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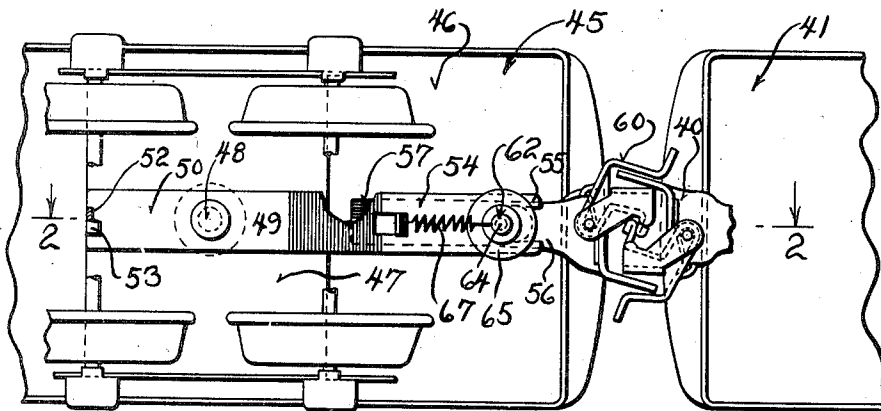
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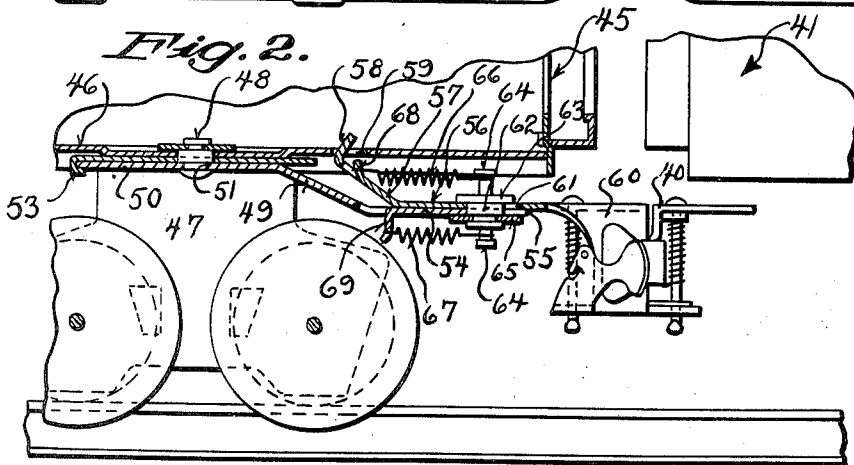
CENTERING DEVICE FOR TOY TRAIN COUPLERS

Filed Dec. 18, 1937

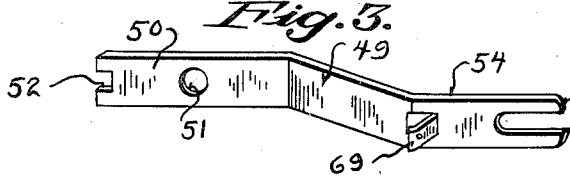
*Fig. 1.*



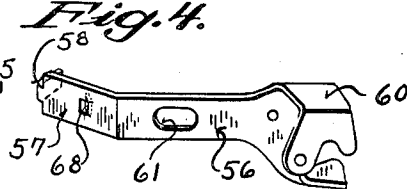
*Fig. 2.*



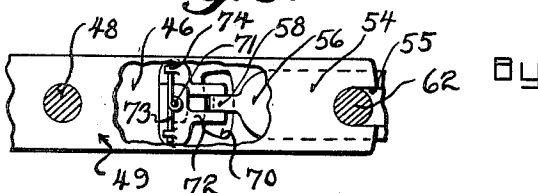
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE

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## CENTERING DEVICE FOR TOY TRAIN COUPLERS

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2 Claims. (Cl. 213—100)

This invention appertains to toy train couplers, and more particularly to a novel centering device therefor.

One of the primary objects of my invention is to provide novel means for centering the coupler heads of toy cars relative to one another when the cars are on a curve of a track, whereby to facilitate the coupling of the cars under all conditions.

Another salient object of my invention is the provision of novel means for resiliently mounting the drawbar, whereby to lessen the shock between cars incident to the coupling of the cars and the initial jar incident to the starting of a train.

A further object of my invention is to provide a toy train coupler which is durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market and incorporated with a toy train at a small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:

Figure 1 is a fragmentary, bottom, plan view showing my improved couplers connecting a pair of cars together.

Figure 2 is a fragmentary, longitudinal sectional view, taken substantially on the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a detail, perspective view of the centering bar, the view being taken on a smaller scale than Figures 1 and 2.

Figure 4 is a detail, perspective view of one of the drawbars, the view being taken on the same scale as Figure 3.

Figure 5 is a fragmentary, bottom, plan view illustrating the resilient means for engaging the pivot of the drawbar to allow movement of said pivot under certain operating conditions.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the numerals 40 and 60 indicate companion couplers carried by adjacent cars 41 and 45. The cars can be of any character or type, and the same form no part of my present invention, and have been shown to illustrate the use of my invention therewith.

The car 45 includes a bottom wall 46, and the car truck 47 is pivotally mounted on the bottom wall 46 by means of a pivot pin 48. The centering device includes a centering lever 49 having a

rearwardly extending arm 50, which extends under the top wall of the car truck 47. The pivot pin 48 extends through an opening 51 in the arm, and the extreme rear end of the arm is notched, as at 52, for the reception of a bendable tongue 53 formed on the truck, and this connection serves as means to rigidly secure the centering lever to the truck for swinging movement therewith. The centering lever angles downwardly and forwardly from the truck, and is provided with a forwardly extending leg 54. The front end of the leg is bifurcated to provide a pair of spaced parallel fingers 55.

The drawbar 56 is placed on top of the leg 54, and the rear end of the drawbar has formed thereon the upwardly and rearwardly inclined arm 57. The extreme rear end of the arm has formed thereon a reduced extension 58, which extends through a longitudinally extending slot 59 in the bottom wall 46 of the car, and this extension 58 engages the side walls of the slot 59 and constitutes a pivot for the drawbar. The forward end of the drawbar can carry any preferred type of coupler head 60. The drawbar intermediate the head 60 and the inclined leg 57, has formed therein a slot 61, which lies over the bifurcated end of the centering lever.

To connect the centering lever and the drawbar together, I employ a pivot pin 62, and this pivot pin is received in the slot 61 and in the bifurcated portion of the centering device. A flange 63 is formed on the pivot pin for engaging the upper face of the drawbar, and the opposite ends of the pivot pin carry knobs 64, for a purpose which will be later set forth. A washer 65 is employed for holding the pivot pin in place, and this washer engages the lower face of the centering lever.

In use of this form of my invention, it can be seen that when the car moves around a curve and the car truck swings on the car body, the centering lever will be swung to the right or left. The forked end of the centering lever, which receives the pivot pin, will move the pivot pin to the right or left, which will swing the drawbar on its pivot 58 therewith.

In order to relieve noise and shock incident to the coupling of two cars and the initial starting of the cars, I employ upper and lower coil springs 66 and 67. The upper coil spring 66 has its opposite ends connected respectively to the knob 64 and a tongue 68 struck from the drawbar. The lower spring 67 has its opposite ends connected to the lower knob of the pivot pin and to a tongue 69 struck out from the centering lever.

When the drawbar is pushed rearwardly incident to a pair of cars coming together, the drawbar will slide on the pivot pin 62, and this movement will be resisted by the upper spring 66. When the drawbar is pulled outwardly, this will pull the pivot pin 62 forwardly, and the pivot pin will slide in the bifurcated arm, and this movement will be resisted by the lower spring 67.

I have found that in some cases where a train is going around an S curve, the trucks of two adjacent cars will be moved in opposite directions, and as the drawbars of the cars are connected together, there is a tendency for the connected drawbars to throw one of the car trucks off the rails.

To eliminate this difficulty, I have provided means, as shown in Figure 5, to allow the slipping of the pivot 58 when a pressure beyond a predetermined degree is placed on the pivot. In this form of the invention, the bottom wall of the car truck can be provided with any desired shape of slot 70, through which extends the pivot 58. Rockably mounted on the bottom wall of the car body by means of a pivot pin 71 is a pair of levers 72, which engage the opposite sides of the pivot 58. A spring 73 is coiled about the pivot pin, and the opposite ends of the spring are connected to the levers beyond the pivot by tongues 74 struck out from the levers. The spring functions to hold the levers 72 in firm contact with the tongue. However, when undue pressure is exerted on one lever or the other by the tongue, this lever will give against the tension of its spring and allow the pivot to move. Means can be provided for limiting the swinging movement of the pivot 58, if so desired.

Particular attention is invited to the fact that in the form of my invention shown, the centering lever 49 not only operates the drawbar, but also forms the support therefor. This simplifies the device and eliminates the necessity of providing extraneous supports for the drawbar.

Changes in details may be made without departing from the spirit or the scope of this invention, but what I claim as new is:

1. In a toy train, a car having a bottom wall provided with a slot, a car truck pivotally connected to said bottom wall for swinging movement, a coupler including a drawbar having a pivot member formed on its rear end received in said slot, a centering lever carried by the truck for swinging movement therewith extending under and supporting the drawbar and provided at its forward end with a yoke, the drawbar being provided intermediate its ends with a slot, a pivot member received in said slot and the yoke of the drawbar, a contractile coil spring connected to the drawbar adjacent to its rear end and to the pivot member, and a contractile coil spring connected to the centering lever and to the pivot member.

2. In a toy train, a car having a bottom wall provided with a slot, a car truck pivotally connected to said bottom wall for swinging movement, a coupler including a drawbar having a pivot member formed on its rear end received in said slot, a centering lever carried by the truck for swinging movement therewith extending under the drawbar and supporting the same, the lever being provided at its forward end with a yoke, the drawbar being provided intermediate its ends with a slot, a pivot member received in said slot and the yoke of the drawbar, a contractile coil spring connected to the drawbar adjacent to its rear end and to the pivot member, a contractile coil spring connected to the centering lever and to the pivot member, and spring-pressed members carried by the bottom wall engaging the opposite sides of the pivot on the drawbar for normally holding the pivot of the drawbar centered relative to the longitudinal center line of the bottom wall.

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