May 9, 1933. W. J. REGAN 1,908,542

RAILWAY DRAFT APPLIANCE

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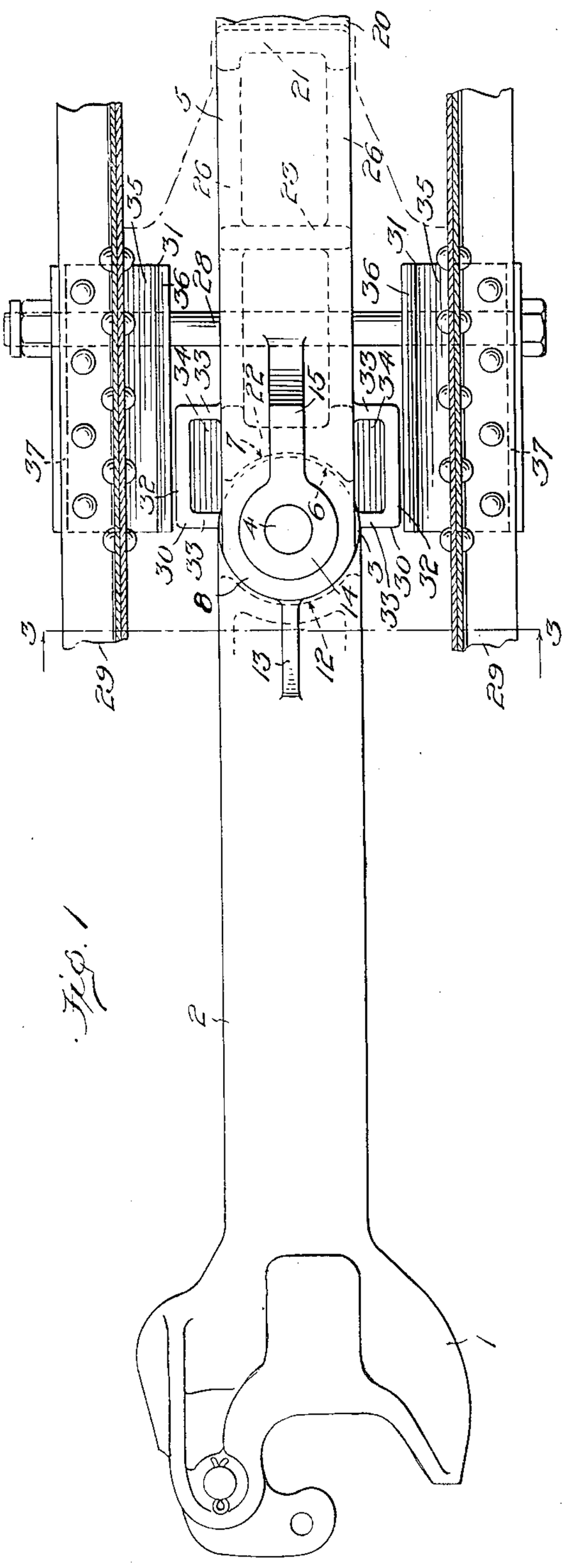

Fig. 1.

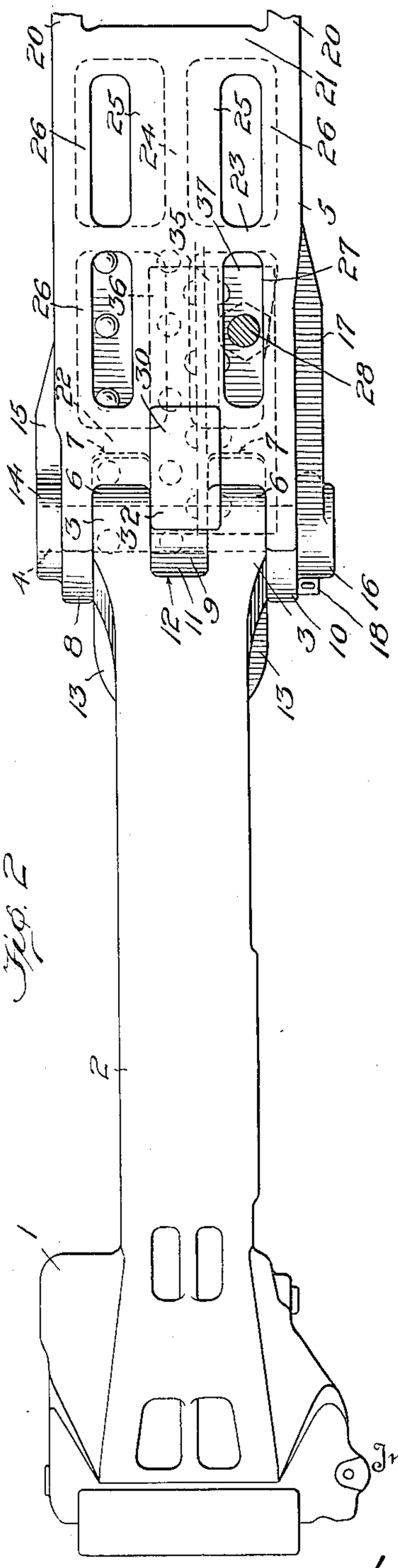

Fig. 2.

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Fig. 3

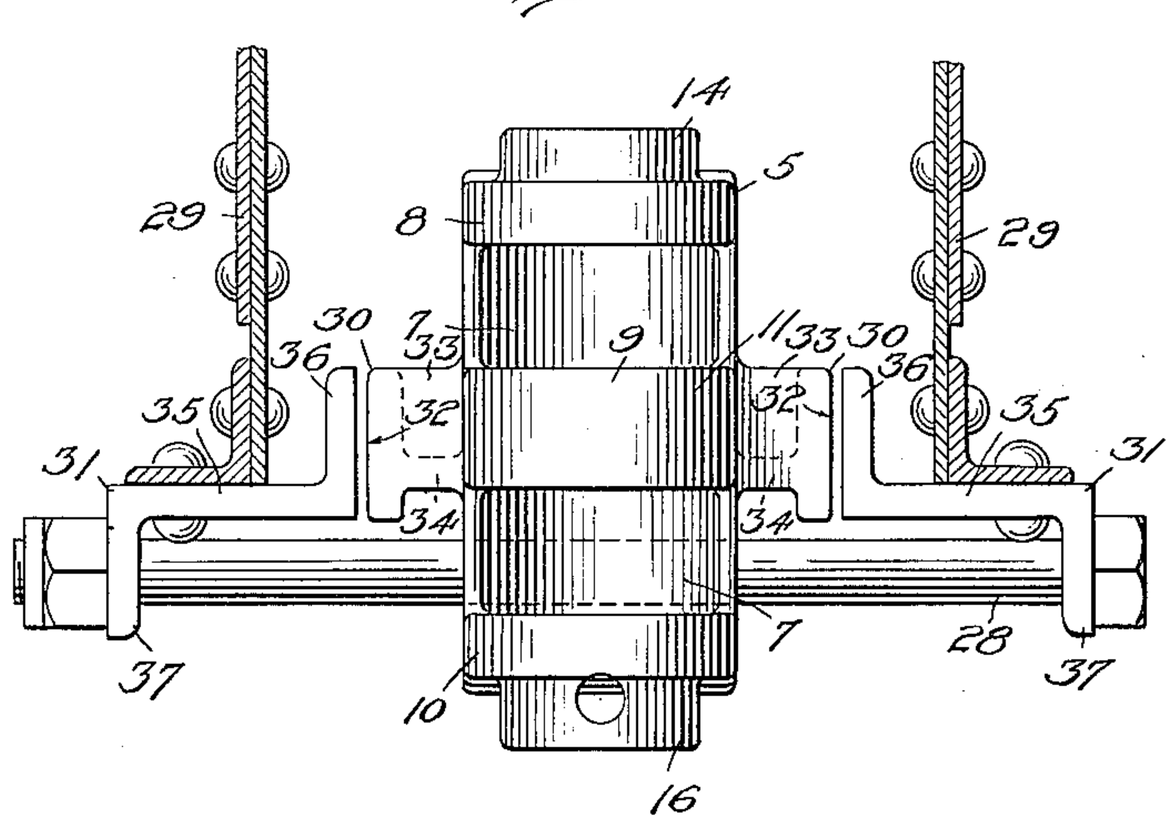


Fig. 5

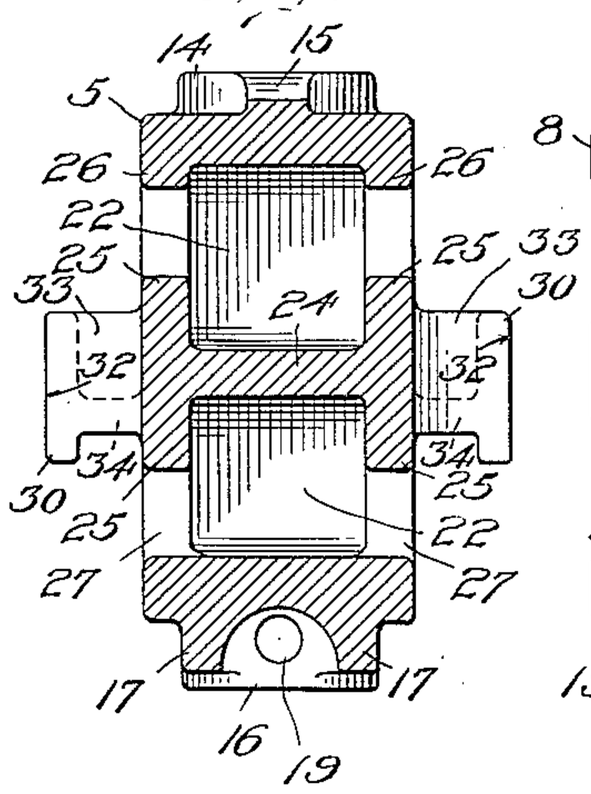


Fig. 4

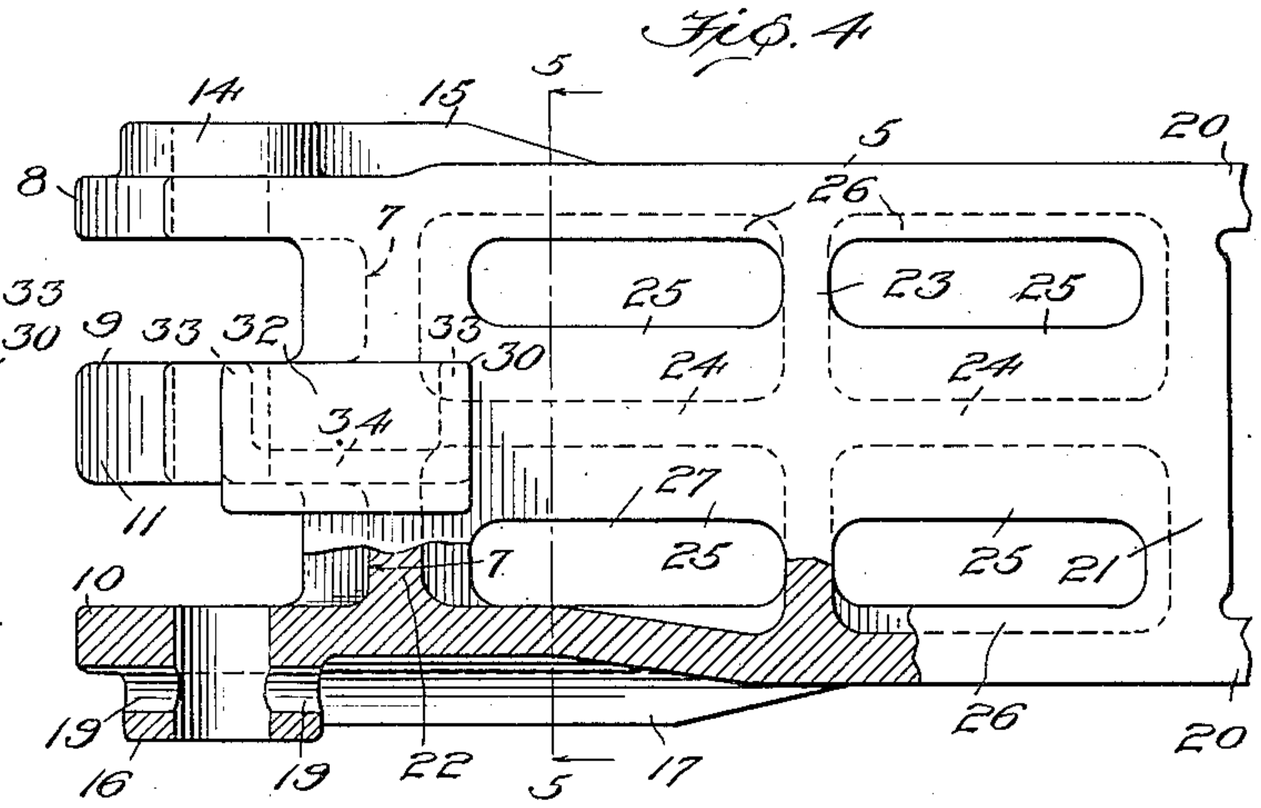
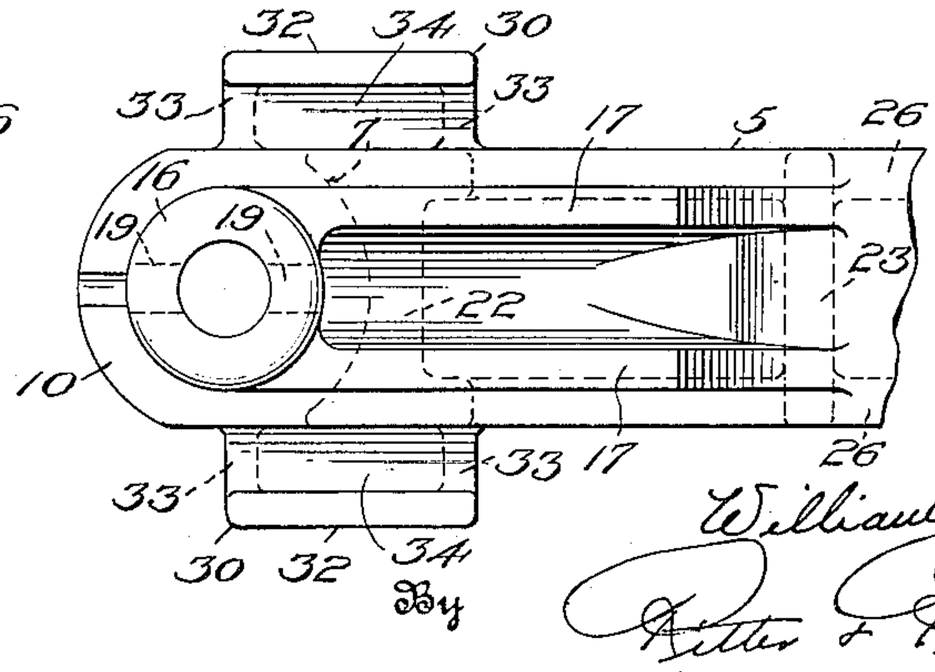


Fig. 6



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UNITED STATES PATENT OFFICE

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RAILWAY DRAFT APPLIANCE

Application filed October 22, 1928. Serial No. 314,207.

My invention relates to railway draft appliances embodying a longitudinally movable draft yoke to the forward end of which a car coupler is connected so as to be capable of radial swinging movement when the car passes around a curve.

The principal object of the invention is to afford a construction which, with a minimum amount of alteration to existing car structures, will enable a rigid car coupler having a head sufficiently large to receive the standard knuckle, locking block and other fittings of the well-known D-type coupler to be pivotally connected to a reciprocating draft yoke without substantially diminishing the amount of angular movement of the coupler head.

The primary feature of the invention consists in pivotally connecting a car coupler having a rigidly united head and stem to a draft yoke which is adapted to reciprocate longitudinally in draft and buffing between the draft sills of the car, the yoke being formed in advance of the space for receiving a draft gear cushioning unit with laterally projecting oppositely disposed portions which are adapted to cooperate in draft and buffing with adjacent chafing members rigidly mounted upon the respective draft sills of the car, the rear end of the coupler stem and the forward end of the yoke thereby being maintained in the center of the space between the sills in all positions the coupler may assume in service.

Other features of the invention residing in advantageous relations of parts and details of construction will hereinafter appear and be pointed out in the claims.

In the drawings chosen for the purpose of illustrating the invention,—

Figure 1 is a plan view of a railway draft appliance embodying the invention, a portion of the yoke being broken away and adjacent parts of the draft sills of the car being shown.

Figure 2 is a side elevational view of the construction shown in Figure 1, the draft sills being omitted.

Figure 3 is a sectional view on the line 3—3, Figure 1, the coupler being omitted.

Figure 4 is a detail view partly in side elevation and partly in vertical section, of the forward end of the draft yoke.

Figure 5 is a section on the line 5—5, Figure 4.

Figure 6 is a detail bottom plan view of the forward end of the draft yoke.

The car coupler illustrated in the drawings is formed with a head 1 and a shank 2 which are integrally united. The coupler head is made of large size to insure great strength and is preferably of a design suitable for receiving the knuckle, locking block and other fittings of the standard D-type, while the shank 2 is of ample depth and width to enable it to efficiently resist the heavy buffing shocks to which it is subjected. At its rear end the shank 2 is fashioned with vertically spaced pivot lugs 3 for receiving a tail pin 4 by which the forward end of the draft yoke 5 is pivotally connected to the coupler. The rear ends of the pivot lugs 3 are circularly curved, as at 6, for buffing cooperation with the correspondingly curved forward faces 7 of the yoke which alternate with the respective pivot lugs 8, 9 and 10 of the yoke. The forward face 11 of the intermediate pivot lug 9 of the yoke is also preferably circularly curved for buffing cooperation with the correspondingly curved wall 12 of the coupler shank lying between the vertically spaced pivot lugs of the latter. The portions of the pivot lugs 3 which project above and below the top and bottom of the intermediate part of the coupler shank 2 may advantageously be braced by longitudinally extending ribs or flanges 13. The upper pivot lug 8 of the draft yoke is preferably reinforced by an upwardly extending boss 14 which is braced by a rearwardly extending rib 15; and the lower pivot lug 10 of the yoke may likewise be reinforced by a downwardly extending boss 16 which is braced and reinforced by laterally spaced longitudinally extending ribs 17. The bosses 14 and 16, in addition to strengthening their respective pivot lugs, provide increased bearing area for the pivot pin 4, which preferably is of the downwardly removable headless type. As a convenient

means for supporting the tail pin 4 in assembled position a headed pin 18 which passes through openings 19 may be employed, the pin receiving openings being longitudinally alined so as to permit the headed pin to be inserted and removed through the space between the rearwardly extending bracing ribs 17.

The draft yoke 5 is cast as an integral member having spaced arms 20 which are connected at their rear ends in the usual manner to form a space for receiving the draft gear cushioning unit. The arms 20 are rigidly connected at the forward end of the draft gear space by a vertically extending tie wall 21 whose rear face is adapted to engage the usual forward follower (not shown) of the draft gear. At the forward end of the yoke the pivot lugs 8, 9 and 10 of the latter are rigidly connected by a vertically extending tie wall 22 having, as heretofore explained, curved forward faces 7 for cooperating with the rear end of the coupler shank in buffing. As the distance between the tail pin 4 and the follower engaging tie wall 21 at the forward end of the draft gear space is considerably greater than is usually the case it is preferred to provide an intermediate tie wall 23 located between the tie walls 21 and 22 and rigidly uniting the upper and lower extensions of the yoke arm 20. It is also preferred to strengthen the forward portion of the yoke by a horizontal web 24 which is integrally united to each of the spaced tie walls 21, 22 and 23, the web being centrally disposed so as to support the intermediate pivot lug 9 of the draft yoke. Between the rear tie wall 21 and the forward tie wall 22 the central horizontal web 24 is reinforced at its outer margins by oppositely extending vertical flanges 25 forming side walls of the yoke and imparting to its central forward portion an I-beam cross-section. In advance of the rear cross tie wall 21 the arms of the yoke are also preferably provided with vertically extending marginal reinforcing flanges 26 which likewise form parts of the side walls of the yoke. As thus formed the side walls of the forward portion of the draft yoke are provided with transversely alined openings which respectively communicate with the interior spaces of the yoke lying between the vertical tie walls, the central horizontal web and the yoke arms. These openings, all of which are preferably elongated in the direction of length of the yoke, provide for coring and one of them, 27, near the lower side and forward end of the yoke, is adapted to receive a transversely extending tie member or bolt 28 constituting means for preventing spreading of the draft sills 29 as a result of the lateral shocks to which they are subjected under heavy draft and buffing while the car coupler is in a position of angular displacement.

On opposite sides at its forward end and preferably in transverse alinement with the cross tie wall 22 immediately to the rear of the tail pin 4, the yoke 5 is integrally provided with outwardly projecting portions 30 whose outer ends are adapted to cooperate with chafing members 31 rigidly riveted to the respective draft sills. Each of the lateral projections 30 may advantageously be fashioned with a longitudinally extending vertical face or flange 32 which is integrally united to the central portion of the adjacent side wall of the yoke by transversely extending vertical flanges 33 and a horizontal web 34. The chafing blocks or members 31 with which the lateral projections 30 of the draft yoke cooperate may advantageously be of Z-bar form, their webs 35 being respectively riveted to the correspondingly adjacent draft sills, their inner upright flanges 36 being adapted to cooperate with the laterally projecting portions of the draft yoke and their downwardly projecting flanges 37 being apertured to receive the transversely extending tie bolt 28. The Z-bar chafing members are of sufficient length to afford bearings for the lateral projections 30 of the yoke in all positions of draft and buffing, thus insuring that the rear end of the coupler shank and the forward end of the yoke shall reciprocate in the center of the space between the draft sills.

I claim:

1. A railway draft appliance comprising a car coupler having a head and shank, a draft yoke mounted between the draft sills of the car and longitudinally movable with respect thereto in draft and buffing, means for pivotally connecting the rear end of the shank to the forward end of the yoke, said yoke being provided adjacent its forward end with laterally projecting portions rigidly united thereto, chafing members for cooperating with said laterally projecting portions to compel the forward end of the yoke and the rear end of said shank to reciprocate centrally of the space between the draft sills when the coupler is subjected to draft or buffing while in an angularly displaced position, and means extending transversely of said yoke for connecting said chafing members to prevent spreading of said draft sills, said chafing members being rigidly mounted upon the respective draft sills and extending inwardly therefrom and each being formed with a vertically extending flange for cooperating with the adjacent laterally projecting portion of said yoke and each being formed with a portion extending below said sills for connection to said transversely extending means.

2. A railway draft appliance comprising a car coupler having a head and shank, a

draft yoke mounted between the draft sills of the car and longitudinally movable with respect thereto in draft and buffing, said yoke being adapted to receive a draft gear cushioning unit and having a transversely extending tie wall adapted to engage the forward follower of said unit and being integrally provided in advance of said tie wall with laterally projecting portions and provided with a cross tie wall in alinement with said projecting portions, means for pivotally connecting the rear end of the coupler shank to the forward end of the yoke, chafing members rigidly mounted upon the respective draft sills for cooperating with said laterally projecting portions to compel the forward end of the yoke and the rear end of said shank to reciprocate centrally of the space between the draft sills when the coupler is subjected to draft or buffing while in an angularly displaced position, each of said chafing members having a web engaging the adjacent draft sill and having an upwardly extending flange spaced inwardly from said sill and having a downwardly extending flange spaced outwardly from said first-named flange, and a cross-tie extending through the downwardly extending flanges of said chafing members and through said yoke for preventing spreading of the draft sills, said cross-tie being disposed between said transversely extending tie wall and the rear end of said coupler shank.

3. A railway draft appliance comprising a car coupler having a head and shank, a draft yoke mounted between the draft sills of the car and longitudinally movable with respect thereto in draft and buffing, said yoke being formed as an integral member provided with a tie wall adapted to engage the forward follower of a draft gear cushioning unit and having in advance of said wall oppositely disposed laterally projecting portions and being formed below said projecting portions with a longitudinally elongated transverse opening and being provided with a cross tie wall in transverse alinement with said projecting portions, means for pivotally connecting the rear end of the coupler shank to the forward end of the yoke, chafing members rigidly mounted upon the respective draft sills for cooperating with said laterally projecting portions to compel the forward end of the yoke and the rear end of said shank to reciprocate centrally of the space between the draft sills while the coupler is in angularly displaced position, each of said chafing members being Z-shaped in cross-section and having one of its flanges extending downwardly in transverse alinement with said opening in the yoke, and a bolt extending through said opening and connecting the downwardly extending flanges of said chafing members to prevent spreading of the draft sills.

4. A railway draft appliance comprising a car coupler having a rigidly connected head and shank, a draft yoke mounted between the draft sills of the car and longitudinally movable with respect thereto in draft and buffing, means for pivotally connecting the rear end of the shank to the forward end of the yoke, said yoke being formed as an integral member provided adjacent its forward end with laterally projecting portions and having a vertical tie wall in transverse alinement with said projections and also having a horizontal web which is in transverse alinement with said projections and is integrally united to said tie wall, means rigidly mounted upon the respective draft sills for cooperating with said laterally projecting portions to compel the forward end of the yoke and the rear end of said shank to reciprocate centrally of the space between the draft sills when the coupler is subjected to draft or buffing while in an angularly displaced position, and cross tie means extending through said yoke for connecting the draft sills at a point adjacent said laterally projecting portions of the yoke to prevent spreading of said sills.

5. A draft yoke adapted to be mounted between the draft sills of a car so as to be longitudinally movable with respect thereto in draft and buffing, said yoke being provided at its forward end with means adapting it for pivotal connection to the rear end of a coupler shank and being formed as an integral member provided adjacent its forward end with laterally projecting portions and having a laterally extending tie wall in transverse alinement with said projecting portions, said projecting portions being adapted to cooperate with means rigidly mounted upon the respective draft sills to thereby compel the forward end of the yoke to reciprocate centrally of the space between the draft sills when the coupler to which the yoke is connected is subjected to draft or buffing while in an angularly displaced position.

6. A railway draft appliance comprising a car coupler having a head and shank, a draft yoke mounted between the draft sills of the car and longitudinally movable with respect thereto in draft and buffing, means for pivotally connecting the rear end of the coupler shank to the forward end of the yoke, said yoke being adapted to receive a draft gear cushioning unit and having to the rear of said shank a transversely extending tie wall adapted to engage the forward follower of said unit and being provided adjacent its forward end with laterally projecting portions rigidly united thereto, means rigidly mounted upon the respective draft sills adjacent the forward end of the yoke for cooperating with said laterally projecting portions to compel the forward end

of said yoke and the rear end of said shank to reciprocate centrally of the space between the draft sills when the coupler is subjected to draft or buffing while in angularly displaced position, and means extending through said yoke in advance of said tie wall to the rear of said coupler shank for preventing spreading of said draft sills, said last-named means extending transversely of said yoke and being disposed in vertical alinement with said means rigidly mounted on the respective draft sills adjacent the forward end of the yoke.

In testimony whereof I affix my signature.

WILLIAM J. REGAN.