June 2, 1931. W. F. RICHARDS 1,808,378

DRAFT GEAR

Filed July 27, 1926 2 Sheets-Sheet 1

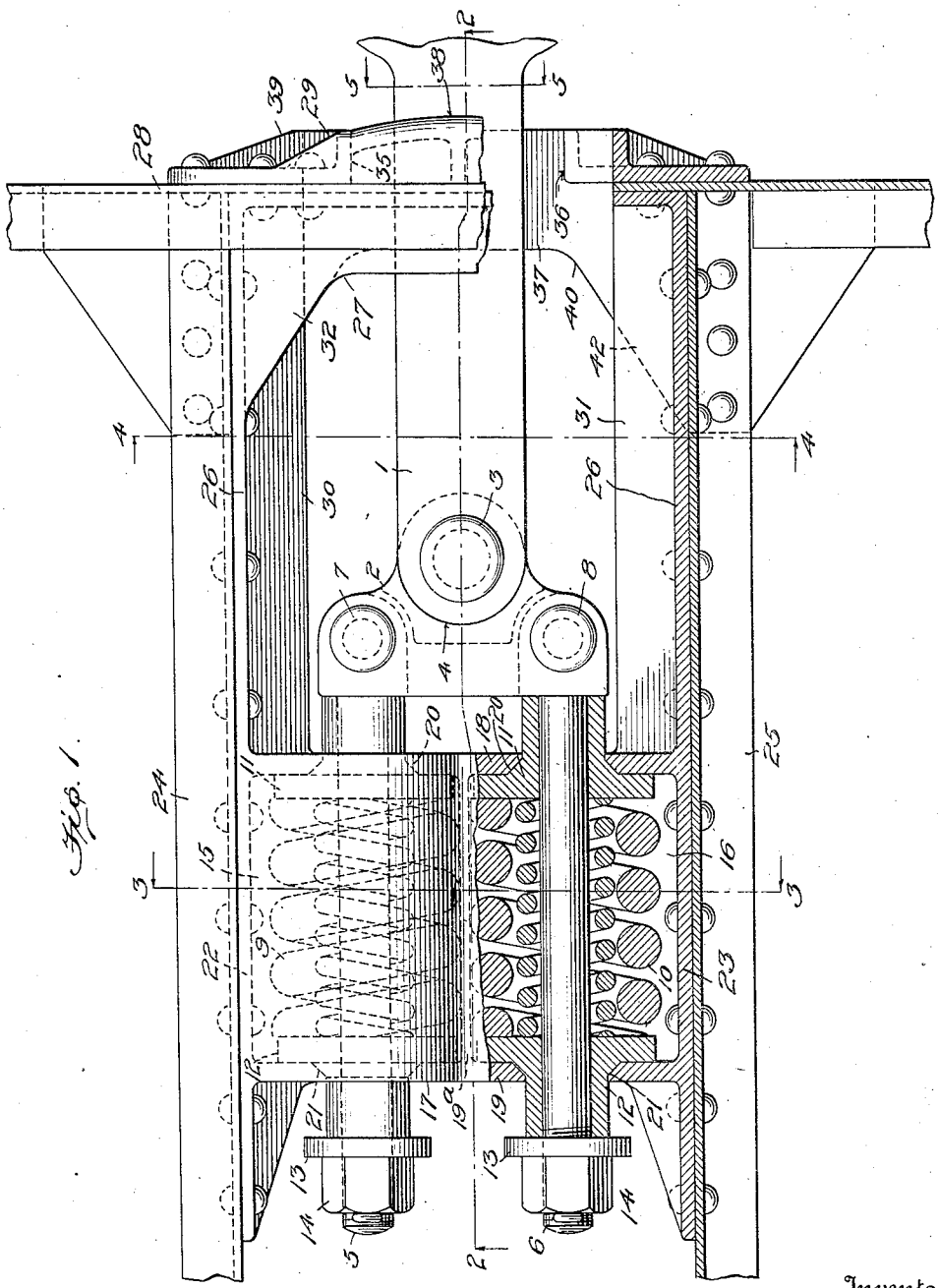

Fig. 1.

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Filed July 27, 1926 2 Sheets-Sheet 2

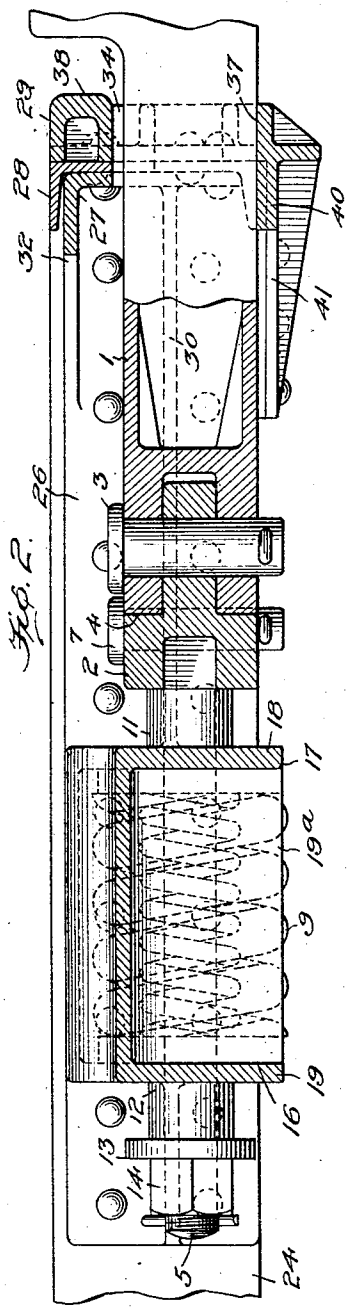

Fig. 2.

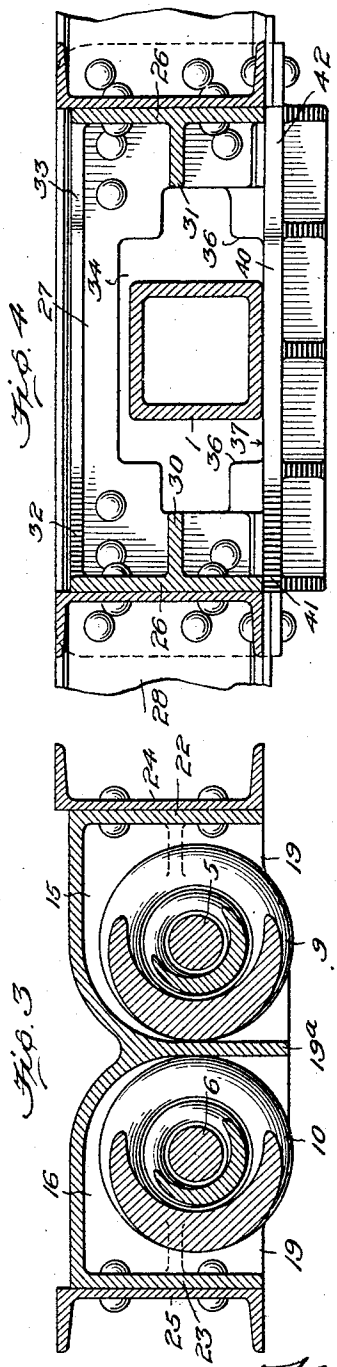

Fig. 4

Fig. 3

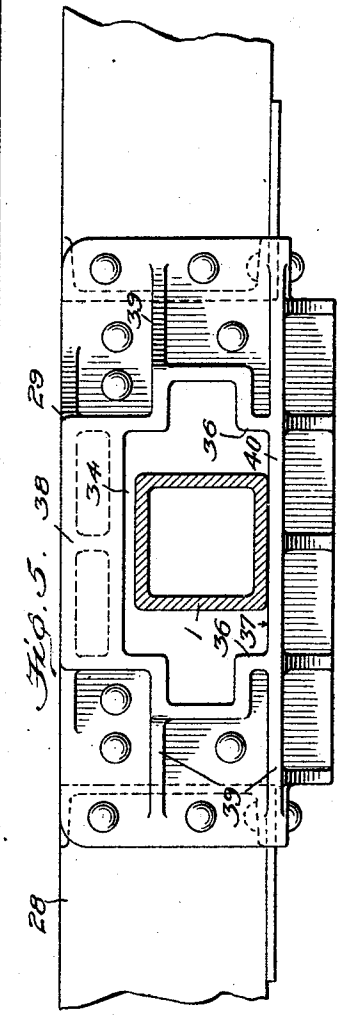

Fig. 5.

Inventor

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Patented June 2, 1931

1,808,378

UNITED STATES PATENT OFFICE

WILLARD F. RICHARDS, OF DEPEW, NEW YORK, ASSIGNOR TO THE SYMINGTON COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MARYLAND

DRAFT GEAR

Application filed July 27, 1926. Serial No. 125,268.

This invention relates to a draft and buffing mechanism for railway cars, more especially to draft and buffing mechanism for cars of small tonnage such as are in use on industrial railways, and has for its object the providing of a rugged easily constructed mechanism employing spring means to cushion the draft and buffing stresses encountered in this type of car.

My invention is especially adapted for use in cars having spaced center sills and provides unusual reinforcing means whereby the draft and buffing stresses may be effectively distributed to the center and end sills.

The advantages of the several features of construction will appear from a consideration of the drawings which embody a preferred form of my invention in which:

Figure 1 is a horizontal plan view partly in section showing the spring assembly, the spring housing and the forward extension of the housing in its relation to the end sill and striking plate.

Figure 2 is a vertical longitudinal sectional view on the line 2—2 of Figure 1 showing especially the construction of the bifurcated coupler shank.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 1 through the spring pockets showing the central web.

Figure 4 is a vertical transverse sectional view on the line 4—4 of Figure 1 showing the reinforcement of the end sill.

Figure 5 is an end view, partly in section on the line 5—5 of Figure 1 showing the striking plate in its relation to the sills and the forward end of the housing.

Considering the drawings in detail like parts being designated by like reference characters, it will be noted that in the single embodiment of my invention shown, a bifurcated coupler shank 1 is preferably connected to an equalizing member 2 by the pin 3 and that the coupler shank and equalizing member may have common arc shaped bearings 4 whereby buffing strains may be directly transmitted and the pin 3 relieved of a portion of these strains. A pair of tail bolts 5 and 6 may in turn be connected to the equalizing member 2 by the pivot pins 7 and 8 permitting a limited amount of independent motion between these parts. Upon these tail bolts a pair of springs 9 and 10 and front and rear followers or thimbles 11 and 12 may be held in assembled relation by the washers 13 and the nuts 14. I prefer to house each of these spring assemblies comprising the front and rear followers 11 and 12 with the interposed springs 9 and 10 in the separate pockets 15 and 16 formed by the partitions 18 and 19 and the longitudinal web 19ª of the housing 17. It will be noted that the followers 11 and 12 may be free to slide upon the tail bolts 5 and 6 and also within the respective openings 20 and 21 in the front and rear walls or partitions 18 and 19 of the spring pockets 15 and 16. The side walls 22 and 23 are in contact with and are conveniently secured to the center sills 24 and 25.

In a preferred form of my invention, the housing 17 may have a forwardly extending portion 26 with a transverse forward member 27 of suitable contour in contact with and secured through the end sill 28 to the striking plate 29. It may be desirable and convenient to reinforce the side walls 22 and 23 of the housing 17 by the horizontal flanges 30 and 31 and connect them to the forward member 27 which may also be reinforced by the gussets or triangular web members 32 and 33. The striking plate 29 is provided with an opening 34 through which the coupler shank may pass. The side walls 35 and 36 of this opening 34 may be adapted to limit the motion of the coupler shank permitted by its pivotal connection with the equalizing member 2. The coupler shank is conveniently supported by the floor portion 37. The striking plate may be provided with a striking portion 38 and with reinforcing flanges 39. A lower portion 40 having rearwardly extending flanges 41 and 42 which lie beneath and may be secured to the center sills 24 and 25 may also be provided.

Industrial cars for which this inventon may be particularly adapted are subjected to especially hard usage and have frequently failed in that satisfactory means have not been provided to adequately receive and distribute to the car frame the buffing and draft

strains. My invention is devised especially to meet this condition with a device that is effective, exceedingly simple and readily manufactured. In the preferred embodiment shown, an integral cast steel housing of special form not only contains the draft mechanism but intimately unites this mechanism, the center sills, the end sill and the striking casting.

Having now described my invention, I claim:

1. In a draft and buffing mechanism, the combination with center and end sills of a housing connected thereto having at one end portions adapted to reinforce the end sill and at the other end partitions forming compartments adapted to receive yielding means of said draft and buffing mechanism, said partitions being connected intermediate the ends by a longitudinally extending web.

2. In a draft and buffing mechanism, the combination with center and end sills of a housing connected thereto having at one end portions adapted to reinforce the end sill and at the other end partitions connecting the sides thereof and forming a compartment, and yielding means of said draft and buffing mechanism, received in said compartment and comprising a plurality of springs with front and rear followers slidably mounted on tail bolts operating in apertures in said partitions.

3. In a draft and buffing mechanism, the combination with center and end sills of a housing connected thereto having at one end portions adapted to reinforce the end sill and at the other end partitions and a longitudinal web forming pockets for receiving yielding means of said draft mechanism comprising a plurality of springs and followers mounted upon tail bolts passing through said partitions.

4. In a draft and buffing mechanism, the combination with center and end sills of a housing connected thereto having at one end portions adapted to reinforce the end sill and at the other end partitions and a longitudinal web forming pockets for receiving yielding means of said draft mechanism comprising a plurality of springs and followers mounted upon tail bolts passing through said partitions, said tail bolts being pivotally connected to an equalizing member.

5. In a draft and buffing mechanism, the combination with center and end sills of a housing connected thereto having at one end portions adapted to reinforce the end sill and at the other end partitions and a longitudinal web forming pockets for receiving yielding means of said draft mechanism comprising a plurality of springs and followers mounted upon tail bolts passing through said partitions, said tail bolts being pivotally connected through an equalizing member to a coupler shank.

6. A draft gear housing comprising an integral casting formed with side walls adapted for connection to associated sills, an end wall adapted for connection to an associated end sill, substantially horizontal webs reinforcing the connection between said side walls and end wall, and a plurality of transverse webs connecting the side walls adjacent the other end of said casting and forming a compartment for receiving cushioning mechanism.

7. A draft rigging housing comprising an integral casting formed with side walls adapted for connection with associated side sills, an end wall adapted for connection with an associated end sill, and a plurality of transverse webs connecting the side walls adjacent the other end of the casting, and an intermediate longitudinally extending partition between said transverse webs, said intermediate partition and transverse webs forming with the side walls compartments for receiving associated cushioning mechanism.

8. In draft and buffing mechanism, in combination with side sills and an end sill, a plurality of transverse webs connecting said side sills and each formed with a pair of apertures registering with those in the other web, a follower received in each aperture, resilient means disposed between said followers, tail bolts extending through said followers and resilient means, an equalizing member pivotally connected to the front ends of said tail bolts, and a coupler extending through the end sill with the butt thereof pivoted to the equalizing member intermediate the connection of the tail bolts thereto.

In testimony whereof I affix my signature.

WILLARD F. RICHARDS.