June 5, 1934. S. B. HASELTINE 1,961,353

COUPLER AND YOKE CONNECTION FOR RAILWAY DRAFT RIGGINGS

Filed May 12, 1928

Fig. 1

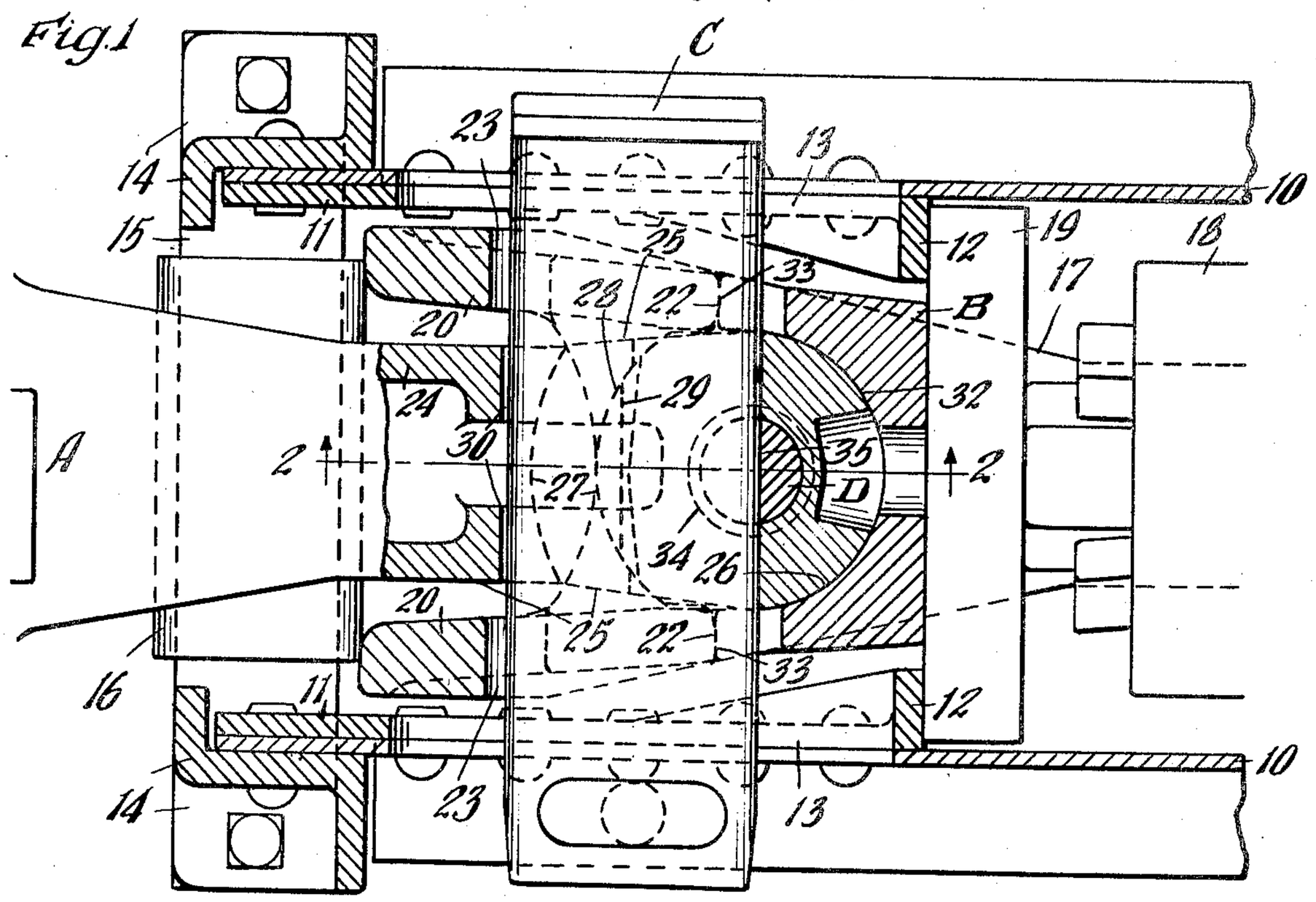


Fig. 2

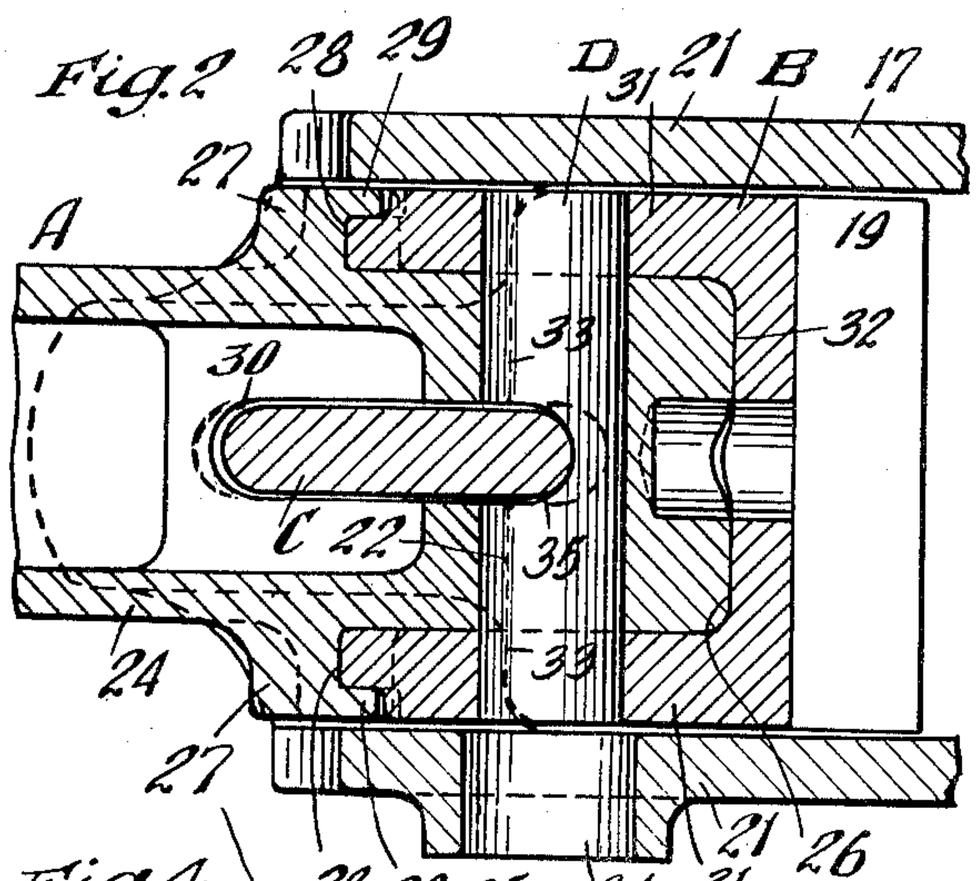


Fig. 3

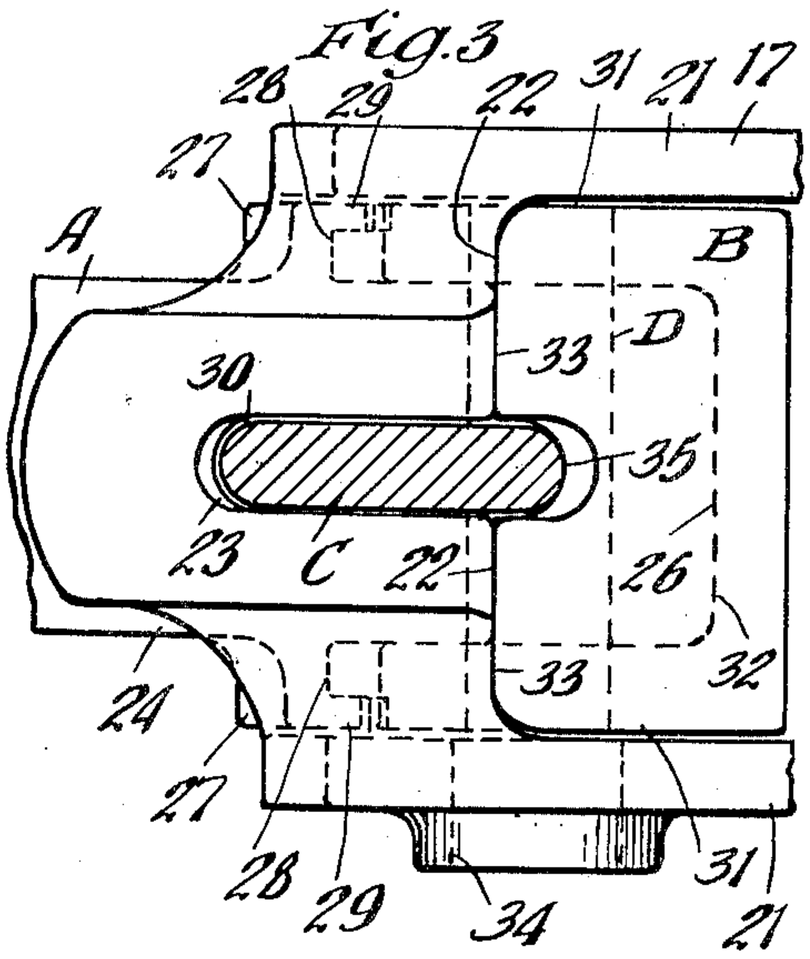
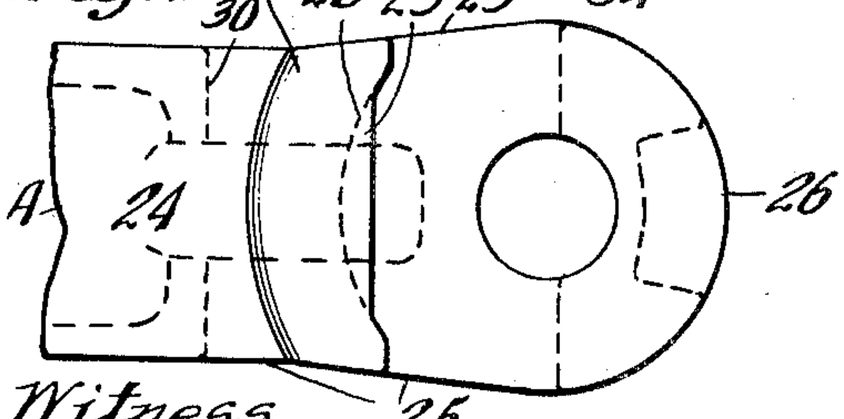


Fig. 4



Witness
Wm. Geiger

Inventor
Stacy B. Haseltine

By Joseph Harris
His Atty.

Patented June 5, 1934 1,961,353

UNITED STATES PATENT OFFICE

1,961,353

COUPLER AND YOKE CONNECTION FOR RAILWAY DRAFT RIGGINGS

Stacy B. Haseltine, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware

Application May 12, 1928, Serial No. 277,230

4 Claims. (Cl. 213—71)

This invention relates to improvements in coupler and yoke connections for railway draft riggings.

One object of the invention is to provide a coupler for railway draft riggings, having a swiveled butt end member adapted to be connected to a hooded yoke, the butt member and yoke having shouldered engagement to effect outward movement of the yoke with the coupler in draft.

A more specific object of the invention is to provide a coupler having a butt block swiveled thereto, the coupler shank and butt block having cooperating bearing surfaces transmitting the forces in buff and providing for lateral swinging movement of the coupler, and the coupler shank being connected to the butt block by a pivot pin, the butt block having lateral projections engaging in back of the side walls of the hood of the yoke to effect outward movement of the yoke in draft.

Other and further objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawing, forming a part of this specification, Figure 1 is a horizontal, longitudinal, sectional view of a portion of the underframe structure of a railway car, at one end of the same, illustrating my improvements in connection therewith. Figure 2 is a longitudinal, vertical, sectional view, corresponding substantially to the line 2—2 of Figure 1. Figure 3 is a side elevational view of my improved coupler and yoke connection, showing the coupler key in section. And Figure 4 is a top plan view of the inner end of the coupler shank employed in connection with my improvements.

In said drawing, 10—10 indicate the usual channel-shaped center or draft sills of a railway car under-frame, to the inner sides of which are secured the usual front stop castings 11—11. The stop castings 11 present transverse inner abutment faces 12 which function as the front stop members proper of the railway draft rigging. As shown, the stop castings are longitudinally slotted, as indicated at 13, to receive the opposite ends of the coupler key, and the draft sills have similar slots which register with the slots 13. The striking casting of the railway draft rigging is designated by 14 and a carry iron 15 is associated therewith, the usual wear plate 16 being interposed between the carry iron and the bottom side of the coupler shank. A yoke 17 of the hooded type is disposed between the sills of the railway draft rigging, and a shock absorbing means of any well known form is disposed within the yoke. In the present instance, the shock absorbing means is illustrated as a friction shock absorbing mechanism 18, comprising the usual friction shell and friction shoes and wedge member cooperating therewith. A front follower 19 directly engages the wedge member and has its outward movement limited by engagement with the stops 12 of the castings 11. The hooded front end portion of the yoke 17 comprises the usual spaced side walls 20—20 and top and bottom walls 21—21. As shown in the drawing, the side walls 20 are relatively short and present vertical abutment faces 22 at the inner ends thereof. The side walls 20 are provided with coupler key receiving slots 23—23.

In carrying out my invention, I provide, broadly, a coupler A, having a butt block B swiveled thereto which has shouldered engagement with the yoke member, a coupler key C extending through the coupler shank, and a pivot pin D connecting the butt block to the coupler shank.

The coupler shank, which is indicated by 24, has the section thereof adjacent the coupler head rearwardly tapered, the inner end portion of the shank having substantially straight side walls 25 and a curved end bearing surface 26. Adjacent the inner end, the coupler shank is provided with upstanding, transversely arranged, relatively heavy ribs 27—27, which are cut away adjacent the shank, as indicated at 28, thereby providing overhanging portions 29—29. The cut-away sections 28 are provided with transversely disposed, concave bearing surfaces, and the edges of the overhanging projections 29 are also provided with similar concave end surfaces. As most clearly shown in Figures 1 and 2, the shank is provided with a transverse key receiving slot 30, adapted to accommodate the coupler key C. The coupler key C has straight line bearing engagement with the inner end wall of the slot 30, as most clearly illustrated in Figure 1, and the front edge of the coupler key is normally slightly spaced from the front end wall of said slot.

The butt block B comprises a vertical main body portion having forwardly extending, spaced, top and bottom arms 31—31, embracing the inner end of the coupler shank. The inner wall of the main body portion of the block B, between the arms 31, presents a concave bearing surface 32 which is engaged by the cooperating bearing surface 26 at the inner end of the coupler shank.

As most clearly illustrated in Figure 2, the front end portions of the top and bottom arms 31 are cut away so as to interfit with the rib members 27 of the coupler shank, the edges of the

arms presenting convex bearing surfaces which mate with the bearing surfaces of the ribs 27. The main body portion of the butt block B is considerably wider than the arms 31, thereby presenting transverse abutment faces 33—33 which are adapted to engage in back of the short side walls 20—20 of the hood of the yoke 17, as clearly shown in Figures 1 and 3.

The butt block is connected to the inner end of the coupler shank by means of the vertically disposed pivot pin D, the shank of the coupler and the arms 31 of the block B being provided with aligned pin receiving openings to accommodate the pin. In order to facilitate the assembling of the parts, the bottom wall 21 of the hood is provided with an opening 34, through which the pin D may be inserted.

The coupler key C extends through the slot 30 of the coupler shank, the slots 23 of the yoke and the slots 13 of the stop castings. To hold the pin D in operative position, the same is provided with a notch 35, within which the edge of the coupler key engages. Although the coupler key C is employed in connection with my improvements, it will be evident that the same does not function normally in the manner of the usual coupler key, in that it does not act during the draft action to pull the yoke forward, being normally spaced from the front end walls of the slots 23 of the yoke.

The coupler key is employed to retain the pin in assembled relation with the other parts and also to act as a safety device in case of emergency should the pin become broken, whereupon the key will engage the front end walls of the slots 23 of the yoke, thereby preventing the coupler shank from being pulled outwardly with respect to the yoke member and separated therefrom.

In assembling my improved coupler and yoke connection, the shank of the coupler is inserted through the front end of the hood of the yoke and the butt block B is inserted through the side of the yoke and passed forwardly into the hood thereof, engaging the arms 31—31 over the inner end portion of the coupler shank. As will be evident, the laterally projecting portions of the block B, which are provided with transverse abutment shoulders, are thus disposed in back of the relatively short side walls of the hood. When the parts have been thus far assembled, the pin receiving openings of the arms 31 of the block B and of the coupler shank will be in alignment and the pin D, for pivotally connecting the coupler shank to the block B, is then inserted within the openings by passing the same through the opening 34 in the bottom wall of the hood. The coupler key C is then inserted through the aligned slots of the sills, stop castings, yoke walls, and coupler shank, engaging the rear edge of the key within the notch of the pin D, thereby locking the pin against vertical displacement and accidental removal. With the parts thus assembled, it will be evident that the coupler butt block B is pivotally connected to the coupler shank so that the same will move with the coupler shank in both buff and draft.

The buffing forces, however, are not directly transmitted through the pin to the coupler butt block B, but are transmitted through the cooperating bearing surfaces of the coupler shank and butt block B, as hereinbefore pointed out. As clearly shown in Figure 1, the coupler butt block B has flat bearing engagement with the front face of the main follower 19 and does not at any time during the operation of the mechanism have rocking movement on the front follower, as the swiveled connection between the coupler shank and the butt block provides for the necessary lateral swinging movement of the coupler in service.

The operation of my improved coupler and yoke connection is as follows: When a draft or pulling action is applied to the coupler A, the pull is transmitted through the pivot pin D to the butt block B and the butt block will be pulled forwardly in unison with the coupler. Through the shouldered engagement of the butt block with the inner ends of the side walls of the hood, the yoke is compelled to move forward in unison with the coupler. At this time, lateral swinging movement of the coupler with respect to the butt block is permitted by the pivotal connection afforded by the pin D.

When a buffing force is applied to the coupler A, the butt block B is forced inwardly directly by engagement with the coupler shank, through the cooperating curved bearing surfaces on the ribs 27 and arms 31 of the coupler shank and butt block, and the cooperating curved bearing surfaces on the inner end of the coupler shank and the vertical wall of the butt block. It is obvious that the curved bearing surfaces referred to, provide for the necessary swiveling movement of the coupler shank on the butt block to permit of the lateral swinging action of the coupler. During the buffing action, the pivot pin D is entirely relieved from strain.

In case of emergency during a draft action, the coupler key C comes into operation and acts in the manner of the usual coupler key in transmitting the pulling force from the coupler shank to the yoke member. The key C is designed to come into operation only in case of failure of the pivot pin D, that is, in case the pivot pin D becomes accidentally broken or damaged.

While I have herein shown and described what I consider the preferred manner of carrying out my invention, the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a railway draft rigging, the combination with a hooded yoke having side walls; of a coupler provided with a shank; and a one piece butt block detachably connected to the shank of the coupler, said block having a rear face adapted to have flat bearing engagement with a follower of a shock absorbing mechanism and also having lateral projections engaged in back of the walls of the hood of the yoke to effect movement of the yoke with the coupler in draft.

2. In a railway draft rigging, the combination with a yoke having a head adapted to receive the inner end of a coupler shank, said head having relatively short, spaced side walls; of a coupler provided with a shank; a butt block swiveled to the shank, said butt block being enlarged at the inner end to provide abutment shoulders adapted to engage in back of the side walls of the head of the yoke to effect movement of the yoke in draft with said coupler, said block being insertable forwardly through the yoke into the head to dispose said shoulders in back of the side walls of the head; and a pivot pin connecting the coupler shank to the block, the head of the yoke being provided with an opening through which said pin is insertable.

3. In a railway draft rigging, the combination with a yoke having a head provided with short

side walls slotted to receive a coupler key; of a coupler provided with a shank; a butt block swiveled to the shank and having a flat end face adapted to cooperate with the front follower of the railway draft rigging, said butt block having shouldered engagement with the side walls of the head of the yoke to effect movement of the yoke with the coupler in draft, said coupler shank and butt block having cooperating bearing surfaces operative to transmit buffing forces; a pivot pin connecting the coupler shank and butt block; and a coupler key extending through the coupler shank and slots in the side walls of the yoke, said key having notched engagement with the pin to prevent removal of the latter, and said key being held spaced from the front end walls of the slots of the yoke and adapted to act as a safety device in case the pin becomes broken, to engage the outer end walls of the slots of the yoke and prevent separation of the coupler and yoke.

4. In railway draft rigging, the combination of a yoke formed with flattened bearing portions, a coupler associated with said yoke and having a two-part coupler stem movable with respect to said yoke during transmission of buffing forces, and means providing a pivotal connection between said parts, one of said parts having portions embracing the other, said embracing portions being provided with flattened end portions non-rotatively engageable with the flattened bearing portions of said yoke for transmission of draft forces to said yoke.

STACY B. HASELTINE.