J. F. O'CONNOR.

DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED MAY 6, 1910.

1,142,358.

Patented June 8, 1915.

4 SHEETS—SHEET 1.

FIG. 1

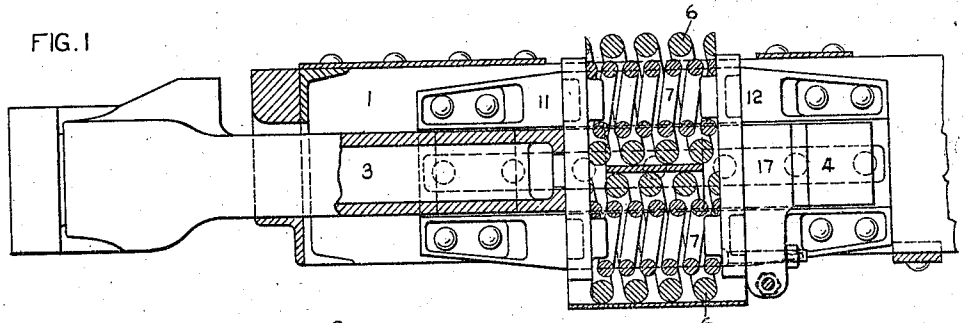


FIG. 2.

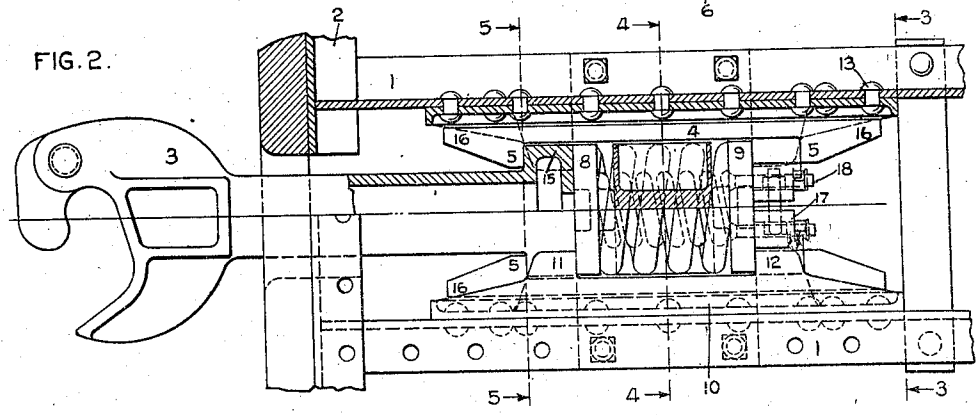


FIG. 3

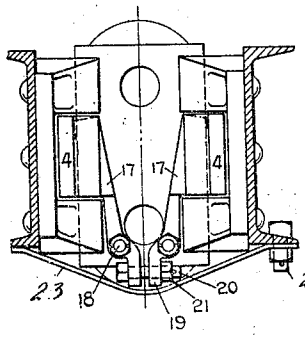


FIG. 4

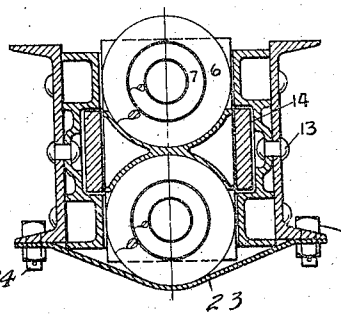
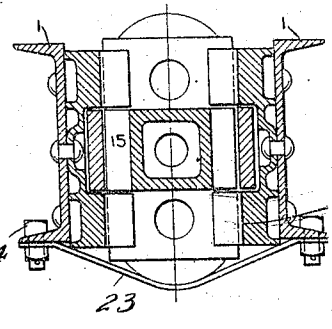


FIG. 5.



WITNESSES:

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4 SHEETS—SHEET 2.

FIG. 10.

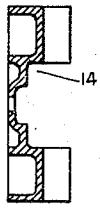


FIG. 6.

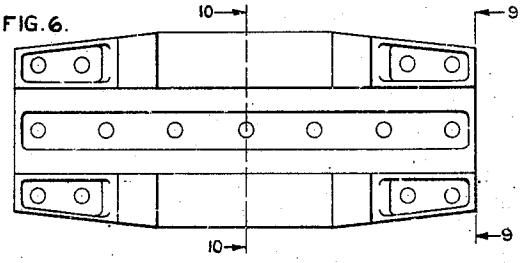


FIG. 9.

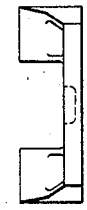


FIG. 7.

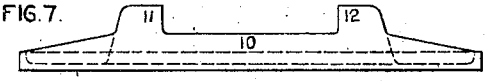


FIG. 8.

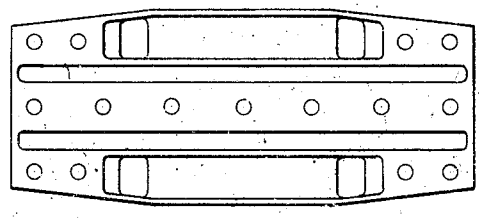


FIG. 11.

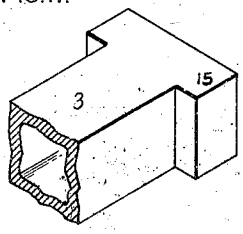


FIG. 12.

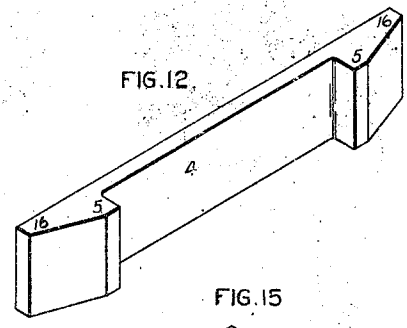


FIG. 13.

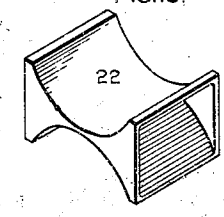


FIG. 14.

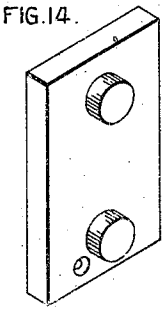


FIG. 15.

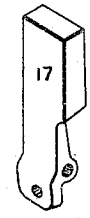
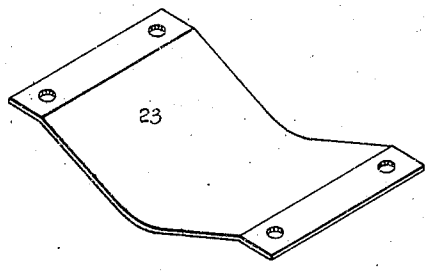


FIG. 16.



WITNESSES

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4 SHEETS—SHEET 3.

FIG. 17

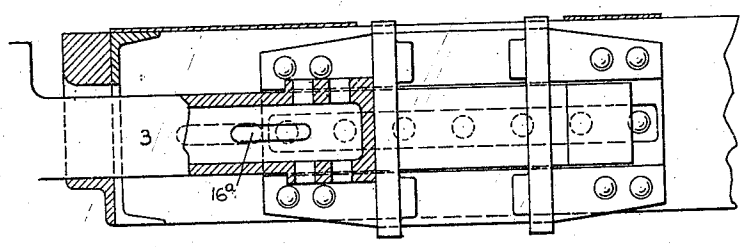


FIG. 18

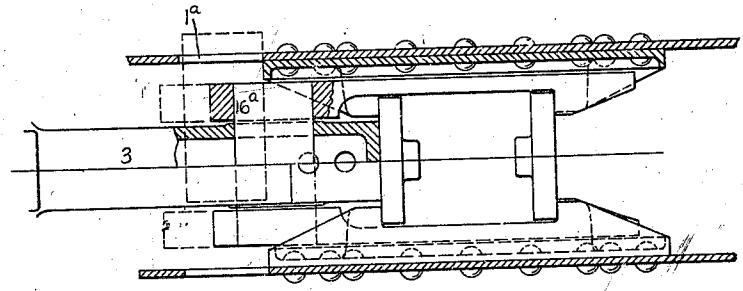


FIG. 19

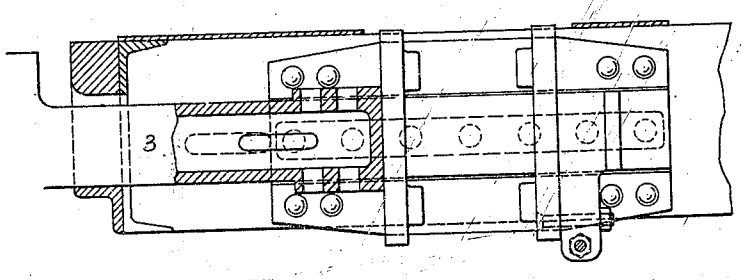
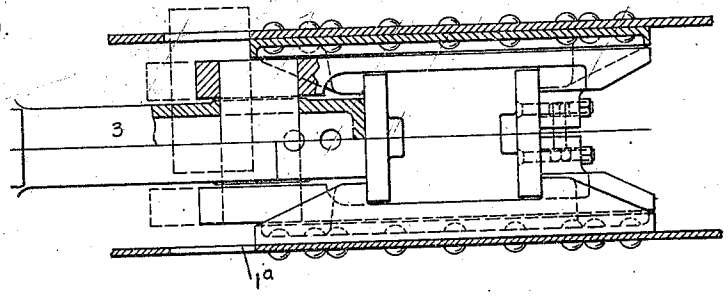


FIG. 20.



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4 SHEETS—SHEET 4.

FIG. 21

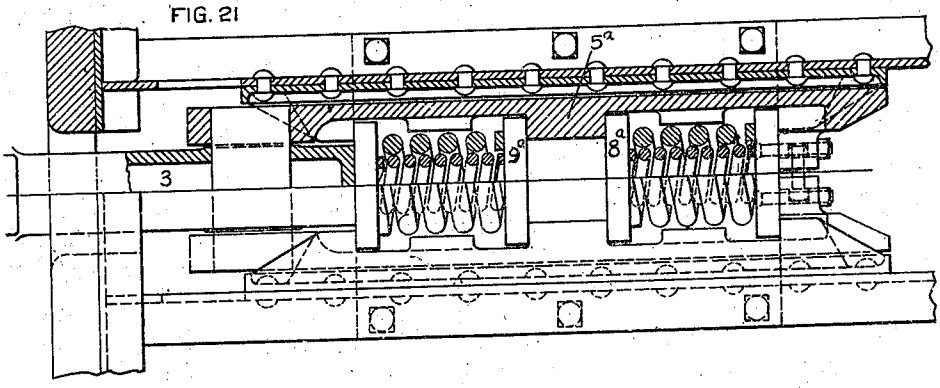
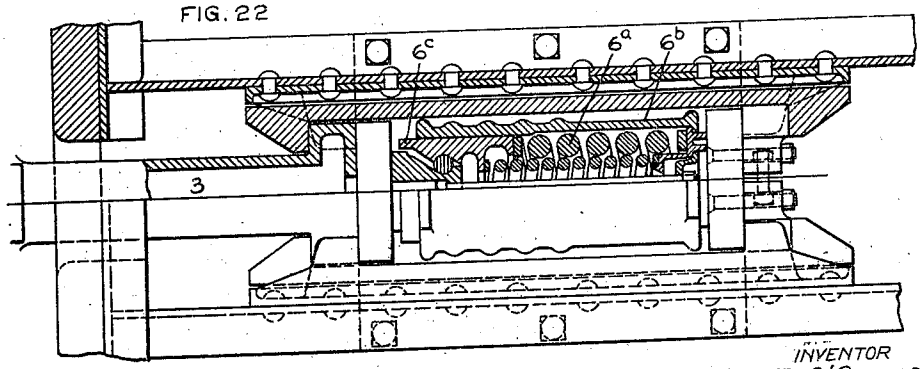


FIG. 22



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UNITED STATES PATENT OFFICE.

JOHN F. O'CONNOR, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM H. MINER, OF CHICAGO, ILLINOIS.

DRAFT-RIGGING FOR RAILWAY-CARS.

1,142,358. Specification of Letters Patent. Patented June 8, 1915.

Application filed May 6, 1910. Serial No. 559,785.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Draft-Rigging for Railway-Cars, of which the following is a specification.

My invention relates to improvements in draft rigging for railway cars.

My invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described, and by which an improved and very much simplified two-part connection between the draw-bar and followers is provided, and the removal and replacement of the draw-bar and draft rigging materially facilitated.

In the accompanying drawing forming a part of this specification, Figure 1 is a central, vertical, longitudinal section, partly in elevation of a draft rigging embodying my invention. Fig. 2 is a plan view, partly in horizontal section. Figs. 3, 4 and 5 are vertical cross sections on lines 3—3, 4—4 and 5—5 respectively of Fig. 2. Fig. 6 is a side view of one of the side plates or stop castings. Fig. 7 is a plan view of same. Fig. 8 is a rear elevation of same. Fig. 9 is an end view. Fig. 10 is a vertical section on line 10—10 of Fig. 6. Fig. 11 is a perspective view, showing the rear end of the draw-bar. Fig. 12 is a perspective view showing one member of the two-part draw-bar and follower connection. Fig. 13 is a perspective view of a spring spacer device. Fig. 14 is a perspective view of one of the followers. Fig. 15 is a perspective view of the movable dog or filler block interposed between one of the followers and one of the shoulders of the draw-bar and follower connection. Fig. 16 is a perspective view of the tie-plate or carrier. Fig. 17 is an elevation, partly in central, longitudinal section, illustrating a modification, the springs being removed. Fig. 18 is a plan view, partly in horizontal section of the construction shown in Fig. 17. Fig. 19 is an elevation, partly in central, vertical longitudinal section, illustrating a further modification, the springs being removed. Fig. 20 is a plan view, partly in horizontal section of the construction shown in Fig. 19. Fig. 21 is a plan view, partly in horizontal section, illustrating a further modification, in which tandem springs are employed as the cushioning device instead of twin springs, and Fig. 22 shows a further modification in which the cushioning device is a spring with friction shell and shoes.

In the drawing, 1, 1 represent the center sills or other frame members of a car to which the draft rigging is applied, 2 the end sill, 3 the draw-bar, 4, 4 a horizontally disposed two-part draw-bar and follower connection, having shoulders or abutments 5, 5 to afford connection between the draw-bar and one of the followers, 6, a cushioning device, preferably twin springs arranged one above the other, and each preferably having a smaller spring 7 nested within it.

8, 9 are upright followers extending through or between the horizontally disposed two-part draw-bar and follower 4, 4, one at each end of the springs and 10, 10 are the side plates, check plates, draft lug members or stop castings, having front and rear stops or shoulders 11, 12 for the followers 8, 9 to abut against, and secured to the center sills 1, 1, preferably by rivets 13, and each furnished with a central, longitudinal channel 14 to receive a member 4 of the two-part draw-bar and follower connection 4, 4, the channel 14 separating the stop shoulders into upper and lower members. The draw-bar 3 is preferably furnished with laterally projecting shoulders 15 on its upright faces for engagement with the shoulders 5 of the draw-bar and follower connection members 4, 4. The shoulders 15 of the draw-bar preferably project outwardly as far as the follower 8 extends, thus giving the rear end of the draw-bar an extended bearing against the front follower. The connection members 4 fit between the upright faces of the followers and the upright faces of the side plates or stop castings 10, which in turn are backed up by the center sills 1. The draw-bar connection members 4 are furnished at their front and rear ends with extensions 16, these end extensions 16 serving to give the draw-bar connections 4, 4 an extended bearing longitudinally against the side plates 10 and center sills 1, thus preventing all possibility of buckling under the most severe buffing or other blows to which the draw-bar may be subjected.

17, 17 are movable dogs or filler blocks interposed between the rear shoulders 5 of the draw-bar connection members 4 and the rear

follower 9. These movable dogs or filler blocks are each preferably hinged or pivotally connected by a bolt 18 to the rear follower 9. The dogs or filler blocks 17 are each preferably furnished with a short arm 19 connected to its companion by a removable bolt 20, having a threaded nut 21 which holds these dogs or filler blocks in their normal position to fill up the space intervening between the rear shoulder 5 of the connection member 4 and the rear follower 9.

To remove a broken coupler, draw-head and draw-bar and replace it with a new one, it is unnecessary, as heretofore, to remove the tie-plate or carrier 23 and then take down the draft rigging, springs or cushioning devices and other parts, as this may be done by simply removing the bolt 20 and then swinging the dogs or blocks 17 inward or together, thus permitting the draw-bar connection members 4, to be moved forward sufficiently to permit the rear end of the draw-bar and its shoulders 15 to clear the front stop shoulders 11 of the stop castings 10 so that it may be then slipped downward and disengaged from the connection members 4.

In the modification shown in Figs. 17 and 18, the removable connection between the draw-bar and draw-bar connection members 4, instead of comprising the interengaging shoulders 16 on the draw-bar and 5 on the members 4, consists of a removable key 16^a extending through slots formed in the draw-bar 3 and connection members 4, the side sills 1 also having slots 1^a for insertion and removal of the horizontally disposed key 16^a. In this modification shown in Figs. 17 and 18, the removable dogs or filler blocks 17 are omitted, and it is necessary to remove the tie-plate or carrier and then first slip down the followers and springs in order that the draw-bar and connection members 4 may be slipped forward sufficiently to cause the key 16^a to register with the removal slot 1^a in the center sill.

In the modification shown in Figs. 19 and 20, the construction is the same as that shown in Figs. 17 and 18, excepting that the movable dogs or filler blocks 17 are employed, thus enabling the removal and replacement of the draw-bar to be effected without removing the tie-plate or carrier and the follower or cushioning devices.

In the modification illustrated in Fig. 21, the construction is the same as that first described, excepting that tandem springs are employed instead of twin springs, the connection members 4 having middle abutment shoulders 5^a to fit between the two intermediate followers 8^a and 9^a.

In the modification shown in Fig. 22, the construction is the same as that first described, excepting that the cushioning device consists of a spring 6^a and friction shell 6^b and shoes 6^c instead of twin or tandem springs.

In the construction shown in Figs. 1 to 20 in which twin springs are employed as the cushioning mechanism, a spring spacer 22 is preferably interposed between the upper and lower springs. The tie-plate or carrier 23 is preferably removably secured to the lower flanges of the center sills 1 by short bolts 24.

I claim:—

1. In a draft rigging, the combination with center sills, stop members secured thereto furnished with central, longitudinal channels, a draw-bar, followers and cushioning means, of a horizontally disposed draw-bar and follower connection, composed of two independent like parts separably movable, fitting in said central, longitudinal channels of the stop members and having shoulders for operating the rear follower, substantially as specified.

2. In a draft rigging, the combination with a draw-bar, followers, cushioning means and stop members, of horizontally disposed connection members removably connecting the draw-bar and followers fitting one on each side of the draw-bar and between the same and the stop members, the draw-bar and said connection members being adapted to be longitudinally moved out of normal position and separable from each other when thus out of normal position, substantially as specified.

3. In a draft rigging, the combination with a draw-bar, followers, cushioning means and stop members, of horizontally disposed connection members removably connecting the draw-bar and followers fitting one on each side of the draw-bar and between the same and the stop members, the draw-bar and said connection members being separable from each other when slipped longitudinally out of normal position, and removable means for permitting such slipping into separable position, substantially as specified.

4. In a draft rigging, the combination with a draw-bar, followers, cushioning means and stop members, of horizontally disposed connection members fitting one on each side of the draw-bar and between the same and the stop members, said connection members having shoulders at one end for operating one of the followers, and movable filler blocks interposed between said shoulders and follower to permit the draw-bar and connection members to be moved forward into separable position, substantially as specified.

5. The combination with draft lug members having central, longitudinal channels to receive draw-bar connection members, of a pair of separate draw-bar connection members and independently movable fitting in

said channels, interengaging shoulders on said connection members and the draw-bar, means on said connection members adapted to operate the rear follower, a rear follower and movable dogs interposed between said rear follower and said means on said connection members for operating the rear follower, substantially as specified.

6. The combination with a draw-bar having laterally disposed shoulders 15, of a front follower operating against the rear end of the draw-bar, a rear follower cushioning means between the front and rear followers and horizontally disposed separate piece connection members 4 having shoulders 5 and extensions 16, and movable dogs interposed between the rear follower and the rear shoulders 5, substantially as specified.

7. In a draft rigging, in combination: draft sills having stop members secured thereto, said stop members having central longitudinal channels, a draw bar, followers, cushioning means, a draw bar and follower connection composed of two separate parts each arranged to fit within one of the longitudinal channels of the stop members and each provided with shoulders at its front and rear ends, and displacable means arranged to be placed between the rear shoulders of said parts and the rear follower to render the device operative, said means being removable from operative position to thereby enable said parts to be independently moved forwardly to thereby permit the disengagement of the draw bar from said parts.

8. A draft rigging comprising, in combination: a draw-bar; followers and cushioning means; a draw-bar and follower connection composed of two independent parts separately movable and each having a shoulder at its rear end thereof; movable dogs mounted on the follower and adapted to be interposed between the same and said shoulders; and means connected to the dogs arranged to positively hold said dogs at all times in position between the follower and said shoulders, substantially as specified.

9. In a draft rigging, the combination with a draw-bar having vertical shoulders on the sides thereof, of followers, shock absorbing means between the followers, stop members, and a pair of connecting members each having a shoulder at its front end arranged to coöperate with one of said vertical shoulders on the draw bar and a shoulder at its rear, arranged to actuate the rear follower.

JOHN F. O'CONNOR.

Witnesses:
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PEARL ABRAMS.