Sept. 22, 1936. D. S. BARROWS 2,055,275

DRAFT RIGGING

Filed April 1, 1931

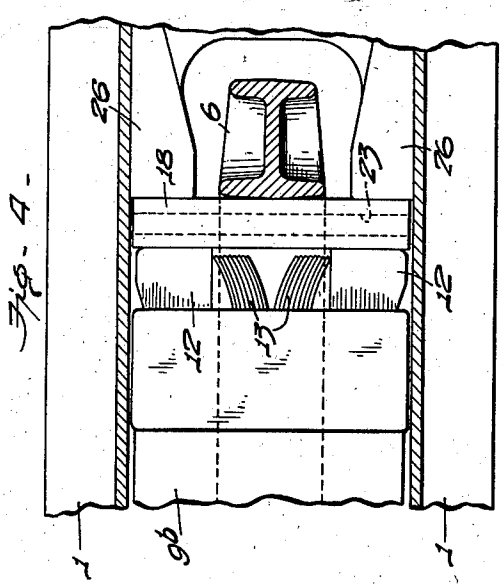


Fig. 4.

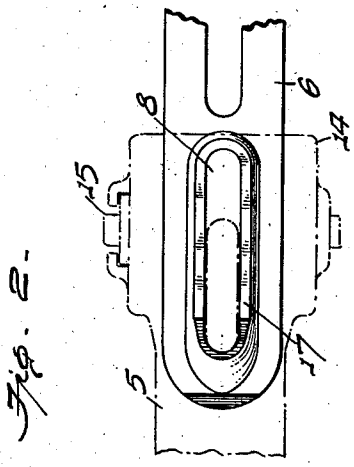


Fig. 2.

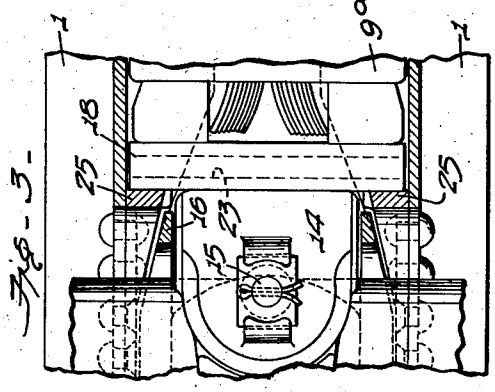


Fig. 3.

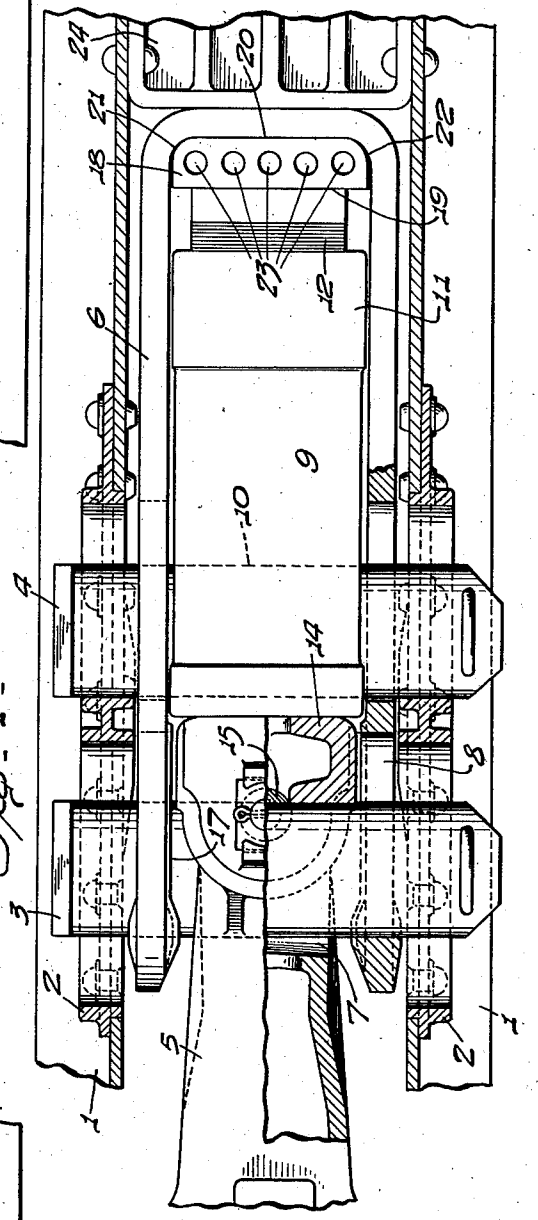


Fig. 1.

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DRAFT RIGGING

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6 Claims. (Cl. 213—72)

This invention relates to draft rigging, and more particularly to parts thereof adapted for interchangeable use with vertical and horizontal yokes.

The principal object of my invention, generally considered, is the provision of a horizontal yoke and associated follower adapted to function with a coupler, and particularly the articulated block or butt of a radial coupler which is designed for interchangeable use with a vertical yoke, said follower being also designed to be turned 90° and used with a vertical yoke.

Another object of my invention is to provide a horizontal yoke with slotted arms formed with reinforcing bosses or ribs around said slots on the inner sides of said arms to decrease the clearance with respect to the swivel block or butt of an associated coupler which is designed for interchangeable use with a vertical yoke.

A further object of my invention is to provide a member adapted for use as a rear follower or yoke filler with a horizontal yoke and, after turning 90°, as a front or rear follower with a vertical yoke.

Other objects and advantages of the invention relating to the particular arrangement and construction of the various parts will become apparent as the description proceeds.

Referring to the drawing illustrating my invention, the scope whereof is defined by the appended claims:—

Figure 1 is a plan with parts in horizontal section of portions of railway vehicle sills and associated draft rigging embodying my invention.

Figure 2 is a fragmentary side elevation looking at the inside face of one of the arms of the yoke, the associated coupler stem being shown diagrammatically.

Figure 3 is a fragmentary plan corresponding to Figure 1, but showing a vertical rather than a horizontal yoke.

Figure 4 is a plan corresponding to Figure 3, but showing my follower used at the rear instead of at the front of the associated mechanism.

The swivel butt coupler shown in my Patent No. 1,431,717, of October 10, 1922, was designed for use with a normal or standard horizontal yoke, and of such a width that there would be no undue side clearance between the butt of the coupler and said yoke. As so constructed, such a coupler is not adapted for use with a normal or standard vertical yoke. I now propose to form the butt of such a swivel butt coupler narrower so that it is interchangeable with both horizontal and vertical yokes, and modify the horizontal yoke, as will be subsequently described in detail, to reduce the excess side clearance resulting from a decreased width of the swivel block.

It is also my purpose to provide a combination yoke filler and follower which is also interchangeable with horizontal and vertical yokes, said follower being used in an upright position with a horizontal yoke, and turned 90° about the longitudinal axis of the associated vehicle when used as a follower with a vertical yoke. This is accomplished by providing a follower of a width adapted to fit between the arms of a horizontal yoke, and with curved or rounded rear corners adapted to cooperate with the curvature at the rear end of the yoke where the side arms join the rear or connecting portion thereof, and forming said follower of such a height that when turned sidewise or into a horizontal position, it is snugly receivable between the webs of the associated draft sills and adapted to cooperate with front or rear draft lugs to function as a front or rear follower for use with a vertical yoke. In order to produce this interchangeability, I eliminate the yoke filler lugs, such as usually employed with a horizontal yoke for holding the filler in position on the yoke, or add to the usual vertical yoke follower the two round corners which are characteristic of, and necessary for, the horizontal yoke follower.

Referring now to the drawing in detail, like parts being designated by like reference characters, and first considering the embodiment of my invention employed with a horizontal yoke, as shown in Figures 1 and 2, there are shown draft sills 1 which are slotted and have correspondingly slotted cheek plates 2 applied thereon, and receive front draft key 3 and a rear or second draft key 4. The front draft key 3 serves to operatively connect the coupler stem 5 to the horizontal yoke 6, said stem and yoke, for that purpose, being slotted, as indicated at 7 and 8, for receiving said connecting key. The second key 4 serves to support the cushioning mechanism 9, and functions as front stop means for said mechanism by passing through a slot 10 in the housing 11, said mechanism, in the present embodiment, involving friction wedges 12 held apart and in frictional engagement with the housing 11 by curved plate springs 13, such as shown in Figure 4.

The coupler stem 5 is of the swivel butt type, that is, it comprises a block or butt 14 pivotally connected to the rear portion of the stem by means of a pivot pin 15 which passes through

intercalated portions on the stem and butt, and is held in place in any desired manner, said coupler being of the type generally disclosed and claimed in my Patent No. 1,431,717, previously referred to. The swivel block 14 is, in the present embodiment, formed of a width smaller than that of the patent, so that it is adapted to fit between the side walls of the hood of a vertical yoke, such as shown at 16 in Figure 3. With an ordinary horizontal yoke, an abnormal amount of side clearance between the arms of said yoke and swivel block 14 would occur. To remedy this difficulty, I reinforce the side arms of the yoke 6 around the front slots 8 therein by local projections, ribs, or peripheral bosses 17, said bosses not only decreasing the side clearance with respect to the swivel block, but increasing the bearing area between the key 3 and the yoke 6 for the transmission of draft forces therebetween, as will be clear from a consideration of Figure 1. In this way, I accomplish the double purpose of improving the strength of connection between the coupler and yoke and decreasing the side clearance, so that the swivel block 14 is maintained in the desired central position with respect to said yoke.

When the coupler is subjected to draft forces, it pulls the key 3 and connected yoke 6 forwardly, moving the yoke filler or rear follower 18 therewith and forcing the friction elements 12 into the housing 9, which is held stationary by the second key 4, resulting in a compression of said mechanism and a cushioning of the draft forces. The follower or yoke filler 18, in the present embodiment, is formed with a flat front face 19 cooperating with the rear surfaces of the friction elements or wedges 12 and a rear face 20 having curved or rounded rear corners 21 fitting the correspondingly curved corners 22 of the yoke. In order to economize in material, the follower 18 is preferably cored out, as indicated at 23, to leave a series of vertically extending cylindrical openings, as shown most clearly in Figure 1. The yoke filler or follower 18 is maintained in position in any desired manner as by means of a carrier iron (not shown). When the coupler is subjected to buffing forces, the yoke, follower and friction blocks are stopped by the engagement of the yoke 6 against the associated backstop 24.

In order that the yoke filler or follower 18 may be employed as a follower for use with a vertical yoke, if and when desired, said follower desirably has a height corresponding approximately with the distance between the sills 1 of a railway vehicle, so that when turned 90° into a horizontal position, as shown in Figures 3 and 4, it is adapted to snugly fit between the sills 1 with only normal clearance, and either engage the front draft lugs 25 to function as a front follower with cushioning mechanism 9^a, or engage rear stop lugs or portions 26 to function as a rear follower for cushioning mechanism 9^b, as shown in Figure 4, said follower, in either instance, being used with a vertical yoke 16.

From the foregoing, it will be seen that I have devised railway draft rigging involving elements which are interchangeable for use with either horizontal or vertical yokes, as well as a horizontal yoke which is formed to receive and properly function with such interchangeable elements. The follower is preferably formed with curved surfaces merging into one of the exterior faces to adapt it for use with a horizontal yoke in which the rear portion is connected to the sides along curved corner portions. The construction of the follower preferably involves a coring in order to economize material, resulting in the provision of a series of internal webs extending in the direction of the length of the member, said webs being separated by spaces preferably opening through the opposite ends of the member between the exterior faces.

Although a preferred embodiment of my invention has been illustrated, it will be understood that modifications may be made within the spirit and scope of the appended claims.

I claim:—

1. In railway draft rigging, in combination with a coupler comprising a shank portion and a bearing block, said shank portion being adapted to have an angular swinging movement with respect to said block, a horizontal draft yoke having spaced sides receiving said bearing block between them, and a transversely extending key for connecting said coupler and yoke, the opposite sides of said yoke being provided with slots permitting said key to move rearwardly with respect to the yoke during buffing movement of the coupler and with inwardly projecting ribs bordering said slots for cooperating with said block, in all usual relative positions, to limit lateral shifting thereof with respect to said yoke.

2. A horizontal yoke having side arms provided with slots for receiving a connecting draft key and allowing said key to move rearwardly with respect thereto during buffing movement of an associated coupler, said arms being reinforced by inwardly projecting ribs bordering said slots and with their inner faces spaced to cooperate with the adjacent portion of said coupler to limit lateral shifting thereof with respect to said yoke in all usual relative positions.

3. In railway draft rigging, in combination with draft sills, a slotted horizontal yoke, a coupler with a slotted stem, a key passing through the slotted portions of said yoke and stem for connecting said members, and cushioning mechanism embraced by said yoke, said coupler having a butt member articulated with respect to the stem and of a width reduced as compared with the normal distance between the arms of said yoke, said yoke having inwardly projecting ribs around the slotted portions for taking up the excess clearance resulting from the reduced width of said butt member.

4. In railway draft rigging, in combination with sills, a horizontal yoke, a coupler with a stem, said yoke, stem and sills being formed with registering slots, a draft key passing through said slots for supporting and connecting said coupler and yoke, and a cushioning device embraced by said yoke and disposed rearwardly of said stem, said coupler having its stem of a width reduced as compared with the normal distance between the arms of said yoke, said yoke having the slots therein framed by inwardly extending ribs for centering the stem of said coupler and increasing the bearing area for said key.

5. In railway draft rigging, in combination with sills, a horizontal yoke, a coupler with a stem, said yoke, stem and sills being formed with registering slots, and a draft key passing through said slots for supporting and connecting said coupler and yoke, said coupler having its stem reduced in width as compared with the normal distance between the arms of said yoke, said yoke having the slots therein framed by inwardly extending ribs for centering the stem of said coupler and increasing the bearing area for said key.

6. In railway draft rigging, in combination with draft sills, a horizontal yoke with laterally spaced arms, a coupler having a stem received between said arms, a butt member engaging the rear portion of said stem, a normally vertical pin pivotally connecting said stem and butt member, said stem, with its associated butt member and the embracing portions of the yoke arms, having normally registering slots, and a normally horizontal key passing through said slots for connecting said coupler and yoke, said butt member being reduced in width as compared with the normal distance between the arms of said yoke, said yoke having inwardly projecting ribs framing the slots therein for taking up the excess clearance resulting from the reduced width of said butt member.

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