Dec. 29, 1953 C. A. ANDERSON 2,664,213

MINE CAR DRAFT RIGGING

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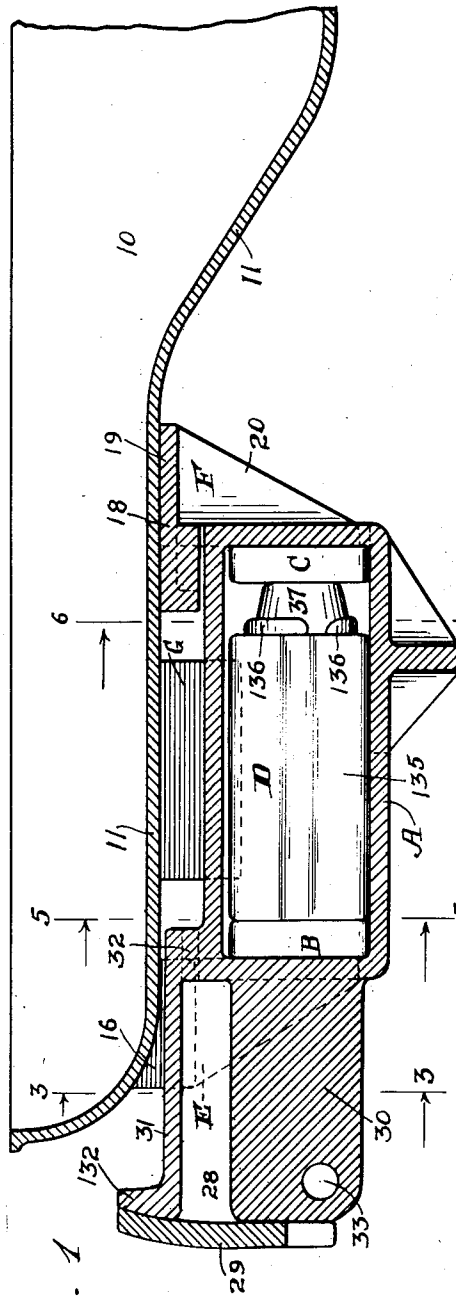


Fig. 1

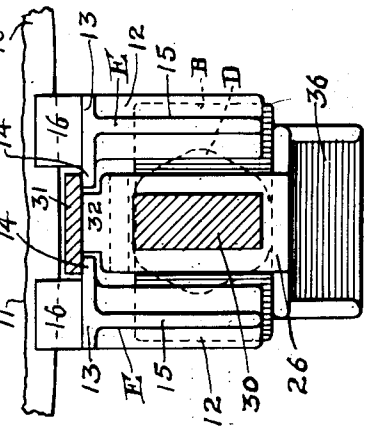


Fig. 3

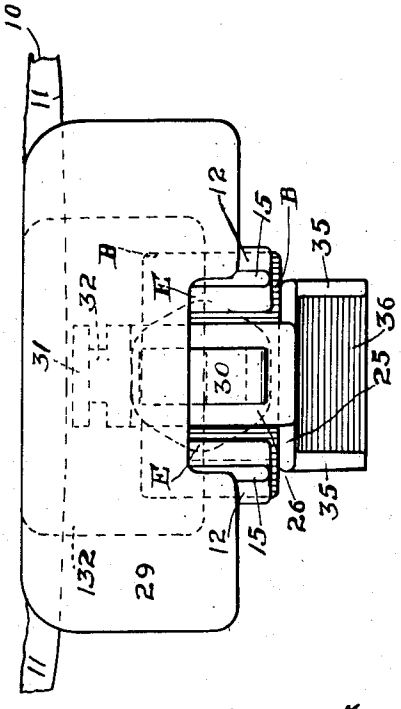


Fig. 2

Inventor:
Carl A. Anderson.
By Henry Fuchs
Attys.

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Fig. 4

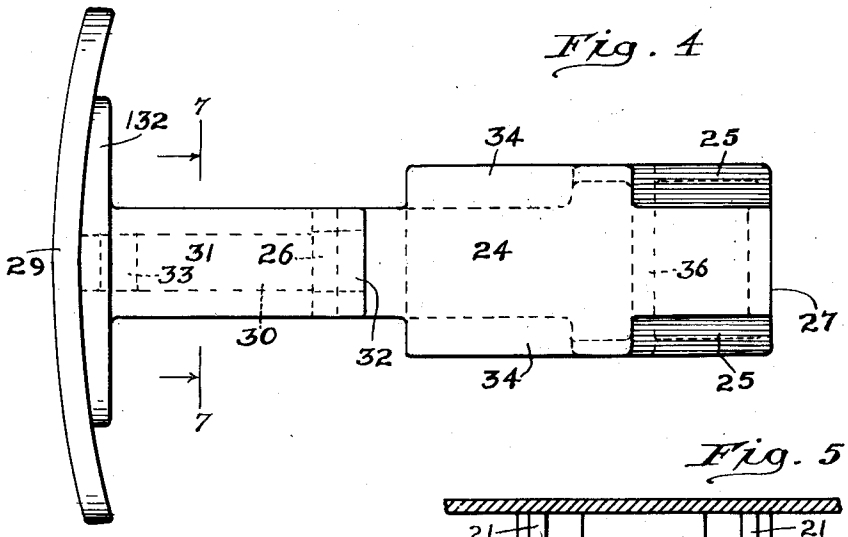


Fig. 5

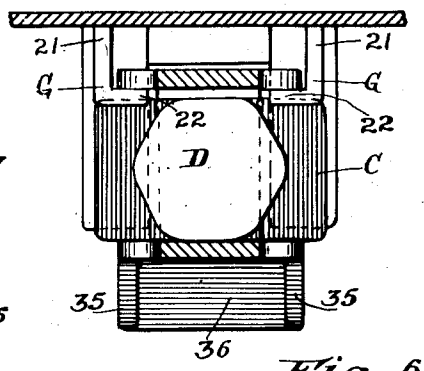


Fig 7

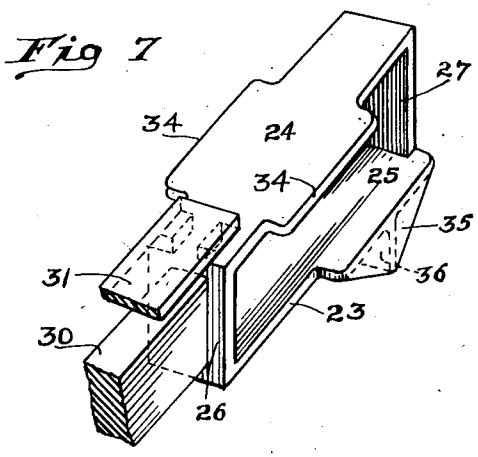
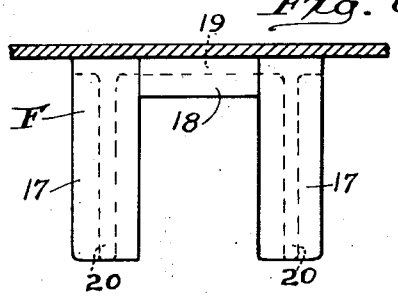


Fig. 6



Inventor:
Carl A. Anderson.
By Henry Fuchs
Atty.

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MINE CAR DRAFT RIGGING

Carl A. Anderson, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware

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9 Claims. (Cl. 213—50)

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This invention relates to improvements in draft riggings, especially adapted for mine cars.

One object of the invention is to provide a draft rigging of simple design which is adapted to successfully cushion the draft and buffing shocks to which mine cars are subjected in service.

A more specific object of the invention is to provide a draft rigging of the character specified including a supporting yoke structure slidingly mounted on the car, and a friction shock absorbing mechanism carried by the yoke structure and interposed between front and rear followers cooperating with front and rear stops on the underframe structure of the car, wherein the yoke structure is guided for horizontal movement lengthwise of the car by laterally projecting guide flanges provided on said structure and engaged with supporting guides on said underframe structure, and wherein the yoke structure is further provided with an integral buffing head, and is designed to detachably accommodate the usual mine car coupling means for the transmission of draft forces to the friction shock absorbing mechanism.

Another object of the invention is to provide a mine car draft rigging, as set forth in the preceding paragraph, wherein the yoke structure is further provided with a depending draft and buffer flange or lug which is utilized to receive shocks encountered in bringing the mine car to a halt by manually set stop means on the mine car track, and to receive shocks encountered when the mine car is pulled by a conveying mechanism, to transmit such shocks to the friction shock absorbing mechanism of the rigging.

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

In the accompanying drawings forming a part of this specification, Figure 1 is a broken longitudinal vertical sectional view through the bottom portion of a mine car at one end of the same, illustrating my improvements in connection therewith, and showing the friction shock absorbing mechanism and front and rear followers of the draft rigging in elevation. Figure 2 is a front elevational view of Figure 1. Figure 3 is a transverse vertical sectional view, corresponding substantially to the line 3—3 of Figure 1. Figure 4 is a top plan view of the supporting yoke structure of my improved draft rigging. Figure 5 is a transverse vertical sectional view, corresponding substantially to the line 5—5 of Figure 1. Figure 6 is a transverse vertical sectional view, corresponding substantially to the line 6—6 of Figure 1, with the friction shock absorbing mechanism and rear follower of the draft rigging omitted. Figure 7 is a broken detailed perspective view of Figure 4, said view being broken off at the line 7—7 of Figure 4.

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In said drawings, 10 designates generally the body of a mine car, and 11, the bottom wall of said car body.

In carrying out my invention, I provide broadly a supporting yoke structure A, which is suspended from the car body and is guided for sliding movement lengthwise of said car, front and rear followers B and C, a friction shock absorbing mechanism D within the yoke structure, front stop brackets E—E, and a rear stop bracket F with which the followers cooperate, and supporting guides G—G for said yoke structure fixed to the underneath side of the car body 10.

The front stop brackets E—E are laterally spaced apart and arranged at opposite sides of the central longitudinal axis of the car structure. Each bracket E consists of a vertically disposed, rearwardly facing plate 12, reenforced by a horizontally disposed, lengthwise extending, platelike section 13 projecting forwardly therefrom, the platelike section 13 being of greater width than the plate 12 and projecting laterally inwardly beyond the latter to provide a protruding guide ledge 14. The plate 12 of each bracket is preferably further reenforced by a central vertical web 15 extending between said plate and the platelike section 13. These stop brackets E—E are preferably welded to the underneath side of the bottom wall 11 of the car body 10, and are spaced to accommodate the forward end portion of the yoke structure A therebetween, with the guide ledges 14—14 projecting toward each other. Inasmuch as the wall 11 of the car body 10 is curved upwardly at the end of the car, as shown in Figure 1, a filler block 16 is employed between the platelike section 13 of each bracket E and the wall 11 of the car body at this point, the same being preferably welded to said plate and the wall 11 of the car body.

The rear stop bracket F comprises a pair of vertically disposed, laterally spaced plates 17—17, which are in alignment respectively with the plates 12—12 of the brackets E—E, and a transverse barlike section 18 connecting said plates and formed integral therewith. The bracket F has the plates 17 thereof reenforced by a rearwardly projecting, horizontally disposed, platelike section 19 at the top portion thereof. A pair of reenforcing webs 20—20 are also employed on the bracket F, each web 20 extending between the

plate 17 and the platelike section 19 at each side of said bracket. The bracket F is fixed to the car body rearwardly of the brackets E—E, being preferably welded to the wall 11 of said car body.

The supporting guides G—G are located between the front and rear stop brackets E—E and F, at opposite sides of the longitudinal center line of the car, each guide being in the form of an angularly bent plate comprising a vertical section 21, which is welded to the bottom wall 11 of the body 10, and a horizontal section at the lower end of the vertical section, forming a guide ledge 22. The guide ledges 22—22 of the supporting guides G—G project toward each other, as shown in Figure 5.

The yoke structure A comprises a rear straplike portion 23 composed of horizontally disposed, top and bottom arms 24 and 25 connected by front and rear, vertical sections 26 and 27, and a head portion 28 comprising a transverse buffer plate 29, connected to the straplike portion 23 by a forwardly extending shank member 30 on the section 26, and a platelike strip 31 connected at its rear end to the top portion of the section 26 by a web 32 which is of lesser transverse width than the section 26 and the strip 31. The forward end of the strip 31 is fixed to the inner side of the buffer plate 29, being preferably reenforced by an upstanding flange 132 at its connection with the plate 29. The shank 30 is provided with a transverse opening 33 at its outer end adapted to accommodate the pin or a portion of the link of a coupling member of any well-known design, and the buffer plate 29 is cut out at the bottom, as shown in Figure 2, to accommodate said coupling member and provide clearance for swinging of the same. Between its ends, the top arm 24 of the straplike portion 23 of the yoke structure A is laterally enlarged to provide guide flanges or wings 34—34 which overlap and ride upon the guide ledges 22—22 of the guides G—G to support the yoke structure A and guide it in lengthwise direction.

The front or head portion 28 of the yoke structure is supported by the strip 31 which laterally overlaps and rides upon the ledges 14—14 of the front stop brackets E—E. The bottom arm 25 of the straplike portion 23 of the yoke structure A is preferably laterally enlarged at its rear end, as shown most clearly in Figures 4 and 7, and at said enlarged portion the arm 25 is provided with depending side webs 35—35 connected by a vertically disposed transverse section, providing a draft and buffing flange or lug 36. This draft and buffing flange 36 is designed to engage with manually set stop means commonly employed on mine car tracks for bringing the car to a stop, and the shock incident to halting such a car is thus transmitted to and taken care of by the friction shock absorbing mechanism of the draft rigging. The flange or lug 36, as placed on the yoke structure, is further engageable by the usual mine car conveying means and the shocks encountered in pulling a car by such a conveying means are thus also transmitted to the friction shock absorbing mechanism.

The followers B and C and the friction shock absorbing mechanism D are of well-known design. As shown, the followers B and C are arranged within the straplike portion 23 of the yoke structure at the front and rear ends thereof, respectively, and the friction shock absorbing mechanism D is arranged within said strap-

like portion between the followers B and C. As illustrated, the followers B and C protrude from the yoke at opposite sides to engage with the plates 12—12 of the front stop brackets E—E and the plates 17—17 of the rear stop bracket F.

The friction shock absorbing mechanism D comprises the usual friction casing 135 having one end bearing on the front follower B, spring resisted friction shoes 136—136 slidingly telescoped within the other end of the casing, a wedge 37 engaged between the shoes and bearing on the rear follower C.

In the operation of my improved mechanism, the yoke structure A is pulled forwardly in draft, forcing the rear follower C against the friction shock absorber mechanism D, the casing 135 of which is held stationary by engagement with the front follower B which at this time is held against forward movement by engagement with the front stop brackets E—E. In buff, the yoke structure A is moved rearwardly, carrying the follower B rearwardly therewith against the friction casing 135 of the friction shock absorbing mechanism, the wedge 37 of which is held stationary by the follower C, which at this time is in engagement with the rear stop bracket F. In either buff or draft, the friction shock absorbing mechanism will thus be compressed between the followers B and C to cushion and absorb shocks. During both draft and buffing strokes of the yoke structure A, movement of the latter is accurately guided and controlled by th supporting guides G—G and supporting guide ledges 14—14 with which the guide wings or flanges 34—34 and the strip 31 cooperate.

I claim:

1. In a railway draft rigging, the combination with front and rear stops; of a yoke structure movable lengthwise of said rigging; shock absorbing means within said yoke structure; followers within said yoke structure at the front and rear of said shock absorbing means, said followers cooperating with said front and rear stops, respectively; fixed guides at opposite sides of said rigging; and laterally projecting, lengthwise extending flanges on said yoke structure engaged over said fixed guides.

2. In a railway draft rigging, the combination with front and rear stops; of a yoke structure movable lengthwise of said rigging; shock absorbing means within the yoke structure; followers within said yoke structure bearing on opposite ends of said shock absorbing means, each of said followers projecting at opposite sides from said yoke structure to engage said front and rear stops; fixed guides, each of which includes a longitudinally extending ledge projecting toward the other guide; and laterally projecting flanges on said yoke structure engaged over said ledges.

3. In a railway draft rigging, the combination with front and rear stops; of a yoke structure movable lengthwise of said rigging; shock absorbing means within said yoke structure; followers within said yoke structure bearing on opposite ends of said shock absorbing means, each of said followers projecting from opposite sides of said yoke structure to engage said front and rear stops; fixed guides, each of which includes a longitudinally extending ledge projecting toward the ledge of the other guide; and laterally projecting flanges at the top of said yoke structure engaged over said ledges.

4. A railway draft rigging, including a yoke

structure and fixed guides at opposite sides of said rigging, said yoke structure including a strap member having top and bottom arms and front and rear, vertical end sections connecting said top and bottom arms, said top arm having horizontal flanges at opposite sides laterally extending therefrom and engaged over said guides.

5. A railway draft rigging, including a yoke structure and fixed front and rear guides at opposite sides of said rigging, said yoke structure including a strap portion and a head portion extending forwardly from said strap portion, said strap portion having laterally projecting, longitudinally extending guide flanges thereon engaged over and supported on said rear guides, and said head portion having laterally projecting, horizontally disposed, lengthwise extending guide portions engaged over and supported on said front guides.

6. In a draft rigging for a railway car, the combination with front and rear stop brackets on the car; of longitudinally extending guide ledges on said front stop brackets; a yoke structure movable lengthwise of said car, said yoke structure including a strap member and a head portion, said head portion extending forwardly from said strap member; longitudinal guide flanges on said head portion engaged over said ledges for supporting said yoke structure for sliding movement; longitudinal guide flanges on said strap member; and fixed guides on the car, said guides including lengthwise extending ledges over which said flanges of said strap member are engaged.

7. In a yoke structure, the combination with a strap portion comprising top and bottom arms and front and rear, vertical end sections connecting said arms; of a shank extending forwardly from said front section; a transversely extending buffer head plate at the outer end of said shank; and a bracing plate above said shank connecting the buffer head plate to said front vertical end section of said strap portion.

8. In a railway draft rigging, the combination with front and rear stops; of a yoke structure movable lengthwise of said rigging; a depending flange on said yoke structure adapted to receive draft and buffing shocks; shock absorbing means within the yoke structure; and followers within the yoke structure at the front and rear of said shock absorbing means, said followers cooperating with said front and rear stops, respectively.

9. A railway draft rigging including a yoke structure, said yoke structure including a strap member having top and bottom arms and front and rear, vertical end sections connecting said top and bottom arms, said bottom arm having a vertically disposed, transverse draft and buffing flange depending therefrom.

CARL A. ANDERSON.

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