

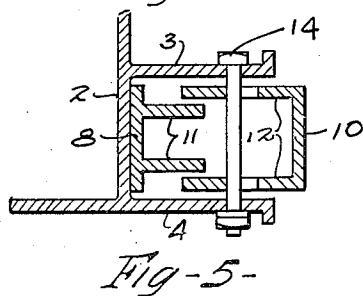
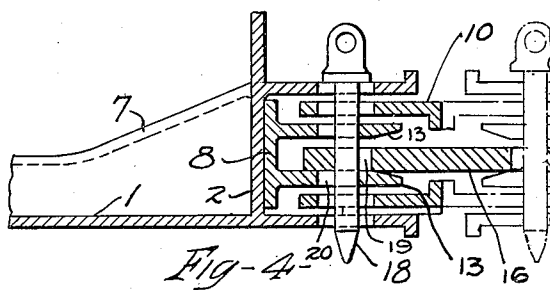
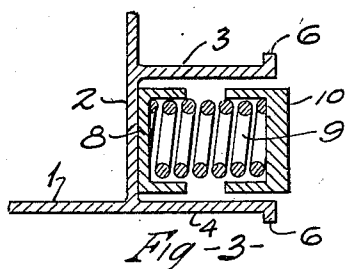
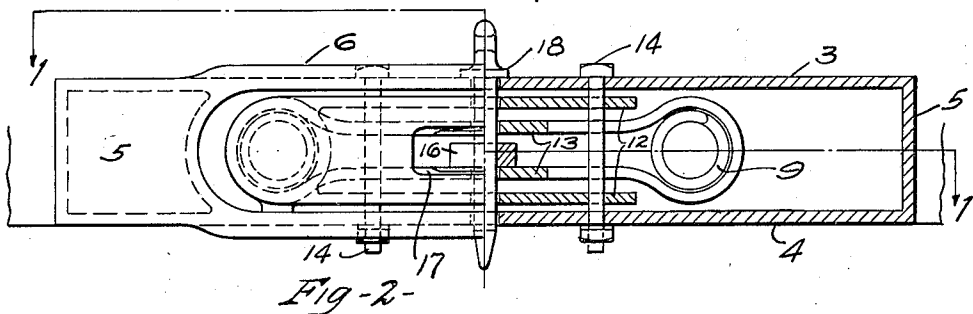
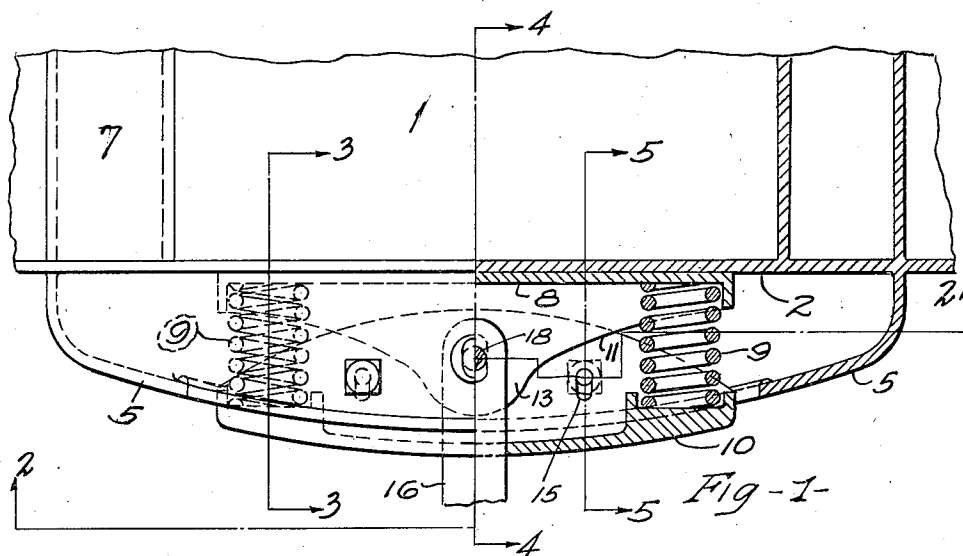
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DRAFT AND BUFFING DEVICE

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2,065,616

DRAFT AND BUFFING DEVICE

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Application April 4, 1932, Serial No. 602,925

11 Claims. (Cl. 213—9)

The invention relates to a novel device for transferring draft and buffing forces between adjacent vehicles and in the vehicle framing structure associated therewith. The invention is adapted for railway cars and particularly for mine cars.

One object of the invention is to provide a simple effective device for applying the draft and buffing forces to the vehicle framing at points spaced transversely of the end of the vehicle framing and preferably to apply both draft and buffing forces at the same level.

Another object of the invention is to provide a vehicle end sill and associated draft and buffing device which will cooperate to yieldingly transmit the longitudinal forces to and from each other with a minimum amount of interconnecting elements.

Another object of the invention is to provide a device of the class described which shall be easy to manufacture and to apply to the vehicle, or to disassemble for repair purposes.

These and other detail objects of the invention are attained by the structures shown in the accompanying drawing, in which—

Figure 1 is in part a top view and in part a horizontal section through a portion of the end of a mine car embodying the invention, the view and section being taken on line 1—1 of Figure 2.

Figure 2 is a front view and transverse vertical section taken substantially on the line 2—2 of Figure 1.

Figures 3, 4, and 5 are vertical longitudinal detail sections taken on the corresponding section lines of Figure 1.

The drawing illustrates the end portion of a mine car of the type described in my copending application Serial No. 596,687, filed February 23, 1932, which preferably embodies a floor 1 having integral therewith an end wall forming the back wall 2 of the end sill which includes horizontal flanges 3 and 4 projecting forwardly from wall 2 and with their outer edges joined throughout a substantial portion of their length by the forward walls 5. Preferably the outer edges of flanges 3 and 4 are reinforced with suitable ribs 6. The car floor 1 may include box-like or U-shaped corrugations 7 forming longitudinal sills.

The end sill and flanges 3 and 4 form a housing for receiving the draft and buffing device which includes a draft beam 8 extending transversely of the line of draft with its end portions forming seats for springs 9. A buffer beam

10 extends transversely of the line of draft similarly to draft beam 8 and its end portions form seats for springs 9 opposing the seats on beam 8. Both beams 8 and 10 are of channel-like section, beam 8 having spaced horizontal flanges 11 and beam 10 having similar flanges 12 spaced a greater distance apart and adapted to receive between them the central portions 13 of flanges 11.

Vertical bolts 14 extend through elongated openings 15 in flanges 12 and through the end sill flanges 3 and 4 and serve as anchoring means for the draft and buffing device. The rear face of draft beam 8 normally abuts the front face of wall 2 and the inner ends of openings 15 normally abut bolts 14 (see Figure 5), springs 9 normally holding the beams in the position mentioned.

A draw bar 16 is inserted through an opening 17 formed in the web of beam 10 and projects into the space between flanges 11 of beam 8. A draw bar pin 18 extends through draw bar 16 and flanges 11. In the drawing, pin 18 is shown as extending also through flanges 12 of the buffer beam and the flanges 3 and 4 of the end sill, but this extension is for convenience only and is not required for the functioning of the device. A chain or a single link may be substituted for the draw bar illustrated.

Adjacent cars will be coupled together as indicated in Figure 4 with their beams 10 abutting each other, and with their springs 9 compressed because of the anchorage of pins 18 to the beams 8, as shown in Figure 4. When a buffing force is transmitted from one car to the other, beam 10 will move inwardly from the position shown in Figures 4 and 5, compressing springs 9 and thereby yieldingly transmitting the buffing shock through the inner spring seats to the end sill wall 2. When a draft force is transmitted from one car to the other, draw bar 16 through pin 18 will move draft beam 8 away from the end sill, compressing springs 9 against their seats in beam 10 and thereby yieldingly transmitting the draft force through pins 14 to the end sill flanges 3 and 4.

The elongated opening 19 in draw bar 16 accommodates telescoping of the beams due to buffing forces, and the elongated openings 20 in central portions 13 of flanges 11 accommodate telescoping of the beams due to draft forces.

The device described is simple, compact and effective, transmits all of the longitudinal forces on the same horizontal plane and distributes these forces along the end sill. The device is well

protected by the end sill structure, yet does not require undesirable extensions of the end sill structure in order to form a suitable housing.

Many of the details of the structure may be modified without departing from the spirit of the invention and I contemplate the exclusive use of all modifications coming within the scope of the claims.

What is claimed is:

1. In combination, a draft beam of channel section extending transversely of the line of draft, a similarly extending buffer beam of channel section opposing the channel section of said draft beam, springs compressed between said beams, a portion of the flanges of said beams overlying each other, and other portions of said flanges on said beams being spaced apart horizontally, a draft pin extending through the overlying portions of said flanges, and anchoring means for said buffer beam independent of said draft beam extending through the other portions of said buffer beam flanges.

2. In combination, a railway vehicle end sill including a rear wall and an outwardly projecting flange, a draft beam positioned to abut said rear wall and movable to and from the same, a buffer beam opposing said draft beam, compression springs between said beams, transversely spaced anchoring means rigidly secured to said flange and extending through loosely fitting openings in said buffer beam, a removable draw bar extending through said buffer beam, and a removable draw bar connecting pin extending through loosely fitting openings in said draft beam and said draw bar.

3. In combination, a railway vehicle end sill including an elongated box-like portion having a restricted opening in its forward wall, a draft and buffing device housed by said sill and including a buffer beam projecting through said opening and a draft beam spaced inwardly from said buffer beam, compression springs between said beams, means spaced longitudinally of said end sill and anchoring said buffer beam to the upper and lower walls of said box-like portion independently of said draft beam to limit outward movement of said buffer beam, and a draw bar secured to said draft beam and projecting through an opening provided therefor in said buffer beam.

4. A structure as specified in claim 3 in which the springs and draw bar are disposed in substantially the same horizontal plane.

5. In combination, a railway vehicle end sill of box-like structure having an opening in its forward wall, a draft and buffing device mounted in said sill and including a buffing member projecting through said opening and extending across the longitudinal center line of the vehicle and a draft transmitting element extending through the center of said buffing member, yielding means between said buffing member and draft element, lost motion means anchoring said buffing member to transversely spaced points on the top and bottom walls of said sill, and lost motion draw bar connecting means on said draft member between said anchoring means.

6. In combination, a railway vehicle end sill, a channel-shaped draft beam extending longitudinally of the sill and across the longitudinal center line of the vehicle, springs seated on said member at points spaced from and on opposite sides of said longitudinal center line, a channel-shaped buffing member with horizontal flanges extending longitudinally of the sill and between

and engaging said springs, means anchoring said buffing member to said end sill independently of said draft beam, and a draft element extending through the web of said buffing beam, and means extending through openings therefor in the flanges of said beam and member for securing said draft element to said sill, said openings being enlarged to free said means and draw bar from the thrust of said springs.

7. In a device of the class described, channel-shaped draft and buffer members disposed transversely of the line of draft, the central portions of the flanges of said members overlapping and there being elongated openings through the central portions of all of said flanges and through the outer portions of said buffer flanges respectively, springs compressed between the outer portions of said members, a draw bar connecting element extending through first mentioned openings and movable therein without moving said buffer member, and anchoring elements extending through said buffer member openings and substantially spaced from said draft member.

8. In combination, a railway vehicle end sill, a buffer beam in front of said end sill, means anchoring said buffer beam to said end sill but providing for relative movement of the same, a draft beam between said end sill and buffer beam arranged to abut said end sill, springs compressed between said beams, a draw bar extending through said buffer beam, and a draw bar pin for securing said draw bar to said draft beam, said pin being insertable and removable through slots in said beams and free of thrust from said springs.

9. In a combined draft and buffing gear for cars, the combination with supporting means on the end of the car; of a yoke having forwardly extending top and bottom arms; a buffing head; guide means on the buffing head slidably accommodating said top and bottom arms; guide means on said supporting means slidably accommodating the rear portion of the buffing head; additional guide means on said supporting means slidably accommodating the rear end portion of the yoke; and shock absorbing means within the yoke yieldingly opposing relative movement of the buffing head and yoke toward each other.

10. In a combined draft and buffing gear for a car, the combination with a supporting member; of a movable buffing head slidable with respect to said supporting member; means for limiting outward movement of said buffing head and holding the same assembled with the supporting member; a yoke slidable with respect to the supporting member, said yoke having top and bottom arms guided within the buffing head; a coupling pin extending through the buffing head and the arms of the yoke, said yoke being movable with said pin in draft and said pin being movable in a direction lengthwise of the car with respect to the buffing head; and means within the yoke yieldingly opposing relative movement of the yoke and buffing head.

11. In a combined draft and buffing gear for a car, the combination with a supporting member on the end of the car; of a yoke movable lengthwise of the car, said yoke having top and bottom arms; a buffing head enclosing said yoke arms, said head being slidably mounted on said supporting member; cushioning means yieldingly opposing relative movement of the yoke and buffing head; and means for connecting the yoke to a coupling link.

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