Aug. 30, 1932. H. S. BECKER 1,874,228

CAR COUPLER

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Fig. 1.

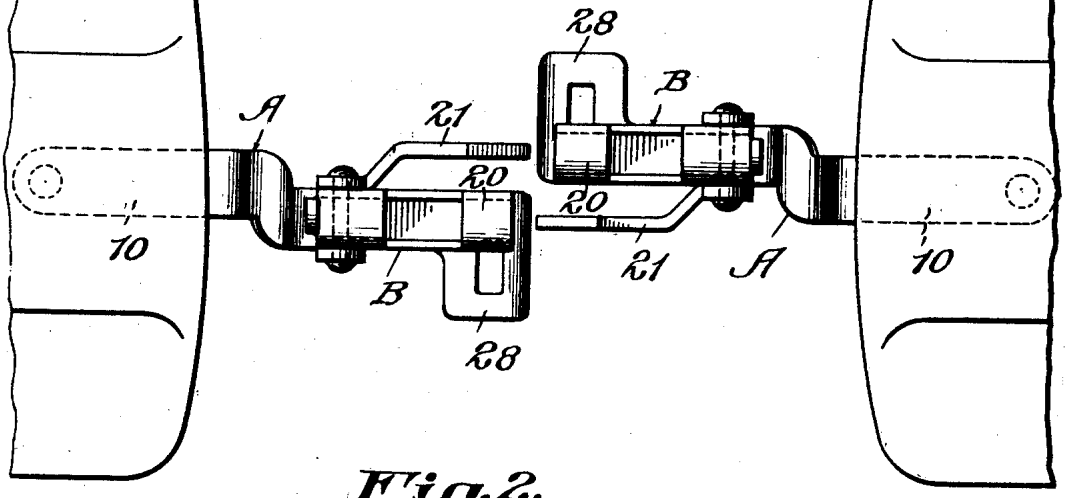

Fig. 2.

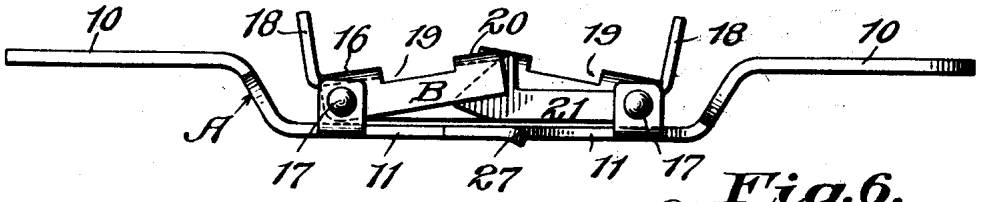

Fig. 6.

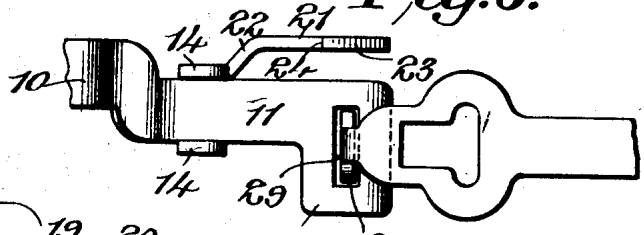

Fig. 5.

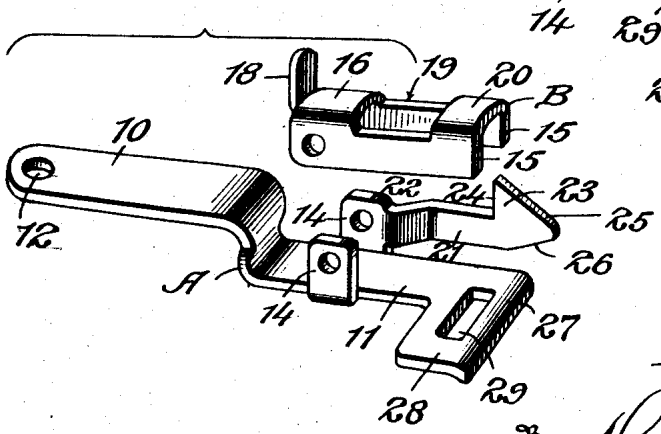

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Fig. 3.

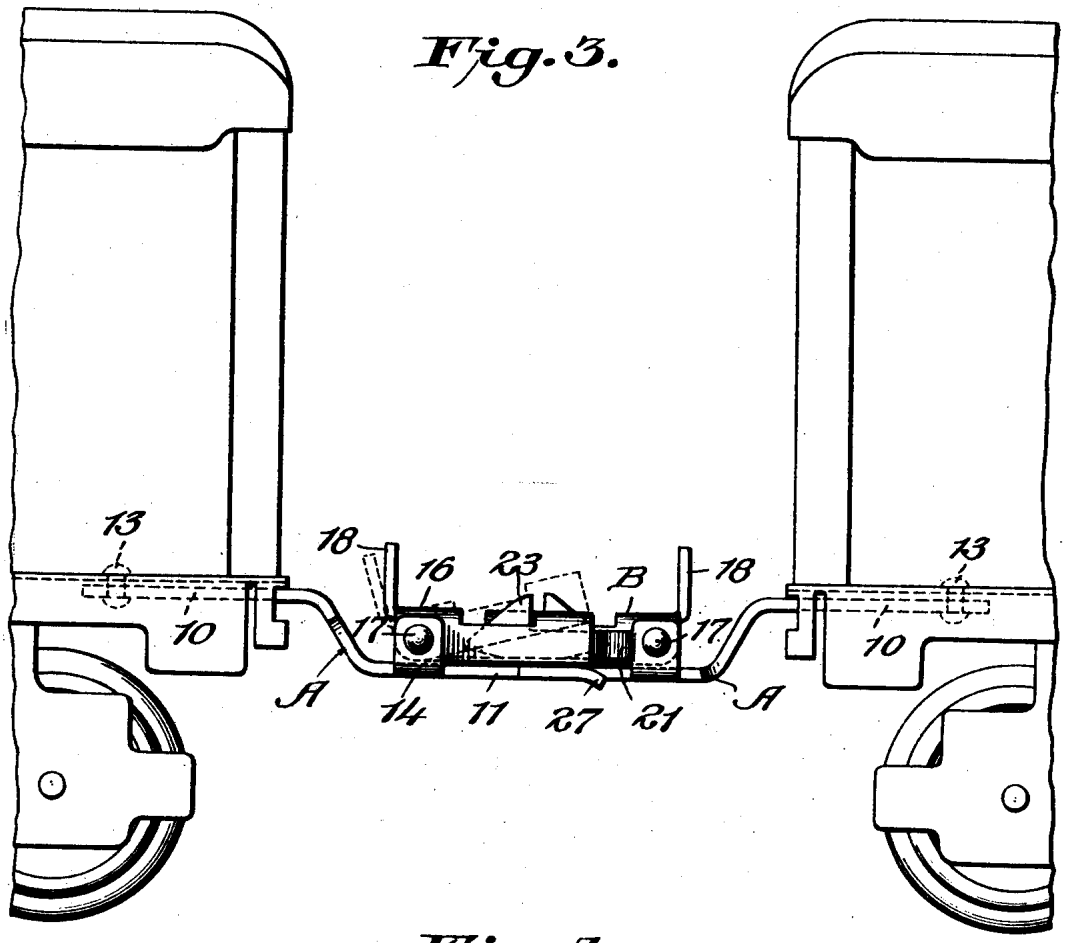
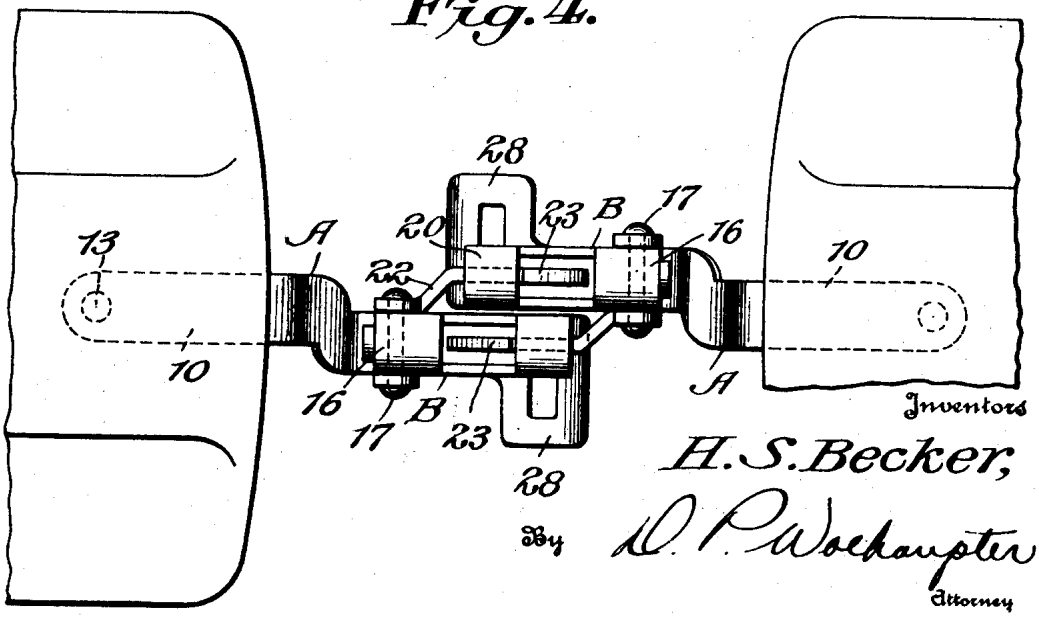


Fig. 4.



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UNITED STATES PATENT OFFICE

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CAR COUPLER

Application filed July 22, 1930. Serial No. 469,755.

This invention relates to car couplers, and has particular reference to an improved coupler for connecting the cars and locomotives of toy railway trains.

An object of the invention is to provide a coupler which is adapted for connection with a duplicate coupler, thereby to avoid the necessity of providing so-called male and female, structurally different couplers, at the opposite ends of a car or locomotive, as has heretofore been common practice, and to avoid the objection of turning cars or locomotives end for end when forming a toy train, as is frequently required when the cars or locomotives are provided with so-called male and female couplers.

Another object of the invention is to provide a coupler embodying a construction affording positive connection with a duplicate coupler under all conditions of movement of a toy train, and which is yieldable to permit relative lateral movement of the ends of adjacent cars as in rounding curves in the track and under similar conditions.

Another object of the invention is to provide a coupler which will automatically connect with a duplicate coupler by relative movement of the couplers towards one another, and which may readily be uncoupled without removing the car or locomotive from the track.

Another object of the invention is to provide a coupler which is adapted for connection not only with couplings which are duplicates thereof, but which also is adapted for connection with other well known structurally different types of couplers.

A further object of the invention is to provide a coupling having the characteristics mentioned which is relatively cheap and easy to produce, which is strong and durable, and which is thoroughly reliable and efficient in use.

With the foregoing and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

In the drawings, wherein like characters of reference denote corresponding parts in the different views:—

Figure 1 is a plan view of a pair of couplers embodying the novel features of the present invention, the couplers being shown in separated relation.

Figure 2 is a side elevation illustrating the couplers in a partially engaged position.

Figure 3 is a side elevation illustrating the couplers in a fully engaged position.

Figure 4 is a plan view of the couplers in a fully engaged position.

Figure 5 is a perspective view illustrating the parts comprising the present coupler in separated relation; and

Figure 6 is a plan view illustrating the adaptability of the present coupler for connection with one well known structurally different coupler.

Referring to the drawings in detail, it will be observed that the present coupler is composed of only two main parts viz, a shank A and a latch B and that these are of a design adapting them to be produced economically in the form of sheet metal stampings.

The shank A, which preferably is in the form of a sheet metal strip of suitable length, width and thickness, is inclusive of inner and outer end portions 10 and 11, respectively, which are laterally offset with respect to one another, whereby the inner end portion 10 is adapted to be mounted at the transverse center of a car or locomotive and the outer end portion 11 is adapted to overlap the outer end portion 11 of a duplicate coupler when the respective couplers are disposed in longitudinal alinement with their related cars or locomotives. Preferably, but not necessarily, the outer end portion 11 also is offset downwardly with respect to the inner end portion 10 to dispose the connection between a pair of the couplers at a desired elevation.

At its inner end, the portion 10 of the shank A is provided with an aperture 12 to receive a pin or rivet 13 for pivotally connecting the coupler to a car or locomotive thereby to provide for lateral swinging movement of the coupler.

Intermediate its ends, the outer portion 11 of the shank A has a pair of ears 14, 14 bent upward from the sides thereof, and between these ears is pivoted the latch B.

The latch B is somewhat elongated and of inverted U-shape in cross section, being inclusive of a pair of side walls 15, 15 and a top wall 16. This latch is pivoted at its inner end on a pin 17 which passes through the ears 14, 14 and through the side walls 15, 15, whereby the outer end of the latch is adapted to be raised and lowered, its normal position being horizontal and resting upon the outer end portion 11 of the shank A as is manifest.

At its rear end, the latch B preferably is provided with an upwardly directed tongue 18 for finger engagement to effect pivotal movement of the latch in a direction to elevate its outer end, as when effecting disconnection of a pair of the couplers, while intermediate its ends, said latch has its top wall 16 cut away, as at 19, to provide an opening for the upward projection through said wall of a cooperating part of a companion coupler, and also to provide a strap or yoke element 20, which is part of the top wall 16, connecting the side walls 15, 15 between said opening and the outer or free end of the latch.

Formed preferably as an integral part of the inner ear 14 and extending forwardly from the forward edge of said ear, is an arm 21 which is laterally offset, as at 22, to adapt its free or outer end portion to aline with the latch B of a companion coupler, and which terminates at its free or outer end in an upwardly directed extension 23 providing a rearwardly facing shoulder 24 for cooperation with the inner edge of the yoke or strap portion 20 of the latch of a companion coupler. From the top of said shoulder the edge of said extension 23 is sloped downwardly and forwardly to the forward or free end of the arm 21, as at 25, and from said free end, the lower edge of said arm is sloped downwardly and rearwardly as at 26.

In view of the foregoing it is believed that the operation of the present coupling will be apparent as follows: As a pair of the couplings are moved relatively towards one another with the arms 21 alined respectively, with the latches B, the inclined lower edges 26 of said arms first engage with the downwardly curved outer or free end portions 27 of the shanks A whereby said arms are directed over the tops of said shanks, and as the relative inward movement of the couplings is continued, the ends of the arms 21 enter the outer ends of the latches B until the inclined upper edges 25 of said arms engage the strap or yoke portions 20 of said latches and lift the outer ends of said latches. Then, as further relative inward movement of the couplings continues, the extensions 23 of the arms 21 ride beneath the yoke or strap portions of the latches until the shoulders 24 of said extensions pass the inner edges of said yoke or strap portions 20, whereupon the latches gravitate to their normal position with the extensions 23 projecting upward through the openings in the tops of the latches and the shoulders 24 disposed behind the rear edges of the yokes or straps 20. Thus, the couplings become automatically interlocked with one another simply by relative inward movement of the couplings, since manifestly relative outward movement of the couplings cannot take place due to the abutting relation of the shoulders 24 with the inner edges of the yokes 20. However, to disconnect the couplings, all that is necessary is to effect upward swinging movement of the latches B, either by means of the tongues 18 or in any other suitable manner, to effect elevation of the inner edges of the yokes or straps 20 above the upper ends of the extensions 23, whereupon the couplings may be moved relatively outward or separated as is obvious.

When a pair of the present couplinges are operatively connected with one another as illustrated in Figs. 3 and 4 of the drawings, the latches B manifestly provide means positively preventing any accidental disconnection of the couplings, and as is also manifest, the present coupling not only is adapted for connection with a duplicate coupling, but when a pair of the present couplings are connected with one another provision for ample relative lateral movement of the couplings is afforded by reason of the narrow width of the arms 21 as compared with the relatively wide space between the side walls of the yoke B.

To adapt the present coupler for connection with other well known structurally different types of couplers, the free end of the shank A preferably is provided with an outwardly directed lateral extension 28 having a slot 29 therein to receive the downward extension 30 or equivalent formation of well known types of other couplings as illustrated, for example, in Fig. 6 of the drawings.

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 and scope of the appended claims.

I claim:—

1. A car coupler comprising a shank, a pair of ears extending upwardly from opposite sides of said shank, an arm extending forwardly from one of said ears, said arm having an upward extension providing a hook, a latch pivoted between said ears and

provided with an abutment for cooperation with the hook of another coupler to connect the couplers together, and means for holding the latch normally in an operative position for automatic connection with the hook of an arm of another coupler when the couplers are moved together, said arm and said hook being laterally spaced from each other.

2. A car coupler comprising a shank, a pair of ears extending upwardly from opposite sides of said shank, an arm extending forwardly from one of said ears, an upward extension on said arm providing a hook, and a latch of inverted U-shaped cross section pivoted between said ears with its lower edges resting normally on said shank whereby it is held normally in an operative position, said latch having an opening in the top thereof to receive the hook of another coupler.

In testimony whereof I hereunto affix my signature.

HARRY S. BECKER.