

Nov. 10, 1925.

H. S. BECKER

COUPLER FOR TOY CARS

Filed March 30, 1925

2 Sheets-Sheet 1

1,561,398

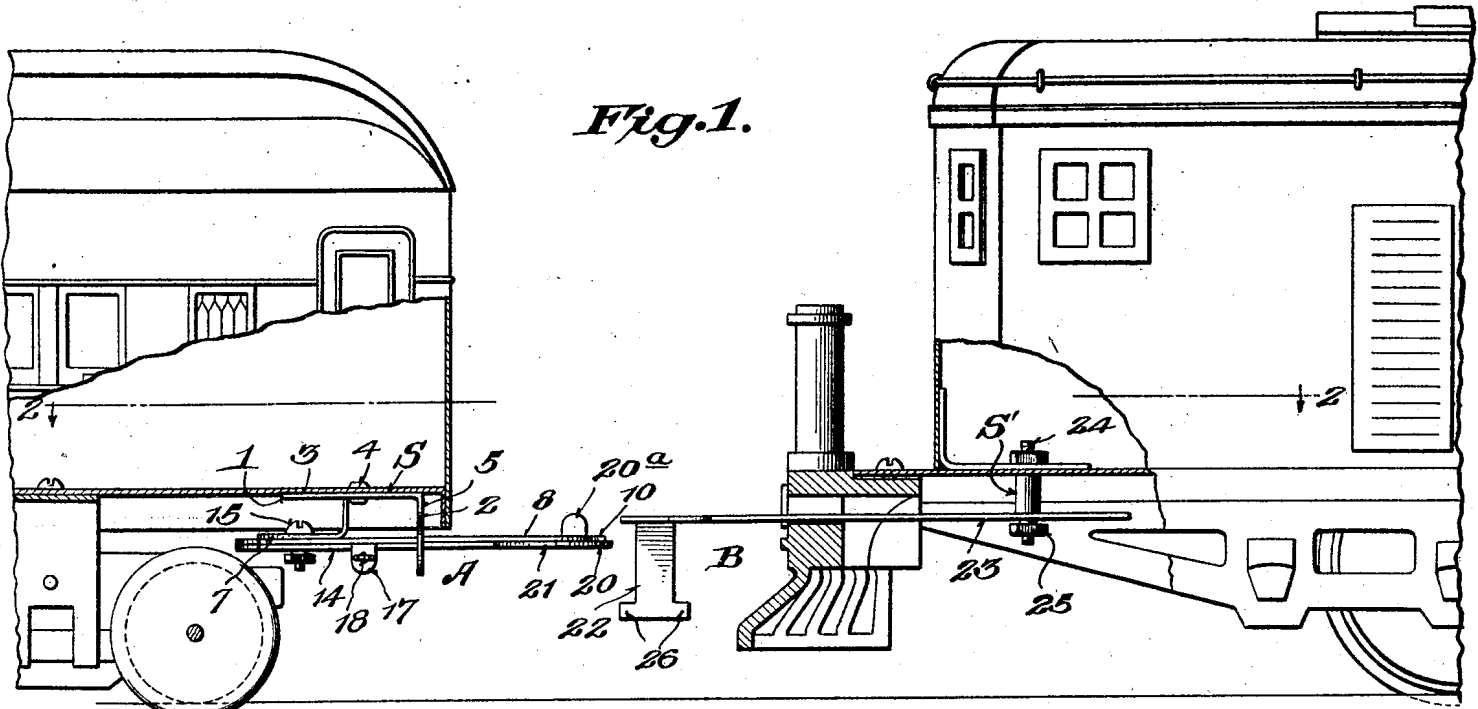


Fig. 1.

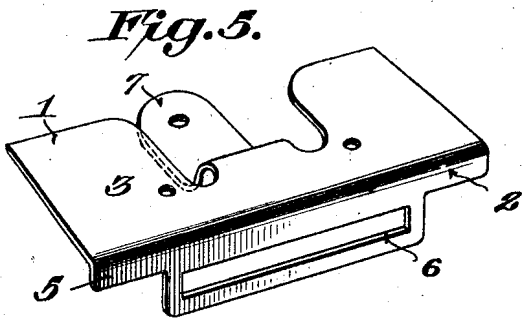


Fig. 5.

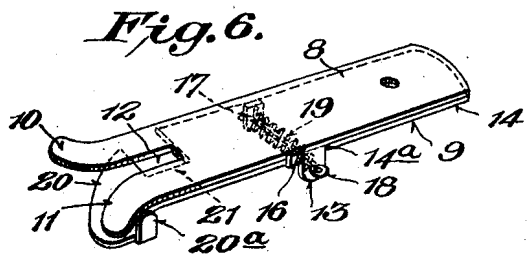


Fig. 6.

H. S. Becker
 Harry S. Becker
 Inventor
 Attorney

Nov. 10, 1925.

H. S. BECKER

1,561,398

COUPLER FOR TOY CARS

Filed March 30, 1925

2 Sheets-Sheet 2

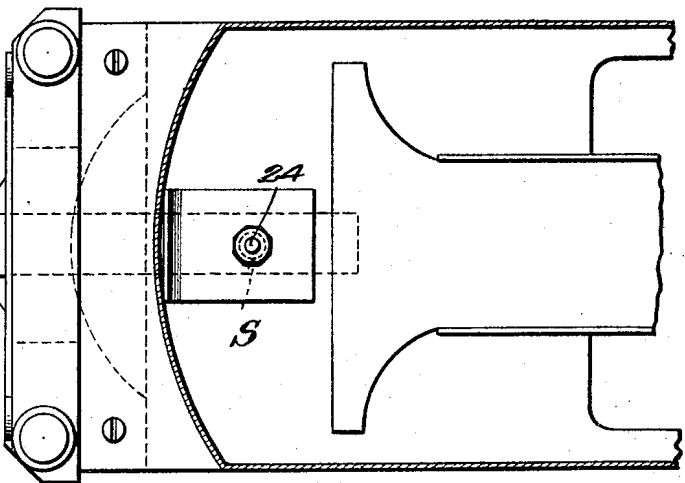


Fig. 2.

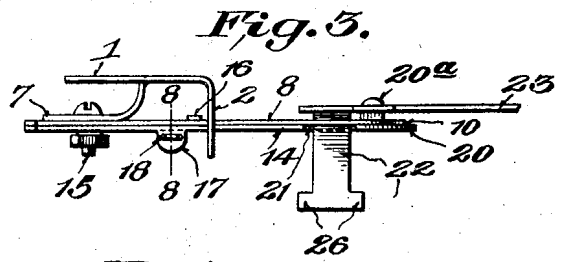
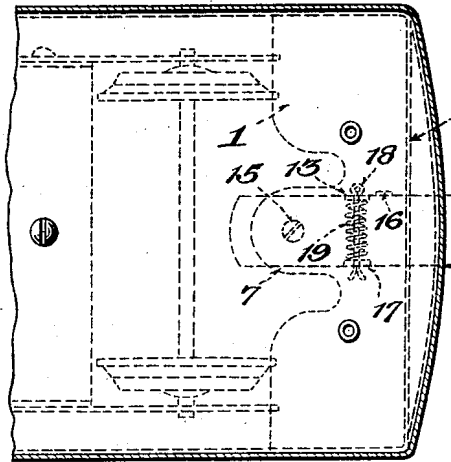


Fig. 5.

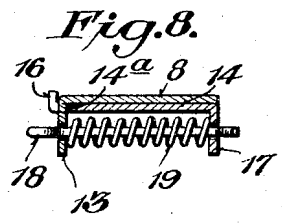


Fig. 8.

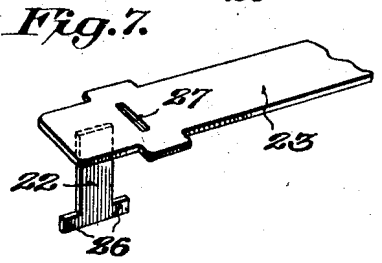


Fig. 7.

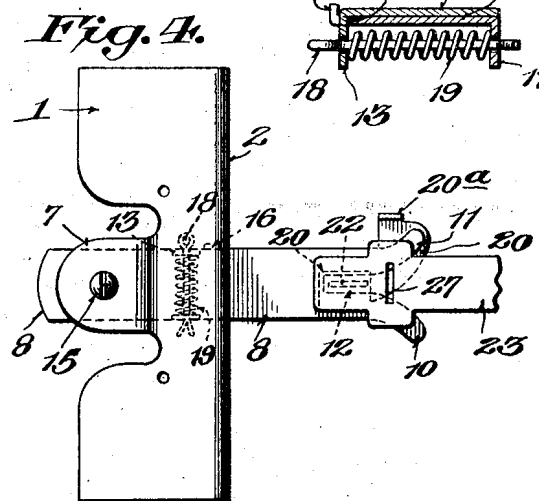


Fig. 4.

334
H. S. Becker
Inventor
Attorney

Patented Nov. 10, 1925.

1,561,398

UNITED STATES PATENT OFFICE.

HARRY S. BECKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN FLYER MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COUPLER FOR TOY CARS.

Application filed March 30, 1925. Serial No. 19,423.

To all whom it may concern:

Be it known that I, HARRY S. BECKER, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Couplers for Toy Cars, of which the following is a specification.

This invention relates to toy railways, and has particular reference to a novel improvement in car couplers for connecting the cars in train formation.

To that end the invention contemplates a coupling device for toy trains that will permit of the coupling of one car to another; a car to a locomotive; or a locomotive to a locomotive. In that connection the invention has in view a coupler of the automatic type, using as few parts as possible, and these parts being of strong and substantial construction thereby to successfully withstand the severe handling to which toys of this type are sometimes subjected.

A further and important object of the invention is to provide a coupler which will not buckle when pushing cars around a curve. That is to say, it is proposed to provide a coupler which will transmit the pushing force of the locomotive from one car to another through the rigid coupling itself rather than cause the coupling to break at the point of connection and move to one side so that the pushing force is imparted by car-to-car contact if there is enough play in the couplings to permit, or cause the force to result in a side thrust that has a tendency to derail the cars. When cars are being pulled the couplers of course readily stay in proper alinement but when cars are being pushed there is always a tendency in couplers heretofore constructed for the parts to break alinement and move to one side or the other at the point of connection of one coupler with the other. The present construction, however, obviates that objection and provides a coupling which will not buckle on curves when cars are being pushed or being pulled.

A still further object of the invention is to provide a coupling that will readily connect one car to the other automatically and

yet may be readily uncoupled or disconnected when desired.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a side elevation of portions of toy rolling stock equipped with the present novel coupling device shown in position about to couple.

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a detail side elevation of the parts of the coupling in their connected or coupled position.

Figure 4 is a top plan view of the construction shown in Figure 3.

Figure 5 is a perspective view of a supporting bracket for one of the coupler members.

Figure 6 is a perspective view of the latch unit of the coupler device.

Figure 7 is a detail perspective view of the pin unit of the coupling device.

Figure 8 is a detail sectional view taken on the line 8—8 of Figure 3.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

The present invention includes in the embodiment illustrated in the drawings a latch unit designated generally as A and a pin unit B respectively attached to the opposite ends of two cars or a car and a locomotive in such a way that each piece of rolling stock will be equipped at one end with a latch device and at its opposite end with a pin device, thereby permitting the ready automatic coupling of one car to another. In its general aspect the present construction is an improvement on the coupler construction shown in the Lowe Patent No. 1,432,723, dated Oct. 17, 1922, the improvements herein residing in the construction of the present device which overcomes the

buckling of the coupling when the cars are being pushed around a curve, and also that which provides a more positive lock between the pin and the latch portions of the coupler thereby to prevent accidental uncoupling.

Each element or unit A and B of the coupler is carried by a suitable support S or S' mounted on the end of the car. This support may assume various forms according to the type of car on which the coupling is to be installed, and in the case of the installation on cars of the passenger or equivalent type the bracket 1 is used. This bracket preferably consists of an angular body 2 having the attaching flange 3 provided with openings adapted to receive fastenings 4 for connecting the bracket to the bottom of the car and also having a downwardly extending front wall 5 provided with an elongated horizontal slot 6. The intermediate portion of the top flange 3 may be bent downwardly as indicated at 7 thereby to provide an ear for pivotally supporting the rear end of the draw-bar portion or shank of the latch unit A.

The said latch unit A preferably includes a keeper member 8 having the shank portion 9 and the front end thereof being provided with the outwardly extending horn portions 10 which are so formed as to define a converging guiding mouth 11 communicating with a relatively elongated and constricted terminal keeper slot 12. One side edge of the member 8 is provided with a downturned lug 13 and the same may also be perforated near its rear end thereby to register with a similar perforation in a spring tensioned latch member 14 which lies therebeneath, thereby to receive the fastening 15 for movably connecting the members 8 and 14 to the pivot ear 7.

The keeper member 14 is notched at one edge as indicated at 14^a thereby to accommodate the lug 13, and adjacent the notch is provided with an upturned abutment 16. The opposite edge of the member 14 is provided with a downturned lug 17 which lies opposite the lug 13, and both of said lugs are perforated to receive a cotter pin 18 or the like for supporting a coil spring 19. This spring is arranged between the lugs 13 and 17, and due to the abutment 16 above referred to outward movement of the member 14 is prevented. The effect of the coil spring 19 is to maintain the keeper head 20 across the guiding mouth 11 thereby to provide a lock or barrier for the constricted terminal keeper slot 12 of the member 8. As will be observed from the drawing, the body of the member 14 adjacent the keeper end 20 is cut away as indicated at 21 thereby to provide proper clearance for the pin 22 carried by the pin unit B, and also provided with the releasing lug 20^a.

As shown, the pin unit B of the coupling

comprises a substantially T-shaped body the head of which carries the pin 22 and the shank 23 of which provides in effect a draw-bar portion for the coupler. The rear end of this shank is connected to the support S' which, in the illustration shown, is on a locomotive wherein the support comprises a bolt 24 having a suitable spacing sleeve thereon and a nut 25 for pivotally clamping the shank 23 to the bottom of the car. It will also be observed that the shank portion 23 of the element B may have a lateral movement through the slot provided in the fender of the locomotive. The head portion of the member B may also be provided with a transverse opening 27 to permit of its use in connection with the mating part of another coupler now in use.

The pin 22 of the pin unit B is of special importance because it has the capacity for cooperating with the slot 12 in such a way as to prevent buckling on curves and also will not jump out of the slot and cause accidental uncoupling. The characteristics of this pin which make these features possible are that the same is flat and relatively wide; and also it is secured to the shank 23 in a plane parallel to the longitudinal axis thereof while its lower end is provided with the offset keeper 26 which will engage with the underside of the member 14 at the opposite ends of the notch 21 thereby to prevent accidental uncoupling if the pin should happen to rise. When the cars are coupled as shown in Figures 3 and 4 it will be observed that the relatively elongated flat pin 22 fits in the constricted slot portion 12 of the member 8 in such a way that relative rotational movement between the pin and the latch unit is prevented whereas if a round pin were used the units A and B would move to one side or the other as far as the slots 6 of the brackets or their equivalent, carried by the cars would permit. Also, the projections 26 on the member 22 provide in effect a locking head for said pin member which prevents accidental withdrawal if the element B should lift with reference to the element A.

When it is desired to effect uncoupling the keeper end 20 of the member 14 may be grasped by the finger at the point 20^a and moved until out of obstructing relation to the constricted locking slot 12 in the member 8. This movement further compresses the spring 19, so that when 20^a is released 20 will snap back across the open end of slot 12.

With the construction shown and described, it will be apparent that the present invention provides a coupling that will automatically connect the cars by the movement thereof in opposite directions, that is towards each other to effect coupling, and after the coupling is completed the cars may

be pulled or pushed, and in the latter case the pushing force will not cause lateral deflection or buckling of the couplers but will transmit the pushing force more directly in line with the longitudinal axis of both parts of the coupler and the car body. Thus, not only less load is imposed on the locomotive when pushing cars around curves with this type of coupling, but also the tendency to derail the cars by a lateral thrust is entirely obviated.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. A coupler for toy cars comprising a latch unit having an elongated relatively narrow keeper slot arranged parallel to the direction of coupling, keeper means for automatically closing the entrance end of the slot, a pin unit, and a flat coupling pin adapted to enter said keeper slot edgewise.

2. A coupler for toy cars comprising a latch unit having a keeper slot arranged parallel to the direction of coupling, a keeper member normally obstructing the slot, means for manually shifting the keeper member to open the slot, and a pin unit including a flat pin adapted to enter the slot edgewise and to be held by said keeper member until the same is manually shifted.

3. A coupler for toy cars comprising a latch unit including a member having a relatively flaring mouth and a constricted keeper slot communicating therewith, and another member arranged beneath said first named member and provided with a keeper head adapted to lie across said mouth and adapted to be moved in obstructing relation to the constricted keeper slot, and a pin unit including a shank portion having a flat coupling pin depending from the underside

thereof and arranged for edgewise movement into the constricted keeper slot thereby to couple said units in substantially rigid relation.

4. A coupler for toy cars comprising mating latch and pin units, said latch unit including a pair of relatively flat members pivotally supported at one end to a car, said members having a cooperating locking slot and keeper head and a spring for normally maintaining said members in substantially registering relation, and said pin unit comprising a body having a shank portion and a head, and a flat pin depending from said head and having keeper projections thereon.

5. A coupler for toy cars comprising mating latch and pin units, said latch unit comprising a pair of superposed flat members pivotally connected at one end and supported beneath the bottom of the car, said members having a cooperating locking slot and keeper head, a spring for normally maintaining said members in registering relation, thereby to maintain the keeper head in locking relation to the slot except when the spring is manually compressed to move the keeper head away from the slot, and said pin unit comprising a body portion adapted to be pivoted at one end to the under side of the car, and a pin carried by the front end of the said body, said pin being flat and disposed parallel to the said body and having forwardly and rearwardly projecting portions at the lower end thereof.

6. In a coupling for toy cars, a supporting bracket having horizontal and vertical flange portions, the former constituting means for attaching the bracket to the bottom of the car and the latter having a horizontal slot, a pivot ear bent down from said horizontal flange and lying substantially in the plane of said slot, and a coupler member pivotally connected to said pivot ear and projecting through said slot.

In testimony whereof I hereunto affix my signature.

HARRY S. BECKER.