Oct. 31, 1939. A. DUNHILL 2,178,035

AUTOMATIC COUPLING FOR TOY RAILWAY VEHICLES

Filed April 16, 1938

Fig. 1.

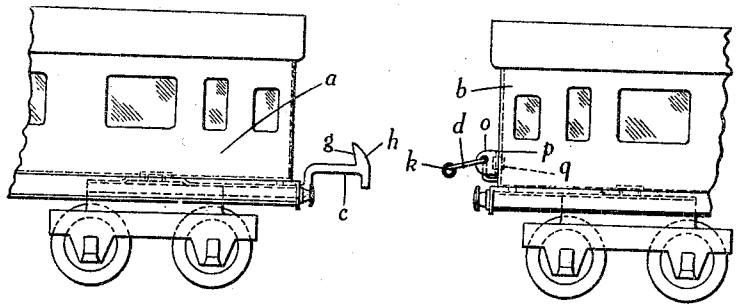


Fig. 2.

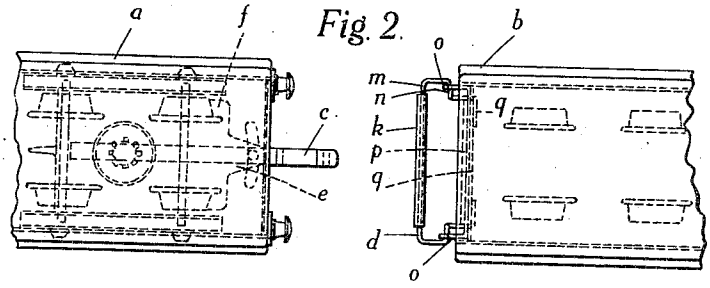


Fig. 3.

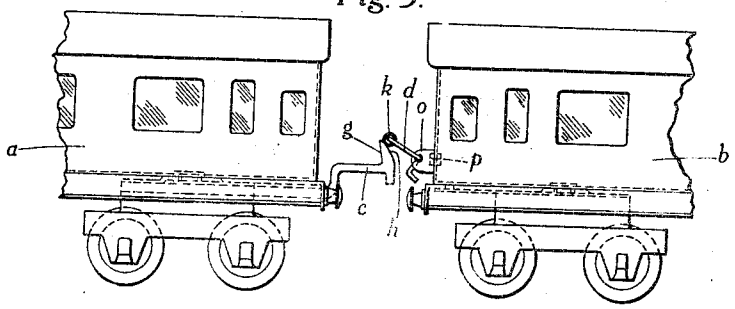
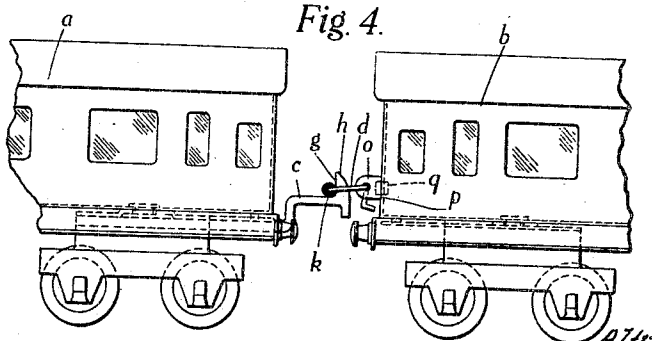


Fig. 4.



INVENTOR

Alfred Dunhill

BY

ATTORNEY

Patented Oct. 31, 1939 2,178,035

UNITED STATES PATENT OFFICE

2,178,035

AUTOMATIC COUPLING FOR TOY RAILWAY VEHICLES

Alfred Dunhill, Notting Hill, England

Application April 16, 1938, Serial No. 202,575
In Great Britain July 28, 1937

1 Claim. (Cl. 213—176)

This invention relates to the coupling of toy railway vehicles and has for its object to provide appliances which fitted to the ends of the vehicles are automatically operated by the impact of one vehicle on the other to couple the two vehicles together. Thus the several vehicles to form a train may be automatically coupled together and thereby through the front vehicle to the locomotive or tender when the locomotive, or locomotive and tender, is run into contact with the leading vehicle.

With this object in view according to the present invention the coupling appliances comprise a hook member on one end of a vehicle having an inclined nose or front striking surface and a draw-bar pivoted on the other end of the vehicle for upward movement and normally maintained in a position projecting substantially horizontally from the end of the vehicle, so that it is at all times in position to strike the inclined nose of the hook member of another vehicle and ride up the inclined surface thereof into engagement with the hook.

But in order that the invention may be clearly understood reference is now made to the accompanying drawing in which similar reference characters relate to like parts in all the figures and in which:

Figures 1 and 2 show in respective elevational and plan views the coupling appliances mounted on the opposing ends of two vehicles to be coupled.

Figure 3 shows the position of the parts of the coupling appliances during the coupling operation and

Figure 4 the position of the same parts when the two vehicles are coupled.

Referring to the drawing, the reference letters *a* and *b* represent two vehicles to be coupled by means of the hook member *c* and draw-bar *d* mounted respectively on the opposing ends of the vehicles. The hook member *c* is so attached that it cannot move vertically, either upwards or downwards, but it may have a limited oscillatory movement in the horizontal plane and, in the example shown in the drawing, representing the vehicles with bogie underframes, it is rigidly attached to the forepart *e* of the pivoted bogie frame *f*. The hook *g* is formed with an inclined front *h* that provides a sloping surface to meet the draw-bar *d* during the coupling operation.

The draw-bar *d* comprises a tube *k* of sufficient length to ensure its engagement with the hook *g* irrespective of the angular position of the two vehicles, as for example on a curve, that is freely rotatable on a wire rod *m* the ends of which are bent inwardly and returned to form arms *n* mounted to rotate freely in lugs *o* projecting from the ends of the bar *p* secured to the end of the vehicle by a strap *q*. The cranked formation of the ends of the rod *m* prevents downward movement of the draw-bar *d* beyond the approximately horizontal position shown in Figure 1, the inwardly bent ends of the arms *n* bearing against the end of the vehicle *b*.

In the coupling operation the tube *k* of the draw-bar *d* strikes the hook *g* so that the draw-bar *d* is tilted upwardly and the tube *k* rides up the inclined surface *h* as shown in Figure 3, passes over the top of the hook and falling by gravity behind the same into the position shown in Figure 4 couples the vehicles *a* and *b*.

What I claim is:

Automatic coupling appliances for toy railway vehicles, comprising a hook member on one end of a vehicle and a draw-bar pivoted on the proximate end of an immediately adjacent vehicle for upward influence by the hook member and for gravitational influence to engage in rear of the hook member for coupling purposes, the draw-bar including a rod-like section having a relatively long front coupling length, side sections extending rearwardly from the coupling length, inwardly extending sections serving as pivot sections, and depending hook elements having rearwardly extending terminals, means on the vehicle for pivotally supporting the pivot sections with such means arranged so that the free terminals of the hook end of the coupling member engage the vehicle to limit the position of the coupling length of the coupling member to a substantially horizontal position with respect to the vehicle, and a freely rotatable tube encircling the coupling length of the coupling member.

ALFRED DUNHILL.