C. A. HOTCHKISS.

AUTOMATIC COUPLING FOR TOY RAILWAY CARS.

APPLICATION FILED JAN. 31, 1912.

1,029,545. Patented June 11, 1912.

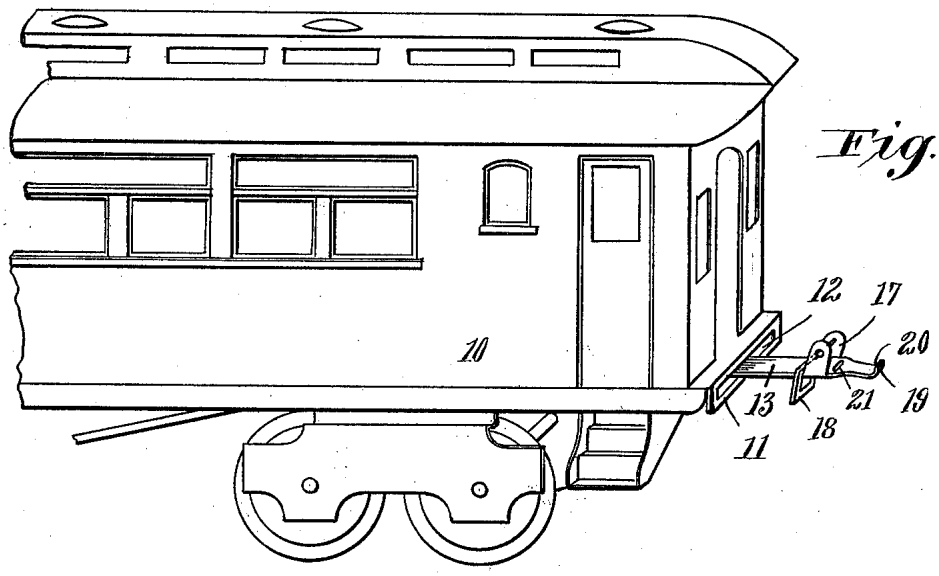


Fig. 1.

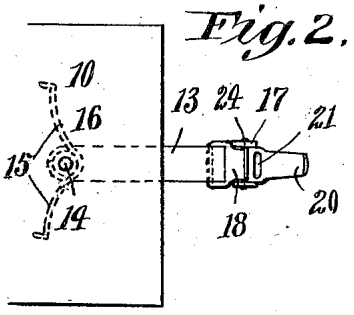


Fig. 2.

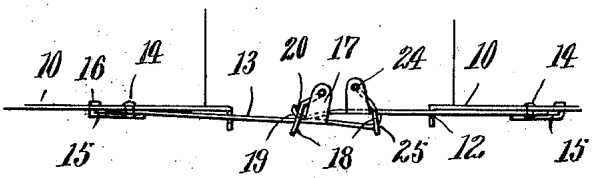


Fig. 4.

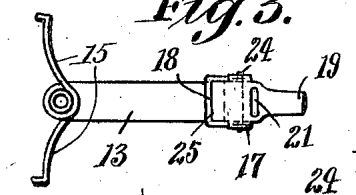


Fig. 3.

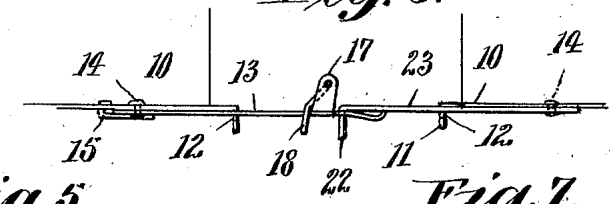


Fig. 6.

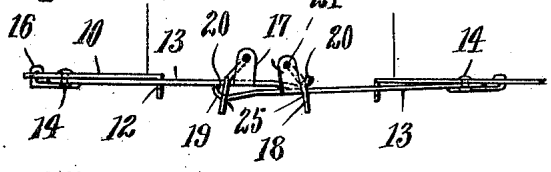
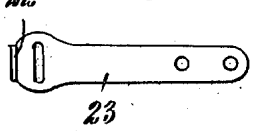


Fig. 5.

Fig. 7.



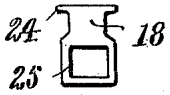


Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

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AUTOMATIC COUPLING FOR TOY RAILWAY-CARS.

1,029,545. Specification of Letters Patent. Patented June 11, 1912.

Application filed January 31, 1912. Serial No. 674,579.

To all whom it may concern:

Be it known that I, CHARLES A. HOTCHKISS, citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Automatic Couplers for Toy Railway-Cars, of which the following is a specification.

This invention relates to new and useful improvements in "automatic couplers for toy railway cars," such as are now commercially manufactured, sold and operated upon suitable tracks by means of spring, electric and other forms of motors. Heretofore these kind of cars have employed various forms of couplers, so called, for detachably connecting the cars together, the most popular form of such couplers consists of a sheet metal strip pivotally connected to the car and having a transverse slot in said strip adjacent to its outer end, and having its extreme outer end portion turned down at a right angle for engagement with the slot of the coupler on the end of the adjacent car. These prior forms of couplers are not in any sense automatic, but have to be manually connected and disconnected, which frequently requires the lifting of the end of one of the cars so coupled from the track, to insure the insertion of the hook end of the coupler with the slot of the adjoining coupler. These old forms of couplers are now in quite general use and therefore in the designing and adoption of an automatic coupler it has been necessary to provide for this condition and construct the new coupler so that it may readily be used in connection with the couplers of toy railway cars previously manufactured and sold.

I have therefore sought to improve upon couplers for toy railway cars by producing an automatic device which will promptly connect and become locked with a similar coupler when the two are run together, thus avoiding the necessity of manually engaging the couplers when connecting the same, or of raising the cars from the track as has heretofore been required; to design a coupler that can be inexpensively manufactured by being stamped out of sheet metal and bent to form, and assembled in very few operations; further to provide an automatic coupler for the purpose and of the class mentioned, which can be readily unlocked for the disconnection of the cars without derailing the same; and finally to provide means for normally holding the coupler in a centrally extended position so as to insure the alinement of the two couplers on the adjacent ends of the cars, and to insure the connection of one with the other, yet in a way to allow of the couplers swinging laterally as required to conform to the position of the cars when rounding a curve.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departure from the spirit or sacrificing any of the advantages of the invention.

Similar characters of reference denote like or corresponding parts throughout the several figures of the accompanying drawings, and upon which,

Figure 1, shows a perspective view of the end of a sheet metal toy railway car, having one of my improved automatic couplers attached thereto as in position to be connected with a similar coupler. Fig. 2, is a plan view of the same coupler, shown pivotally attached to the bottom of a car body. Fig. 3, is a detached bottom plan view of the coupler shown in Fig. 2. Fig. 4, is a side view of a pair of my improved automatic couplers, attached to the ends of car bodies and locked together. Fig. 5, is a further connected side view of the couplers, but wherein the relative vertical position of the connected couplers is reversed. Fig. 6, is a further side view of one of my improved couplers, shown connected to one of the old style couplers. Fig. 7, is a detached bottom plan view of the said old style coupler before referred to and shown in Fig. 6, and, Fig. 8, is a detached front view of the pivotal locking pawl.

Referring in detail to the characters of reference marked upon the drawings

represents a sheet metal toy railway car of the class heretofore mentioned. The sheet metal end 11 of this car is shown deflected down and provided with a horizontal slot 12 that forms a support and guide in which the shank of the coupler 13 is supported and free to swing to and fro, upon its pivot which is in the form of a rivet 14 passing through a suitable hole in the coupler and the floor of the car body at a point distant from the end thereof as shown in the drawings. A suitable spring 15 is soldered or otherwise secured to the rear or pivot end of the coupler and has its two free ends 16 disposed through holes or otherwise attached to the bottom of the car at an equal distance from the said pivot so as to insure the coupler remaining in a neutral central position. This spring would obviously be formed of light tension wire so as to readily permit the couplers to swing to one side or the other as would be necessary to permit the cars to freely round a curve.

The coupler proper is formed of but two pieces of sheet metal the main one 13 of which is in the form of a longitudinal strip having upwardly turned ears 17 on its outer end portion and intermediate of which a special form of locking pawl 18 is pivotally connected. The extreme outer end portion of the coupler is deflected down slightly and then disposed up to form an incline face 19 upon the outside and a hook 20 upon the top or inside. A transverse slot 21 is also formed in this outer portion of the coupler between the said hook and the ears to accommodate the hook 22 on the old style of couplers 23. The locking pawl 18 is stamped up from sheet metal to form pintles 24 that are pivoted in holes of the ears and thus freely hangs, when in a normal position, and rests against the inner edges of the two ears and against the top face of the shank of the coupler. The under lower portion 25 of the pawl extends below the said shank and is free to be raised by the hook end of the connecting coupler and to drop back over the hook as it passes under in a way to engage and lock the same until it is manually disengaged. The construction further insures the free end of the first mentioned coupler sliding in under the abutting coupler and freely entering the loop of the pawl beneath the shank of the coupler which is arranged above it. It is thus immaterial which of the abutting couplers assumes the upper or lower position for the action is the same in each instance, except that the locking pawl in one case serves as the operative engaging means, whereas in the other instance as shown in Fig. 5, the other pawl serves to engage the end of the shank which has assumed the uppermost position.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. An automatic coupler for toy railway cars, comprising a strip of sheet metal pivotally connected at one end to a car, and having a hook formed of the outer end of the strip, a locking pawl pivotally hung in the said shank so as to permit the hook of a similar coupler sliding thereunder, and means for normally holding the coupler in a yieldable, but central position.

2. The combination with a sheet metal toy car having a depending end flange with a transverse slot therein, of a coupler pivoted to the bottom of the car and extended out through and supported in the slot, said coupler including a hook end, and a pawl pivotally connected on the upper side and back of the hook to automatically engage a similar hook on an adjoining coupler.

3. The combination with a sheet metal toy car having a depending end flange with a transverse slot therein, of a coupler pivoted to the bottom of the car and extended out through and supported in the slot, said coupler including a hook end, a pivoted pawl to automatically engage and hold a connecting coupler, and means for normally but yieldably holding the coupler in a central position.

4. A toy railway car coupler, comprising a shank pivotally connected at one end to a car and having upwardly disposed ears upon opposite sides of its outer end portion, and having its extreme outer end disposed upward to form a hook, a locking pawl pivotally hung between the said ears and extended below the shank to engage the forward end of a connecting coupler either above or below the shank of the first mentioned coupler.

5. A toy railway car coupler, comprising a shank pivotally connected at one end to a car and having upwardly disposed ears upon opposite sides of its outer end portions, and having its extreme outer end disposed upward to form a hook, a locking pawl pivotally hung between the said ears and having a hole therein through which the shank of the coupler is arranged and adapted to admit the forward end of a similar connecting coupler when shoved in either above or below the said shank.

6. A toy railway car coupler, comprising a shank pivotally connected at one end to a car and having upwardly disposed ears upon opposite sides of its outer end portion, and having its extreme outer end disposed upward to form a hook, a locking pawl pivotally hung between the said ears and adapted to engage the hook of the connecting coupler to lock the same.

7. An automatic coupler for toy railway cars, comprising a strip of sheet metal pivotally connected at its inner end to a car,

and having a hook formed in the outer end and a transverse slot also formed in the said outer end portion, a locking pawl pivotally hung on the said shank so as to allow the hook of a similar coupler to slide thereunder, and means for normally holding the coupler in a yieldable, but central position.

8. The combination with a toy railway car having a depending end flange with a transverse slot therein, of a coupler pivoted to the bottom of the car and extended through and supported in the slot, said coupler including a hook and a slot for the attachment of a hook, and means for normally but yieldably holding the coupler in a central position.

9. A toy railway car coupler formed of sheet metal and comprising a shank pivotally connected at one end to a car and having upwardly disposed ears upon opposite sides of its outer end portion, and having its extreme outer end disposed down and then upward to form a hook, a locking pawl pivotally hung between the said ears and adapted to engage the top of the shank and to engage the hook of the connecting coupler to lock the same.

Signed at Bridgeport in the county of Fairfield and State of Connecticut this 30th day of January A. D. 1912.

CHARLES A. HOTCHKISS.

Witnesses:
C. M. NEWMAN,
RUTH M. WORDEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."