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CARRIER ASSEMBLY FOR ROTARY COUPLER

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Fig. 1.

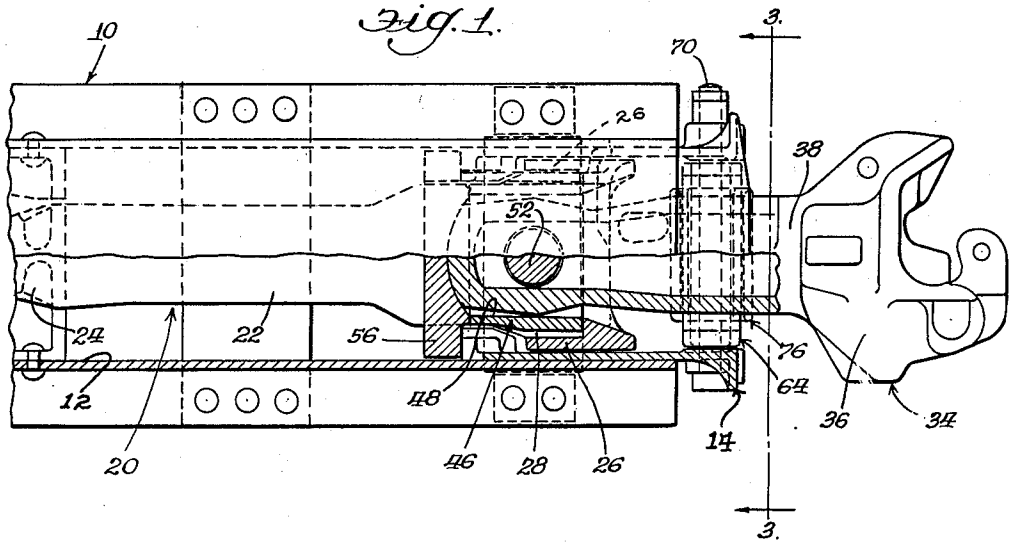


Fig. 2.

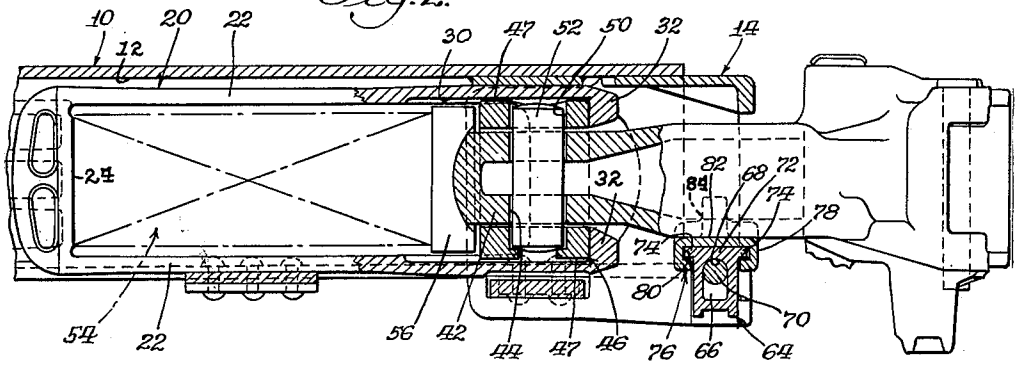
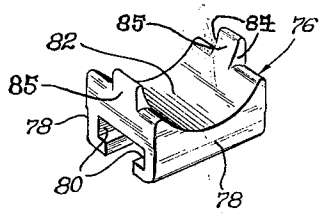


Fig. 4.



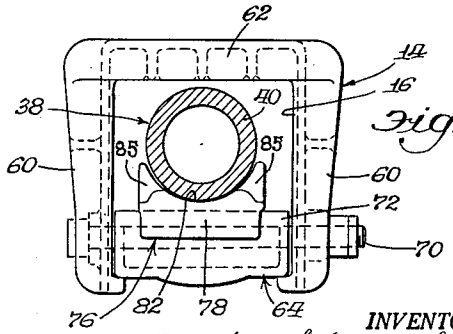


Fig. 3.

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CARRIER ASSEMBLY FOR ROTARY COUPLER

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1 Claim. (Cl. 213—61)

This invention relates to railway car couplers and more particularly to couplers mounted for rotation about their longitudinal axes so as to be usable on cars adapted for rotary dumping operations. An example of this type of rotary coupler mounting can be found in the U.S. Patent No. 2,990,962, issued July 4, 1961, to Karl F. Nystrom.

It is an object of the invention to provide, in a rotary coupler mounting arrangement, improved carrier means for rotatably supporting the coupler shank.

A more specific object of the invention is to provide, in a carrier assembly for a rotary coupler, a detachable saddle member slidably mounted on the carrier iron and adapted to rotatably cradle the coupler shank.

These and other objects of the invention will be apparent from an examination of the following description and drawings, wherein:

FIGURE 1 is a fragmentary top plan view, partly in section, of a railway car rotary coupler arrangement embodying the features of the invention;

FIGURE 2 is a longitudinal section, partly in side elevation of the structure illustrated in FIGURE 1;

FIGURE 3 is a transverse vertical section taken on line 3—3 of FIGURE 1, and

FIGURE 4 is a perspective view of the saddle member illustrated in the other views of the drawings.

It will be understood that certain elements have been omitted intentionally from certain views where they are illustrated to better advantage in other views.

Referring now to the drawings for a better understanding of the invention, it will be seen that a rotary coupler and draft gear arrangement embodying features of the invention is applied to a railway car center sill or draft gear housing, indicated generally at **10**, having an internal cavity or draft gear pocket **12**.

Formed integrally with, or preferably welded to, the forward end of the center sill is a striker casting **14** having an opening **16** extending longitudinally therethrough to receive a coupler shank. The details of the striker casting will be described hereinafter in the specification.

Disposed within the draft gear pocket **12** is a yoke, indicated generally at **20**, preferably comprising a pair of vertically spaced longitudinally extending horizontal arms **22** interconnected at their rearward ends by a vertically extending transverse wall or abutment **24** and interconnected at their forward ends by a pair of arcuate vertical side walls **26** which define with the adjacent portions of the arms **22**, a cavity or pocket **28**, presenting a generally cylindrical internal surface **30**. The forward extremities of the arms and side walls merge with an annular inwardly projecting flange **32** adapted to partly close the forward end of the pocket **28**.

A coupler, indicated generally at **34**, is shown as comprising a head **36** having a shank **38** extending rearwardly therefrom, through the striker casting opening **16** and into the pocket **28** of the yoke. As best seen in FIGURE 3, a medial portion **40** of the shank which is located in substantial vertical alignment with the striker casting **14** is preferably cylindrical in section, while the rear end **42** of the shank is preferably rectangular in transverse vertical section and has extending vertically therethrough a pin hole **44**.

Rotatably mounted within yoke pocket **28** is a connecting member or collar **46** which presents a generally cylindrical outer surface **47** engageable with the cylindrical internal surface **30** of pocket **28**. The collar **46** has extending longitudinally therethrough a generally rectangular opening **48** adapted to receive the rear end **42** of the coupler shank. The collar also has extending vertically therethrough a pin hole **50** adapted for vertical alignment with the pin hole **44** of the coupler shank when the latter is disposed within the collar so the collar and shank may be pivotally interconnected by a pin **52**.

Disposed within the yoke **20** between the arms **22** is a draft gear **54** which may be of any desired type. The draft gear is positioned between the yoke rear wall **24** and a follower **56** which is interposed between the forward end of the draft gear and the rearward end of the coupler shank, in a conventional manner, for engagement with stop lugs (not shown) presented by the draft gear housing.

The striker casting **14** is shown as comprising spaced side walls **60** interconnected at their upper ends by a top wall **62**.

Disposed between the lower ends of the side walls **60** of the striker casting is a generally elongated transversely extending coupler carrier iron **64** which, as best seen in FIGURE 2, is somewhat rectangular in transverse vertical section and which has an opening **66** extending longitudinally between the end walls of the carrier, said opening being reduced in the end walls to form a round hole for bolt **70**. The roof **68** of the opening **66** is preferably concavely arcuate, as seen in FIGURE 2.

The coupler carrier iron may be connected to the striker casting by means of a nut and bolt assembly **70**, which extends through aligned holes of the striker legs **60**, a best seen in FIGURE 3. The upper portion of the carrier iron includes a preferably flat horizontal table or shelf **72**, as best seen in FIGURE 2, having flanges **74** which extend outwardly over the main portion of the carrier iron.

As best seen in FIGURE 2, there is mounted on the carrier iron a movable member or saddle **76** which is provided with a pair of depending arms or flanges **78** having longitudinally extending horizontal grooves **80** adapted for receipt of the flanges **74** of the carrier iron. Sufficient clearance may be provided between the flanges of the saddle and carrier iron to permit the saddle to slide back and forth on carrier iron, longitudinally thereof and transversely with the coupler which rests upon upper surface **82** of the saddle. As best seen in FIGURES 3 and 4 the upper portion of saddle **76** is curved so as to present an upwardly facing concave bearing surface **82** to rotatably receive and support the cylindrical journal portion **40** of the coupler shank **38**. In order to permit the shank to angle horizontally about the vertical axis of the pin **52** the upper corners, front and rear of the saddle are preferably recessed, as at **84**. The radius forming the concave surface **82** is also purposely made somewhat larger than the radius forming cylindrical part of shank **40** to allow for horizontal angling of coupler.

Thus, in operation, it will be understood that as the rotatable connection between the yoke and shank permits the latter to rotate about its longitudinal axis, the symmetrical contour of the shank receiving recess in the saddle freely accommodates such rotation. At the same time, the slidable connection between the saddle and carrier iron permits the saddle to move back and forth with the coupler shank as the coupler shank pivots about the pin **52**. The upwardly extending lugs **85** of the saddle serve to prevent lateral displacement of the coupler shank **40** with respect to concave surface **82** of the saddle if the coupler shank raises to top of opening in striker during rotation such as during dumping operation of the car.

We claim:

In a rotary coupler arrangement for a railway car, the combination of: a coupler having a shank with a journal portion which is substantially cylindrical in cross-section;

draft gear means connecting the coupler shank to the car and accommodating horizontal pivotal movement of the coupler and rotation of the coupler shank about its longitudinal axis; and carrier means on the car for supporting the coupler shank journal portion, said carrier means including a substantially horizontal member having a top surface below the journal portion of the coupler shank, a saddle member mounted on said top surface of said horizontal member for sliding movement longitudinally of the latter, said saddle member presenting an upwardly facing concave arcuate bearing surface for rotatably receiving the cylindrical journal portion of said shank, said concave arcuate bearing surface being of greater radius than the journal portion of the shank, and lugs upstanding from opposite sides of the saddle member midway between

edges of the saddle member considered longitudinally of the coupler shank, said lugs being engageable with the journal portion of the coupler shank to prevent lateral displacement of the shank relative to the saddle member while enabling limited angular movement of the coupler shank in a horizontal plane.

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