Nov. 11, 1958 L. E. FURNISS 2,859,883

RAILWAY DRAFT RIGGING

Filed Aug. 5, 1955 2 Sheets-Sheet 1

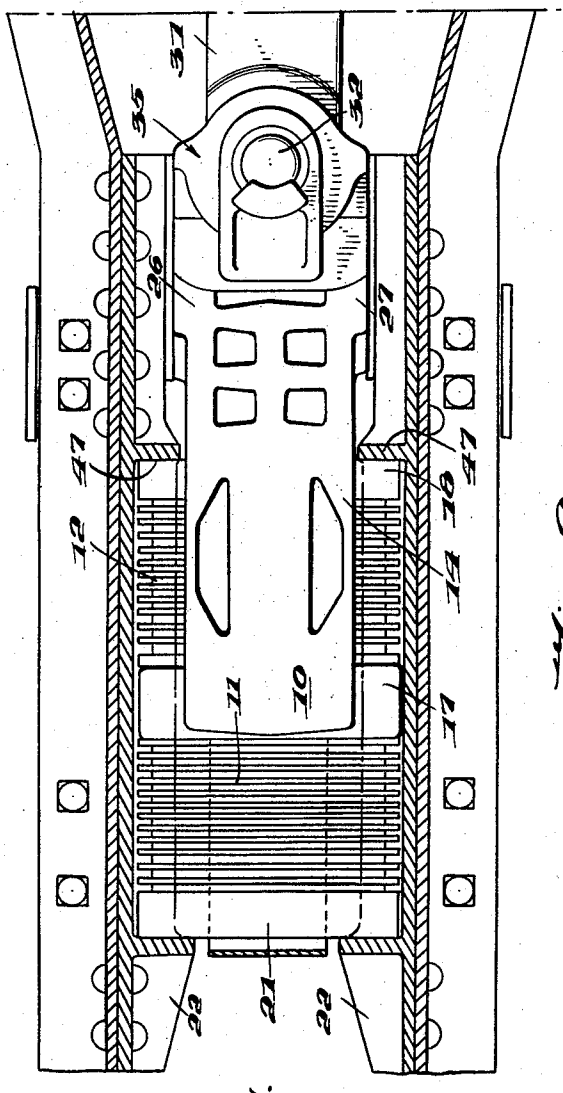


Fig. 1.

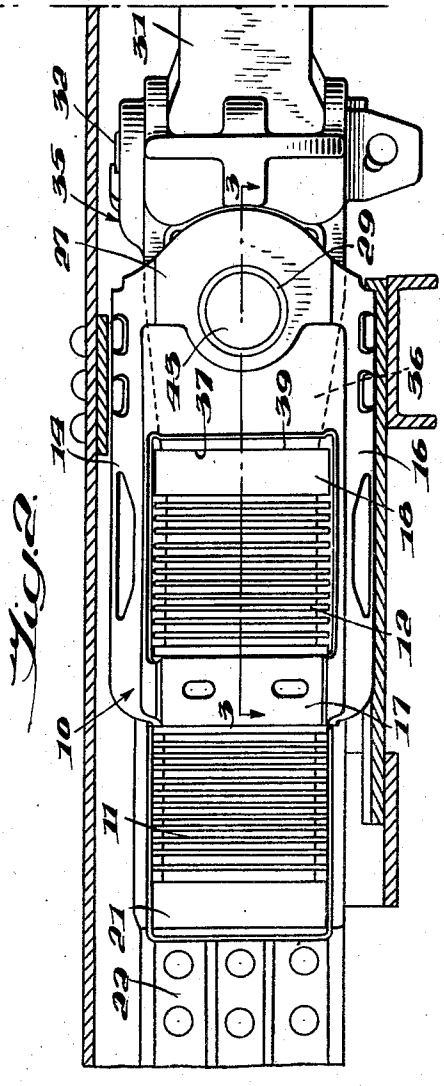


Fig. 2.

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Fig. 3.

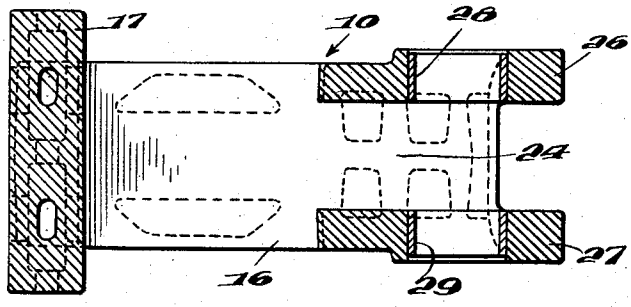


Fig. 4.

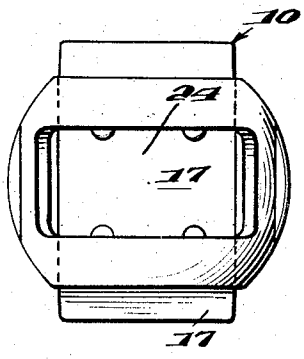


Fig. 5.

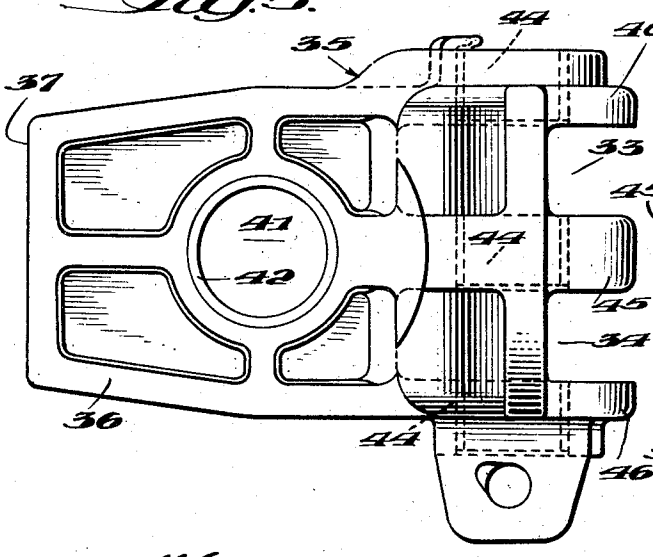


Fig. 6.

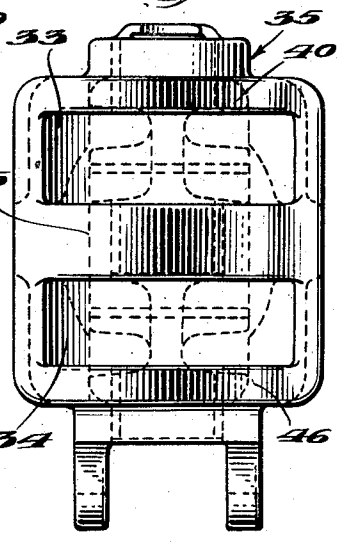
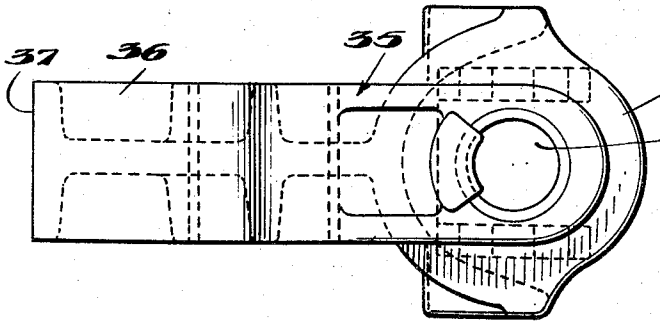


Fig. 7.



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RAILWAY DRAFT RIGGING

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Application August 5, 1955, Serial No. 526,761

2 Claims. (Cl. 213—69)

The present invention relates to attachments for a tight-lock railway coupler wherein the draft rigging includes twin cushioning units and the invention pertains to a yoke cooperating with such resilient units and so designed as to accommodate a member for connecting the rear end portion of the coupler stem to the forward portion of the yoke.

In a prior draft rigging employing twin resilient draft gears for a tightlock coupler the forward portion of the yoke carries a rigid element extending between the top and bottom straps and integral with the yoke structure. This element in the past has been provided with a forward facing concave cylindrical surface which is generated about the axis of the openings for the horizontally disposed yoke pin. Such a draft rigging included a "radial connection" coupled to the forward portion of the yoke by the horizontally disposed yoke pin and connected to the rear end of the stem of the coupler by means of a vertically disposed shank pin. In such a draft rigging it is possible for the forward portion of the "radial connection" to turn downwardly about the axis of the yoke pin. Under such circumstances and when pulling forces or buffing forces were applied to the rigging the "radial connection" is abruptly shifted to a horizontal position and the top and bottom lugs of the coupler are brought into impact contact producing noise which is transmitted to the car body and making such an attachment undesirable for passenger car service.

It is an object of the present invention to provide a yoke for use with twin cushion draft gears designed to accommodate a single unitary connection member between the rear end of the coupler stem and the forward portion of the yoke to provide for vertical and horizontal angling of the coupler with the yoke so shaped that the butt end of the connecting member is in flat abutting relationship with the forward face of the front follower in the absence of the transmission of pulling and buffing forces through the rigging.

A further object of the invention is to provide a yoke for twin cushion units devoid of a transverse element within the forward portion of the yoke and to avoid the necessity of concave cylindrical seat within the hooded portion of the yoke so that the rear portion of the connecting member may extend longitudinally through the forward portion of the yoke whereby the butt end of the connecting member may lie in flat bearing engagement with the forward face of the front follower.

A still further object of the invention is to provide improvements in a draft rigging whereby the rear portion of the member connecting the stem of the coupler with the forward portion of the yoke bears directly against the front follower which in the absence of the application of pulling or buffing forces and as a result of the partial compressed condition of the front cushioning unit will urge the front follower forwardly into contact with the butt end of the connecting member to prevent drooping

or downward swinging movement of the forward portion of the connecting member about the axis of the yoke pin.

Other objects and features of the invention will be appreciated and become apparent to those skilled in the art relating to railway draft appliances as the present disclosure proceeds and upon consideration of the following detailed description and the accompanying drawings wherein an embodiment of the invention is disclosed.

In the drawings:

Fig. 1 is a plan view of a draft rigging embodying the invention showing cooperating portions of a railway vehicle body structure in section.

Fig. 2 is a side elevational view of the draft rigging shown in Fig. 1 with portions of the body sill structure shown in section and in association therewith.

Fig. 3 is a sectional view of the yoke taken on the line 3—3 of Fig. 2.

Fig. 4 is a front elevational view of the yoke showing the open character of the forward portion.

Fig. 5 is a side elevational view of a combined radial connection and radial connection seat for the draft rigging.

Fig. 6 is a front elevational view of the connecting member shown in Fig. 5.

Fig. 7 is a plan view of the connecting member shown in Fig. 5.

Referring to the drawings there is shown at **10** a yoke designed for use in a draft rigging which includes twin cushion units **11** and **12**. The yoke includes conventional yoke straps **14** and **16** which are formed integral with a butt end member **17**. The resilient front draft cushion **12** may be of a well-known rubber laminated structure which is accommodated in the front draft gear pocket between the yoke straps **14** and **16** and is partially compressed between the front follower **18** and the butt end member **17** of the yoke even in the absence of pulling or buffing forces being applied to the draft rigging. The resilient cushion unit **11** may also be of a similar laminated construction and is disposed between the butt end member **17** of the yoke and the rear follower **21** for transmitting buffing forces to the rear draft lugs **22** carried by the body sill structure.

The forward portion of the yoke **10** is devoid of a transverse element such as has been necessary in the past so that there is an open area **24** in the hooded portion of the yoke as will be more clearly apparent from a consideration of Figs. 3 and 4. The absence of the transverse element required in the past simplifies the manufacture of the yoke and avoids the operation of providing a forwardly facing cylindrical surface within the hooded portion of the yoke and reduces the weight of the attachment, The ears or nose portions **26** and **27** of the yoke are provided with aligned horizontally disposed openings each accommodating wear resistance bushings **28** and **29**. The openings in the bushings are in horizontal alignment and the horizontally spaced ears **26** and **27** are connected to the forward ends of the yoke straps **14** and **16**.

The rear end of a stem for a tightlock coupler is shown at **31** which is connected to the yoke **10** so that the coupler may angle vertically and horizontally. The draft rigging provides for such movements of the coupler and the rear end of the coupler stem **31** is coupled to a combined radial connection and radial connection seat which is of unitary construction and herein referred to as a connecting member **35**. The connecting member **35** is provided with open areas **33** and **34** between vertically spaced horizontal webs **40**, **45** and **46** for receiving the rearwardly extending ears carried by the butt end of the coupler stem. These webs are provided with vertically aligned openings **44** for receiving a pin **32** coupling the butt end of the coupler stem to the connecting member **35**. The cou-

pler may therefore angle horizontally about the axis of the pin 32.

The forward portion of the connecting member 35 is formed integral with the rear end portion 36 which extends through the open area 24 in the yoke and the butt end 37 lies in flat abutting engagement with the forward face 39 of the front follower 18 as shown in Fig. 2. The connecting member 35 is provided with a horizontally disposed opening 41 lined with wearing resisting bushing 42 for receiving a pin 43. This pin connects the forward portion of the yoke with the connecting member 35 so as to permit vertical angling movements for the coupler and the connecting member.

The parts are so dimensioned that the front cushioning unit 12 is partially compressed in the absence of pulling or buffing forces. Under such circumstances the cushion unit 12 urges the front follower 18 forwardly and the front face 39 thereof is in flat bearing engagement with the butt end 37 of the connecting member 35 which maintains the connecting member 35 in the horizontal position. Accordingly there is no tendency for the connecting member 35 to droop about the axis of the yoke pin 43 and to be abruptly shifted from a drooping position to a horizontal position during the application of pulling or buffing forces. The pre-compression of the front cushioning unit 12 keeps the surfaces 37 and 39 in contact and thus prevents drooping of the front portion of the connecting member 35 when there is no pull or buff on the draft rigging.

In operation and when pulling forces are applied to the pin 32 by the coupler stem these are transmitted to the webs of the connecting member 35 and thence applied to the ears or nose portions 26 and 27 of the yoke 10 by the yoke pin 43. The pulling forces are transmitted to the yoke straps 14 and 16 to the butt end member 17 and applied to the front draft lugs 47 through the draft gear 12 and the front follower 18. The buffing forces are applied to the nose portions of the yoke 10 and thence transmitted by the yoke straps 14 and 16 to the butt end member 17 of the yoke. The buffing forces are applied to the rear draft gear 11 and onto the rear follower 21 and transmitted to the car body sill structure through the rear draft lugs 22.

The absence of a transverse element within a forward portion of the yoke reduces the weight of the yoke by approximately forty-three pounds. The yoke as disclosed herein for use with twin cushion draft gears is so designed as to receive the connecting member disclosed in my copending application Serial No. 448,175, filed August 6, 1954, so that the combined radial connection and radial connection seat may be used in both types of draft rigging for passenger car service.

While the invention has been described with reference to specific attachments for railway draft rigging wherein the cushioning units are of the laminated type it will be appreciated that other draft gears may be employed and that the invention is adaptable to other types of railway couplers. Such changes and others may be made including alterations in the structural characteristics of the parts without departing from the spirit and scope of the invention as set forth in the appended claims.

What I claim and desire to secure by Letters Patent is:

1. In a draft rigging for an interlocking railway coupler, a yoke having a butt end member with yoke straps extending forwardly therefrom, front draft lugs, a resilient draft gear between said straps with a rear end engaging said butt end member, vertically extending horizontally spaced nose portions connecting front ends of said yoke straps having the entire area therebetween unobstructed, a front follower having portions for engaging said front draft lugs and a rear face engaging a forward end of the draft gear, a connecting member having a rear portion and a front portion integral therewith, said rear portion extending through said unobstructed area and having a butt end in flat bearing engagement with a front face of said front follower, a horizontally disposed yoke pin connecting said nose portions of the yoke with said connecting member, a coupler stem, a vertically disposed pin connecting the stem with said forward portion of said connecting member, rear draft lugs and a rear follower, and a second resilient draft gear between said butt end member and the rear follower.

2. In a draft rigging for an interlocking railway coupler, a yoke having a butt end member with yoke straps extending forwardly therefrom, front draft lugs, vertically extending horizontally spaced nose portions connecting front ends of said yoke straps having horizontally aligned rear edges spaced forwardly of said front draft lugs, a front follower extending transversely between the yoke straps with lateral portions overlying said front draft lugs and engaging a front end of the draft gear, a connecting member having a rear portion and a front portion integral therewith, said rear portion extending through the area between said nose portions of the yoke and having a butt end in flat bearing engagement with the front face of said front follower, a horizontally disposed yoke pin connecting the nose portions of the yoke with said connecting member, a coupler stem, a vertically disposed pin connecting the stem with said forward portion of said connecting member, a second resilient draft gear engaging said butt end member, and said front draft gear being under compression in the absence of pulling or buffing forces.

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