

EUROPEAN PATENT APPLICATION

Application number: **82300928.7**

Int. Cl.³: **A 63 H 19/30**

Date of filing: **23.02.82**

Priority: **24.02.81 GB 8105703**

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Date of publication of application: **01.09.82**
Bulletin 82/35

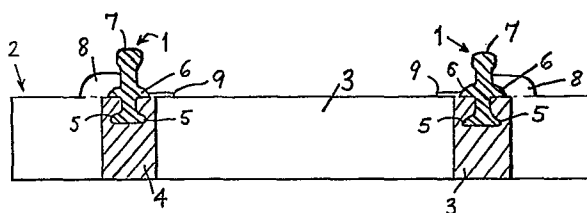
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Designated Contracting States: **AT DE GB IT**

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Small-gauge model railway track.

A small-gauge model railway track comprises a sleeper base (2) moulded of a plastics material with sleeper portions (3) to which metal rails (1), each having a section including a bottom base portion, defined by flanges or enlargements (5) along opposite sides of the bottom of a rail, embedded in the plastics material and an intermediate base portion defined by flanges or enlargements (6) projecting from and along opposite sides of the rail between the bottom base and the top running surfaces (7) of the rail, the rails (1) being secured to the sleeper base (2) with the undersurfaces of the flanges or enlargements (6) of the intermediate base portion substantially level with the upper surfaces of the sleeper portions (3).



SMALL-GAUGE MODEL RAILWAY TRACK

This invention relates to small gauge model railway track, particularly but not exclusively, for N-gauge track.

Small gauge model railway track (as distinct from track for use with what is classed as toy trains) as at present commercially supplied conventionally comprises a sleeper base moulded of a plastics material to which metal rails of flat-bottom or bullhead section are secured by portions of the moulding which resemble rail chairs or like fixings extending over the upper surfaces of the two flanges or enlargements forming the bottom portion of and projecting from both sides of a rail. The sleeper base may comprise portions representing sleepers which are spaced apart by integrally moulded ties which lie beneath the rails, the chairs or the like rail fixings being moulded on the upper surfaces of the sleeper portions.

All commercial small-gauge model railway track is very much "over-scale". For example, N-gauge track at present uses a rail section which is between about 1.90 mm and 2.03 mm high which, of course, is very much over scale; doubling up as if for 00-gauge it would be about 4.00 mm high whereas even the over-scale 0-gauge rail is only 2.54 mm high. Such an extremely high rail has been necessary for N-gauge because of the comparatively deep flanges of the wheels used on N-gauge vehicles, almost the same as for 00-gauge, a rail depth of at least 1.27 mm above the rail chairs being required to accommodate them, and the remaining 0.63/0.76 mm being used to accommodate the thickness of the rail fixings.

The object of the invention is to provide a model railway track for small gauges which has a much more "scale" appearance than the present track, and is of strong construction.

To this end, the invention consists in a small gauge model railway track comprising a sleeper base moulded of a plastics material with portions simulating sleepers to

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which metal rails, each having a section including a bottom base portion defined by flanges or enlargements along opposite sides of the bottom of a rail, are secured by portions of the moulding extending over the upper surfaces of the two flanges or enlargements of the bottom base portion characterized in that each rail includes an intermediate base portion defined by flanges or enlargements projecting from and along opposite sides of the rail between the bottom base portion and the top running surface of the rail, the rails being secured to the sleeper base with the undersurfaces of the flanges or enlargements of the intermediate base portion substantially level with the upper surfaces of the sleeper portions, the plastics material beneath said undersurfaces overlying the upper surfaces of the flanges or enlargements of the bottom base portions of the rails.

The sleeper portions may have dummy chairs or like rail fixings moulded thereon adjacent the outside flange or enlargement of the intermediate base portion and, preferably, extending over the said outer flange or enlargement.

The track may be fabricated in sections, rigid or flexible, which may be joined together end-to-end by rail joiners which engage over and around the bottom base portions of adjacent rails.

In order that the invention may be more clearly understood, reference will now be made, by way of example, to the accompanying drawings, in which:-

Figure 1 is a plan view of one embodiment of a model railway track according to the invention,

Figure 2 is a cross-section of the track taken along the line A-A of Figure 1, and

Figure 3 shows a rail joiner located on one end of a rail.

As shown in Figures 1 and 2, a section of model railway track according to the invention comprises two metal running rails 1 which are partially embedded in a sleeper base 2 moulded of plastics material with sleeper portions

3 which are held in spaced-apart relation by integrally
moulded ties 4 which lie beneath the rails 1. Some of the
ties in each row may be omitted or provided with gaps, as
well-known, to facilitate flexing a track section to a
5 desired curvature.

The rails are extruded with a cross-section as shown
in Figure 2, comprising a bottom base portion defined by
flanges 5 along opposite sides of the bottom of the rail,
and an intermediate base portion defined by flanges 6 pro-
10 jecting from and along opposite sides of the rail between
the flanges 5 of the bottom base portion and the top runn-
ing surface 7 of the rail. The flanges 6 of the inter-
mediate base portion may have inclined upper surfaces and
horizontal under-surfaces to represent a conventional
15 flat-bottom rail and the flanges 5 may be similarly shaped.

The part of a rail beneath the intermediate base
portion is embedded in the sleeper base 2 with the under-
surfaces of the flanges 6 substantially level with the
upper surfaces of the sleeper portions 3 and the ties 4.
20 Dummy chairs 8 are moulded on the sleeper portions outside
the rails 1 and overlapping the upper surfaces of the out-
side flanges 6. There are no chairs along the inside
flanges 6, but raised portions 9, which are not higher than
the inside flanges, may be provided to give an appearance
25 of chairs.

For N-gauge track the overall height of the rail
may be 1.90 - 2.00 mm, the same as for conventional N-
gauge rail, only 1.27 - 1.39 mm of the rail showing
above the sleeper base.

30 The track is conveniently made in sections of
desired modular lengths by insert moulding, that is
by positioning lengths of the rail as inserts in the
mould and injection moulding the plastics material
around the rail inserts.

35 The track sections can be connected together by

1 conventional rail joiners 10 fitted onto the flanges 5
of the bottom base portion as shown in Figure 3.
To this end, a portion of the end sleeper portion 3
is cut away to accomodate the rail joiner. This
5 may be conveniently effected by severing the end
sleeper portion from the base, cutting away parts
of the severed sleeper portion as required to fit
around the rail joiners when fitted on the bottom
flanges 5 of the rail, and then replacing and
10 securing the cut-away sleeper portion in its
initial position relative to the base.

(Fitting the rail joiners to the flanges 5
of the bottom base portion does not reduce the
depth above the inner flange 6 for accomodating
15 wheel flanges. Further, as the rail has the same
overall height as the present conventional rail, the
rail joiners on the new track are correctly
positioned for connection to conventional track of an
existing layout.

20 The track according to this invention provides
an improved "scale" apperance without weakening of
the security of the rail in the sleeper base.

(By small gauge model railway track is meant
track of such small size that it is not practical,
25 in commercial manufacture, to use a metal rail having
a correct "scale" height, by reason of inadequate
strength, limitations caused by other factors such
as rolling stock wheel dimensions, or otherwise.

1 1. A small-gauge model railway track comprising a
sleeper base (2) moulded of a plastics materials with
portion (3) simulating sleepers to which metal rails (1),
each having a section including a bottom base portion,
5 defined by flanges or enlargements (5) along opposite
sides of the bottom of a rail, are secured by portions
of the moulding extending over the upper surfaces of the
two flanges or enlargements of the bottom base portion,
characterised in that each rail includes an intermediate
10 base portion defined by flanges or enlargements (6)
projecting from and along opposite sides of the rail
between the bottom base portion and the top running surface
(7) of the rail, the rails (1) being secured to the
sleeper base (2) with the undersurfaces of the flanges
15 or enlargements (6) of the intermediate base portion
substantially level with the upper surfaces of the
sleeper portions (3), the plastics material beneath said
undersurfaces overlying the upper surfaces of the flanges
or enlargements of the bottom base portion of the rails.

20 2. A small-gauge model railway track according to
claim 1, characterised in that the sleeper portions (3)
have dummy chairs or like rail fixings (8) moulded thereon
adjacent the outside flange or enlargement of the
intermediate base portion and extending over the said
25 outer flange or enlargement.

3. A small-gauge model railway track according
to claim 1 or 2, characterised in that the track is
fabricated in sections which are joined together end-
to-end by rail joiners (10) which engage over and around
30 the bottom base portions of adjacent rails.

4. A small-gauge model railway track according
to claim 1, 2 or 3, characterised in that the sleeper
portions (3) of the base are held in spaced apart relation
by integrally moulded ties (4) which lie beneath one
35 and/or the other of the rails (1) and in which are embedded

1 the portions of the rails beneath said undersurfaces.

5 5. A small-gauge model railway track according to any preceding claim, characterised in that the sleeper portions (3) are provided, adjacent the inside flanges or enlargements of the intermediate base portion, with raised portions (9) each of which is not higher than the adjacent inside flange or enlargement (6).

10 6. A small-gauge model railway track according to any preceding claim, characterised in that the track is fabricated in sections of desired modular lengths by injection moulding the base on to lengths of rails arranged as inserts in the mould.

7. A small-gauge model railway track constructed substantially as described with reference to the drawing.

15 8. A rail (1) for a small-gauge model railway track characterised by a cross-section including a bottom base portion defined by flanges or enlargements (5) along opposite sides of the bottom of the rail (1) and an intermediate base portion defined by flanges or enlargements (6) projecting from and along opposite sides of the rail between the bottom base portion and the top running surface (7) of the rail.

20 9. A rail for a small-gauge model railway track characterised in that the rail has a cross-section substantially as shown in Figures 1 and 3 of the drawing.

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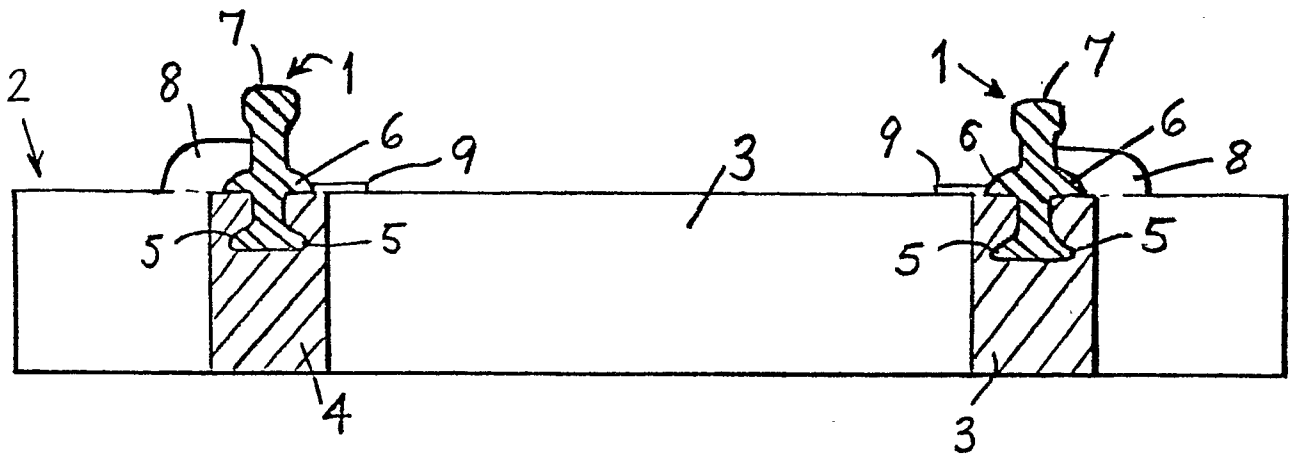


Fig. 2

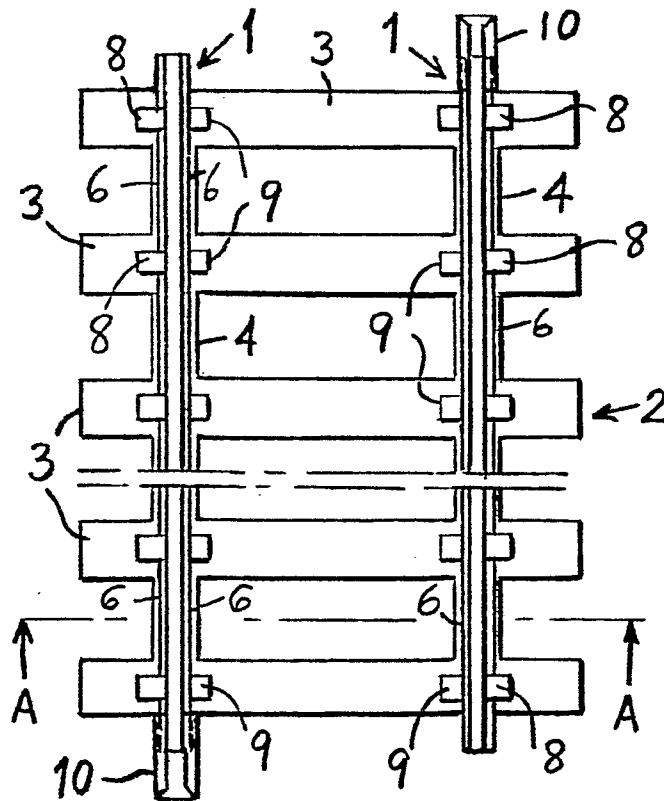


Fig. 1

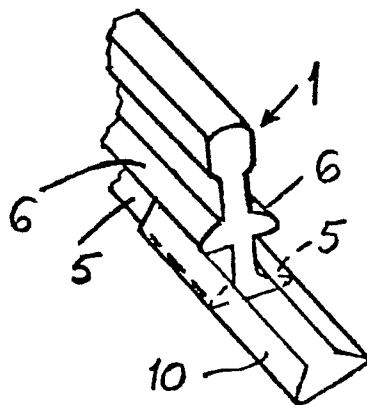


Fig. 3



European Patent
Office

EUROPEAN SEARCH REPORT

0059107

Application number

EP 82 30 0928.7

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	<u>GB - A - 2 035 105 (PLAYART LTD.)</u> * claim 1, page 1, lines 113 to 123; page 2, lines 5 to 22 and 68 to 72; fig. 1 to 3 * ---	1-7	A 63 H 19/30
Y	<u>US - A - 4 219 153 (R.C.M. CHENG)</u> * column 2, lines 28 to 35; column 3, lines 37 to 45; column 5, lines 4 to 12; fig. 4 * ---	1-7	TECHNICAL FIELDS SEARCHED (Int.Cl. ³)
Y	<u>US - A - 2 637 501 (H. L. JOYCE)</u> * column 2, lines 36 to 55; column 3, lines 1, 2; fig. 3, 4 * ---	1-7	A 63 H 19/00
A	<u>DE - C - 810 724 (R. KAHRMANN & CO.)</u> * page 3, lines 31 to 35 and 69 to 75; fig. 7, 11 * ----	3,8,9	CATEGORY OF CITED DOCUMENTS
			X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons
<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search		Date of completion of the search	Examiner
Berlin		14-05-1982	CLOT