Dec. 2, 1924. 1,517,635

B. W. KADEL ET AL

DRAFT RIGGING

Filed Aug. 26, 1921 2 Sheets-Sheet 1

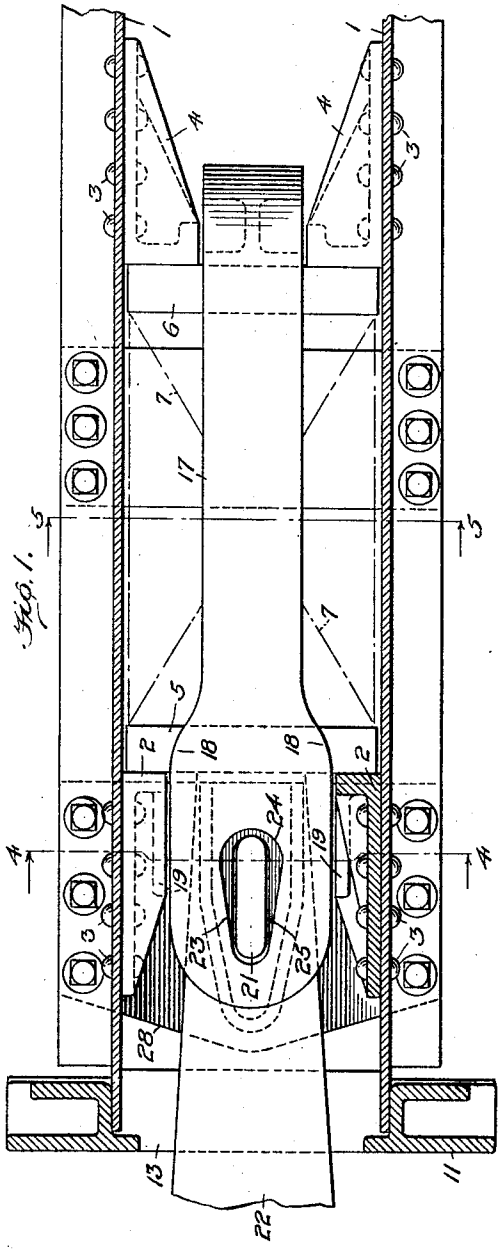


Fig. 1.

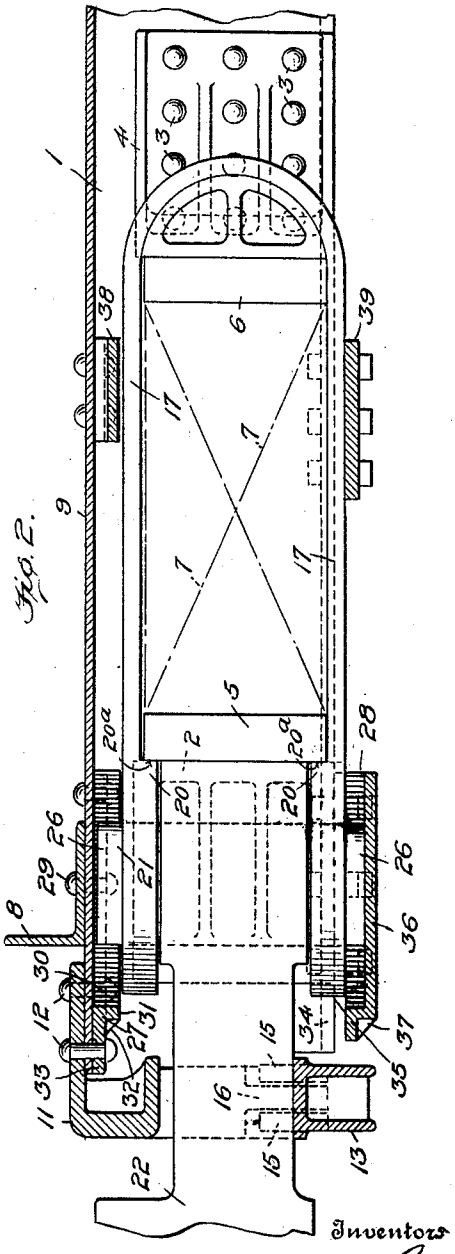


Fig. 2.

Witness

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Filed Aug. 26, 1921 2 Sheets-Sheet 2

Fig. 3.

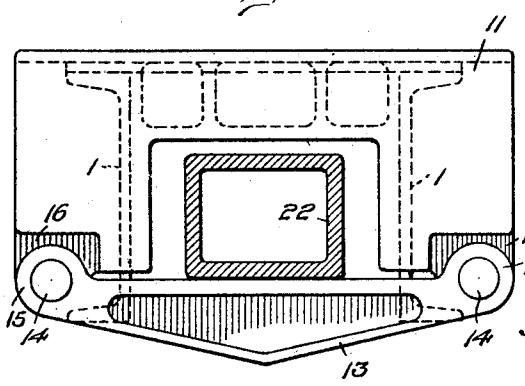


Fig. 4.

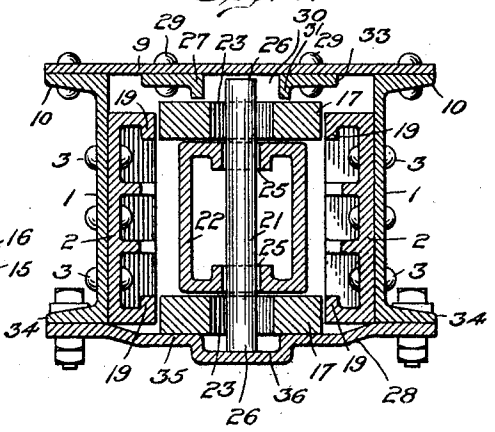


Fig. 5.

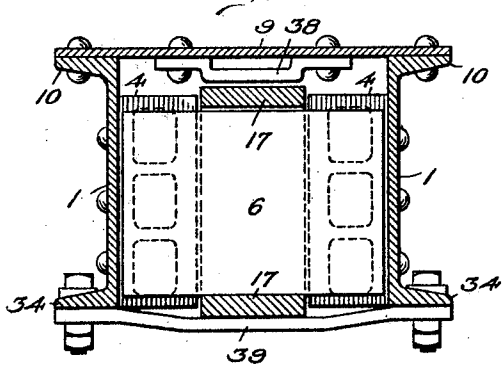


Fig. 6.

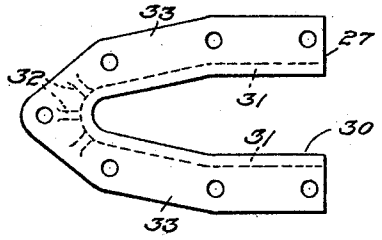
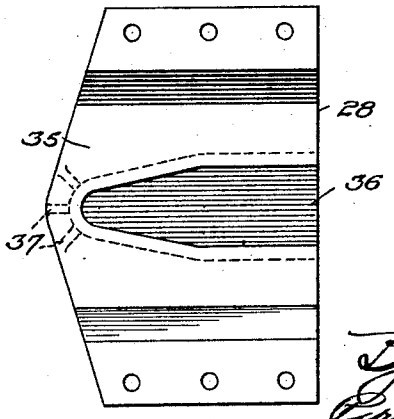


Fig. 7.



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UNITED STATES PATENT OFFICE.

BYERS W. KADEL AND PERCY R. DRENNING, OF BALTIMORE, MARYLAND, ASSIGNORS TO THE T. H. SYMINGTON COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

DRAFT RIGGING.

Application filed August 26, 1921. Serial No. 495,658.

To all whom it may concern:

Be it known that we, BYERS W. KADEL and PERCY R. DRENNING, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Draft Rigging; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to draft rigging for railway cars.

The principal object of the invention, generally considered, is to provide, in connection with a vertically arranged key for connecting the yoke and coupler, means connected to the car frame for guiding the said key, the said means also acting as supplemental stops to prevent forward movement of the said coupler beyond a predetermined amount.

Another object of our invention is to provide means on the car framing for guiding and supporting the coupler key in its movements.

A still further object of the invention is to provide, in combination with a flexible connection between the coupler and yoke, means positioned above and below the said yoke, the said means being adapted to maintain the parts in assembled relation in the event of breakage of the yoke or cushioning mechanism.

With these and other objects in view the invention comprises the various elements and combinations of elements hereinafter set forth, the novel features of the invention being pointed out in the claims.

In the drawings, wherein we have illustrated a single embodiment of the invention,—

Figure 1 is a view, partially in plan and partially in longitudinal section, of the center sills and associated parts of a car underframe showing a draft rigging embodying our invention.

Figure 2 is a central longitudinal vertical sectional view of the construction shown in Fig. 1, parts of the mechanism being seen in side elevation.

Figure 3 is an end view of the construction shown in Fig. 1.

Figure 4 is a transverse vertical section on line 4—4 of Fig. 1, the section being viewed as indicated by the arrows.

Figure 5 is a vertical transverse sectional view taken on line 5—5 of Fig. 1, the section being viewed in the direction indicated by the arrows.

Figure 6 is a top plan view of the upper supplemental stop and guide member.

Figure 7 is a top plan view of the lower supplemental stop and guide member.

Throughout the specification and drawings like parts are designated by like reference characters.

The numeral 1 designates the center or draft sills of the car, 2 the ordinary form of front stop lugs which are connected preferably by rivets 3 to the vertical faces of the said sills 1. 4 represents the rear stop members which are also connected to the vertical faces of the sills at points spaced from the front stop lugs 2, preferably by means of the rivets 3. Interposed between the front and rear stop lugs is the cushioning mechanism which, as illustrated in the drawings, comprises a front follower 5, a rear follower 6, and an interposed cushioning mechanism 7, diagrammatically illustrated by dot and dash lines.

The end sill 8, which may be in the form of an angle bar, is shown most clearly in Fig. 2, and 9 a top cover plate, which is preferably riveted to the upper flanges 10 of the center sills 1. The striking casting 11 is shown as connected to the top cover plate by means of the rivets 12, the said striking casting having combined therewith a carry iron 13, said carry iron being maintained in position by means of the bolts or studs 14 which pass through the ears 15 of the carry iron and through the downwardly projecting flange 16 of the striking casting.

Surrounding the cushioning mechanism is a vertically arranged yoke 17. This yoke at its forward ends is increased in width as at 18 so as to lie closely adjacent the guiding flanges 19 formed on the front stop members 2. Preferably we also increase the thickness of the yoke arms as at 20 adjacent the forward ends thereof to provide an inceased bearing area for the vertically arranged coupler connecting key 21. A coupler 22 is pivotally united to the said yoke by means of the said key 21, the slots 23 in the yoke arms being widened adjacent their

rear ends as clearly shown at 24 to provide lateral clearance for the pivotal movement of the coupler key, the key receiving slot 25 in the coupler 22 being adapted to closely embrace the said key.

The coupler key 21, as will be seen from an inspection of Fig. 2, is of greater length than the combined width of the yoke portions 20 and the coupler 22, thereby providing portions 26 which extend above and below the upper and lower faces of the yoke arms. These projecting portions of the coupler connecting key 21 are adapted to seat, respectively, in the openings formed in the supplemental stop members 27 and 28. The upper supplemental stop member 27 is preferably united to the end sill 8, to the striking casting 11, and to the cover plate 9 by means of the rivets 12 and 29. This supplemental stop member is provided with a rearwardly open slot 30 the marginal edge or flange 31 of which is reinforced at the closed end of the slot by webs or flanges 32 which extend from the web 33 of the said stop member. The slot 30 is of greater width than the coupler key 21 to permit of the angling of the said key on pivotal movement of the coupler. The forward end of the said slot 30 is preferably so positioned as to engage the forward edge of the said key 21 at the time the cushioning mechanism becomes solid; that is, at the limit of the movement of the cushioning mechanism the forward edge of the key 21 engages the forward edge of the slot 30 in the supplemental stop member 27.

The supplemental stop member 28 is preferably bolted or otherwise suitably connected to the lower flanges 34 of the draft sills 1. In the form shown in the drawings this supplemental stop member is provided with a flat portion 35 to engage and support the lower face of the yoke member 17, and in this face 35 there is formed a depression 36 which corresponds in outline to the slot 30 in the upper stop member 27. The forward edge or end of the depression 36 is also reinforced by webs or flanges 37 which correspond to the webs 32 above described. The face of the depression 36 forms a bearing to engage the lower end of the coupler key 21 and forms a support for the latter. It will of course be understood that the forward end of the depression 36 is in vertical alinement with the forward end of the slot 30, and that when the coupler key is in its extreme forward position the vertical walls at the end of the slot 30 and at the end of the depression 36 will simultaneously engage the upper and lower projecting portions 26 of the coupler key 21. In addition to serving as supplemental stops the members 27 and 28 also act to prevent spreading of the yoke arms since they lie closely adjacent the upper and lower portions thereof, and they also perform the additional function of guiding the coupler key in its forward movement. At the same time they do not interfere with the angling of the said key.

The vertical shoulders 20[a] at the inner ends of the enlargements 20 are adapted, in the normal position of the parts, to engage the upper and lower portions of the front follower 5. These vertical shoulders 20[a], while aiding in positioning the forward end of the yoke, are also of great advantage in that they afford means for holding the cushioning mechanism in assembled position with the yoke. When the mechanism is within the yoke, with the rear follower 6 in engagement with the rear end of the yoke, and the front follower in engagement with the shoulders 20[a], the yoke and its assembled mechanism may be readily inserted between the stop members 2 and 4.

At 38 we have indicated an upper yoke guide which is preferably connected to the top cover plate 29, and at 39 we have shown a form of yoke support and carry iron which is preferably bolted to the car sills.

We claim:—

1. In a draft rigging, the combination with center sills, of a coupler, a yoke, a vertically arranged key for connecting the said coupler and yoke, and means including a plurality of members disposed respectively above and below the key for guiding the same, at least one of said members being connected to the center sills.

2. In a draft rigging, the combination with the center sills, of a coupler, a yoke, a vertically extending key for operatively connecting said coupler and yoke, and means connected to said sills and extending beneath said key for supporting the same, said means being adapted to prevent the movement of said key in one direction beyond a predetermined amount.

3. In a draft rigging, the combination with a coupler, of a vertically arranged yoke, an upright key for connecting said coupler and yoke, and means adjacent the upper and lower faces of said yoke for guiding said key, the means adjacent the lower face of the yoke serving to support said key.

4. In a draft rigging, the combination with spaced draft sills, of a coupler, a yoke, a vertically arranged key for connecting said coupler and yoke, and means connected to said sills and extending above and below the said key, said means having a portion for preventing forward movement of said key beyond a predetermined amount.

5. In a draft rigging, the combination with spaced draft sills, of a coupler, a yoke, a vertically extending key for operatively connecting the same, said key having portions thereof extending above and below the

said yoke, and means including a plurality of members cooperating with said extending portions, said members having respectively an opening and depression for the reception of the projecting portions of said key.

6. In a draft rigging, the combination with draft sills, of a coupler, a yoke, cushioning mechanism within the same, stop members connected to the sills for transmitting thereto the forces delivered to the said coupler, a vertically arranged key for operatively connecting said yoke and coupler, and supplemental stop members arranged above and below said yoke and adapted to engage the said key upon a predetermined movement of said coupler in one direction.

7. In a draft rigging, the combination with center sills and cover plate, of a striking casting, a coupler, a yoke, a vertically extending key for operatively connecting said coupler and yoke, means connected to said cover plate and striking casting for retaining said key, said means being adapted to prevent movement of said key in one direction beyond a predetermined amount, and means connected to said center sills and extending beneath said key for supporting the same, said last named means having a portion adapted to prevent movement of said key in one direction beyond a predetermined amount.

8. In a draft rigging, the combination with center sills and end sill, of a coupler, a yoke, a vertically extending key for operatively connecting said coupler and yoke, means connected to said end sill above said key for retaining the same and limiting the movement of the key in one direction beyond a predetermined distance, and means connected to said center sills and disposed beneath said key for supporting the same, said last named means having a portion adapted to prevent the movement of the key in one direction beyond a predetermined distance.

9. In a draft rigging, the combination with center sills, of a coupler, a yoke, a vertically extending key cooperatively connecting said coupler and yoke, means arranged at the top of said key for guiding the same and limiting the movement thereof in one direction beyond a predetermined amount, and means extending from said center sills beneath said key for supporting the same, said last named means having a portion in vertical alinement with the means arranged at the top of said key for limiting the movement thereof in one direction beyond a predetermined amount.

10. In a draft rigging, the combination with center sills, of a coupler, a vertically arranged yoke, an upright key for connecting said coupler and yoke, means arranged at the top of said key and adjacent said yoke for retaining the same and prevent movement thereof in one direction beyond a predetermined amount, and means connected to said center sills and extending beneath said key for supporting the same, said means being adapted to prevent movement of said key in one direction beyond a predetermined amount and being disposed adjacent the lower forward end of said yoke for supporting the same.

11. In a draft rigging, the combination with a coupler, of a vertically arranged yoke, an upright key for connecting said coupler and yoke, means located above the forward upper end of said yoke for retaining the key and limiting the movement thereof in one direction beyond a predetermined amount, and means arranged beneath the forward lower portion of said yoke for supporting the same, said last named means being adapted to prevent the movement of said key in one direction beyond a predetermined amount.

In testimony whereof we affix our signatures.

BYERS W. KADEL.
PERCY R. DRENNING.