CONNECTOR FOR MODEL VEHICLE TRACKS

ABSTRACT: A base for engagement beneath the flanges of adjacent rails, a pair of resilient clips on opposite sides of the base each frictionally engaging respective sides of the rail flanges, and detent means on the base for interfitting engagement with the undersides of the rail flanges.
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1 CONNECTOR FOR MODEL VEHICLE TRACKS
BACKGROUND OF THE INVENTION

While there have, in the past, been proposed a wide variety of connectors for track sections employed in conjunction with model vehicles, such as model railways, and the like, these connectors have not proved entirely satisfactory. In particular, prior track connectors have been found readily subject to loosening and disconnection under the normal vibratory forces of model vehicle operation, so as to require repeated reconnection. Certain of the more widely used track connectors have, in the past, been entirely separate from the track sections, thereby requiring connecting to and disconnection from both adjacent track sections upon each assembly and disassembly operation. In addition to requiring tedious and time consuming procedures, the track connectors were readily subject to damage and loss by such repeated handling.

SUMMARY OF THE INVENTION

Accordingly, it is an important object of the present invention to provide a track connector structure of the type described which overcomes the above mentioned difficulties, effectively resists loosening and disconnection under even abusive conditions of operation, while being readily disconnectable by simple, deliberate manipulation.

It is another object of the present invention to provide a track connector having the advantageous characteristics mentioned in the preceding paragraph, which may effectively form a relatively permanent part of a track section for quick and easy detachable connection therewith to a like track section, thereby effecting substantial savings in time and greatly facilitating the assembling and disassembling procedures.

It is a more particular object of the present invention to provide a track connector of the type described which is extremely simple in construction, being advantageously fabricated of a single integral sheet of resilient material, so as to be durable and reliable throughout a long useful life, and capable of economic mass production for sale at a reasonable cost.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top perspective view showing a connector constructed in accordance with the teachings of the present invention, apart from the track sections proper.

FIG. 2 is a top plan view of the connector of FIG. 1.

FIG. 3 is a longitudinal sectional elevational view taken generally along the line 3-3 of FIG. 2.

FIG. 4 is an exploded, top plan view showing the adjacent end portions of a pair of like track sections incorporating the connector structure of the present invention.

FIG. 5 is a partial bottom plan view of the track sections of FIG. 4 in a connected condition.

FIG. 6 is a partial transverse sectional view taken generally along the line 6-6 of FIG. 5.

FIG. 7 is a partial transverse sectional view taken generally along the line 7-7 of FIG. 5.

FIG. 8 is a partial longitudinal sectional view taken generally along the line 8-8 of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the drawings, and specifically to FIGS. 1-3 thereof, a connector of the present invention is there generally designated 10, and may advantageously be fabricated from a single integral sheet of stiff resilient material, such as metal, or other suitable material. The connector 10 includes an elongate generally rectangular base 11 having tapering end portions 12 and 13 which terminate in respective longitudinally outwardly projecting terminal regions or tabs 14 and 15. The end tabs 14 and 15 may be defeatable to incline upwardly and outwardly, as by respective bends 16 and 17, the tabs being resiliently deflectable downward as will appear more fully hereinafter.

Upstanding along each longitudinal side edge of the connector base 11 is a clip 20. In particular, each clip 20 includes an outer generally upright portion 21 integral and generally coextensive with its respective side base edge, and an accurately inwardly curving upper portion 22 spaced over the base 11. The curvature portion 22 of each clip 20 curves downwardly and terminates in a longitudinally extending, downwardly facing edge 23 spaced over the base 11. Also, the clips 20 and their innermost, downwardly facing edges 23 are adjacent to but spaced from each other. Advantageously, the end edges 24 of the clips 20 are mitred or cut to converge toward each other in the direction longitudinally inwardly of the base 11.

The base 11 is formed at longitudinally spaced locations therealong with a pair of holding formations or detents 26 and 27. In particular, the detent 26 may be located adjacent to the base end portion 12, being spaced inwardly therefrom longitudinally of the base, and may be constituted of a tongue extending longitudinally of the base, being struck up from the material of the base and terminating in a free inner end 28, for a purpose appearing presently. The holding formation or detent 27 may be located adjacent to and spaced longitudinally inward from the base end region 13, and assume the form of a raised dimple or protrusion. It will be observed that the holding formations or detents 26 and 27 are located generally beneath the downwardly facing inner edges 23 of the clips 20, as best seen in FIGS. 2 and 3.

In FIG. 6 are shown the adjacent end portions of a pair of sections, respectively generally designated 30 and 30a, each incorporating a connector as described hereinbefore in connection with FIGS. 1-3, the connectors of respective track sections being generally designated 10 and 10a. The track sections 30 and 30a may each include a support, as at 31 and 31a, which may simulate a railroad bed and ties. Carried on the support 31 and 31a are a pair of parallel rails 32 and 33, a similar pair of parallel rails 32a and 33a being carried on the support 31a. The rails 32, 33, 32a and 33a may be secured to the supports by simulated spikes 34, 35, 34a and 35a, respectively. It will be apparent that the end portions of the rails 32, 33, 32a and 33a may extend beyond the adjacent end portions of the supports 31 and 31a. Further, the support 31 may be cut away, as at 36 and 37, to expose the undersides of end portions of the respective rails 32 and 33, and similarly, the support 31a may be cut away at 36a and 37a to expose the undersides of respective rails 32a and 33a.

As best seen in FIGS. 6 and 7, the rails 32 and 32a, which may be identical to rails 35 and 35a, are of a cross section to accurately simulate full size railway rails. In particular, the rails 32 and 32a each include a longitudinally extending, laterally enlarged lower portion or flange 40 and 40a, respectively, an upstanding web 41 and 41a, respectively, and a longitudinally extending enlarged, upper head 42 and 42a, respectively. In addition, on the undersurface or nether side of each rail flange, adjacent to and spaced inward from the free end thereof, there is a recess, as at 43 and 43a of respective rails 32 and 32a. Moreover, the recess 43 in the underside of rail flange 40 is generally of right angular configuration including an abutment wall 44 adjacent to the free end of rail 32. The recess 43a may have its sidewalls inclined, as best seen in FIGS. 7 and 8.

In the assembly of FIG. 4, a connector 10 has the adjacent end portion of rail 32 engaged in one end of the connector. More specifically, the end portion of rail 40a is then adjacent portion of connector base 11, with the clips 20 extending about respective lips of flange 40 in frictional engagement therewith. That is, the clips 20 extend upwardly, inwardly, and
downwardly so that the free end edges 23 resiliently engage with respective sides of flange 40. In this condition, the end tab 14 is deflected substantially flat for frictional engagement with the underside of the flange 40; and further, the holding tab or tongue 26 has snapped upwardly into adjacent recess 43 with the tab end 28 engageable with recess wall 44 to positively resist removal of the connector 10 from the rail 32.

The connector 10a is similarly engaged on the rail 32a and positively retained thereon. Both connector 10 and 10a extend longitudinally outwardly beyond the ends of their respectively received rails 32 and 32a. More specifically, the base and clips of connectors 10 and 10a extend beyond their received rails.

The outwardly extending regions of connectors 10 and 10a are adapted to receive the end portions of respective rails 33a and 33. That is, the exposed end of rail 33a on the adjacent base portion of connector 10, with the clips 20 extending about and frictionally engaging downwardly with opposite sides of the flange of rail 33a. It will be apparent that the convergent configuration of clip ends 24 adjacent to rail 33a facilitates insertion of the latter into connector 10. Such insertion is continued until holding formation or detent 27 snaps into the nether recess 43a of rail 33a, as best seen in FIG. 8. In this condition, the connector 10a is effectively retained in its connected relation with respect to rail 33a, except upon deliberate separation therebetween. In the connected condition, the resilient tab 15 is deflected downwardly and frictionally engages the underside of the flange of rail 33a, to further aid in retention, while permitting of manual separation, when desired.

From the foregoing, it is seen that the present invention provides a track section and connector therefore which effectively prevents accidental separation of connected track sections, while permitting desired separation and connection of track sections, all without detracting from the accurate simulation in a model of the full size track, and which otherwise fully ac-
complishes its intended objects.

Although the present invention has been described in some detail by way of illustration and example for purposes of clari-
ty of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention.

We claim:
1. A track section for model vehicles comprising a pair of generally parallel rails each having a lower flange, upstanding web and upper head; there being a pair of recesses on the under-
side of each flange adjacent to respective ends thereof; and a connector on one end of one rail; said connector comprising an elongate base for engagement beneath the flange of said one rail extending beyond said one end thereof; a pair of resilient clips on opposite sides of said base each frictionally engaged about a respective side of said rail flange; said clips extending longitudinally of said base beyond said a rail end and terminating short of said base to facilitate guided insertion of a rail flange of a like track section; and a pair of detents at longitudinally spaced locations on said base, one of said de-
tents being engageable in one recess of said one rail flange; said base being adapted to receive thereon and said clips being adapted to engage about the rail flange of a like track section with the other of said detents engaged in a nether recess of the rail flange of said like track section; said base, clips and de-
tents being integrally fabricated of resilient sheet material, said one detent comprising a struck-up tongue extending in-
wardly from the adjacent base end and terminating in a raised free end for positive retention in a nether recess of said one rail flange, and said other detent comprising an upset dimple for releasable retention in a recess of said rail flange of said like track section.
2. A track section according to claim 1, said one recess of said one rail flange having one internal wall generally upright and facing away from the adjacent rail end for positive retain-
ing engagement with said tongue.