 curved radially from the pivotal center *x* of the yoke 6, which in this case is the upright center line of the face 6'; but the pivotal center *x* of the yoke 6 may be otherwise located at any suitable distance to the rear of the yoke 6 for reducing the angle of the coupler *e* when moved laterally from its normal central position, the outer face 8' of the block 8 being in such case curved radially thereto. The curved face 8' engages in a correspondingly-shaped recess 8² in the rear side of the back follower-plate 5, the block 8 being preferably attached to the face 6' of the yoke 6 by one or more rivets 9, as shown, or in any other suitable manner, or the block 8 as a separate piece may be dispensed with and the curved face 8' formed on a corresponding projection (the equivalent of the block 8) from the face 6' and integral with the yoke 6. Similarly, the front side of the front follower-plate 4 is formed with a projection 10, having its outer upright face 10' curved radially from the pivotal center *x* (or from whatever point this center may be located to the rear of the yoke 6) and engaged by the square (or

correspondingly concave) inner end of the shank or draw-bar 7 of the coupler *e*. By this construction when the coupler *e*, with its shank 7 and yoke 6, is moved to either side of the longitudinal center line of the tender (or car) the convex surface 8' of the yoke-block 8 will partially rotate within the recess 8² of the back follower-plate 5 and the inner end of the coupler-shank or draw-bar 7 partially around the convex projection 10' of the front follower-plate 4, radially, respectively, to the pivotal center *x*, whereby the follower-plates 4 and 5 and the intermediate springs 3 will remain normal and unaffected at all times, thus eliminating the recoil of the coupler *e*, which will consequently remain stationary in any adjusted position about its pivotal center *x*.

This invention is of great advantage when switching for readily and quickly coupling the tender and cars together on a curve without danger to the operator.

What we claim as our invention, and desire to secure by Letters Patent, is—

In draft-gear of the character described, the combination with the yoke and the shank of the coupler, of a front follower-plate, a back follower-plate, a spring between the said plates, a block interposed between the rear side of the back follower-plate and the corresponding inner face of the yoke, and a projection on the front side of the front follower-plate, the said block and projection having their outer upright faces respectively curved radially to the pivotal center of the yoke, and adapted respectively to engage in a corresponding recess in the back follower-plate, and with the inner end of the said shank, substantially as described and for the purpose set forth.

In witness whereof we have signed our names to this specification in the presence of two subscribing witnesses

CHARLES T. WESTLAKE.
ALBERT R. THOMAS.

Witnesses:

E. C. TOUHEY,
EDWARD W. FURRELL.