

Märklin Liliputbahn

By Jeff Carpenter with additional material by Nicholas Oddy



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The author would like to thank the following people for their contribution to this book:

Frans Bevers	Elizabeth Phillips
Michael Bowes	Manuel Pipa
Ekkehard Brunn	David Pressland
Bella Chipperfield	Alex Procyk
Paul Deardorff	Norwin Rietsch
Peter Gilis	Christian Selzer
Rainer Haug	Bodo Schenck
Georg Kaul	Erich Schiffko
Doug Lally	Paul Klein Schiphorst
Lankes Auktionshaus	Mark Stephens
Franz Nowak	Aart van der Zouwen
Nicholas Oddy	

Design and layout: Michael Bowes.

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- INTRODUCTION -

When I first started buying old small gauge trains in the mid 1980s, Märklin Liliput trains were the holy grail for the Table Railway collector. The chances of finding any small Märklin buildings or Liliput trains in the UK in those pre-eBay days were virtually nil. In fact, I have only heard of three pieces surfacing here in the last thirty five years. I talked with many prominent dealers with negative results. The only piece of information regarding Liliput items in the UK came from Pierce Carlson who told me about what must have been part of a scenic layout turning up at a London auction house in the 1970s. This was bought by a German dealer and quickly returned to its country of origin.

I started to make contact with collectors in Europe but still no connection with Märklin Liliput. This state of play remained until around 1995, when Franz Nowack from Munich contacted me about a collector friend Helmut Maier who had a Liliput scenic layout, several small buildings and two passenger trains. My hopes of acquiring a train were raised, but after making enquiries I was told that nothing was for sale. The owner was, however, willing to let Franz photograph the collection on my behalf to use in my Bing Table Railway book.

In 1996 I was able to buy some Märklin 00 gauge LMS items and wrote to Mr Maier sending photographs of the LMS train that I could offer as a swap for his spare Liliput passenger train. To my surprise he agreed to the deal and very soon after this I was boarding a plane to Munich to make the exchange.

With the publication of my Bing Table Railway book in late 1996, my contacts in Europe and the United States grew considerably, as did my awareness of German auction houses. I was very interested when Christian Selzer sold a Liliput armoured train. I realised this was beyond my fiscal status at the time, but did however persuade Ron Ingram to visit the auction and photograph the train for me. Soon after this, my friend Alex Procyk found a prototype Liliput trolley which he was kind enough to bring to my house for me to see.

In 2021 I have been fortunate to make contact with some prominent authorities on Märklin. An introduction by Rainer Haug to Bodo Schenck and subsequently to Norwin Rietsch has released so much information that would previously have been unavailable to me. I have also been able to make contact with some Märklin Liliput collectors who have allowed me to photograph many of the rare items in their collection.

When I started researching Märklin Liliput trains, virtually nothing was known about the Meccano Raylo game. The Hornby 0 gauge book by Chris and Julie Grabe had very little information, with just one contemporary photograph of Peter Dunk's locomotive. Late in 1996 a complete Raylo game was found, with a second example coming to light a few years later. Nicholas Oddy wrote a superb article on this subject for the Hornby Railway Collector in 2014. Nicholas has very kindly given permission to let me use this article as the first section of this book.

With the information from contacts I have made this year, and Nicholas allowing his work to be used, it became feasible to write this book. The book is in three sections, starting with the history of the Meccano Raylo game as mentioned above. The second section covers Märklin Liliput trains from the first clockwork sets of 1912 through to the scenic layouts and prototype trolley. Researching the third section on small Märklin buildings has been especially interesting. Again, things have developed this year that has increased my knowledge of these buildings. An interesting example of this is the small house (page 74): a hand painted version of this had not been seen before. It was sold at a French auction house in April only to reappear in a German auction in September. I am sure there will be other instances similar to this in the future - if so, please contact me by email: jeffcarpenterguitar@gmail.com This information can then be added to the relevant section so it may be preserved for future collectors.

This is the third book I have worked on with Michael Bowes. His great photographs and computer skills have turned what started as a vague idea into what I hope will be an informative book on a subject of toy collecting that has not been covered before. Thank you, Michael, for all your help.

Jeff Carpenter
October 2021

In memory of Tony Twiggs who loved all things Märklin.



FRANK HORNBY - An unwitting pioneer in small gauge toy trains – Raylo and Liliput compared.

By Nicholas Oddy

This article is part of one first published in *The Hornby Railway Collector* (The Journal of the Hornby Railway Collectors' Association) No500 (February 2014) pp 12-19.

Today, we tend to think of Meccano Ltd as an observant follower, rather than a leader of smaller than 0 gauge model/toy railways. The Dublo system, magnificent though it was, was greatly informed by 'prior art' by Bassett-Lowke (Trix Twin) and Märklin. However, less well recorded is that Frank Hornby was instrumental in the creation of one the first of these systems prior to the Great War and the first to be offered in electric after it. He was never to talk about it and it has been largely forgotten, in fact his place in it has been inadvertently written out of history.

In November 1910 Frank Hornby applied for a patent, No 27,533, for a novelty table game. The game entailed a clockwork loco running at high speed round a complicated circuit of track with sprung crossings and points. To 'win' the operator had to keep the loco from derailing or ploughing into a buffer-stop by pulling off the various point blades from a central, illogically arranged lever frame as the loco went round the circuit.

The game was to be called 'Raylo', the railway equivalent of 'Meccano', but there the similarity ended. If there is any evidence needed that Hornby was no gifted designer or inventor, but rather a man with determination who had only one good idea, it is this. He took ten years to come up with another idea... it was Raylo...yet he was still determined to develop it.

Right - A view of the top of the Raylo game. The whole surface, plus the bent-down section with "Raylo" lettering, is a single piece. The arrangement of the four trap sidings can be seen. Although at first the switching sequence needed seems complicated, in practice it takes only a few tries to allow the loco to make a full circuit.



The game was large and it required manufacturing processes that were alien to Meccano at the time. Therefore, it was largely made of components that were ‘put out’ to sub-contractors. The game comprised a wooden box decorated with paper litho on which was mounted the track, a single sheet of pressed tinfoil lithographed to look like a landscaped layout. It seems likely that the paper was commissioned from one of the commercial chromolithographers that Meccano employed for their showcards and posters, such as Banks & Co of Edinburgh. Meanwhile, the track probably came from Hudson, Scott & Co in Carlisle, one of the leading UK makers of decorative tin boxes, who handled much of Meccano’s litho tinfoil. The delicate quality of the printing and precision of the pressing is typical of their work. Hornby was well used to commissioning printed tinfoil. His understanding of the importance of attractive packaging for the first Mechanics Made Easy (MME) sets had resulted in these being packaged in colourful tin boxes, varieties of which continued to be made into the Meccano period. The Raylo game was contained in a ‘leather bound carton’ (as the 1915 *Book of Prize Models* describes it) of which no example is ‘known’, but it is pictured in Meccano publicity. The inside of the lid is reproduced in Graebe *The Hornby Gauge 0 System* at p8. It is decorated with an image of a generic 4-6-0 steaming into the left-hand field, exactly the same as that used on the lids of the first Hornby Clockwork Train sets. The ‘leather bound’ element refers to the outside. It seems to have been covered with mottled brown paper, with the lid embossed and gilded, the whole looking like the boxes used for No1 and No2 Hornby Train sets in 1921-4, the design being similar. It seems that both the inside and outside of the Raylo box lid later informed Hornby packaging. The only components of the game that seem to have been made by Meccano were the connections between the lever frame and the point blades, which included old-stock, folded MME strips, and, presumably, its woodwork.

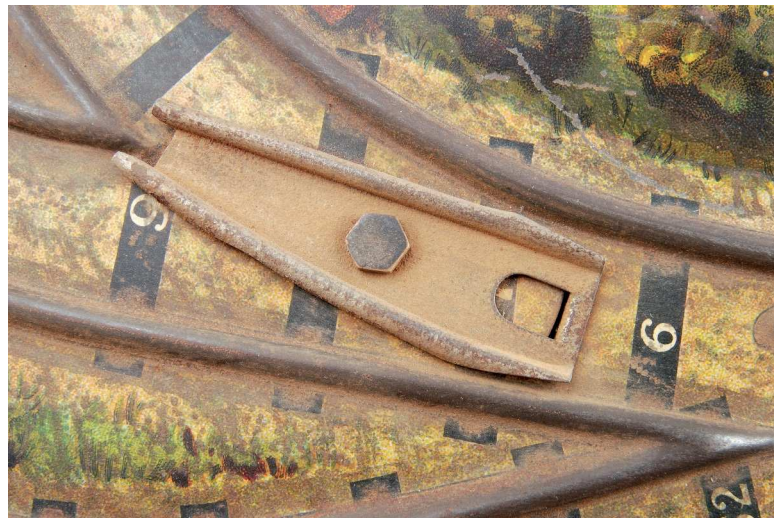


Underneath the board, showing the lining paper.



The Wreck Stop, visible on the far side of the crossing.

Raylo was already listed as an asset in a surviving account sheet dated 28 Feb 1910, albeit at only £1-8-9 it must have been very nascent. It had developed far enough for the patent application in November and presumably the design process was concluded before a complete specification was deposited with the Patent Office in May 1911, the final granting being in July. The accuracy of the specification suggests that, by early-mid 1911, component production could have been well underway. The patent can be viewed on and downloaded from the European Patent website <http://worldwide.espacenet.com> using the reference GB191027533.



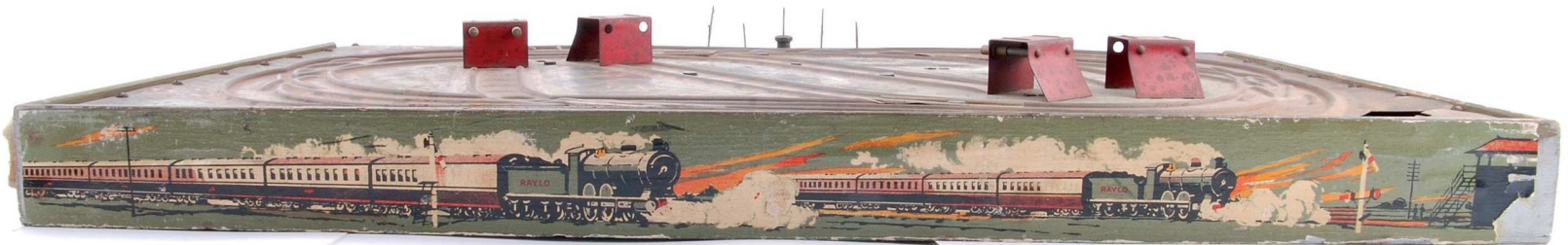
Above left: the loco storage pit, reducing the depth needed for the (missing) lid. Above right: close-up of a point.

Below left, the loco in place.

Below right: the operating side of the game.



Typical of Meccano Ltd, production seems to have been based on a desire to manufacture, which overrode any more rational consideration of whether or not the company had the capability or need to do so. I might develop this thesis further and suggest the game was a total aberration in terms of product development. It had nothing to do with the parent product and one wonders what it was that first inspired Hornby to think it up and, moreover, what it was that he believed was so good about it to merit a patent and taking it into production? Its complete irrelevance to the Meccano system meant that, in actual fact, there was no urgency or imperative to produce it and, indeed, every reason not to. The game was large and very complicated; consideration of the number of wood-screws used in assembly gives one an idea of the amount of time and effort that had to be poured into its manufacture, the diametric opposite of Meccano itself. Yet, this was to be Meccano's first attempt to expand its product range by diversification. One can only assume that the success of Meccano suggested to Hornby that *any* Meccano product would be successful.

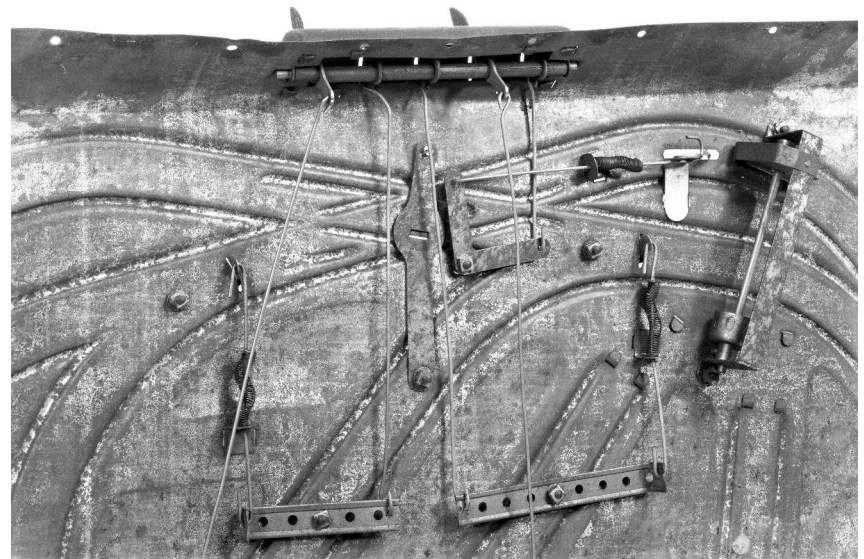


Above and left: The other three sides of the box, and the litho papers used to decorate the woodwork.



As it was, although it seems that all the components of the game had been manufactured by mid-1912, the game did not reach the market until 1914. It would seem that few were sold before production was halted to make way for far more lucrative ordnance contracts during the Great War. Today, only two complete games and a handful of locos are 'known' to have survived. Remarkably, those two games that do survive are different; the (presumably later) version has the woodscrews replaced by slotted runners. By any reckoning Raylo must have been an expensive dead-end, ill-conceived in the first place and aborted by circumstance. Yet, the faith that Hornby had in the product is reflected in it still taking pride of place on Meccano's bill-heads in 1919, even though the product seems never to have been advertised post-war.

Chris Graebe proposes that the reason for the delay between patent and introduction was one of logistics. While the components could be commissioned, there was no space for their assembly. It could be that the game became a victim of Meccano's success. The Meccano factory in West Derby Road had been acquired on a three-year lease in 1909. Hornby himself describes the situation there in 'The Life Story of Meccano' (*Meccano Magazine*, March 1932, pp172-3): 'I well remember how impressed I was with the size of the building...even after all our machinery and benches were installed the uncovered floor space that remained gave me a fright!...Never had I made a bigger miscalculation! The popularity of Meccano increased at a rate I had never contemplated in my wildest imaginings... I added machine after machine until the vacant floor space was completely covered; and still the output was not large enough. ...In less than two years the position in this factory became similar to that in the old one.'



Right: Jim Gamble's Raylo, shown removed from the wooden case to display the simple but effective inside works. Note the use of pre-1909 Mechanics Made Easy strips (Meccanotype strips but with folded edges) as pivots.

It might be that while there was a clear prospect of space being given to diversification in 1909-10, which encouraged the design of Raylo, the pressure placed on the works by rising demand of the parent product meant that no space was available by the time the component parts of the game had been commissioned and produced. It was only after the move to the comparatively palatial factory at Binns Road was completed in 1914 that production could be started. The fact that Binns Road offered space for extensive product diversification is corroborated by the area which Frank Hornby claimed he allocated to the production of the Tin Printed Clockwork Train in 1914-15, some 24,633 square feet. (See *HRC* 248, Feb 2008, p17). The Tin Printed Clockwork Train was a plagiarised version of a small Bing 0 gauge train set, copied nearly identically and made by Meccano. It was launched at the British Industries Fair of 1915 as part of a government-backed scheme to substitute German made products with ones made in the UK.



Given the long time that Raylo was under development, it is perhaps not surprising that the example above differs from the one on the previous page. Instead of the mitred ends on the narrow-topped sides of the other Raylo, it has wide wooden edges more simply joined, but slotted to take the metal of the top, thus not having the lines of screws on the top surface. The sides by the loco pit therefore have to have triangular cut-outs to take the corners of the loco.

Compare all this to the rhetoric Hornby comes out with in ‘The Life Story of Meccano’ (*Meccano Magazine*, Feb 1932, p93), in which he suggests that it was an early aim to concentrate all production and not use out-sourcing, and we can see a discrepancy in his position. While he might have been convinced that he should concentrate manufacture of MME in his own premises, he was clearly quite happy to sub-contract most, if not all, of very complicated products at the time of Raylo and indeed until the Great War. I suspect that it was his unwillingness to admit to this, in the light of his experience from 1914-22, which determined the position he took when he was writing ten years later.

While the Raylo track and associated casing could be commissioned from UK sources, which were probably already familiar to Meccano, the locomotive posed a problem. The patent application suggests that, at the time of its drafting, presumably in mid-1910, Hornby was uncertain of the nature of the locomotive. While it prioritises an ‘engine’, the patent offers the alternative of a ball which would be rolled round the track by tipping the board...an unlikely possibility given the size and design of the board, which the patent drawing shows to have point blades and buffer stops identical to those that were realised. Assuming that the descriptor belongs to 1910 and the drawing belongs to the complete specification, the final form of Raylo, with a locomotive, had been decided by May 1911. The complexity of the track-plan demanded a small gauge, one inch, to prevent the game from becoming unwieldy. The game required a long-running, but very small, clockwork locomotive, robust enough to stand the destructive nature of the game, thus it needed to be of a high build quality. In 1910-11 tinsplate clockwork toy manufacture was dominated by Germany to the extent that there were no serious manufacturers in the UK. In 1907 Hornby had turned to James Bedington & Son/Tessted of Birmingham for steam engines to power MME models. As Ken Brown points out (*Factory of Dreams* pp 32-6) Percy Bedington was instrumental in popularising MME, his family firm were significant metal toy makers in their own right; but, such companies worked in brass and rarely made more than steam toys. Hornby therefore turned to the German manufacturer, Gebruder Märklin of Göppingen, from which were also commissioned the first Meccano clockwork motors.

What informed this choice of partner is a matter of conjecture. In 1910-12 Hornby had no negative experience of German toy manufacture. It might be noted that Märklin’s clockwork motors tended to be over-engineered, but under-powered and relatively expensive; the first quality might be what appealed to Meccano over performance or cost. A cryptic reference to ‘Spring Motor’ in the February 1910 assets, valued at £20-0-0, might suggest that commissioning the Meccano-Märklin motor (introduced in 1912), was underway at a very early date making Meccano’s links with Märklin go further back than is often assumed. If this is the case, then an approach by Hornby to Märklin for the Raylo loco in early 1911 would have been an obvious and simple one, part of a rapidly expanding interest in Germany closely tied to a business relationship with Märklin Meccano registered their trade name in Germany and established an office there in 1912. By the outbreak of the Great War, Meccano had gone so far as to make an agreement by which Märklin would manufacture Meccano for distribution within the German Empire and its sphere of influence.

Of course, in any decision of this kind there might lurk the spectre of prejudicial reasons that Hornby looked to somewhere other than Nürnberg, where the bulk of tinsplate clockwork toy manufacture was concentrated. Whatever, we know that relationships between Hornby and the biggest of the Nürnberg manufacturers, Gebrüder Bing, would soon be soured by Bing's launching of 'Structator' simultaneously with Meccano's venture into serious partnership with Märklin, something that seems too much of a coincidence not to be related.

It seems certain that the Raylo loco was conceived as a stand-alone commission; but, having built it, Märklin looked to exploit the tooling further, by using the loco as part of a conventional toy train system. The Märklin version was first offered in their wholesale catalogues of 1912. The Märklin product was called 'Liliput' and took its gauge directly from the Raylo game. This Märklin called '00' gauge, the first use of the term, but to claim it was the first ever smaller-than-0 toy railway system would be wrong. What did make it different was that the Liliput range had a solid quality more commensurate with better-end 0 gauge, thus stepping towards the sort of 00/H0 of inter-war Märklin and Dublo, rather than staying in the realms of light-weight tin toys that characterise many of its predecessors. The fact that Liliput was advertised as early as 1912 could suggest that the initial order for Raylo locos from Meccano was not substantial enough to justify the setting-up costs. But, equally, Märklin might just have seized the opportunity to develop the product, given that the Liliput concept hardly impinged on Raylo. In the writing of toy train history, all too often dominated by product introduction and first appearance in catalogues, the fact that Raylo was not put into production immediately has served to confuse many into thinking that Liliput came first and Raylo second. It is clear from the objects themselves and the early date of Hornby's patent that the opposite was, in fact, the case.



Illustrated here is one of the 1912 Liliput locos, alongside a Raylo loco. It will be noted that the Liliput loco is identical to the Raylo in almost every respect.

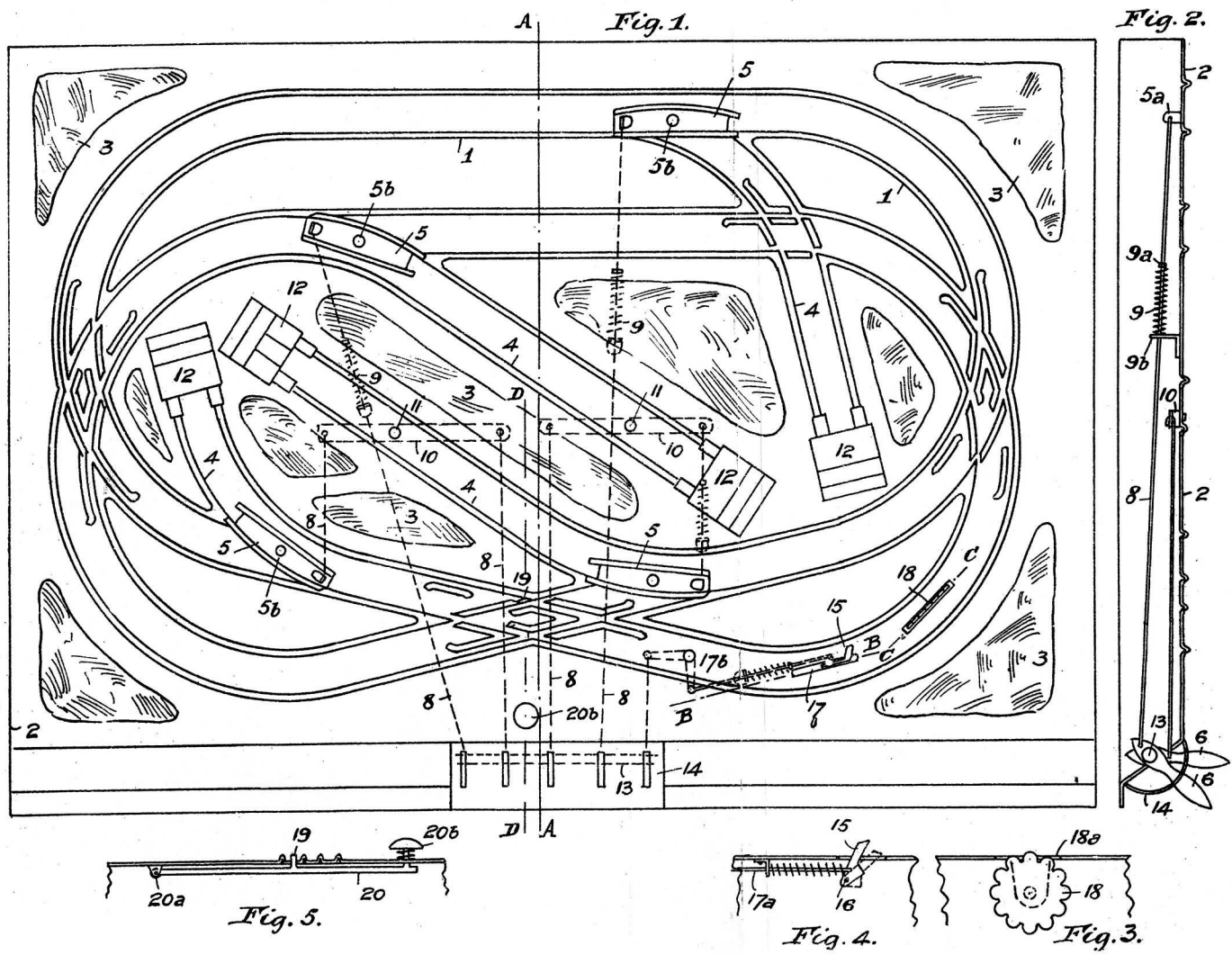
The mechanism is the same, robustly built with broad, cut gears, thus making it largely immune from the saw-like action that bedevils the pressed gears often found in clockworks of this size. It is fitted with the disc wheels designed for the game, but massively over-width, overweight and overscale for the purposes of a normal toy train. The significant difference is in the wheel settings. For Raylo the forward wheels are set radially. As the loco goes round a fixed circular track in one direction, the setting has the effect of reducing friction and speeding the loco up on curves, but making it eager to jump off-course on straights and badly-set points. Raylo needed wheels with strength for rough treatment, width to handle the radial setting and the loco's tendency to 'pull' when not on compatible curves, weight to hold the loco on the rails, and large diameter to add greater speed. For Liliput, all Märklin did was fix a simple pin coupling to the footplate and set the front axle square, but the wheels look ludicrous in the context of a toy train system, confirming the sequence of the product being designed for Hornby first, then utilised by Märklin second. The legacy of the Raylo concept went far further than the wheels. The Raylo loco needed no hand brake and therefore there is no provision for one. Rather surprisingly this was overlooked in Liliput, which has no hand brake either.

To make sure there was no confusion between the products, Märklin ordered revised litho printings for the Liliput loco, without the RAYLO cabside name. Unfortunately this adjustment did not spread to the LNW style white lining, making it incompatible with the red-lined tender, which followed continental practice. Indeed, the sequence is also obvious when we look at the stock. The loco is undoubtedly UK profile, but the tender looks as if it belongs to something more Germanic, while the coach is purely continental, suggesting a different time of design and a different market intention. Furthermore, the wheels of both tender and coach are far more appropriately proportioned for the Liliput concept of a toy train system.



RAYLO

[This Drawing is a reproduction of the Original on a reduced scale.]



Mulby & Sons, Photo-Litho.

A diagram from Hornby's Raylo patent.

With the product barely launched before the war curtailed its production, it might be expected it would be resumed thereafter, but this was not the case. Under a principle of free trade and a belief in fostering a reinvigorated German industry able to pay off war debts, strongly supported by Lloyd-George, UK trade was quick to be reopened after hostilities ceased. Indeed, there was a complete return to pre-war trading regulations by 11th November 1919. But, Meccano's close relationship with Märklin was never to be revived. During the War Märklin had taken control of Meccano's intellectual property, making Meccano under the Märklin name. Meccano took until 1928 to wrest back its German interests from its one-time partner. (Brown, *Factory of Dreams*: p67) Even then, Märklin continued production of former Meccano products under the Märklin name but did not enter them into markets in which Meccano had a significant presence (mainly those within the British Empire, France and Scandinavia). Furthermore, post-war issues of ownership were conflated by Hornby's largely negative experience of the Tinprinted Clockwork Train. In this Hornby realised that it was folly to try to compete with German manufacture on its own terms. Meccano products had to be different to give them added value and justify the higher cost of British labour. Henceforth, Meccano would never look to subcontract products to Märklin or any other potential rival, and it would make every effort to avoid subcontracting at all, even within the UK, for even the most trivial components.

TELEPHONE NOS. OLD SWAN { 377
 378
 379
 TELEGRAMS: "MECCANO, LIVERPOOL"
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 MECCANO G. M. B. H., BERLIN.
 MECCANO (FRANCE) LTD., PARIS.
 MECCANO CO., INC., NEW YORK.
 BRANCHES AND DEPOTS IN
 LONDON, BRUSSELS, MILAN,
 SYDNEY, N.S.W., WELLINGTON, N.Z.

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Per *L. Onwale* 18th July 1919

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	SUBJECT	NETT			
24	Meccano Outfits 10.0	7/6	6	12	
24		1/7	10	16	
			17	8	
			5	16	11 12
					11 12

Number System—1027/16
 B6345

From an early Meccano Ltd invoice (probably printed pre-1914, though used here in 1919) promoting Raylo.

It may well be this that caused the demise of Raylo as much as market reception. Effectively, Raylo did not match any of Meccano's post-war product strategy and was quietly forgotten. This was different from the Tinprinted Clockwork Train, which, though plagiarised, was manufactured entirely in the Meccano factory and was not based on sub-contracted components; therefore it continued to be made and listed, while the Raylo Game did not.

RAYLO. The Great Railroad Game

INSTRUCTIONS: To be Read Carefully

Each player must wind up the engine himself, which is prevented from running by the small brake at the back. The engine must then be placed with the front in line with the word "Start."

The engine is started by operating the starting lever, which is the first lever to the right. This releases the brake, and at the same time the "Wreck Stop" must be depressed, also the lever controlling Siding No. 7. The next lever to be operated is the one controlling Siding No. 8, followed by Nos. 9 and 10. This completes one round of the double track, and this will be recorded on the indicator, which should be set at 0 before the commencement of the run.

At the commencement of the next and each succeeding round, the "Wreck Stop" and the No. 7 Siding Lever must be operated together.

The object of the game is to keep the engine running as long as possible.

Each complete run round the entire track represents 113 points, two runs 226 points, and so on. With care and skill the engine may be kept running round the track several times.

If the engine comes to a stop on the track, the number immediately in front of it is added to the score. If it runs into a siding, the number indicated on the sleeper in the siding must be deducted from the score. The last numbers before the sidings are: 8, 33, 56, and 85.

Only one switch lever at a time may be operated, and the player is not allowed to touch any other switch lever than the one which he is operating, on penalty of forfeiting the run.

If the engine is wrecked through not operating the "Wreck Stop," or from any other cause, the entire run is forfeited.

Any number of players may take part in the game, and the one scoring the largest number of points in five runs wins the game.

The game should be played on a level table, and the track must not be moved by any player whilst a run is in progress.

MANUFACTURED BY MECCANO LTD., LIVERPOOL.

As a consequence, the printings for Raylo locos that Märklin was still holding were redundant and Märklin was free to use them as they chose. Thus we find the RAYLO name prominent on many post 1919 Liliput electric locos, along with mismatched loco and tender lining.

It is interesting to think that had it not been for Frank Hornby's unwitting input and the tooling Raylo demanded, Liliput would possibly never have been made and, with it, Märklin's pioneering foray into small-scale electric train sets. In conclusion, while Meccano certainly spoke the last words in commercial electric smaller-than-0 gauge in the inter-war years, it could be said that they might have whispered the first.

The author would like acknowledge the following for contributing to this article ether by offering advice, illustrations, or both:

Jeff Carpenter, Stephen Dabby, Peter Dayton, The late Peter Dunk, Jim Gamble, Chris Graebe and Mark Stephens.

Meccano Ltd's 1910 asset list, the first known mention of Raylo.

AS AT 28th FEBRUARY. 1910.				

A S S E T S.				

			<u>£. S. D</u>	<u>£. S. D</u>
Stock Trading	1074	8	9	
Manufacturing	<u>458</u>	<u>10</u>	<u>6</u>	1532 19 3
Patents, Trade Mark & Copyrights	4609	6	6	
Less written off	<u>460</u>	<u>18</u>	<u>6</u>	4148 8 0
Plant	1077	1	11	
Less depreciation	<u>107</u>	<u>14</u>	<u>2</u>	969 7 9
Fittings	318	14	5	
Less depreciation	<u>31</u>	<u>17</u>	<u>5</u>	286 17 0
Press tools	74	0	0	
Less depreciation	<u>37</u>	<u>0</u>	<u>0</u>	37 0 0
Formation Exs	33	0	0	
Less written off	<u>31</u>	<u>10</u>	<u>0</u>	41 10 0
Spring Motor				19 9 0
Gas & Electric Light Deposits				27 0 0
"Raylo"				1 8 9
Sundry Debtors				1150 4 6
Cash at Bank.-----	268	13	7	
at Office.---	<u>5</u>	<u>0</u>	<u>5</u>	271 14 0

				£8485 18 3
