June 28, 1932. H. J. LOUNSBURY 1,864,842

RAILWAY DRAFT RIGGING

Filed Aug. 9, 1929 2 Sheets-Sheet 1

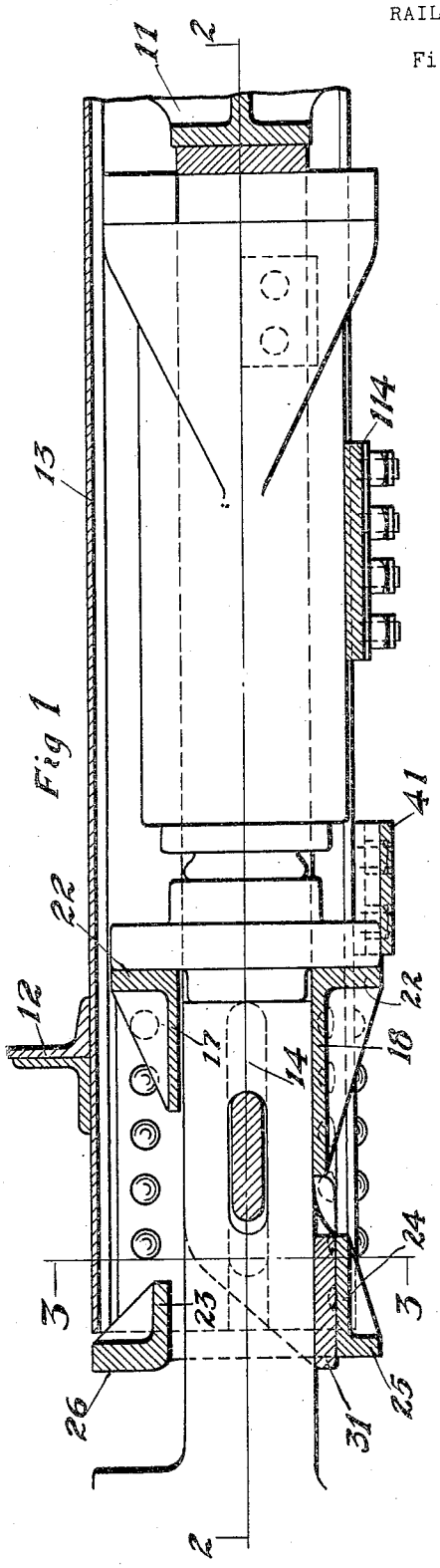


Fig 1

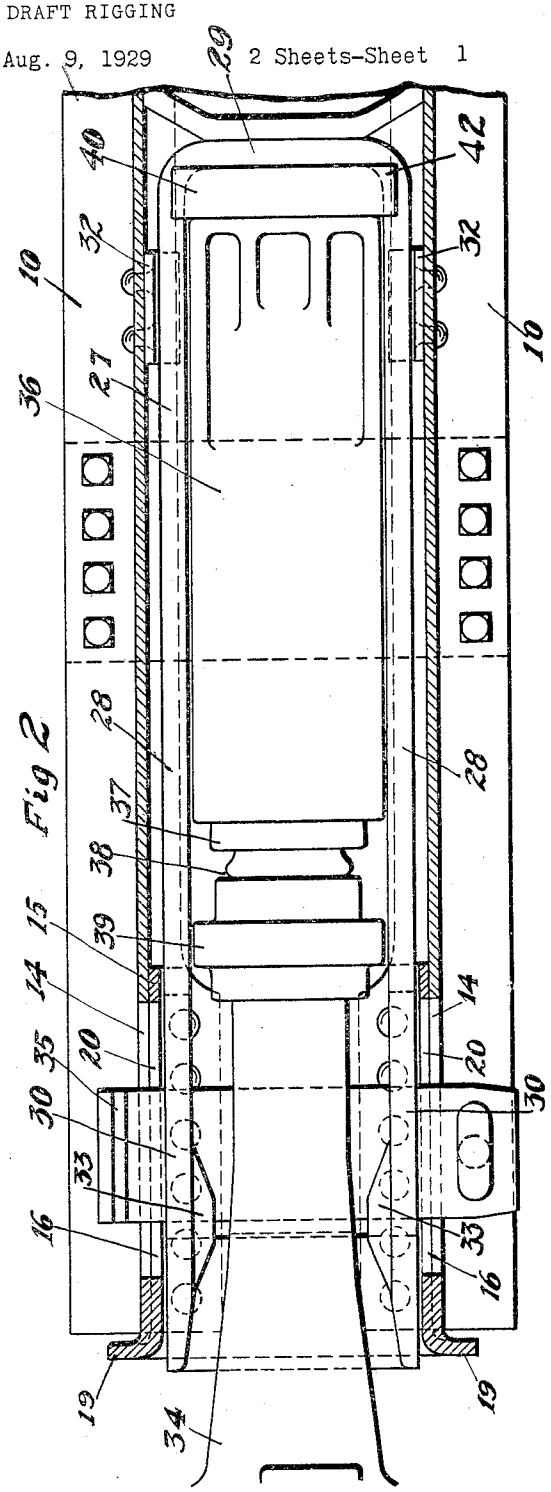


Fig 2

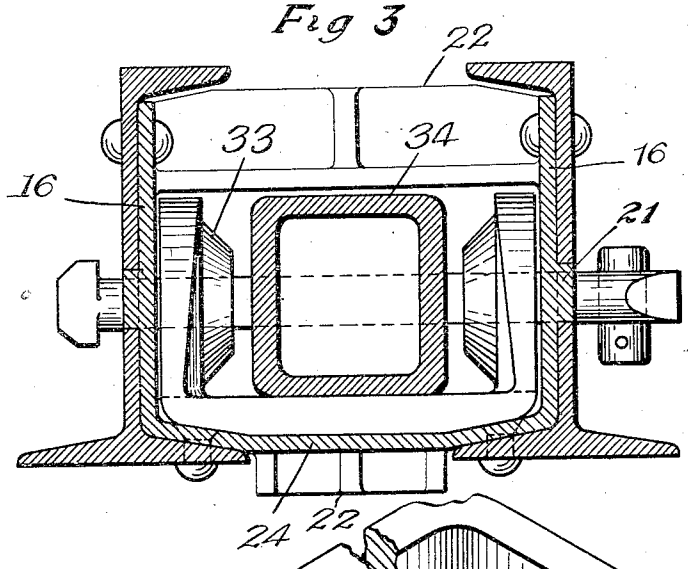
Inventor
Harvey J. Lounsbury
By Joseph Harris his Atty

June 28, 1932. H. J. LOUNSBURY 1,864,842

RAILWAY DRAFT RIGGING

Filed Aug. 9, 1929 2 Sheets-Sheet 2

Fig 3



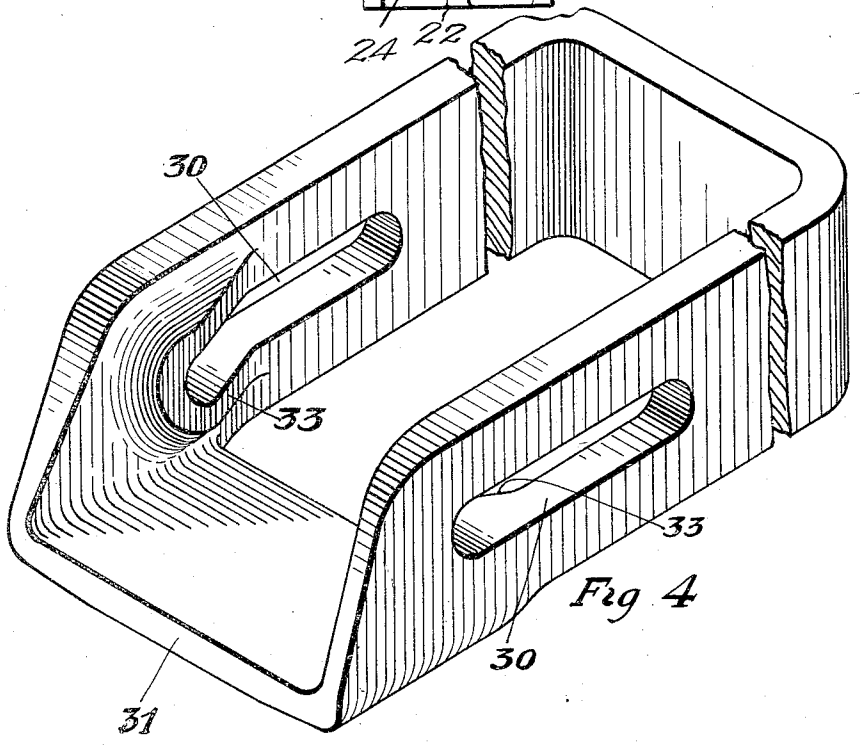


Fig 4

Inventor
Harvey J. Lounsbury
By Joseph Harris his Atty

Patented June 28, 1932 1,864,842

UNITED STATES PATENT OFFICE

HARVEY J. LOUNSBURY, OF GLEN ELLYN, ILLINOIS, ASSIGNOR TO W. H. MINER, INC., OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE

RAILWAY DRAFT RIGGING

Application filed August 9, 1929. Serial No. 384,679.

This invention relates to improvements in railway draft riggings.

One object of the invention is to provide a railway draft rigging including a horizontal yoke connected to the usual coupler and having shock absorbing means disposed within the yoke, wherein means is provided, movable with the yoke, for at all times supporting the coupler shank to maintain the coupler in proper alinement with the shock absorbing means and support the coupler in proper horizontal position to cooperate with the coupler means of the next adjacent car, thereby especially adapting the railway draft rigging for use in connection with shock absorbing means having greater compression in buff than in draft.

Another object of the invention is to provide a yoke of the horizontal type for use in connection with railway draft riggings wherein the yoke has side arms provided with coupler key-receiving slots and the side arms are connected by an integral web member disposed forwardly of the key-receiving slots of the yoke arms to provide a supporting shelf for the shank of the coupler, engaging the under side of said shank, thereby supporting the coupler at such a point that the weight of the coupler head is overbalanced by the coupler shank and connected yoke rearwardly of the point of support thereof to maintain the coupler in proper horizontal alinement with the usual follower and shock absorbing means and the coupler head in position to properly cooperate with the coupler of the next adjacent car.

A still further object of the invention is to provide a railway draft rigging including spaced draft sills having coupler key-receiving slots opening through the outer ends thereof; a front stop casting connecting the sills and secured thereto and having laterally outwardly projecting filler members engaging within the outer ends of the sill slots to close the same, wherein the casting is provided with top and bottom guide walls cooperating with the rear end of the coupler shank and the arms of the horizontal yoke, and further provided with an integral horizontal web forming a support for the forward end of the yoke.

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

In the drawings, forming a part of this specification, Figure 1 is a longitudinal, vertical sectional view through the underframe structure of a railway car illustrating my improvements in connection therewith. Figure 2 is a horizontal, longitudinal sectional view corresponding substantially to the line 2—2 of Figure 1 but showing the yoke, coupler, shock absorbing means and followers in plan. Figure 3 is a vertical, transverse sectional view corresponding substantially to the line 3—3 of Figure 1. And Figure 4 is a detailed perspective view, partly broken, of my improved yoke member employed in connection with the railway draft rigging.

In said drawings 10—10 designate longitudinally disposed spaced center or draft sills of a railway car of the usual channel shape form. The combined filler and stop casting 11 is disposed between the draft sills and cooperates with the yoke and shock absorbing means of the railway draft rigging in the usual manner. The end sill structure of the car is designated by 12. The draft sills 10 are provided with the usual cover plate member 13 and have secured to the bottom flanges thereof a saddle plate 114 which supports the shock absorbing means of the railway draft rigging in a well known manner.

In carrying out my invention, I provide the spaced draft sills 10 with longitudinally extending coupler key-receiving slots 14—14 at the forward ends thereof. As shown, the slots 14 are open at the outer ends of the sills and are in transverse alinement. A front stop casting 15 is secured between the front ends of the sills, the same having vertically disposed spaced side walls 16—16 and horizontally disposed spaced top and bottom walls 17 and 18 at the rear end thereof. The side walls may be secured to the vertical webs of the draft sills in any well known manner and are herein shown as riveted to the same. At the forward end, the side walls 16 are provided with laterally projecting flange-

like sections 19—19 which form abutments for the front ends of the draft sills. The side walls 16 are provided with alined key-receiving slots 20—20 which register with the slots 14—14 of the draft sills. Each side wall is also provided with a laterally outwardly projecting filler section 21 which engages within the open front end portion of the corresponding slot 14 of the draft sill and substantially fills the same. The filler projection 21 forms a closure for the outer end of the slot 14 in the corresponding draft sill, the closed slot defined thereby being of the same length as the corresponding slot 20 in the side wall 16 of the front stop casting.

As most clearly shown in Figure 1, the top wall 17 of the casting 15 is shorter than the bottom wall 18 which has the front edge thereof disposed a considerable distance inwardly of the front end of the casting 15. At the rear end of the casting the top and bottom walls 17 and 18 are provided with vertically disposed flange-like sections 22—22 which are in vertical alinement and form the stop members proper which cooperate with the front follower of the railway draft rigging. The top and bottom walls of the casting are preferably suitably reinforced by longitudinally extending ribs which are formed integral with these walls and the flanges 22 as most clearly illustrated in Figure 1. At the forward end the casting 15 is provided with a relatively short top wall portion 23 in horizontal alinement with the wall 17, and a horizontal bottom wall section 24 connecting the side walls, the section 24 being of slightly greater length than the wall 23 but having the inner edge thereof spaced from the front edge of the wall 18. As clearly shown in Figure 1, the wall 24 is disposed in a plane below the wall 18 and forms the carry iron member of the railway draft rigging as hereinafter more clearly pointed out. The bottom wall 24 is provided with a depending, relatively short vertical flange 25 at the forward end thereof which is in substantial alinement with the flanges 19 and is preferably formed integral with the same. The flange 25 and wall 24 may be suitably reinforced by longitudinally extending ribs as shown in Figure 1. The top wall 23 has a vertical flange 26 upstanding therefrom, which is of greater thickness than the flanges 19 and 25 and has the front face thereof outwardly offset as shown, with respect to the front faces of the flanges 19 and 25. The section or flange 26 forms the striking plate member proper of the casting 15.

A horizontal yoke 27 is disposed between the draft sills and has spaced longitudinally extending side arms 28—28 and a connecting rear section 29 which is formed integral with the side arms, thus providing a yoke member of substantially U-shaped form. Adjacent the forward ends of the arms 28 are provided with alined coupler key receiving slots 30—30. As shown, the arms 28 are extended forwardly beyond the front ends of the slots 30 and are connected at the bottom edges by a horizontally disposed relatively heavy transverse web 31 which forms a support for the coupler shank as hereinafter pointed out, and is slidably supported on the carry iron section 24 of the casting 15. The arms 28—28 of the yoke are directly supported by the bottom wall 18 of the casting and have slidingly guided movement between said bottom wall 18 and the top wall 17. At the rear end of the yoke the side arms 28 are preferably slidably supported by guide members 32—32 which are secured to the webs of the draft sills and have inwardly projecting bottom flanges which engage underneath the side arms. The key receiving slots 30 of the yoke arms 28 are preferably reinforced at the forward ends by flanges 33—33 as most clearly illustrated in Figures 2 and 4.

The usual coupler member of the railway draft rigging is designated by 34 and has the shank portion thereof connected to the yoke arms 28 by a coupler key 35 extending through the shank of the coupler and the key-receiving slots 30—30 of the yoke. The outer ends of the key 35 have sliding movement in the slots 20 and 14 of the casting 15 and draft sills 10, the key being headed at one end as shown and provided with the usual retaining means at the other end to maintain the same assembled with the railway draft rigging. The shank of the coupler 34 has the rear end portion thereof guided between the top and bottom walls 17 and 18 of the casting 15 and is supported adjacent the front end thereof, forwardly of the key-receiving opening by the supporting shelf 31 of the yoke, which engages underneath the coupler shank.

A shock absorbing mechanism of any well known type may be employed in connection with my improved railway draft rigging and as herein shown a shock absorbing mechanism of the friction shell type is disposed within the yoke, the same being designated generally by the numeral 36. The shell 36 has the usual spring resisted friction shoes 37 and wedge member 38 cooperating therewith. Front and rear follower members 39 and 40 cooperate with the opposite ends of the friction shock absorbing mechanism, the front follower 39 being preferably in the form of a heavy rectangular plate having forwardly and rearwardly projecting enlargements or bosses thereon engaging respectively the rear end of the coupler shank and the front face of the wedge 38. The follower 39 is preferably supported by a carrier plate 41 as shown in Figure 1 which may be secured to the bottom flanges of the draft sills in any suitable manner. The rear follower 40 is also in the form of a heavy

rectangular plate interposed between the rear end of the friction shell of the shock absorbing mechanism and the transverse connecting section 29 of the yoke, the follower 40 being provided with laterally extending top lugs 42—42 which engage over the side arms 28 of the yoke, thereby supporting the follower member.

My improved railway draft rigging is of such a construction that it is particularly adapted to cooperate with a shock absorbing mechanism having greater compression in buff than in draft and the friction shock absorbing mechanism 36 illustrated is so proportioned that it will have a greater compression stroke in buff than generally employed in present railway practice. In order to provide for the necessarily greater inward travel of the coupler in buff than in draft to effect greater compression of the gear during the buffing action, the slots 20 and 14 of the casting 15 and sills 10 are made of such a length as to permit greater travel of the key 35 rearwardly of the slots than forwardly of the same. The key slots 30 of the yoke arms 28 are of such a length that the necessary relative movement of the coupler and yoke will be permitted during a buffing action to effect full compression of the shock absorbing mechanism. As shown, in the normal position of the parts the rear end walls of the slots 30 are spaced slightly inwardly of the corresponding end walls of the slots 20 and 14 of the stop casting 15 and sills 10. A slight amount of play is permitted between the coupler key and the coupler key opening of the coupler shank as clearly shown in Figure 1. In the normal position of the parts, the front edge of the coupler key 35 is in engagement with the front end walls of the slots 30 whereby outward movement of the yoke is effected immediately upon a pulling or draft action being applied to the coupler 34.

As hereinbefore pointed out, the supporting shelf 31 of the yoke is disposed forwardly of the coupler key receiving slots 30 of the yoke arms 28. By this arrangement the shelf 31 is located at such a point with respect to the opposite ends of the coupler that the combined weight of the yoke connected to the coupler and of the coupler shank rearwardly of said point of support overbalances the weight of the coupler head, thereby maintaining the coupler in proper horizontal alinement with the follower and shock absorbing mechanism of the railway draft rigging and also holding the coupler head properly positioned for cooperation with the coupler of the next adjacent car. As will be evident, due to the coupler head being overbalanced, drooping of the same is positively prevented. It is further pointed out that due to the rear end portion of the coupler shank being guided between the top and bottom walls 17 and 18 of the casting 15, additional means is provided for preventing tilting of the coupler.

As will be evident, the coupler cannot be pulled outwardly with respect to the yoke to a greater extent than that shown in Figures 1 and 2 of the drawings because the coupler key 35 by engagement with the front end walls of the slots 30 limits such outward movement. The coupler is thus prevented from being pulled outwardly of the yoke to an extent where the weight of the coupler head overbalances the combined weight of the yoke and shank rearwardly of the support 31, thereby assuring proper horizontal alinement of the coupler at all times. It will be evident the necessary inward movement of the coupler with respect to the yoke to provide for compression of the shock absorbing mechanism in buff is permitted by the slots 30 of the yoke arms 28. In this connection, it is pointed out that the coupler head is spaced such a distance from the striking plate member 26 as to permit this movement.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but 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 draft rigging having longer travel in buff than in draft, the combination with spaced draft sills and a coupler; of a one-piece integral stop casting secured between said sills, said casting having spaced vertical side walls, spaced top and bottom webs connecting said side walls at the rear end section of the casting, said top and bottom webs receiving the coupler shank therebetween and together forming guide means for maintaining the rear end of the coupler shank in horizontal position, said casting also having a bottom web at the forward section thereof connecting said side walls and serving as a carry iron member; a yoke between said sills, said yoke having side arms provided with transversely aligned coupler key receiving openings, said side arms being connected by a bottom web forming a shelf engaging underneath the shank of the coupler for supporting said shank adjacent to the coupler head, said bottom web of the yoke being disposed outwardly of the key receiving openings thereof and being slidably supported on said carry iron member in horizontal alignment with the bottom guide web at the rear end of said casting; a coupler key extending through the side walls of the casting, the slots of the yoke arms and the coupler shank for operatively connecting the coupler to the yoke for movement in unison therewith in draft.

2. In a draft rigging having longer travel in buff than in draft, the combination with

spaced draft sills and a coupler having the shank thereof provided with a transverse key slot; of a carry iron member and a striking plate for the coupler head at the outer ends of the sills; a yoke having spaced side arms, said yoke being disposed between the sills and said side arms having aligned coupler key receiving slots; a key extending through the slots of the coupler shank and yoke; a bottom web connecting sail yoke arms outwardly of the key slots thereof, said web forming a supporting shelf engaging underneath the coupler shank outwardly of the keyed connection thereof with the yoke, said shelf being slidably supported on the carry iron and normally projecting outwardly beyond the vertical plane of the striking plate; and a guide member fixed to the sills engaging the upper surface of the coupler shank rearwardly of the key slot thereof and overlapping the shank in all operative positions of the latter.

In witness that I claim the foregoing I have hereunto subscribed my name this 7th day of August 1929.

HARVEY J. LOUNSBURY.