

No. 677,469.

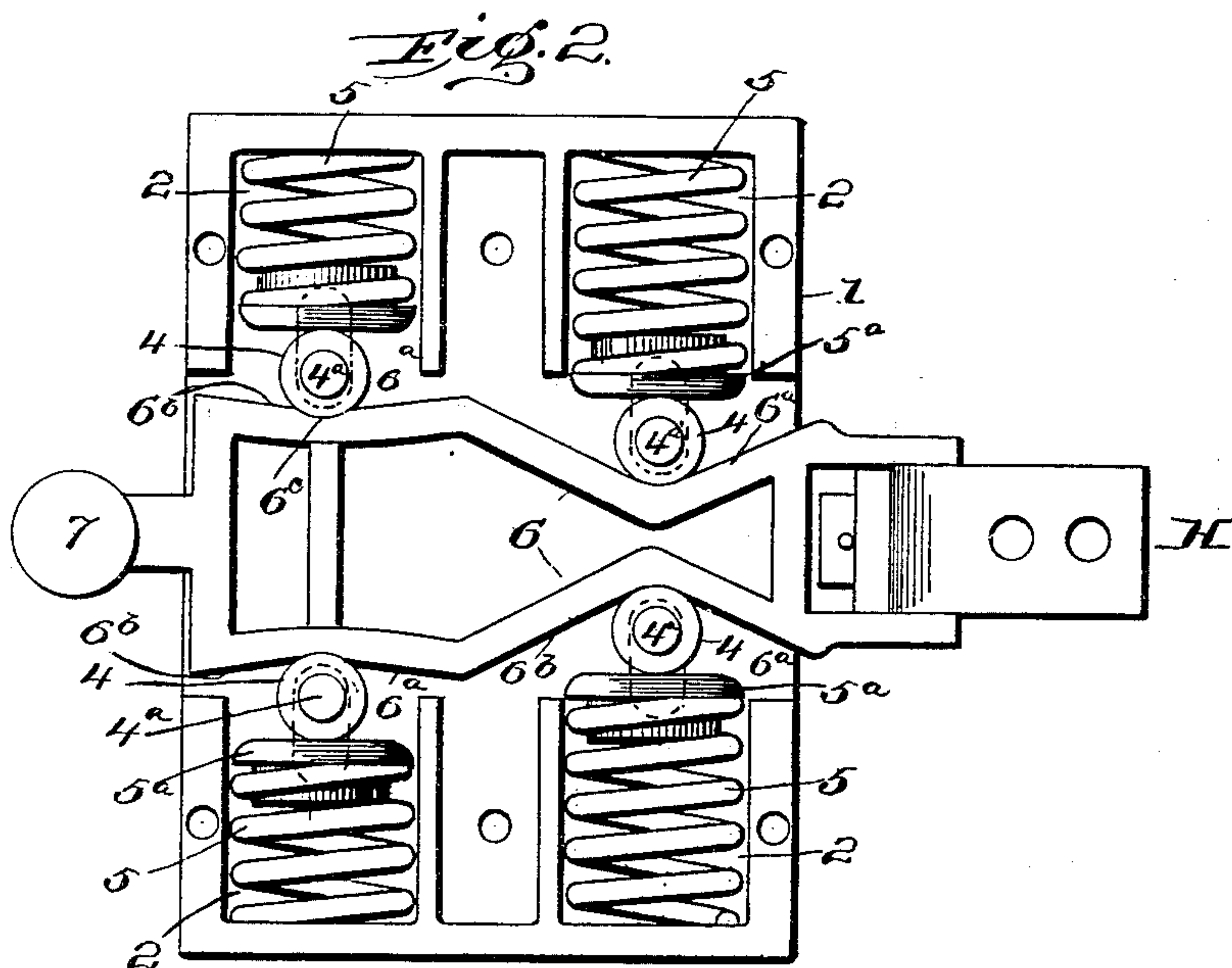
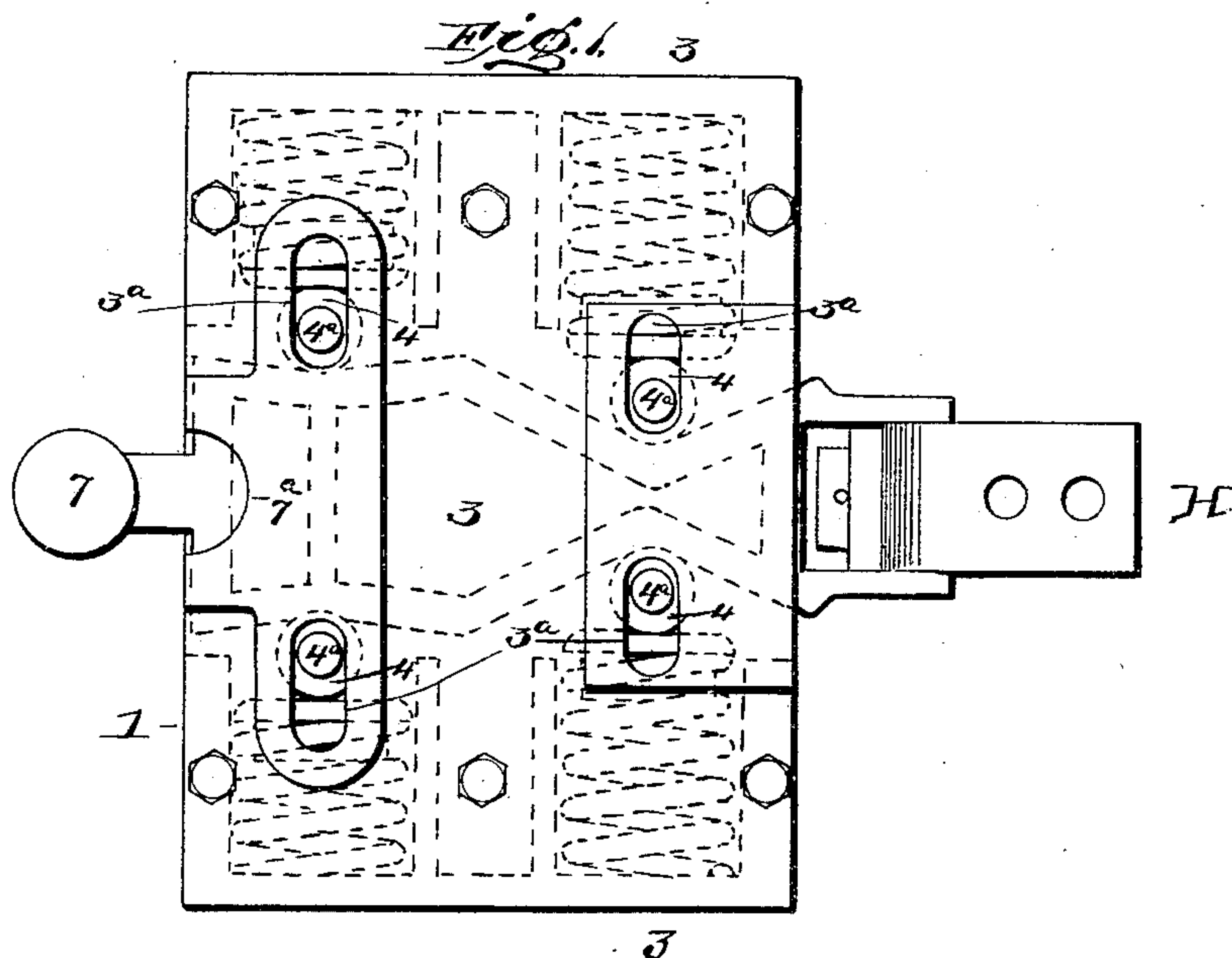
Patented July 2, 1901.

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DRAFT RIGGING FOR RAILWAY CARS.

(Application filed Dec. 21, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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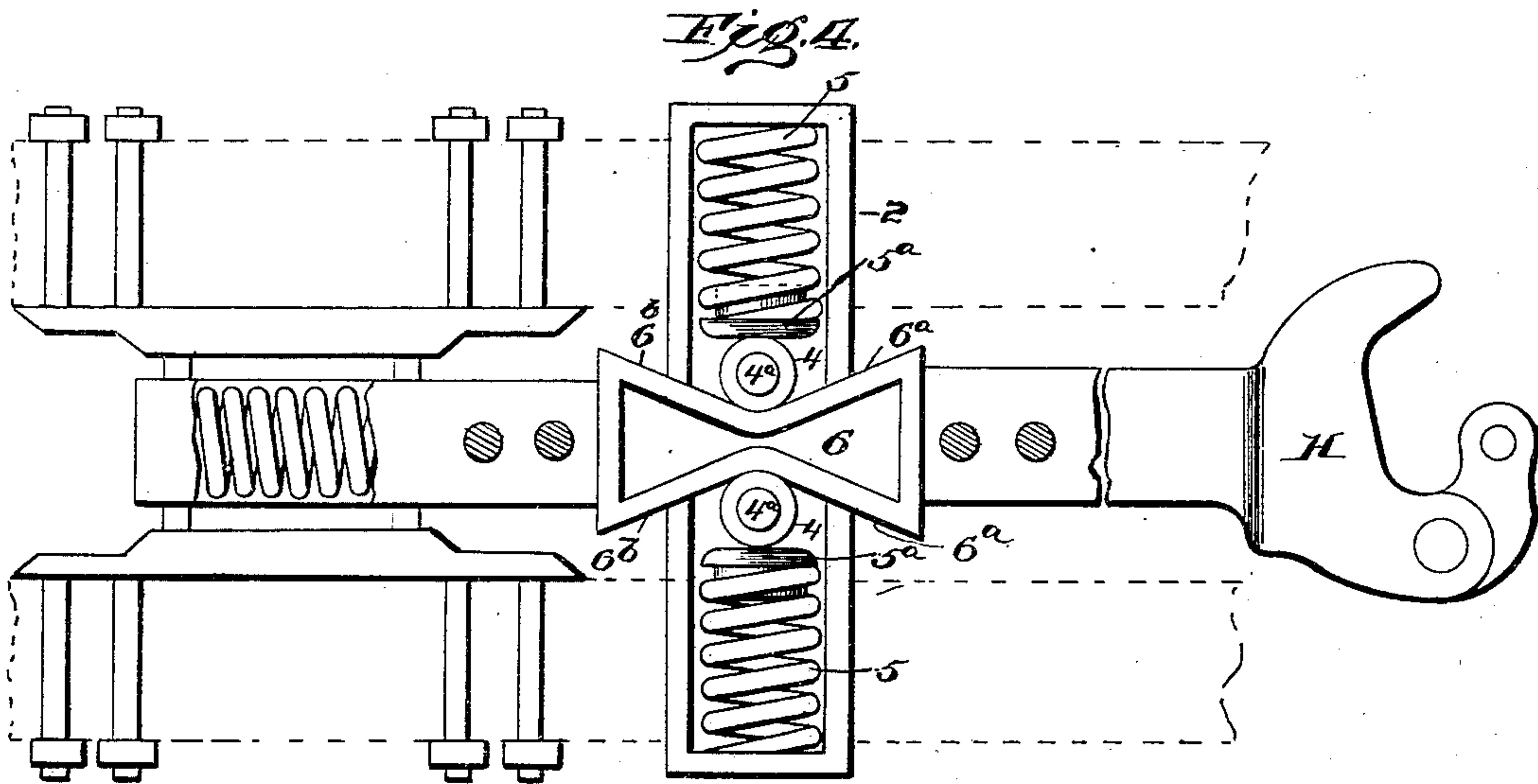
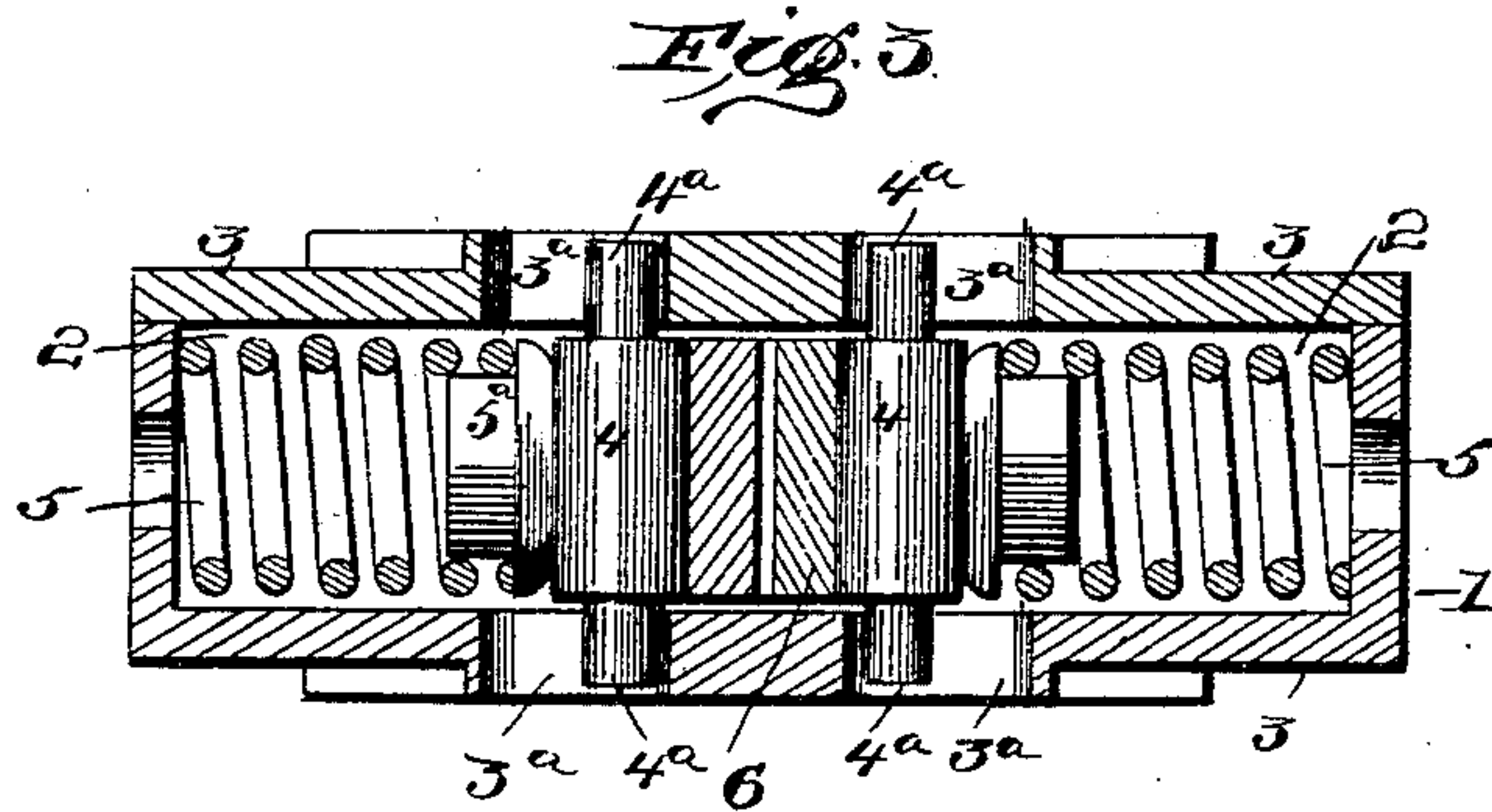
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UNITED STATES PATENT OFFICE.

JOHN RAWLES, OF EAST GALESBURG, ILLINOIS, ASSIGNOR OF ELEVEN-SIXTEENTHS TO JOHN L. GRIFFITH AND GEORGE H. McELVAIN, OF SAME PLACE, AND HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 677,469, dated July 2, 1901.

Application filed December 21, 1900. Serial No. 40,645. (No model.)

To all whom it may concern:

Be it known that I, JOHN RAWLES, a citizen of the United States, residing at East Galesburg, in the county of Knox, State of Illinois, have invented certain new and useful Improvements in Draft-Rigging for Railway-Cars; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view of draft-rigging embodying my invention, showing in full lines the casing or housing by means of which the same is secured to the draft-timbers and in dotted lines the shank of the draw-bar and the rollers and springs coacting therewith. Fig. 2 is a plan view, the cover of the casing or housing removed. Fig. 3 is a transverse section on the line 3 3, Fig. 1; and Fig. 4 is a plan view, partly in section—the cover of the casing removed—of a modification wherein the standard draft and buffing spring is combined with the shank of the draw-bar and spring-supported rollers embodying my invention.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of draft-rigging for railway-cars, and has for its object the elimination of slack by the constant support of the draft-bar in reversing, so as to obviate jars and shocks, which tend to rack the car-frame and destroy the draft-rigging.

As is well understood by those familiar with railway practice, draft-bars for cars are spring-supported to cushion the parts in draft and buffing, and in standard constructions the entire movement of the draw-bar to compress the springs occurs lengthwise of the car, which causes a corresponding slack or lost motion in the train, productive of severe shocks and strains until such time as the draw-bars come to a rest or assume the normal position. To overcome said objections to the present construction of draft-rigging, I combine with the shank of the draft-bar a series of oppositely-located converging inclines and oppositely-placed yieldingly-supported rollers, which maintain a constant

bearing upon and regulated support of the draft-bar, whereby any slack or lost motion of the draw-bar with relation to its supports is obviated and any jumping of the draw-bar prevented, and such a construction, either alone or in combination with what is known as the "standard draft-spring" and "followers," embodies the main feature of my invention.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, 1 indicates a suitable casing or housing for the shank of the draw-bar, by means of which casing or housing and the usual or any approved "carry-iron" (not shown) the draft-rigging will be secured to and supported on the draft-timbers of the car.

The casing 1, which may be a single casting, if desired, will be formed on its interior with a series of spring-pockets 2, corresponding in number with the rollers employed to coact with the shank of the draft-bar, and with suitable covers or a top and a bottom plate 3, provided with elongated guide-slots 3^a in line with the axial center of the spring-pockets 2 and at right angles to the travel of the draw-bar for the reception and travel of journals on the ends of the rollers 4, which coact with the shank of the draft-bar. The covers 3 may be secured to the housing 1 by suitable bolts, and provision will also be made for bolting or otherwise securing the housing 1 to the draft-timbers of the car.

4 4 indicate rollers, each provided with journals 4^a, which enter and travel in the elongated guide-slots 3^a of the covers or top and bottom plates 3 of the housing, or in lieu thereof any equivalent means to guide the travel of the rolls to and from the shank of the draw-bar and insure their rotation may be adopted at the will of the constructor.

Within the spring-pockets 2 of the casing are springs 5, interposed between the bottom of said pockets and the rollers 4 and provided with caps or bearing-plates 5^a where they contact with the rollers, and said plates may have beveled or rounded faces to accom-

moderate the movement of the rollers and the side swing of the draw-bar on curves. The springs 5 will be inserted under compression, so as to always maintain the contact between rollers 5 and the shank of the draw-bar and to afford constant spring resistance to the endwise movement of the draw-bar either in or out.

6 indicates the shank of the draw-bar, to which the usual or any approved form of coupler or draw-bar head H may be bolted or otherwise secured or, if preferred, may be formed integral therewith. The shank of the draw-bar is provided with a series of converging inclines 6^a 6^b, which meet at a point opposite the rollers 4 when the draw-bar is at rest or in its normal position, the number of said (pairs of) inclines depending on the number of rollers 4 4, combined with the draw-bar shank. If preferred, a single pair of laterally placed and opposed rollers and springs may be employed to coact with interposed and oppositely-located inclines on the draw-bar to maintain the constant support of the draw-bar, while the usual standard draft-spring may be used with follower-plates and either a strap or tail-bolt (see Fig. 4) to take up the load in draft or buffing; but I prefer a plurality of rollers and springs laterally placed and opposed and coacting with a plurality of converging inclines on opposite sides of the shank of the draft-bar, as indicated in Figs. 1 and 2 of the drawings.

Where a plurality of converging inclines and coacting spring-supported rollers are employed, the forward sets of inclines are preferably quite steep, while the rear sets of inclines are less so and at their points of convergence may be arc-shaped, as at 6^c, to form seats for the rear rollers, the more readily to check the vibration of the draw-bar and bring it to a rest in its normal position.

Where the spring-pressure is entirely lateral, as in the construction shown in Figs. 1 and 2 of the drawings, the tail of the draw-bar shank may terminate in a post 7 or equivalent projections adapted to engage the housing, and if a post then preferably of cylindrical form, having an arc-shaped seat 7^a on the housing 1 to facilitate the lateral swing of the draw-bar in curving.

The construction being substantially such as herein pointed out, the operation of the devices will be as follows: When the draw-bar is drawn forward, as in pulling, the rear inclines 6^b on the shank of the draw-bar will be drawn between the rollers 4 4, forcing them apart and compressing the springs 5 5, which will resist the movement of the draw-bar until the post 7 has come to a bearing in the seat 7^a of housing 1, (or in case of the construction shown in Fig. 4 until the standard draft and buffing spring has been overcome,) and the parts will so remain until the motion of the train is arrested, whereupon the rollers will travel down the inclines 6^b with the inward movement of the draw-bar, being constantly maintained in contact therewith by the springs 5 5, so that no jumping of the draw-bar can occur. If the force which moves the draw-bar inward is sufficient to carry it past its normal position, (as in case of emergency stops or in buffing,) the forward inclines 6^a will enter between the rollers 4 4, gradually forcing them apart and increasing the spring resistance to the inward movement of the draw-bar; but in the case of the construction shown in Figs. 1 and 2 of the drawings, where the roller-seats 6^c are used, there will be an added tendency of the draw-bar to be arrested in its central or normal position.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a draft-rigging for railway-cars, the combination with a draw-bar having on its opposite sides converging inclines, of spring-supported oppositely-placed rollers arranged to maintain constant contact with the inclines of the draw-bar, substantially as and for the purposes specified.

2. In a draft-rigging for railway-cars, the combination with a draw-bar having inclines, and yielding rollers which coact with the inclines of the draw-bar, of a casing having guides for the yielding rollers, substantially as and for the purposes specified.

3. In a draft-rigging for railway-cars, the combination with an endwise-movable draw-bar having inclines and a tail-post or stop, of a housing with which the tail-post or stop of the draw-bar engages, and spring-pressed rollers which engage the inclines of the draw-bar, substantially as and for the purposes specified.

4. In a draft-rigging for railway-cars, the combination with a draw-bar having converging inclines terminating in a roller-seat, of yielding rollers arranged to engage the draw-bar, substantially as and for the purposes specified.

5. In a draft-rigging for railway-cars, the combination with an endwise-movable draw-bar having a plurality of converging inclines of different pitch or inclination, of yieldingly-supported rollers arranged to maintain constant contact with said inclines, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of witnesses, this 18th day of December, 1900.

JOHN RAWLES.

Witnesses:

J. J. WELSH,
R. D. ROBINSON,
J. E. MALEY.