Oct. 20, 1936. S. J. STRID 2,058,270

COUPLER SUPPORT

Filed Sept. 13, 1933 2 Sheets-Sheet 1

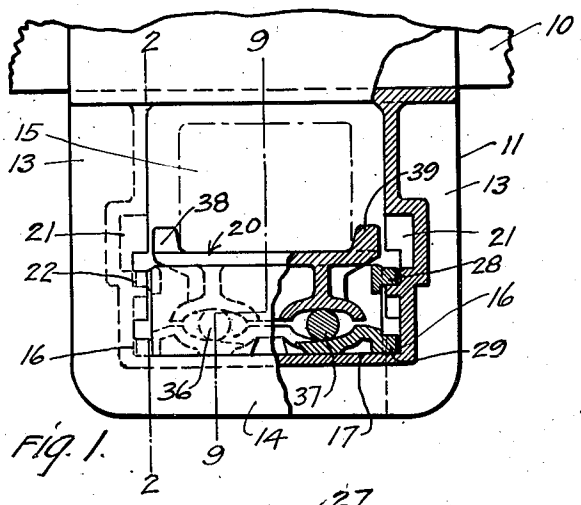


Fig. 1.

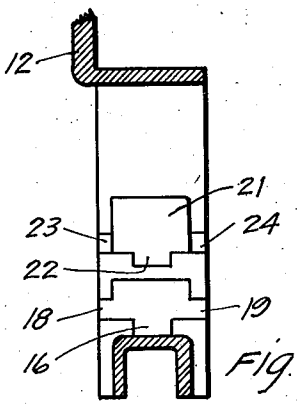


Fig. 2.

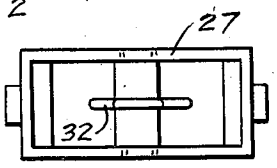


Fig. 3.

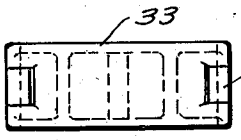


Fig. 6.

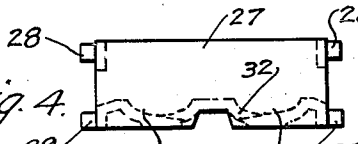


Fig. 4.

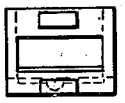


Fig. 5.

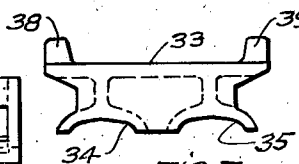


Fig. 7.

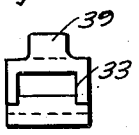


Fig. 8.

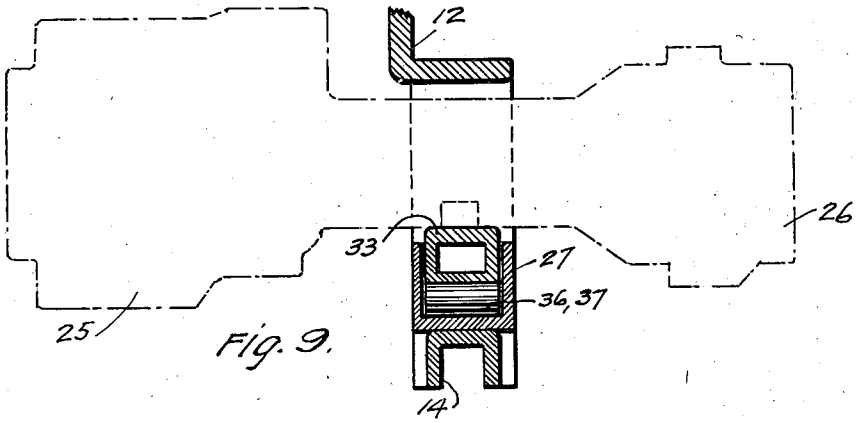


Fig. 9.

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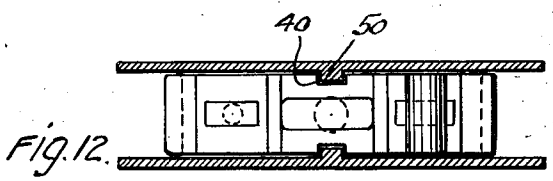


Fig. 12.

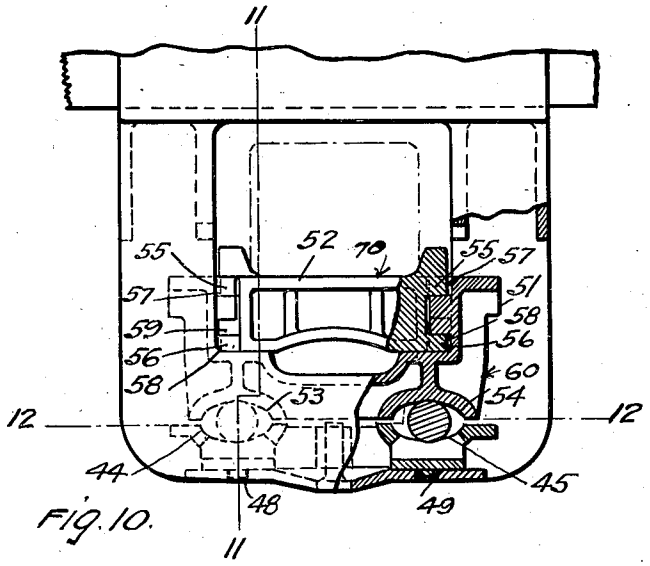


Fig. 10.

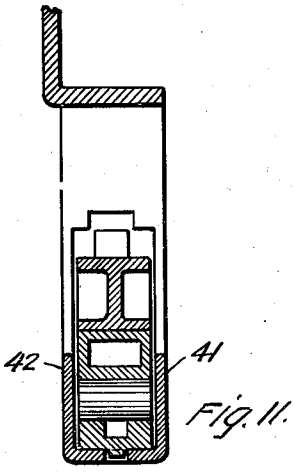


Fig. 11.

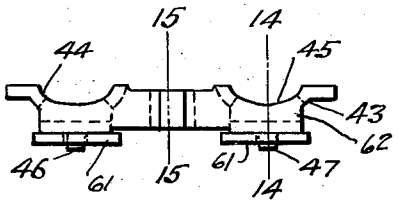


Fig. 13.

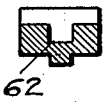


Fig. 14.

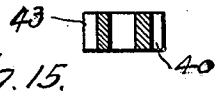


Fig. 15.

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2,058,270

COUPLER SUPPORT

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Application September 13, 1933, Serial No. 689,167

9 Claims. (Cl. 213—21)

This invention relates to railways cars, and more particularly to coupler supports and the like.

One of the objects of the invention is the provision of a new and improved removable car coupler support that is provided with means for supporting the coupler and for automatically centering the same.

Another object of the invention is the provision of a car coupler support in which tracks are provided for supporting the coupler, the tracks being removable.

A further object of the invention is the provision of a new and improved coupler support that may be easily and readily removed from the striking plate or casting and that has an interlocking connection with said plate or casting.

Another object of the invention is the provision of a coupler support having new and improved means for connecting the same to the striking plate casting without the aid of screws, bolts or pins.

A still further object of the invention is the provision of a new and improved coupler support together with novel means for changing the height of the support for vertically adjusting the height of the coupler.

Another object of the invention is the provision of a new and improved coupler support that is simple in construction, inexpensive to manufacture, easily installed, efficient in operation and which is not likely to become broken or out-of-repair.

Other and further objects and advantages of the invention will appear from the following description, taken in connection with the accompanying drawings, in which—

Fig. 1 is an end elevation of a portion of a railway car showing the invention in position thereon with parts broken away and parts in section;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the track member or base plate;

Fig. 4 is a side elevation thereof;

Fig. 5 is an end elevation thereof;

Fig. 6 is a top plan view of the saddle or coupler supporting member;

Fig. 7 is a side elevation thereof;

Fig. 8 is an end elevation thereof;

Fig. 9 is a section on the line 9—9 of Fig. 1 showing a coupler or drawbar in position on the supporting unit in dotted lines;

Fig. 10 is an end elevation of a portion of a railway car showing a modified form of the invention in position thereon with parts broken away and parts in section;

Fig. 11 is a section on the line 11—11 of Fig. 10;

Fig. 12 is a section on the line 12—12 of Fig. 10;

Fig. 13 is a side elevation of the track member or base plate;

Fig. 14 is a section on the line 14—14 of Fig. 13; and

Fig. 15 is a section on the line 15—15 of Fig. 13.

In the construction of coupler devices and supports therefor on modern railway cars, it is desirable that the parts be so designed that the number of parts that are to be attached by screws, bolts and the like be reduced to a minimum for the reason that bolts or screws tend to come loose and may cause considerable inconvenience, if not serious consequences.

It is common practice to employ an integrally cast striking plate or casting through which the drawbar or coupler shank extends, but in order to permit the insertion of a coupler shank provided with a pivoted coupler butt the height of the opening through the casting must be enlarged. It has been proposed to reduce the size of this opening after the coupler shank is inserted by a removable carry iron secured in position by bolts, but this arrangement is objectionable because the bolts may become loosened and release the carry iron from the striking plate, thereby permitting the coupler to drop too low to make proper coupling connection with the coupler of an adjacent car. The present invention seeks to remedy this difficulty by the provision of a removable coupler supporting unit that is interlocked in position without the aid of bolts, screws or other fastening means.

Referring now to the drawings, the reference character 10 designates the end of a railway car to which is rigidly attached the striking plate or casting 11, as is usual in such constructions. The striking plate comprises the upper angular attaching portion 12, the depending sides 13 and the connecting bottom member 14, which are all cast integral, forming an opening 15 extending through the plate or casting. Each of the side members 13 is provided on its inner surface with a recess or notch 16 adjacent to the lower marginal edge 17 of the opening 15. Laterally extending passages 18 and 19 are in communication with the upper portions of the recesses 16, as shown more clearly in Fig. 2 of the drawings. The side members 13 are also provided with pockets 21 spaced above the lateral passages 18 and 19 and a notch or recess 22 extends downwardly

from the pockets 21 at each side of the opening. Lateral passages 23 and 24 are provided for permitting the insertion of the upper lugs of the saddle into the notches 22, as will presently appear.

The opening 15 through the striking plate or casting is of sufficient dimension to permit the insertion of coupler 25 which may be provided with a swivel butt 26, as indicated in dotted lines in Fig. 9 of the drawings.

Suitable means are provided for supporting the coupler and drawbar from the striking plate or casting. In the form of construction shown, which is by way of example only, this mechanism comprises a supporting unit designated generally by the reference character 20. This unit comprises a base plate or track member 27 and a cradle or coupler supporting member 33. The track member or base plate 27 is hollow and is provided with outwardly extending lugs 28 and 29 at each end thereof. The bottom wall of this base plate is provided with a plurality of curved tracks 30 and 31, two being shown. A slot 32 (see Figs. 3 and 4) is provided in the bottom wall of the base plate which will permit water falling on the tracks to escape therefrom.

The lugs 28 and 29 extending outwardly from the ends of the base plate or track member are of such dimensions as to slide freely through the openings 18, 19, 23 and 24 and seat in the recesses 22 and 16, respectively.

The cradle or coupler supporting member 33 is provided for engaging the coupler bar and supporting the same. This member is provided on its lower surface with a pair of curved tracks 34 and 35 corresponding to the cooperating tracks 30 and 31 in the base plate 27. Suitable rollers 36 and 37 are adapted to be inserted between the tracks of the base plate and those of the cradle or coupler supporting member, as shown more clearly in Figs. 1 and 9 of the drawings. The cooperating curved tracks are elongated to permit lateral movement of the yoke or coupler supporting member 33, during operation of the device.

The coupler supporting member 33 is provided on its upper surface with upstanding lugs 38 and 39 at the ends thereof for engaging at each side of the coupler member when the same is in position therein, as indicated in dotted lines in Fig. 1. In assembling the device, the coupler or drawbar is inserted through the opening 15, rollers are placed within the hollow track member 27 within the tracks 30 and 31, after which the coupler supporting member 33 is lowered into coupler member 27. The coupler supporting unit is then placed in position in the striking plate or casting beneath the coupler member by causing the lugs 28 and 29 to move laterally through the passages 23 and 18, or 24 and 19, as the case may be, and seat in the recesses 22 and 16, respectively. The coupler is elevated to permit the insertion of the supporting unit after which it is lowered to the position shown in Figs. 1 and 9.

In the operation of the device, the track and rollers will permit the side movement of the drawbar, the pockets 21 affording a clearance for the lugs 38 and 39. The curvature of the tracks will automatically center the drawbar inasmuch as any lateral movement of said bar will cause the coupler supporting member to be elevated, due to the curvature of the tracks.

The form of construction shown in Figs. 12 to 15, inclusive, differs from that just described in in that the portion of the striking plate or casing 41 is provided with a channel 42 for receiving the lower portion of the coupler supporting unit 60. This unit comprises coupler supporting means 70 and a base plate 43 having curved tracks 44 and 45 on its upper surface and provided with depending pins 46 and 47 which are adapted to engage openings in shims or in corresponding openings 48 and 49 in the bottom wall of the channel 42, as will presently appear.

Suitable means are provided for preventing the endwise movement of the base plate 43. In the form of construction shown, the base plate is provided with a groove 40 at each side thereof which is adapted to be engaged by lugs 50 integral with the side walls 42. See Fig. 12.

The rules of the American Railway Association prescribe that the coupler shank shall be a fixed distance from the rails. In order to avoid accuracy in the casting of different parts of the supporting mechanism, shims 61 are provided which may be inserted between the base plate and the bottom of the channel 42.

The parts are so constructed that normally one or more shims are necessary so that if, for any reason, the drawbar is too high, one or more may be removed, and if too low, one or more may be added.

The coupler supporting means 70 comprises two parts, the cradle 51 and a carrying iron 52. The cradle 51 is provided on its lower surface with a pair of curved tracks 53 and 54 corresponding to the tracks 44 and 45, respectively, and has a depression in its upper surface, into which the carrying iron 52 is adapted to seat. The carrying iron 52 is provided with lugs 55 and 56 extending outwardly from each end thereof which are adapted to engage corresponding recesses 57 and 58 in the cradle 51. A lateral passage 59 is in communication with the recesses 58 at each end of the carrying iron 52 whereby the same may be placed in position by first moving the lugs 58 laterally along the passage 59 and then lowering the lugs 55 and 56 into recesses 57 and 58.

The lower tracks 44 and 45 are provided with openings 62 which permit the water to escape from the tracks, as in the previously described construction.

In both forms of the device, the coupler supporting unit comprises supporting means and supported means oscillatably mounted thereon. The entire unit may be removed for inspection, replacement or repairs, or the supported members may be removed independently of the supporting members as occasion may require.

It is thought from the foregoing, taken in connection with the accompanying drawings, that the construction and operation of my device will be apparent to those skilled in the art, and that changes in size, shape, proportion and details of construction may be made without departing from the spirit and scope of the appended claims.

I claim as my invention:

1. In a railway car, a striking plate cast integral and having an opening through which a drawbar is adapted to extend, said plate having an integral tie bar forming the lower margin of said opening, the side walls of said opening being provided with vertical notches and with lateral passages leading into the upper portions of said notches, a coupler supporting unit having lugs extending outwardly therefrom and movable laterally along said passages and seated in said notches, said unit being removable while said draw bar extends through said opening for increasing the dimensions of said opening whereby said draw bar may be removed therefrom and

comprising a supporting member and a supported member oscillatably mounted thereon.

2. In a railway car, a striking plate having an enlarged opening through the same for receiving a draw bar, the side and bottom marginal walls of said opening being integral, a removable coupler supporting unit for restricting the size of said opening and for supporting said draw bar above the lower margin of said opening, and means for interlocking said unit to said plate and permitting the removal therefrom while said draw bar is in position in said opening, said unit comprising a lower stationary member and an upper movable member adapted to engage said draw bar and support the same above the lower margin of said opening.

3. In a railway car, a striking plate having an enlarged opening therethrough for the reception of a coupler shank member having a pivoted coupler butt, said opening having its marginal edge portions constituting an integral structure, a coupler supporting unit detachably carried by said plate for restricting the effective vertical dimensions of said opening, said unit comprising a track carrying member and a coupler supporting member, means including tracks and rollers for rockably mounting one of said members to swing laterally of the car, and one of said members being provided with a plurality of positioning lugs at each end thereof for engaging in laterally and downwardly extending slots in an adjacent surface, whereby portions of said unit may be removed by disconnecting the lug and slot connections, and removing one of said members for enlarging said opening vertically for removing said coupler member therefrom.

4. In a railway car, an integral striking plate member having an opening therethrough for the reception of a draw bar, said plate having an integral tie bar beneath said opening, a coupler supporting unit, and means including lugs and slots opening forwardly for detachably mounting said unit in said opening while said draw bar extends therethrough, said unit comprising supporting means and supported means oscillatably mounted on said supporting means.

5. In a railway car, a striking plate having an opening therethrough for the reception of a draw bar, the bottom and side marginal walls of said opening being integral, the side walls of said opening being provided with notches and with lateral passages leading into the upper portions of said notches, a coupler supporting unit comprising a base plate having lugs movable along said passages and seated in said notches and constituting the sole means for securing said unit to said plate, said base plate having curved tracks thereon, and a coupler engaging member having curved tracks on its underside corresponding to the tracks on said base plate and rollers between said tracks, said unit being removable from said plate without removing said coupler engaging member from said base plate.

6. In a railway car, a striking plate having integral top, bottom and side walls forming an enlarged opening through said plate for receiving a coupler shank having a pivoted coupler on an end thereof, said bottom wall having a recess therein below said opening, a base member having a track on its upper surface located within said recess, a cradle member having tracks on its lower surface, rotating elements between said tracks, said cradle member having upstanding arms provided with laterally and downwardly extending slots in their inner walls, and a coupler supporting element having a plurality of horizontally extending lugs on each end thereof for engaging said slots.

7. In a device of the class described, a striking casting having an opening through which a draw bar is adapted to extend, the lower marginal wall of said opening being integral with the side marginal walls thereof, said side marginal walls each having slots therein with portions in vertical alinement, a hollow casing supporting member opening upwardly and having outwardly extending lugs at each end thereof for detachably engaging said slots, said casing having curved tracks on the upper surface of its bottom wall, a cradle movably mounted in said casing and extending above the same for supporting said draw bar, said cradle having curved tracks on its lower surface above the tracks in said casing, rollers between the tracks on said casing, and cradle for normally centering said draw bar.

8. In a railway car, a striking plate having an opening therethrough for the reception of a draw bar, the side and bottom marginal walls of said opening being integral, said opening being enlarged downwardly, draw bar supporting means in the lower portion of said opening and extending above the lower marginal edge thereof, said means comprising a horizontal track supporting portion having elongated curved tracks thereon and arms extending upwardly from each end thereof, each arm having a pair of lugs thereon for engaging a pair of slots spaced vertically in each side marginal wall of said opening, the upper slots opening upwardly and the lower extending horizontally and then downwardly in the plane of the upper slots, a cradle for engaging and supporting said draw bar, said cradle having elongated curved tracks on its lower surface above said first-named tracks, rollers between the tracks on said cradle and means, and upstanding lugs on each end of said cradle for engaging the sides of said draw bar.

9. In a railway car, a striking casting having an opening therethrough for the reception of a draw bar, the lower marginal wall of said opening being integral with said casting, a hollow supporting casing in the lower portion of said opening and resting on said lower marginal wall, said side marginal walls and casing having interengaging slot and lug connections for detachably retaining said casing in position within said opening, a cradle within said casing extending above said casing for supporting said draw bar, and means between said cradle and the bottom wall of casing for rockably supporting said draw bar, said means being adapted to cause said cradle to automatically return to a central position when moved to either side thereof and released.

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