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EDITORIAL First, apologies for the lateness of this Issue. As some readers will know it is because I had, unexpectedly, to have a heart operation.

For the future, I plan to continue to produce OSN but regrettably it is probable that Issues will appear when they are ready rather than with their current, twice a year, regularity. This for several reasons, but mainly because changes in my personal circumstances, quite unconnected with the operation, will mean that I will be unable to spend as much time on hobbies as I've been able to up until now. I'll give updates as to progress on my OSN website from time to time.

SHORTER NOTES, with thanks to all contributors.

1. **Snippet. A NECOBO Clockwork Motor.** Having expressed surprise in 44/1334 that there were no NECOBO Motors, the one right was offered on Marktplaats soon afterwards. No doubt its one lever would be a brake and so it would be non-reversing. What looks like a brass Pinion may have been misplaced on the winding spindle.

A Price List in the lot with the Motor lists Sets 0-6 plus the Junior outfit; Sets 0A-5A; and the Mechanism Sets A-C. But there is no mention of the Motor.

NECOBO: S5

46/1388]

2. **Guibert's Encyclopédie.** Jean-Pierre Guibert continues his good work in updating his Encyclopédie des Jeux de Construction métalliques, and the 2012 version, on a DVD, runs to over 400 pages with details of some 800 systems. As well as new and 'new' systems, many of the earlier entries have been revised and more detail added.

The format is as before (see 43/1292) and each page can if desired be printed off as an A4 side. It may be hard to see the details of some images such as Illustrated Parts but all those I tried could be easily read after using the WORD Zoom facility. Also with WORD (though not with WORD Viewer) any image can be copied, and then enlarged after pasting it onto a blank page. Thus just the enlarged image can be printed off.

The DVD also includes an updated Database called an 'Index', again with the same format as before.

All in all a very useful reference, and having some years ago produced some Sheets to update and add to the now long outdated MCS, I understand just how much work has gone into J-P's Encyclopédie.

Jean-Pierre can be contacted at jeanpierre1g@orange.fr.

Encyclopédie des Jeux de Construction

46/1388



3. **'New' System, ALFLEX.** Urs Flammer wrote of 2 sets found in Switzerland. The models on the lid label above are MIGNON (see 10/262) and a photo of the base tray of one of the sets looks identical to the later MIGNON No.3 in terms of both the parts and their layout. (The later MIGNON sets had fairground models, as opposed to 'Tower Bridge' on the lid label.) The manual is in French and is identical to the French edition of the one described in OSN 10 except that the Mignon name has been removed from the cover and the maker's name from the back cover. In fact neither 'Mignon' nor the maker is mentioned on the inside pages of any of the later manuals (the ones with fairground models on the cover, see OSN 10). In passing, details of the MIGNON manuals, as well as the sets, & the system's history, are given in www.mignonbaukasten.de.

Although the two sets were found in Switzerland Urs discovered that the ALFLEX name was registered as a brand (concernant un jeu de construction) on 19 July 1947 by René Guichard, in Paris. The registration was in the BOPI (Bulletin officiel de la propriété industrielle) under licence No.378.421, page 1809.

MIGNON was of course made in Germany by Gebr. Staiger of St. Georgen and it is possible that the ALFLEX sets were a special order imported by a retailer, perhaps French, perhaps Swiss. But if the latter why was the Alflex name used? It is even possible that there was a French ALFLEX system quite unconnected to the Swiss sets.

ALFLEX: S1

[46/1388]

4. **Freundeskreis Metallbaukasten at BEBRA** Model building is alive and well in Germany – an email-based group called Freundeskreis Metallbaukasten (Friends of MCS) hold regular meetings at Bebra, a town near the centre of Germany, chosen to minimise travel distances.

This information from Thomas Morzinck and he included the links below which show the models at the 2011 meeting. Feast your eyes (there is no associated write-up).

<http://www.metallbaukasten-eiermann.magix.net/meine-alben/!oa/6413895/>

<http://www.metallbaukasten-eiermann.magix.net/album#/meine-alben/!oa/6413895-75780919/>

<http://www.youtube.com/watch?v=Q082IjIvpYc>

Freundeskreis Metallbaukasten

[46/1388]

5. **'Matchbox' Set Parts.** Jean-Pierre Guibert sent details of the key dimensions of the parts in his 2 CLOU matchbox sets & a Louis Marx MATCHBOX set. That's to say the pitch & diameter of the holes in the 5h Strip, the diameter of the bore in the wooden Pulleys, & the diameter of the wooden Rods/Axles). He found that they are the same for each brand and that they differ from those in the Database.

The latter were based on the values in MCS and those of the parts in sets which I had on loan at the time. In the light of J-P's results I measured the parts in the sets currently to hand, a CLOU, a Louis Marx, & a Linemar MATCHBOX. (Notes on the different 'Matchbox' sets were given in 6/131 – MCB2 there is the Louis Marx.)

Below the measurements in millimetres (m = mean value).

Set ↓	Pitch	Hole Ø	Bore	Axle Ø
CLOU Database	8.6	3.2	2.9m	3.0m
CLOU J-P	8.5	3,15	3.0	3.0m
CLOU Mine	8.7	3.15	3.0	2.9m
Marx Database	8.7	3.3m	3.0	3.0
Marx J-P	8.5	3.15	3.0	3.0m
Marx Mine	8.75	3.4	2.9	3.0m
Linemar Database	8.7	3.4m	3.3m	3.1m
Linemar mine	8.75	3.3	3.3	3.2m

Many of the Axles vary slightly in diameter along their length and/or are significantly oval in section. My Marx Axle can push into the Pulley (actually a Wheel because it doesn't have a pulley groove) because its wood is very soft and fibrous.

Given that care was taken to make the measurements as accurate as possible there are clear differences in the metal parts. Especially noteworthy are the different pitches within the

CLOU sets, and the different pitches & hole diameters within the Marx. Presumably they would have been due to different tooling, though whether by the same manufacturer (or subcontractor) one can't say.

And in case you wondered, the pitch of the holes in the other parts matched those in the Strips.

MATCHBOX SETS: S2

[46/1389]

6. **STABIL** Werner Sticht continues to add to his STABIL website, www.stabilbaukasten.de.vu. Click on "Neuigkeiten" (= news) and you will find links to • STABIL before 1912; • other early German systems plus details of MÄRKLIN, TRIX, & MECCANO in Germany; • and detailed accounts of STABIL Pulleys & Flanged Wheels.

In addition the 'News' section has links to updates on 1911-1912 toy trade catalogues, on the 'Eisenbahnwagen-Baukasten', and on the wooden 'Maschinen-Baukasten'. There are also links to the numerous Änderungen und Korrekturen (Changes & Corrections) throughout the site.

STABIL: S8

[46/1389]

7. **VEX** The high shipping cost of VEX items bought from the firm in America was mentioned in 41/1253. Now the company's website, www.vexrobotics.com, says that most products can be shipped from England, but I wasn't able to check any actual shipping costs.

Also on the site, a list of resellers, among them 3 in the UK: one in Malmesbury, Wiltshire; one in Radstock, Somerset; and the third in Brentford, Middlesex.

VEX: S5

[46/1389]

METALL-BAUKASTEN

Following the note on Jan Ringnalda's set in 42/1621, Jean-Paul Guibert has kindly supplied details of his set, including the photos shown here. The box is the same but the set is much more complete and all the parts in it are thought to be original.

In all it contains 15 types of part as follows: 3,5,7,9h Strips; a 3h Strip almost twice as wide as the standard Strip; a 5*7h Flanged Plate; a 5h Ø Circular Plate; a 3h Ø Pulley; a Spanner or Span'driver (partly covered by the top edge of the Flanged Plate); & in the top right compartment, enlarged right: a Washer; a wire Handle Crank; a short Screwed Rod,



FIG.2a

a square Nut, & 2 lengths of cheeseheaded Bolt.

The main parts are aluminium with 4.1mm Ø holes at 13.0mm pitch. The N&B, etc look nickelled; also the Pulley – it looked aluminium in Jan's set.

A great many 9h Strips would be needed to make the Bridge on the lid.



FIG.1

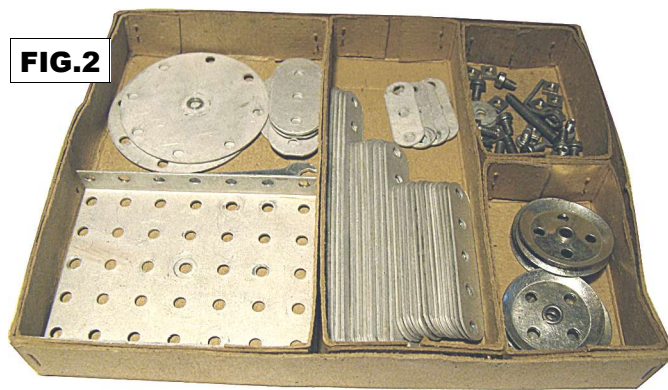


FIG.2

OSN 46/1389

METALL-BAUKASTEN [5]: S3

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Payments Please make cheques etc payable to P.A.Knowles. Remittances must be in Pounds Sterling (GBP) or, as cash, in Euros or US Dollars (£1=€1.10=\$1.50). Payments from overseas may also be made using PayPal (in Sterling please).

Small Ads Short ads are free to subscribers; insertion in the OSN 47 guaranteed if at all feasible (but repeats may not always be possible, please ask).

OSN – Your Credit Balance:

was £ after OSN 45
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 is £ after this Issue
 Please send at least £ if you wish to receive the next Issue.

Another GLORIA Set This set, from Ebay, is like the one shown in 28/839. It appears to be unused with the various sizes of Strips & DAS bolted together, but the contents differ slightly from those given in 43/1316.

The Parts Before going to the contents a few points about the parts to add to those in the Issues above and in 44/1325. Holes are mostly 3.0mm with a few 2.9mm. Strip parts are between 6.0 & 6.1mm wide. The 18mm Pulley is 3mm wide over its vee; the 25mm, 5½mm. Bosses are aluminium, 6.4mm o.d., 3.0mm bore, & single-tapped. The larger diameter Collar, see OSN 43, has the spigot and is aluminium – it is the part used for the boss. The Axles are 2.8mm Ø, and the 2 sizes in the Set are 50 & 70mm long. The N&B do not run on the current M2.5 thread and given their actual diameter of 2.5mm (as in OSN 43) they are most likely the earlier 2.6mm standard (see 7/168), as in MIGNON. The Nuts are rather irregularly hexagonal, 6.1 to 6.2mm A/F. The Bolts' cheeseheads are 4.1 to 4.2mm Ø. Most parts are nicely nickelled but the 6h Strips and some of the 4h are a darker dull grey. The small zinc Loose Pulleys are slightly corroded.

Set Contents As in OSN 43 except as follows, with the OSN 43 quantities in square brackets: 19[12]x 11h Strips but no[5] 10h, 10[8]x 5h; 2[1] A/Gs; no[2] 4h DAS; 1[2]x 18½mm Pulley; 3[7] Collars, all the boss type; no 3 or 15cm Axles [1,1] but 1[0]x 7cm; 1[2] 45mm Crank Handle plus 1[0]95mm (as in OSN 44); 10 [6] Spacers; Bolts: 47 (plus 6 for the Collars & bosses), 9,3[40,6,3]x 5.10,12mm u/h; 55[51] Nuts.

Some of the differences would certainly be packing errors, the single 18mm Pulley for example, with 2 needed for the Hand Cart shown in OSN 43.

For the other discrepancies it may have been that certain parts were not available, the 10h Strip for instance, and the models in the model leaflet could easily be made using substitute parts. In the case of the 4h DAS, it is needed for the upright pillars in the Trip Hammer in OSN 43 but 5h DAS could be used instead.

On the other hand now that an actual model leaflet is to hand it can seem that two parts are used in the OSN 43 Elevated Jib Crane which haven't been seen in any of the sets known so far. The sides of the jib are joined 8 holes from the top by what looks like a rather wide D/B (as right), and the vertical Crank Handle which passes down the centre of the tower would need to be over 14cm long. If the 95mm Handle were used instead the bottom bearing would need to be raised accordingly – possible but not easy to do neatly. For the jib, omitting the D/B would mean the sides were held together only at the base and at the top by the Axle for the jib head Pulley. The latter would not really be satisfactory even if Collars, not shown, were added at each of the Axle's ends.

Using the Parts GLORIA is somewhat unusual in having a large number of Strips but no brackets, and no parts with less than 6 holes other than the 4 & 5h Strips. I thought the Leaflet models uninspiring and that a more ambitious model could be attempted. In the end I decided on one of my favourite types, a Multi-Jib Crane. There were some problems. First, many more N&B would be needed, plus a few washers: the answer, commercial M2.5 items. Secondly, 7 DAS or D/B of various widths were needed, and a few 2- & 3-hole Strips. These were made by cutting/bending some home-made replica strips – there were actually enough original parts for this purpose but I

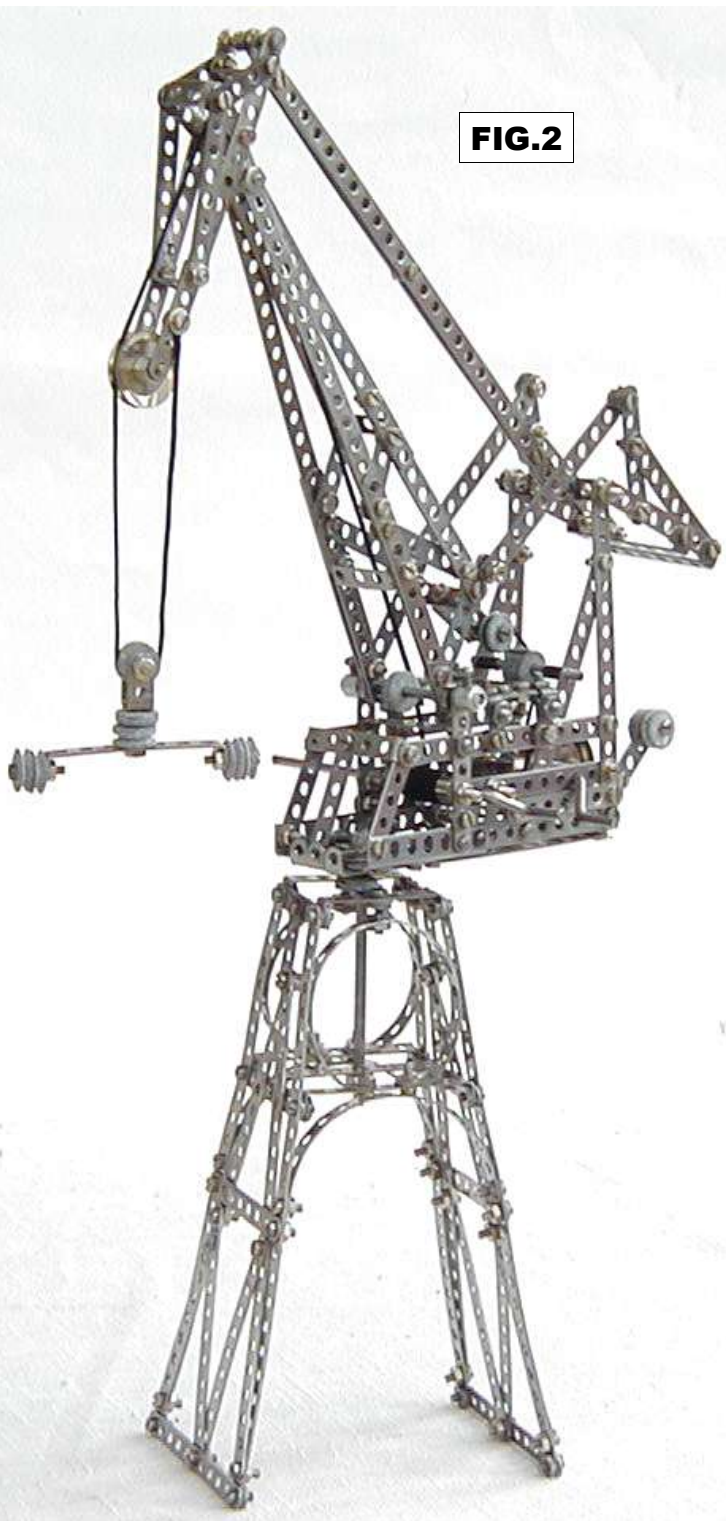


FIG.2

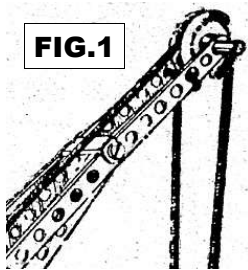


FIG.1

am something of a purist in OS matters and after experimenting on one Strip I baulked at 'mutilating' any more. In fact the originals, like the replica parts, are made of quite soft steel and could be bent easily across their holes, or between them if held in a Mole grip and hammered over. And they could even be straightened out again without any risk of breakage. Finally, 4 extra collars were needed (there would have been enough in the OSN 43 set). Above the finished model, it has the same luffing geometry as the MUSALA model mentioned in 44/1350. A cord brake controls the luffing motion while the load is prevented from dropping by the Crank Handle's handle engaging one of two Bolt shanks when pushed inwards.

Apart from assembly being somewhat fiddly (forceps are virtually essential), the main difficulty, one usual at this scale, was that the N&B interfered with one another in corners unless one Bolt pointed outwards. Otherwise the only poor feature was the oversize bores in the Pulleys & Bush Wheel.

ROCO This post-WW2 German system was noted in 17/477 but with no details. Now a set, made in the British Zone, and thought to be from 1949, has come to hand. It is probably unused and is complete except for its Hook.

ROCO was made by Roco-Gesellschaft Curt Krause & Co. of Hamburg 21. Nothing more is known of the company but Baukästen says that the ROCO sets were first shown at the Spring Fair in 1949.

The parts are made of a fairly soft aluminium alloy and structures are made from rolled Tubes of about 6.4mm Ø, joined by Eye Connectors.

The PARTS Fig.3 shows the manual illustrations & names, Fig.5 actual parts from the Set (all types but only examples of the Tubes & Sleeves, and only the end of each Railing) plus, inset, part of the Hook from an Ebay set, at about the same scale. Below, a list of the parts, with my English names & some comments. The sheet metal parts are .8mm thick. The holes are 6.5mm Ø and are a sliding fit over the Tubes.

#S Tubes, 1,1½,3,4½,6,9,12cm long. The gap varies from 3.1 to 3.8mm in the different parts, with no particular pattern.

#M Sleeves, .8 (nominally 1), 3, 5cm long, 8mm o.d., with gaps from 2.6 to 2.8mm. They are a push fit on the Tubes.

#E (straight) Eye Connector.

#D Right Angle Eye Connector.

#V Coupling. A zinc die-casting with slightly tapered ends.

#K Plug. Turned with a slight taper on the shank.

#Mi Key. To lock a circular part to a Tube.

#Wv Angle Bracket. Not seen. In Fig.7 (bottom centre) the arms look longer than in Fig.3. It probably slides into a Tube.

#ZS Locking Ring. Not seen. The German description is: Zugsicherungs-Ring, "ZS", zur Sicherung des "V"-Stückes oder der Öse "E" bei starker Zugbeanspruchung. Perhaps a sleeve to push over a Tube to lock it to a #V or #E inside it.

#L Link, with holes at 27½mm pitch.

#B (Straight) Railing, 43*205mm, with 15 bays, and **Decorative Railing**, 31¼*194mm, with 14 bays. Obviously the scrap from pressing out Links & Eye Connectors.

#R Pulley with Rubber Ring. The Pulley is 30½mm Ø, 8½mm wide, with a 6.7mm bore and a 2.9mm wide keyway in each disc. The Ring's rubber has hardened and can't be removed from the Pulley. In situ it is 55mm Ø & 14mm wide.

#ZK Bevel Gear & 2,3,4,5,6cm Ø **#Z Gears.** Not seen but see Figs.3 & 7.

#P Flanged Plate. Seen only in Fig.7.

#LS-5 Wheel Disc. 50mm Ø. **#LS-9 Flanged Disc Pulley.**

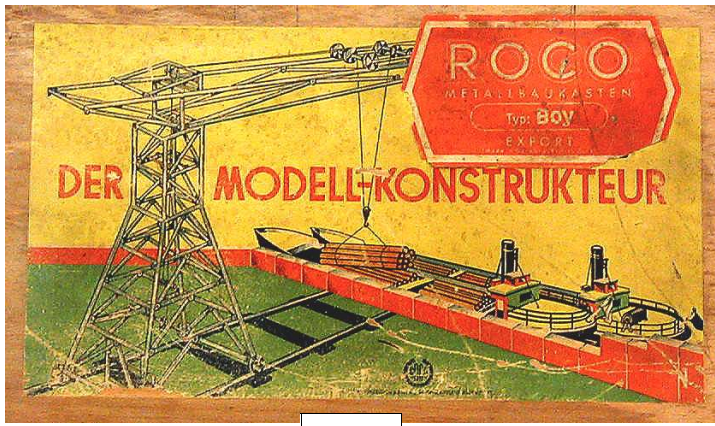


FIG.1

See Fig.7, with the centre different to Fig.3.

#H Hook. Not seen. Those in Figs.7 & 15 looks similar.

#Kb Handle Crank. Either end pushes into a Tube.

Drift. Pliers. Not seen.

Cord. Over 1½m in length.

ASSEMBLING the PARTS

Fig.2, a selection of diagrams from the Manual, shows the basics, and some of the finer points are mentioned in the following notes.

In 'A' the joint can be

reinforced by overlaying it with a Sleeve. Using a long Sleeve without the Coupling is also possible and allows some adjustment of the length.

In 'A' pushing the Plug into the end of the Tube locks the eye provided it is near the end of the Tube, and sliding a Sleeve onto the Tube before the eye gives an even firmer grip.

The Connector #E doesn't have to be pushed fully home into its Tube and thus a small adjustment of length is possible.

In 'B' one eye can also be between the arms of the Right Angle Connector.

In 'C' several eyes are joined by pushing a short Tube #S1 through them and then a Plug into it. But even the shortest Tube looks rather clumsy and a 5mm Tube would look neater. A small amount of adjustment can be obtained by pushing the Plug through the eyes into a Tube on the remote side, as in 'B' but the eyes are not held so firmly.

The eye of the Eye Connector can be bent to an angle as at 'gebogen' in 'F'.

Tubes are used as axles and eyes as bearings for them. The Pulley can be loose on a Tube, located by a sleeve on either side. The Key #Mi slides into a Tube and the Pulley is held fast by it. A Sleeve either side makes its location even more secure.

'D' shows a crankshaft with connecting rod.

The SETS The contents of the 5 sets are shown in Fig.4. They are progressive with two exceptions. Compared to the Boy, The Boy (Export) has, inexplicably, no Gears, no Pliers, and fewer long Sleeves. The other deviation, again inexplicably, is that the two largest sets have no Railings. It might be thought that this was an error but the Manual contains photos of both outfits (Fig.7 shows the largest, the Super) and no Railings can be seen in either.

The present Boy (Export) set is packed in the strong but slightly roughly made wooden box, 31*51½*3cm (Fig.6). It has the sliding lid shown in Fig.1, and the red ROCO hexagon top right is a label stuck on. The words along the bottom speak of patents at home and abroad, as on the Manual cover. The packaging of the Tubes is neat with all but 4x 3cm pushed onto pairs of tabs which have been pushed through a 2¾cm wide brass steel strip.

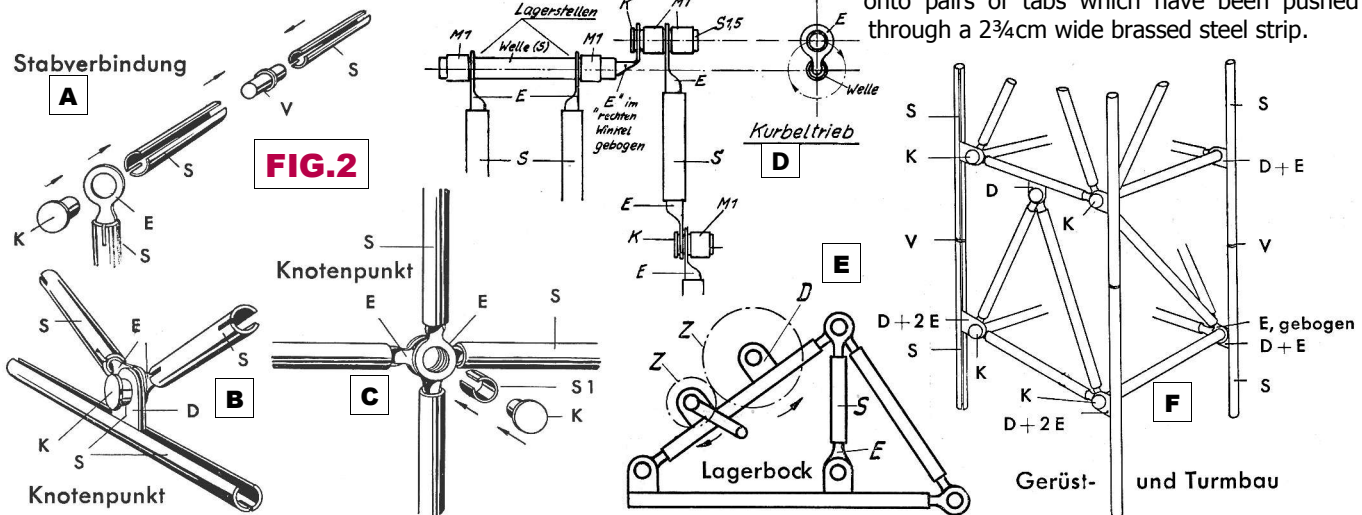


FIG.2



FIG.3

R Wagenrad „R“ mit Gummireifen,

Bauteil	Piccolo	Boy	Boy (Export)	Standard	Super	Bauteil	Piccolo	Boy	Boy (Export)	Standard	Super
S 12	6	10	10	12	30	Wv	—	—	—	6	12
S 9	4	6	6	10	18	ZS	—	—	—	10	24
S 6	10	10	10	12	16	P	—	—	—	1	1
S 4,5	8	12	12	14	25	LS-5	—	2	2	2	4
S 3	8	18	18	20	25	LS-9	—	—	—	2	2
S 1,5	—	8	8	8	8	R	2	4	4	6	8
S 1	8	10	10	10	12	ZK	—	—	—	2	4
M 5	2	3	2	4	5	Z - 2	—	1	—	2	2
M 3	4	4	3	6	8	Z - 3	—	—	—	—	1
M 1	10	25	25	30	40	Z - 4	—	1	—	1	1
E	22	45	45	52	80	Z - 5	—	—	—	—	1
D	18	29	32	45	60	Z - 6	—	—	—	1	1
V	6	15	15	20	30	Kb	1	1	1	2	2
K	18	35	35	40	60	Dorn	1	1	1	1	1
Mi	1	4	2	4	4	Zange	1	1	—	1	1
H	1	1	1	2	2	Gummireifen 2	—	4	4	4	4
B	2	3	3	—	—	Schnur	1	1	1	1	1
L	4	10	10	20	40	Gesam	140	264	260	351	533

FIG.4

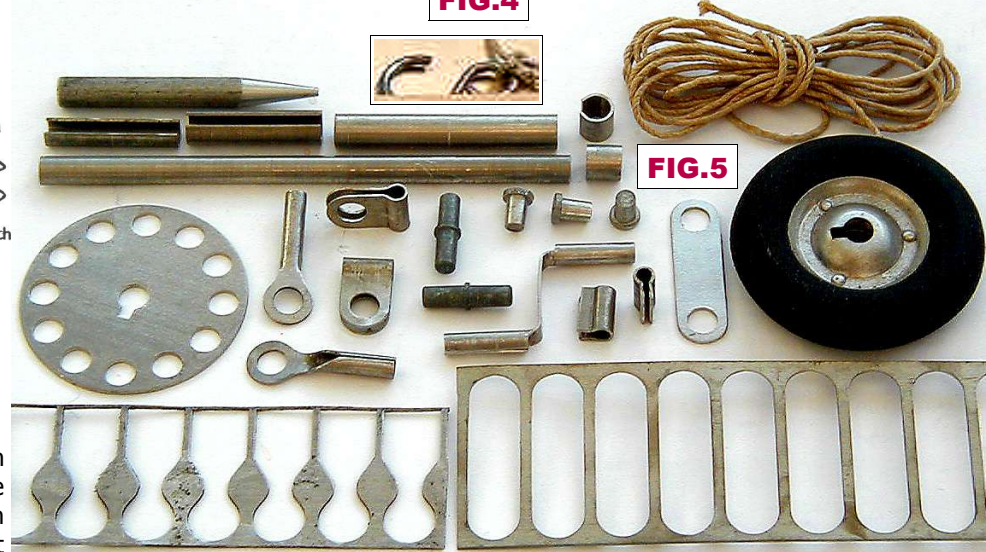


FIG.5

The only other ROCO set seen was on Ebay and was identical to the present one. Its Railings were, as in the present set, 2 of the Straight type and one of the Decorative.

Nothing is known of the other sets except that photos of the open boxes of the Standard & Super are shown in the Manual. Both look to be in cardboard boxes and both have 2 layers of parts. The Super is shown in Fig.7 and the Standard's parts are arranged in the same style. No Pliers can be seen in either set. The Standard's box size is given as 390*285*45mm.

Increasing the size of sets by buying packs of parts is mentioned in the Manual's Intro.

The MANUAL It consists of 24 unnumbered pages clipped

between grey covers, 213*155mm. Below the front: C2 has the Illustrated Parts, C3 the Set Contents, and C4 the ROCO logo and details of the printing & photographic companies: Grbrüder Hoesch, Hamburg 1, EP 4 – 6510 4000 6.49 Klasse A. Fotos: Hansa Foto-Studio, Hamburg 1, Steindamm 10. The inside pages are printed on art paper with good halftones. p1 has an Introduction, pp2-3 Instructions & Advice with 18 numbered paragraphs & drawing which broadly cover the the same ground as the Assembling the Parts earlier. Then the next 3 pages have Basic Constructions A, B, & C,

FIG.6a

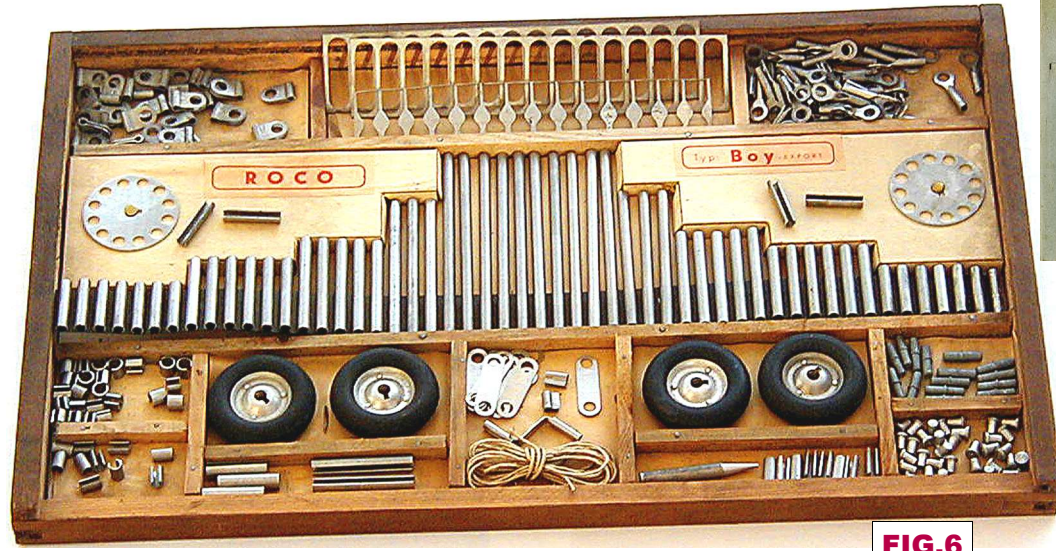


FIG.6

with titled diagrams which cover much the same ground but add more examples, particularly of braced structures. All the examples in Fig.2 come from these pages.

pp7-13 have 21 model with a photo and Parts List for



FIG.7

ROCO, Typ Super, 445×320×45 cm. 533 Teile.

each. Models PM 001-020 are for the Piccolo set, from Tisch [Table] to Dreibock mit Flaschenzug [Tripod with Pulley Block]. Then 20 models for Boy on pp14-22, from BM 051 Lastenaufzug [Goods Lift] to BM 070 Dreirad-Sportwagen [3-Wheel Sports Car]. The only additional instructions are drawings showing the steering for a Motorcycle and, on p23, for Cars, plus a note on the steering column bearings for two vehicles.

The sole mention of the Export set is to say that the only Boy model to use gearing, the Crane in Fig.15, should be made omitting the Gears. Gears are also used as a steering wheel on two 4-wheel models and the only substitute from an Export set would be a Wheel Disc, though it would look out of place.

The Piccolo models are a reasonable selection of the type of model made from rod/tube systems – domestic items, carts, simple railway items, 2-wheelers, etc. The only 'mechanical' models is the Tripod with Pulley Block.

The Boy models are more interesting with no domestic items, better railway models, the Goods Lift, a Swing, a Railway & a Mobile Crane, a Fire Pump Trailer, a Motorcycle, & three 4-Wheelers with linkage steering.

6 manual models are shown right & on the facing page. All are the original size except some of the diagrams in Fig.11. The Steps, Fig.8, the Handcart, Fig.10, & a similar Cart are the only ones in which the Railings are used. Fig.11 is taken from the manual p23 about the steering. Abb.1 & 3 show alternate axle assemblies of different widths. The track rod is the Tube shown in the centre diagram with a Connector E in each end.

USING the PARTS Some of the parts fitted together perfectly but many needed their diameters adjusting to fit properly. This was easy enough to do by squeezing with pliers (or a vice for long Tubes) or expanding using the Drift This was not unexpected given the variation of the gap in the Tubes etc already noted, and though this might have been the work of a previous owner, from their appearance the parts did not look to have been used, let alone abused.

Given a near perfect fit it was still sometimes necessary to adjust the parts if an especially tight or loose fit was needed.

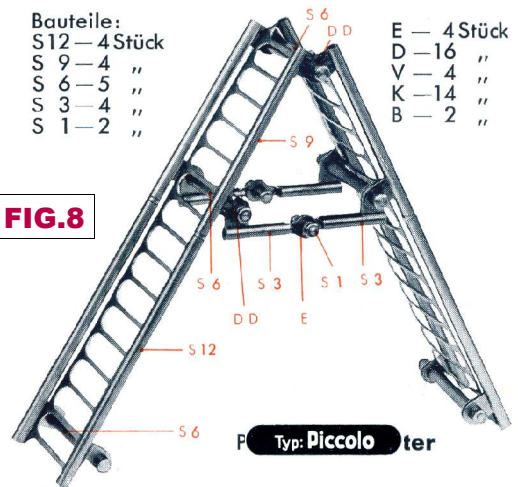
In the former case a hammer was needed to, for example, fully engage a Plug, and pliers to pull it out again. Another problem sometimes found was if a Tube in one place needed to be slightly below the nominal diameter to rotate freely in another part, but a nearby part of the Tube needed to be the nominal size to retain, say, a Sleeve or Connector. A Sleeve could be suitably closed up but not a Connector's eye.

I thought to make the Abschleppwagen in Fig.13 but as I couldn't work out quite how it was to be made I started by building the steering based on the Fig.11, Abb1 diagram. Then, little by little, the Buggy in Fig.14 emerged. It wasn't too difficult but, as is usually the case with Rod/Tube systems, it was tiresome to have to dismantle to a greater or lesser extent if one initially omitted to put the right number of Connectors in or on a Tube. There was to have been a nose to hide the steering gear but there weren't enough of some of the smaller parts to build it. The finished model was quite robust.

ROCO is certainly one of the neatest & more elegant Rod/Tube systems. It is doubtful though if many children would have the skills & patience needed to build any but the simpler models.

- Bauteile:
- | | | | |
|-----|-----------|---|-----------|
| S12 | — 4 Stück | E | — 4 Stück |
| S 9 | — 4 " | D | — 16 " |
| S 6 | — 5 " | V | — 4 " |
| S 3 | — 4 " | K | — 14 " |
| S 1 | — 2 " | B | — 2 " |

FIG.8



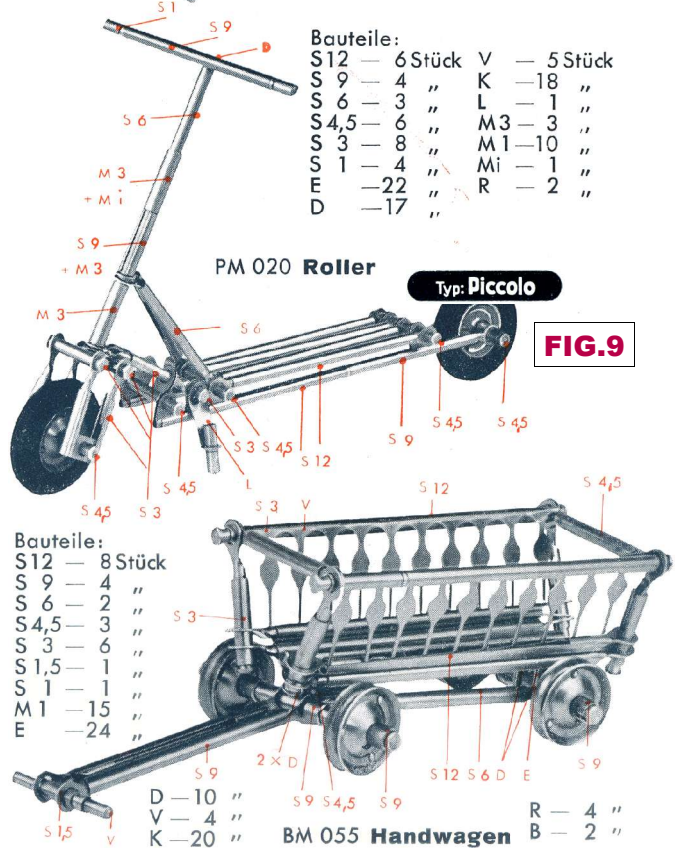
Typ: Piccolo

- Bauteile:
- | | | | |
|------|-----------|----|-----------|
| S12 | — 6 Stück | V | — 5 Stück |
| S 9 | — 4 " | K | — 18 " |
| S 6 | — 3 " | L | — 1 " |
| S4,5 | — 6 " | M3 | — 3 " |
| S 3 | — 8 " | M1 | — 10 " |
| S 1 | — 4 " | Mi | — 1 " |
| E | — 22 " | R | — 2 " |
| D | — 17 " | | |

PM 020 Roller

Typ: Piccolo

FIG.9

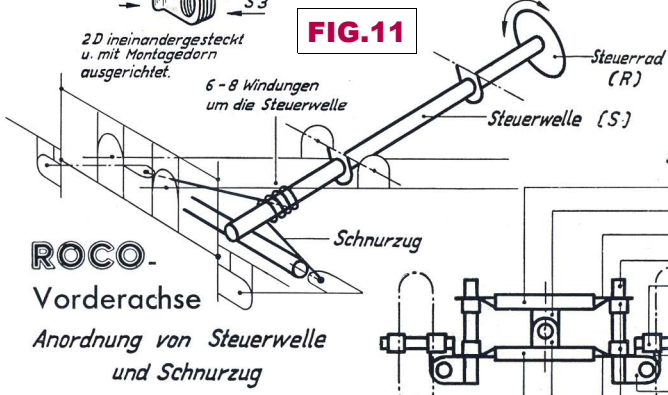
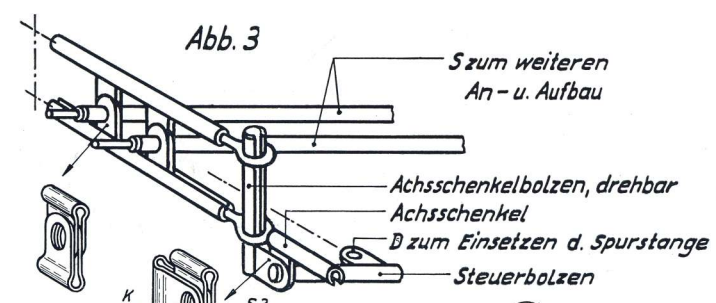


- Bauteile:
- | | |
|------|-----------|
| S12 | — 8 Stück |
| S 9 | — 4 " |
| S 6 | — 2 " |
| S4,5 | — 3 " |
| S 3 | — 6 " |
| S1,5 | — 1 " |
| S 1 | — 1 " |
| M1 | — 15 " |
| E | — 24 " |

- | | | | |
|---|--------|---|-------|
| D | — 10 " | R | — 4 " |
| V | — 4 " | B | — 2 " |
| K | — 20 " | | |

Typ: Boy

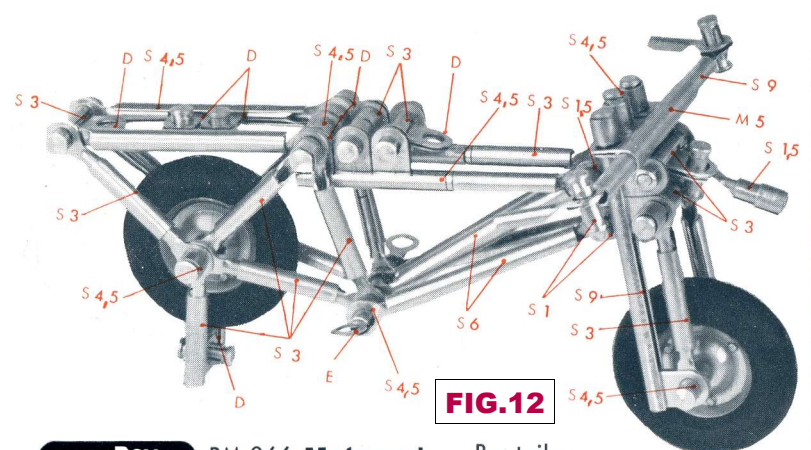
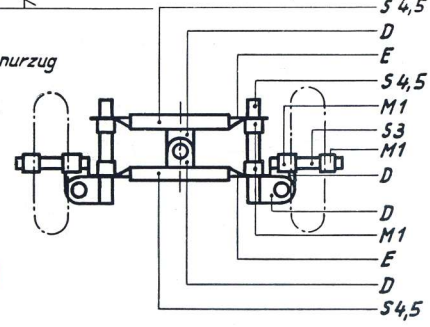
FIG.10



ROCO-
Vorderachse
Anordnung von Steuerwelle
und Schnurzug

ROCO

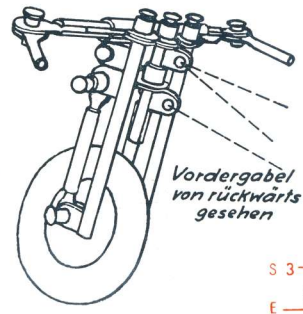
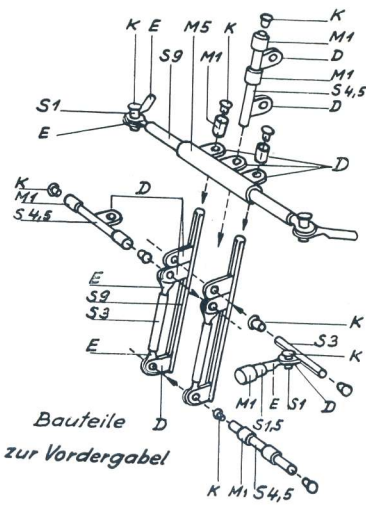
Abb. 1



Typ: **Boy** BM 066 **Motorrad**

Bauteile:

S 9 - 3 Stück	M 1 - 25 Stück
S 6 - 6 "	E - 43 "
S 4,5 - 11 "	D - 28 "
S 3 - 16 "	V - 2 "
S 1,5 - 1 "	K - 33 "
S 1 - 7 "	R - 2 "
M 5 - 1 "	

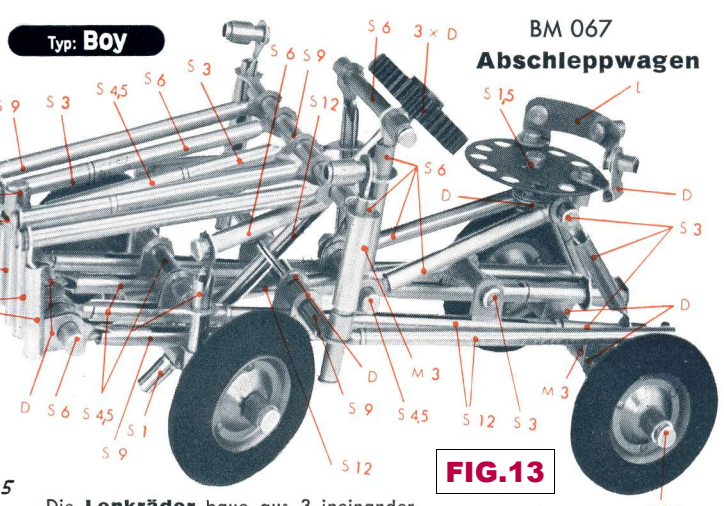


Bauteile:

S 12 - 10 Stück	M 5 - 2 Stück	Mi - 2 Stück
S 9 - 6 "	M 3 - 1 "	L - 4 "
S 6 - 10 "	M 1 - 25 "	LS 5 - 2 "
S 4,5 - 11 "	E - 31 "	R - 4 "
S 3 - 15 "	D - 25 "	Kb - 1 "
S 1,5 - 3 "	V - 15 "	
S 1 - 4 "	K - 33 "	

BM 065 **Abschleppkran**

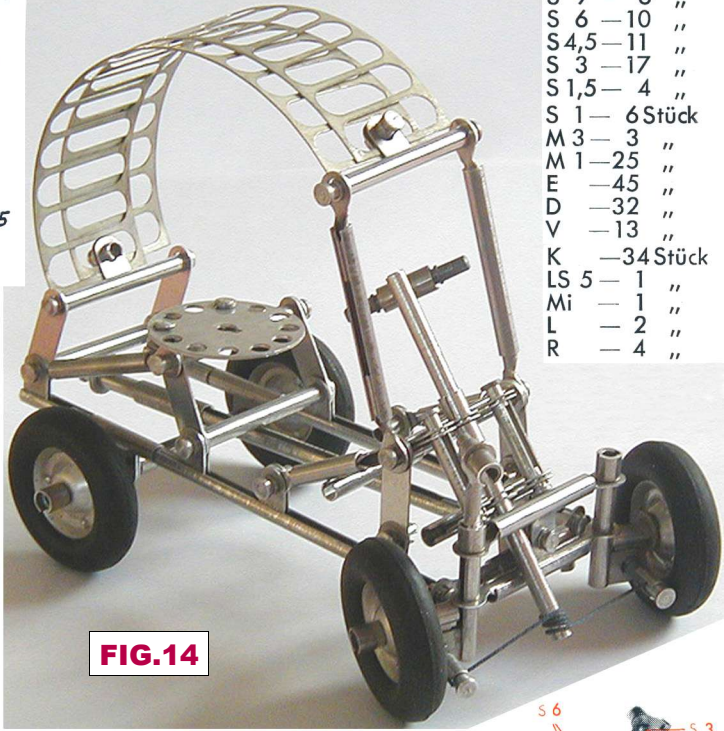
Typ: **Boy**



Die **Lenkräder** baue aus 3 ineinandergesteckte **Schiebeösen** „D“.
Bau der **Vorderachse** siehe übernächste Seite.

Bauteile:

S 12 - 7 Stück
S 9 - 6 "
S 6 - 10 "
S 4,5 - 11 "
S 3 - 17 "
S 1,5 - 4 "
S 1 - 6 Stück
M 3 - 3 "
M 1 - 25 "
E - 45 "
D - 32 "
V - 13 "
K - 34 Stück
LS 5 - 1 "
Mi - 1 "
L - 2 "
R - 4 "



Baue eine **einfache** Winde ohne Zahnräder ein und befestige die Kurbel daran, da die Z 2 und Z 4 im **Boy-Export** nicht enthalten sind.

POLYLONG & 'POLYLONG' – What's New?

POLYLONG As a year ago (44/1346) the Polylong website is no longer opening and although various Chinese outlets show one or two sets, many are marked 'not available' or 'discontinued'. So probably the company is defunct.

'POLYLONG' 10 new brand names have been spotted since OSN 44, as follows, with, in brackets, the countries in which the brand was seen.

- **AMUSED** (Poland).
 - **BUILD IT** (UK).
 - **COMBINED BLOCK** (Germany).
 - **DIY ALLOY SERIES** (New Zealand).
 - **MAGICAL MODEL** (UK, Australia, Argentina).
 - **MASTER** (Holland)
- The featured model was said to have a remotely controlled electric Motor.
- **MECH TECH** (UK).
 - **METAL** (Germany)
 - **METAL CONSTRUCTION SET** (New Zealand).
 - **TRONICO** (Germany)
- More on this one on the next page.

A representative photo of a box lid is shown right in alphabetical order for each (except TRONICO) but usually several different sets have been seen. It is noticeable that more of the models include coloured metal parts.

NEW MODELS Below and bottom right 3 of the new models that caught my eye. The Eiffel Tower is a BUILT-UP Toys set and has 314 parts (or in some ads 341). The model is said to be 50cm high at 1:400 scale, and the parts to be 95% alloy metal. They include a Screwdriver & a Spanner. With that number of parts perhaps many of them are Panels which bolt together, rather than individual Strips.

The 375 part Eagle below is another BUILT-UP outfit. There are other sets for an Elephant, and 2 Dinosaurs, but the plastic parts in those models look a trifle clumsy.

The box for the solar powered Wind Turbine (Fig.4) has not been



FIG.1



FIG.2



FIG.3

seen but the set is said to be from the German RCEE company, a name seen on the METALLBAUKASTEN/METAL KIT set in 41/1256. It has 557 parts and notice the square holes in them, as in another RCEE set noted in 42/1266. The pylon is

FIG.1

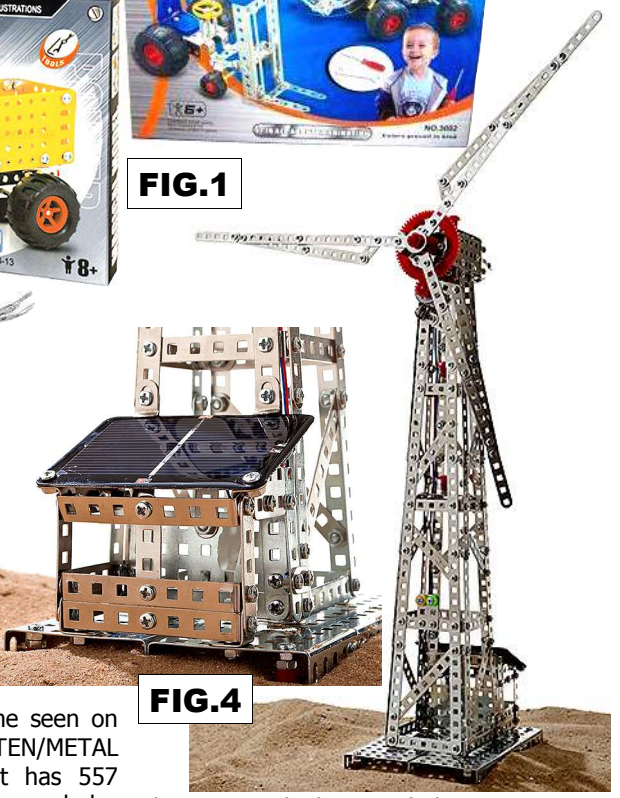


FIG.4

about 47cm high. I can't be sure but I don't think the turbine drives a pump or anything.

TRONICO RCEE is a Bremen company which has produced various 'POLYLONG' set in the past, and since last autumn has added the TRONICO brand to its range. It currently consists of 8 one-model sets with more promised. All the models can be seen at www.rcee.de – look for 'Tronico' on the home page. There is an English language option. The company is now seeking new partners to distribute their products worldwide.

3 of the models are Tractors, all rather similar to the one below, but with changes of detail, paint scheme, and transfers to represent the Claas Axion 850, the Fendt Vario 939, & Massey Ferguson 8690. The next 3 are the same models but fitted with a bucket, as below.

The 7th is the Krampe 650 Trailer in Fig.3. A grey, simpler 2-Wheel Trailer has also been seen on Ebay but isn't listed on



FIG.1



FIG.2



FIG.3

Loader, as on the Set's lid in Fig.1 above. It is 44cm long and has 1345 parts.

the RCEE website.

All the models so far are 1/16 scale, with the Tractor about 30cm long and having 1012 to 1077 parts according to version. The Trailer has 1455 parts and is 45cm long.

The final model is the 1/20 scale Liebherr Front Wheel

All the parts have the square holes as in other RCEE outfits. The lids of all the sets are similar in style to the Liebherr but none of the others are in English as well as German.

None of the models are motorised and they look to be mechanically simple: from the website photos the Tractor's front wheels are linked to steer, the front & rear of the Liebherr are articulated, and I presume the bucket can be moved, but I suspect that none of these movements are linked to controls, even the steering.

Postscript The model left was also attributed to Tronico but has only been seen on the UK Ebay. It was described as a Unimog at 1/16-scale.

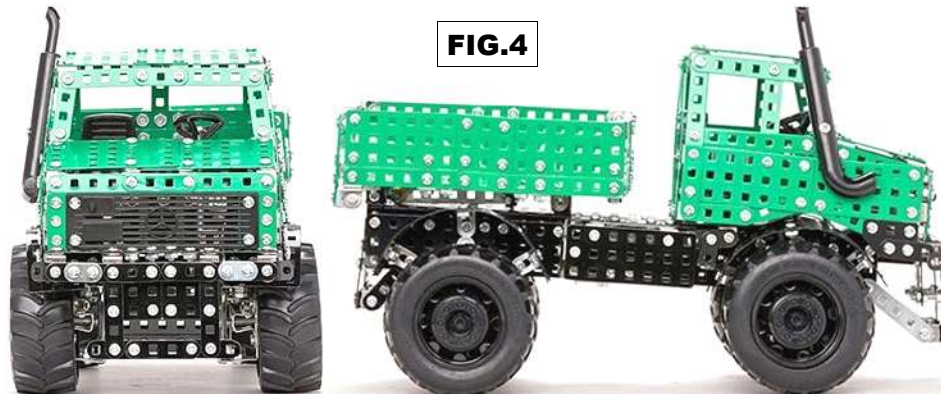


FIG.4

TRONICO: S1

OSN 46/1396



FIG.1

TECHNICA: New Indian System The set shown here (with the box plus manual below & the lid right) was seen on the U.S. Ebay. It was described as 'Anmal Technica' from Mumbai, with 342 parts, including a Motor & remote Controller. 60 models are claimed on the lid & manual. 'Anmal' is on the lid in small print above the 'T' in Technica. It is to the left of a Screwdriver/ Spanner/Gear logo, and an Anmal logo can be seen in the top right corner.

No clear connection can be seen between this system & TECNICA (see 22/624), also from Mumbai, or any other known Indian system. Except perhaps for the orange Hook (on top of the Controller) which looks like the MECHANIX part, and cutouts in the Trunnions which remind one of MR MECHANIX (both were made in Mumbai, see 15/409 & 22/625).

TECHNICA: S1

OSN 46/1396



FIG.2

A PAJTÁS SET A manual from this, probably 1960s, Hungarian system was described in 38/1145. In it the Flanged Plate looked like MÁRKLIN but the parts in the set to hand are not steel, the hole pitch is not 12.7mm, & the thread is not $\frac{5}{32}$ " BSW.

FIG.1



The Set is not complete but most of the main parts are present, and all of the inside sheets of the OSN 38 manual, but not their outer wrapper. There is no indication of its Set's size but from the contents it is almost certainly the larger No.2.

The only indication of the maker is the orange logo on the lid (Fig.1): Kecskemét is the town mentioned in OSN 38 and 'BFV' perhaps the company's initials, with possibly the FV standing for Finommechanikai-Vállalat, again see OSN 38.

The PARTS The different parts can be seen in the photo below (Fig.2). All, except the rod parts & the N&B, are a fairly soft, shiny aluminium alloy, mostly about 1mm thick. The holes are 4.2mm Ø at 13.0mm pitch, except only 12.8mm in the 5*11h Flanged Plate & 12.5mm in the 2h Strip. The only slotted holes, 6.8mm long, are in the Flanged Plate. The thread is M4. The bosses have recessed peening and are single-tapped. They, and the Collar, are 12.1mm Ø with a bore of 4.1mm.

Apart from the variations in pitch & burr on the ends of some of the Bolts, the parts are accurately & cleanly made, except that one end of many of the parts are quite rough (as can just be seen in the photo).

The various parts are listed below with comments as necessary & the actual quantities in the Set in curly brackets.

- **Strips**, 2,3,4,5,7,11h, 13.0mm wide. {6,2,2,8,3,7}
- **DAS** {2}
- **A/B**, typically 13.8*13.9mm o/a. {5}
- **Reversed A/B**. {4}
- **Plates**. • **Flanged 5*11h**; • **Flanged Sector** with only 3 holes across its bottom row; • **Triangular**, only 4h high {2,2,4}
- **Pulleys, Fast & Loose**, 24.0mm Ø, with bosses 13 & 6mm long. {4,2}
- **Rubber Ring**, 37½mm o.d. & 6¾mm wide when fitted to the Pulleys. {3}
- **Bush Wheel**, 37.0mm Ø. {2}
- **Axles**, 50, 90mm long, & • **Crank Handle**, 116mm long o/a. All steel, 4.0mm Ø. {1,1,1}
- **Collar**, 6.8mm long. {1}
- **N&B**, nickelled steel. • **Nut**, hexagonal, pressed, 6.8mm A/F, 3.2mm thick. {26}
- **Bolt**, roundheaded, 6.6-6.8mm Ø, 12½mm u/h {27}
- There were also 2 each of plain steel cheeseheaded Bolts, 6.2mm Ø, & 11¾, 5¾mm u/h. Foreigners probably but the shorter ones were in bosses, perhaps because one of the nickelled Bolts would have protruded outside the Pulley.

• **Other parts** As found the Set did not contain the 1*3*1h DAS, D/B, 1*2h A/B, & Screwed Rods that were mentioned in OSN 38 as possible parts used in the manual models. Looking at the models again, alternative parts could have easily been used in most but not all of them. For example the 5h DAS could replace the 3h in the Twin Arc Lights (Fig.3), but considerable changes would have been needed to replace the Screwed Rods in the Drying Rack (Fig.4).

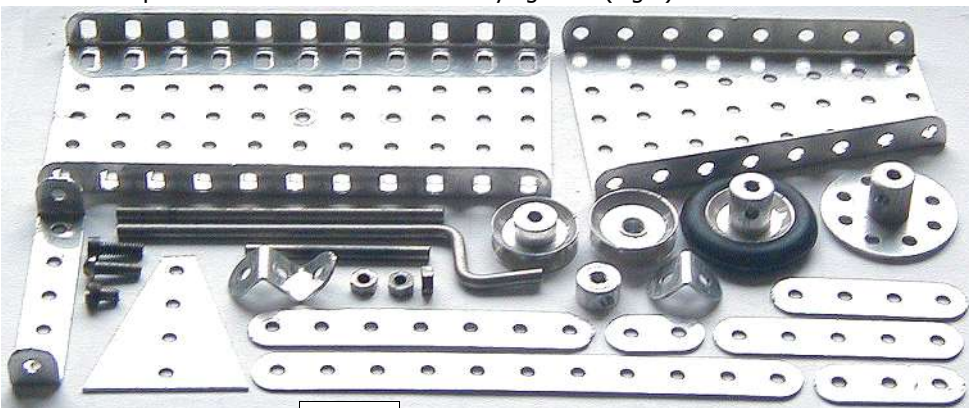


FIG.2

A Google search yielded 2 other PAJTÁS sets on an Hungarian auction site, www.vatera.hu, both incomplete but in the same box as the present one. Neither contained any of the 'extra' parts above but both had a Double Bent Strip, and one a 2h high D/B. The bosses in one set were only about 9mm Ø.

The SET The box, 21½*31*2½cm, is red with a label (Fig.1) which

Szárítóállvány

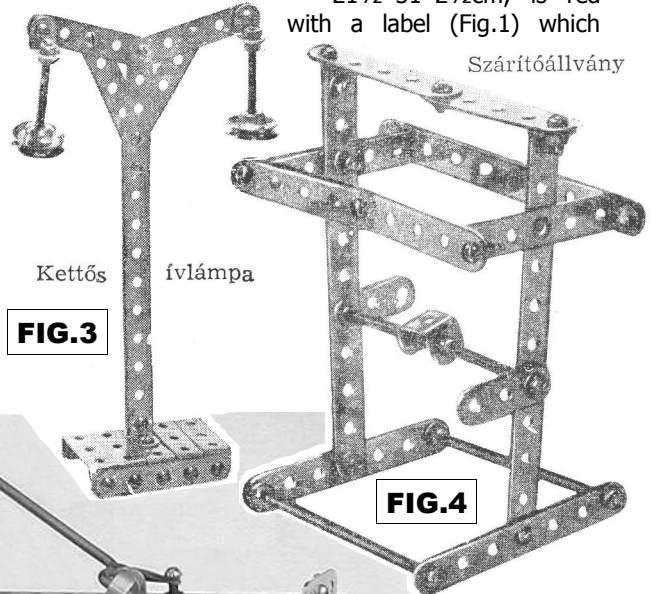


FIG.3

FIG.4

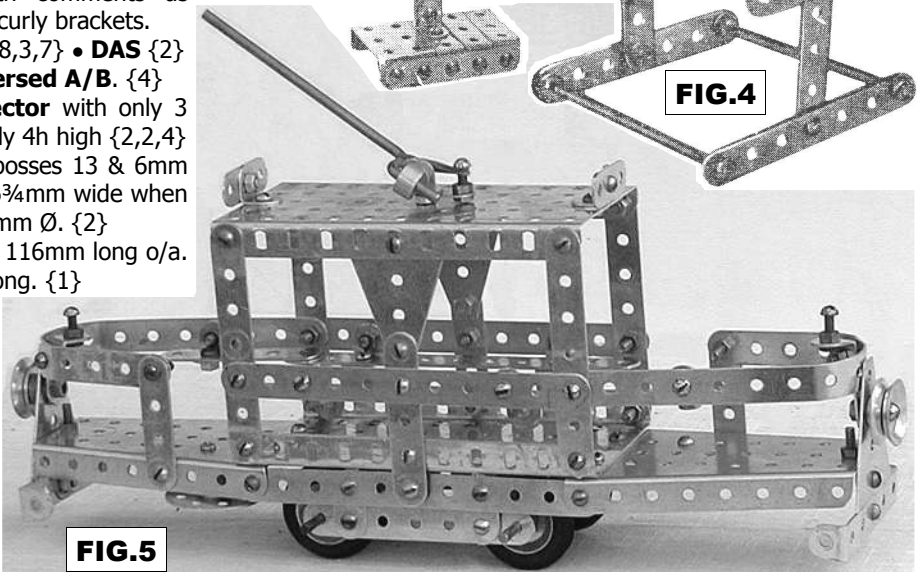


FIG.5

covers the lid. The inside is white with red-capped partitioning to give 4 rows of 3,3,5,2 bays.

The manual cover in one of the Vatera sets is identical to the one in OSN 38, but in the other it has a circle in the bottom left corner. It is blank but could have housed a set number.

USING the PARTS I started to make the Tram shown in OSN 38 but, using all the parts in the Set, plus a few substitutes for those obviously missing, & some extra N&B, it ended up as the Seaside Tram above. A few holes had to be opened out a little to compensate for the variation in the hole pitch, but apart from that, & filing the burr off the ends of some Bolts, the only problem was the inconvenience of the over long Bolts in corners.

The STABA TELEFON Sets Jurgen Kahfeld has kindly sent some details of the two, hitherto unrecorded, Telefon sets, H1 & H2, including scans of all the manual pages. The H1 has parts to make the Telephone shown on the box label right, and H2 has twice the number of parts to make a pair. The name Ernst Groß o.H.G. (o.H.G. = partnership) on the label (and the manual cover) was not among the various makers listed in the review of STABA sets in 31/925. All those firms were in Erfurt, and Sömmerda is some 20km to its north. Probably Groß just produced the Telefon sets. From the Manual's PR, Jurgen's set dates from 1954, and at that time the other STABA sets were being made by Hörselejau. The range of sets listed in the 'H' manual is: A, B, C, F, G, H1, H2, Liliput, R1, R2, R3, T.

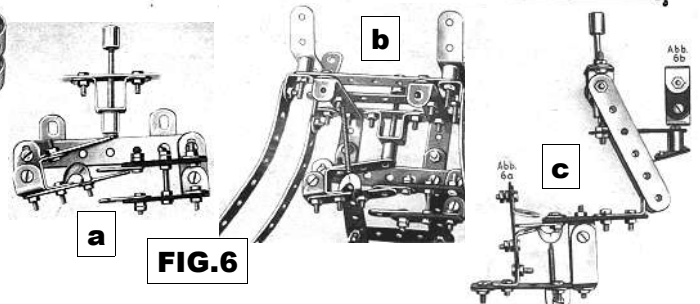
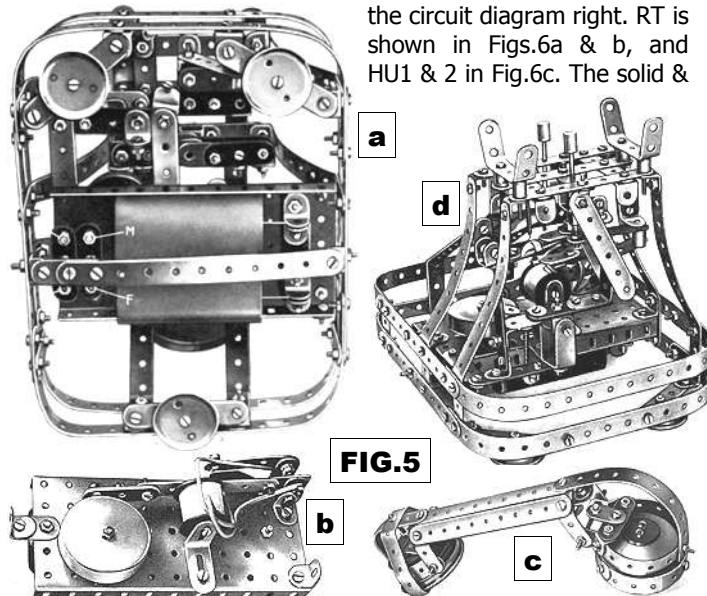
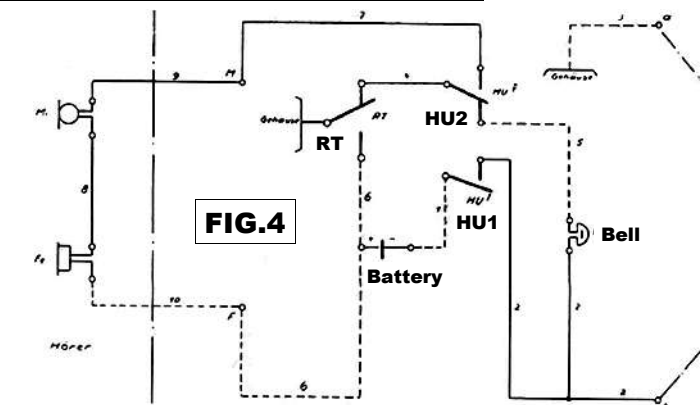
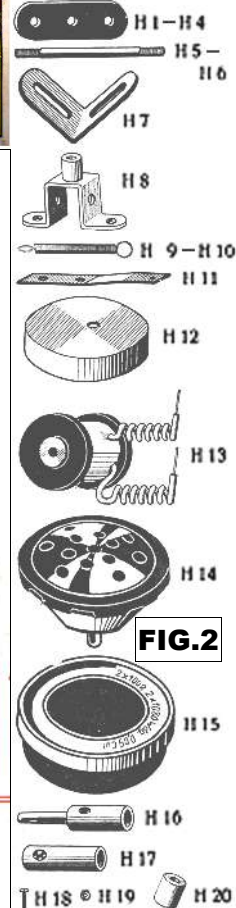
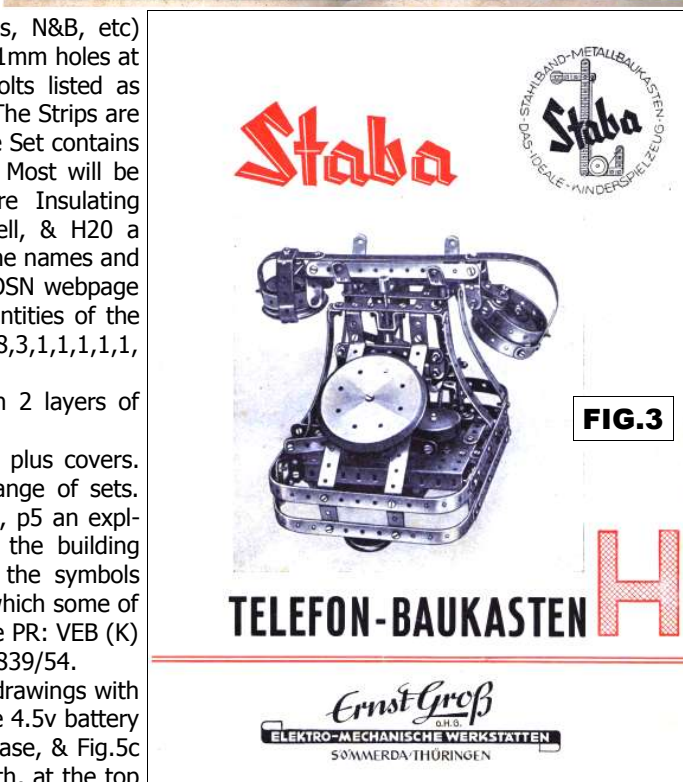
The PARTS These are listed in the Manual with their quantities. There are 25 standard parts (Strips, Brackets, Pulley Discs, N&B, etc) from other STABA Sets (A, B, C, & G), with 3.1mm holes at 12.0mm pitch, and M3 N&B (one of the Bolts listed as #A20, a brass M3x8mm, may be a 'special'). The Strips are 11.95mm wide & 1.2mm thick. In addition the Set contains the 20 special parts shown far right (Fig.2). Most will be obvious from the illustrations but H1-4 are Insulating Strips, H11 is a Springy Contact, H12 a Bell, & H20 a Spacer. Note also the M2 N&B, #H18 & 19. The names and quantities of all the parts are shown on the OSN webpage (click on Other System Material) but the quantities of the 'H' parts in Set H1 are, from H1 to H20: 2,3,8,3,1,1,1,1,1,1,1,1,1,2,2,1,1,4.

SET H2 is in a box 430*310*56mm with 2 layers of parts. The label measures 345*245mm.

The MANUAL, in German, has 16 pages plus covers. The front is shown right and C2 lists the range of sets. pp1-4 have the Illustrated Parts/Set Contents, p5 an explanation of how a telephone works, pp6-13 the building instructions, p14 circuit diagrams, and p15 the symbols used in them. p16 & C3 show the shapes to which some of the Strips have to be bent, and C4 has just the PR: VEB (K) Buch- und Werbedruck, Saalfeld V/15/31 Rs 3839/54.

The instructions include 9 photos & 3 line drawings with lengthy written explanations. Fig.5a shows the 4.5v battery mounted under the bell unit (Fig.5b) in the base, & Fig.5c the handset. Fig.5d is the back of the unit with, at the top between the cradles, 2 Rods headed by Threaded Sleeves. When depressed they operate the switches to ring the bell & bring the handset into circuit. These are RT and HU1 & 2 respectively in the circuit diagram right. RT is shown in Figs.6a & b, and HU1 & 2 in Fig.6c. The solid &

dashed lines in Fig.4 denote different coloured wires, & the chain dotted lines on the right side are wires to link 2 units together (their circuit diagrams are mirror images). As far as I can see the 'dial' on the front is just decoration. A boy given the H1 set might have been disappointed to find that all his Telefon could do was to ring its bell.



HAPPYNAK This simple constructional toy from 1914 had rolled tinplate Tubes which pushed into formed tinplate Joints with split sockets. These notes are based on the manual and the few remaining parts from a No.0 set (courtesy David Martin); details of patents & advertisements from David Hobson; the MCS pages which were I think the outside pages from a No.1 manual; British Tin Toys by Marguerite Fawdry; and photos, courtesy Mike Rhoades, of a few parts & manual pages like those in MCS. My thanks to all.



not specifically mention a constructional set among the list of its toys.

The PATENT It was No.9150 and the date of application, with a provisional specification, was 11th April, 1914. A further provisional specification, No. 18584, dated 12th Aug., 1914, was followed by a (considerably redrafted) complete specification 3 days later on 15th Aug. It

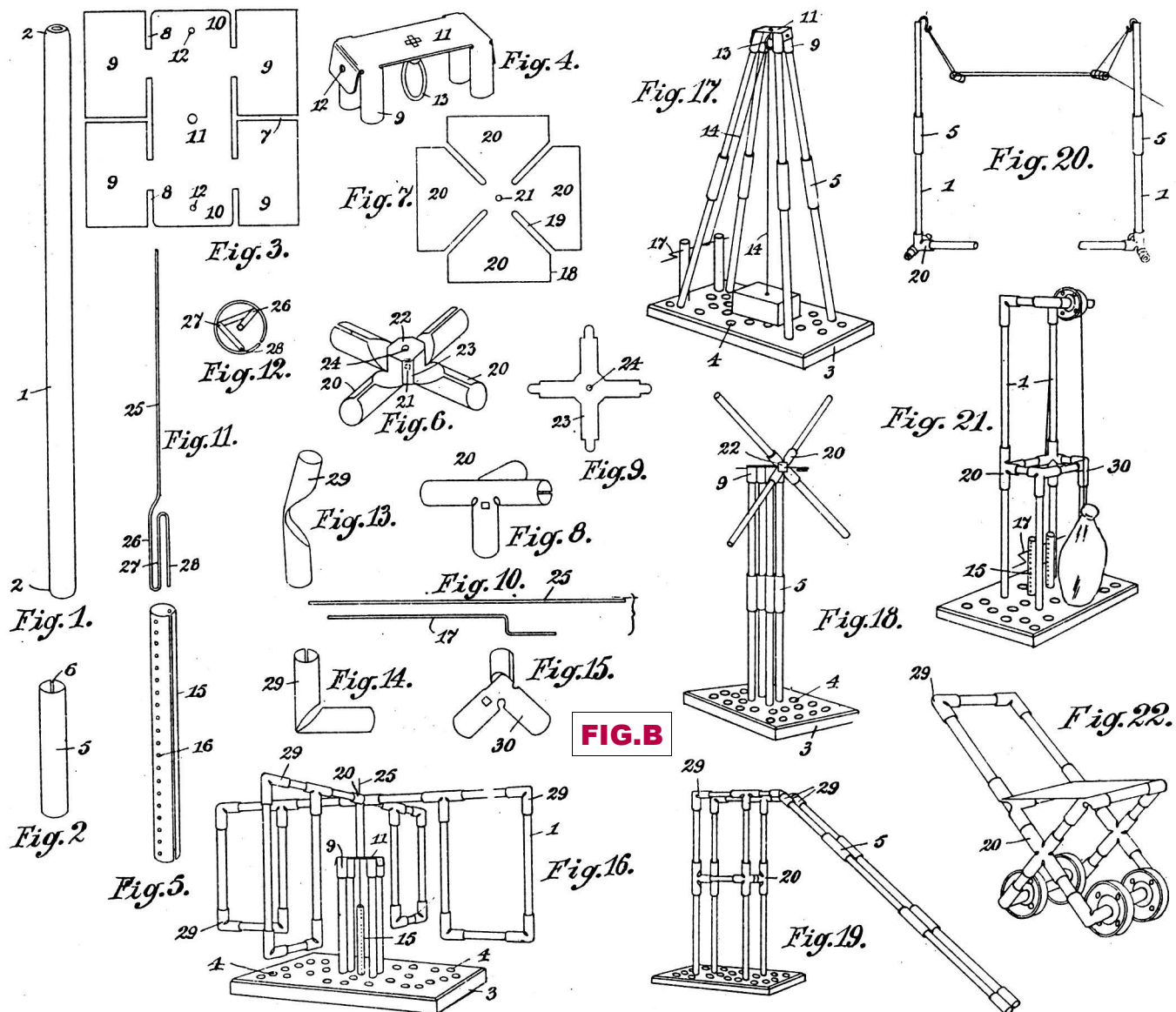
HISTORY HAPPYNAK constructional sets were produced by a Liverpool company called The Matchless Metal Polish Co., in a factory opposite Meccano's in Binns Road. It was one of a range of toys sold under the Happynak trade mark. The company was originally called Paton, Calvert & Co.; the name was changed in 1901, and then changed back again in 1919. Tin Toys gives HAPPYNAK's launch date as 1915 but shows an advert which was actually from Oct. 1914. The company name on it is Paton, Calvert & Co. and that disagrees with the chronology above. HAPPYNAK was advertised throughout 1915 and then a Jan. 1916 ad announced that it was hoped to resume production of Happynak toys after the war. No end date is known but sets were still being made in 1922. A list of the Company's exhibits at the 1929 British Industries Fair does

was accepted (as No.9150) on 4th Feb., 1915.

All the specifications were in the name of Joseph Davenport Bruce of 67 Heathfield Road, Wavertree, Liverpool, manager for James Wallace Paton of Binns Road. It is noted on the provisional specifications that James Wallace Paton was temporarily in Canada at the time.

The figures in the Patent are shown below in Fig.B, with Figs.1-15 showing various elements of the system, and Figs.16-21 some models made from them.

Earlier patents (No.3937 of 1913 by John David Roland of Mosely, Birmingham, and No.1430 of 1914 by John Thomas Lawrence of Houndsditch, London) had described frameworks made from metal rods or tubes pushed into flexible split or solid tubular sockets, and so the claims in the HAPPYNAK



patent relate only to specific parts. These are cardboard Tubes; the joints in Figs.4 & 6 of Fig.B; the Perforated Tube in Fig.5; and the Supporting Rod in Figs.11 & 12.

The Tubes (Fig.1) were to be made of cardboard by winding paper to which adhesive had been applied, and with, for preference, slightly bevelled ends to allow easier insertion into the Joints.

A wooden Base with vertical and angled holes could be used to ground the Tubes in suitable models.

The Joints were to have 2, 3 or 4 split sockets and be made of metal, tinplate for example, flexible enough to allow the sockets to be bent to different angles and springy enough to grip the Tubes. The Joint in Fig.2 is to join Tubes end-to-end, and other Joints are shown in Figs.4, 6, 8, & 13-15. Fig.7 is the blank for the basic 4-socket Joint in Fig.6, which can be bent to make Fig.8 etc. Also by adding a boss (from Fig.9 by bending the arms to form a cup, and then bending the tab ends of the arms to 'clip onto' the gaps between the sockets 20) a bearing for a Rod is provided by holes 21 & 24.

Fig.3 is the blank from which Fig.4 is pressed with holes 12 to journal a Rod, & a hole 11 to attach a ring. This part could provide a top anchoring point for Tubes grounded in the Base.

Fig.5 is the Perforated Tube with holes right through to provide bearings for the wire Rods, etc. shown in Fig.10. Finally Figs.11 & 12 show the wire Supporting Rod which pushes into Tubes with an end protruding to form a shaft for a rotating structure, as in Fig.16 for example.

The models show the use of the various parts, with the Cord in the Fig.17 Hoist passing through the ring of the Fig.4 Joint. Fig.20 is a Wireless Telegraph aerial with the horizontal cords passing through a Perforated Tube at each end. The Patent makes no mention of the Pulley Wheels used in some of the models, nor the seat in Fig.22.

In the first provisional specification the cardboard tubes were to have their ends fitted with a metallic ferrule or sleeve. And Rods made of wood or other cheap material could be used instead of the cardboard tubes. Also pulleys were mentioned, and pieces of card, wood, & fabric, suitably coloured if desired, were envisaged, though it wasn't said how these would be attached.

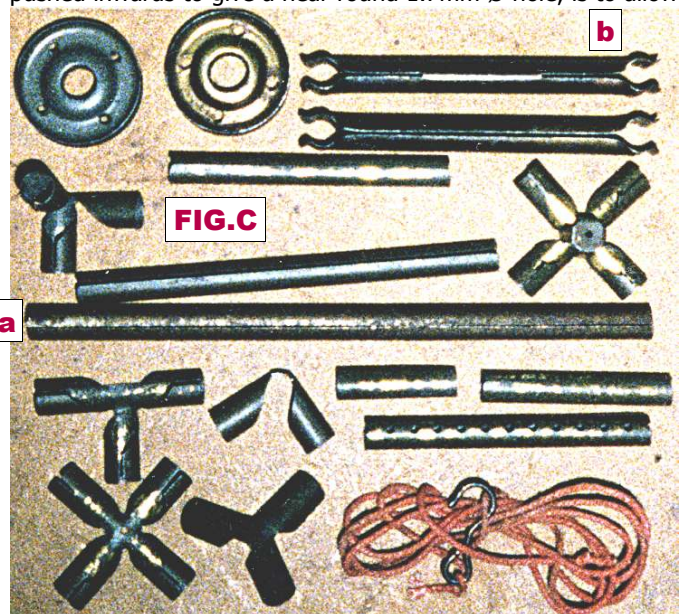
The PARTS Steel Tubes were used instead of the cardboard ones in the Patent, but otherwise, with the few exceptions to be mentioned, the parts match those in the Patent. Figs.D below is the Illustrated Parts from MCS and Fig.C right the No.1 parts (plus 3 KLIPTIKO parts for comparison: the Tube, 'a', & the 2 Tubes with clip ends at 'b'). The

No.0 parts to hand are in less good condition but traces of their original brassed finish can still be seen. In Fig.D the starred parts are said not to be in Set 1, and as Sets 0-3 are mentioned on another page it could be assumed that all the system's parts are shown. However 2 sizes of both the Rod & the Perforated Tube are among the parts listed on another page, and details of these are given in the notes which follow.

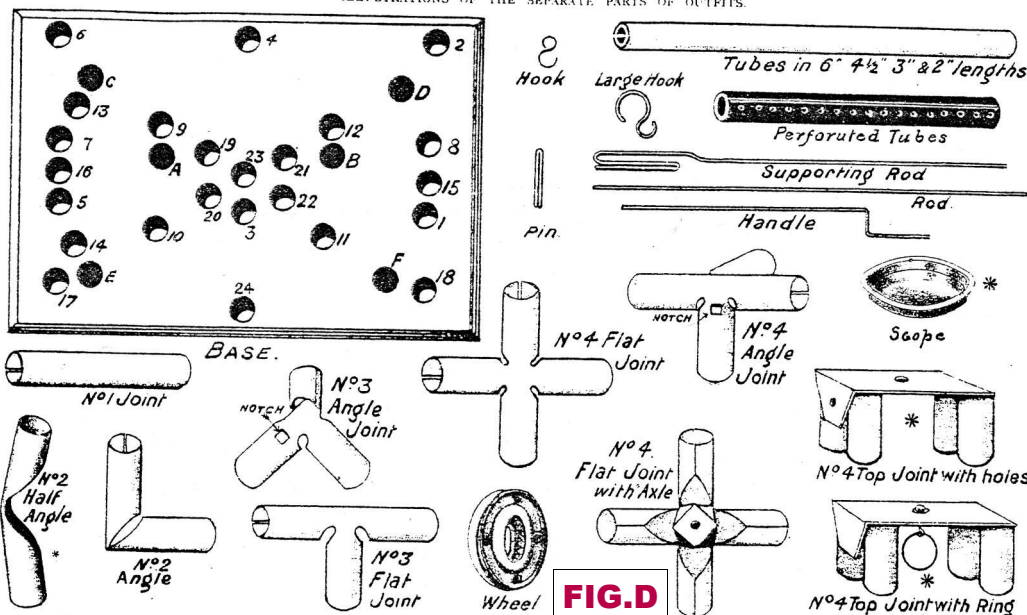
Tubes. They are rolled from .012" sheet with a gap of 1mm or a little more. The gap has to be squeezed to near zero to push them into the Joints and then their diameter is about 8.4mm. Some of the Tubes in the No.0 parts are printed in colour on their inside in a pattern which looks to be Union Jacks – probably army surplus material from the war. The Tubes slide inside KLIPTIKO parts.

Perforated Tubes, 3 & 4½" long, with 2mm holes through both side walls at ¼" pitch. So 11 in the 3" and 17 in the 4½", plus half holes at each end.

Joints. They are formed from .020" thick steel and are about 9½mm Ø with a gap similar to the Tubes. No.1 is 1¼" long. The others are as shown except that the No.4 Flat has a 1.9mm centre hole. The No.4 Joint with Axle is among the parts in Fig.C. The Fig.4 Joint in the Patent became two actual No.4 Top Joints, one 'with holes' (to journal a Rod) and the other 'with Ring'. One Top Joint forms the radiator of the Tower Wagon in Fig.N. The notch in some parts, a circular tab pushed inwards to give a near round 1.7mm Ø hole, is to allow



ILLUSTRATIONS OF THE SEPARATE PARTS OF OUTFITS.



* Not included in the No. 1 Set.

THE USER SHOULD BECOME QUITE FAMILIAR WITH THE VARIOUS PARTS BEFORE COMMENCING TO BUILD.

them to 'always be kept on the same side' so that the Tubes will line up one with another.

Base. Not seen but no doubt wooden. The straight holes are lettered; the angled ones numbered.

Wheel. A pulley which scales at 2" Ø.

Handle, Rods 6 & 3", and Supporting Rod. Not seen.

Hooks. The ones in Figs.I & K look to be the small part, and the large version is probably the one above in Fig.C. This type may also be holding the tops of the Cord jib stays in Figs.I & M.

Lynch Pin. Not seen. It would pass through a Perforated Rod used as an

axle to prevent a Wheel falling off.

Scope. Not seen. It is used in Fig.J as a scale pan.

Card Parts. Not seen. The No.0 instructions say 'The CARD SEATS, etc, are made by cutting out of the Tray in box as marked'.

The SETS By Jan. 1915 Sets 0 & 3 had been added to the Nos.1 & 2 advertised in 1914. All four sets are mentioned in both the No.0 & No.1 manuals, and 15, 20, 45, & 75 models were claimed for them.

The parts used in the No.0 models are: 8,8,4,4 for the 2,3,4½,6" Tubes; 3x 3" Perforated Tubes; Joints: 2x #1, 8,4,2x #2,3,4 Flat, 4,2x #3,4 Angle; 1 Wheel; 1 Handle; 1 Small & 2 Large Hooks; 2 Pins; String; various card parts.

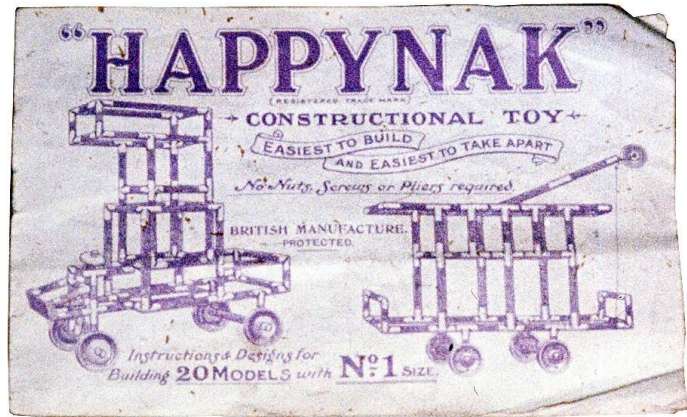
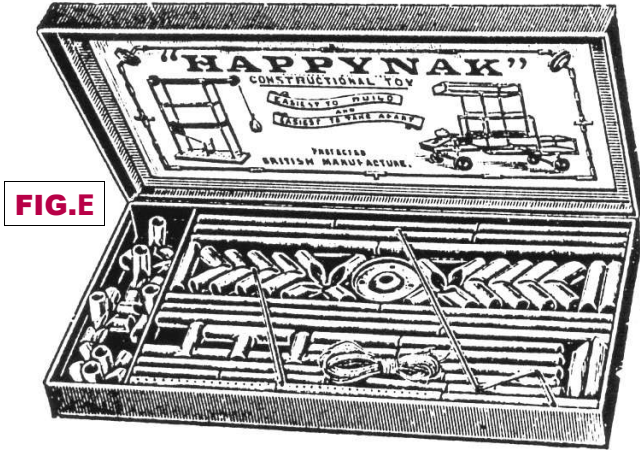
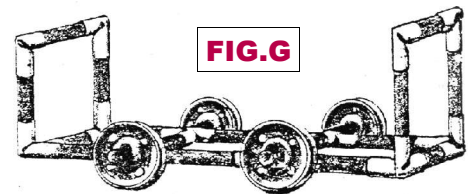


FIG.F The outer cover of the No.1 is shown above and measures about 8¾*5¾". The inside covers are, in

order, the Illustrated Parts in Fig.D, and the Instructions. The latter mentions Card Seats, etc but with no reference to cutting them from the packaging. The back page shows 5 models that can be made from Set 2: the one in Fig.17 of the Patent, the Mobile Crane in Fig.M, and 3 simple Hand Trucks – the one above and two with 2 Wheels. I wonder why it was thought that they would attract interest in the No.2 Set.



The No.1 included all the parts except the Scope, Supporting Rod, and the following Joints: #2 Half Angle, #4 Top with Ring, & #4 Top with Holes. Only 1 Wheel is used in the few models seen.

All that can be said of the larger sets is that the No.2 had at least 5 Wheels, 2 Scopes, & a #4 Top Joint with Ring. No models larger than the Tram in Fig.K and the Tower Wagon in Fig.N are shown in any of the material to hand and they each require perhaps 50 Joints, against the 20 needed for the No.0 models.

The only illustration of a set is the one above taken from a 1922 advertisement: it might be a No.0, or slightly more likely, a No.1.

The MANUALS Both are printed in purple. The No.0 is a single sheet folded in two to give 4 sides 277*218mm, and then folded in two again, no doubt to fit into the box. The top half of the front is shown in Fig.A. Below it came the 'INSTRUCTIONS': a list of the different parts; get to know the parts and place on one side those needed before starting to build; and a note about the 'notch'. Along the bottom, a 6" scale.

The inner pages show the 15 models from GARDEN SEAT to COUCH. There is a shaded line drawing of each with most of the parts labelled and a list of those required. 3 of the models are slightly simplified versions of the Figs.20-22 models in the Patent. Most of the rest are furniture items or similar, plus a Goal Post, a Rugby Goal Post, and the 3 models in Fig.H right (full-size but rearranged).

The back page shows 5 models that can be made from the larger sets, as on the facing page. The Chair-O-Planes & Crane are for Set 1, the Mobile Crane & Scales for Set 2, and the Tramcar for Set 3. The other model (Fig.N) is taken from the 1914 advertisement, and may be for Set.3. The steering wheel is a part not seen or mentioned elsewhere.

USING THE PARTS The parts to hand had a good selection of Tubes but very few Joints, and none of the small Pins, Hooks, etc. I was therefore only able to make a small model, a much simplified version of the Hoist below using a substitute Pulley. Despite being somewhat battered the parts fitted together reasonably easily, and the Joints gripped the

WAREHOUSE HOIST
Parts Required.

4-6 inch Tubes	6 No. 2 Angle Joint
7-3 " " "	4 No. 3 " " "
6-2 " " "	2 No. 4 " " "
1 Wheel	1 Handle
3-3 inch Perforated Tubes	1 Small Hook
String	4 No. 3 Flat Joints
	2 No. 1 Joints

See note re notch.
Bag not included in this Set.

PLATFORM.
Parts Required.

2-4½ inch Tubes.
8-3 " " "
4 No. 2 Angle Joints.
4 No. 3 " " "

LUCCAGE TRUCK.
Parts Required.

2-6 inch Tubes.
4-3 " " "
5-2 " " "
1-3 " " Perforated Tube.
2 No. 2 Angle Joint.
2 No. 3 " " "
2 No. 3 Flat Joints.
2 No. 4 Angle " " "
1 Wheel.
2 Pins.
1 Card Rest

See note re notch

Rods firmly. The resulting framework was more rigid than I'd expected. But among the parts were 4 sockets which had broken off Joints at the 6mm wide neck, due no doubt to excessive bending and straightening. So this may have been a weak point and the metal used, while springy enough to grip the Tubes really well could not withstand too much bending.

REMARKS Presumably HAPPYNAK was intended to be a cheap product, so how did it compare with KLIPTIKO, a slightly more elaborate system which had appeared a little before it (see 44/1339). In Jan.1915 HAPPYNAK Sets 1-4 cost 1/-, 1/6, 3/-, & 5/-. No KLIPTIKO prices are available for 1915 but in 1917 the cheapest, No.0, outfit was 2/-. But prices in general had increased by that time, the smallest MECCANO, the No.0, from 3/- in 1914 to 5/- in 1916. So perhaps the KLIPTIKO No.0 fell between the HAPPYNAK No.0 & No.1. Both the No.0's had only one Pulley and although the HAPPYNAK manual has 15 No.0 models against 7 for the KLIPTIKO, the latter were in the main appreciably larger and more interesting.

More generally, my impression is that HAPPYNAK was a little slower to assemble than KLIPTIKO, but frameworks were more rigid. Other HAPPYNAK pluses were the Base, an easy place to start building for young modellers, and the Crank Handle, much superior to the expedients needed in KLIPTIKO models. On the minus side the HAPPYNAK Instructions were less helpful than KLIPTIKO's. They didn't for example

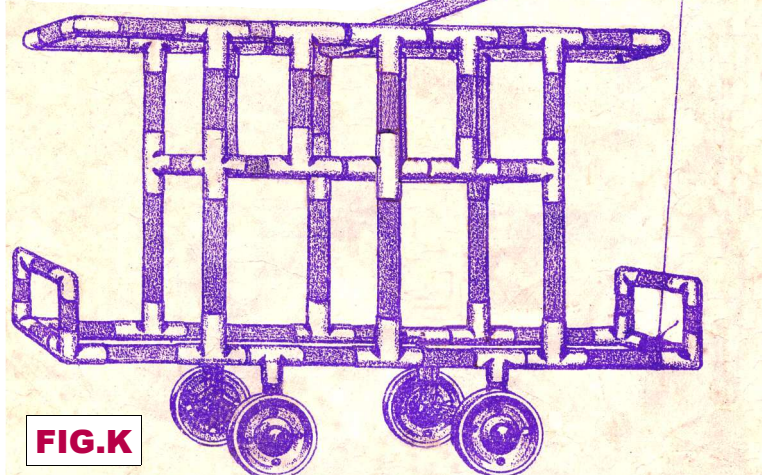


FIG.K

mention the latter's method of joining Tubes in-line (by pushing one into the slit in the other and twisting) though it works perfectly well with the HAPPYNAK parts.

The limited quantity of HAPPYNAK that turns up may not be that significant as a pointer to its popularity when it was on the market: I don't recall seeing any small KLIPTIKO sets even though KLIPTIKO carried on well into the 1930s.

Perhaps KLIPTIKO outlasted HAPPYNAK because it 'sold itself' better with large, interesting models to aspire to, and, unlike Meccano's Blocksetter, they could be made from the larger sets. And later the coloured parts were introduced and the presentation of the sets and manuals updated.

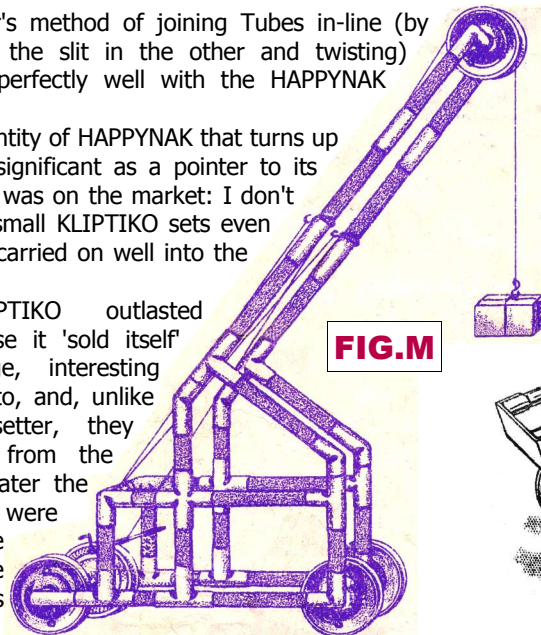


FIG.M

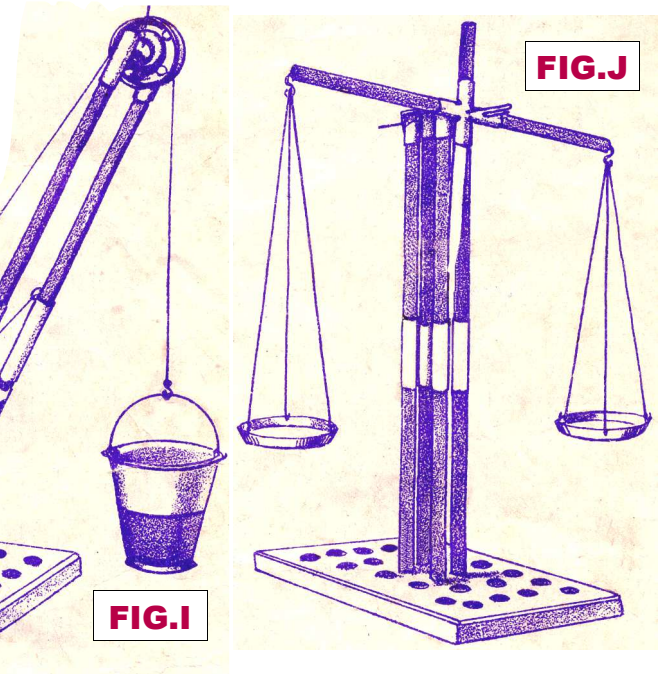


FIG.I

FIG.J

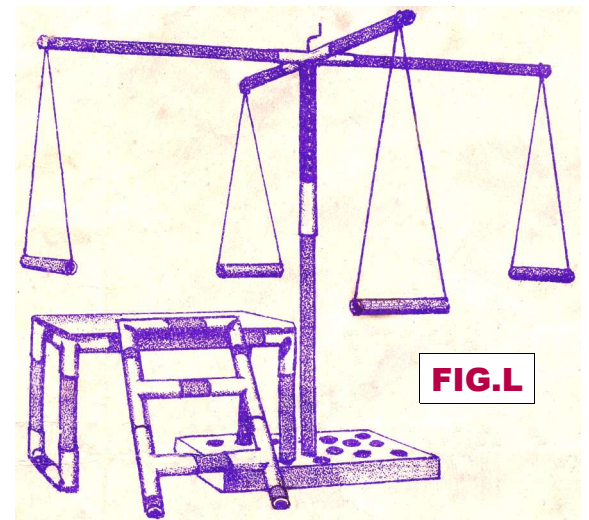


FIG.L

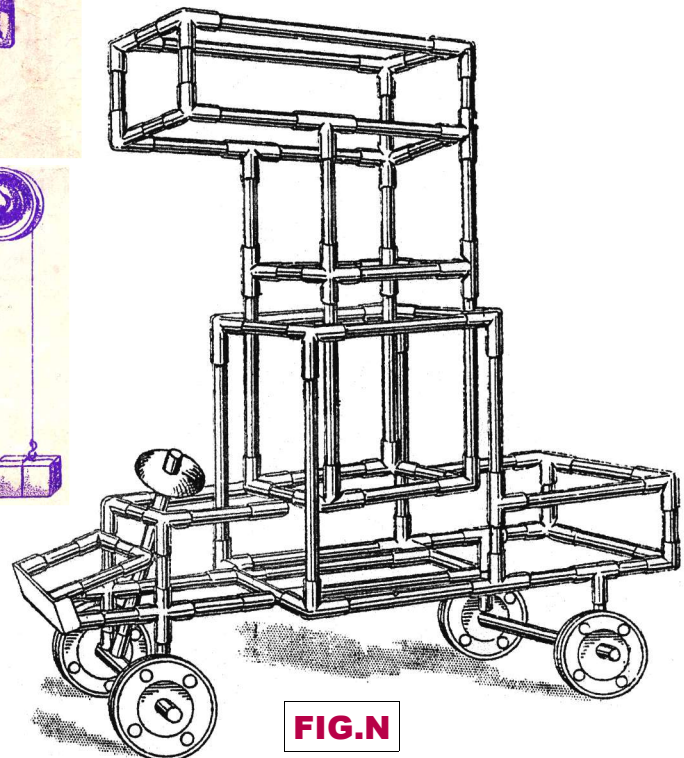


FIG.N

- Striscie a foratura semplice**
- 101 - 2 fori 109 - 10 fori
 - 102 - 3 » 110 - 11 »
 - 103 - 4 » 111 - 12 »
 - 104 - 5 » 112 - 13 fori
 - 105 - 6 fori 113 - 15 »
 - 106 - 7 » 114 - 18 »
 - 107 - 8 » 115 - 21 fori
 - 108 - 9 » 116 - 25 »
 - 117 - 30 »

- Striscie a foratura doppia**
- 118 - 2 coppie di fori
 - 119 - 3 » » »
 - 120 - 4 » » »
 - 121 - 5 » » »
 - 122 - 6 » » »
 - 123 - 7 » » »
 - 124 - 8 » » »
 - 125 - 9 coppie di fori
 - 126 - 10 » » »
 - 127 - 12 » » »
 - 128 - 15 » » »
 - 129 - 18 coppie di fori
 - 130 - 21 » » »
 - 131 - 25 » » »
 - 132 - 30 » » »

- Angolari semplici**
- 133 - 2 coppie di fori
 - 134 - 3 coppie fori
 - 135 - 4 » » »
 - 136 - 5 » » »
 - 137 - 7 coppie fori
 - 138 - 9 » » »
 - 139 - 12 » » »
 - 140 - 15 coppie di fori
 - 141 - 18 » » »
 - 142 - 21 » » »
 - 143 - 25 » » »
 - 144 - 30 coppie di fori
 - 145 - 65 » » »
 - 146 - 40 » » »
 - 147 - 45 » » »

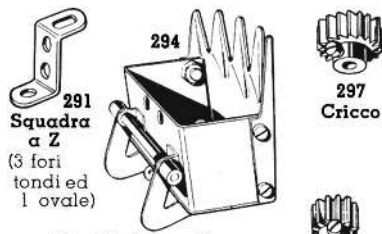
- Angolari doppi**
- 148 - 3 terne fori
 - 149 - 5 » » »
 - 150 - 7 » » »
 - 151 - 9 » » »
 - 152 - 12 » » »
 - 153 - 15 » » »
 - 154 - 20 terne fori
 - 155 - 25 » » »
 - 156 - 30 » » »
 - 157 - 35 » » »
 - 158 - 40 » » »
 - 159 - 45 » » »

- 160 Piastrina a due fori
- 161 Supporto piatto
- 162 Piastrina curva a fori tondi
- 163 Piastrina curva a fori tondi ed ovali
- 164 Piastrina triangolare
- 184 Ciminiera

- 165 Piastrina a squadra
- 166 Piastrina piegata mm. 73 x 37
- 167 - Piastrina piegata mm. 61 x 25
- 168 Piastrina piegata mm. 61 x 37
- 169 Piastrina piegata mm. 85 x 13
- 170 Piastrina piegata mm. 61 x 13
- 171 - Piastrina piegata mm. 133 x 15
- 172 Angolare mm. 25 x 25
- 173 Squadra doppia mm. 20 x 18
- 174 - Squadra semplice mm. 12 x 13
- 175 Squadra a Z
- 176 Piastrina piegata mm. 16 x 30
- 177 - Piastrina piegata mm. 15 x 13
- 178 - Piastrina piegata mm. 9 x 26
- 179 Piastrina piegata mm. (9 + 3) x 12
- 180 Supporto a squadra
- 181 Manovella a squadra con mozzo
- 182 Manovella semplice con mozzo
- 183 Piastrina con mozzo
- 185 Mozzo con guida
- 186 Asse con manovella semplice
- 187 Albero a gomito semplice
- 188 Albero a gomito doppio mm. 135
- 189 Albero a gomito doppio mm. 195
- 190 - Giunto largo
- 191 - Giunto cardanico
- 192 Giunto semplice
- 193 Pala d'elica larga
- 194 Pala d'elica stretta
- 195 Nottolino con mozzo
- 196 Nottolino doppio con mozzo
- 197 - Eccentrico
- 198 Ponticello a 5 fori
- 199 - Disco con mozzo diam. mm. 60
- 200 - Idem diam. mm. 34
- 201 - Carrucola diam. mm. 16
- 202 - Carrucola diam. mm. 25
- 203 - Carrucola con mozzo diam. mm. 25
- 204 - Carrucola con mozzo diam. mm. 38
- 205 - Carrucola con mozzo diam. mm. 50
- 206 Fuleggia con mozzo diam. mm. 75
- 207 Carrucola diam. mm. 25
- 208 Carrucola con mozzo diam. mm. 25
- 209 Fuleggia con mozzo diam. mm. 38
- 210 Fuleggia con mozzo diam. mm. 50
- 211 Ruota con bordino diam. mm. 20
- 212 Ruota con bordino diam. mm. 30
- 213 Volante diam. mm. 78
- 214 - Pneumatico diam. mm. 43
- 216 - Pneumatico diam. mm. 73
- 220 Fermoaglio
- 221 Ghiera a molla d'arresto
- 222 Giunto cilindrico per alberi
- 223 Giunto con esagono per alberi
- 224 Giunto cilindrico per alberi
- 225 Giunto con esagono per alberi
- 226 - Chiave per dadi
- 227 Cacciavite l = 125 mm.
- 228 Cacciavite l = 170 mm.
- 229 Cerniera
- 230 Ponticello a 7 fori
- 231 Carrucola a 3 gole
- 232 Vite senza file
- 233 Grifa

- 235 Pala per molino
- 236 Piastra forata mm. 132 x 60
- 237 Piastra forata mm. 60 x 60
- 238 Piastra piegata mm. 85 x 60 x 13
- 239 Piastrina piegata mm. 25 x 36 x 13
- 240 - Fondello della caldaia
- 241 - Mantello della caldaia mm. 148 x 108
- 242 Piattaforma rettangolare mm. 132 x 60 x 13
- 243 Piattaforma con cava mm. 132 x 60 x 13
- 244 - Ruota imbottita con mozzo
- 244 b - Ruota imbottita con foro centrale
- 245 - Traliccio tipo A l = mm. 96
- 248 - » » » » 144
- 249 - » » » » 180
- 250 - » » » » 252
- 251 - » » » » 300
- 253 - Traliccio tipo B l = mm. 96
- 255 - » » » » 144
- 256 - » » » » 180
- 257 - » » » » 252
- 258 - » » » » 300
- 260 Carrucola con mozzo diam. mm. 16
- 261 Carrucola con mozzo diam. mm. 16
- 262 Gancio
- 263 Squadretta piana
- 264 Squadretta piegata
- 265 - Settore
- 266 Manovella a contrappeso
- 267 Camme
- 268 Camme
- 269 Ruota per ventilatore diam. mm. 50
- 270 Manovella
- 271 Piastrina a 9 fori a croce
- 272 Piastrina a 9 fori piegata
- 273 Piastrina a 9 fori a croce
- 274 - Piastrina a 9 fori piegata
- 275 Piastrina a 6 fori a T
- 276 Piastrina a 6 fori a T piegata
- 277 Piastrina a 5 fori a croce
- 278 Piastrina a 5 fori piegata a T
- 279 Piastrina a 6 fori a T
- 280 Piastrina a 6 fori a T piegata
- 281 Piastrina a 9 fori a doppio T
- 282 Squadretta piegata (destra)
- 283 Squadretta piegata (sinistra)
- 284 Giunto semplice per piastrina
- 285 Cacciavite con impugnatura lungh. mm. 160
- 286 Cacciavite con impugnatura lungh. mm. 170
- 287 Piastrina piegata mm. 48 x 13
- 288 Piastrina piegata mm. 48 x 13
- 289 Ruota per ventilatore diam. mm. 50
- 290 Piastrina triangolare con cava

FIG.1A



291 Squadra a Z (3 fori tondi ed 1 ovale)

294 Cucchiaia per Draga

297 Cricco

298 - Pignone - 19 denti
 299 - » - 25 »
 300 - » - 30 »

301 - Ruota dentata diam. mm. 38 - 57 denti
 302 - Idem. diam. mm. 34 - 51 denti
 303 - » - 30.7 - 46 »

304 - Ruota dentata a corona diam. mm. 38
 305 - Pignone a corona diam. mm. 19

307 Tazza per elevatore
 309 Maglia senza orecchiette

310 Ruota dentata per catena Vuacanson 11 denti
 311 Idem - 23 denti
 312 Idem - 46 denti

314 - Cremagliera - 53 denti
 315 - » - 89 »

316 Alberino diam. mm. 4 x 20
 317 » » » 4 x 30
 318 » » » 4 x 40
 319 » » » 4 x 50
 320 » » » 4 x 65
 321 » » » 4 x 70

322 Alberino diam. mm. 4 x 90
 323 » » » 4 x 115
 324 » » » 4 x 130
 325 » » » 4 x 150
 326 » » » 4 x 200
 327 » » » 4 x 300

332 Ruota conica 48 denti
 334 Ruota conica 38 denti
 335 Supporto per vite senza fine

336 - Catena Vuacanson di trasmissione (metri 1)

337 - Vite a testa cilindrica l = mm. 5
 338 - Idem l = » 7
 339 - Idem l = » 9
 340 - Idem l = » 12
 341 - Idem l = » 15
 341/B - idem, senza testa l = » 7

342 - Dado esagonale
 344 - Ranella per detto
 349 - Corda di trasmissione (metri 4)

345 Ruota dentata per catena a maglie scomponibili

346 Traliccio

347 Piastra curva
 348 - Molla a spirale cilindrica

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

350 Taglia semplice (montata)
 351 Taglia doppia (montata)
 352 Taglia tripla (montata)

LEONARDO by Jacques Pitrat



parts indicated.

'Costruzioni Leonardo' was made in Italy just after WW2 by Giocattoli Elettro Meccanici Minuterie Affini (G.E.M.M.A.), via G. Borgazzi, 4, Monza. The logo of the firm, above, is the letter 'G' inscribed in a pentagon. The manual with the set to hand was printed in 1946. Little has been known of LEONARDO until now: there is a short entry based on a leaflet in MCS, brief mentions in OSN 15/426 & 16/446, plus, in 42/1272, a picture of the largest set, & one of a motor sold on eBay. This account is based on a lightly used Gamma set, its manual, & some model sheets with it.

The system comprised five sets: Alpha, Beta, Gamma, Delta, & Epsilon. There were no connecting sets but the manual mentions the possibility of buying supplementary parts, so one could upgrade one's set. Nowhere is the price of the sets or of the separate

One could roughly define the 5 sets as large 1929 MECCANO sets completed with some MÄRKLIN parts. But though most of the parts look like MECCANO or MÄRKLIN they are not compatible with them because their hole pitch is only 12.0mm.

The PARTS The Illustrated Parts in the manual is shown, in condensed form, in Figs.1A & 1B. In the original the lengths of parts 101-159 were given but all are simply the number of holes multiplied by 12mm. Many of the actual parts can be seen in the photos of the set below. There are so many parts that I cannot describe all of them, so I will only highlight some characteristics of the system.

The diameter of the holes is 4.3mm, and as already noted, the pitch is 12.0 mm. The thread is M4 and the bosses are double-tapped. Bolts are cheeseheaded, & the Nuts are hexagonal: one type is 2.0mm thick, the other 3.3mm. Axles are 4.0mm diameter. The Gears are about Mod .65, virtually the MECCANO value. The pitch of the Sprocket Chain is about 5mm, a

FIG.2

FIG.3

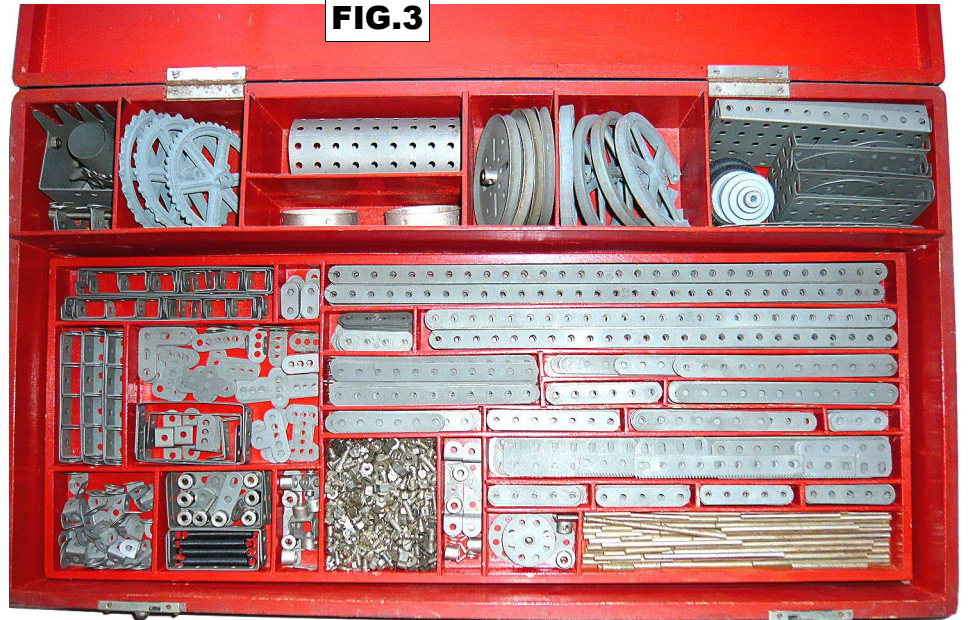


FIG.4

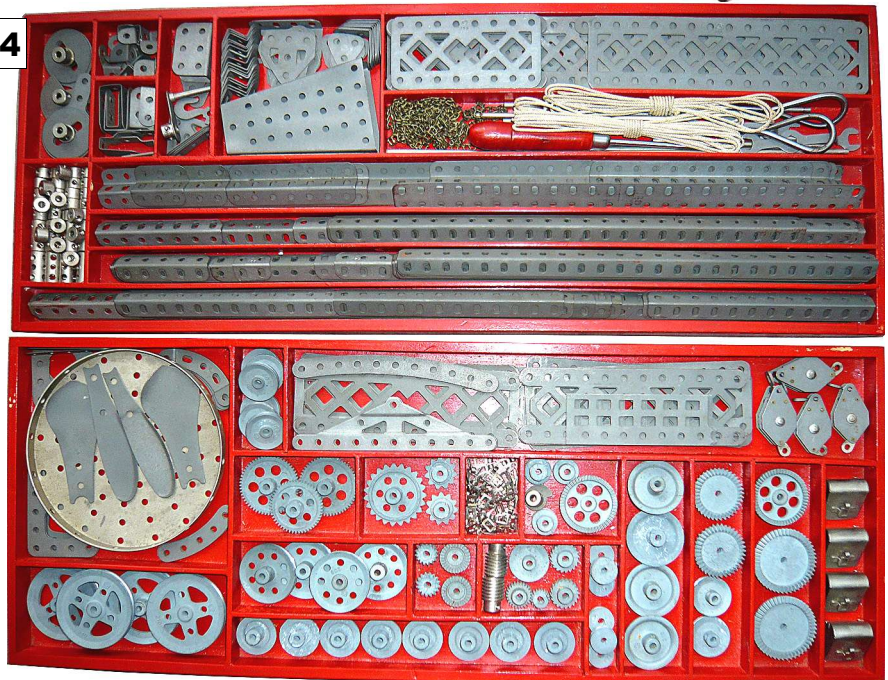


FIG.1B

little greater than the MECCANO value.

According to the manual the Strips, Girders, & Plates are 'acciaio inossidabile' (printed in bold), stainless steel, but treated to have a grey appearance – to make the models look more realistic perhaps. Some other parts such as the Bush Wheel, the 3" Pulley, the Face Plate, the Cranks, the Bearings; the Forks, the Cam, etc. are also steel but with a brass boss. The Couplings, Collars, & the Worm are brass. All the parts are very well made, and look like new, without rust, screw marks, or tarnish. A few parts are stamped with the 'G' logo & the PN. It is difficult to understand why some parts are stamped and others are not. For instance the 8h Braced Girder with closed ends is stamped while the 8h Braced Girder with open ends isn't.

The makers probably also wanted to have brass Pulleys, Pinions, Bevels, & Wheels: the Crane on the manual cover has brass Wheels & Pulleys. But as copper was scarce at the time, they were obliged to find a substitute and these parts were cast using what is probably a lead alloy. Antimony was often added to lead to increase its hardness. All these parts are marked with the 'G' logo & their PN, and the quality of these marks is excellent, as good as printed characters. So it is possible that the alloy includes tin, as in type alloys; tin is harder and tougher than lead, and it promotes the fluidity of the molten metal. The appearance of these parts is excellent, the teeth of the Pinions & Bevels are as good as those in MECCANO, cut from brass. However this alloy has two severe drawbacks. Firstly, if it is hard, it is fragile. In my set, one Artillery Wheel and one Pinion are broken. Secondly, just as there is a well known zinc pest, there is also a lead pest due to impurities in the alloy. Some parts are still immaculate, but many have serious damage. They have white patches which indicate a change in the composition of the alloy, or they have marks & cracks; in the worst cases, they have begun to disintegrate. It would be impossible now to use most of these parts in a working model, they would not bear the stress. The solution chosen by Meccano France at the same time was much better: the normally brass Pinions, Bevels, Gears, Worm, & Ratchet Wheel were made of an aluminium alloy, and are still in a perfect condition.

Though most of the parts look like MECCANO, this does not mean that they are in the sets in the same number as in the corresponding MECCANO outfits: there is no compatibility of the models. Moreover, the number of holes is not always the same: LEONARDO favours even numbers. For instance, there are 8, 10, 12, 18, & 30 hole Strips & Flat Girders; 12, 18, 30, & 40 hole Angle Girders, and 8 & 12 hole Braced Girders.

To maintain the symmetry of the ends of the Braced Girders with an even number of holes they have a curious opening in the centre, as right.

Conversely, many parts with an odd number of holes are not represented in the LEONARDO system: there are plenty of 11h Strips, but no 11h Flat, Angle, or Braced Girders (although a non-existent 11h long part was used to illustrate the Braced Girders in the manual!).

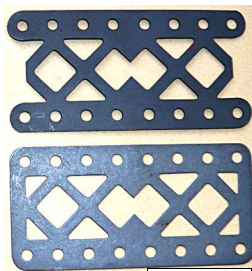


FIG.5

If we list all the number of holes that are represented for at least for one kind of Strip or Girder, we have the following sequence: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 18, 20, 21, 25, 30, 35, 40, 45.

In some cases, the parts are slightly different to the equivalent MECCANO part, for instance, the Corner Angle Bracket has no oval hole. It also happens that some parts are very different, such as the Eccentric, where the LEONARDO solution is better since it is not limited to only three values for the stroke.

One oddity of the LEONARDO system is that it has two versions of a few MECCANO parts. Thus one Propeller Blade is

the large 1909 form, the other the more realistic 1927 shape. One 11*5h Flanged Plate has no end flanges, the other has them and also the slot & slit for the Saw. One Pawl is the 1921 two-headed type with boss, the other the modern form. The wider 1914 Double Bracket coexists with the narrower 1917 one. And all the Braced Girders exist with closed & open ends (and each set has exactly the same number of of each type).

Some Meccano parts have not been reproduced; among those missing are the Electrical parts, the Loom parts, the Train parts, the Screwed Rods, the large circular parts, and naturally all the parts that appeared after 1928. However, many rare parts such as the Ship's Funnel, the Octagonal Coupling, the Hinge, the Dredger Bucket, the Fan, the Cone Pulley, and the Digger Bucket, are present. Moreover, LEONARDO sets include six MECCANO parts that were never in the MECCANO sets: the three Pulley Blocks, the Crane Grab, the Girder Frame, & the Right Flanged Bracket (the Left one was not included in LEONARDO).

Beside MECCANO parts, LEONARDO also has many reproductions from MÄRKLIN. They include (with the pre-WW2 MÄRKLIN/LEONARDO PNs): 7h Double Bent Strip (45a/230), Handle (62/270), Worm Housing (65/335), Wheel (67/244), Crankshaft, Double (99a/189), various Brackets (114-118/274-281, plus 273 which had no MÄRKLIN equivalent), Crank with Counterweight (122/166), Cam (123/268). Unlike the MECCANO parts, many of these did not exist in 1929.

LEONARDO also has three families of original parts. First, the Z-Girders with 12 sizes (#148-159) from 3 to 45 holes. A singularity in this sequence is that there are neither 18 nor 21h parts, but 20h ones, the only part 20 holes in length. Few of these parts are in the sets: none in the Alpha and up to 6 of each in the Epsilon. As can be seen right the part is unusual in the position of its slotted holes.

Two sizes of Flanged Discs exist in this system. They are different from the MECCANO & MÄRKLIN parts with only round holes and no other piercing of the face. The 130mm above has its face

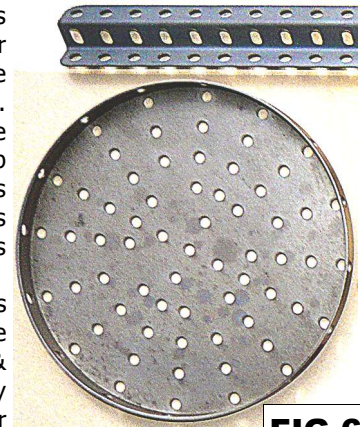


FIG.6

As in MECCANO & MÄRKLIN, LEONARDO includes a Dredger Bucket (#307) and it is shown right with its associated parts (plus a 3h Z-Girder to give scale). Instead of being fastened to a Sprocket Chain, it has a rectangular link with a hook spot welded to its underside, and this can be clipped into a chain made from similar Links, pitch approximately 9mm.

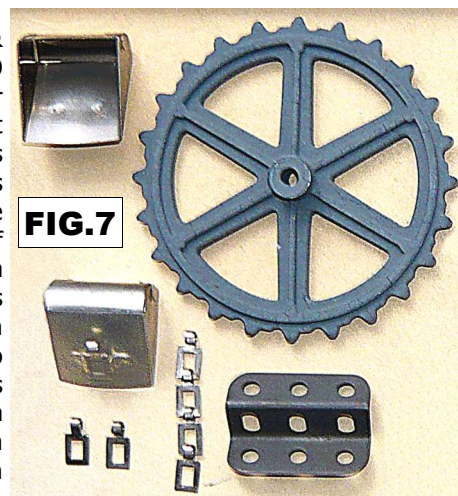


FIG.7

As these Links are larger than those of the Sprocket Chain a special Wheel (#345) with suitably spaced teeth is provided.

Finally, 29 parts appear in the contents of the sets with a number but without a description. They are probably parts that the authors of the system wanted to include in the sets, but were never realized because of lack of time or of manufacturing capacity. As the parts are numbered in a logical



FIG. 10

one from Set 6 (Scales, 6.39). The adaptations are well made, the model is sometimes presented from a clearer point of view, and the LEONARDO parts are shown truly when they differ from the MECCANO pattern. For example, two 11h Braced Girders are used in the MECCANO 'Try-Your-Strength Machine' (2.50). As they do not exist in the LEONARDO sets, they are replaced by 12h Braced Girders; moreover, as Alpha has only one with closed ends and one with open ends, the drawing shows one of each type, with their characteristic centre opening. See Fig.12. All in all, the Alpha models are satisfactory, although they are not very original, and larger and more intricate models could be built with this set. A more complicated Alpha model is shown below.

I have only one sheet which include models for sets Gamma & Delta. All four are Bridges and they are disappointing as, if we do not include the Nuts, Bolts, & Washers, they use only between 11 & 15 different types of part. This is rather few for sets with 200 different kinds of part, and one cannot say that the potential of these sets was well used. The 3 Gamma models represent one side of a Bridge, and the parts are given for building this side. Naturally one

explaining how to build it. Contrary to the standard mechanisms of the manual, MÄRKLIN parts are rarely used in the models: in only three in fact.

Most Alpha models are adapted from models in the 1929 or older MECCANO manuals for Sets 2, 3, 4, and there is even

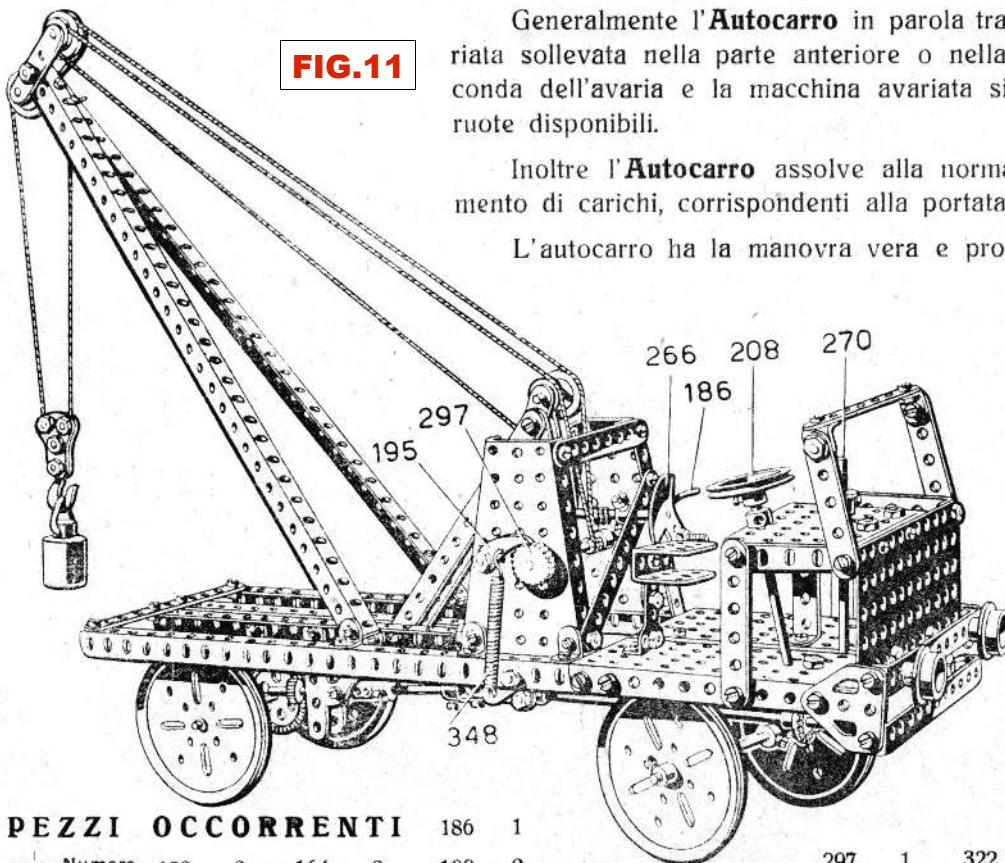
Costruzione realizzabile con le Scatole: Alfa - Beta - Gamma - Delta - Epsilon

Costruzione realizzabile con le Scatole: Alfa - Beta - Gamma - Delta - Epsilon

Mod. N. II - AUTOCARRO CON GRU

È un **Autocarro** particolarmente usato per i servizi di soccorso stradali e precisamente per recuperare e rimorchiare auto od autocarri che abbiano subito avarie per incidenti stradali e non siano più in grado nè di proseguire con mezzi propri, nè di essere rimorchiati da altre macchine.

FIG. 11



Generalmente l'**Autocarro** in parola trasporta la macchina avariata sollevata nella parte anteriore o nella parte posteriore a seconda dell'avaria e la macchina avariata si vale delle uniche due ruote disponibili.

Inoltre l'**Autocarro** assolve alla normale funzione di sollevamento di carichi, corrispondenti alla portata della gru.

L'autocarro ha la manovra vera e propria di guida, e le manovre inerenti al funzionamento della gru.

La prima è realizzata in maniera alquanto originale ed è meglio visibile nell'altra figura.

Il volante è rappresentato da una **puleggia con mozzo 208** sul quale è imperniato lo sterzo che all'estremità inferiore è collegato con un **disco 200** (vedi altra figura).

PEZZI OCCORRENTI		186	1	192	2	195	1	211	2	242	2	297	1	322	1	(vedi retro)	
Voce	Numero Pezzi	109	2	164	2	192	2	220	10	262	1	301	1	324	1	342	108
		110	2	166	1	195	1	221	8	263	2	304	1	326	1	343	13
101	5	111	2	168	1	200	1	224	2	265	2	305	1	337	125	344	1
102	4	134	1	170	1	201	2	236	1	266	1	317	2	338	10	348	1
103	2	136	1	171	2	206	4	238	1	270	1	318	1	340	2	Corda Metri 2.5	
104	8	143	4	174	10	207	2	239	1	275	2	320	1	341	2		
105	2	144	2	177	6	208	1										
107	2	161	2	178	1	209	1										

would want to build both sides but unfortunately the Gamma does not contain enough parts for that. The Delta Bridge is shown in Fig.13. I cannot really judge the models of the large sets with so few examples, I can only hope that I was unlucky in having only this particular sheet.

LEONARDO v. 1929 MECCANO etc The MECCANO part

Costruzione realizzabile con le Scatole:
Alfa - Beta - Gamma - Delta - Epsilon

Mod. N. 44
Misuratore di Forza

È un dispositivo che dà in modo relativo la misura della forza basandosi sul colpo che si impartisce su un disco predisposto allo scopo.

Il principio è semplice: per effetto del colpo dato al disco il movimento viene impresso ad una piccola carrucola che scorre verticalmente su due guide. L'altezza raggiunta da detta carrucola determina l'entità della forza.

Il dispositivo della leva è montato sul settore 265 di base, uguale a quello superiore indicato in figura.

Due supporti a squadra 180 sono montati su detto settore. Due striscie 110 abbinate all'altezza del terzo foro sono attraversate da un alberino 317 che è impernato nei due supporti 180 suddetti con interposizione di 3 ranelle 344 per parte, e fissato con due ghiera 220. Le due striscie 110 sono unite all'estremità esterna con due squadre 174 e libere all'estremità interna, e sorreggono una carrucola 201 che scorre fra le due striscie 117 verticali senza poterne uscire, per effetto della scanalatura della carrucolina.

Il pulsante è composto da un disco 200, un alberino 319 ed una ghiera 220 interna che poggia sulle due squadrette 174 della leva.

Colpendo il disco 200 il pulsante trasmette il colpo, mediante la leva interna, alla carrucola, imprimendole una certa velocità ascendente; a seconda della forza del colpo la carrucola raggiungerà una data altezza.

PEZZI	
Voce	Numero Pezzi
106	1
110	2
116	2
117	2
144	2
162	2
174	4
180	2
198	1
200	1
201	1
220	3
242	1
248	1
255	1
263	2
265	2
317	1
319	1
337	41
342	35
343	2
344	6

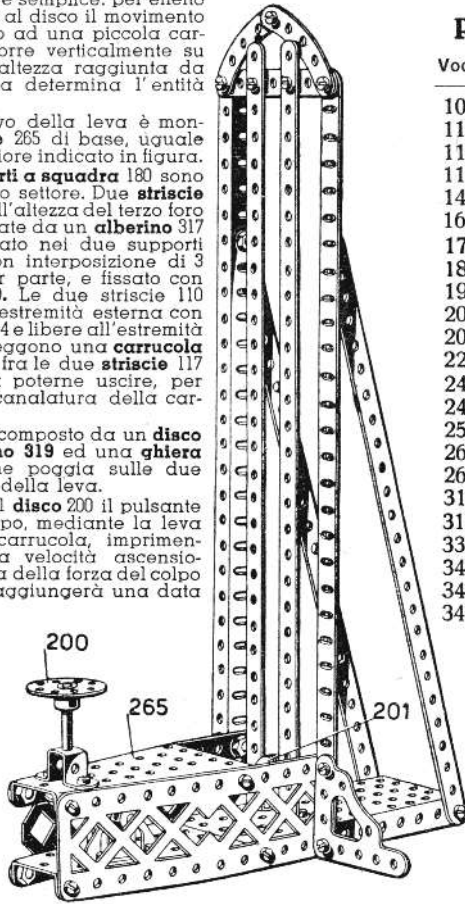


FIG.12

Mod. N. 21 - Ponte Ferroviario
con arco a 2 cerniere a spinta eliminata

N. b. - Costruzione realizzabile solo con i modelli « DELTA » ed « EPSILON ».

PEZZI OCCORRENTI

Voce	Numero Pezzi
104	4
106	4
107	4
108	8
115	4
116	30

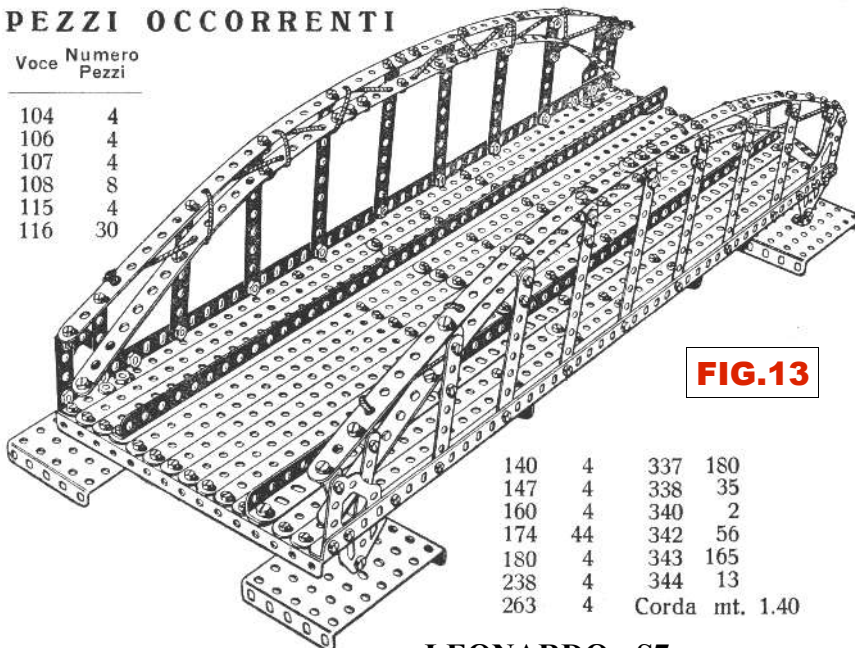


FIG.13

140	4	337	180
147	4	338	35
160	4	340	2
174	44	342	56
180	4	343	165
238	4	344	13
263	4	Corda	mt. 1.40

with the highest PN similar to a LEONARDO part is the Digger Bucket, #169; and as it is also the part with the highest PN in the 1929 MECCANO sets (except the electrical parts), it will be interesting to compare them with LEONARDO sets.

LEONARDO sets are very large. Georges Spinnler, then Professor of Mechanical Engineering at the Ecole Polytechnique Fédérale de Lausanne in Switzerland, devised a method for measuring the 'Potential' of construction sets assembled using Nuts & Bolts. He suggested $N*Z/1000$ where Z is the number of different types of part, and N the total number of parts (the 1000 is just to give a handy result). One never takes into account the Tools, Set Screws, Nuts, Washers, manuals, & instruction leaflets. The Potential for the 1929 MECCANO Sets 4-7 are 41, 64, 160, & 464, while the Potential for Sets Alpha, Beta, Gamma, Delta, & Epsilon are 61, 125, 248, 391, & 493. Thus the Potential of the smallest set Alpha is almost the Potential of the MECCANO No.5, while Gamma is much higher than the No.6, and Epsilon higher than the No.7. Other manufacturers have made sets with a high Potential, but lower than Epsilon; for instance the value for the FAC X2 is 382, while the ERECTOR set with the highest Potential is the 1931 No.10 set, the Climax of Erector Glory, but it only rates 437. (Automat has very large sets, but their Potential is difficult to evaluate because it is not clear whether one has to take account of some, none, or all of their many very small parts: spacers, rollers, links, & circlips). Before WW2, the set with the highest Potential was the Meccano's 'L' outfit with 490, so LEONARDO matched this record (which was also almost equalled by C.I.G.E.A., another Italian system, with 481 for its Set H). It was only surpassed in 1962 with the 512 of the MECCANO No.10. But if only one of each of the LEONARDO 'unknown' parts (those numbered but not named or produced) had been included in the Epsilon outfit the Potential of the Set would have risen to at least 566, greater by far than any set ever made. In fairness though it should be added that Spinnler has pointed out that the Potential of the sets in some systems do not reflect the Potential of the system itself because many of the parts are not included in the sets. MÄRKLIN suffers thus, and especially STOKYS which includes only 94 of its 280 parts in its largest outfit.

REMARKS It is very surprising that such large sets appeared in Italy just after WW2. Both the French & the Italian industry had been severely damaged by the war and at the time the highest set produced by Meccano France was the No.7 with an Potential of 42, less than the Alpha, the smallest LEONARDO outfit.

These huge LEONARDO sets have a very high potential with their large quantities of (mostly) well chosen parts. Most of the parts are not very original, they are essentially reproductions of MECCANO & MÄRKLIN. They were very well made, and still look as new; however, due to the scarcity of copper, the alloy chosen for casting many of the Wheels & Gears produced pieces which are fragile & subject to a pest destroying some of them.

It would be certainly possible to build very interesting models with the sets, but I am not sure that those devised by the maker fully use the system's potential.

On the whole, I admire the maker who succeeded in producing one of the largest metal construction system ever made at a time when many difficulties must have been hard to overcome. Unfortunately, it does not seem that LEONARDO was a commercial success: the sets are very rare.

Snippets. More on AUKI This account is based a number of sets seen on Ebay & elsewhere since the last note on this 44-part, post-WW2 German system in 28/818, plus information kindly supplied by Joachim Kleindienst. He also gave permission to reproduce images from his website www.baukastensammler.de (Figs.2, 4, & 7). In passing, the site has good photos & other information on a variety of German sets and is well worth a visit.

Some of the AUKI parts resemble STABIL but the hole pitch is 12.0mm. There were 3 main sets: Nr.1, 2, & 3, plus linking sets 1a, & 2a. It is now known that the main parts were aluminium and that eventually each set was also available with the aluminium parts coloured, perhaps painted but more likely anodised.

The Parts Pp 2-4 of Joachim's AUKI manual show the Illustrated Parts; they are as in Fig.4 after rearrangement and with their size reduced. Some actual parts (from Joachim's small '5-tray', see later, set) are shown in Fig.2, and others can be seen in Figs.5-7. Most of the parts are light alloy but some Brackets and nearly all the circular parts are nickelled steel. Of the latter the 1.5 & a few of the 2.7cm Ø Pulleys look to be aluminium. Below some notes on the parts (called by more usual names) with those seen only in Sets 2A & 3 marked '+':

- **Strips** #1-1f, 3,4±,5,6±,7,8±,9h long, with mostly well rounded ends, but some have a larger radius. A **Twisted Strip** #2, about 5h long, with only a hole at each end (the 7h size mentioned in OSN 28 seems to have been a mistake). **DAS** #25±, 1*5*1h.
- **Flanged Plates**. #8, 7*5h, with slotted holes in the flanges; #7, as #8 but with a central 3*3h cutout. It is shown with round holes in its flanges but they are slotted in Joachim's set.
- **Perforated Plates** #5,6, 3*3h & 7*3h with near square corners.
- **A/Gs±** #24-24b, 5,4,3h long (the '3h' for #24 in Fig.4 is an error).
- **Pulleys**. #14,16,17: 1.5cm, turned with flat side faces, 2.6cm Ø, and 3.7cm with 2 holes in its face.
- **Disc** #15, 6cm Ø, with 8 outer & 4 inner holes, although in



FIG.1

- most sets it has only the outer ring.
- Wheel Disc** #28±, 3.4cm Ø.
- **Road Wheels**± #29,29a, formed, 3.7 & 2.7cm Ø.
- **Gears**± #30,30a, STABIL 1925-style of 5.2 & 2.7cm Ø with 14 & 28 teeth.
- Various **Brackets**: **Flat** #3; **Angle** #9; **Reversed Angle** #10, with a slotted centre hole. **Corner** #11, 2*2h with a sharp inner angle.
- Double Bent Strip** #26±.
- **Bearing Brackets** #12,13, for the Screwed Rods (as in STABIL).
- **Slide Plate** #4. It was most likely introduced to be used as part of the crosshead in the Press

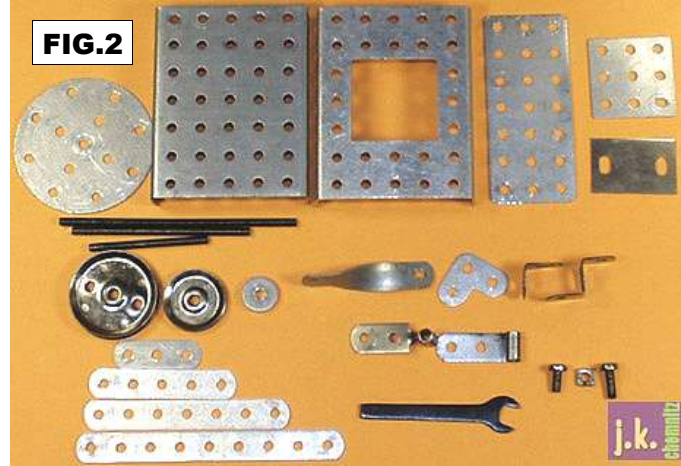


FIG.2



FIG.3

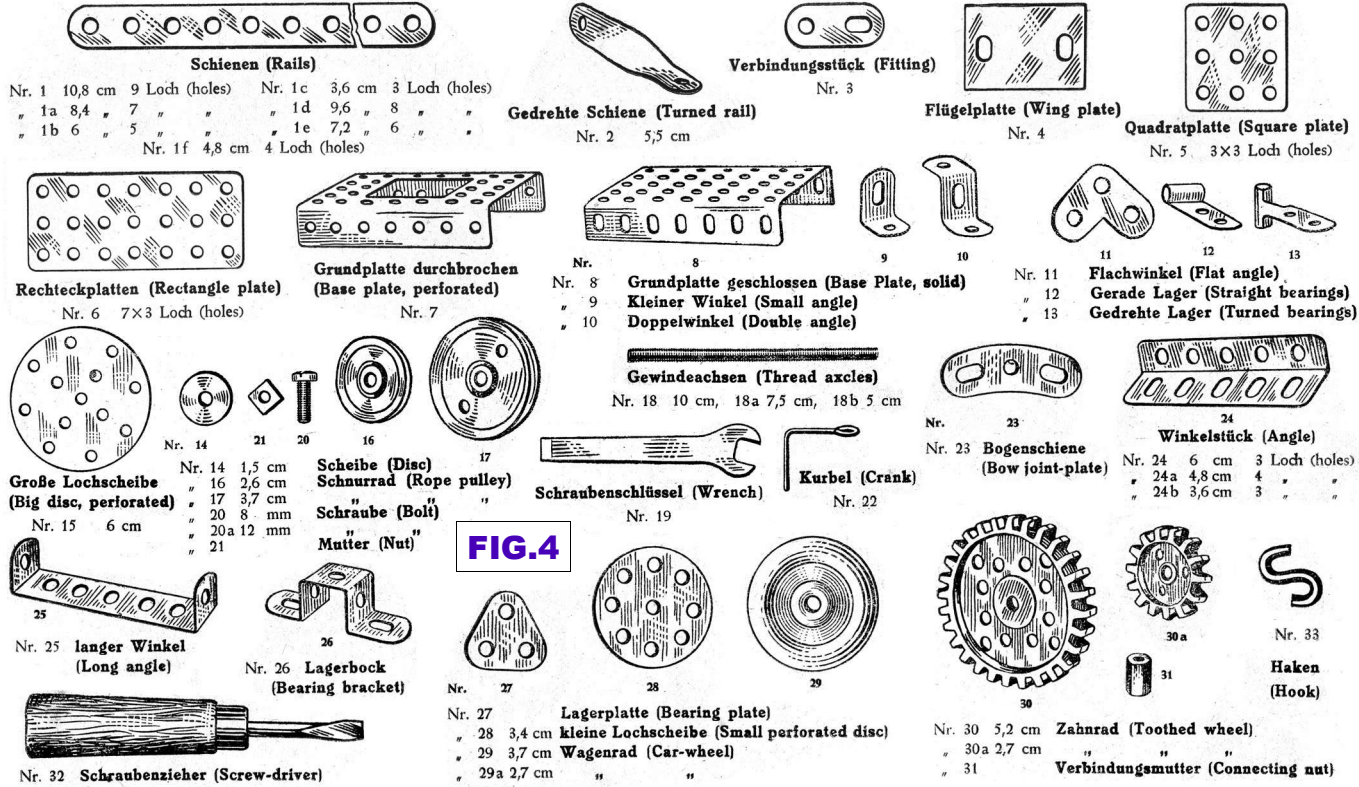


FIG.4



FIG.5

shown in Fig.6. Early versions had rounded holes.

- **Hook** #33‡, wire (at the rear of the Car in Fig.7).
- **Screwed Rods** #18-18b 10, 7.5, 5cm long.
- **Handle Crank** #22, wire.
- **Bolts** #20,20a, 8 & 12mm, cheeseheaded, but roundheaded in a few sets. **Nut** #21.
- **Screwdriver** #32‡, about 12cm o/a. A wire one has been seen in a few sets. **Span'driver** #19.
- **Tyres** for the 2.6 & 3.7cm Pulleys. These are not in the Illustrated Parts and were probably only in later sets. The larger size is suspect because it has only been seen in one (of the two known) 'Standard Nr.2' sets.

The Sets All but 4 of the 19 sets seen are in plain cardboard boxes about 30*15*2½cm. Their label is identical to the manual cover, with 2 boys making models, that was shown in 28/818 (also in the centre of the Fig.1 label), and the same

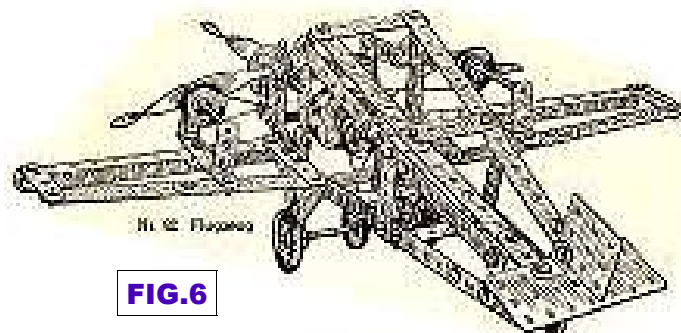


FIG.6

size. The parts are in 5 trays, as in Fig.3. One corner bay houses the N&B etc and was fitted with a lid. The lids in different sets vary in colour & design, and one is plain cardboard, but all have AUKI on them.

It isn't certain if any of the sets are complete but the maximum quantities of the main parts seen in any of them is: 1 each of the Flanged Plates; 2 each of the Perforated Plates & 6cm Disc; 16,16,13,6? of the 3,5,7,9h Strips; 8 of the Twisted Strip; 4 of the Slide Plate; and 4 each of the 3 sizes of Pulley.

No number can be seen on any of these sets and one might assume that they are the smallest Nr.1 set, or perhaps there was only one unnumbered set originally. There is a doubt though because 2 of the sets have the same 5-tray box, but their lids have yellow panels added on either side of the usual lid label, and on the left one is 'Standard Nr.2'. 'Standard' is a German word and I wonder if it was the designation used for the 'plain' sets after the coloured ones were introduced. As for the 'Nr.2', it seems unlikely that all of the 5-tray sets would be either

Nr.1 or Nr.2, so perhaps the same box was used for both sizes. In which case the quantities above would no doubt relate to the Nr.2.

The contents of one of the 'yellow label' Nr.2's matches the other sets but the other includes 4 DAS, and the 2.6 & 3.7cm Pulleys are both fitted with Tyres – the only set in which the larger Tyres look as if they might be original parts.

2 of the sets in the 5-tray boxes have coloured parts and one is shown in Fig.3. The other set has the same colour scheme with red Plates, green Strips, & a yellow 6cm Disc. Also in Fig.3 there looks to be a dark blue part poking out from under the Disc. In both sets the Twisted Strips and many of the Brackets look black.

Sets with a quite different type of packaging. Fig.5 is a Nr.3. The centre panel of its lid label (Fig.1) is the same size as the label on the 5-tray sets. Some of the parts are no doubt 'foreign': the letters 'A' & 'E' in the top right bay for example, & others at top left. Also the various balls and the electrical bits & pieces bottom left.

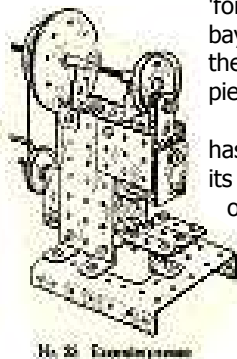
A Nr.2 lid in the same style but smaller has been seen – it measures 32*27cm and its label, the same size as the Nr.3, fills most of the lid.

From the parts in the Ergänzungskasten (linking set) in OSN 28, which was labelled '3', it can now be seen from the parts in it that it must be a Nr.2a. Also its lid is the same size as the Nr.2 above with the same label except that it has Ergänzungskasten at the top of the inner panel and the wrong set number (presumably a mistake).

The Manuals Most of the manuals seen have the cover with 2 boys making models, as in 28/818 (and in the centre of the Fig.1 label). It scales at about 21*14cm. One '2-Boy' manual was said to have 16 pages but Joachim's has 36. The latter has no PR but was printed by Buchdruckerei Adolf Kugel in the small village of Milspe, today in Nordrhein-Westfalen).

Early manuals had the cover with the Loco on it, as in 28/819. It is somewhat smaller, perhaps 16*12cm, and one was said to have 8 pages and to be from an early 1950s set.

The models shown here are all for Set 3 except possibly the Press.



Nr. 26 Eisenhammer

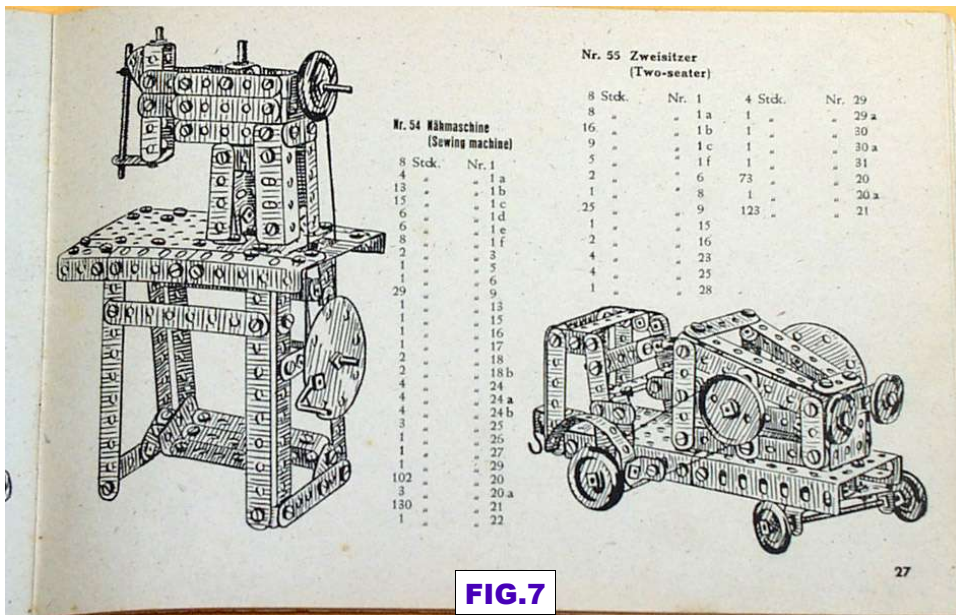


FIG.7

WEMA Matters The last notes, in 22/630, on this unusual, early post-WW2 German system were mainly about a Set C, and an AB manual. The set structure was Sets A & B which could be used independently or together, an add-on Set C, & a combined Set ABC. Since then a Set A & a Set B have come to hand, and also, thanks to Urs Flammer, a copy of a different manual with (mainly) models needing Sets A+B+C, plus a list of the parts in Set ABC.

SETS A & B These are in the same size green boxes as Set C, with the same label covering the lid (above), a similar yellow sticker giving the set size, & the same method of holding the parts.

SET ABC The 3 examples seen on Ebay have a similar box except that it is red rather than green, and the parts are in 13 bays formed by red-topped partitioning.

SET CONTENTS These are listed in Fig.4 with the parts shown in Fig.3 (the inside of the lid). The quantities for Sets A, B, & C are as found in the sets, all virtually complete. In a few cases those in Sets A, B, & C don't add up to the ABC figure. This could be packing errors, or the need to allow an A or a B set alone to have enough parts for the appropriate manual models, or, for the N&B, the inclusion of some spares.

The PARTS As mentioned in OSN 22 the colours of some of the parts in Fig.3 are incorrect. The Flanged Disc #71 is yellow (and the piercing shown is incorrect), the 'Wheels' #70 & 74 are steel, painted orange, & #79 the Loaded Hook is not painted.

Next, the parts not properly described in OSN 22. #68 is a triangular-sided **Channel Bearing** (a sort of double bracket) with 3 holes along its base. #69 **Flat Hook** is 26¼mm long o/a. #73 **Face Plate** is 59¾mm Ø. #74 **Flgd Wheel** is a 24½mm Ø disc with an 18mm Ø cylinder attached to it to



FIG.1

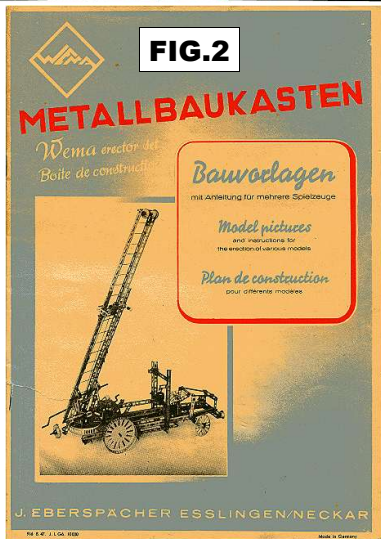


FIG.2

form the tread. The part, 7½mm wide o/a, has no boss, it runs on the centre hole in the disc and in the cylinder's outer closed end. #79 **Loaded Hook** is 50mm long o/a with a straight-sided weight 22mm Ø & 21½mm high.

The purpose of the #78 **Wire Clip** is still a mystery. It is only used in one manual model, at the jib head of the Multi-Jib Crane on the set lids.

The MANUAL It has 16 A4 pages and the cover (Fig.2) has a PR '916 8.47 J. I. Gö. 10000' at the bottom, the same as the AB edition.

An Intro, in German, English & French, talks of another manual later on which will include the Fire Engine on the cover. It also suggests buying a supplementary set when all the manual models have been made. Nothing is known of either. The 14 models go from Bockleiter (Step-ladder) to Kran, the one on the lid (& in Fig.7). The presentation is like the AB with a parts list & one or more good half-tones for each model. The first 8 vary from very to quite simple, but all but one need parts from Set C. The next two are small, but fair, Delivery Tricycles, though without any indication of how

Part/Set	A	B	C	ABC
1. Strip	2	2	2	4
2. Strip	2	4	2	8
3. Strip		3		3
4. Strip	2			2
5. Strip		4	2	6
6. Strip	2		3	4
7. Strip		2	3	4
8. Strip	2			2
9. Strip			4	4
10. Strip	4	2		6
11. Strip	6			6
12. Strip	2	5		7
21. A/G			2	2
22. A/G			2	2
23. A/G		2	2	4
24. A/G	2	4	3	9
25. A/G	2	2		4
26. A/G			1	1
27. A/G	2	2		4
28. A/G			1	1
31. A/B	6	3		9
32. 'L' Brkt			1	1
33. 'L' Brkt	4	2		6
36. D/B	2	2		2
37. D/B			1	1
38. D/B	5	4		9
39. DAS	4	4		8
40. DAS	3	1	4	4
45. Strip		1	1	1
46. Pawlr	1			1
47. DAS		1	1	1
48. DAS		2	2	2
51. Axle		4	4	4
52. Axle	1	1		1
53. Axle	1			1
54. Axle	1			1
55. Axle	2			2
56. Axle		5		5
61. Cr Handle	1			1
62 Cr Hdl thrd		2	2	2
66. Formed Str		2	2	2
67. Formed Str		2	2	2
68. Ch Bearing	2	2		4
69. Flat Hook	1			1
70. Pulley	2		3	5
71. Flgd Disc	1	2	3	4
72. Gear	1	3		4
73. Face Plate	1	2		3
74. Flgd Wheel	4			4
75. Worm		2	2	2
76. Worm End		4	4	4
77. Collar	10	20	10	40
78. Wire Clip		1	1	1
79. L'd'd Hook	1			1
80. Bolt	41	67	69	160
81. Bolt	4	8	6	20
82. Bolt	5	4	2	10
83. Nut	52	79	93	200
84. Washer	6	8	6	20
85. Spanner	1	1	1	1
86. Spanner				1
87. S'driver	1	1	1	1
88. Cord	1	1	1	1

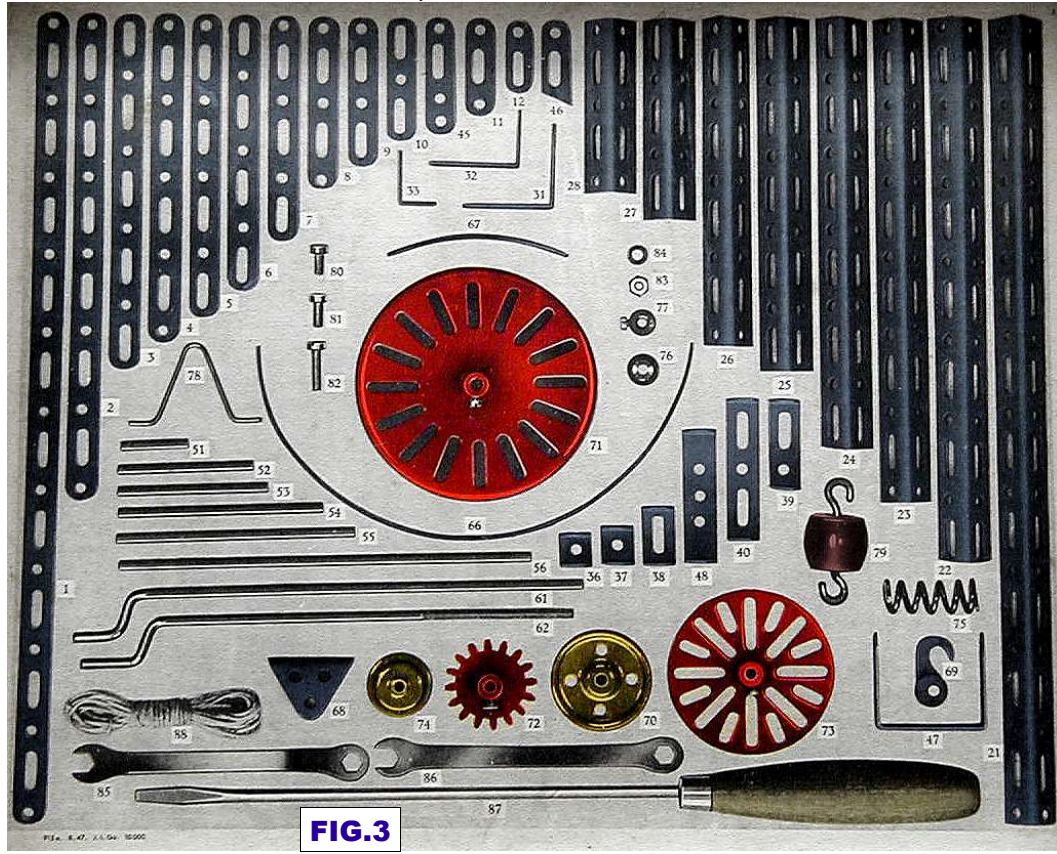


FIG.3

FIG.4

they would be propelled. Then the Windmill on the AB manual cover with the sails driven from a Crank Handle in the base through 2 pairs of Gears used as bevels, and the Road Roller in Fig.6. Next a good Mobile Crane with luffing, hoisting, & centre pivot steering. Its jib is about 40cm long and the wheels are Flanged Discs & Pulleys, the latter looking much too small. Finally the Multi Jib Crane.

The Crane right was my attempt at a multi-jib model from Sets A+B, and gives an idea of the WEMA look in colour. The unusual jib layout came from Abb.64 in <http://www.math.tu-dresden.de/~baer/ScriptEbeneKinematik2007.pdf>. The model is simple with slewing by a Gear on a vertical Crank Handle which runs around a Flanged Disc bolted to the top of the tower. Construction was straightforward and I found the numerous lengths of Strip helpful rather than confusing.

There are 3 photos of the Road Roller in the manual & 7 scrap views of the Crane: most of the main features can be seen in Figs.6 & 7 but they are much smaller than the originals. 6a shows the Roller's steering with a Worm on the end of a Crank Handle engaging a Gear on a shaft carrying a Face Plate with cords to the roller frame. Fig.6b shows the flywheel geared to one of the rear wheels, & a connecting 'rod' to the 'engine cylinder'. The canopy & roller were to be cardboard.

At Fig.7b's right end is a Crank Handle winding shaft with a Face Plate at its far end. Pawl #46, moved by handle #10, engages a slot in the Flanged Disc. The sloping Crank Handle

carries a Worm which meshes with a Gear that drives the Flanged Disc on the luffing shaft through an idler Gear. In Fig.7c the Crank Handle

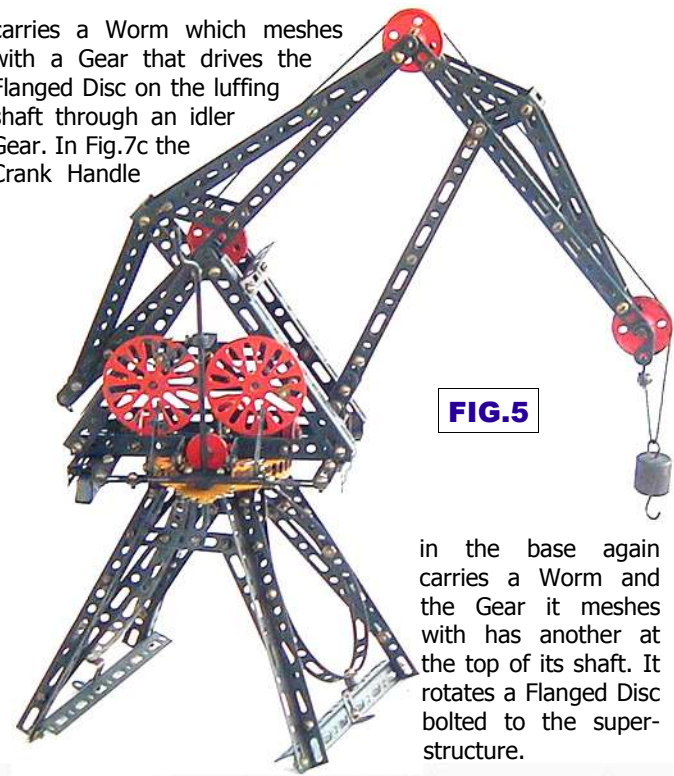


FIG.5

in the base again carries a Worm and the Gear it meshes with has another at the top of its shaft. It rotates a Flanged Disc bolted to the super-structure.

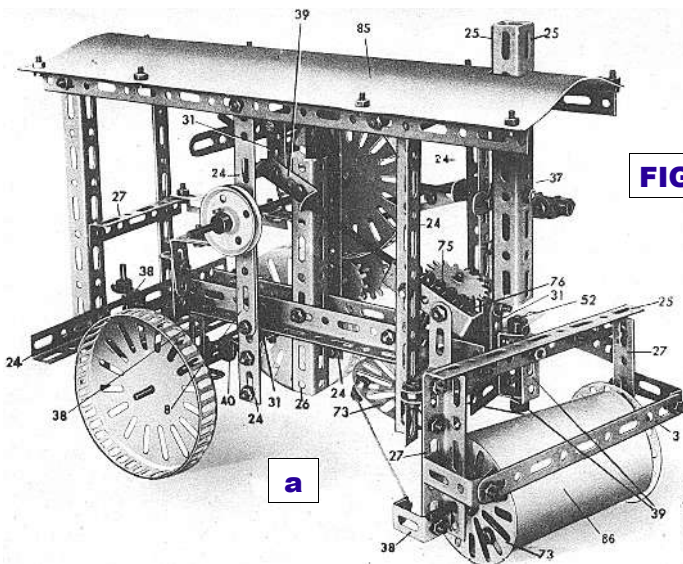


FIG.6

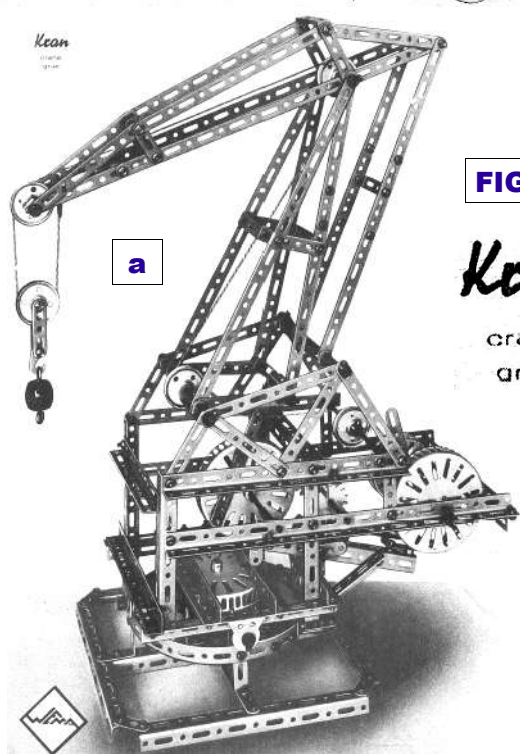
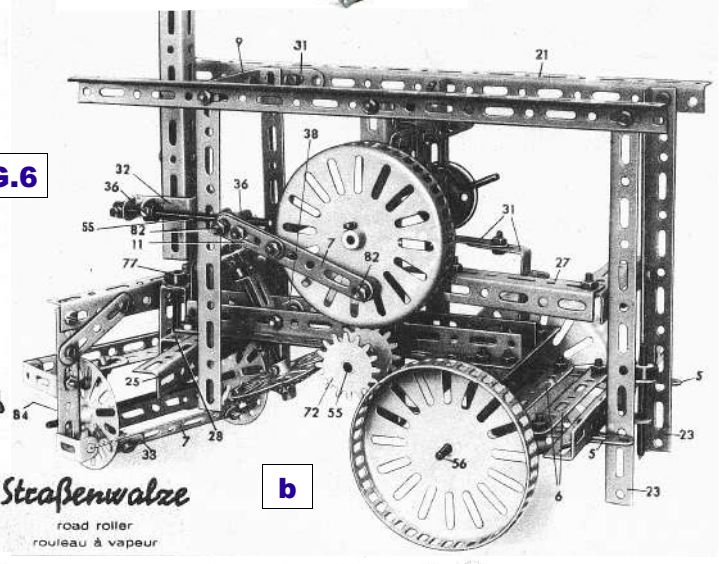
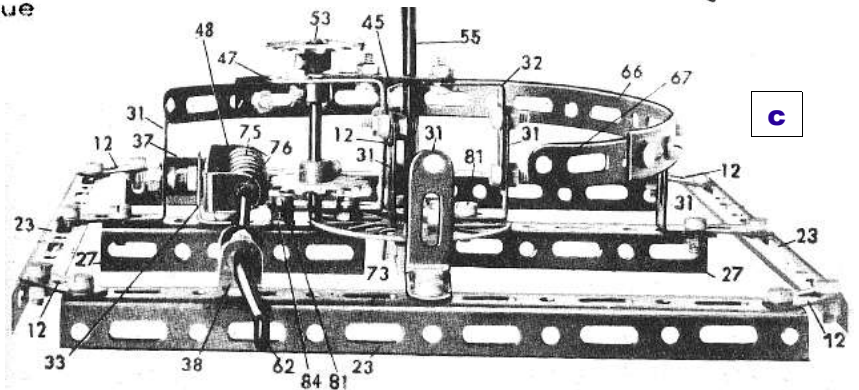
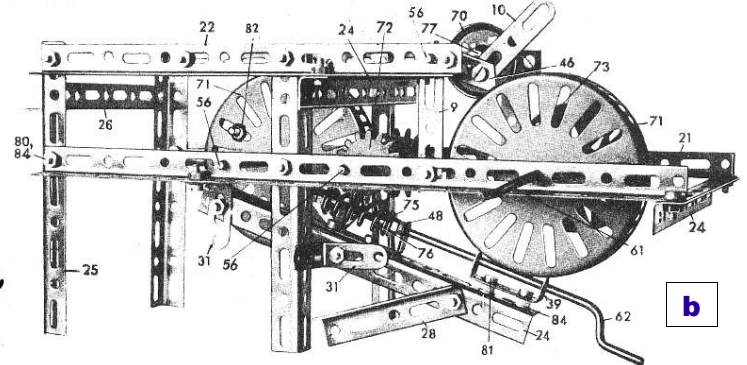


FIG.7

Kean
crane
grue



ERECTOR – EREKTIT - BILDICO

These were the names used consecutively for one system during a few years from 1914 (though ERECTOR only very briefly), and it is of particular interest as one of the first to use Rods instead of Strips as the basic structural element. (The BILDICO name was used again after WW2 but for an entirely different small MECCANO-style system, see 27/805 and earlier.) EREKTIT/BILDICO parts are sometimes

found in lots of old MECCANO but sets are rare and these notes are based on all that has become available over the last 20 years: one EREKTIT set to hand, probably a No.4 (the largest was No.5), details of a similar set belonging to Jacques Pitrat, photos of a probable No.3 set from David Hobson, Ebay photos of 2 smaller outfits, and photos of one small BILDICO set, courtesy Malcolm Hanson. David also lent me his 2 EREKTIT manuals and provided copies of all known advertising material & the Patent. My thanks to all concerned.

The PATENT The parts were described in Patent No.27171, application date 25 Nov. 1913. It was in the name of Leon Rees 'of the Firm Eisenmann and Company, 45 and 46 Basinghall Street, London, E.C., Merchants'. The initial provisional specification was followed by the complete version on 25 May, 1914, and it was accepted on 27 August. The main features which were ultimately produced were as follows. The 3 types of Clip shown in Figs.1-3 of Fig.B – in Fig.3 two of the Fig.1 are riveted together but can be rotated relative to each other by hand. The curled edges were to be springy to hold rods (called Wires) and also Strips which would be pushed down between the curled edges (as in Fig.7). An angled joint was provided by an angle bracket made from a short length of strip onto which Clips could be pushed. A small drawing of one model was shown (Fig.8, 150% full-size) to demonstrate the use of pairs of Wires G joined across by Clips.

Various other possibilities were described. Fig.4 shows an angle bracket from angled wires joined by 2 Clips – it isn't said how this would be used & as drawn the ends of Strips added to each arm would interfere with one other. Fig.5 shows Clips riveted to an angled strip, & to a wider Strip in Fig.6. Angle, 'U', & square girders for larger structures could be made using Clips & Wires, as in the square girder in Fig.11 (& presumably the friction in the curled edges was assumed to be enough to maintain its shape).

EREXTIT

The PARTS Except where stated all are steel; most parts are nickelled but the N&B and Wheels are brass plated. All are nicely made, and the only problem is that in Jacques' set the discs of 2 of the Pulleys have come off the boss. The parts are shown in Fig.C right, but with only one (4") Axle, and one short (2 1/4") Strip plus part of a 12". **Holes**, except where stated, are 3.2mm. **The thread** is 1/8" BSW. **The boss** is brass, 3/8" Ø on one side & 7/32" on the other, single-tapped, with a bore of 3.0mm, a good sliding fit on the Wires. **The Set Screw**, also in the Collar, is nickelled, .2" u/h, with a 3/16" Ø cheesehead. It is very tight to screw fully home.



FIG.A

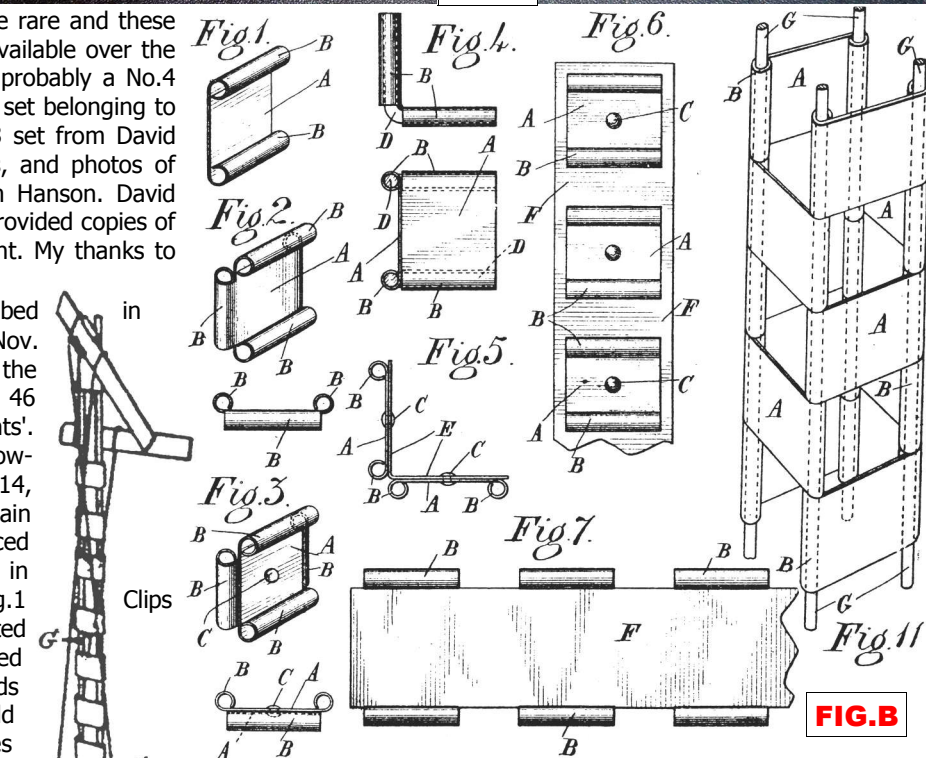


FIG.B

Notes on the parts, as listed on the back page of one of the manuals (there is no #11 or 16) follow, with probable quantities for the No.4 set (except perhaps the N&B) in curly brackets.

- #1-3 **Cross, Swivel, Plain** (sometimes called **Simple**) **Clips**. Formed from .015"

thick steel. Unlike the parts in the Patent all have a centre hole, (3.5mm in the Swivel Clip). The eyelet in the Swivel Clip grips well and makes it quite tight to turn. {72,20,12}

- #4-10 **Strips** 12,7 1/2, 6,4 1/2, 3 3/4, 3,2 1/4" long o/a nominally but actually about .15" shorter. The holes (3.2mm) are at the nominal length less 3/4". The parts are .032" thick. Their width in different example varies from 11.8 to 11.9mm but the

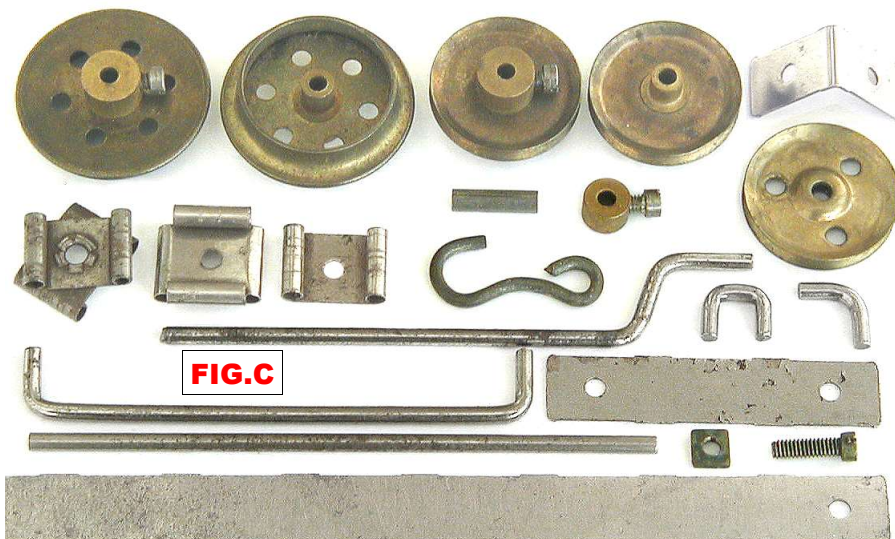
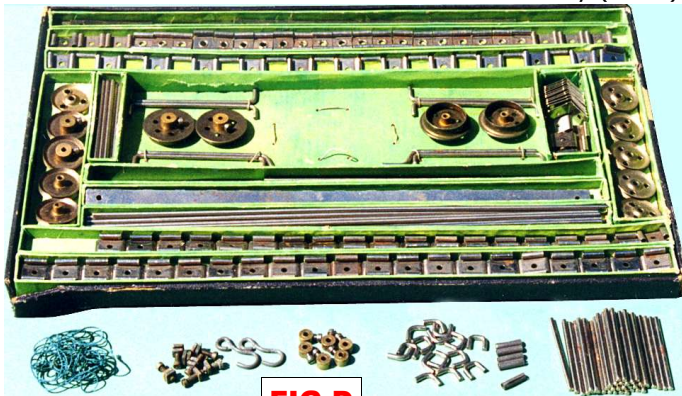


FIG.C

necking (1/2" long at 3/4" pitch) is always 11.2mm wide (this is important when pushing the Strips into the Clips – the necking is not mentioned in the Patent). {4,8,0,0,8,0,8}

- #12 **Angle Strip**. The arms are about 3/4" long and each has the 1/2" narrowed section. {12}
- #13-15, 17-19 **Wires** 12,8,6,4,3,2" long, with sheared ends but no burr, 2.87-2.97mm Ø but most are 2.92-2.95mm (nearer 2.8 in Jacques' set). {12,6,0,5,8,40}
- #20 **Bent Wire**, the 'DAS' part, with arms at 3 1/8" centres. {6}
- #21 **Handle Wire**, 3 3/4" long o/a with a 3" shank and the handle offset by 5/8". {2}
- #22 **Staple**, with arms at 1 1/32" pitch. {8}
- #23 **Angle Wire** about 7/16" x 7/16" o/a. {8}
- #24 **Hook** made from 2.3mm wire & 1 1/8" long o/a. Dull plated. {2}
- #25 **Loose Pulley**, 1.02" Ø and .15" across vee. {6}
- #26 **Small Tube**, 9/16" long and dull plated. It is about .16" o.d. and rolled from .020" sheet. It is presumably meant to join Wires end to end but it doesn't grip many of them well enough, or at all. {6}
- #27 **Collar and Screw**. The Collar is brass, 5/16" Ø, 7/32" long, and single-tapped. {6}
- #28 **Flanged Wheel**, 1 1/4" Ø with a formed tread. {4}
- #29 **Tight Pulley**, 1.0" Ø and .16" across the vee. {4}
- #30 **Screw**, 7/16" u/h with a 3/16" Ø cheesehead. {7}
- #31 **Nut**, pressed, 1/4" square, and .08" thick. {12}
- **Cord**. Though not listed 2 of the sets seen contain thin green Cord, as in Fig.D below.

The SETS The 4 boxes seen are black with, apart from the No.2, their insides lined with green paper, a similar shade to that in MECCANO boxes of the time. The set number isn't printed on the boxes but a label inside the lids lists which manual models can be made with each of the sets 1-5, and the parts used in the models then allows the size of a set to be deduced. The No.4 boxes measure 39 1/4" x 24 3/4" x 2 1/2" cm and their lid label (Fig.A) is 28 1/2" x 10 1/2" cm. Notice that it includes a girl, rare at the time (and later for that matter), but not only that, she is actually making a model, not just admiring the boys' efforts, or playing with a Pram, or some other model, they have made for her. And it's a No.3 model; the boys' are from lesser sets. Elastic cords in the box's centre bay (below)



hold the 'DAS' & Crank Handles but it's not obvious how the Flanged Wheels are held or the purpose of the 4 loops of cord in the centre – they don't look suitable for a small parts box, but if not then where do the N&B & other small part go?

The lids of most of the sets have a fabric hinge along one long edge. Two, thought to be No.3's, are in slightly smaller boxes which scales at 35 1/2" x 22 1/2" cm, but have the same lid labels. Some of the parts are in trays, as in the No.4, but others are held by tabs pushed up out of the backing card.

The fifth set is probably a No.2 and the box, light grey inside, measures (very roughly) 30 1/2" x 17 1/2" cm. It again has the same labels. None of the internal packaging remains.

From the parts that can be seen in the manuals models: Set 1 includes 2x 12" Wires, 2x 7 1/2" & 2x 3 3/4" Strips, 4 'DAS', 2 Crank Handles, a Hook, and 1 Loose Pulley; Set 2 adds 2x 12" Wires, 2x 7 1/2" & 2x 3 3/4" Strips, and 576 Loose Pulley; and Set 3 adds 476x 12" Wires, and 4x 2 1/4" Strips.

As well as Sets 1–5 the label inside the lid lists a No.0 outfit which 'CONTAINS PARTS FOR THE DEVELOPMENT OF ALL MODELS'. It is also said that 'ALL PARTS MAY BE OBTAINED SEPARATELY'. No mention is known of linking sets.

The MANUALS There was no manual with my No.4 set but Jacques' edition is similar to David's. The only differences of note between them are their typefaces, and the back cover which either has a price list of the 31 parts in the system or text saying how good EREKTIT is for boys.

Each has 20 pages including covers, 23*10.7cm, and p1 is



shown above. At top left is 'Except for a few parts such as Wheels all the pieces in sets of "EREKTIT" are NICKEL-PLATED'. p2 mentions the various parts & has diagrams showing Wires & Strips in the various Clips, and a Clip being pushed onto a necked portion of a Strip. No Set Contents are given.

pp3-19 (with pp15-18 misnumbered 18-15) have 47 models from No.1 RAILWAY SIGNAL to No.47 GIRDER CRANE, with a small shaded line drawing of each, and a few words about the model, but no building instructions, and no list of parts. Much of the detail in the larger models, and some in certain of the smaller ones, is unclear. Nothing is said about which models can be made from which sets but the label in the lid did that. Set 1 made models 1-9, Sets 2 – 5 all models through 22, 33, 41, & 47. All the models shown overleaf are at their original size, with no significant loss of detail.

There are one or two 'domestic' models among the smaller ones, especially those for Set 1, but otherwise they are in the main bridges, vehicles, cranes, & other mechanical models (though there are no Gears and only the one size of Pulley). Their general appearance is much like those for conventional systems of the time but the lack of Plates is noticeable in some cases. Strips are sometimes used as a substitute for form platforms etc but are expensive in terms of the parts needed.

The best No.1 models are the Signal from the Patent, and a luffing Crane.. The No.2 models include an Aeroplane, 3 Cranes, the Conveyor Bridge in Fig.F, the Windmill in Fig.G and the Wagon in Fig.J. For Set 3 there are several larger models including a Telfer Span, a Passenger Elevator [lift], & a 6-signal Signal Gantry. There are also 5 machine tools, one of which is shown in Fig.K, though I'm not sure how the Pulleys are made fast to the shafts. The No.4 models include the Fire Escape in Fig.L, the Bridge on the manual cover, a Tramcar, a Steam Ship, a Church, & Tower Bridge. Figs.M, N, & O show 3 of the Set 5 models; the others include a Transporter Bridge, a Lighthouse, a [seaside] Pier, & a Pit Head Gear.

Overall a good selection of models and it would be interesting to try some of the larger, more complicated ones – though, see below, preferably with an unused set. They would certainly be very difficult for a young builder.

The manual with the Price List is on poorer quality paper and the line drawings are darker and less distinct – perhaps it was printed well into the war. It was with the No.2 set that was light grey inside.

USING the PARTS As there was no manual with my No.4 I made the Railway Crane in Fig.I (the kingpost is clamped to the truck by a Pulley above & below the intersection of crossed pairs of Wires). It is a sturdy little model but it doesn't really do justice to the Set as none of the 12" long parts were used. The only extra parts needed were spacers – either more Collars or stacks of washers would have sufficed.

The only real difficult in making the model was that often a great deal of force was needed to push the Strips into many of the Clips and to push the Wires through several successive Clips, or even one in some cases. Dismantling was even more difficult. This problem may have been due to the Clips having been slightly distorted by previous use but on the whole the parts didn't look to have been maltreated. The key was differences in the exact shape of the curled edges and their spacing apart – perhaps the tooling used didn't give the accuracy, or consistency, needed.

The narrowed portions of the Strips allowed the Clips to be evenly spaced but short of using extreme force to slide the full-width part of the Strip under the bottom edges of the curls it wasn't possible to move a Clip along between the necking. And even if one did so the Clip could rotate a little or slide out from under the curl at one side. It wasn't often that having the Clips evenly spaced was essential but it did allow parts on either side of the model to line up accurately. The alternative would have been to have had the whole Strip narrower but on the whole the necking seemed a good idea.

The concept of several Clips along a Strip with Wires on each side was excellent as it significantly increased the torsional stiffness of frameworks, a weak point of most systems using rods. It was an approximation to the FAC Beams (see 18/508).

As far as can be seen very few N&B are used in the manual models but they are quite often useful in my Crane. No Tools are mentioned in the Manuals and none were seen in any of the Sets.

BILDICO



FIG.H

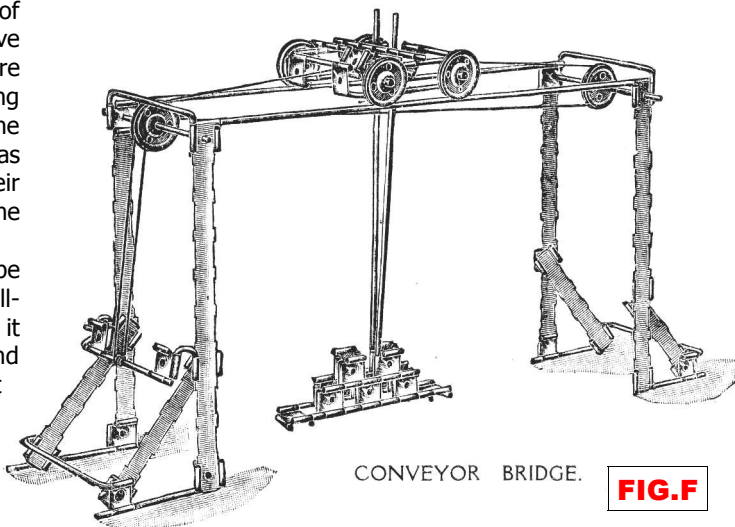
All that is known is the MCS entry and a photo, courtesy Malcolm Hanson, of the set on which it was based. Essentially the latter could be EREKTIT except for the change of name. The box is black, lined inside with green, & the label on the outside of the hinged lid has the new name in the same style as the old, as above (in B&W), with the EINCO trade mark replaced by a longer scroll & more leaves. The 'Patent Applied For' in the top right corner has also been omitted. The name is changed on the label inside the lid, but the same sets 0-6 are listed on it. The name is also changed throughout the manual except that the parts list is still headed EREKTIT. The set is probably a No.1 and the box scales at 12½*4¾". The manual's typeface is the same as that of the 'early' EREKTIT edition.

HISTORY

Eisenmann & Co. was the UK branch of a German firm, and was headed by Josef Eisenmann. It imported toys from Germany and also made them in this country (as Chiltern Toys). Leon Rees joined the company from Germany in 1900 and married Josef's daughter Maud in 1908. He inherited the company on Josef's death in 1919, and while his main interest by that time was in the Chiltern brand he was active in other toy areas throughout his life, including marketing CONSTRUCTUMS in the 1930s.

The first known advert for the system in April 1914 was from a wholesaler, Whyte, Ridsdale & Co. 4 sets were listed (probably Nos.1-4) under the name ERECTOR: 'The LAST WORD in Metal Construction Toys (British Made)'. No other reference to the use of ERECTOR for this system is known and it seems unlikely to have been a

MODEL No. 11.



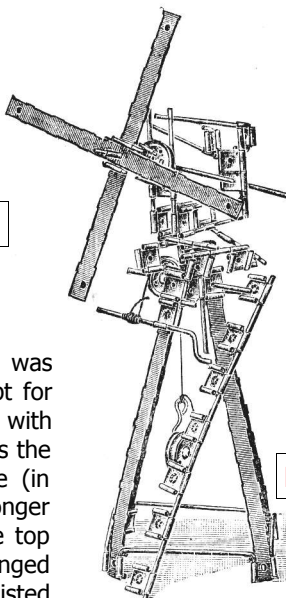
CONVEYOR BRIDGE.

FIG.F

A good example of modern engineering. Will develop and expand the Mechanical aptitude of the builder.

typographical error, so perhaps ACG raised objections, even if his sets weren't actually on sale at the time – they certainly were by Xmas of that year.

MODEL No. 13.



WINDMILL.

FIG.G

Fitted with Elevator. An old mechanical contrivance to utilise the forces of nature.

Anyway the next ad in June 1914 was for EREKTIT, with 5 sets listed at 1/-, 2/6, 5/-, 7/6, & 10/6. By way of comparison in 1915 a MECCANO No.0 cost 3/- and a No.2 10/-. The ad is curious in not giving a company name. The final ad in May, 1915, is for a stand at the British Industries Fair. EREKTIT was said 'To be had from all leading Wholesale Houses'.

No ads or dates for BILDICO are known & one can only speculate as to when the name was changed, or introduced, and why. There was much anti-German feeling at the start of the war & perhaps the change of name was to avoid the German connection. All the EREKTIT lid labels seen have the Eisenmann EINCO logo & this would certainly

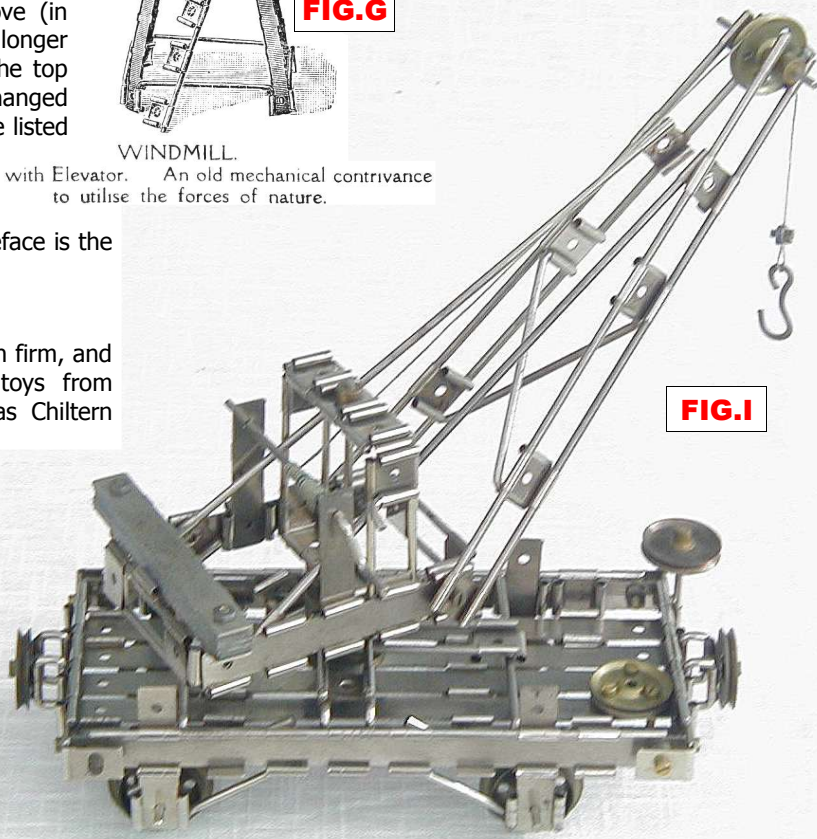


FIG.I

EREKTIT: S3

MODEL No. 20.

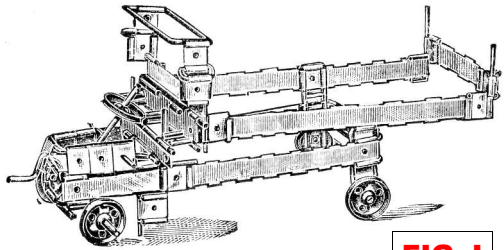


FIG.J

MOTOR DELIVERY WAGON.

A copy of the wagons in use for goods delivery by the transport undertakings, railways, etc.

indicate a German firm to the trade, & perhaps to the general public. It has also been suggested that EREKTIT, if mispronounced, could cause embarrassment to potential lady purchasers.

When did BILDICO sets appear? Its manual has the same typeface as the 'first' EREKTIT edition but it has the same back cover with price list of parts as the 'later' one. So possibly it appeared between the two, & for a certain period EREKTIT & BILDICO ran in parallel. (In that case was BILDICO introduced to replace EREKTIT or was it simply another line aimed at a different (perhaps low-end) market?) It's not very likely that BILDICO appeared much later than the 'later' EREKTIT manual because if it had it would be reasonable to expect that the prices in the parts list would have increased – the price of MECCANO Strips was, on average, 75% higher by 1916.

How long did BILDICO last? And why are so few sets found? EREKTIT probably looked quite attractive when it first appeared, and may have enjoyed some success as an innovative, glossy looking, well packaged product at a

reasonable price. The sets known could be from this period. If BILDICO appeared after this time, material shortages could have limited its sales during the war, but if it had been still available during the boom in toy sales that followed the end of the war, one might expect that more sets would have survived.

MODEL No. 46.

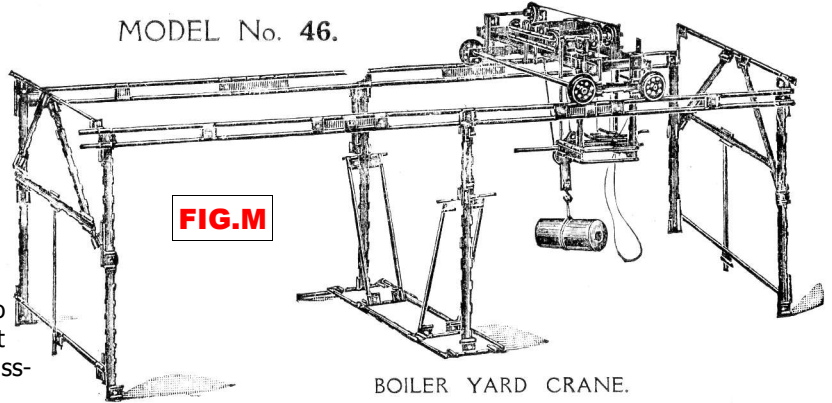


FIG.M

BOILER YARD CRANE.

For lifting and carrying horizontal boilers in big engineering works. The overhead carriage runs across and along, and

MODEL No. 32.

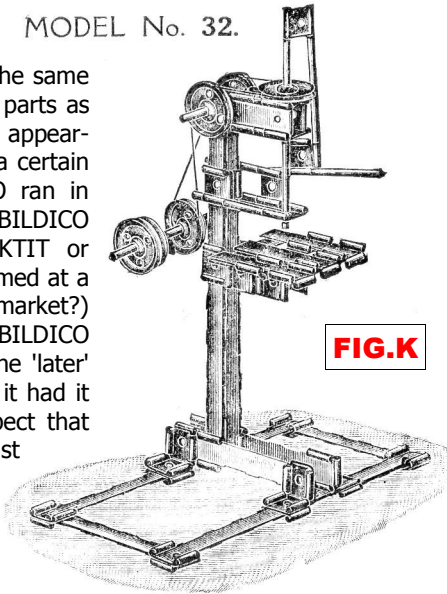


FIG.K

ENGINEERS' DRILL PRESS.

The model is taken from Machines in use in the factory where "EREKTIT" is made.

MODEL No. 43.

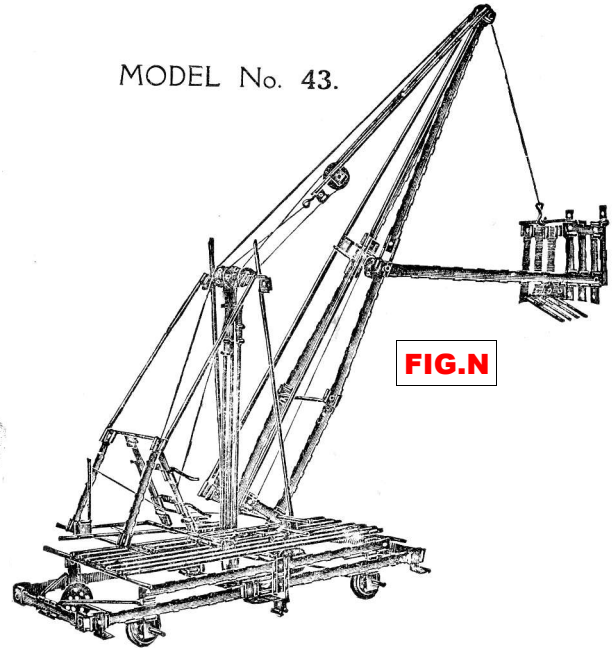


FIG.N

MECHANICAL NAVY.

A digging machine used in making Railway and Canal cuttings. The jib and shovel-arm work independently, and the whole machine swings round in a circle. Mounted on wheels for transport.

MODEL No. 35.

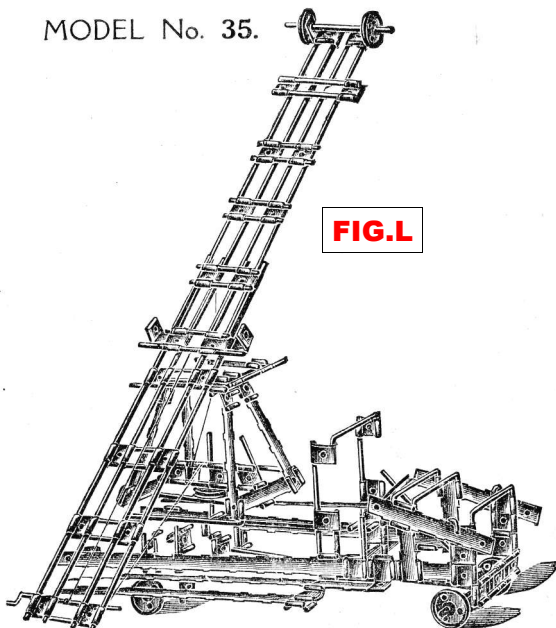


FIG.L

MOTOR FIRE ESCAPE.

The Ladder is telescopic in action, and when the Escape is travelling it lies over the top of Motor parallel to the body.

MODEL No. 47.

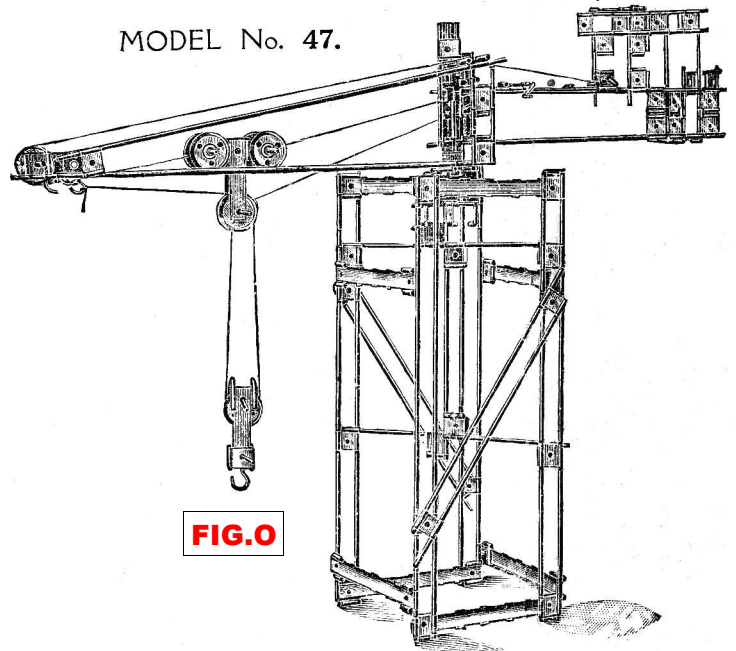


FIG.O

GIRDER CRANE.

Designed for picking up loads and distributing them.

FRYDAGH A brief note on this early post-WW2 East German system appeared in 15/414, mainly taken from Baukästen. This account is based on 9 sets that have been seen on Ebay since then, a manual that has come to hand, and, principally, thanks to Urs Flammer, notes about & photos of his set, and a copy of the manual with it.

HISTORY FRYDAGH was made in Haldensleben, 20km north-west of Magdeburg, by the Frydagh Maschinen- und Gerätebau GmbH. The company's name was changed in 1948 and all the known material relating to the system carries the Frydagh name.

Baukästen speaks of a basic and an add-on set, and a website calls them Set A & B. But the manual refers to only one outfit and lists its contents. Also all the sets seen have the same size & type of box with, as far as is known, no indication that any of them are other than the manual outfit. And although none of the sets are actually complete, no pattern can be seen in their contents which would point to there having been two sets.

Apart from the finish of the parts the only obvious difference in the sets is in the lid labels & manual covers. All are similar to the cover in Fig.1 except that: its orange areas are light blue in all the lids, and there are changes to the bottom left corner.

The latter, dated from their PRs are: (A) April 1946, as left (ABTLG. = DEPT.); (B) Feb. 1947, as Fig.1; (C) March 1947, as left.

The full PRs are (A) 1116 Dr.1 446 10000; (B) 376 Dr.1 247 10000; (C) 655 Dr.1 347 10000.

The PARTS Fig.4 is the Illustrated Parts from the manual (compressed and omitting the German names of the parts). Most of the actual parts are as drawn but among Urs' parts in Figs.5-8 (all roughly to scale) the Curved Strip is rather different.

Some points of interest about the parts follow. Most of them are blackened steel. **Holes** are 3.3mm Ø at 13.0mm pitch. The only elongated holes are in #1 (not in the flanges), and #11-14 (#13, not in the lugs). **Axles** are plain steel, 3.0mm Ø. They scale at 5, 11½, & 13cm long; the Crank Handle at



FIG.5

OSN 46/1417



FIG.1

29		1
28		1
27		10
26		40
25		40
24		10
23		6
22		1
21		1
20		2
19		1
18		1
17		1
16		2
15		1
14		6
13		4
12		4
11		2
10		4
9		4
8		6
7		3
6		4
5		2
4		5
3		2
2		2
1		1

FIG.4

contents are given in the last column of Fig.4. The set contains most of the different types of part but not the Tools nor the Flanged Sector Plate.

Other boxes are the same size but are red or blue as well as green. Some are white inside but the partitioning is always the same. The label always nearly covers the lid, but only the Type A label has a PR (in the edging bottom left). Of the 7 sets seen which have a manual all but one have the same type of label & manual cover. The exception is Urs' which has a Type A label and, for whatever reason, a Type C manual.

FIG.6

The MANUALS The Type B to hand will be described first. It has 16 pages, 207*142mm, plus covers and the front is shown in Fig.1. The C2-4 covers are pink



FIG.7



FIG.8

18cm. The **thread** is M3. The **Bolt** is dull silver looking with a cheesehead; the **Nut** is square, 6mm A/F with a brass look. **Bosses** are 10mm Ø, the **Collar** 12mm. All have a 3.5mm bore and are single tapped. **Strips** are 10.5mm wide, & .75mm thick. #6 is 25h long; also the #12 A/G, and it has 10½mm wide arms. The **Pulleys** look to be turned. #23's use is unknown, it is flat, .5mm thick, and has a standard hole, not tapped.

Aluminium and brassed steel parts were mentioned in Baukästen, as well as blackened steel. Some of the Ebay sets contain parts that look silvery, quite likely aluminium. In 6 they are the Pulley Wheels, plus many of the Strips in 3 of them. No particular pattern can be seen in relation to the different labels/covers.

In one of the sets the short Strips are blue and in another the Flanged Plate is orange but this paintwork may not of course be original.

Most of the Ebay sets had unexpected parts in them, many obviously foreigners but a few, as described below, had a generally similar look to the genuine parts. A 4h Wheel Disc or Bush Wheel in 2 of the sets, the latter a part needed in a number of the manual models. Likewise a 5h long DAS in 2 other sets. And 3 of the sets, all the (C) type had a large and a small Gear in them, the large about the size of the Large Pulley, the small about a third the diameter. Two of the pairs had 12 & 40 teeth, the other pair 10 & 30.

The SETS Urs' box, 38*26*3cm, is green inside and out with partitions to give 1 large, 2 medium & 6 small bays. The label is the Type A (Fig.2) and nearly covers the lid. The nominal

FRYDAGH: S1

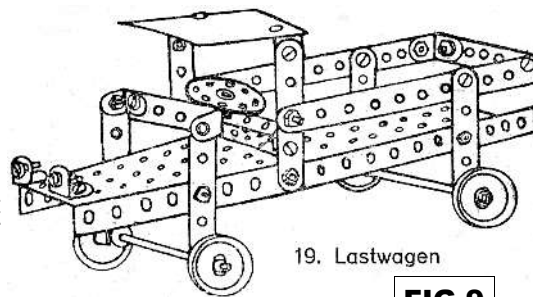
and totally plain. p1 is the title page and includes the address as Postfach 15. p2 has the Illustrated Parts/Set Contents; p3 an Introduction. p16 is blank except for the PR & the name of the printer: Kreisdruck+erei Halbensleben. The

34 models are on pages 4-15 and run from 1. Schubkarre [Wheelbarrow] to 38. Presse [(Eccentric) Press]. They are a good selection of the usual small models plus a few larger ones including a Slewing Crane and several machine tools. For each one line drawing, usually adequate though a Parts List would have been interesting because a number of the models need more of some parts than are in the Set. But the main problem is that many of the models need a Bush Wheel and/or 5h long DAS. In some cases the Large Pulley could replace the Bush Wheel but not always, and it would usually look clumsy; likewise the use of alternatives to the DAS. The models 19 & 20 (Figs. & 10) show the problems. The models were clearly not created for the Set and in fact I found most of them in a prewar MÄRKLIN manual, though they had been redrawn without their original shading.

Fig.11 is one of the most complex models and needs more Pulleys than are in the Set. Its Märklin name of Dieselmotor mit Schnellbohrmaschine [Diesel Engine with High-Speed Boring Machine] is more apt. The Märklin manual has text explaining that there is: a cord drive 2 from the Large Pulley on the Crank Handle to the top Large Pulley on the cross shaft; a crossed cord drive 3 from the Small Pulley on the cross shaft to another behind the lower Large Pulley; and a cord drive 1 from that Large Pulley to the boring spindle. A scrap view is also provided (Fig.11A) to show how the engine's pistons are moved up & down.

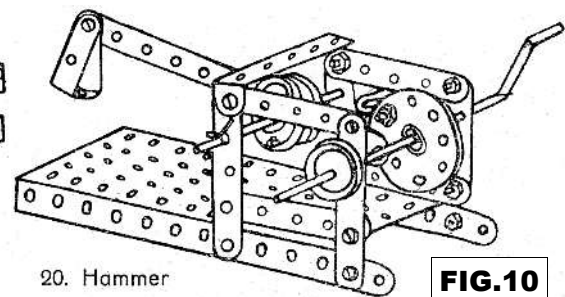
I wonder why Frydagh didn't include a Bush Wheel, a much simpler part to produce than the Large Pulley. And why the 7h long DAS? Could it have been a mix up due to Märklin's practice of describing a 5h long DAS as 'Nr.60/7, 7 Loch', counting all the holes including those in the lugs?

The contents of the Type C manual are identical except for the PR & minor changes to the title page. The Type A has the same number of pages & the 3 model pages seen are



19. Lastwagen

FIG.9



20. Hammer

FIG.10

Figs.9-11 are full-size but 11A (from a MÄRKLIN manual) is only 60%.

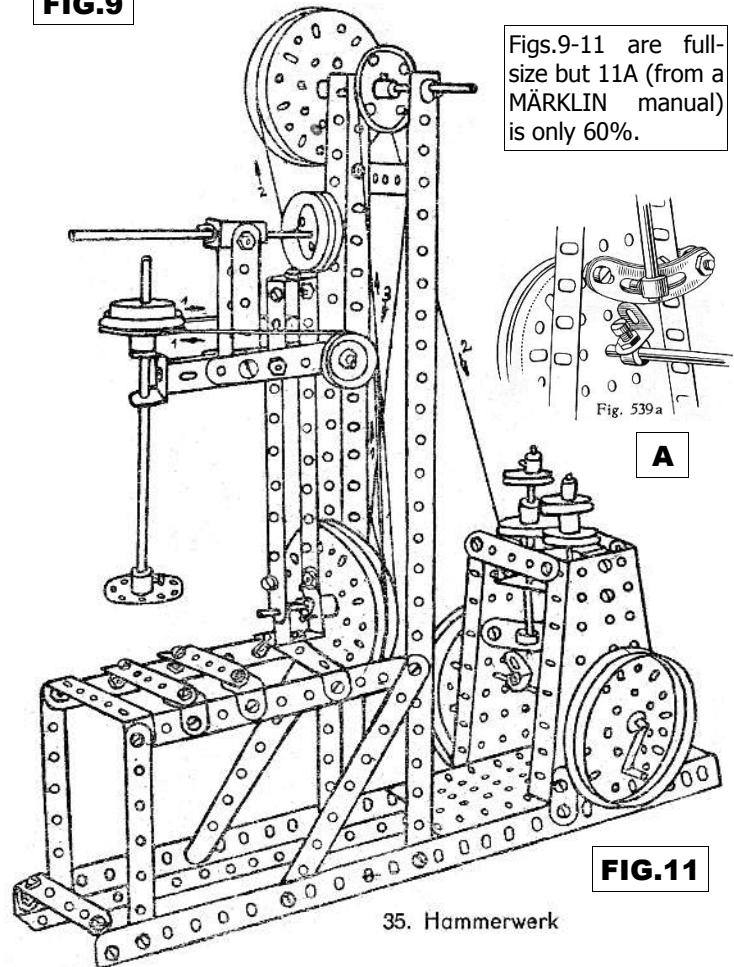


FIG.11

35. Hammerwerk

identical. But the PR is on the front cover, as on the Type A lid.

FRYDAGH: S2

OSN 46/1418

The MAC-SICCAR Big Wheel Set

These notes are based on a photo of the lid right (the label & one end), kindly sent by John Evans; a photo of parts in their box, Fig.2, courtesy Malcolm Hanson; and a set seen on Ebay, far from complete.

The box measures about 16½*6". The small print above the Mac-Siccar name on the label reads REGISTERED TRADE MARK. And along the bottom 'Made by Hunter Bros., High Street, Bordesley, Birmingham. The set has parts to build just the one model. In that it is similar to the KELMAR P'WER HOUSE Ferris Wheel outfit (see 20/587 & 21/618) but much less elaborate. Most likely it was also produced soon after WW2. No other Mac-Siccar sets are known.

The blue Base Sides are joined by substantial Corner Brackets. The bottom of each A-frame bolts onto the base and to a Joint Plate at its apex. The A-frames look to be made from



FIG.1

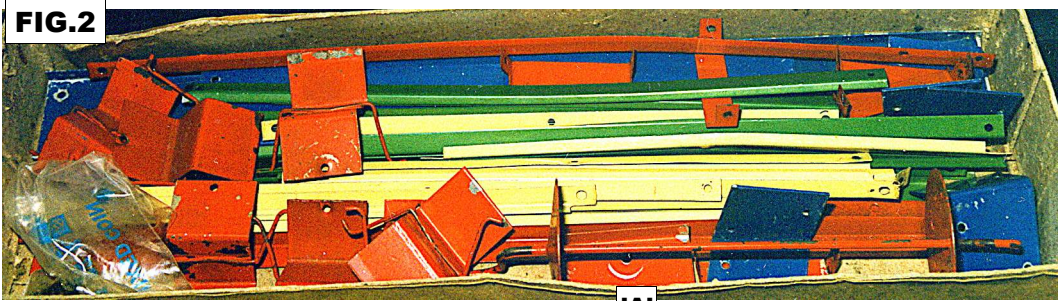
the green parts in the box, and they scale at about 12" long. They have a narrow stiffening flange, or possibly they are a shallow U-section. The Joint Plate is also flanged and is probably the red part marked 'A' in Fig.2. The wheel's Axle has one end cranked and carries the hubs for the wheel, most likely permanently attached. The yellow Radial & Outer Wheel

MAC-SICCAR: S1

OSN 46/1418

Members all have a narrow flange along most of their length. The sides of the wheel are about 6" apart at their hubs but taper to the 2" long red DAS which join the sides at each outer joint. The Seats, all red, have 'wire wings' which clip into small holes midway along the Outer Members.

FIG.2



The parts in the Ebay set look the same and the wheel Hubs are again shown mounted on the Axle. The colour scheme is the same too except that the base parts are a lighter blue.

nearly as long as the 'A' box. It is along the top of the photo above, and even if there were more than one in the Set, I don't see where it could be used in the model.

No N&B can be seen in either set but the holes for them scale at around 1/8" Ø.

One puzzle is that in both sets there is a red 'strip' which is

OSN 46/1419

MAC-SICCAR: S2

GESCHA OSN 36/1077 contained a snippet about the No.1 set of this small TRIX-style German system, and now Jean-Pierre Guibert has kindly sent photos of, and key facts about his No.1. GESCHA was made by Gebr. Schmid (Gescha) from 1959 to 1967.

The box is 12.3*18*1.6cm and the lid is identical to that shown in OSN 36. The parts are packed in a plastic bag (right) and all in the Set are shown on the front of the Model Leaflet (far right). The actual parts match them except that the DAS has only the 3 centre line holes. The ends of one DAS can be seen in the box right, under the 3h Strips.

Holes are 3.1mm Ø, a little smaller than TRIX, but their pitch is 12.3mm, appreciably longer than TRIX's 7.8mm. Unlike TRIX, GESCHA's pitch across the Strip is, hypothetically, less than the lengthways value, and so the diagonal pitch is 7mm against 5.5mm for TRIX. The advantage of equal pitches across & along is that Strips can be joined at right angles by 2 Bolts, but this doesn't matter for GESCHA since the 'opposite' holes don't exist. A disadvantage of equal pitches is that Strips look rather too wide, especially in small models, and at 14.1mm wide GESCHA Strips are over 5mm narrower than they would be with equal pitches. The Strips are .92mm thick, much the same as TRIX. Another difference from TRIX, the pitch of the holes in the Wheel Disc matches the Strips. And another difference, the smallest TRIX set has 4 Wheel Discs (as well as 2 of the smaller Discs).

The 12 Rods are wooden, 3mm Ø & 45mm long. The Set contains 24 of the red plastic Washers that push onto them. The N&B are M3, brass steel, with Nuts 5.4mm A/F, and the Bolts' cheeseheads 5.3mm Ø. The other metal parts are zinc plated.

The Model Leaflet is a sheet folded to give 4 panes 11*16.7cm, with the front in Fig.2. When opened out the other 3 panes of the top side show 11 models from Kreuz [Cross] to Verkehrzeichen [Road Traffic Sign], & on the back panes are 12 more models from Signal (as right) to Transportwagen (far right). As would be expected the models are mostly small & simple everyday items and only 5 have moving parts. Apart from the 2 shown here they are a Seesaw, a Capstan, & a Sack Truck. The Rods are a good way of filling spaces, as in the Footbridge, but there are many more working models in a



FIG.1

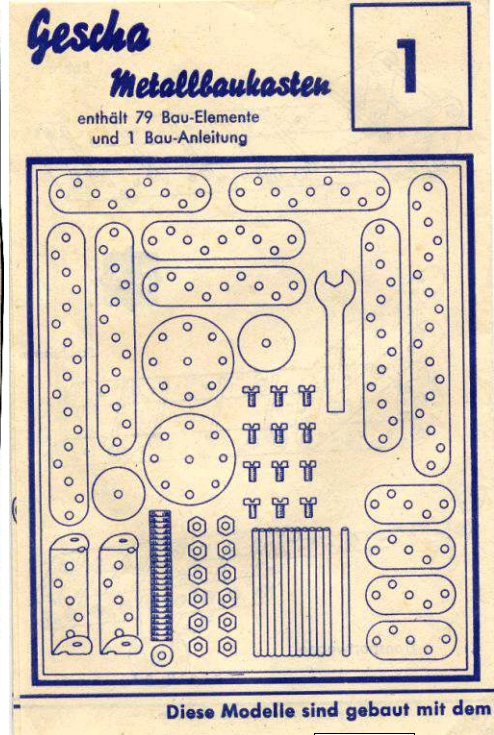


FIG.2

These 3 models are about 60% of their original size.

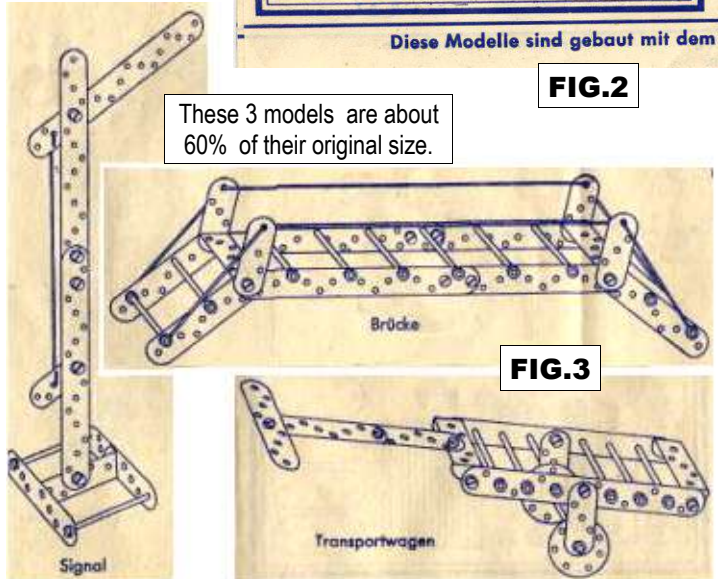


FIG.3

prepare TRIX manual for the smallest set, and they make good use of the 4 Wheel Discs in the Set, and of its Screwed Rods.

There is text along the bottom of each side of the Leaflet. On the front it says that the models can be made with Set 1; on the reverse that Sets 2 & 3 allow larger, even better models, and that Set 4 has more parts such as Wheels & Tyres for action models. Nothing is known so far of Sets 2-4.