Oct. 2, 1962 M. ZION 3,056,512

UNCOUPLER TRACK

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Fig. 1.

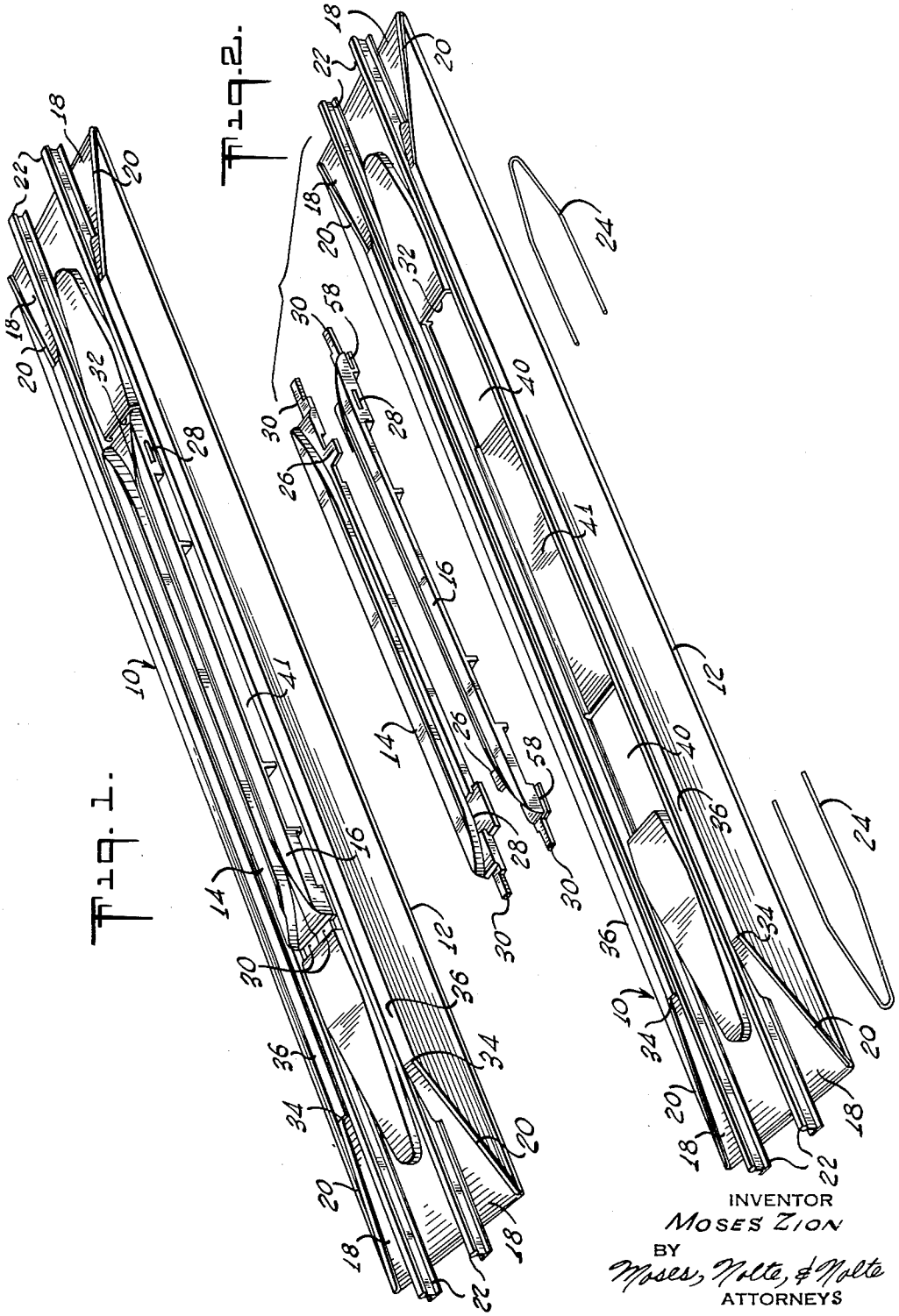

Fig. 2.

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UNCOUPLER TRACK

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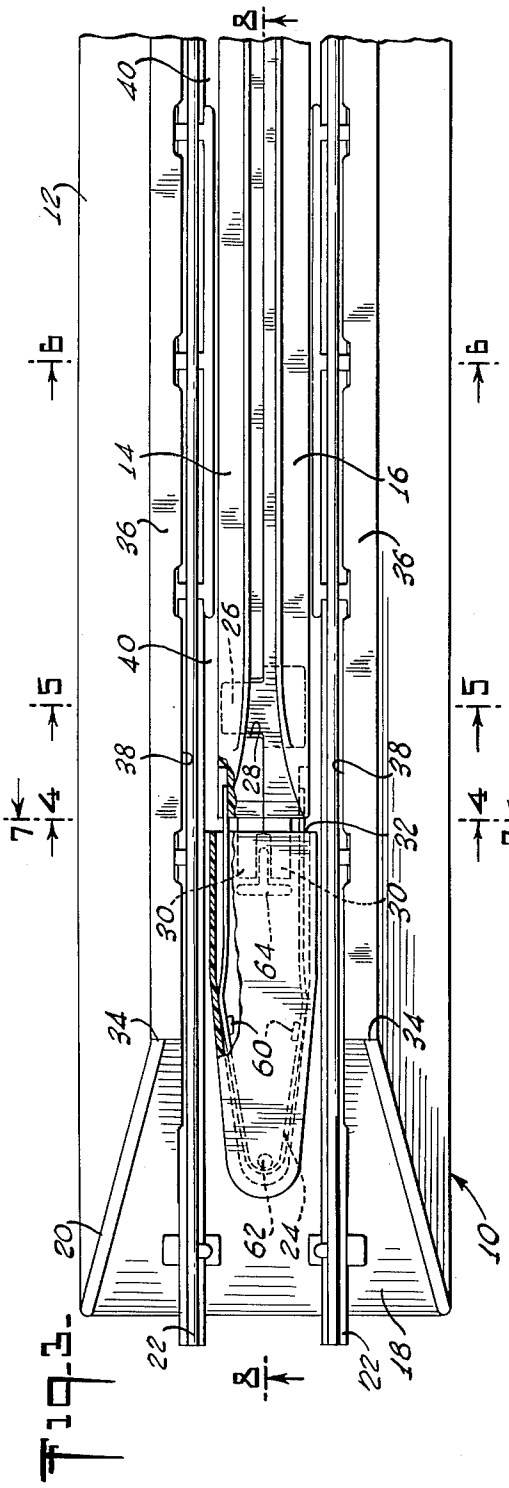

FIG. 3.

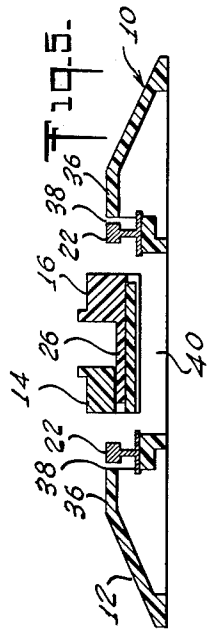

FIG. 5.

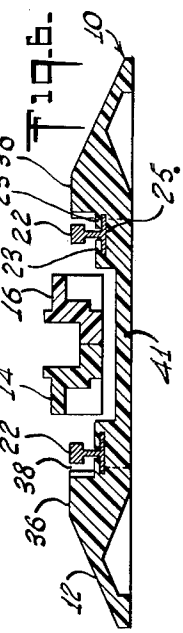

FIG. 6.

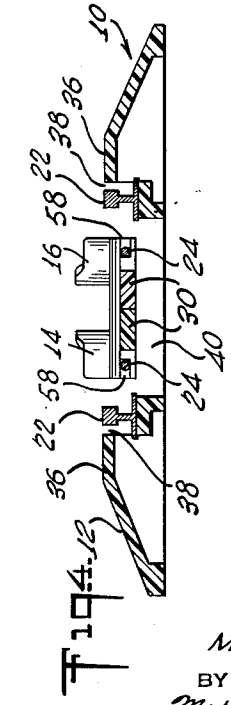

FIG. 4.

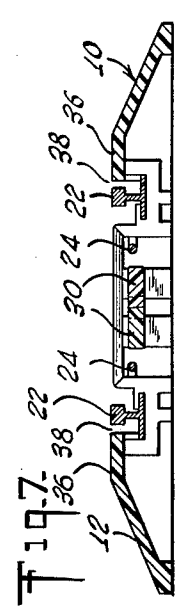

FIG. 7.

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FIG. 8.

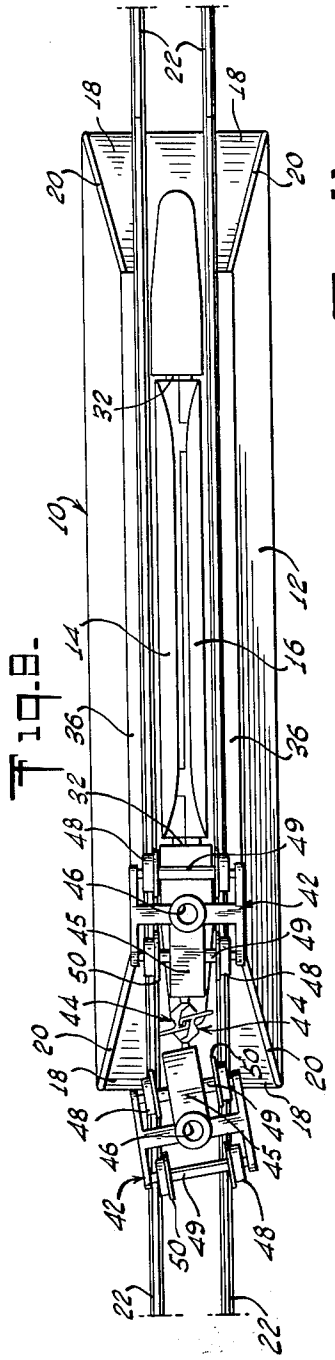

FIG. 11.

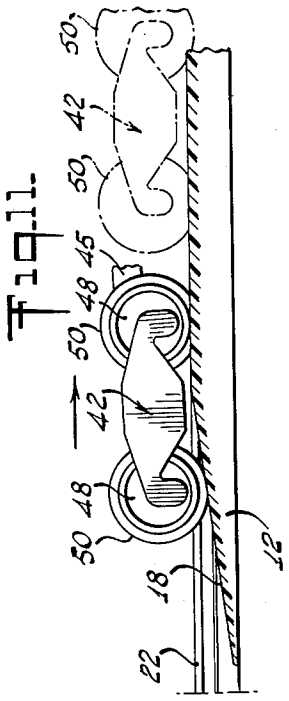

FIG. 10.

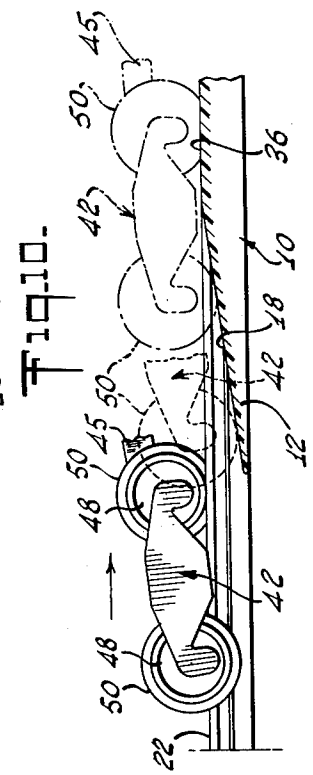

FIG. 9.

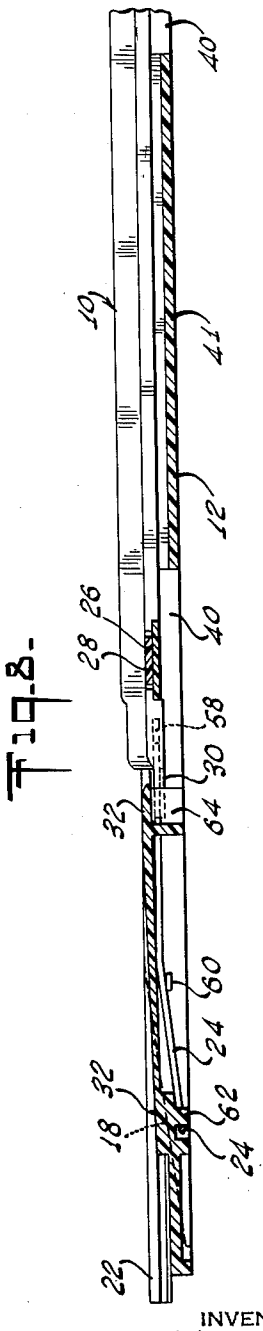

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Fig. 12.

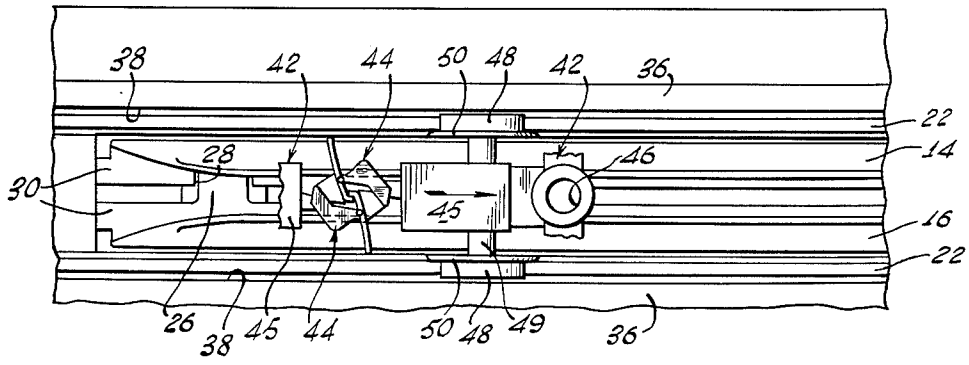


Fig. 13.

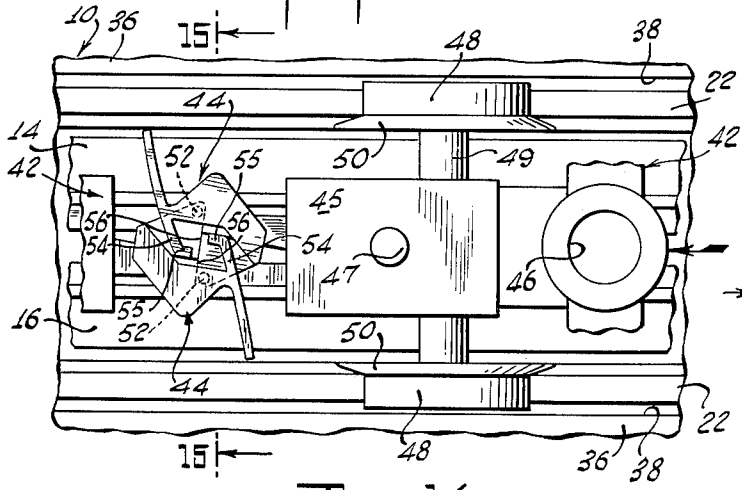


Fig. 15.

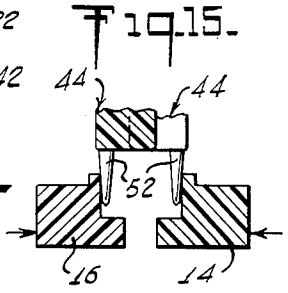


Fig. 14.

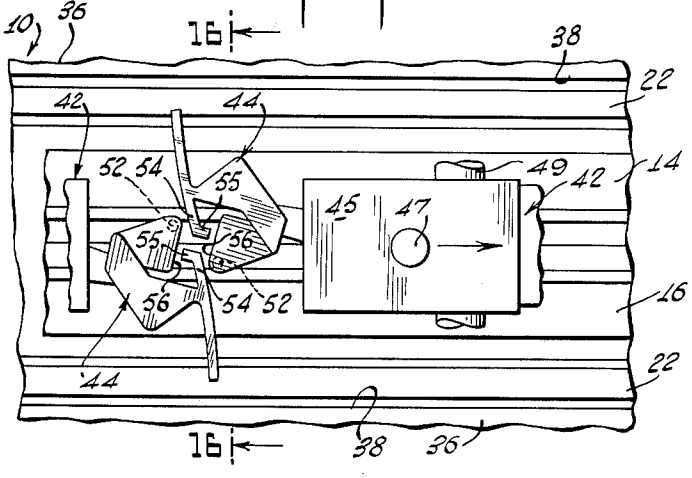
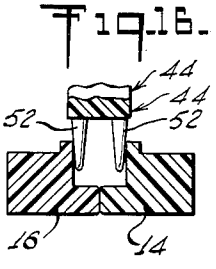


Fig. 16.



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United States Patent Office 3,056,512 Patented Oct. 2, 1962

3,056,512

UNCOUPLER TRACK

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Filed Apr. 20, 1960, Ser. No. 23,437
4 Claims. (Cl. 213—211)

This invention relates in general to improvements in model railroad track structures and in particular to a novel track section for rerailing truck wheels and for automatically uncoupling adjacent cars.

The invention employs a molded plastic base structure having two inclined end ram portions which are formed to blend into raised base portions extending longitudinally along the outsides of the spaced parallel wheel bearing rails. The inclined ramp portion is provided with a pair of converging guide rails which extend along the outer edges of the ramp portion to direct the misplaced wheel flanges toward the raised portion of the base adjacent the top edge of the rails. With this inclined ramp construction at either end of the molded plastic track section base, a conventional, loosely pivoted car truck may be easily aligned with the rails by the mere placement of the truck in approximate track aligned relation on the inclined ramp. Final alignment of the truck is accomplished by sliding the truck up the ramp portion of the base whereupon the wheel flanges will readily drop between the spaced rails.

In the center portion of the novel track structure the invention provides an uncoupling device. This uncoupling device is purely mechanical in nature and is designed to operate upon a standard N.M.R.A. type miniature railroad coupler. These couplers are characterized by having a lower depending pin which conveniently forms the portion of the coupler upon which the control members of the uncoupler operate.

The novel uncoupler mechanism comprises a pair of longitudinally elongated spring biased control members which contact the depending coupler control pin as the coupler passes over the track section. Each of the slidable uncoupling control members contact one of the depending pins of a coupler pair as the joined cars pass thereover. If an uninterrupted forward motion of the joined cars occurs over the track section employing the uncoupler no uncoupling takes place. Similarly, if joined cars are pushed over the improved uncoupler no uncoupling occurs. Uncoupling is accomplished with the invention in a pure mechanical manner by the mere stopping of a pair of coupled couplers over the control members, applying a slight reversal of the train direction with a subsequent continuation of the forward pulling direction.

In operation of the uncoupling portion of the invention it is only necessary therefore to stop, reverse slightly and then continue to go forward to separate adjacent cars when the train enters the uncoupling track section in a pulling mode of operation. In contrast, if a train is being pushed over the same novel uncoupler, the train need only be stopped with the selected cars above the uncoupling control members and the direction of the locomotive reversed to a forward direction.

It is therefore an object of the invention to provide an improved combined rerailer and uncoupler track section.

It is another object of the invention to provide an improved mechanically operated uncoupling device which acts upon adjacent car couplers only when said coupler are held in compressive engagement and are stopped thereover.

A still further object of the invention is to provide a floating, opposed pair of spring biased longitudinally elongated uncoupling control members spaced between a pair of parallel wheel bearing rails.

Yet another object of the invention is to provide an

improved simplified truck rerailer which quickly and easily aligns a misaligned car truck with the rail portions of a model railway track.

Still another object of the invention is to provide an improved track base structure which is of molded plastic material and incorporates integrally formed rail securing means.

Another object of the invention is to provide a combined rerailer and uncoupler which is simple and durable in construction, neat in appearance and economical to manufacture.

Other objects and advantages of the invention will become apparent and the invention will be fully understood from the following description and drawings in which:

FIG. 1 is a perspective view of the track structure of the invention;

FIG. 2 is an exploded perspective view of the invention;

FIG. 3 is a partial top plan view with portions broken away of the novel track structure;

FIG. 4 is a transverse section taken along line 4—4 of FIG. 3;

FIG. 5 is a transverse section of the invention taken along line 5—5 of FIG. 3;

FIG. 6 is a transverse sectional view taken along line 6—6 of FIG. 3;

FIG. 7 is a transverse sectional view taken along line 7—7 of FIG. 3;

FIG. 8 is a longitudinal sectional veiw taken along line 8—8 of FIG. 3;

FIG. 9 is a top plan view of the invention showing a pair of conventional trucks, one of which is in the process of being rerailed into alignment with the track section rails;

FIG. 10 is a side elevation view of a derailed truck in the process of being rerailed;

FIG. 11 is a view similar to FIG. 10 showing a derailed truck in a more advanced stage of the rerailing process;

FIG. 12 is a broken top plan view showing a pair of engaged couplers in pulling relation as they pass in a forward direction over the uncoupling control members;

FIG. 13 is a plan view showing two abutting couplers as they pass over the uncoupling control members in a car pushing relation;

FIG. 14 is a partial top plan view showing the relative positions of mating couplers immediately after their disengagement by the uncoupling members;

FIG. 15 is an enlarged partial cross section view taken along lines 15—15 of FIG. 13; and

FIG. 16 is an enlarged partial cross sectional view taken along lines 16—16 of FIG. 14.

Referring to the drawings a combined rerailer and uncoupler generally designated 10 is shown having a base 12 which terminates at either end in sloping ramp portions 18. The sides of these triangular ramp portions are bounded by raised guide rails 20 which along with the ramp portions 18 extend upwardly to a narrowed portion 34 to form a flush transition with a pair of spaced raised base portions 36. The base portions 36 are substantially equal in horizontal level as the top of the spaced parallel wheel bearing rails 22. These elongated base portions 36, extend between the top of the ramp portions located at either end of the base, and form a narrow gap 38 between the outside of the rails 22 (FIG. 4). A plurality of aligned rail securing clips 23 are integrally molded in the base 12 to provide a channel like groove to slideably engage the rail shoe portion 25 (FIG. 6). The base 12 is also provided with cut out portions or openings 40 which are separated by a base cross member 41 which provides a guide for a pair of longitudinally elongated uncoupling control members 14 and 16.

These uncoupling control members may be identical in shape and are provided with interlocking male and female portions respectively numbered 26 and 28 to provide horizontal sliding engagement therebetween. Each end of the uncoupling control member is provided with extending tab portions 30, which when assembled to the base 12, engage a raised channel portion 32. These end channel portions also act to form retaining recesses for a pair of uncoupler control member bias springs 24 located therein. Referring to FIGS. 3 and 8, the bias springs 24 may be seen extending about a depending pin portion 62 of the base and locked underneath a pair of base retaining tab portions 60. The free ends of the spring are each engaged in a corresponding slot 58 of each of the control members 14 and 16. In FIG. 8, it can easily be seen how the placement of the spring 24 around the pin 62 and under the tab portion 60 creates a bias force on the ends 30 of the uncoupled control members to wedge them in an upward direction against the underside of the channel portions 32, while allowing downward motion of the control members onto the cross member portion 41 if necessary. On the lower side of the raised channel portions 32, is a depending control member centering stop 64 which acts to limit inward motion of the ends of each uncoupling control member by contacting engagement with the retaining ear portions 30. In this manner, it can easily be seen how the U-shaped springs 24 act to maintain the elongated control members 14 and 16 in a baised inward position while not limiting outward or downward motion thereof.

Referring to FIGS. 9 to 16, a typical truck 42 is shown without its normally associated railroad car. The truck supports a pair of axles 49 each of which carry conventional railway track wheels 48, each having flange portions 50. Each truck has an aperture 46 which provides the location for pivotal mounting to an associated railway car (not shown). Attached to the truck 42 is a coupler mount 45 carrying a coupler shown generally as 44. These couplers will be recognized as typical N.M.R.A. configurations by those skilled in the art. Each coupler has a jaw portion 54 and a pusher block portion 56 disposed thereunder. Integrally formed with, and connected to, the lower surface of the pusher block is a depending coupler control pin 52. Contained within the coupler mount but not shown is a spring bias means which acts to continually urge the coupler in a counterclockwise direction about a pivot point 47 in the member 45. In this way, due to their counter-clockwise biasing, the couplers become self engaging when the ends of adjacent railway cars are slammed into contacting relation.

In the operation of the rerailing features of applicant's invention, it can easily be seen how in FIG. 9 a skewed coupler 42 which straddles the wheel bearing rails 22, will become aligned therewith as the truck assembly is moved up the inclined portion 18. As the truck assembly is moved up the ramp portion, the guides 20 will align the wheel flanges lying outside the rails 22 upon the flush portion 36. Because this portion of the base is flush with the tops of the rails and the flanges 50 are sufficiently thick not to engage the slot 38, the wheel flanges will automatically slip into aligned relation and drop into their correct position (see FIGS. 10 and 11 for the successive illustration of these events).

The operation of the uncoupler mechanism occurs only if movement of the couplers desired to be uncoupled is stopped above the control member portion of the track section. In other words, the uncoupler control members are inoperative upon the couplers connecting the cars of any train which is continuously pulled over the mechanism or conversely pushed over the mechanism. In either event, no uncoupling will occur because the mechanism of the invention remains inoperative in this dynamic state. Consider first the operation of the invention when a car is pulled in a forward direction over the uncoupler with

the jaws in a tensile or pulling relation. In this instance, uncoupling after the couplers had come to rest would be accomplished by the inward spring force of springs 24 acting through the horizontally sliding control members 14 and 16 upon their respective control pins 52. Normally, the spring force exerted by spring 24 would be incapable of overcoming the interlocking engagement of the tip portions of the jaws 54 upon stopping over the control members. Therefore, in order to accomplish uncoupling it is necessary not only to stop over the uncoupling mechanism but also to initiate a slight reversing action so that the tip portions 55 of the jaw members no longer interfere with each other and therefore allow the force of spring 24 to move the coupler jaws 54 out of alignment with each other. After the spring force has moved, the jaw portions out of alignment with each other, the subsequent reapplication of a forward motion to the leading car will accomplish uncoupling as best seen in FIG. 14. In FIG. 13, the relative positions of the mating couplers is shown when a train is being pushed over the uncoupling mechanism. In this illustration, it can be seen that because the pusher block portions 56 are in abutting relation, that the jaw tip portions 55 of each coupler are not in overlapping engagement. Therefore, upon stopping the desired coupler to be uncoupled over the mechanism of the invention, the control members 14 and 16 will act to urge their contacting control pins 52 to cause a shifting of the relative axial positions of the coupler halves from the position as shown in FIG. 13 to the position as shown in FIG. 14.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the invention principles, it will be understood that the invenion may be embodied otherwise without departing from such principles.

I claim:

1. An uncoupler for model railway couplers of the type having control pins extending downwardly therefrom comprising an elongated base, a pair of spaced wheel bearing rails mounted upon said base, said base including a pair of longitudinally spaced openings therethrough between said rails, a pair of substantially parallel longitudinally elongated uncoupler control members, said members being of greater length than the spacing between the opposite extremes of said openings and having their end portions extending through said openings in contact with the underside of said base, means slidably mounting said control members upon said base to allow horizonal transverse movement thereof relative to said wheel bearing rails, and spring bias means disposed beneath the base in engagement with each end of said control members to urge said members toward one another.

2. Apparatus as set forth in claim 1 wherein each control member is substantially L-shaped in cross section and forms with its opposing control member a U-shaped guide way adapted to engage said coupler control pins.

3. Apparatus according to claim 2 wherein said spring means includes means to bias said control members upwardly away from said base.

4. Apparatus as set forth in claim 3 including central stop means on the underside of said base adjacent the openings therein engaging the ends of said control members and limiting the longitudinal and transverse movement thereof relative to said base.

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