

EDITORIAL First, please note my new email address above. The OSN web site has changed too – it is now www.osnl.co.uk & includes all the colour illustrations from the B&W issues. (If you find that sometimes a picture does not load, 'refreshing' the page always seems to do the trick.) The old site will continue for a week or two but it will not be possible to update it.

The STRUCTO article in this issue turned out to be longer than I'd anticipated, and as a result several pieces have had to be held over until OSN 31. Apologies to contributors thus affected, but it's encouraging to me that after over 900 pages of Other Systems material there is still plenty in the pipeline. This happy state is of course mainly due to all who have sent items, large & small, so let me take this opportunity to say thank you to everyone, and to hope that you will be able to keep up the good work.

On the newsletter format, a few of the readers who responded favoured the same margins on all pages, but many more wanted to keep the present arrangement. So be it, and in fact the question may not be an issue in future because I've found, in printing this issue, that the paper I use has been improved, and will now print satisfactorily on both sides. I've tried doing some sample double-sided pages and all seems well, so the next issue may be double-sided – 'may' because unforeseen problems are always possible. In any case the pages will still be loose sheets I'm afraid. I shall also print single-sided pages for my own use (to file with my MCS sheets) and I can easily print more that way if anyone prefers them like that – but if so please let me know by mid-August for the next issue.

Shorter NOTES, with thanks to all contributors.

1. Don Redmond wrote of some of his 13mm pitch **MERCATOR** parts, see 29/848. • The boss of the **18mm Pulley** is d/t M3.5 or similar (but the pitch is not .6mm).

• **Peening** is smooth & round with no indents. • The **Gears** have 13 & 39 teeth as listed; the Gear Wheel is 1½" Ø & the face width of the Pinion is 10mm. • The **6*6h 4-flanged Plate #95** is red. • The **Boiler #142** is green and is rolled from a heavy 8*8h plate; the **Boiler End** has a 7mm wide flange and an internal boss ie when the part is fitted on the Boiler body it is on the inside. • Other parts include 5, 6, & 7h **A/Gs**, and 1*4*1h **DAS**.

MERCATOR: S6

[30/876A]

2. News of two hitherto unknown Canadian **CONSTRUCTO** sets (basically MERKUR parts repackaged by Paramount Industries, see 20/565) from Don Redmond. The first is **Starter Set No.0**, a single card with a photo of a boy pointing to 2 small models in the top block, and the parts underneath it held by an adhered plastic sheet. 9 models are shown in B&W on the reverse together with the Paramount address and 'To create more advanced projects...Ask for Constructo Sets Nos.1,2,3,4,5,6,V-8,V-12'. The main parts are Strips up to 10h, a 5*5h Flanged Plate, 2 Flat Trunnions, & 2x 2h Ø Pulleys.

The second item is a **Motor Kit** with similar packaging but the boy is looking at a Lorry & Gantry Crane (see MCS MERKUR (D) 5). The centre piece is a 'jet motor', the small MERKUR motor/gearbox/driving axle unit. Its base is sheet metal 50*26mm with bent-up sides, and the motor, 25mm

long, flatted top & bottom, drives 3 stages of reduction starting with the 10t motor pinion. The final shaft is a standard 85mm Axle which carries the Road Wheels in some models. Some of the parts are missing but 2x 3cm Gears, a Pinion, and a large & a small green Pulley remain. There is also a space that may have housed a Worm. On the reverse are 2 bilingual paragraphs about 'The Constructo JET electric motor', and a list of the sets 1-V.12 again.

CONSTRUCTO [1]: S1

[30/876A]

3. The use of 7-32 N&B by Meccano in America in the 1920s was noted in 29/846 and now Kendrick Bisset has identified the **new MECCANO thread** (in a new Erector Ferris Wheel set packed in a tin box) as the very same 7-32.

MECCANO: S1

[30/876A]

4 From Kendrick Bisset. 'In Toronto Jim Bobyn showed me a **US MECCANO #6** outfit circa 1920, and examination of the A/Bs indicated STRUCTO parts. It later occurred to me that Structo sold their construction outfit line to Meccano in, it is believed, December 1919. On checking my collection I found an incomplete 1920 #5x outfit with all the 5 & 11h Strips, and all the A/B, of STRUCTO pattern. The other Strips are normal MECCANO. So it would appear that US Meccano used certain STRUCTO parts in at least some of their sets circa 1920. All those seen are tin plated.' [When new would they would have been shiny and a reasonable match for the nickel used by Meccano at the time.]

U.S. MECCANO: S2

[30/876A]

5. From Kendrick Bisset. 'A **MASTER BUILDER No.4** set recently obtained, with not too many parts missing, has little new to add to the information in OSN 16/450, except for the Pinion & Sprocket Wheel. The Pinion is listed as 1/2", but it is 1/2" diameter at the root with a pitch diameter closer to 9/16". It has 18 teeth and a 3/16" face. The Sprocket Wheel is listed as 1", but is actually 3/4", with 12 teeth. All of the strips have large radius ends.' [Using the above the DP of the Pinion would be 32.]

MASTER BUILDER: S2

[30/876A]

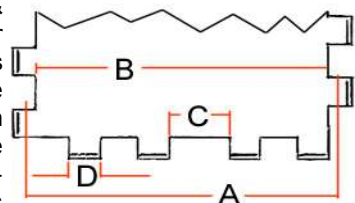
6. On the numbering of the **Gilbert MECCANO** sets, see p890, it was noted by Richard Symonds in 19/546 that the 110 & 115 sets became Nos.10 & 15 in 1932, and now Jacques Pitrat has come across evidence that Gilbert certainly considered selling the larger sets under new numbers. Jacques wrote that a mint 1932 #15 Gilbert Meccano set, including Meccano Briks, was for sale on eBay and in the description of the set there was the following sentence: 'A label placed inside the cover of the catalog notices that set No.110 is the same as No.10; set No.115 as No.15; set No.125 as No.25; set #150 as No.50.' This does not of course prove that such sets were ever actually sold.

Another point of interest. Among Kendrick Bisset's notes about his c1933 No.10 on his web site (www.usmeccano.com) is: There is a rubber stamped '10' in the top right hand corner of the lid. On checking I found '10' on my box at the same place inside the lid, just in the corner.

GILBERT MECCANO: S1

[30/876A]

7. The sizes given in 15/420 for **ASSEMBLO & STANLO** basic square Plates seem to be wrong. In fact on measuring some parts known to be genuine the two are very nearly the same size. The distances A, B, C, D (Rod centres, free edges, tab width, large gap) in the diagram below are 72, 66¾, 7¼, 13½mm for ASSEMBLO, & 72½, 67, 7½, 13mm for STANLO. All the ASS parts seen have (like SLO, see 16/444) a split tab on each side to grip the Rod. The cutout in the large rectangular part (#17 for both) is 52¼*16½-17mm for ASS & 52½*16¼-16½ for SLO. In the parts to hand the corners of the centre cutouts in the ASS Plates are not square as shown in MCS, but angled, like SLO.



Details of some of the **ASSEMBLO Wheels** can also now be given. All seen are zinc die castings with the name around the centre. The Loose Pulley #200 is 24½mm o.d. & about 4¾mm wide. The Flanged Wheel #201 is 28mm o.d., with the tread tapering to 21mm Ø. The Road Wheel #204 has a 41mm Ø hub, with a tapering central boss in the recessed back face. Two types of tyre are known, both 62mm Ø o.d. One is hard black rubber with tread around the flat top as in MCS; the other is a slightly soft dark grey rubber with no tread and a near circular section, a fat rubber ring in fact. Neither have the name on the sidewall as in MCS.

The dimensions A-D for **DINKY BUILDER** are 63, 58¾, 6½, 11½mm, for both pre & postwar parts. The prewar ones do not have the split tabs, but grip is provided by Split Rods (made from semi-circular section rod doubled over & bowed out, as right). D B **Road Wheels** are 39½mm o.d. & are made from 2 pieces like the MECCANO part, but instead of a boss a rubber insert is trapped between them & grips the axle. On mine the metal wheel actually rotates around the rubber insert but whether this was intended I don't know. Probably the rubber has shrunk with time.

Does anyone have details of the ASSEMBLO-like parts from the Italian **FALCO** system (see 26/758)? [30/877]

ASSEMBLO: S1, STANLO: S1 DINKY BUILDER: S1

8. Paul Goodman wrote that Märklin have commissioned Metallus to produce a special edition **MÄRKLIN METALL Excavator Set**. It will cost €750 & will be sold in Germany from May/June this year, to celebrate '90 years of metal construction systems'. [Presumably the 90 years since the firm started to make MECCANO under licence. Right, a rather fuzzy photo from the Märklin web site. A letter in the latest CQ says that the N&B will be M4, and that orders must be placed by 30th May.]



MÄRKLIN: S1 [30/877]

9. On **Pocket ERECTOR** sets, Tim Edwards wrote that he has one with a box like the top ('Gilbert') one in OSN 13/342. Its model leaflet is copyright 1975, and the set contents are

the same as those of the 'Gabriel' set except that the 3*9h Plates are made of blue plastic. Also on rereading OSN 13, the date in the first line should have been 'Early in the 1980s'

ERECTOR [4a]: S1 [30/877]

10. David Hobson sent a French ad for ERECTOR, said to be from 1925. The outfits listed are 3 JOUETS A ROUE sets (Gilbert Wheel Toy, see 8/198) at Frs. 49,80,125, to make 8,12,21 different toys; 7 Erector sets at Frs. 12,24,30,49,70, 125,175, with an electric motor in the last 3; and 4 Electrical sets at Frs. 20,45,65,80. A photo of each type is given and the old, wide Girders are shown in the Erector one. There are also photos of a Tele [Morse] Set, a Phono Set, a Chemistry Outfit, an Air-Kraft Set, & a Wireless Outfit. Those are the names on the lids, all in English, and the rest of the wording that can be seen in the photos is in English too. The address given for 'vente en gros' (wholesale sales) is 24, rue de Liège (sic), Paris.

ERECTOR [2b]: S1 [30/877]

WEB SITES [30/877]

- <http://edwards.web.users.btopenworld.com/meccano.htm>
- Tim Edwards has added full details of his **MCS MECCANO CD**.
- **Stokys** are now at www.Stokys.ch. Sets & packs of parts can be ordered from the site.

QUERIES [30/877]

Query 29 On the colour of STABIL Cord, Werner Sticht wrote 'that blue/white Cord (two coloured strands twisted together) was used in the 1950s & 60s - 'I remember it very well from my first STABIL set that I got in 1957. Plain white Cord was used in sets from the 20s and 30s.'

SMALL ADS [30/877]

Wanted OTHER SYSTEMS INSTRUCTION MANUALS, or good photocopies - either • to buy; • or exchange photocopies (EZY-BILT, BUZ (inc NZ), & BETTAFIT manuals available, also some STEEL TEC, MEK-STRUCT, & CONSTRUCTION); • or exchange original EZY-BILT 1-5 & 6-8 manuals for other original manuals. Please send details & prices to Mr Vern Ellis, P.O. Box 3277, Alice Springs, Northern Territory, Australia 0871. Tel: 0889538282. Email: vern.ellis@switch.com.au. Also **to swop**: a 2 model CONSTRUCTION 663 set.

For Sale KLIPTIKO No. 6 in original wooden box, nearly complete. The box veneer is a little chipped, but the label, which is inside the lid, is perfect. It portrays a small boy playing with Kliptiko, dressed in a green woollen jumper, knee-length grey socks, and short grey trousers. Most parts have a bit of rust. No manual. About £80. Please contact Mrs. C. E. Hutchinson: email: paradise1000@skegness60.fsnet.co.uk, or at 13 Holme House Road, Cornholme, Todmorden, OL14 8LD.

For Sale ERECTOR parts & metal set boxes. Details from Ivor Ellard, 44 Well Lane, Galleywood, Chelmsford, Essex, CM2 8QZ. Tel: 01245 269830. Email: ellard@nildram.co.uk.

For Sale CD VERSION of MCS - MECCANO VOLUME
Price including postage for the CD: UK - £5.50; Europe - £6.00 (10 Euros); Rest of World - £6.50 (US\$15, Aus\$20). Send cash in UK£, Euros, US/Aus\$, or UK£ cheques drawn on a UK bank, to Mr. T Edwards, 5 Burnside Road, Largs, Ayrshire, KA30 9BX, Scotland, Great Britain. Email - timothy.edwards1@btinternet.com. Please see the ad in 28/847 for details of the CD, or visit <http://edwards.web.users.btopenworld.com/meccano.htm>.

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Small Ads Short ads are free to subscribers (but repeats may not always be possible, please ask). Insertion guaranteed in OSN 30 if received by the end of July

OSN - Your Credit Balance is:

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Please send at least £ if you wish to receive the next Issue.

A 1920s French CONSTRUCTOR

No.2 Outfit This set, nearly complete, belongs to David Hobson & he kindly let me borrow it. Its manual is similar to the 24/702 one with 'S. F. du J. M.' on p2, but a leaflet with it, showing the parts/set contents, has 'PARAY-LE-MONIAL (S.-&L.)' rubber stamped on it. So the Set probably dates from soon after the move to Paray-le-Monial in 1925. Most of the parts are as would be expected except that none of the Pulleys have cutouts in their faces, and the Strips are narrower than any known before.

David also lent me a No.0, most likely also from the 1920s, which lacks some parts completely but has many more than would be expected of others. Again the Strips are the narrow type in the No.2. The parts in the No.0 are asterisked below & differences are in square brackets.

The SET The No.2 box, 25½*40½*2½cm, is similar to the one in 24/703 and the lid design is identical apart from the Set No. The contents correspond to the No.2 in the Leaflet (& MCS Extra Sheet X1.6). The parts were attached to green cards, and the N&B are in a green box, 53*53*14mm, with a white label saying: ÉCROUS, BOULONS etc... fabriqués spécialement pour le montage du Jouet "CONSTRUCTOR", in navy blue. [The No.0 box is 25¼*18½*3¼cm; the lid label is similar to the No.2 but is only the width of the pictures, with the text & Set No. rearranged above & below them.]

The PARTS The Leaflet with the Set shows the parts as in MCS X1.3/4c, that's to say as at the top of 24/702 but with the simplified Pulleys already mentioned and no face holes in the Flanged Wheel. All the different parts found in the Set are mentioned below, with details where they differ from earlier accounts, or where they have not been described before.

- Except where stated all metal parts are nicked steel. **Holes** are usually 3.2mm Ø but some are nearer 3.1 & 3.3mm.

- The **Lozenge*** & ½-**Lozenge*** #1 & 2 have minor changes to their outer dimensions.

- The **Strip*** #3, **SAS*** #4, & **DAS*** #5 are only 7.1mm wide.

- #7 **A/B** is also 7.1mm wide (which is more or less the same as all others seen). The bend point varies a little but typical overall dimensions are 9.0*9.7mm.

- The **Foot*** #8 has a base 18.2mm long with 2 holes at 11.0mm pitch, and a centre slot 6.0 – 6.4mm long.

- The **Spring Clip** #9 is 5mm wide, and is just like the illustration with half width tails that wrap past one another. When their ends are squeezed together the part can be slid along a Rod but it can only be put onto a Rod's free end. Later the conventional type was used.

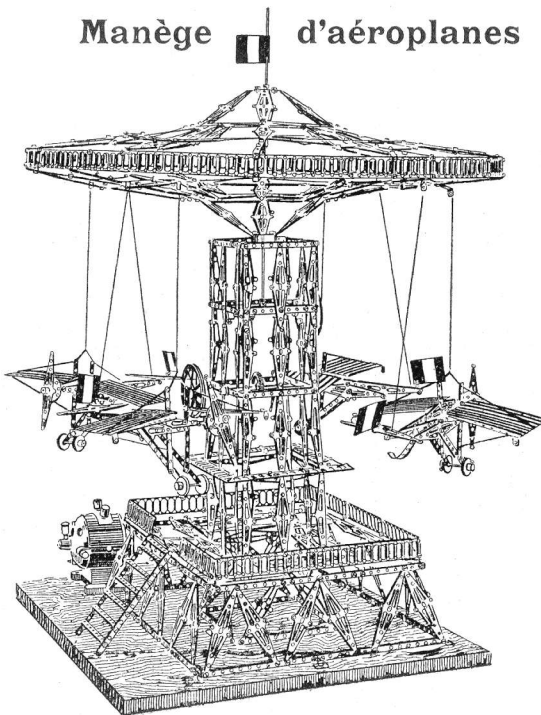
- The **Hook** #10 is not wire but the later flat type, see #22 in MCS p3/4. The same part was with the parts described in 29/485, and is 11.0mm wide, 17.6mm long, with a 2.7mm hole.

- The **Pulleys** #16, 19, 20, & the **Bush Wheel** #18 are all brass, turned from the solid. **Loose Pulleys** #19, 20 are 22.1mm/12.1mm o.d., & 3mm wide with parallel sides. The **Fast Pulley*** #16 is 22.1mm o.d., 3-3½mm wide in different examples,



& again has parallel sides but recessed on the outer face (left). The boss varies from 8.1-8.7mm Ø in different examples & the bore from 3.1-3.2mm; all are 6½mm long and double-tapped with a standard Bolt as set screw.

Manège d'aéroplanes



The **Bush Wheel**, is 32.0mm Ø & 1.5mm thick; it has 2 staggered rings of 6 holes each, as illustrated, on pcd of 16½ & 25mm. The boss is the same as the Pulley's, without the extensions for the tapped holes shown in the Leaflet.

- The **Crank Handle*** #21 & **Axles** #23-25 are variously 2.94-3.05 Ø, with sheared ends. The Axles are a millimetre or two over the nominal lengths of 100, 40, & 20*mm, & the Crank Handle is 133mm o/a with a 21mm [18mm] handle offset 10mm.

- The **N&B** are machined brass. The 5* & 6mm **Bolts**, #27,28, have neat 5.0mm Ø cheeseheads and pointed ends. Including these they are 6 & 7mm u/h. The **Nut*** (no PN) is square, 5.6mm A/F, & 2mm thick. The flat **Spanner** in the Set, right, is not the single-ended type in the Leaflet, and with 6.2mm openings does not fit the Nut above. So it may well not be a genuine part, though it does fit



the hex Nut mentioned in 24/701. It is 62mm long o/a, and 1.5mm thick.

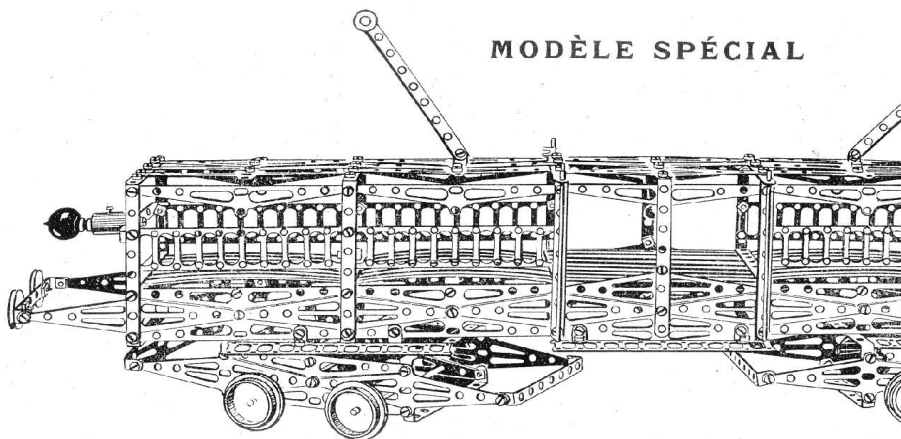
- The **cardboard parts** #32-36 are printed on both sides in the colours given in OSN 24. The oblongs of the **Oriflammes*/Signaux*** are about 30*25mm, & the trapezia 30mm long & 26mm deep. The **Flag*** is 44*36mm [44*35mm]. One **Railway Signal*** is 40mm [38*42mm] square & the circular one is 45mm [44mm] Ø. The **Toile de Tente*** is 100*76mm [103*76mm], with the red & white stripes about 5½ & 4mm wide.

- The **Wooden Bases** #37 & 38 are 5mm thick and are 107*105½mm & 107*148mm in plan. They have a centre hole and well rounded corners, typically 10mm radius.

- #6 **Braced Girder*** is as seen before. #29 **10mm Bolt**, & #30 **Screwdriver** were missing from the Set.

The MANUAL As already mentioned it is similar to the 1920s 0-2 in OSN 24. All the set models are identical & are on the same pages. The front cover & Intro on p1 differ only in minor details. p29 after the models has the special model below (truncated here but symmetrical fore & aft), with what look like an electric bulb at each end. The flooring is presumably the Toile de Tente sheets. p30 has small drawings of 3 more 'super' models, a Big Wheel, Windmill, & the rather nice Roundabout above centre. All are about the same size, and all are powered by an Electric Motor similar to the 110v one at the top of 24/704. p31 has the Set Contents, & p32 has yet another 'super' model, a 2-Bay Workshop which was also in the slightly later 0-4 manual referred to in 24/702. C3 & 4 are blank, and no printer is mentioned anywhere. Probably this Manual fits between the two in OSN 24.

MODÈLE SPÉCIAL



DEN DANSKE INGENIØR This Danish system was mentioned in 16/444, and now David Hobson has kindly lent me a selection of parts, including some which were only in the largest outfit, and the manual that was with them. DEN DANSKE INGENIØR (DDI from now on) had 93 parts in all including a good selection of Strips, Girders (Angle, Flat & Braced), and rigid Plates, but no Flexible Plates. Examples of these are shown on the facing page, together with all the other parts, some unusual Gears among them. (My) English names for the parts are in the Set Contents underneath.

The PARTS A list of the parts follows, with points of interest, and those seen are asterisked.

• **The Basics** The hole pitch is generally between 12.9 & 13.0mm but with extremes of 12.7 & 13.2mm. Holes are usually 4.4mm in Strips and 4.5mm in Plates, but a few are 4.2mm. Strips & Brackets are 13.0mm wide. Apart from the Flat/Angle Bracket, all the Strips & Brackets have large-radius ends, and the Plates have square corners. The longer Strips are about 1mm thick, and the 3-7h, and the Brackets, are mostly .85mm. Plates are .8mm.

With the one or two exceptions noted all the parts are steel, and apart from Axles & the like, all those seen are painted, even the Brackets. Strips & Brackets are dark green, and Plates & Wheels medium red. A few of the parts, at random, are a medium green or a dark red. Apart from the variations in hole size & pitch, the parts are well made, and the paint finish is mostly quite good.

• **Strips, #1-8.** The lengths listed are 2,3*,5*,7*,9*,11*,19* & 23*h, but the 2h seen is a Flat Bracket. **DAS, #15*,32,34,35.** The 1*5*1h, #15, is 67½mm long o/a.

• **Brackets, #8*,11*,12*,13*,14,29*,30*,31,33.** Apart from being slightly wider the Flat Bracket is almost identical to the MECCANO part, and the A/B is made from it. The Double Bracket is 15mm wide. The top section of the Double Bent Strip is 15mm long and the base holes are at 28mm pitch. The Rev. A/B is similar to M124 but without the slotted hole.

• **Flat & Angle Girders, #62-69, #50-57.** Both are in 23,19, 11,9,7,5,3, & 2h lengths. None have been seen.

• **Perforated Plates, #10,22,26,38,39,40*,41,42*,43,44.** 4 of the **Curved Plates, #76*,77,** with a 1h overlap, make a 12h circle of 50mm diameter. The curved top of the cab of the Crane on the manual cover/lid label is made from a #76. The circumferential holes are at standard pitch but the longitudinal ones in the one example seen are at 13.2mm pitch.

• **Flanged Plates, #36*37*,** are 65 mm wide o/a. These illustrate the variability of the parts – the 5*5h/5*11h have 4.2/4.5mm holes at 12.7/13.1mm pitch, and one 5*11h is a dark red while the other is a medium shade.

• **Braced Girders, #70-75,** are 23,19,11,9,7,5h long. A decorative plate but none seen, so of unknown rigidity.

• **Pulleys, #9,9A*,58,59*.** #9A, the Fast version of #9, is 24½mm o.d., and the width of the vee varies from 5½ to 6mm in different examples. The discs are non-ferrous, probably brass. #59 is 43mm Ø with a 7mm wide vee.

• **Flanged Wheels, #60*,61.** Looking at the illustration of #60, the boss sits on the 5mm deep upward beveling at the centre, and the edge of the disc is formed upwards into a 'Z' section, with a tread 4mm wide and a flange 3mm deep. The metal is quite thick giving a rigid wheel. The o.d. is 68mm and the 4 face holes are on a pcd of about 44mm.

• **Bush Wheel, #28*.** 36½mm Ø with 4.2mm face holes at 25mm pcd. The **Wheel Disc, #28A,** is shown with a large centre hole, presumably for the boss of the Bush Wheel.

• **Rubber Ring, #46*,** for Pulleys 9,9A. Black rubber now gone hard, 28mm o.d. & 6mm wide. One has a 'V' tread on its sidewalls and is a slightly different size (27/6½mm). **Tyre, #46A,** for the 43mm Pulley, #59.

• **Large-toothed Gears, #47*,47A*,48*,48A*.** #47,48 have 'outline' teeth of the STABIL 1926 patent type (see 13/349) but the discs are held together by a boss. #47 has 14 teeth, and #48, 42, like their STABIL counterparts, but their

Leading Particulars

Name DEN DANSKE INGENIØR

Country Denmark **Maker** unknown.

History From before 1948, 1935 is possible, to ?.

Hole dia. 4.4 – 4.5mm. **Hole pitch** 12.9 – 13.0mm.

Sets Nos.3/0, 2/0, 0, 1, 2, 3, 4, 5; linking sets 0A, 1A, 2A.

Material/Finish Steel; dark green & medium red. Some parts in dark red & medium green also known.

Boss Zinc, painted or brassed. 9.5-10.0mm o.d., 4.1mm bore, s/t ⅝" BSW. Most have EIFFEL on the outer face.

Fixing ⅝" BSW brassed steel N&B. Square Nuts 6.3mm A/F; 5.6mm Ø CH Bolts, 6, 9½, 19mm u/h.

Axles 3.95-4.00mm Ø.

diameters (29½ & 79mm o.d.) are slightly greater because of DDI's greater hole pitch. The teeth are a little wider too, 11mm for #47 & 10mm for #48. The pair run together at 4h spacing.

STABIL Gears can be used as bevels though the tooth engagement is not large, and to give a better engagement #47A (right) & 48A are simply one disc with boss, a sort of contrate.



• **Fine-toothed Gears, #78,79,80,81.** #80 & 81 are shown with 50 & 15 teeth and probably run together at 2h spacing. If so the Mod. would be .8 (32 D.P.), so rather coarser than MECCANO. #79 looks like a Bevel, and possibly #78 is a Contrate, or even a larger Bevel.

• **Bosses.** All are non-ferrous, probably zinc die-castings, but it's hard to be sure because some are brassed and the others are painted red. All are single-tapped ⅝" BSW and all except those fitted to the 24½mm Pulleys have 'EIFFEL' cast around the hole in the end face. A Danish system called EIFFEL with red & green parts, and, probably, some marked EIFFEL, was noted in 16/458, 17/491, & 23/682. So if the present parts are DDI there would seem to have been a connection between the two systems.

All the bosses have 4.1mm Ø bores but their diameters vary from 9.5 to 10.0mm. All are 8½mm long and the peening is either a normal ring or else wider, usually with some radial splitting.

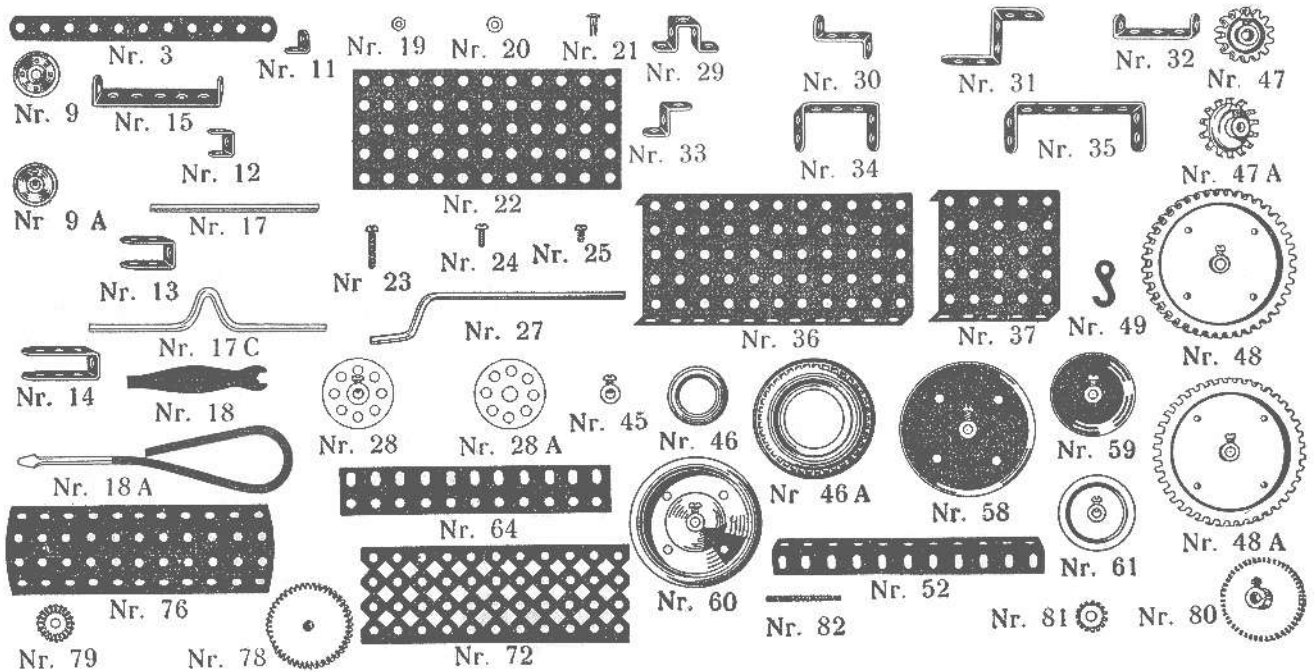
• **Axles, #16*,17*,17A*,17B*,17D*,17E*.** Their diameters vary from 3.95 to 4.00mm; their lengths are not given in the Manual but those found are 6,8,10,14½,22½,25cm long. **Crankshaft, #17C*.** 118mm long & 4.04mm Ø, with an 18mm offset. **Crank Handle, #27*.** 4.00mm Ø, 137mm long o/a, with a shaft of 100mm & a 27mm handle offset 20mm (2 were found plus a third, similar, but 4.27mm Ø). All these parts have slightly rounded ends.

• **Collar, #45.** Not seen.

• **Hook, #49*.** .8mm thick brassed steel, 25mm long, with a 4.5mm hole.

• **Fixings.** All are brassed steel and the thread is ⅝" BSW. The pressed **Nut, #19*,** is square, 6.3mm A/F, & 2.2mm thick. Hex Nuts are shown in the Manual. **Bolts #23*,24*,25*** are 6,9½,19mm u/h and have 5.6mm Ø cheeseheads, though the 9½mm has a slight taper. The **Washer #20*** is 9.0mm Ø & .85mm thick.

• **Bifurcated Rivet, #21*.** This part was in Sets 0-5 with 10 in the No.5, and 8 were found among the present parts. It is coppered steel with a very flat 7.2mm Ø mushroomhead, and the 3.7mm Ø shank is 11mm long, forked to a depth of 8mm. It is used as decoration in several manual models, either pushed into a hole or over the edge of a Strip. In either case the fork tails would have to be bent to hold it in place but are



| PART \ SET: | 3/0 | 2/0 | 0 | 1 | 2 | 3 | 4 | 5 |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Strip, 23h | | | | | 6 | 6 | 6 | 10 |
| 2. - 19h | | | 2 | 4 | 4 | 4 | 4 | 10 |
| 3. - 11h | | 2 | | | 4 | 6 | 6 | 10 |
| 4. - 9h | 2 | 2 | 2 | 6 | 8 | 10 | 10 | 12 |
| 5. - 7h | 2 | 2 | 4 | 6 | 8 | 10 | 10 | 12 |
| 6. - 5h | 2 | 2 | 4 | 4 | 8 | 10 | 10 | 12 |
| 7. - 3h | 2 | 2 | 4 | 6 | 8 | 10 | 10 | 12 |
| 8. - 2h | 2 | 2 | 4 | 4 | 6 | 8 | 10 | 12 |
| 9. 24mm Pulley, Loose | 2 | | | | | 2 | 2 | |
| 9A. 24mm Pulley, Fast | | 4 | 4 | 4 | 5 | 6 | 6 | 8 |
| 10. Perf. Plate, 5*23h | | | | | | | | |
| 11. Angle Bracket | 2 | 4 | 4 | 6 | 8 | 10 | 12 | 15 |
| 12. Double Bracket | | 2 | | 1 | 1 | 2 | 3 | 3 |
| 13. Dble Brkt, 2h deep | | | 1 | 1 | 1 | 1 | 2 | 3 |
| 14. Dble Brkt, 3h deep | | | | | 1 | 2 | 2 | 4 |
| 15. DAS, 1*5*1h | 2 | 2 | 4 | 6 | 10 | 12 | 12 | 20 |
| 16. Axle | | | | | 2 | 2 | 2 | 4 |
| 17. Axle | | 2 | 2 | 2 | 2 | 4 | 4 | 4 |
| 17A. Axle | | | | | | | 2 | 3 |
| 17B. Axle | ... | ... | ... | ... | ... | ... | 1 | 2 |
| 17C. Crankshaft | | | | | | | 1 | 2 |
| 17D. Axle | ... | ... | ... | ... | ... | ... | | 1 |
| 17E. Axle | | | | | | | | |
| 18. Span'driver | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 18A. Screwdriver | | | | | 1 | 1 | 1 | 1 |
| 19. Nut | 10 | 15 | 15 | 25 | 50 | 75 | 100 | 150 |
| 20. Washer | | | 4 | 5 | 8 | 10 | 10 | 10 |
| 21. Bifurcated Rivet | | | 3 | 4 | 6 | 8 | 8 | 10 |
| 22. Perf. Plate, 5*11h | | | | | | | | |
| 23. Bolt | 2 | 2 | 4 | 4 | 5 | 10 | 10 | 25 |
| 24. Bolt | 3 | 3 | 3 | 6 | 15 | 15 | 15 | 25 |
| 25. Bolt | 5 | 10 | 8 | 15 | 30 | 50 | 75 | 100 |
| 26. Perf. Plate, 5*9h | | | | | | | | |
| 27. Crank Handle | | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 28. Bush Wheel | | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 28A. Wheel Disc | | | | | | | 1 | 2 |
| 29. Double Bent Strip | | | 1 | 1 | 1 | 2 | 2 | 3 |
| 30. Reversed A/B, 2h | | | | | 1 | 2 | 2 | 4 |
| 31. Rev. A/B, 2*2*2h | ... | ... | ... | ... | ... | 2 | 2 | 4 |
| 32. DAS, 1*3*1h | | | | | | 1 | 9 | 10 |
| 33. Reversed A/B | ... | ... | ... | ... | ... | 1 | 2 | 6 |
| 34. DAS, 2*3*2h | | | | | | | 2 | 6 |
| 35. DAS, 2*5*2h | | | | | | | 2 | 4 |
| 36. Flanged Plate, 5*11h | | | 1 | 1 | 2 | 2 | 2 | 4 |
| 37. Flanged Plate, 5*5h | | 1 | | 1 | 1 | 2 | 2 | 4 |
| 38. Perf. Plate, 5*19h | | | | | | | | |
| 39. Perf. Plate, 5*7h | ... | ... | ... | ... | ... | ... | ... | 1 |
| 40. Perf. Plate, 7*7h | | | | | | | 1 | 2 |

| PART \ SET: | 3/0 | 2/0 | 0 | 1 | 2 | 3 | 4 | 5 |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 41. Perf. Plate, 7*9h | | | | | | | | |
| 42. Perf. Plate, 7*11h | ... | ... | ... | ... | ... | ... | ... | 1 |
| 43. Perf. Plate, 7*19h | | | | | | | | 1 |
| 44. Perf. Plate, 7*23h | ... | ... | ... | ... | ... | ... | ... | ... |
| 45. Collar | | | | | | | 2 | 4 |
| 46. Rubber Ring | ... | ... | ... | ... | 4 | 4 | 4 | 4 |
| 46A Tyre | | | | | | | 4 | 4 |
| 47. Large-Tooth Gear, 14t | ... | ... | ... | ... | ... | 1 | 2 | 2 |
| 47A. - 'Contrate', 14t | | | | | | | | 1 |
| 48. Large-Tooth Gear, 42t | ... | ... | ... | ... | ... | 1 | 1 | 2 |
| 48A. - 'Contrate', 42t | | | | | | | | 1 |
| 49. Crane Hook | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 50. A/G, 23h | | | | | | | | 4 |
| 51. A/G, 19h | ... | ... | ... | ... | ... | ... | 4 | 4 |
| 52. A/G, 11h | | | | | | | | 4 |
| 53. A/G, 9h | | | | | | | | |
| 54. A/G, 7h | | | | | | | | |
| 55. A/G, 5h | | | | | | | | |
| 56. A/G, 3h | | | | | | | | |
| 57. A/G, 2h | ... | ... | ... | ... | ... | ... | 4 | 4 |
| 58. Pulley, large | | | | | | | 2 | 4 |
| 59. Pulley, 43mm | ... | ... | ... | ... | ... | ... | 4 | 4 |
| 60. Flanged Wheel, 68mm | | | | | | | | 4 |
| 61. Flanged Wheel, small | ... | ... | ... | ... | ... | ... | 4 | 4 |
| 62. Flat Girder, 23h | | | | | | | | |
| 63. Flat Girder, 19h | | | | | | | | |
| 64. Flat Girder, 11h | ... | ... | ... | ... | ... | ... | ... | 2 |
| 65. Flat Girder, 9h | | | | | | | | |
| 66. Flat Girder, 7h | | | | | | | | |
| 67. Flat Girder, 5h | | | | | | | | |
| 68. Flat Girder, 3h | | | | | | | | |
| 69. Flat Girder, 2h | | | | | | | | |
| 70. Braced Girder, 23h | | | | | | | | |
| 71. Braced Girder, 19h | | | | | | | | |
| 72. Braced Girder, 11h | ... | ... | ... | ... | ... | ... | ... | 2 |
| 73. Braced Girder, 9h | | | | | | | | |
| 74. Braced Girder, 7h | | | | | | | | |
| 75. Braced Girder, 5h | | | | | | | | |
| 76. Curved Plate, 4*11h | ... | ... | ... | ... | ... | ... | ... | 4 |
| 77. Curved Plate, 4*9h | | | | | | | | |
| 78. Contrate? Gear | | | | | | | | |
| 79. Bevel? Gear | | | | | | | | |
| 80. Gear Wheel 50? t | | | | | | | | |
| 81. Pinion 15? t | | | | | | | | |
| 82. Screwed Rod? | | | | | | | | |
| Model Leaflet | #1 | #1 | #2 | #2 | #2 | #2 | | |
| Manual | | | | | | | 1 | 1 |

SET CONTENTS

so stiff it would be difficult to do so even using pliers.

• **Tools.** The **Screwdriver #18*** found in the parts has a shorter handle than in the illustration. The nicked wire is 3.95mm Ø, the length o/a is 134mm, and the handle is 53mm long & 26mm wide. The tip is parallel but has probably been ground to that shape. The **Span'driver #18A.**

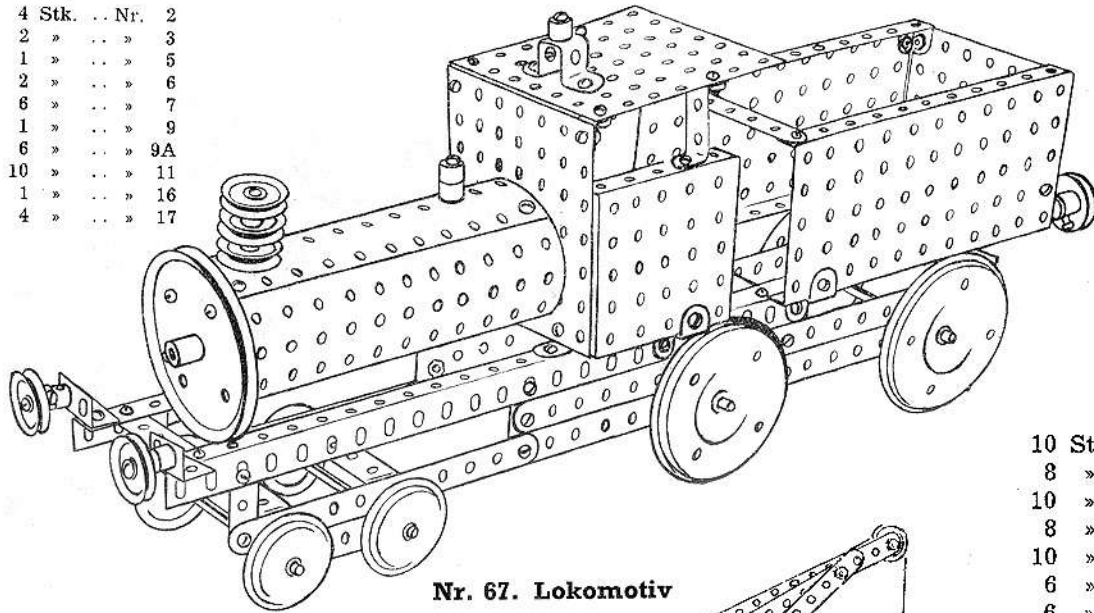
• **Screwed Rod (?), #82.** Not seen but it looks like a short Screwed Rod in the Illustrated Parts.

The SETS The contents of the 8 basic sets occupy 6 pages in the manual and have been condensed into one table on the previous page. The contents of the 3 linking sets in the system, 0A, 1A, & 2A, are also in the manual. Apart from the change from Loose to Fast Pulleys between 3/0 & 2/0, the sets are probably progressive, and there may be some errors in the numbers of Strips and other parts in the smaller sets because they don't all quite agree with the contents given for the linking sets.

The manual also has photos of all the basic sets. The No.4 has a tray of parts above those in the bottom of the box, and the No.5 has 2 such trays. The lids of Sets 4 & 5 are shown and have a label like the one in MCS (also like the manual cover shown later but with a light, wider border with a pattern of parts on it). With David's parts was the bottom of a No.0 box – it is 6½*11*¾" in size and is fawn cardboard with 6 orange trays inside to create partitioning.

The MANUAL SUMMARY •Name: DEN DANSKE INGENIØR
 •Details of maker: none. •Dates &/or Ref Nos: none. •Page size: 258*149mm. •No. of pages: 52 unnumbered inc covers. •Language: Danish. •Printing: line drawings of models. •Page Nos. of Illustrated Parts & highest PN: 4-6,82. •Page Nos. of Set Contents & highest PN: 7-9,12,13,16-18. •Sets covered: 3/0,2/0,0,1,2,3,4,5. •No. of models for each set: 11,10,5,12,11,10,7,7. •Name, Model No., Page No. of first & last model of each set: 3/0: Sækkevogn,1,19; Flyvemaskine,11,20. 2/0: Trækvogn,12,20; Mølle, 21,22. 0: Vejhøvl, 22,22; Telefon,26,24. 1: Hejseværk,27,24; Svingbro,38,27. 2:

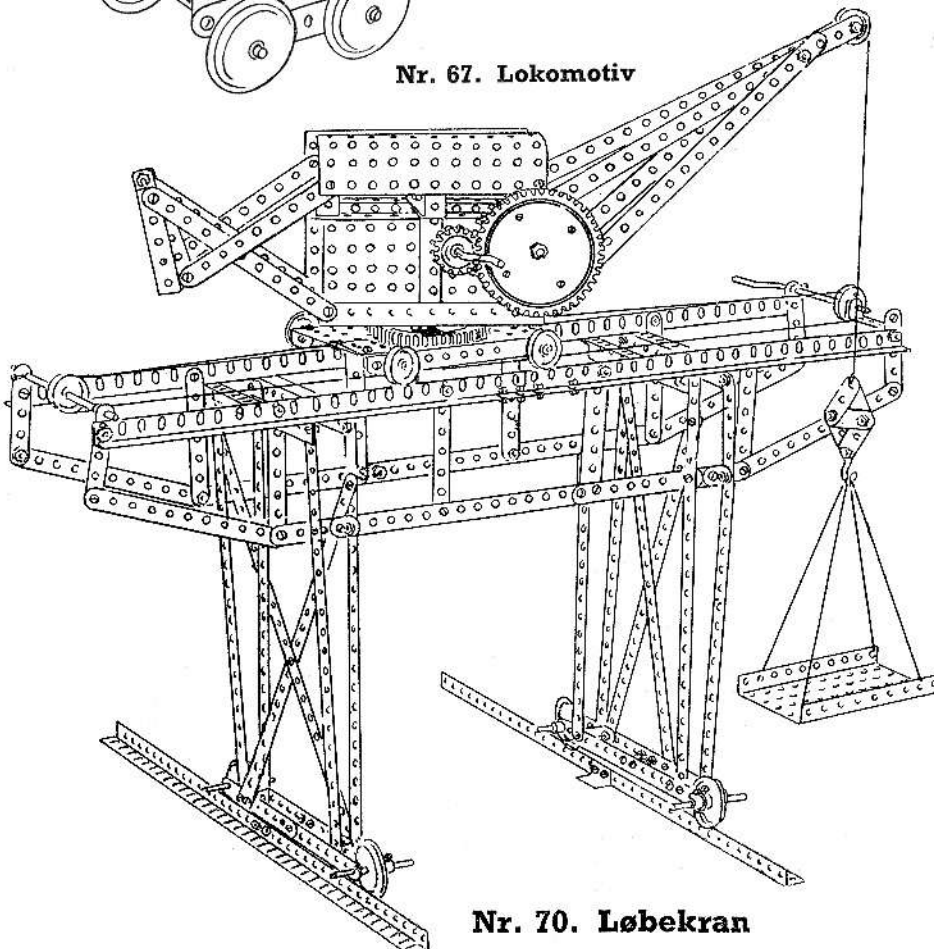
| | | | |
|----|------|-----|----|
| 4 | Stk. | Nr. | 2 |
| 2 | » | » | 3 |
| 1 | » | » | 5 |
| 2 | » | » | 6 |
| 6 | » | » | 7 |
| 1 | » | » | 9 |
| 6 | » | » | 9A |
| 10 | » | » | 11 |
| 1 | » | » | 16 |
| 4 | » | » | 17 |



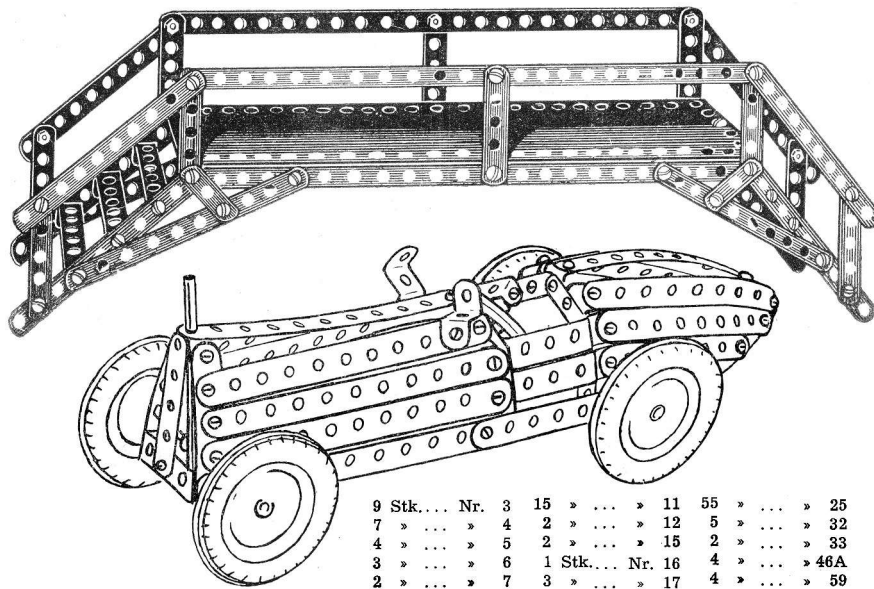
Nr. 67. Lokomotiv

| | | | |
|----|---|---|----|
| 75 | » | » | 19 |
| 5 | » | » | 23 |
| 70 | » | » | 25 |
| 1 | » | » | 29 |
| 4 | » | » | 30 |
| 4 | » | » | 33 |
| 2 | » | » | 36 |
| 2 | » | » | 37 |
| 1 | » | » | 40 |
| 8 | » | » | 45 |
| 2 | » | » | 50 |
| 2 | » | » | 57 |
| 1 | » | » | 58 |
| 4 | » | » | 60 |
| 4 | » | » | 61 |
| 3 | » | » | 76 |

| | | | |
|-----|------|-----|-----|
| 10 | Stk. | Nr. | 1 |
| 8 | » | » | 2 |
| 10 | » | » | 3 |
| 8 | » | » | 4 |
| 10 | » | » | 5 |
| 6 | » | » | 6 |
| 6 | » | » | 7 |
| 1 | » | » | 9 |
| 6 | » | » | 9A |
| 12 | » | » | 11 |
| 1 | » | » | 14 |
| 4 | » | » | 16 |
| 2 | » | » | 17 |
| 3 | » | » | 17A |
| 150 | » | » | 19 |
| 25 | » | » | 23 |
| 25 | » | » | 24 |
| 100 | » | » | 25 |
| 2 | » | » | 27 |
| 1 | » | » | 28 |
| 1 | » | » | 32 |
| 4 | » | » | 33 |
| 3 | » | » | 35 |
| 3 | » | » | 36 |
| 4 | » | » | 37 |
| 1 | » | » | 42 |
| 9 | » | » | 45 |
| 1 | » | » | 47 |
| 1 | » | » | 48 |
| 1 | » | » | 48A |
| 1 | » | » | 49 |
| 4 | » | » | 50 |
| 4 | » | » | 51 |
| 4 | » | » | 52 |
| 4 | » | » | 57 |
| 4 | » | » | 61 |
| 2 | » | » | 76 |



Nr. 70. Løbekran



Nr. 69. Racervogn

| | | | | | | | | | | | | | |
|---|---------|-------|----|----|---------|--------|----|----|-----|-----|-----|----|----|
| 9 | Stk.... | Nr. 3 | 15 | » | ... | » | 11 | 55 | » | ... | » | 25 | |
| 7 | » | ... | 4 | 2 | » | ... | » | 12 | 5 | » | ... | » | 32 |
| 4 | » | ... | 5 | 2 | » | ... | » | 15 | 2 | » | ... | » | 33 |
| 3 | » | ... | 6 | 1 | Stk.... | Nr. 16 | 4 | » | ... | » | 46A | | |
| 2 | » | ... | 7 | 3 | » | ... | » | 17 | 4 | » | ... | » | 59 |
| 1 | » | ... | 9A | 55 | » | ... | » | 19 | | | | | |

aren't used in any of the models. The Large Gear is usually the DDI pattern but in one model it looks like the STABIL part with a large centre hole, and in the photo of the No.3 outfit (but not in the No.4 & 5) both size Gears are like MÄRKLIN with Gear Rings (18 & 40t) on Pulleys.

The 4 models on the back cover are shaded line drawing with no names or parts lists, and include Plates unlike any DDI parts, as in the Footbridge left.

HISTORY There are few clues beyond the suggestion of a date of c1935 in 10/266. The use of 'aa' instead of 'å' in the Manual indicates pre-1948, and none of the models look postwar. The manufacturer isn't mentioned in the Manual, the printer though was from Aarhus (aka Århus), a large town on the east coast of the Danish mainland.

Presse,39,27; Brandbil,49,32. 3: Rutchebane, 50,33; Svingkran, 59,37. 4: Flyvemaskine,60,38; Omnibus,66,43. 5: Lokomotiv,67,44; Traktor,73,50. •Other notes: Intro on p3; photos of sets on pp 10,11,14,15. An extra model No.74, a small Mobile Crane (Transportabel Sækkeløfter), set unspecified, is also on p50, and 4 small, unnamed models are on p52. pp2,51 are blank. The printer is given on p52: S. MØLLER CHRISTENSEN 1/8 AARHUS.

There is a fair range of models, with a single drawing & list of parts for each. The model on the cover (right) isn't in the Manual (and on closer examination the Gears in it are the DDI type, not the MÄRKLIN pattern suggested in OSN 16. Apart from simple gearing none of the models have any mechanical features.

Most of the unusual parts can be seen in the models left and in the Racing Car above. The 2 Braced Girders in Set 5



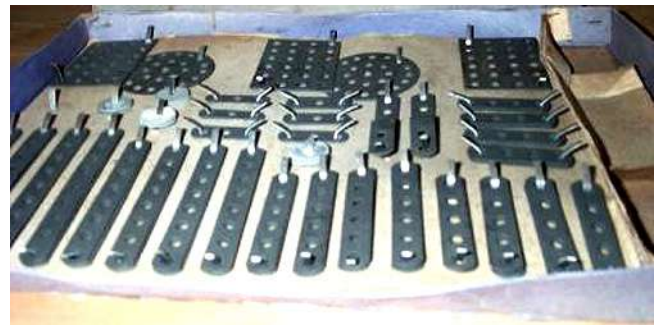
DEN DANSKE INGENIØR: S4

OSN 30/882

SNIPPET: 'New' System FRAMA My thanks to Thomas Morzinck for drawing my attention to the No.1 Set of this seemingly simple German system, sold recently on Ebay. The box is blue and measures 25*30*2½cm. The large lid label is black on fawn and below is an improved B&W version of it (thanks to Thomas). The only indication of the age of the Set is the Aeroplane on it.

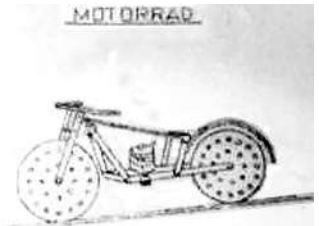
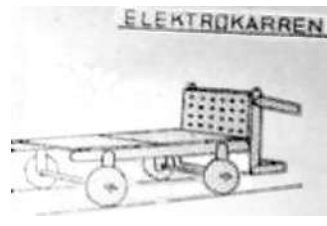


The main parts are attached to a white card, some held by clips and others by longish N&B. Most can be seen in the photo atop the next column – Strips with 3, 4, 5, 6, 8, & 9 holes; 4*6h Plates, 5h Ø Discs, and what look like 4 Pulleys of about 1½h diameter. In another photo are 7 A/Bs with



round holes in both lugs, 6 wide MÄRKLIN-type Double Brackets, and (probably) a Screwed Rod. The hole pitch scales at about 12mm.

The manual is in landscape format with small pages perhaps 12cm wide. It is B&W and the cover has the same illustration as the lid label. Inside are sketches of 7 models including the 2 below, a Crane, Scales (Waage), and a Hand Cart.



FRAMA: S1

OSN 30/882

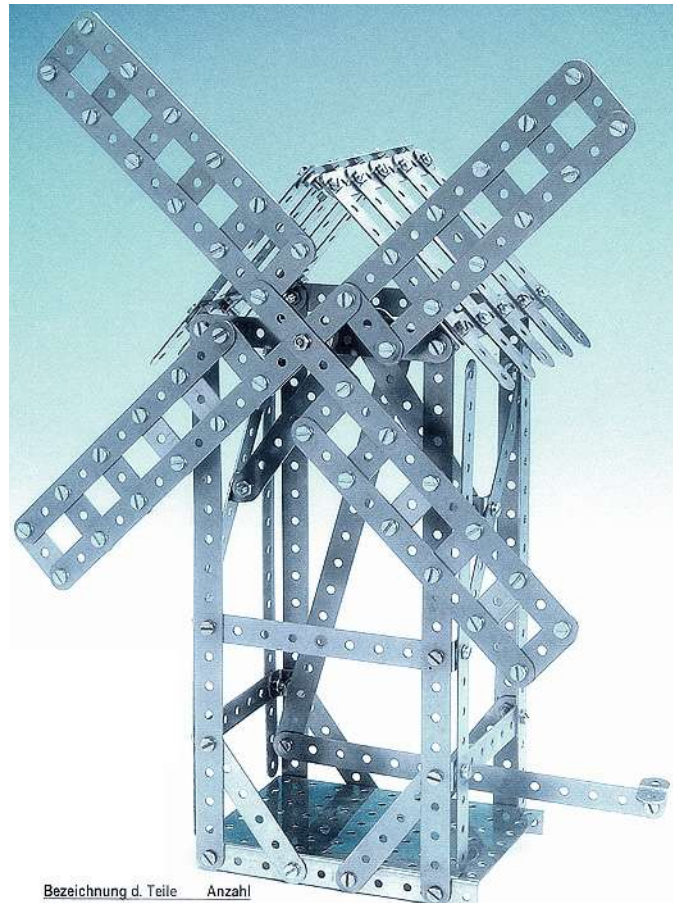
New System: MOLECKI This German system consists of one set at present, & it is unusual in two ways. First, it has no Wheels of any sort, just Strips, DAS, Flanged Plates, & A/Bs; secondly, all the main parts are stainless steel - a first I think, though David Fellows has of course made MECCANO compatible parts from this material for some time. No danger of these parts being mistaken for his, the hole pitch is 14.0mm. My thanks to David Hobson for lending me his set for this account.

NAME MOLECKI Metallbaukasten. The name is that of the factory or workshop in which the parts are made, at Zella-Mehlis, a town between Eisenach & Sonneberg in Thüringen.

COUNTRY Germany

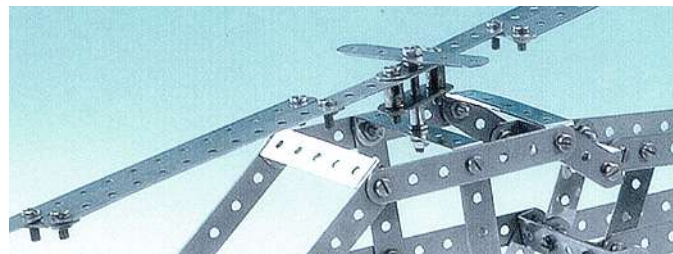
MAKER Fa. Molecki Werkzeugbau Zella-Mehlis, Gabelsbergerstr. 06, 98544 Zella-Mehlis, Thüringen. Tel/fax 03682 46125/482968 (this is only on a small label stuck inside the lid, to warn against putting the parts into ones mouth).

HISTORY Known from Ebay in late 2003. (Notice the girl's bare midriff in the lid label below - the fashion for this started, in Salisbury at any rate, late in 2003.) The seller was Norbert Büttner, Thüwa-Shop, Steigerstr. 51, 99897 Tambach-Dietharz, tel/fax: 036252 31505/32283. The set was also advertised on his web site (as of early 2004), www.thuewa.de - click on thüwa-shop, Artikel aus Edelstahl, Spielwaren. The price was €69.50 including postage inside Germany.



| Bezeichnung d. Teile | Anzahl | | | | |
|----------------------|--------|-------------|----|---------------------|-----|
| Grundplatte | 01 | 07-Lochstab | 02 | 17-Lochstab | 05 |
| 02-Lochstab | 01 | 08-Lochstab | 04 | 19-Lochstab | 04 |
| 03-Lochstab | 24 | 09-Lochstab | 19 | Winkel 1x1-Loch | 24 |
| 05-Lochstab | 02 | 11-Lochstab | 08 | Schraube M4x65mm | 01 |
| 06-Lochstab | 04 | 14-Lochstab | 01 | Schraube M4x45mm | 01 |
| | | 15-Lochstab | 04 | Schrauben & Muttern | 130 |

MODELS There were three A4 model sheets in the Set, each with a photo of one simple model on it, together with a parts list. The best one is the Windmill above. It is treadle operated although it's not clear what provides the pivot for the treadle lever. Another model is the Helicopter being made on the lid label. It is skeletal, but over 65cm long, and it could easily be improved from the remaining parts in the Set. The Spacers can be seen in the rotor head below. The final model is a rather strange Big Wheel, with a 2-dimensional wheel on one side of a pylon, and carrying 6 2-dimensional cars. Like the Windmill it is treadle driven, with a pivot point made from 3h Strips.



SETS Size A (but, from the web site above, others are planned). The parts are loose in a red plastic, commercial box, 36½*29*5½cm, with fixing partitioning & a clear, hinged lid. The label above, 20*28¼cm, is stuck to the lid.

HOLES: 4.0mm Ø (4.4 in A/B). **Slots** (only in A/B) are 6mm long. **Pitch** is 14.0mm.

MATERIAL/FINISH Quite shiny grey stainless steel except the N&B and Spacers.

PARTS Basics • Most parts are .8mm thick; a few are .9mm, & all the 19h Strips are 1.0mm. • **Widths** vary from 13.3 to 13.6mm, but the A/B is 14.2mm. • **Ends** are fully rounded or nearly so, but the **corners** of the Flanged Plate are nearly square. • **Quality** of the parts is good although the line of holes in a few Strips is not quite parallel to the edges, and there is slight burr in a few places. Some of the Strip ends & the slotted holes in the A/B indicate hand rather than machine finishing.

• **Strips** with 2,3,4,5,6,7,8,9,11,14,15,17,18,19 holes. **DAS**, 1*5*1 & 1*3*1h. • **A/B**. • **Flanged Plate**, 7*10h. **Spacer**, 8.0mm o.d., 4.2mm bore, 11mm long, steel with iridescent finish.

• **Fixings:** M4 commercial steel N&B with BZP finish. **Nuts**, hex machined, 7.0mm A/F & 3.0mm thick. **Bolts**, 7.0mm Ø CH, and 8, 20, 45, 65mm u/h.

• **Tools:** **Screwdriver**, 145mm long with black rubbery, triangular section handle decorated with short red lines, and 3.2mm Ø blade. **Spanner**, commercial 7mm with one open & one ring end, marked 'CHROM-VANADIUM' & 'DIN 3113'.

SET CONTENTS (as found) 6,2,5,4,6,8,19,4,14,8,14,10,34,7

REMARKS Stainless steel has obvious advantages in terms of durability but is not perhaps quite as attractive looking as say nickel. Incidentally, David has pointed out that there are various grades of stainless steel and in this case the Strips are slightly magnetic whereas the Flanged Plate is entirely non-magnetic.

The use of a treadle is an unusual and interesting feature but locknuts are needed for it, and also when using the long Bolts as axles. However there is only one Spanner in the Set and its jaws are thicker than the depth of the Bolts.

PÈRE NOËL / AÉRO TECHNIQUE MACREZ Some notes on this system from c1930 ads were given in 4/64, and now some parts are to hand. They came built up into the 10" span Biplane below, except that the Propeller is a homemade addition. The parts in it have a clear resemblance to those in the OSN 4 models though a Coned Disc replaces the Radial Engine. In fact there can be no mistaking the origin of the larger parts because each is stamped with the maker's mark. This takes two forms, both circular & about 1½cm diameter – the first reads 'AÉRO TECHNIQUE (sic) NOËL | COSTE & LE BRUX | PARIS · NEW YORK'; the second 'AÉRO MACREZ NOËL | NUNGESSER | ET COLI'.



These markings no doubt indicate that the parts are from the sets commemorating famous French pilots that were listed in one of the OSN 4 ads, and Jacques Pitrat has kindly supplied some details. Dieudonné Costes & Joseph Le Brix made many pioneering flights together including a world tour in 1927. Costes was also, in 1930, the first to cross the Atlantic non-stop in the difficult, Paris to New York, direction; however he was not with Le Brix for that flight but with Maurice Bellonte. (hence the Costes & Bellonte set). Charles Nungesser was a French WW1 ace, and he

disappeared with François Coli while trying to fly from Paris to New York in 1927, two weeks before Lindbergh succeeded in the other direction.

The PARTS The various major parts in the model are shown bottom left and they are listed below with some notes about them, and the quantity of each in curly brackets. Although the model is relatively crude in concept the parts themselves are accurately made and fit together well. The numbers in the photo are mine for ease of reference. **Holes** are 4.1mm Ø & nearly all are at 12.0mm pitch or multiples thereof. The **thread** is 4mm Ø x .75mm pitch, no doubt the pre-ISO French standard.

The **Wing #1**, 252*59mm; the **Half Wing #2**, 94*48mm; & the **Fuselage Side #3**, 178mm long, are made from coloured, flexible plastic, 1mm thick, except #3 at 1.2mm. {1,2,2.} The top Wing is flat across the chord but the Half Wings have a little camber.

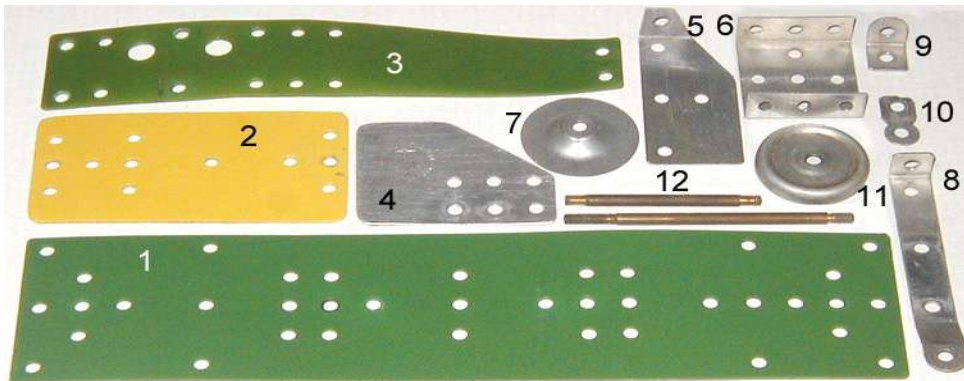
The **Fin #4**; **Half Tail #5**, 59mm long, with attachment lug; & the flanged **Bulkhead #6**, 36*37mm wide, are aluminium, .65mm thick. {1,1 of each hand,2.} Other aluminium parts are the **Coned Disc #7**, 36mm Ø, which sits loose between the Propeller and the front Bulkhead; the formed **Strut #8**, 84mm long & .9mm thick, which has a lug to support the top wing, and a hole at the bottom for the undercarriage axle; the **Bracket #9** used to attach the lower wing; the flat imitation **Tail Wheel #10**; and the formed Wheel #11, 34mm Ø & 4½mm wide. {1,2,2,2, 2.}

The remaining parts are brass, now mostly tarnished to a dark brown, but still bright on non-exposed surfaces. The **Rods #12** are 4.06mm Ø and are 58 & 85mm long o/a, with threaded ends. The 85mm has 7 & 15mm of thread, and passes through both Bulkheads, with the Propeller lock-nutted on at the front; the 58mm has 6mm of thread at each end, and is used as the interplane strut & as the axle. {1,5.} The **Bolt** is 4mm u/h, with a few 5mm, and has a slightly domed 5.0mm Ø CH; the hex **Nut** is 5.5mm A/F & 2mm thick. The **Eyelet** is 4mm long and is used to space the Wheels from the Strut. {14,4,42,2.}



QUESTIONS Parts 1,3,4, & one Tail 5 have the Costes & Le Brix stamp, while the 2's & the other Tail have Nungesser & Coli. So it seems likely that the parts were from 2 different sets, and that would account for the different coloured Wings. In OSN 4 the names C & L B are prefaced by Vert (green) and that would tie in nicely with the green parts, but N & C have Blanc (white) before them, and Jaune (yellow) precedes Assolant et Loti.

On the parts, the Coned Disc can't be seen in any of the models in the ads, and the Tail Wheel is rather roughly made compared with the other parts.



PÈRE NOËL / AÉRO TECHNIQUE MACREZ: S1

OSN 30/884

Snippet - 'New' System: METALLBAUKASTEN This little set was on German Ebay and all that is known of it is the picture right, with the name of the lid label. The parts that can be seen in the box are listed below.

- A Flanged Plates top left, 5*10h with a 3*8h centre cutout, and another under it I think.
- A number of circular parts under the Flanged Plates, probably Wheel Discs, and perhaps a Pulley or Pulley Disc.
- Two 4*3h Flanged Plates on the right, with holes around the edge of the top face, and one in the centre.
- Two lengths of dark looking Axles top right, possibly with screwed ends.
- Some Brackets and 1*5*1h DAS in the compartment to the left of the top 4*3h Flanged Plate.
- Strips, including some 5h long, in the compartment to the left of the lower 4*3h Flanged Plate, and longer ones, up to at least 15h long, in the bottom compartment.



METALLBAUKASTEN [4]: S1

OSN 30/884

CONSTRUCTION in 2003 Paul Goodman kindly gave me Eitech's 2003 German language catalogue. The sets in it are listed below with the new ones underlined and an asterisk by those which have changed compared with 2002 (see 27/795). The total number of sets is considerably reduced but the larger ones remain unchanged, except that the basic outfit No.03 is replaced by a larger set 06, with a Geared Motor in it.

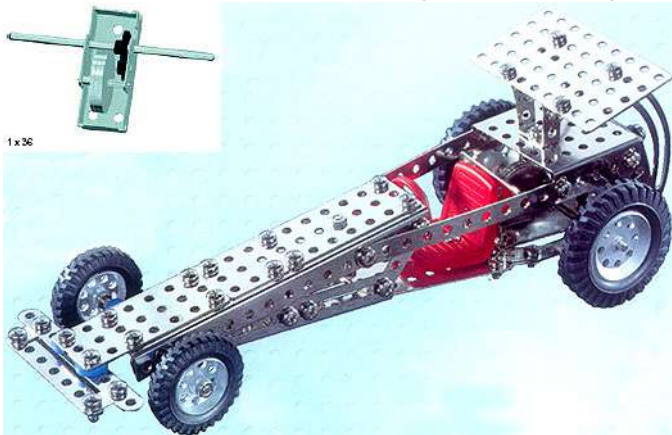
The **2003 range** is: Sets 02,04,06,07,08,10,11,15,30*,31,32,60,61-66,72,75,76,78,155; Packs of Parts 101-109,110*,111*,112-114,115,116,117,118,119,120.

The **discontinued sets** are: 01,03,05,13,17,69,77,70,162.

The **new/changed sets** are: • **06**. This is a 2 tray basic outfit, size 350*290*75mm. The trays shown look identical with those for 04 in 2002, however it has 582 parts (against 419 in the 04) and they include a Geared Motor. The models on the lid, below, look new, but the illustrations are too small to see



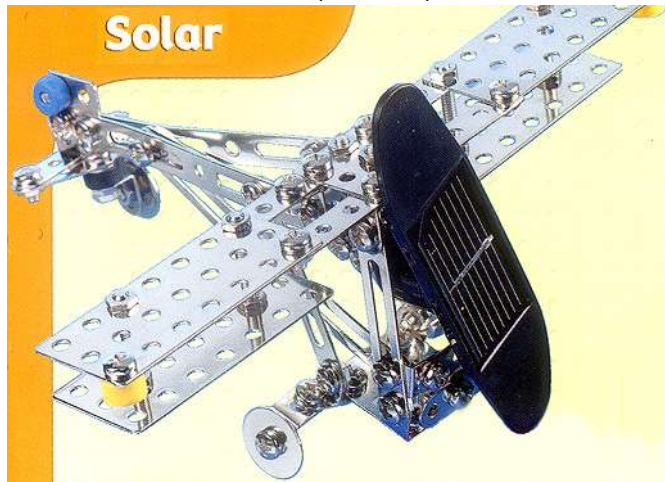
many details. • **07**. This set is not in the catalogue but was shown as new on the Eitech web site when I looked last October. It has 378 parts and the lid shows 3 lorries, all with similar, rather old-fashioned front ends. One is a Breakdown Truck with a crane made from standard parts, one is a Tanker with a yellow plastic tank on the chassis at the back, and the third has a blue container, or van body, instead of the yellow



tank. • **10**. This set, 350*290*30mm, has 319 parts and a Friction Motor; the lid shows a Buggy, the Dragster below (with the Motor inset), & a F1-style Racing Car. The Small & Large Pulleys/Tyres are PN 1031/1421 & 1032/1422. • **30** is shown in the catalogue packed in the blue plastic case shown at the top of the next column – it is as in 2002 (the picture should have been included in OSN 29). This set is not on the web site but instead, labelled as new, is a No.30 in an ordinary box with the earlier label (and the earlier parts on it) as shown in 25/727. However the instructions for the Set, which can be downloaded from the site, show the later parts. • **60**. A 253 part outfit, size 289*174*76mm, and the 3 models on the lid are a



Tower & a Windmill, both rudimentary, plus a simple but rather better Tower Crane, about 30cm high. • **72**, again 289*174*76mm, is a new 'Solar' set with 188 parts. On the lid an ungainly Solar Panel serves as a propeller on the Biplane below and as a rotor on a simple Helicopter.



The **new/changed packs** are: • **110**, which is now the Solar Panel used in Set 72, instead of the longer one used in No.71, see 16/442. • **111**. Plug & socket connectors are now fitted in the leads joining the Motor & Solar Panel. • **115**. A blue cylindrical Motor with Battery Box and a selection of parts including 25h A/Gs & blue plastic Gears. • **118**. A Geared Motor for 'Solarmodul'. The 'works' are in a small rectangular clear plastic housing. It isn't clear what it is to be used with but the leads look as if they could connect to models made from Eitech's plastic 'Experimentiersets'. Also included though are adaptors to allow connection to Solar Panels, etc. • **119**. Another Geared Motor in a clear rectangular plastic case, but larger and with output shafts on the top, bottom, & the 2 sides. The case looks 'knobbly' like Lego and may be primarily intended to fit to the Experimentiersets parts. • **120**. A Solar Panel which looks the same as the one in Pack 111.

2004 UPDATE In mid-January the Eitech web site showed the following **sets**: 01,02,03,04,05,06,07,08,10,11,13,15,17,30,31,32,60-66,72,75,76,77,78,155. Apart from the new 2003 sets (Nos.07,10,60,72) and Sets 69,70,162, the range has reverted to what it was in 2002. The lids shown for the reintroduced sets are as in the 2002 catalogue.

The **parts packs** remain as in 2003 plus, under Solar, #1630 (the Rotor in #110 is shown, plus, not shown, 'Motor & Bushse'), and #1631 (which appears to be the same as #111 but only the Panel is illustrated).

The web site also shows the individual parts in the system though I couldn't find the Wheels used on the Dragster (left). Parts I'd not seen before included #1136, a 6*12h Transparent Plate with only the corner slots pierced; a Bulb Holder #1734; a 3.5v Clear Bulb #1735; & a Red Flashing Bulb #1736.

New System: POLYLONG

Polylong (600 series) CONSTRUCTION Sets. Last year Edmundo Veiga found the outfit with the lid below on sale in



Buenos Aires and several examples of the same set have now been seen on German Ebay. Apart from the set number the lid looks identical to the Eitech No.65 (mentioned in 22/622) but no No.665 Eitech set is known, and closer examination of the lids shows that the logo at bottom left is 'PoLyLong Jilie' instead of 'eitech GERMANY'.



The two logos are shown above.

The step-by-step instructions for the 3 featured models are on separate sheets, and are identical to those from the Eitech web site except for the logo at the bottom of the front page, with MADE IN GERMANY under the Eitech one, and MADE IN CHINA under the other. On examination the parts in the Set, including the crosshead Bolts, seem identical to Eitech ones, and the same PNs are used in the Model Sheets.

Edmundo's 665 box has small photos of 5 set lids on its underside, the 665 and Nos.661-664, and the latter look just like the Eitech 61-64 sets. It also has 'Not suitable for children under 96 months' in 8 European languages (or 'under 8 years' for some countries).

In passing, not all the logos on Eitech sets have the small GERMANY under Eitech, but the significance of its inclusion, or not, isn't clear yet – I think that all the Eitech boxes I've seen have Made in Germany on them but I've not noticed if their logos have GERMANY under them. A point to watch for in future.

I doubt if even the most optimistic firm would hope to sell such a blatant copy on the European market without legal action against it, so my guess is that the 661-665 sets are either another Eitech line or are made under license from Eitech. Probably the latter because Polylong now have many other sets to their name, as explained below. As far as is known there is no indication of the name of the manufacturer on any Polylong set.

Since the above was written a number of other lids from small Polylong CONSTRUCTION sets have been seen on Ebay. A No.663, featuring a Helicopter & a Seaplane (211 parts) is, as expected, like the Eitech No.63, but



666, Fork Lift (98 parts), is quite different to the Eitech 66. The others, all for small models, are in the same size boxes as the 663 and 666, 16*14*6½cm, with the same style lids, and have no Eitech equivalents. They are 671 left (Bike, Trike, 121 parts); 673 (Kart, Mobile Crane, 122 parts); 681 (Jet

Fighter, 146 parts). The names are mine for the models on the lids.

Three other '600' sets have been spotted on Ebay, box sizes unknown. The No.678 lid is like the 671 etc in style and shows a Lorry running on thin plastic Wheels, perhaps 3½cm Ø, red on the front & yellow on the back. The other two feature rather bigger models using the normal CONSTRUCTION plastic Road Wheels. No.669, with 188 parts, has a lid similar to the 665, but with a Trike- & a Quad-Buggy on it. Only a model from the other, No.679, has been seen - a Tipping Lorry well over 20cm long, with some features of the '700' models described below, including a cab using special parts. **Another model**, probably from a 600 series set, but Set No. unknown, is a Tractor running on 4 Road Wheels, with the same cab as the 679, and a small bucket on the front, attached by 2 Slotted Curved Strips.

Nos. 678 & 679 have been sold on Ebay from England as well as from Germany.

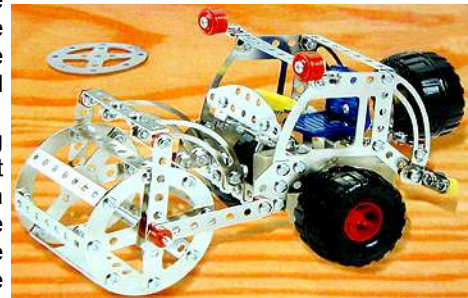
And More Polylong CONSTRUCTION (700 series) Sets

Apart from the 679 set, and give or take one or two plastic pieces, all the parts in the small sets above look like standard Eitech, but the sets to be described, mostly seen on German Ebay, also include some special parts unique to Polylong. 5 sets with the CONSTRUCTION name are known, Nos.701, 702, 722, 723, & 725; each features one model, somewhat larger & slightly more complicated than those for the '600' sets, and motorized in the case of the 701 & 702 outfits.

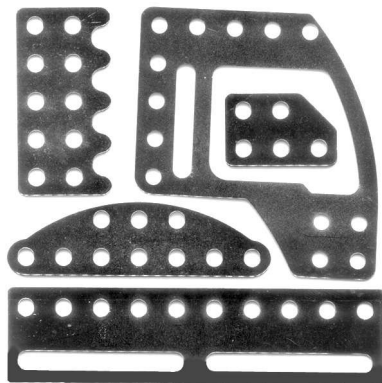
A No.702, bought from Germany and apparently new, is to hand. Its end-opening box measures 33*43*4¾cm and the parts are in an expanded foam block (more foam than parts), mostly packed in plastic bags. Some of the English on the lid below is rather odd but one can guess what 'MADE FROM



YOUR OWN CREATION' means. I think though that the '21' CENTURY NEW EDITION FLASHING ENTER' in the green star top centre just means a brilliant new set, and certainly there are no flashing lights in the Set. The featured Shovel model above is also shown on the underside of the box, along with the featured model from the No.701 outfit, right. Nothing indicates that it can't be made with the parts in the 702. Also on the bottom are 'Made in China' and the 'not for the under 8's' in 8 languages.



Most of the parts are virtually identical to their Eitech equivalents, and have the same PNs, but the small differences noticed are mentioned in the Set Contents that follows (taken from the Model Leaflet). The new parts are in red, and most of them are shown overleaf, 50% full-size. The PNs of the new



parts generally fit into the Eitech scheme but there are one or two anomalies.

Contents: 2,4,6x 3,4, 5h Strips; 4 Slotted Curved Strips; 3x 1*3*1h wide type DAS (with 1mm longer lugs); 7x #1200, 1*7*1h DAS; 2 Flat Brackets; 2 A/B; 7 A/B with 2 slotted holes; 4x 2*1h A/B; 3 D/B; 2 Reversed A/B; 1x 3*3h Triangular Plate (with slightly rounded bottom

corners); 2x #1127, 3*2h Angled Corner Plate; 1x #1052, 10h Flat Girder (a flat version of the 10h A/G used as the bucket back plate); 2x #1123, 5h long Toothed Plate; (used as the bucket floor); 1x #1128, 7h long Dash Plate; 2x #0101, Cab Side; 4 Road Wheels with push-in Hubs; 2x 85mm Axles (one is used as the output shaft in the Motor/Gearbox unit, with a Road Wheel at each end); 5 Axle Stops (2 red, 2 yellow); 2 Seats (blue); 1 Steering Wheel (red); 51,15,1x 6,8,30mm Crosshead Bolts (6.4mm Ø pan heads, no doubt like those introduced by Eitech in 2002); 80 Nuts; 1x #2001, Spanner (at 1.2mm, thinner than Eitech); 1x #2002, crosshead Screwdriver (green ribbed plastic handle, 102mm long o/a). **Motor/Gearbox** parts (a motor and a 2-stage reduction train to the rear Axle, with green, push-fit plastic gears giving about 3:1 for each stage, are assembled in one half of the green plastic outer casing; the other half is attached by 4 small self-tapping screws); a neat black **Remote Controller**, 6*7½cm, with 2 AA cells, & a forward & reverse switch, spring-loaded to centre off.

The **parts** are of good quality, most as good as Eitech, except that the bore of 3 of the push-fit Wheel Hubs is too large to grip the Axles. All the metal parts are nicely nicked but the N&B are (good) BZP.

The **instructions** comprise a B&W sheet in English & Chinese showing how to assemble the Motor/Gearbox Unit, and a Model Leaflet, a single sheet, 260*184mm, folded in two. The finished model is shown on the front (as on the lid), and the parts on the back, with their quantities, Eitech style. Inside are photos of 5 subassemblies with the parts marked by their PNs, and with a little thought one can work out how to join them together to complete the model. There were a couple of difficulties in the construction process. First it was necessary to bend the connection tags on the motor in a rather drastic way to get it to fit into the casing, and secondly, the movement of the bucket is achieved by means of 12 locknuted Bolts but only one Spanner is included in the Set. In fact these locknuts have to be exactly right, almost dead tight to support the weight of the arm & bucket, but not quite to allow movement.

The **701** set has 226 parts, against 221 in the 702, and both boxes are probably the same size, with similar lids, apart from the featured model. The cab, & Motor/Gearbox with rear Wheels, are basically the same in both models, but the ends of the 701 roller use another special part, a **Circular Frame**. It looks to be about 7cm o.d. and one can be seen lying flat, beyond the model on the previous page.

The **725** lid is shown below and the parts in the model, called a Reaping Machine, include the Cab Sides and also **Tracks**. The **722** has more parts (177) but otherwise the lid is identical except for the model, a Mobile Machinery Shop. Said model has the same cab



and tracks as the 725 one but carries an arm at the front with a circular disc on its end. The No. **723** model is very similar but has a bucket on the end of its arm. **Another set**, probably from this series, but Set No. unknown, features a Tractor basically like the 725 model but with a tool or blade of some sort attached low down at the front.

Then the Polylong COMBINED TOYS (500 series) Sets

These are small outfits with boxes 16*11*2½cm and a typical example, No.505, is shown below. One wonders where the name came from and at a wild guess I'd say that it arose from the notion of parts being combined to make a toy. Bottom left on the lid is the 'flashing enter' message that was on the CONSTRUCTION 702 set, The outfits that have been seen are Nos.501, Aeroplane, 71 parts; 502, Helicopter, 72 parts; 505, F1 Racing Car, 73 parts; and 506, Jeep, 93 parts. No non-Eitech parts can be seen in any of the models.



Finally the Polylong COMBINED EXCELLED (500 & 800 series) Sets

All I can say to whoever dreamt up the COMBINED EXCELLED name is 1 out of 10 for spelling excelled correctly. 4 small sets have been seen (Nos.521, 522, 525, & 526), all offered on Ebay from Australia) and one larger one, No.801.

The lids of the **500** sets are all similar to the No.526 right, apart from the featured model. They all carry the 'flashing enter' text, and under the model is 'SUPER PLAYMOBILE' with 'BAND YOUR EYES ON THE FUNNY TOYS!!' in light blue along the bottom. 'Band your eyes to' is possible in English, meaning look at, but it's hard to think what 'funny' was meant to be. Of the other sets 521 is a Trike, 522 a much smaller version of the 722 model, & 525 a Tipping Lorry (a small-scale No.679 model). All these models run on the same Wheels and a **Small Cab Side**, another special part, is used in the 525 & 526 models.



The **801** box, above, is 25½*35½cm and its top is basically a larger 500 type. Another version seen has 'MADE IN CHINA' in small letters along its lower edge, and the 5 words in the diamond printed upside down. It can be seen that the model includes some of the special parts including Flat Girders as the sides of the Lorry's load platform.

Snippet: New System - KONSTRUKTOR (German/ Ukrainian) 4 different sets from 'Germany/Ukraine' were offered 'as new' on German & U.S. Ebay last year, & the logo on them, below, is again reminiscent of Eitech. Moreover the parts that can be seen on the models on the boxes look like standard CONSTRUCTION. So this time the sets could be packaged in the Ukraine or made there under license.



The 'au' letters in the logo are probably the written form of the Cyrillic ай, a Russian interjection, one meaning of which is surprise or pleasure.

The 4 sets are Nos. 10110, 10201, 10202, & 10203, and all the boxes are similar to the to the 10110 below, with the



KONSTRUKTOR name across the top, a large photo of the featured model, some small, simple models to one side, and in yellow stars, the number of parts in the set and the claimed number of models. The degree of realism in the picture of the featured model varies from set to set. The underside of the

10201 box shows a selection of models but for the other sets there are 4 views of the featured model.

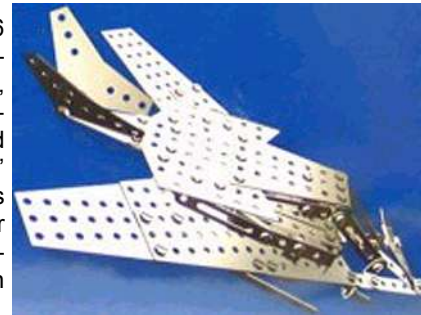
The 10110 box is 9½*7½*2½", and 189 parts & 14 models are claimed. This is the only set where the model on the bottom of the box is identical to the one on the front.

No. 10202, 15*9*2½", has 282 parts for 20 models and the featured model is a Helicopter. From the picture of it on the lid below it looks as if it is a model made of constructional parts with some added special pieces. On the bottom though is a simpler version, below,



presumably the model that can actually be made with the parts in the set. It still looks a fair model and the 2 rotors, one above the other, are retained – bet they don't contrarotate as they should though.

The 10203 (276 parts/18 models) features a Stealth Bomber, & in this case the difference between the lid model & the 'actual' version (right) is not as great, but the former does have extra, realistic parts, notably in the cabin area.



Set 10201 (260 parts/26 models) features a '4 x 4' on the lid, with realistic bonnet, headlights & grill that are missing from the one view of the 'actual' model on the bottom. Also shown there are 6 other models, the Helicopter & Bomber already mentioned, and 4 smaller models – a Floatplane, a Jeep, a Motorcycle, & a F1 Racing Car. All 6 have illegible names or numbers by them and so possibly the smaller ones are made from other sets in the series.

KONSTRUKTOR [17]: S1

OSN 30/888

Snippet: 'New' System – QUICK All that is known of this system are the photos of the lid (below) & open box (right). It is



presumably German and perhaps from the 1940s, judging by the outfit the woman in the foreground is wearing.

The types of part that can be seen are a 9h Strip, shorter ones in the Car, and perhaps longer ones near the lower edge of the box; a 5h long DAS; a 5*11h Perforated Plate; possibly the end of an A/G & a 2h wide Plate (in the top RH corner); a distinctive 5h wide Trunnion; 2 sizes of Pulley, with fat Tyres or Rubber Rings on 5 of the smaller ones; Axle Rods & a Crank Handle.



And in the pile below the Trunnions are 3 short lengths of what might be U-shaped channels, or perhaps they are rectangular in section - but of course they may not have been part of the Set. Lying over the top of the righthand one is what looks like a rod with a very coarse thread, and there is another over the DAS in the top right corner. Probably 'foreigners' too, woodscrews perhaps.

In the original photo the structural parts have an aluminium look to them. The holes appear to be quite large in relation to their pitch, and 4mm Ø at 10mm pitch would be a possibility.

QUICK: S1

OSN 30/888

More on METALLIX Following the 'Snippet' in 28/821, Jacques Pitrat kindly sent details of his No.1 Set, believed complete. He wrote that at a guess, it was made a few years after WW2, and:

'It seems that there were some non-METALLIX parts in the box described in the OSN 28, I don't believe that the system included bossed parts or rubber rings. Certainly neither is in my set, nor shown in the manual.

The size of the **box** is 20*15.5*2cm, and its label is identical to the one in OSN 28.

The holes in the **parts** are 4.0mm Ø at 14mm pitch, and the thread is M4. All the parts are aluminium except that the Screwed Rods, the N&B, & the 5*3h Flat Plate that fits in the middle of the Flanged Plate, are steel. Curiously enough, the Flanged Plate itself is aluminium. As can be seen in the photo of the Set below both Plates are painted red.

Set Contents The number of Strips in my set are: 4x

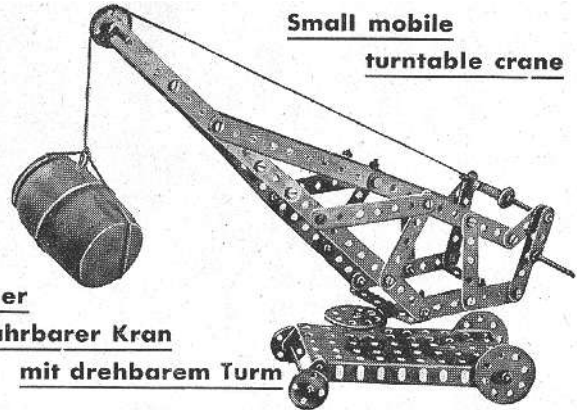


13h, 4x 11h, 4x 9h, 6x 7h, 8x 5h, 6x 3h, & 6x 2h. There are also 2 DAS, 4 A/Bs (both holes circular), & 4 Double Brackets.

The other parts are the Flanged Plate & its centre 3*5h Plate; 4 each of 8h Wheel Discs (diameter 42mm), & small Pulley Discs (diameter 28 mm); 2 each of 98 & 14mm Screwed Rods; an S-shaped Wire Hook; 40 Bolts (cheeseheaded, 13 mm long o/a) & 40 square Nuts (8mm A/F); and a Spanner with a single, angled end, 61mm long (its other end is too thick to be used as a screwdriver for the Bolts).

In the Manual the Flanged Plate is incorrectly shown with the holes in its flanges slotted and without the 5*3h cutout. Also the Pulley Disc is shown with 4 face holes.

The **manual** is made from 2 sheets folded in the middle to give a page size of 15*10.5cm. They are not stapled together. The cover is exactly the same design as the lid label. All the text is in German & English. Only 4 models are shown – the first is a Pair of Scales (called Weighing machine/Tafelwaage), the second the Crane below, and the third & fourth are the Lorry & Crane shown in OSN 28. The latter is the sole Set 2 model.'



OSN 30/889

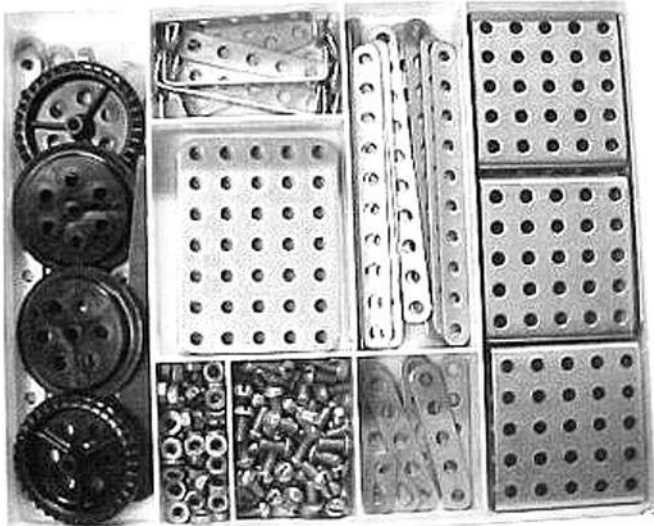
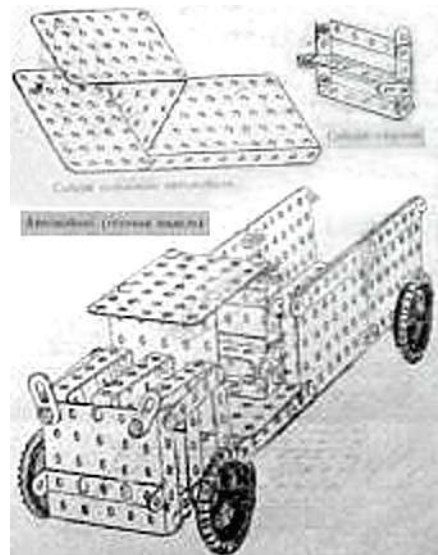
METALLIX: S2



Snippet 'New' System:

KONSTRUKTOR

For the record, another Russian system, small and rather dull. Left, the lid; below, the open box; and right, a manual model. There is nothing to identify the maker, not even a logo, and the only text that can be read is KONSTRUKTOR on the lid and the word above it, meaning children's or kindergarten. The box is plastic, 8³/₈*6⁷/₈", and looks white or light grey. Probably the markings on the lid are moulded in.



The parts that can be seen are 5 & 10h Strips (and there are probably longer Strips underneath the Road Wheels, perhaps the 15h shown on the lid); 1*5*1h DAS; Flat Brackets (a pair can be seen in the bottom left corner of the 5h Strip compartment); 5*5h Flanged Plates; 5*7h Perforated Plates; black plastic Road Wheels with 6 face holes and 3 webs supporting the boss; hex Nuts & RH Bolts. Also in the Wheel compartment, on the right side, is a long, tapering, dark something – a Tool perhaps.

Scaling from the size of the box gives a hole pitch of 10mm, and most likely the N&B are M4. Assuming the 10mm pitch, the Road Wheels would be about 4¼cm diameter.

Axles are shown on a manual page of basic constructions not reproduced here, and the Road Wheels probably push onto them. The other parts on the lid (3 & 6h Strips, 8h Wheel Disc, & 5*6h Plate) can't be seen anywhere. The windscreen on the Lorry looks as though it ought to be a Transparent Plate.

OSN 30/889

KONSTRUKTOR [18]: S1

A 1934 Gilbert MECCANO Wide Beam #10 Set

by Jacques Pitrat

The set is packed in a green wooden box $22\frac{1}{16} \times 10\frac{3}{4} \times 5\frac{1}{2}$ ". It is exactly the size of the 1931 Erector Set A and is larger than the box for the 1930 #110 set, which was only $21\frac{1}{2} \times 8\frac{1}{4} \times 4\frac{1}{2}$ ".

The contents of the set are those of a 1930 #110 set, plus those of a 1934 Wide Beam #5 Set (see 12/318,319 & 19/546), except that some parts, common to both, are included only once, mainly Axles, Pulleys, & Gears. Snap Rivets and many N&B are provided; there are no Meccano Briks.

There was a difficulty with the Motor in the Set, the 110v E2D (see 19/547), not the LV E2B in the 1930 #110. The E2D Motor can replace the E2B when both are used with their side plates, but, contrary to the E2B, the E2D motor cannot be used without side plates. This is because the motor unit has no suitable mounting holes to allow it to be bolted to a Plate. Several #110 Set models used the Motor without its side plates.

As can be seen in the photo right the parts are clipped to a red metal tray and to two cream backing boards, one in the bottom of the box and one in a red cardboard tray.

The quality of the parts is not very good, for instance, a Wide Beam DAS was not painted at all. More seriously the distance between the 14th & 15th rows of the 33*11h Flanged Plate (PN 52B) is not 12.7mm as usual, but 17mm.

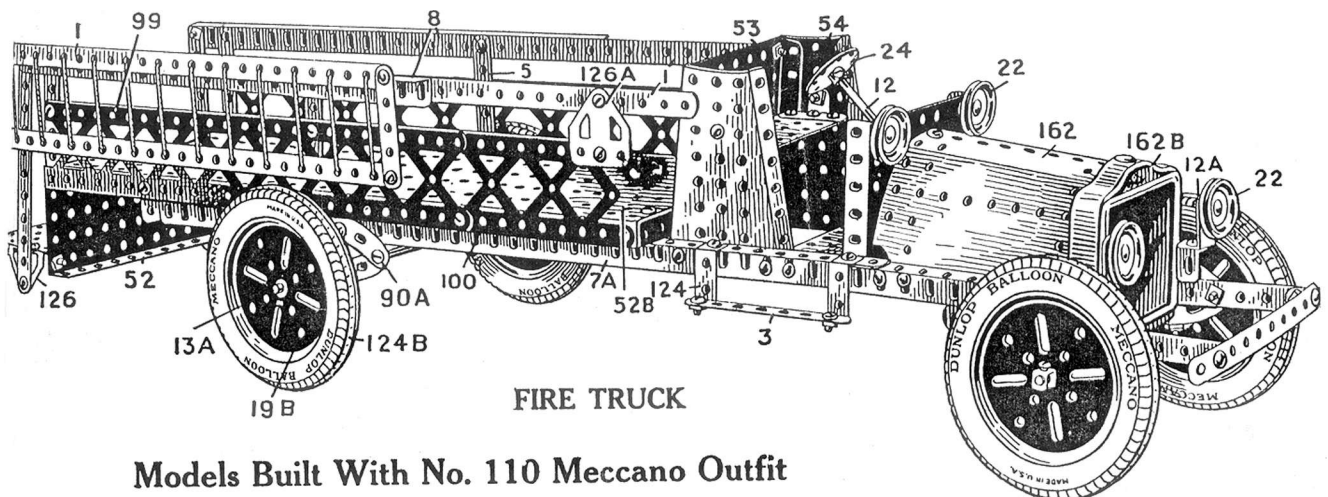
The Manual is the one for the 1934 Wide Beam #5 Set, but with 8 pages added for the #10. These pages are taken from the 13 pages of #110 models in the 1930 Manual. Those missing are 3 pages describing the Dumping & the Fire Truck, and 2 pages with models using the Motor. All the models on these 5 pages could have been built with the #10 Set. The #110 Fire Truck is shown below.

There are some changes on the 8 #10 pages compared with their 1930 counterparts:

- The first '1' of 110 has been erased so that one has: Models Built With the N°. 10 Meccano Outfit.
- On the 2 pages with models using the Motor, the following note has been added: NOTE! SUBSTITUTE GEAR BOX N°. 1 IN GEAR BOX SECTION FOR THESE VARIOUS MOTOR DRIVES. For the reasons already explained this would not always be easy to do when the E2D motor was used without its flanges.
- On another page there were 2 models in 1930, the Auto Truck with Hauling Device & the Trolley Car Motorized. Unfortunately, in this last model the E2B Motor was used inside the car without its sides plates and there was no room for a Motor with side plates. So in 1934 only the Truck was kept and the Trolley Car was erased from the page.



There is not a single new model for the #10 Set, and no model uses the standard and wide beam parts simultaneously. It is a pity, since the #10 Set and, probably, the 1934 #15, are the only MECCANO sets that ever contained a large supply of the standard Strips & Girders, as well as of the wide beam parts. Meccano UK advertised that standard parts were very useful in making large MECCANO X models, and that X parts could be used with advantage in standard MECCANO models (although they did not give many examples of such models). Here, one has a large Set which is merely a combination of two Sets, each with its own models. It is not surprising that it was not a commercial success.



Some Notes on the History of STRUCTO An article on STRUCTO appeared in 15/424, with later shorter items in 16/458, 21/618, & 28/814. Now more material is to hand, including most of 2 sets, various manuals & items of literature, and some Ebay photos. My thanks to Kendrick Bisset, Orion DreamDancer, & David Hobson for much of the new material.

What follows is an account of all this arranged in what seems to be chronological order, plus some details of the parts. Many of the items used, particularly the manuals, are not dated and their order has largely been determined from the various products listed or advertised in them. Nevertheless, as will become evident, some supposition has been needed in deciding where to position certain of them. Details of the manuals referred to are given at the end of this piece.

1913 STRUCTO first appeared in 1913 and a **May 1913 Structo ad** from the *American Toys and Novelties* periodical says that 'Pulleys, Gears, Chain Wheels, etc are strong, smooth, non-corrosive Die Castings', and that 'Beams, Girders, and all other parts are made from best quality of Cold Rolled Steel, heavily Nickel Plated'. The grooved Shafts are also mentioned. The reference to nickel plating was repeated in a **June 1913 ad** and is of interest because although most parts found are tinned (usually now turned to dark grey), those in an early set found recently are nickel. No mention is made of nickel parts in the 1914 material described later so the 'nickel' set is likely to be from 1913 or early 1914. It is a No.2 and apart from the plating, and with some minor exceptions, the parts are identical to later ones. There was no manual with the Set but a few weeks later the Ebay seller offered one which may well have been from it. It is one of 3 manuals known in which the models are shown as photos rather than the line drawings used later. Excluding covers the first has 32 pages, the second 40, and the third probably 60 (the covers, pp1-12 & 53 onwards are missing). Their exact dates are uncertain but it will be assumed that the 32pp was from 1913, the 40pp from early 1914, and, judging from the parts used in the models, the 60pp from late 1914 or early 1915.

The '32pp Photo' Manual The cover is shown below. The



sets listed in it are Nos.1-6 & 1A-5A, priced at \$1,2,3½,5,10,20 and \$1,1½,1½,5,10. They are significantly smaller outfits than those in later manuals (& in MCS), and the Set Contents are given on the next page. Sets 1-6 are illustrated in the manual: 1-3 have a single layer, 4 & 5 have a lift out tray with all the Wheels on it, and the 6, in a wooden box, has 2 such trays in its second layer. The No.2 lid is shown at the top of the next column, the No.3 is similar, and so probably are the 4 & 5. The lid of the wooden box for the No.6 isn't shown but a slightly later 5A is probably similar. It is dark polished wood with the name, below, in gold, about 7" long. The No.1 lid is much plainer than those of Sets 2-5 and in B&W it looks generally similar to the 3A shown below the No.2 in the next column, except that there are no models on it. The models on the 'A' set lids vary from set to set and there are none on some outfits - probably they were not



introduced until later. Some variations in the layout of these labels also occurred. At this time a label showing the Set Contents was pasted inside the lids. The inside of all the boxes seen over the years is light green



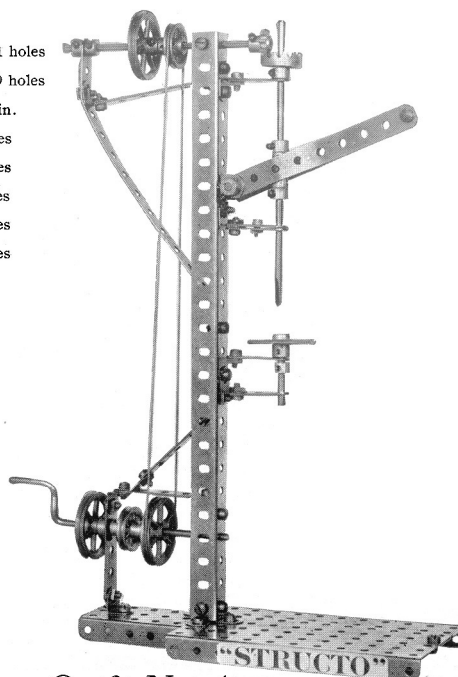
The system ultimately boasted 78 parts and of them 57 were listed in the 32pp manual, with #64 as the highest PN. #35,41-43,51,54,61 were missing, including the 2½" Disc #41 (see OSN 15) and DAS #42 & 43. The Set Screw #65 is illustrated but not listed

The LV Motors A & B (see OSN 15) were advertised

Models The manual contains 32 models for Sets 1-6 (not all in set sequence) plus 3 others including the Bridge on the cover. Only said Bridge has any constructional notes with it; the set models have a single photo & a list of parts. The photos vary in size from quite inadequate to quite large, witness the Biplane & Street Car on p893, both shown full-size. (Unless otherwise stated all the models will be shown full-size though the accompanying PL/text may be reduced, as is the case for the Biplane). The range of models is good and on the whole they look the part, though many, as noted in the Manual, need parts not in their Set. The Motor is only used in one, to drive the machinery in a small Machine Shop. None of the models

MATERIAL

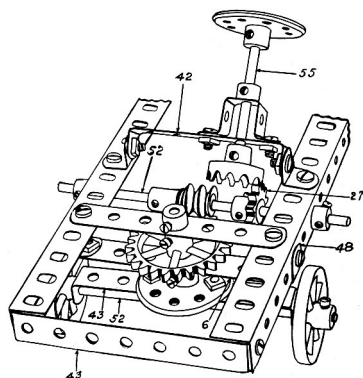
- 2 Angle Plates, 1-5x11 holes
- 1 Angle Plate, 1-3x 9 holes
- 1 Angle Girder, 12½ in.
- 1 Steel Beam, 15 holes
- 2 Steel Beams, 9 holes
- 1 Steel Beam, 6 holes
- 3 Steel Beams, 5 holes
- 5 Steel Beams, 3 holes
- 19 Brackets
- 1 Shaft, 6 in.
- 1 Shaft, 4¾ in.
- 2 Shafts, 1½ in.
- 1 Crank Shaft
- 12 Collars
- 1 Spider Wheel
- 3 Pulleys, 1½ in.
- 2 Pulleys, 1 in.
- 1 Spur Gear, ½ in.
- 1 Crown Gear, ¾ in.
- 34 Bolts and Nuts



Drill Press, Outfit No. 4

have any but the limited degree of mechanical complexity typical of the period but one or two are interesting. An example is the Drill Press in the last column in which the Grooved Shaft used for the vertical spindle must be able to slide through the Contrate. Thus the Grooved Shaft acts as a Rod with Keyway, but its use in this way isn't mentioned anywhere in the manuals. The Lorry overleaf has geared centre-pivot steering but its mechanism isn't shown until the next manual. The non-outfit models are a simple Derrick Crane with a 2 foot jib & a Sightseeing Automobile, nothing special about either of them, and the Bridge overleaf (80% full-size). It would be interesting to know how well its rolling motion works in practice.

1914 Apart from 11 extra models the material in the **40pp Photo Manual** is very similar to that in the 32pp. Its cover differs only in having '91394' after 'TRADE MARK' (below STRUCTO). The parts shown are the same but the Set Screw #65 was now listed. The manual contains 11 more models, more of the same really, and the only new large models are a 2ft long No.5 Traveling [Gantry] Crane, & a 40" high Large Windmill - a pylon with a fan of 8 of the Windmill Cards (see 16/459), chain driven from the base of the pylon. The slogan on the Windmill page (there are slogans on most pages) is novel: 'STRUCTO Is a Noiseless Pastime'. The steering mechanism that could be used in the Truck is shown in the 'use of parts' section, though the Truck builder isn't referred to it. It's a small photo and not very clear so a later line drawing of a similar version is shown below, 55% full-size. Also



new is a 2-stage Gearbox with an overall ratio of 4:1.

The **leaflet** with the early 'Second Addition' brochure mentioned in OSN 15 has a PR of FORM 510-5-14, so perhaps it is from May 1914. As in the 40pp manual, Sets 1-6 & 1A-5A are listed, also the A & B Motors, but a Transformer is mentioned for the first time, the No.5A at \$3.50. Another difference is that the inside of the No.6 lid, the only inside lid shown, has a picture on it, the one shown at the top of the next column (I'll refer to it as the '3 kids'), in a frame with No.6 to its right, & 'Fascinating \ Entertaining \ Instructive' to the left.

The **final T&N ad** to hand is from Oct. 1914. Die cast gears & key seated shafting are specifically mentioned, as in the 5/14 Brochure above, but nothing is said of the finish of the steel parts.

1915 Another 'Second



'Addition' brochure has been found, identical to the first but with it a different leaflet which lists Accessories, including some new parts. It's PR is FORM 515 5-2-15, so perhaps Feb.1915. The Accessories are the Type A Geared Speed Reducer, the Type B Worm Speed Reducer, both as shown in OSN 15, and a selection of parts through #65. The 13 new parts are: #42,43 (5,7h long DAS), 51 (M12a), 54 (Twist Beam), 61 (6" Crank

Contents of Early Outfits

| | 1 | 1A | 2 | 2A | 3 | 3A | 4 | 4A | 5 | 5A | 6 |
|--------------------------------------|----|----|----|----|----|----|----|----|-----|-----|-----|
| No. 62 Angle Girder 12½ in. | | | | 4 | 4 | 4 | 8 | | 8 | 6 | 14 |
| No. 63 Angle Girder 5½ in. | | | | | | | | | | 4 | 4 |
| No. 1 Steel Beam, 25 holes | | 4 | 4 | 4 | 8 | | 8 | 4 | 12 | 4 | 16 |
| No. 2 Steel Beam, 19 holes | | | | | | 2 | 2 | 2 | 4 | 4 | 8 |
| No. 3 Steel Beam, 15 holes | | | | 4 | 4 | | 4 | 2 | 6 | 4 | 10 |
| No. 4 Steel Beam, 11 holes | 2 | | 2 | | 2 | 2 | 4 | 6 | 10 | 6 | 16 |
| No. 5 Steel Beam, 9 holes | | 2 | 2 | 2 | 4 | | 4 | 4 | 8 | 8 | 16 |
| No. 6 Steel Beam, 7 holes | 2 | 2 | 4 | | 4 | 2 | 6 | 6 | 12 | 8 | 20 |
| No. 7 Steel Beam, 6 holes | | | | | 6 | | 6 | | 6 | 2 | 8 |
| No. 8 Steel Beam, 5 holes | 5 | 1 | 6 | 2 | 8 | | 8 | 4 | 12 | 8 | 20 |
| No. 9 Steel Beam, 4 holes | 4 | | 4 | | 4 | 2 | 6 | 4 | 10 | 10 | 20 |
| No. 10 Steel Beam, 3 holes | 3 | 1 | 4 | | 4 | | 4 | 4 | 8 | 8 | 16 |
| No. 11 Steel Beam, 2 holes | 2 | | 2 | 2 | 4 | | 4 | 4 | 8 | 4 | 12 |
| No. 12 Flat Plate, 4x9 holes | | | | | | 1 | 1 | | 1 | 1 | 2 |
| No. 13 Flat Plate, 6x11 holes | | | | | | 1 | 1 | | 1 | 1 | 2 |
| No. 14 Angle Plate, 2- -2x9 holes | | | | | | | | | | 2 | 2 |
| No. 15 Angle Plate, 1- -3x9 holes | 2 | | 2 | | 2 | | 2 | | 2 | 2 | 4 |
| No. 16 Angle Plate, 1- -8x4 holes | | | | | | | | | | 2 | 2 |
| No. 17 Angle Plate, 3- -3x11 holes | | | | | | | | | | 2 | 2 |
| No. 18 Angle Plate, 1- -5x11 holes | | 2 | 2 | | 2 | | 2 | | 2 | 2 | 4 |
| No. 19 Angle Plate, 1- -10x6 holes | | | | | | | | | | 2 | 2 |
| No. 20 Wagon Wheel | | | | | | | | | | | 4 |
| No. 21 Car Wheel | 4 | | 4 | | 4 | | 4 | | 4 | | 4 |
| No. 22 Grooved Pulley 1½ inch | | | | | | 1 | 1 | | 1 | 1 | 2 |
| No. 23 Grooved Pulley 1 inch | | 2 | 2 | | 2 | 2 | 4 | | 4 | 1 | 4 |
| No. 24 Grooved Pulley ½ inch | 1 | | 1 | | 1 | 1 | 1 | | 2 | 4 | 6 |
| No. 25 Spider Wheel | | | | | | 1 | 1 | | 2 | 1 | 3 |
| No. 26 Spur Gear 1½ inch | | | | | | 1 | 1 | | 1 | 1 | 2 |
| No. 59 Spur Gear 1 inch | | | | | | | | 1 | 1 | 1 | 2 |
| No. 27 Spur Gear ¾ inch | | | | | | 1 | 1 | 1 | 2 | | 2 |
| No. 28 Spur Gear ½ inch | | | | | | 1 | 1 | 2 | 2 | 2 | 4 |
| No. 29 Worm | | | | | 1 | 1 | 2 | | 2 | 2 | 4 |
| No. 30 Sprocket 2 inch | | | | | | 1 | 1 | | 1 | 1 | 2 |
| No. 31 Sprocket 1 inch | | | | | | | | 1 | 1 | 1 | 2 |
| No. 32 Crown Gear 1½ inch | | | | | | | | 1 | 1 | 1 | 2 |
| No. 33 Crown Gear ¾ inch | | | | | | | 2 | 2 | 2 | 2 | 2 |
| No. 60 Collars | 2 | 2 | 4 | | 4 | 2 | 6 | 2 | 8 | 8 | 16 |
| No. 34 Hanger | 3 | | 3 | | 3 | | 3 | | 3 | 3 | 6 |
| No. 36 Clevis | | | | 1 | 1 | | 1 | | 1 | 1 | 2 |
| No. 37 Pawl | | | | 1 | 1 | 1 | 2 | | 2 | 2 | 4 |
| No. 38 Hook | 1 | | 1 | | 1 | | 1 | | 1 | 1 | 2 |
| No. 39 Long Bolt with Nut | 2 | | 2 | 2 | 4 | 1 | 5 | 5 | 10 | 14 | 24 |
| No. 40 Short Bolt with Nut | 20 | 10 | 30 | 20 | 50 | 20 | 70 | 50 | 120 | 110 | 230 |
| No. 44 Sprocket Chain 1 ft. long | | | | | | | | 2 | 2 | 4 | 6 |
| No. 45 Cable Cord | | 1 | 1 | | 1 | | 1 | 1 | 2 | 2 | 4 |
| No. 46 Screw Driver | 1 | | 1 | | 1 | | 1 | | 1 | 1 | 1 |
| No. 47 Steel Wrench | | 1 | 1 | | 1 | | 1 | 1 | 2 | 2 | 2 |
| No. 48 Bracket | 12 | | 12 | 12 | 24 | | 24 | 24 | 48 | 12 | 60 |
| No. 58 Shaft 11½ in. long Key Seated | | | | | | | | 2 | 2 | | 2 |
| No. 49 Shaft 8 in. long Key Seated | | | | | | 1 | 1 | 1 | 2 | | 2 |
| No. 50 Shaft 6 in. long Key Seated | | | | | | | | 2 | 2 | | 2 |
| No. 52 Shaft 4¾ in. long Key Seated | | 2 | 2 | | 2 | | 2 | 2 | 2 | 2 | 4 |
| No. 53 Shaft 3¾ in. long Key Seated | 2 | | | 2 | 2 | | 2 | 2 | 2 | 2 | 4 |
| No. 55 Shaft 2½ in. long Key Seated | | 1 | 1 | | 1 | | 1 | 1 | 2 | 2 | 4 |
| No. 56 Shaft 1½ in. long Key Seated | 1 | | 1 | | 1 | | 1 | 1 | 2 | 2 | 4 |
| No. 57 Crank Shaft—Key Seated | 1 | | 1 | | 1 | 1 | 2 | 1 | 3 | 1 | 4 |
| No. 64 Coil Spring | | | | | | | | 1 | 1 | 1 | 2 |
| Book of Instructions | 1 | | 1 | | 1 | | 1 | | 1 | | 1 |

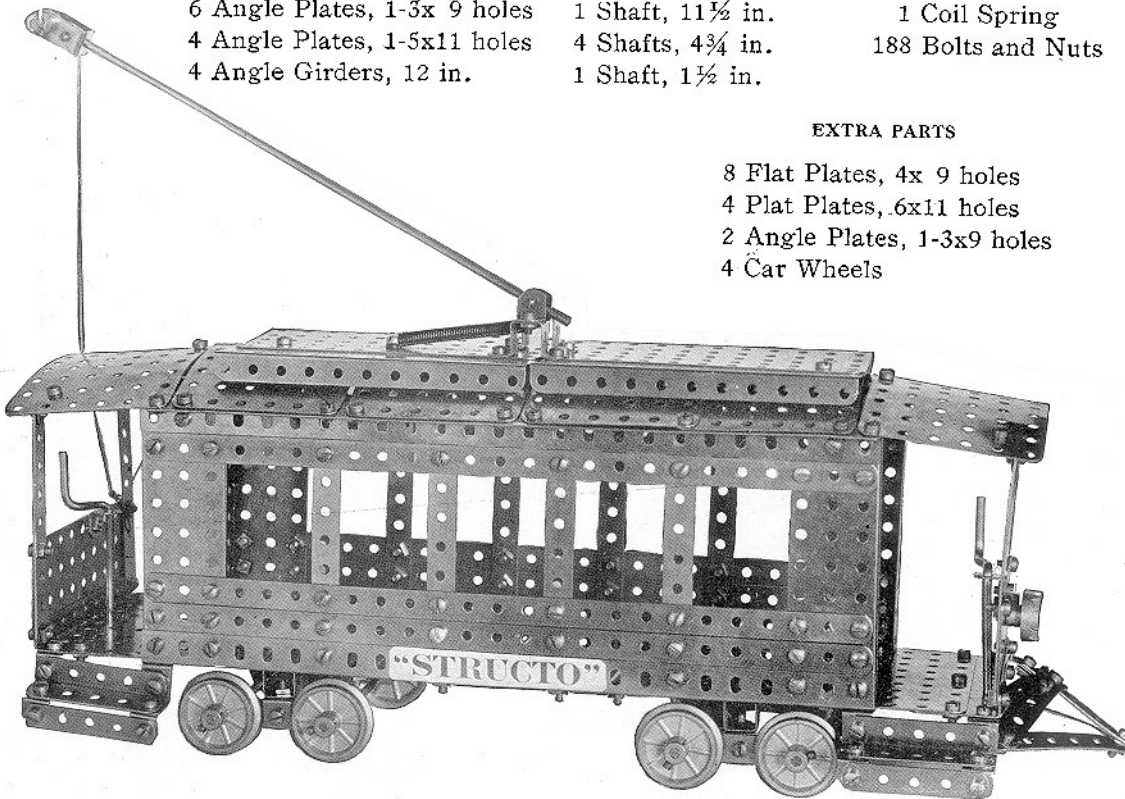
Street Car, Outfit No. 6

MATERIAL

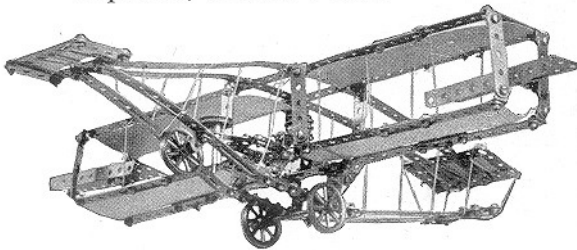
| | | |
|------------------------------|----------------------------|--------------------|
| 10 Steel Beams, 25 holes | 10 Flat Plates, 4x 9 holes | 2 Crank Shafts |
| 14 Steel Beams, 9 holes | 6 Flat Plates, 6x11 holes | 6 Collars |
| 2 Steel Beams, 7 holes | 6 Hangers | 1 Spur Gear |
| 17 Steel Beams, 5 holes | 1 Clevis | 1 Pulley, ½ in. |
| 2 Steel Beams, 4 holes | 41 Brackets | 8 Car Wheels |
| 6 Angle Plates, 1-5x 9 holes | 1 Shaft, 1 1/8 in. | 1 Coil Spring |
| 4 Angle Plates, 1-5x11 holes | 4 Shafts, 4 3/4 in. | 188 Bolts and Nuts |
| 4 Angle Girders, 12 in. | 1 Shaft, 1 1/2 in. | |

EXTRA PARTS

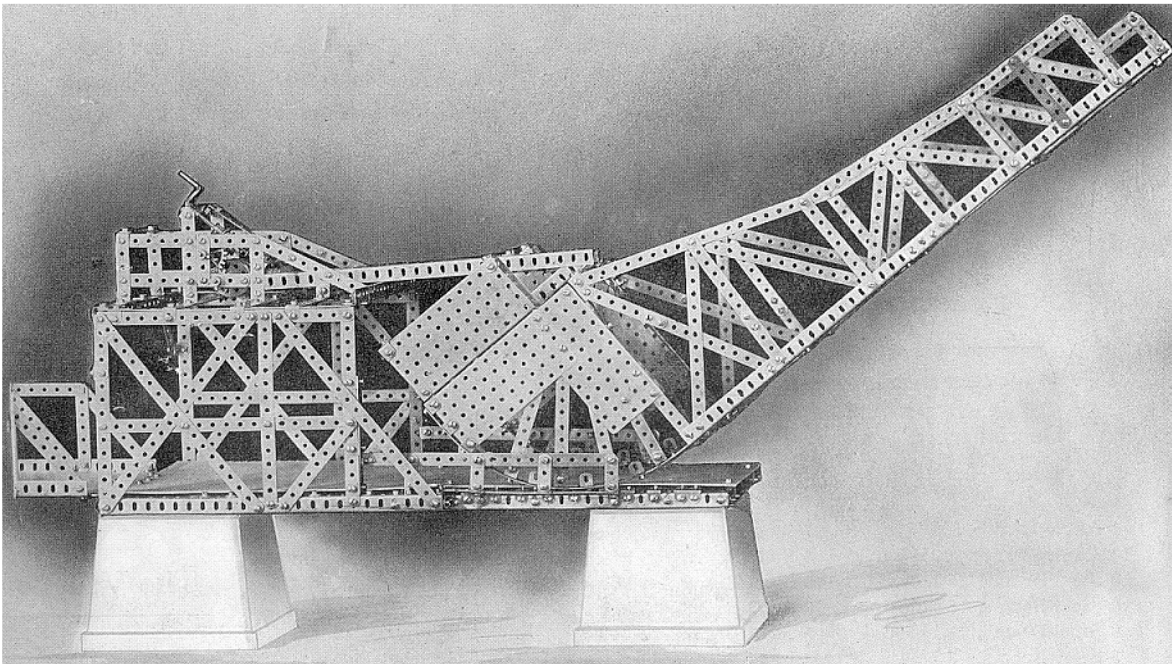
| |
|-----------------------------|
| 8 Flat Plates, 4x 9 holes |
| 4 Flat Plates, 6x11 holes |
| 2 Angle Plates, 1-3x9 holes |
| 4 Car Wheels |

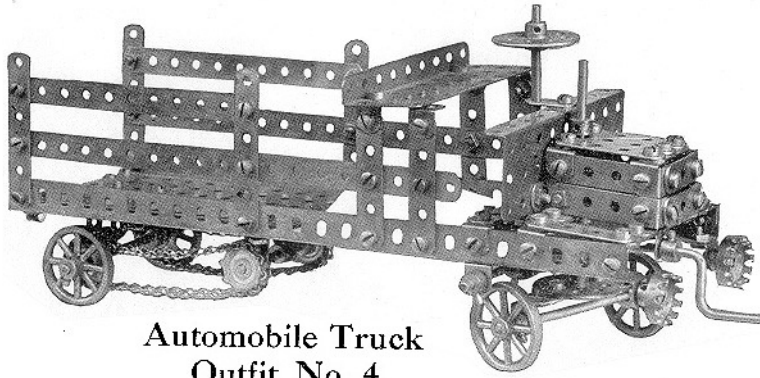


Biplane, Outfit No. 5



| | |
|-------------------------|--------------------------|
| 4 Steel Beams, 25 holes | 1 Grooved Pulley |
| 2 Steel Beams, 19 holes | 3 Wagon Wheels |
| 4 Steel Beams, 15 holes | 2 Hangers |
| 2 Steel Beams, 11 holes | 2 Shafts, 3 3/4 in. |
| 8 Steel Beams, 9 holes | 2 Shafts, 1 1/2 in. |
| 4 Steel Beams, 7 holes | 1 Worm |
| 2 Steel Beams, 6 holes | 6 Collars |
| 10 Steel Beams, 5 holes | 36 Angle Brackets |
| 9 Steel Beams, 4 holes | 110 Short Bolts and Nuts |
| 8 Steel Beams, 3 holes | 1 Cable Cord |
| 4 Steel Beams, 2 holes | |
| 2 Angle Plates, 1x3x9 | EXTRA MATERIAL |
| | 1 Worm |





Automobile Truck
Outfit No. 4

- 2 Angle Girders 12½ in.
- 2 Steel Beams, 19 holes
- 2 Steel Beams, 11 holes
- 2 Steel Beams, 7 holes
- 1 Steel Beam, 6 holes
- 4 Steel Beams, 5 holes
- 6 Steel Beams, 4 holes
- 2 Steel Beams, 3 holes
- 4 Steel Beams, 2 holes
- 1 Flat Plate 6x11 holes
- 2 Angle Plates 1-3x9 holes
- 4 Wagon Wheels
- 2 Spider Wheels
- 1 Spur Gear 1½ in.
- 1 Spur Gear ¾ in.
- 1 Worm
- 2 Crown Gears ¾ in.
- 6 Collars
- 3 Hangers
- 2 Long Bolts with Nuts
- 70 Short Bolts with Nuts
- 24 Brackets
- 2 Shafts 3¼ in.
- 1 Shaft 4¾ in.
- 1 Shaft 2½ in.
- 1 Crank Shaft

EXTRA MATERIAL

- 5 Steel Beams, 4 holes
- 1 Steel Beam, 2 holes
- 1 Flat Plate, 6x11 holes
- 2 Sprockets
- 1 Crown Gear ¾ in.
- 3 Collars
- 20 Short Bolts and Nuts
- 1 Sprocket Chain
- 4 Brackets
- 2 Shafts 3¾ in.

**Practical Education is
The Foundation of Success**

Bascule Bridge and Gear Drive

CORRECT mechanical principles are followed in this model and it operates perfectly. The dimensions of this model can be easily determined by any one, simply by counting the holes in the beams used; each hole representing one-half inch. The gear operating this bridge is shown in detail in figure 17. The power is connected to the lifting span by a cable from the winding drum.

The cable is attached to the center of the top of the lifting span and is covered by a U-shaped beam made from two No. 62 angle girders bolted together and attached to the frame work near the gear. The other end of the beam is not fastened to the lifting span, but slides forward on the guide rail when the bridge is open, as shown on page 16.

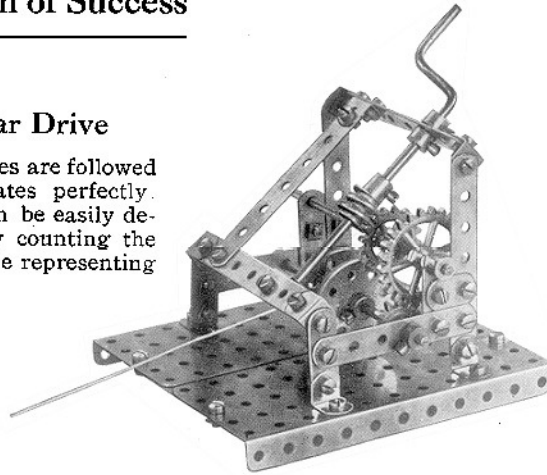
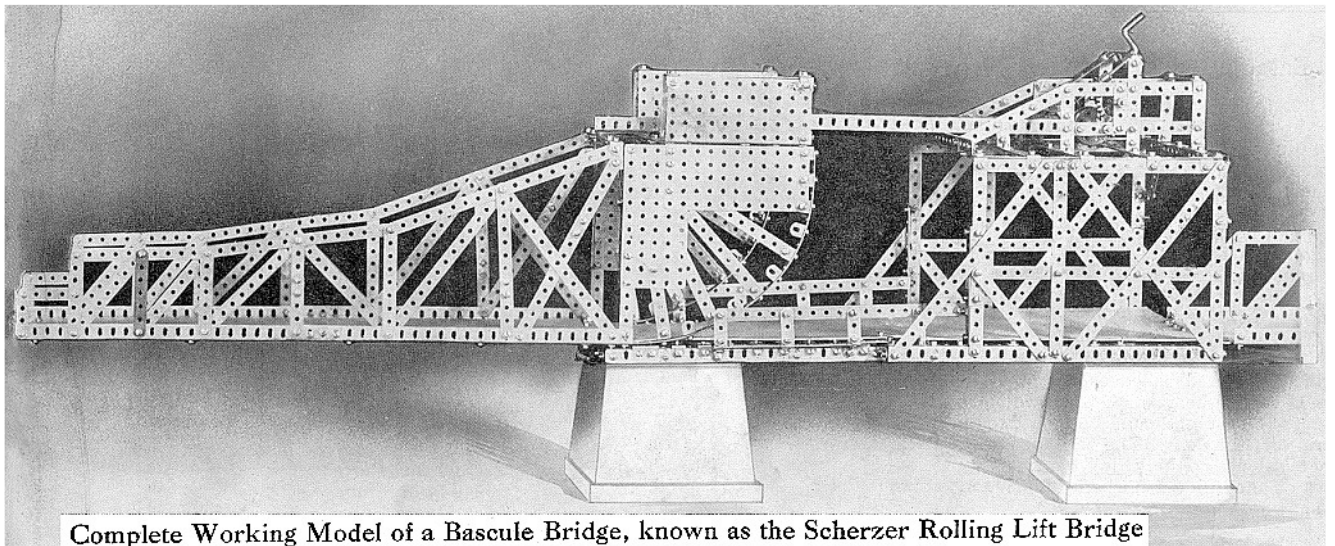


Fig. 17

Bascule Bridge

MATERIAL

- 2 Steel Beams, 25 holes
- 24 Steel Beams, 19 holes
- 34 Steel Beams, 15 holes
- 79 Steel Beams, 11 holes
- 17 Steel Beams, 9 holes
- 17 Steel Beams, 7 holes
- 7 Steel Beams, 6 holes
- 9 Steel Beams, 5 holes
- 10 Steel Beams, 4 holes
- 14 Angle Girders, 12½ in.
- 2 Angle Girders, 5½ in.
- 8 Angle Plates, 1-5x11 holes
- 100 Brackets
- 12 Collars
- 2 Shafts, 4¾ in.
- 1 Shaft, 2½ in.
- 4 Shafts, 1½ in.
- 1 Crank Shaft
- 1 Spur Gear, 1 in.
- 1 Spur Gear, 1½ in.
- 1 Spur Gear, ¾ in.
- 1 Worm
- 2 Spider Wheels
- 1 Hook
- 16 Steel Beams, 3 holes
- 16 Steel Beams, 2 holes
- 1 Hank Cord
- 388 Short Bolts
- 11 Long Bolts
- 399 Nuts



Complete Working Model of a Bascule Bridge, known as the Scherzer Rolling Lift Bridge

Handle), 66,67 (5*5h & 1*4*5h Plates), 69-73 (Rack Guide & Rack, Engine Crank, Coupling, Hanger for Shafting), 100 (Gear Housing). Most of them were shown in OSN 15.

The advertising pages of the **60pp Photo Manual** are missing but the Rack & Rack Guide are used in one of the new No.4 models in it, a Pile Driver. The use of these parts would seem to imply that changes had been made to the contents of the sets by this time, but the quantity of extra A/Gs needed for another new model, the No.6 Eiffel Tower, right, indicates that the standard in MCS had yet to be reached. One of the other new parts, the Twist Beam #54, is used in one of the 'use of parts' details on p50, and 'can be purchased by the piece'. New mechanisms in this section include a Governor using 1½" Pulleys as 'balls', a lever-operated Clutch (2 Contrates), a Reversing Mechanism (a Pinion between 2 Contrates, again lever-operated), and a Block and Tackle.

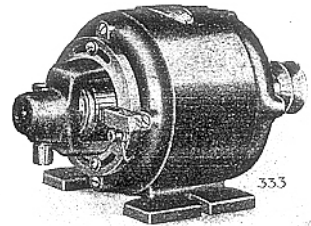
On the **models**, this manual is an improvement in that they are presented in set order, and there are now instructions for many of the larger ones. Compared with the 40pp manual there are 41 models for Sets 3-6 against 25 before. The new ones include several small machine tools, a Railroad Semaphore [Signal Gantry], the Pile Driver already mentioned, a smaller Street Car, an Electric Locomotive, 4 fairground models including the Merry-Go-Round far right, & a Ferris Wheel, both with 2ft diameter 'wheels', and the Eiffel Tower, some 7ft high with an elevator. The photos are still not adequate but in many cases the written instructions do help a lot. Those for the Merry-Go-Round occupy nearly a whole page of small type – in the photo it may be possible to see that the horses are pivoted by a Shaft through their hindquarters and they rock by using 'fine wire or sister's hairpins' to link them to Spider Wheels above. Said Wheels are on the ends of Shafts which carry a Pinion at their inner end, in mesh with a Contrate on the vertical shaft. All the large new models need extra parts and for the 3 largest they are priced as well as listed – at \$6.10 the Eiffel Tower is the most expensive (the No.6 Set cost \$20). The large Rolling Lift Bridge is still included in this manual but not the other two non-outfit models.

Next a **3-panel Leaflet** seen on Ebay. It has a boy playing with a Mechanical Digger on the front with a real digger in a circle behind, and EMPIRE BUILDERS in small letters next to it. On an inside panel the 1915 range is listed: Sets 1-6 & 1A-5A, and the 'new' No.1 Motor, as in OSN 15 (with no mention of the A & B Motors). It is shown with red sideplates and cost \$2, but was given free with Sets 4-6 (still priced at \$5, \$10, & \$20). Sets 2 & 4 are illustrated with line drawings which look like those used later but are not clear enough to be sure. If they are then the sets are those with the later increased contents including the 2½" Disc #41. Certainly their inside lids are completely covered by the '3 kids' picture already seen inside the frame on the No.6 lid.

1916 The first item is a heavily revised, new-style manual, 112 pages plus covers, which could be from late 1915, but I'll call it the '**1st 1916**' manual – it lists all the items in the 1915 material plus some new ones. but not the Multi-Unit Girder. Its cover is like the FORM 536 one shown later but without that reference in the bottom left corner. Notice that the boys have less old-fashioned clothes and that both sides of the Bridge are half raised. The parts listed are #1-75, and #100, that's to say the final complete range except the M-U Girder parts, and the much later Automobile Wheels. The range of Sets is as before, at the same prices, but with new illustrations reflecting their revised 'MCS standard' contents. The boxes themselves look to be the same size as the earlier ones, and with the same partitioning & trays. The outside of the lids are not shown but at first they may have been like the earlier ones with one side of the Bridge half raised; then all but the No.6 were replaced, including the No.1, by the pattern at the top of the next column, in line with the revised manual cover. For Sets 2-5 the inside of the lid is fully covered by the '3 kids' picture, No.6 is as already described, and the No.1 is similar to it except that the framed picture is very small. All the parts in the range were included in



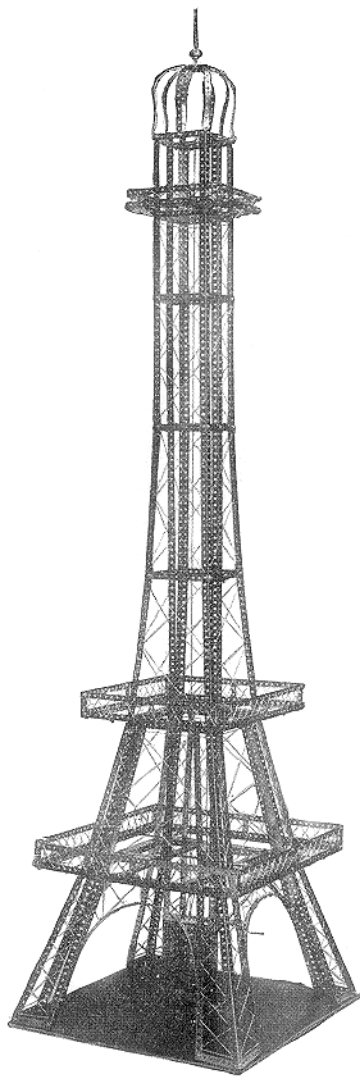
the Sets except the Shafting Standard #73 & The Gear Housing #100. Compared with the 1913 sets the No.1 inventory was increased from 49 parts + 22 N&B, to 55 + 26 N&B, and for the No.6 from 374 + 254 N&B to 687 + 480 N&B. So the No.6 was quite a large outfit, and included 36 A/G, 23 Gears, 4 Sprockets, 32 Plates, 6x 2½" Discs, 6 Couplings, 18 Collars, & 120 A/B. 2½" Discs were included from Set 2, and Gears from No.3 instead of No.4 before. New items advertised are the Fan & Universal Motor, both as in OSN 15, and the 'Standard' Type Motor shown below. It was 'designed especially for operating small machines, such as window display models, coffee grinders, small water pumps, vacuum cleaners,'. It was rated at ¼₄₀ H.P. at 1750 rpm, and there were 2 versions, the B-10 for 110v a.c. at \$12.50, & the B-20 for 115v d.c. at \$12. (The Universal cost \$4.) The No.5A Transformer was replaced by the No.19 at the same price (it gave 3, 6, & 9v), and the No.21 at \$4 with a step rheostat (as on the Hornby type) giving 1½ to 15v in 1½v increments (it says, though the contact arm is shown sweeping over only 6 contacts).



Models With 112 pages the manual is much bigger and it contains very roughly twice as many models as before. Even more important the models are illustrated by larger, clear line drawings with written instructions in nearly all cases, not always comprehensive but always a great help. Another change is that all the models can be made from the parts in the stated set. The enlarged contents have helped in this respect, but some models have been changed to allow them to be made from the appropriate set. The Eiffel Tower for example is now some 2ft shorter, and the Street Car has been simplified. Some attractive models have gone completely though including the large Merry-Go-Round, the Machine Shop, and the 'trademark' Rolling Lift Bridge. More models are now motor-driven but still not many, and none are vehicles. The 'use of parts' section has been reduced in size with most of the examples of gearing and mechanisms now spread among the models throughout the manual. New mechanisms include a chain-driven, bevel Differential, and a simple 3-speed & reverse Auto Transmission, neither of which are used in any of the models. Also a right-angle drive using the Flexible Shaft Coupling #68, and a Universal based on double brackets, made from pairs of A/Bs, bolted back to back. The new models include 2 Sewing Machines, 2 Clocks, including the Hall Clock in MCS, a Ferry [Transporter] Bridge and a Lifting Bridge, a Taxicab, a Steam Tractor, a Locomotive, a Coaling Station, an improved version of the earlier Biplane, and a Derrick with a 2ft jib. A selection of these models is shown later from the 'Form 536' manual.

The next item is also a manual, the '**2nd 1916**', identical to the last one except that the prices of some of the sets have been changed by using rubber stamps to obliterate the old ones and to add new ones alongside. The changes are the No.3 at \$3 instead of \$3.50, the 2A at \$1, ex \$1.50, and the 3A at \$2, ex \$1.50.

Then, the first mention of the **M-U Girder**, in another Ebay item, an ad, said to be from 1916. But just when in 1916 isn't known.



Eiffel Tower, Outfit No. 6

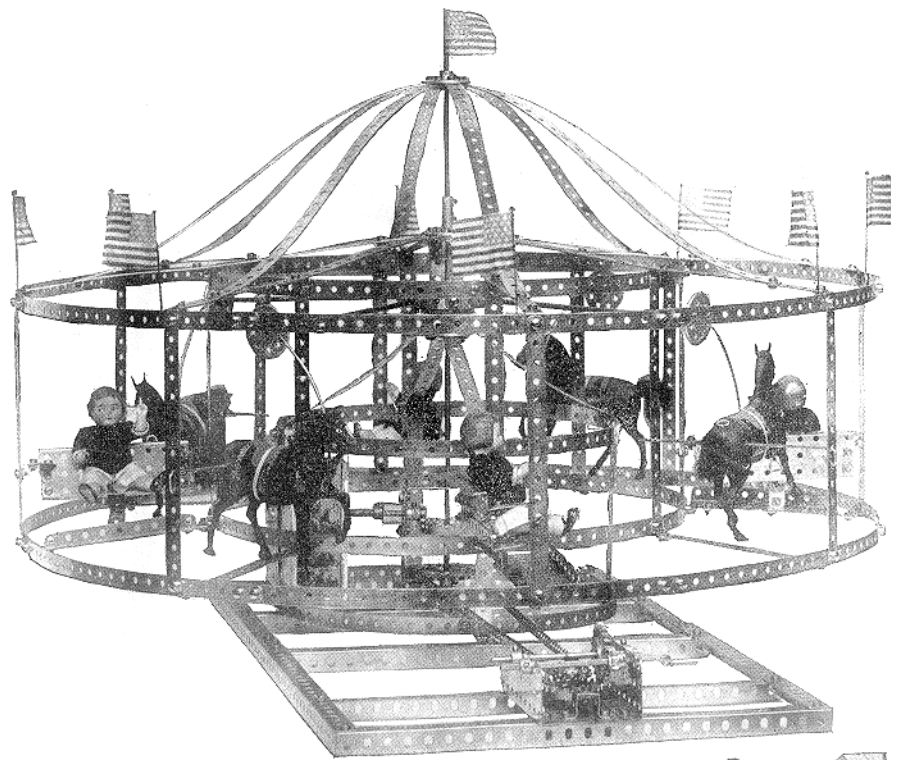
MATERIAL

| | |
|---------------------------|------------------------------|
| 64 Angle Girders, 12½ in. | 1 Sprocket, 2 in. |
| 14 Angle Girders, 5½ in. | 1 Sprocket, 1 in. |
| 16 Steel Beams, 25 holes | 3 Spider Wheels |
| 24 Steel Beams, 15 holes | 3 Angle Plates, 1x5x11 holes |
| 4 Steel Beams, 11 holes | 1 Shaft, 3¾ in. |
| 20 Steel Beams, 9 holes | 2 Shafts, 6 in. |
| 8 Steel Beams, 7 holes | 1 Shaft, 11½ in. |
| 2 Steel Beams, 6 holes | 1 Crank Shaft |
| 18 Steel Beams, 5 holes | 8 Collars |
| 36 Steel Beams, 4 holes | 2 ft. Sprocket Chain |
| 20 Steel Beams, 3 holes | 54 Angle Brackets |
| 10 Steel Beams, 2 holes | 2 Cable Cords |
| 1 Crown Gear, ¾ in. | 287 Bolts and Nuts |
| 2 Pulleys, 1 in. | |

EXTRA MATERIAL

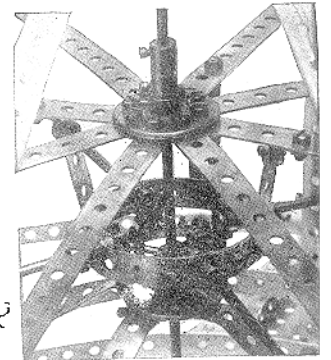
| | | | |
|---------------------------|-----------------|-----|--------|
| 50 Angle Girders, 12½ in. | @ 7¢ | - - | \$3.50 |
| 10 Angle Girders, 5½ in. | @ 5¢ | - - | .50 |
| 14 Steel Beams, 15 holes | @ 5¢ | - - | .70 |
| 4 Steel Beams, 9 holes | @ 5¢ | - - | .20 |
| 16 Steel Beams, 4 holes | @ 5¢ | - - | .80 |
| 4 Steel Beams, 3 holes | @ 2 for 5¢ | - | .10 |
| 33 Bolts and Nuts | @ 10¢ per dozen | - | .30 |
| | | | \$6.10 |

The arrangement of detail regarding lowering and raising device we will leave to the ingenuity of the builder.



Structo was Prepared to Build Solomon's Temple

CENTER POLE GEAR HOUSING



Large Merry-Go-Round, Outfit No. 6

MATERIAL

| | |
|--------------------------|------------------------------|
| 9 Angle Girders, 12½ in. | 4 Steel Beams, 2 holes |
| 1 Crank Shaft | 4 Hangers |
| 1 Shaft, 3¾ in. | 16 Collars |
| 1 Shaft, 6 in. | 3 Crown Gears, 1½ in. |
| 4 Shafts, 8 in. | 1 Sprocket, 2 in. |
| 2 Shafts, 1½ in. | 1 Sprocket, 1 in. |
| 1 Shaft, 11½ in. | 1 Spur Gear, 1½ in. |
| 1 Shaft Coupling | 6 Spur Gears, ½ in. |
| 39 Steel Beams, 25 holes | 7 Spider Wheels |
| 9 Steel Beams, 19 holes | 3 ft. Sprocket Chain |
| 8 Steel Beams, 15 holes | 15 Angle Plates, 1x3x9 holes |
| 16 Steel Beams, 11 holes | 1 Angle Plate, 4x9 holes |
| 2 Steel Beams, 9 holes | 254 Bolts and Nuts |
| 1 Steel Beam, 7 holes | 76 Angle Brackets |
| 4 Steel Beams, 4 holes | 1 Coil Spring |
| 8 Steel Beams, 3 holes | |

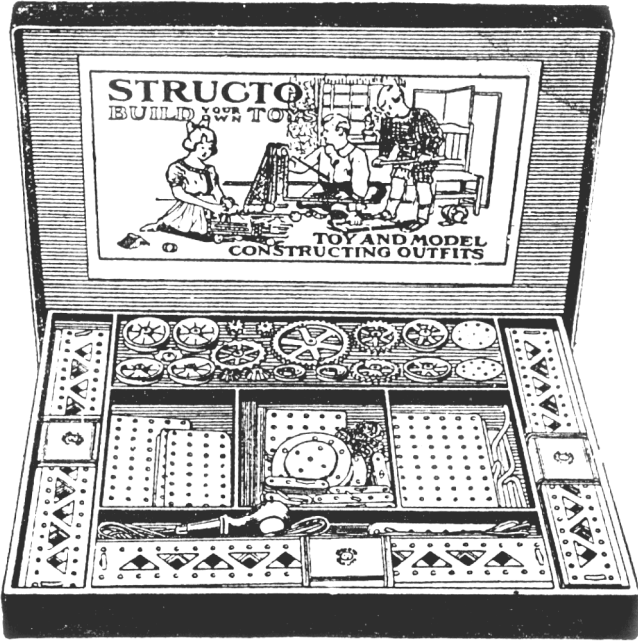
EXTRA MATERIAL

| | | | |
|------------------------------|-----------------|-----|--------|
| 2 Shafts, 8 in. | @ 8¢ | - - | \$.16 |
| 23 Steel Beams, 25 holes | @ 50¢ per dozen | - | 1.00 |
| 1 Steel Beam, 19 holes | @ 5¢ | - - | .05 |
| 1 Crown Gear, 1½ in. | @ 25¢ | - - | .25 |
| 4 Spur Gears, 1 in. | @ 20¢ | - - | .80 |
| 4 Spider Wheels | @ 10¢ | - - | .40 |
| 11 Angle Plates, 1x3x9 holes | @ 7¢ | - - | .77 |
| 16 Angle Brackets | @ 10¢ per dozen | - | .20 |
| 1 Shaft Coupling | @ 10¢ | - - | .10 |

\$3.73

HORSES AND DOLLS NOT FURNISHED WITH OUTFITS

1916-17 First a 40 page plus covers **Engineering Manual** for 3 new sets: Junior, Structo, & Chief Engineer. A B&W copy of its cover is shown below. All three Sets contained



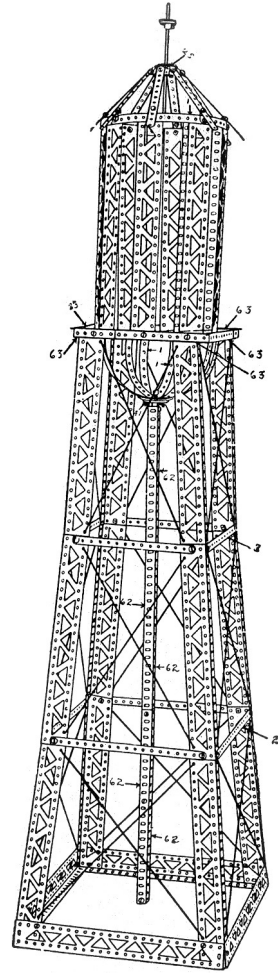
the new M-U Girder #78 & Girder Brace #77, parts which were never included in the standard sets, along with a selection of 'standard' pieces. No inventories are given in the manual, though it's possible they are on the missing back cover. From the parts used in the manual models the Sets included respectively 16,24,40 Girders, 8 Braces, and 78,108,208 N&B. They were priced at \$3, \$5, & \$10, and the Girders were available separately at 10¢ each, 50¢ for 6, or \$1 for 12 (all STRUCTO sets & parts were always post free). A card included in each Engineer outfit could be mailed in to give membership of the Structo Engineering Corps, and then 'we

will keep you advised of the new designs of Models that our Experimental Department is constantly turning out'. Also every member sending a drawing or photo of an original model 'merits the degree of "S.E.C." which entitles him to a Structo Engineer's Button'. Note the 'him'. All 3 sets are illustrated in the manual and the Chief is shown in the last column. The picture inside the lid, the '3kids/window' is similar to the '3 kids' but the background is different with a window & some furniture. The early Type A/B Motor can still be seen to the right of the RH boy's feet. (No doubt this illustration was used inside the standard sets too but I've not seen an example so far – earlier sets seem commoner than later ones.) Nothing is known of the design of the top of the lid. Several new items were advertised and the only one no longer listed was the Standard Motor. New Motors were Nos.2 & 3 (as in OSN 15) at \$2 & \$2.25, and a No.0 is referred to being available in a separate box with Sets 1-3 at \$1 extra (the price of the No.1 Motor had been reduced to \$1.50). The No.0 wasn't illustrated but may have been the No.1 without the on/off switch. Sets 4-6 were now supplied with the No.2 Motor. The other new items were the Power Plant (\$5), the Countershaft (\$1), both as in OSN 15, and the No.1 Transformer at \$2 – it gave 6v, the 'voltage upon which Structo Motors are to be operated with best results'.

The 25 models in the Manual are mainly Bridges, Towers (with & without elevators), & Cranes, all with structures made largely from the Girders. Other models include 2 Windmills, a Zepellin, & another version of the Hall Clock (without the ratchet wind). The Girder is obviously a useful part and is used effectively in many of the models, but in some they are perhaps too much of a good thing. One model from the Junior set is shown right, and two from the Chief are at the bottom of this and the facing page.

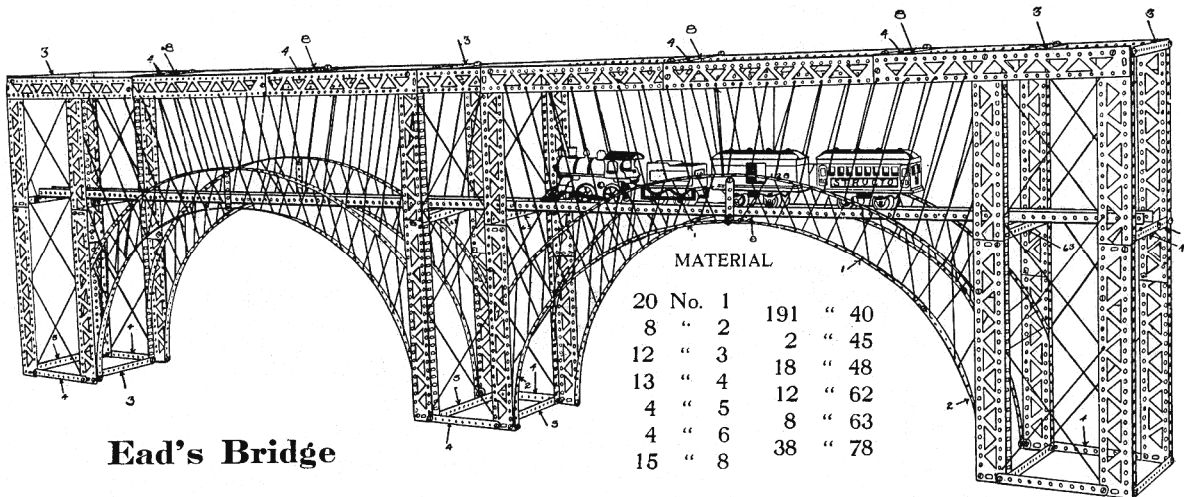
Next the 'Form 536' manual, the one mentioned earlier with a cover, shown at the top of the facing page, that has FORM 536 in the bottom left corner. It again has 112 pages plus covers and the model pages are the same except that 2 in the middle have disappeared and one has been added at the end. The resulting 'free' page is used to feature the M-U Girder & the Engineering Sets. The

Water Tower



MATERIAL

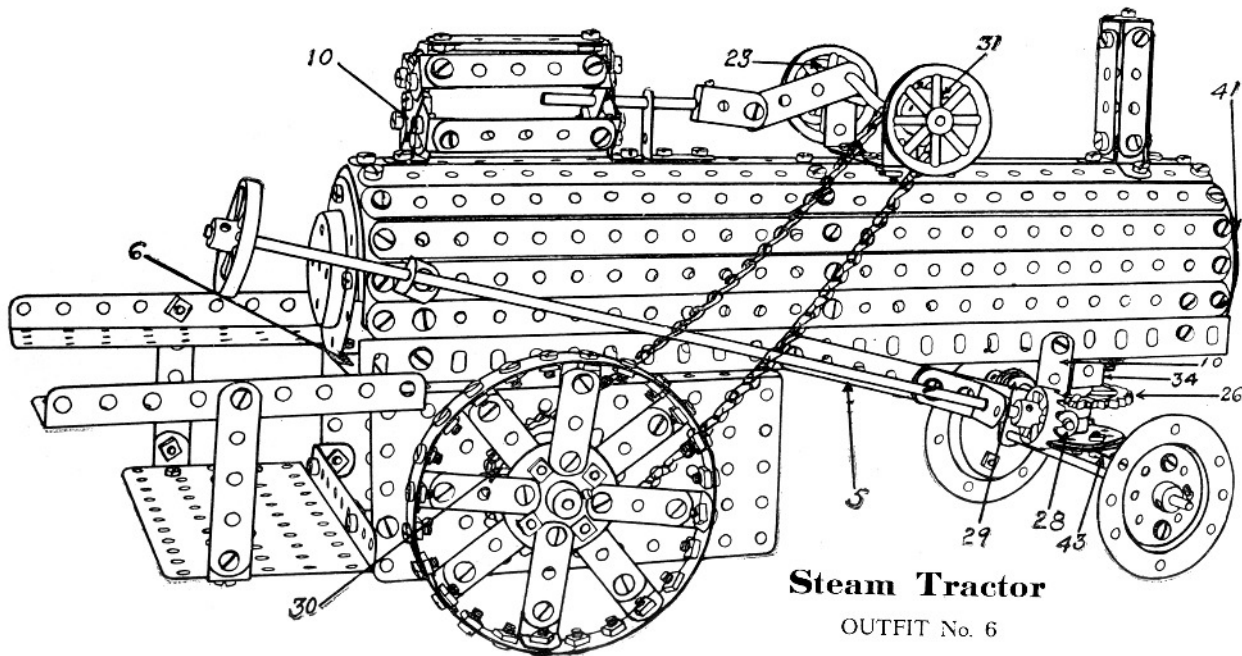
| | | |
|----|-----|----|
| 6 | No. | 1 |
| 6 | " | 2 |
| 5 | " | 3 |
| 8 | " | 4 |
| 1 | " | 23 |
| 1 | " | 25 |
| 1 | " | 34 |
| 8 | " | 39 |
| 88 | " | 40 |
| 1 | " | 41 |
| 2 | " | 45 |
| 16 | " | 48 |
| 1 | " | 50 |
| 1 | " | 56 |
| 2 | " | 60 |
| 6 | " | 62 |
| 8 | " | 63 |
| 24 | " | 78 |



Ead's Bridge

MATERIAL

| | | | | | |
|----|-----|---|-----|---|----|
| 20 | No. | 1 | 191 | " | 40 |
| 8 | " | 2 | 2 | " | 45 |
| 12 | " | 3 | 18 | " | 48 |
| 13 | " | 4 | 12 | " | 62 |
| 4 | " | 5 | 8 | " | 63 |
| 4 | " | 6 | 38 | " | 78 |
| 15 | " | 8 | | | |



Steam Tractor

OUTFIT No. 6

MATERIAL

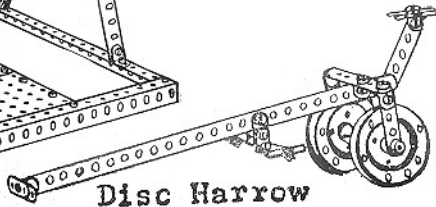
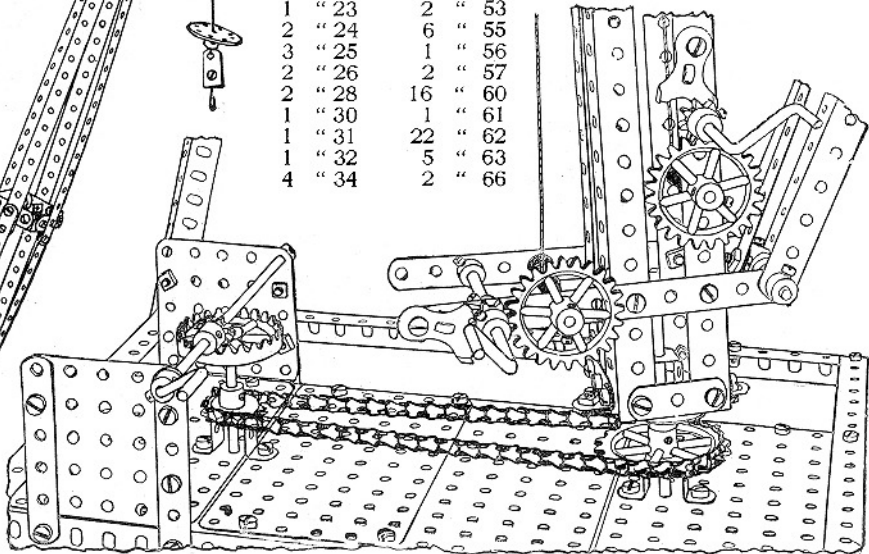
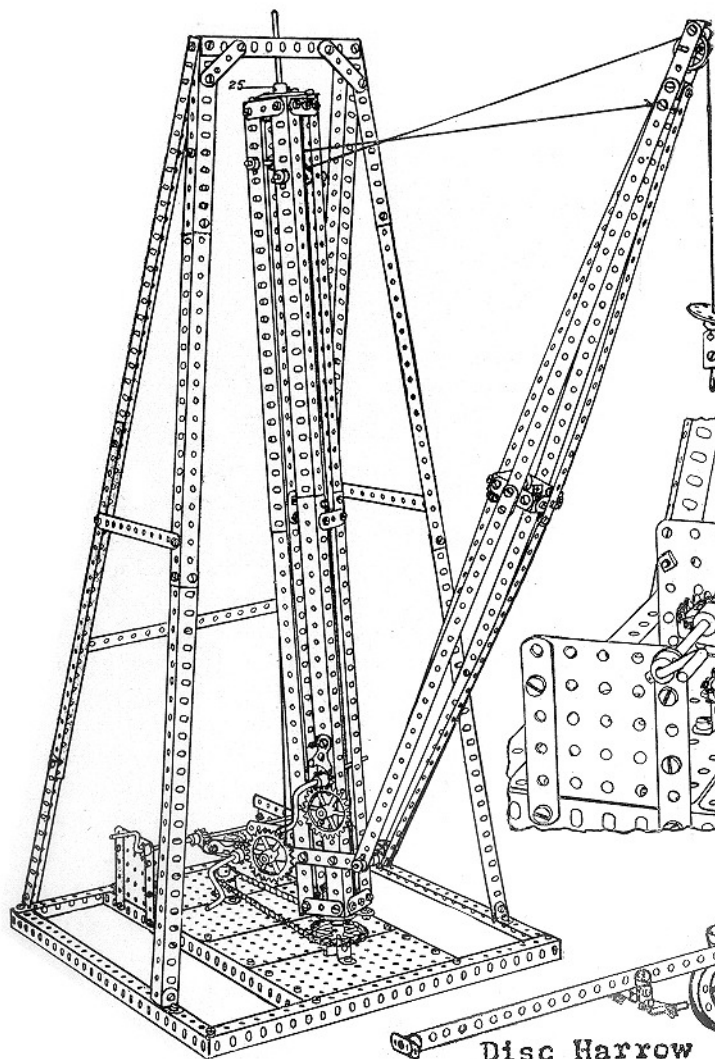
| | |
|-----|-------|
| 13 | No. 1 |
| 3 | " 4 |
| 1 | " 5 |
| 2 | " 6 |
| 9 | " 8 |
| 5 | " 9 |
| 24 | " 10 |
| 8 | " 11 |
| 2 | " 15 |
| 3 | " 18 |
| 3 | " 20 |
| 1 | " 23 |
| 5 | " 25 |
| 1 | " 26 |
| 1 | " 28 |
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| 1 | " 30 |
| 1 | " 31 |
| 1 | " 33 |
| 1 | " 34 |
| 1 | " 36 |
| 1 | " 39 |
| 208 | " 40 |
| 4 | " 41 |
| 2 | " 43 |
| 2 | " 44 |
| 47 | " 48 |
| 2 | " 50 |
| 4 | " 51 |
| 1 | " 53 |
| 1 | " 55 |
| 1 | " 58 |
| 7 | " 60 |
| 2 | " 62 |
| 1 | " 71 |

Derrick

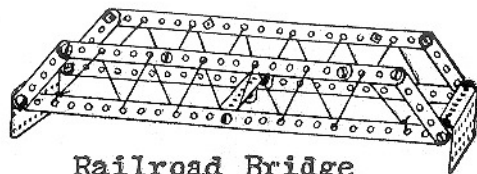
OUTFIT No. 6

MATERIAL

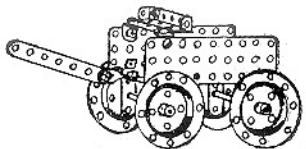
| | | | |
|----|-------|-----|--------|
| 8 | No. 1 | 1 | No. 36 |
| 1 | " 2 | 2 | " 37 |
| 4 | " 4 | 1 | " 38 |
| 4 | " 7 | 4 | " 39 |
| 4 | " 8 | 138 | " 40 |
| 2 | " 9 | 2 | " 44 |
| 14 | " 10 | 1 | " 45 |
| 4 | " 13 | 20 | " 48 |
| 1 | " 23 | 2 | " 53 |
| 2 | " 24 | 6 | " 55 |
| 3 | " 25 | 1 | " 56 |
| 2 | " 26 | 2 | " 57 |
| 2 | " 28 | 16 | " 60 |
| 1 | " 30 | 1 | " 61 |
| 1 | " 31 | 22 | " 62 |
| 1 | " 32 | 5 | " 63 |
| 4 | " 34 | 2 | " 66 |



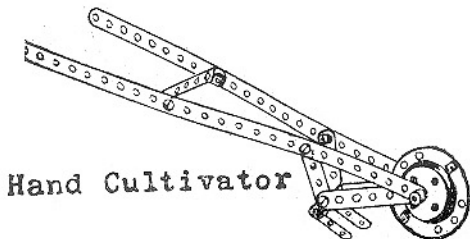
Disc Harrow



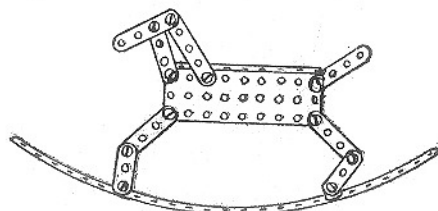
Railroad Bridge



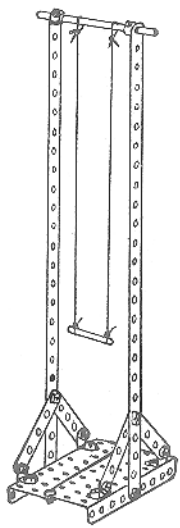
Express Wagon



Hand Cultivator



Rocking Horse

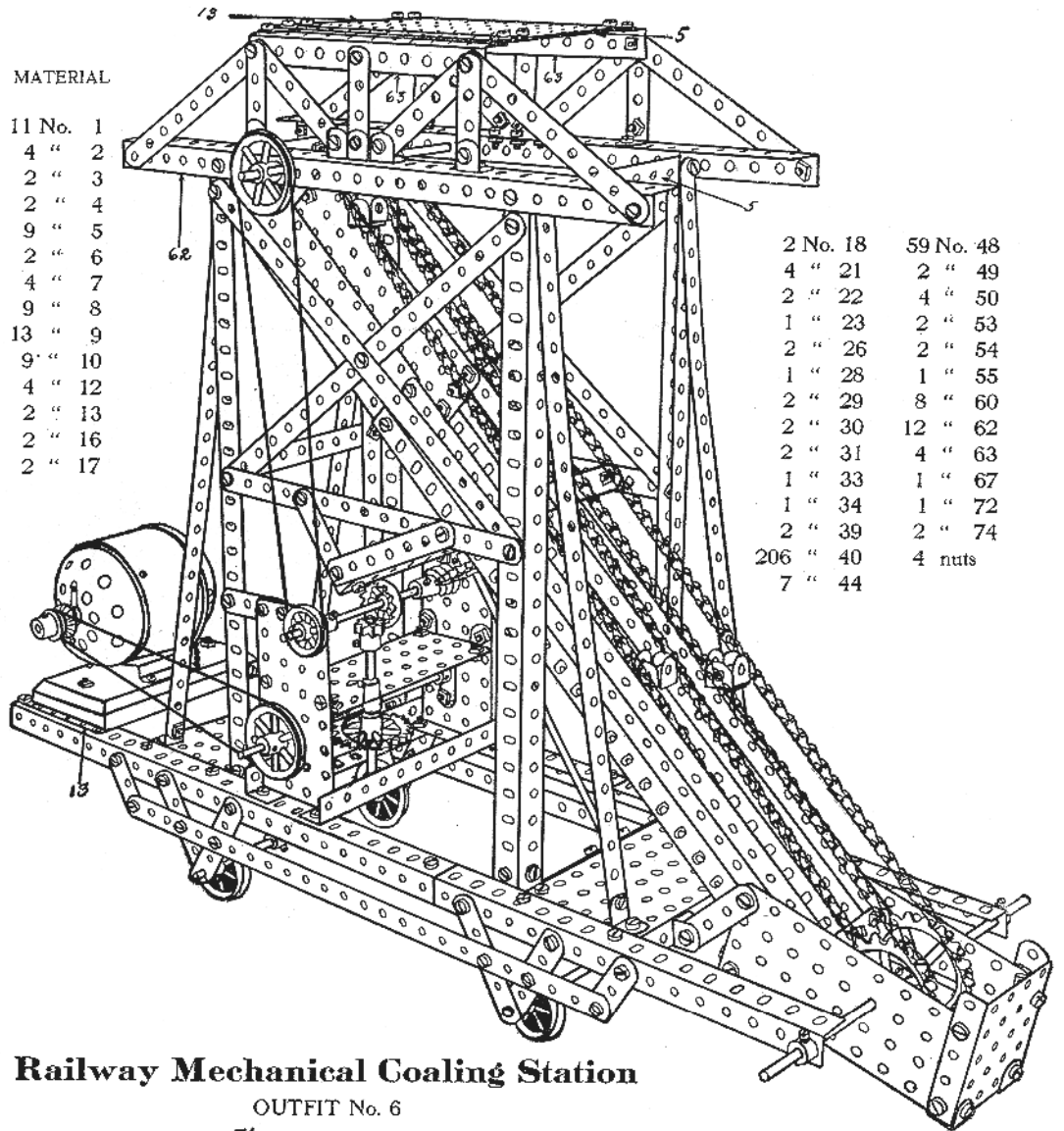


Trapeze

MATERIAL

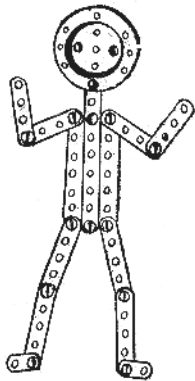
- 11 No. 1
- 4 " 2
- 2 " 3
- 2 " 4
- 9 " 5
- 2 " 6
- 4 " 7
- 9 " 8
- 13 " 9
- 9 " 10
- 4 " 12
- 2 " 13
- 2 " 16
- 2 " 17

- 2 No. 18
- 4 " 21
- 2 " 22
- 1 " 23
- 2 " 26
- 1 " 28
- 2 " 29
- 2 " 30
- 2 " 31
- 1 " 33
- 1 " 34
- 2 " 39
- 206 " 40
- 7 " 44
- 59 No. 48
- 2 " 49
- 4 " 50
- 2 " 53
- 2 " 54
- 1 " 55
- 8 " 60
- 12 " 62
- 4 " 63
- 1 " 67
- 1 " 72
- 2 " 74
- 4 nuts



Railway Mechanical Coaling Station

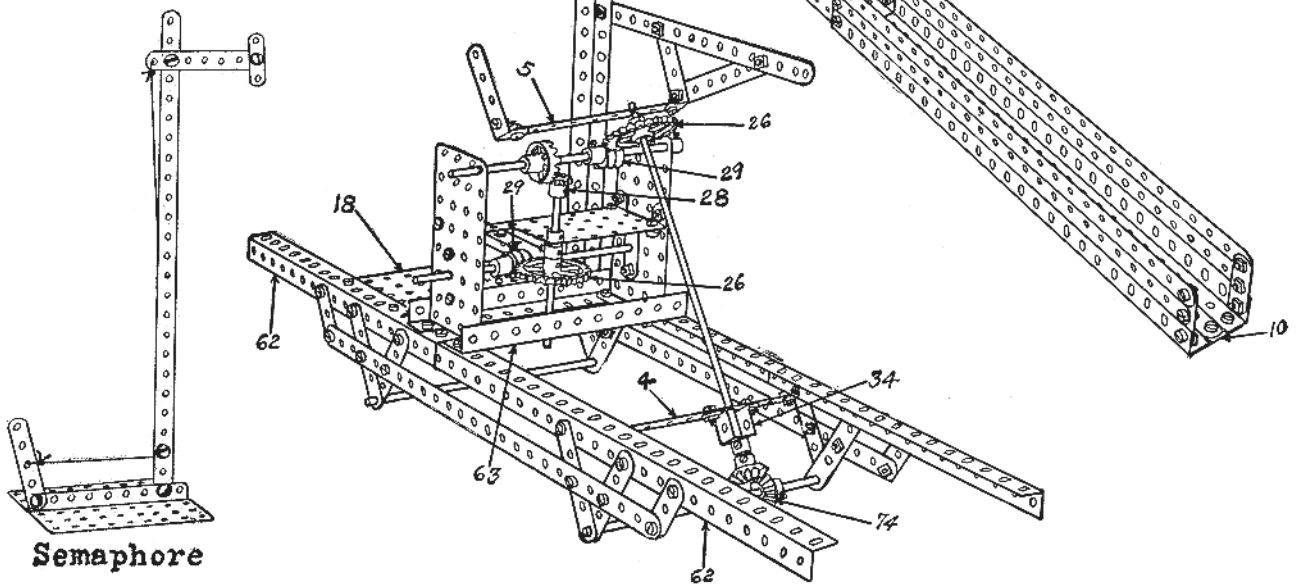
OUTFIT No. 6



Structo Man

DETAIL OF DRIVING MECHANISM

DETAIL OF CHUTE



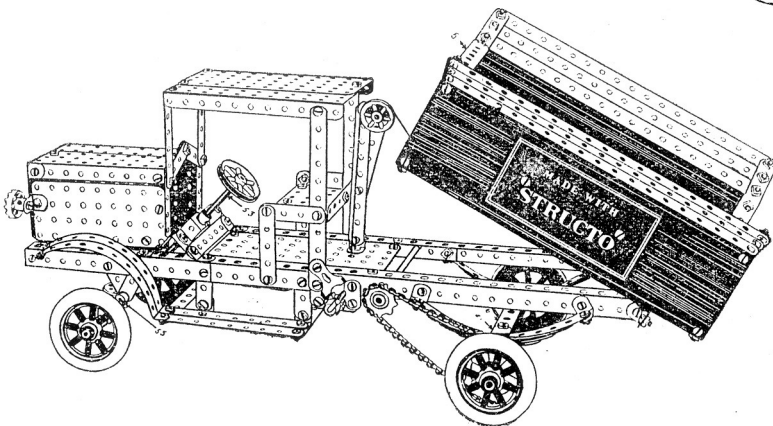
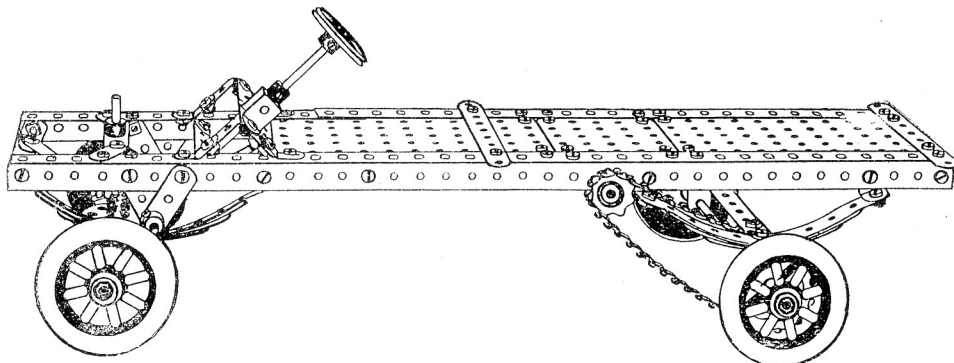
Semaphore

before, and A/Gs 7 & 10¢ against 5 & 7¢. A new feature in this Manual is that the manuals available were listed. The Cadet & Engineering match those described here in having 24 & 40 pages, and costing 15¢ each. The general manual, still 25¢, has 104 pages & more than 200 models, so it has fewer pages than the 536. 8 page Auto Instruction Sheets for the No.10 & 12 Auto Builders were also listed at 15¢.

Only 6 of the 24 pages in the Manual are given over to **models** – a good selection of 70, but all of a very simple nature, & the 8 on the previous 2 pages are typical. No inventory for the Set is given but the main parts, apart from the 2½" Discs, and a selection of Strips (including 2x 25h), are 2x 9"3h Single Flanged Plates.

1919 Only pp9-96 remain of the final manual, date uncertain, but I'll call it the '**1919**' manual. That ought to mean 104 pages in all, and that would agree with the one listed in the '539/Cadet' manual, but the staples show at p50. Perhaps some extra pages were added at the end in some way. The number of models claimed in the ads for Sets 1-5 have increase from 41,69,94,114,127 to 60,87,111,143,162. The numbers in this Manual don't entirely agree with the new claim

even if the 'mechanisms' included are taken into account, but discrepancies, albeit rather smaller, were found in earlier manuals. The items advertised in the remaining pages are the sets as before, but with no prices for any of them, the 2 lengths of M-U Girder, and a new item, the Auto Wheels set, left, at \$1. It contained 4 Road Wheels, 'in cast metal finished in two-color enamel', & presumably they are the ones used in the Auto sets. They scale at about 2½" Ø, a great



improvement on the standard 1½" Wagon Wheel, but from the model above, used to illustrates the use of the new Wheels, still none too big.

The **models** are mostly those from the previous manual, with a few dropped and the new ones 'more of the same'.

1920 As mentioned in OSN 15 production ceased at the

end of 1919. An undated form letter from the Meccano Company, New York reads: 'Your enquiry has been referred to us by the Structo Mfg. Co., who have discontinued the manufacture of Structo steel building outfits. You will find enclosed a copy of 'Meccano Land' and a price list ...'. Based on the highest PN shown the latter is from 1920.

The PARTS The following notes supplement those in 15/424, and the additional information in 16/458-9, 18/523, 21/618, & 28/814. They are based on a No.2 set with nickel parts; most of what was probably a No.5, with the usual tinned parts, now mostly dark grey; and all of a Power Plant except the Transformer, again with tinned parts. For simplicity I'll refer to the No.2 parts as 'early', and the others as 'late'. The sample is too small to be sure that the differences noted between the two periods (including those for the cast Wheels as well) are entirely typical.

The Basics • **Holes** are generally larger in the early parts, 4.4mm mostly, against 4.2-4.3mm for the late ones. • The only early **slot** seen is 7.0*4.7mm in the A/B; the equivalent late slot varies from 7.3*4.7 to 7.7*4.3mm. The slot in the late A/G is 4.7*7.6mm (as in 16/459) but it is 4.3*7.9mm in the M-U Girder. • The bore of all the **bosses** is 4.2mm and all are double-tapped 6-32. All also have a slight taper outwards from the root – very little, 10.0 to 9.9mm, over a typical length of 8mm, on the early parts, but more on the late ones. Those comparable to the early ones are 10.4 to 9.8mm over about the same length, but many of the others have slightly longer bosses, say 9mm, and the taper is 10.6 to 10.0mm. The amount the bosses protrude from the front face varies from zero on the Bush Wheels (but note 18/523) to 3mm on some parts. • **Axes** etc are nearly all 4.10mm Ø but a few are slightly larger for both periods, with up to 4.15mm for the late ones. • **Strips** & **Brackets** have large radius **ends** with typically 2½-4mm of metal outside the end holes. **Corners** are square on Girders but fully rounded on Plates.

• Most **Strips** are 12.7mm wide but some of the late ones, longer than 11h, are up to 13.0mm. • Late **A/Gs** are about 15*15mm in section with 4½mm of metal outside the round holes and 3½mm outside the slots. • **A/Bs** have about 9mm of metal between their hole & slot, but the bend point and metal outside the hole & slot vary considerably. • None of the **Wheels** are painted and the **Wagon Wheels** (see 16/458) have 8 spokes, and a tread 4.8mm wide. The **Car Wheel** & **Bush Wheel** are 1½" o.d. The early ½" **Pulley** is nickel plated steel and so is one of the late ones, but a second is chemically black-

ened. • The **Collar** is cast, 9.7mm Ø, about 7mm long, and double-tapped. • The **N&B** are 8-32 and are nicked steel. The pressed square **Nut** is 6.4mm A/F & 2½mm thick. The **Bolt** has a fillister head of about 6.8mm Ø and is 7mm u/h, though a few in the late set are 10mm u/h. The early Bolts have heads well over 3mm deep while the late ones are only a little over 2mm. The 6-32 **Set Screw**, again nicked steel, has a tiny 4mm Ø fillister head. • The **Spanner** is 70mm long and 1.7mm thick. The **Screwdriver** seen in 3 Ebay sets looks like the MCS one and scales at 4¾" long – 2 have black handles while one in red. The part in the early set, at the top of the next column, is 4¼" o/a and its red handle has no flats. • The early nickel **Hook** is 27mm long o/a, and is made of 2.1mm wire.

Except where stated the rest of the parts are from the late period. • The **Coupling** is similar to the Collar but is 20mm long o/a, and the tappings are at ½" centres. • The **Gear Rack** is pressed from thin, .75mm thick, steel, and is 3½" long. • The **Sprocket Chain** is nickel plated steel and fully stretched, has a pitch of .3" (23 links over 7.0" – it seems to be a good fit on the Sprockets, but I haven't tried running it yet. • The



Engine Crank is 5½" long with a ½" offset. • The **Hanger for Shafting** (from the Power Plant) is a steel casting painted red, with the holes at the top at 1" pitch and the base holes at 2". Its back face is completely flat. • The **Coil Spring** is black, 1¾" long excluding the end loops, and 6½mm Ø. • The **Car Wheel Bracket** hasn't been seen and though there are 4 of them in Set 5 and 8 in Set 6, none are used in any of the manual models. In the Illustrated Parts it looks like a 1*2h A/B with an outward joggle before the end hole in the longer arm. Its photo is shown above on the right, together with 3 of actual parts, the **Rack Guide**, the **Clevis**, & the **Pawl**. The Rack Guide is 1⅞" wide and the Rack runs between the back and the folded over semi-circular lip. The Clevis is like a formed M102. I'm not sure why the centre of the Pawl is pressed through, perhaps as an aid to moving it but using one of the lugs might be easier.

The **Motor** from the Power Plant is perhaps the No.0 mentioned earlier as it has simple screw terminals (one on each sideplate) and no on/off or reversing switch. The sideplates are painted red, & are stamped STRUCTO in an arc near the bottom. The strips bolted across the top of the sideplates have a rectangular slot between the outer & centre holes on each side, & the brush holders are riveted through those in the rear strip. The holes in the mounting flanges are at 2" pitch.

MANUAL SUMMARIES Details identical to those in the previous summary are not repeated.

'32pp Photo' Manual •Name: STRUCTO •Details of maker: Structo Manufacturing Co., Freeport, Illinois, U.S.A. •No dates or Ref Nos. •Page size: 254*169mm. •No. of pages: 32+covers. •Language: English. •Printing: cover shown earlier, photos of models, etc. •Page Nos. of Parts List & highest PN: 29,64 (Illustrated Parts on p30). •Page Nos. of Set Contents & highest PN: 31,64. •Sets covered: 1-6. •No. of models for each set: 1,2,2,5,5,4,4. •Name, Page No. of first & last model of each set (no Model Nos.): 1: Camp Stool,2; Small Derrick,5. 2: Express Wagon,5; Windmill,6. 3: Freight Truck,6; Monoplane,9. 4: Hand Car,8; Railway Derrick,14. 5: Biplane,9; Observation Tower,20. 6: Derrick with Walking Beam Engine,15; Machine Shop,22. •Other notes: Models are not all in Set order. Non-outfit models on pp13,16-18,23. Intro on pp1,24; Using Parts 25-27; ads 28,32,C3. C2,4 blank.

'40pp Photo' Manual •No. of pages: 40+covers. •Printing: as before except '91394' after 'TRADE MARK' on cover. •Page Nos. of Parts List & highest PN: 36,65 (Illustrated Parts on p37). •Page Nos. of Set Contents & highest PN: 38,64. •No. of models for each set: 13,5,10,6,5,4. •Name, Page No. of first & last model of each set (no Model Nos.): 1: Camp Stool,2; Small Derrick,6. 2: Swing,5; Derrick,8. 3: Freight Truck,7; Rail Road Velocipede,18. 4: Hand Car,12; Railway Derrick,19. 5: Biplane,13; Traveling Crane,26. 6: Large Windmill,18; Machine Shop,28. •Other notes: Models are not all in Set order. Non-outfit models on pp20-22,29,40. Intro on pp1,24; Using Parts 31-34; ads 35,39,C3. C2,4 blank. Details from B&W photocopy.

pp13-52 of the '60pp Photo' Manual •No. of pages: probably 60+covers. •Printing: cover not seen, photos of models, etc. •Parts List, Set Contents, etc probably on missing pages. •Sets covered: 1-6. •No. of models for each set: ?,>1,16,10,7,8. •Name, Page No. of first & last model of each set (no Model Nos.): 1: ?,?; ?,?. 2: ?,?; Windmill,13. 3: Freight Truck,13; Steam Shovel,20. 4: Hand Car,21; Street Car,27. 5: Biplane,27; Traveling Crane,35. 6: Large Windmill,36; Electric Locomotive,44. •Other notes: Models are in Set order. Non-outfit model on pp30-32. Intro on pp1,24; Using Parts on p47- at least 52.

'1st 1916' Manual This is the very similar to the '2nd 1916' manual below except that that none of the prices have been increased.

'2nd 1916' Manual This is the same as the 'FORM 536' Manual below except that: (i) It doesn't have FORM 536 on the cover. (ii) There are 2

extra pages of No.5 models after p70, with R. R. Telegraph Repair Car on p71, & Merry-Go-Round on p72. The last model is the Hall Clock on pp101-103 (after the Hall Clock the '536' has Automatic Punch Press on p102). So compared to the '536' all model page numbers after 72 are increased by 2. Both manuals have 112 pages and the extra advertising page in the 536 features the new M-U Girder & Engineering sets. (iii) Rubber stamps have been used to obliterate the price of some sets and put the increased price put alongside. In the 536 these new prices are properly printed.

'Engineering' Manual •No. of pages: 40+covers. •Printing: cover shown earlier, line drgs of models. •Page Nos. of Illustrated Parts List & highest PN: 34-37,100. •No Set Contents. •Sets covered: Junior Engineer, Structo Engineer, Chief Engineer. •No. of models for each set: 7,10,8. •Name, Page No. of first & last model of each set (no Model Nos.): Junior: Triumphal Arch,6; Lawn Swing,10. Structo: Builder's Hoist,11; Dutch Windmill,19. Chief: Ferry Bridge,20; Hall Clock,27-29. •Other notes: Intro on p1; using parts pp3,5; ads pp2,4, 31-33,38-40. C2-4 not seen but probably blank. Details from photocopy.

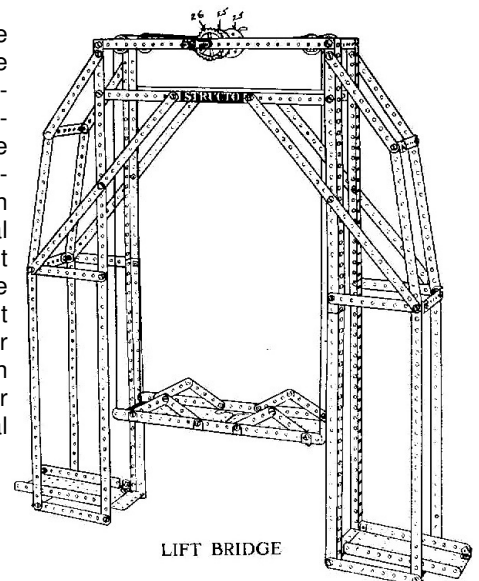
'Form 536' Manual •No. of pages: 112+ covers. •Printing: cover as described earlier, line drgs of virtually all models. •Page Nos. of Illustrated Parts List & highest PN: 3-6,100. •Page Nos. of Set Contents & highest PN: 112,75. •Sets covered: 1-6. •No. of models for each set: 41,27,25,22,10,20. •Name, Page No. of first & last model of each set (no Model Nos.): 1: Small Chair,8; Farm Wagon,21. 2: Auto Truck,22; Power Hack Saw,34. 3: Geared Punch Press,35; Gasoline Engine,47. 4: Doll Cradle,48; Swinging Circular Gang Saw,64. 5: Suspension Bridge,66; Battleship,74. 6: Engine Lathe,75; Automatic Punch Press,102. •Other notes: A 2-d Picture, The Midnight Ride, is on p57 & mechanisms on pp53,59,64,68,71,78,85,90, 95. Intro on pp1,2; Using Parts p7 & Gears pp35,44,48,65; ads pp103-111. C2-4 blank. Details from photocopy.

'Form 536*' Manual This is the 1917 Form 536 manual above except that the pages 107 onwards have been cut out and 2 new pages glued to the 2nd & 3rd of the 3 resulting stubs. They have ads on pp107-8 for the Cadet and 1-4 outfits, and on pp109-110 for the 5 & 6 outfits; the Engineering outfits; and the M-U Girder. Hence no mention is made of the linking sets or the set contents.

'Form 539 Cadet' Manual •Ref No. FORM 539 on C1. •No. of pages: 24+covers. •Printing: cover shown earlier, line drgs of models. •Page Nos. of Illustrated Parts List & highest PN: 18-21,100. •No Set Contents. •Set covered: Cadet. •No. of models: 70. •Name, Page No. of first & last model (no Model Nos.): Factory Truck,3; Push Wagon,8. •Other notes: Intro on p1, using parts p2, ad for manuals p9, other ads pp 10-17, 22-24, including Auto-Builder on pp14,15,24. C2,3 blank; C4 has Toy Mfrs U.S.A. logo. Details from photocopy.

pp9-95 of the '1919' Manual •No. of pages: between 100 & 104 + covers. •Printing: cover not seen, line drgs of model, etc. •Parts List, Set Contents, etc are no doubt on the missing pages. •Sets covered: 1-6. •No. of models for each set: >25,27,26,28,15,21. •Name, Page No. of first & last model of each set (no Model Nos.): 1: ??; Swing,13. 2: Auto Truck,14; Police Patrol Wagon,22. 3: Coal Dump Wagon,23; Freight Truck,34. 4: Concrete Mixer,35; Sewing Machine,49. 5: Roadster,55; Ship Crane,66. 6: Mowing Machine,67; The Hall Clock, 88-90. •Other notes: Ads on pp92-96. Details are from photocopies of 'key' pages.

A little space remains, so on the right the illustration, a little reduced in size, of one of the more original new models in the '1919' manual above. It is for Set 4 & though quite elegant looking, it has no guides for the lifting span and may be rather lacking in lateral bracing.



'New' System: KONSTRUKTOR Another small Russian system with 43 parts, but some of them are a little unusual. Richard Symonds kindly sent photos & photocopies of a small No.2 set (5 models) with manual, a larger one (33 models) without a manual, & a Motor. This was an Ebay lot & another at about the same time included a manual for the larger set.

The **set boxes** are shown below & though the labels look very different it is thought that they are from the same factory. In the first place the parts in both sets are shown in the Manual, and also a silhouette version of the archer logo on the lid of the small set can just be seen on the side of the large box, and on the red shirt of 'Handsome Harry' (Richard's description) on its lid. This solid version is also on the back of the Manual, and is shown among the models on the next page.



The **manufacturer** is given on the lid of the small box as the Progress Works in Michuinsk, a town I haven't been able to find on a map and all Google says of it is that it has an Agricultural College. Also on this label is 'ОСТ 17-882-81': OCT implies a reference of some sort and the numbers might indicate an early 1980s date.

In both **sets** the parts are inside a white expanded foam tray – the small one has a similar foam lid with label, while the larger one is provided with a cardboard lid. The overall dimensions of the two are 11⁷/₈ × 2¹/₂" & 12¹/₄ × 8¹/₄ × 2".

The word after No.2 on the label of the small set seems to be made up of '(bi)cycle/motor/construction set' but the models in the manual don't really reflect either theme.

The hole pitch is 10mm & apart from their holes being shown rather oversized, most of the **parts** look like their illustrations in the Manual shown right. Differences are noted below, along with a few dimensions, all scaled.

The metal parts are steel with a metallic grey finish, perhaps dull BZP, and many show a degree of iridescence. Plastic parts are black, but in other sets some wheels look grey or translucent white.

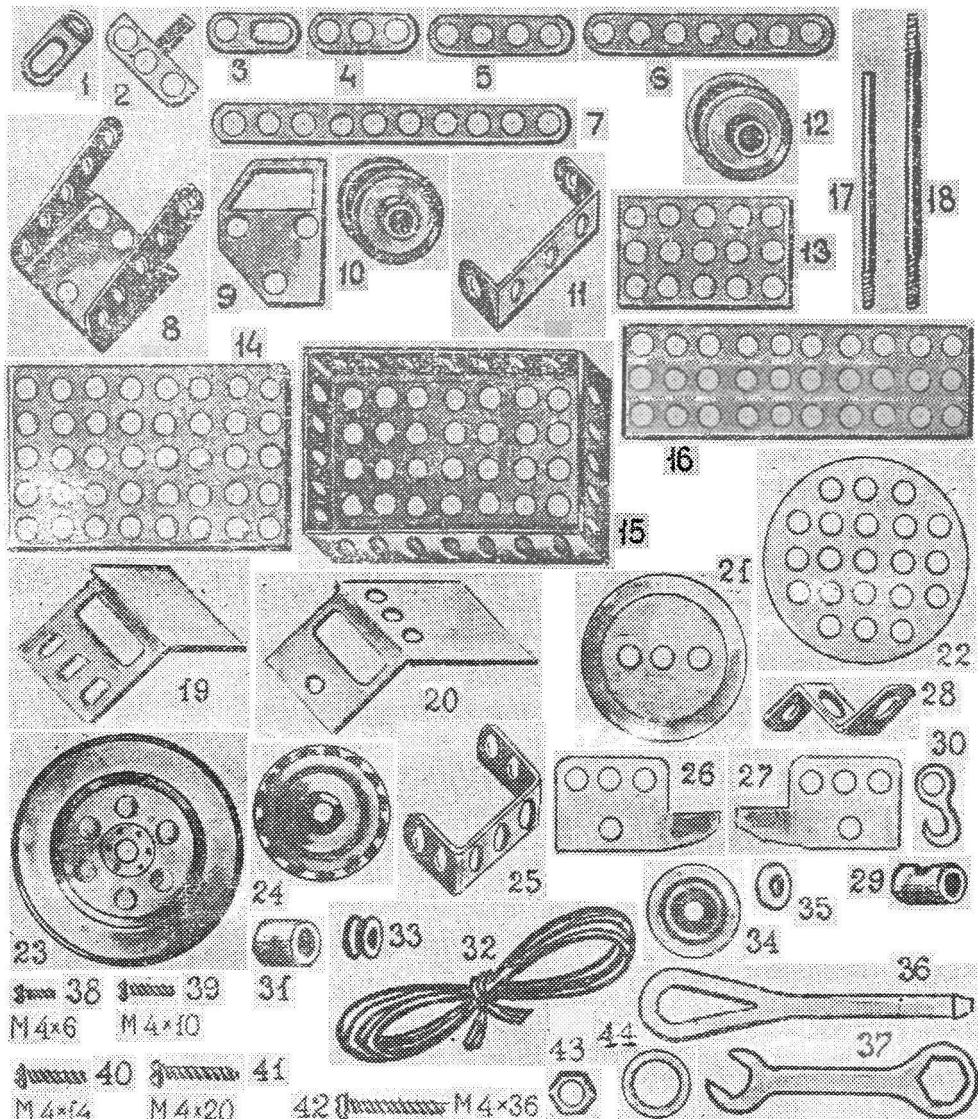
Details • #2 has a narrow lug angled upwards.

• The **plastic parts**. #10 & 12 are Pulleys of about 20mm Ø, and #10 looks to have an integral boss with RH set screw, probably a standard Bolt #38. #24, 30mm Ø, is a Road Wheel, & #23, 75mm Ø, likewise probably, though it's possible it has a

Leading Particulars

| | | | |
|------------------------|---|-------------------|--------|
| Name | KONSTRUKTOR | Country | Russia |
| Maker | Progress Works, Michuinsk. | | |
| History | Perhaps early 1980s. | | |
| Hole dia. | 4mm. | Hole pitch | 10mm. |
| Sets | No.2 (5 models) & and one larger (33 models). | | |
| Material/Finish | Steel with discoloured finish (BZP?); black plastic Wheels & Pulleys. | | |
| Boss | probably integral plastic tapped M4. | | |
| Fixings | M4 hex Nut & RH Bolts (6,10,14,20,36mm long), all bright looking. | | |
| Axles | Rods with Screwed Ends. | | |
| Motor | Perhaps a small, plastic-cased electric, Type P-1. | | |
| DP | No Gears known. | | |

pulley groove. #29 is a blackish Collar, plastic or metal, again with a #38 as set screw. Its wall thickness is greater than shown and it's probably not as wide. #31 is a Spacer. #33 is a 10mm Loose Pulley. #34 & 35 are small Wheels of 20 & 10mm Ø and can be seen as the seat & under the handlebars of the Trike shown later. #44 looks like a black O-ring and though illustrated in the Manual it is not included in the Parts List.



• The lugs of the **DAS** #11 are longer than shown. • It can't be seen for sure if the holes in the flanges of the 5*8h **Flanged Plate** #15 are elongated, but probably not. • The **Axles** #17 & 18 are 50 & 60mm long including their screwed ends. • #20 is

40mm wide; #19 is nearer 35mm. • #21 is 40mm o.d. and in the Manual it looks like a Pulley Disc but in some photos it appears more like a Flanged Disc. • The tapered lugs on the handed parts #26 & 27 are angled upwards. • The Hook #30 is 18mm long o/a. • The Cord #32 is white. • The Screwdriver #36 & Spanner #37 are 100 & 75mm long o/a, and at the ring end of the latter the outer edges are trimmed off parallel to the longitudinal axis. • There is a Washer in Richard's photo but it isn't anywhere in the Manual • The Motor is shown right, and its box, but there is nothing to prove that it is part of the system.



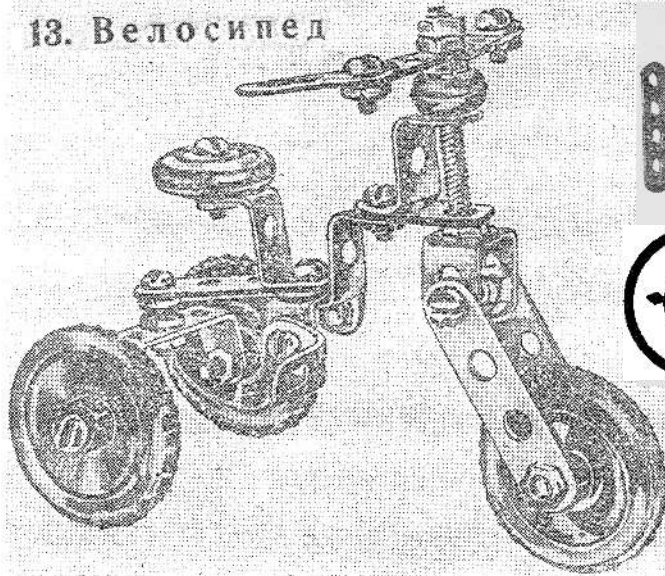
The contents of the No.2 Set are 10x#1; 3x #3; 4x #4; 6x #5; 2x #6; 2x #7; 1x #8; 5x #11; 1x #12; 2x #13; 1x #15; 1x #19; 4x #24; 2x #25; 4x #28; 4x #31; 2x #33; 1x #34; 2x #35; 1x #36; 2x #37; 25x #38; 3x #39; 2x #40; 4x #41; 2x #42; 38x #43.

The No.2 manual is all in Russian and including covers it has 12 unnumbered pages, about 230*150mm - the front cover (p1) is shown far right. p2 has a list of all 43 PNs but names & quantities are only given for those in the No.2 outfit. p3 in an Intro, p4-5 show the parts,

& 6-10 the 5 models, one to a page, with one large illustration of each plus a parts list. The first is No.3 on p6, a 2-Wheel Luggage Barrow, followed by No.4, a Wheelbarrow, No.13 shown bottom left, No.15 as on the cover, and No.18, bottom right, on p10. (The Parts Lists shown are my versions to save space.) After the models is the back cover, plain on the inside, and with the



logo & 'ОСТ 17-882-81' on the back. The cover of the manual for the larger set is as above but with '33 models', in Russian, in red, in the bottom right corner. It would be interesting to see the models in it.



Parts for No.18: 10,2,1,2,2,5,2,1,1,4,2,2,21,2,4,1,34 of #1,4,5,7,11,12,13,15,19,24,25,35,38,39,41,42,43.

Parts for No.13: 6,3,2,3,1,3,3,1,1,1,7,3,1,2,1,19 of #1,3,4,5,11,24,28,33,34,35,38,39,40,41,42,43.

KONSTRUKTOR [15]: S2

OSN 30/904

'New' System: JIFFY BUILDER Actually 'SUPER JIFFY BUILDER | MINATURE MECHANICS | ALUMINUM CONSTRUCTION SET' on the canister label (right), and if you think you've seen a similar label before think GIRDER BILT (and see 17/467). It has a canister identical in size, with an identical label except that JIFFY is green where G B is blue, and on JIFFY the words around the top & bottom are 'JIFFY MIXER CORP. | 1060 WASHINGTON AVENUE | BRONX 56. N. Y.' No model leaflet was with the set to hand, but the models on the label are the same for both sets.



The parts are mostly like those in the OSN 17 G B set but notes on differences follow, together with the quantities found, probably the remains of 2 or 3 sets.

- 16,23,57 of 16,8,4h Strips, but some of the 4 & 8h have probably been cut from longer ones. Several have sharp nibs on their ends like the OSN 17 parts.
- 48 A/B
- 8 dull red Wheels like those in 19/555.

• 3 Spanners, again the OSN 18 type, with a dull black chemical finish. On all, the tip of the round end has been ground down a little and will just enter the slot in the Bolts.

• N&B. Leaving aside a single Nut, these are steel with a 4-48 thread and so differ from any seen before in G B or BOYCRAFT (in 27/785). The 48 hex Nuts, 4.7mm A/F & 1.6mm thick, have a dull grey finish. They are the same size as the OSN 17 parts and thus do not fit the Spanner.

Bolts. 19 of one type, 11mm u/h, have the same finish as the Nuts, and a 4.9mm Ø round head. The remaining 25 Bolts, 7mm u/h, are nicked and have a flattened round head 5.1mm Ø. The 11mm Bolt is not quite long enough to allow a Wheel to rotate on it when it is locknutted to a Strip.

The single Nut, 5.7mm A/F, fits the Spanner. It is nicked brass, 1.8mm thick; its thread has not been identified but it is similar in diameter to the other N&B.

JIFFY BUILDER: S1

OSN 30/904

Snippet – 'New' System: BAU-KASTEN The photos of the set below were on German Ebay and no other details were given. The only clue as to size is a TRIX manual included in the lot, and its top is just visible at the bottom of the lid.

The parts that can be seen are listed below but it may be that some of them are not original.

- 5,7,9,11h **Strips** with large radius ends. Scaling from the TRIX manual (assumed to be 220mm long) gives the pitch of the holes as 12mm.
- A 5*11h **Flanged Plate** (under the parts lower left) with the

outer lengthways top holes elongated.

- Various **Brackets** probably including a 1*3*1h DAS & a 2*1*2h Double Bracket.
- 6-hole **Wheel Discs** of about 42mm Ø. (The larger circular part top right might be a film spool or the like.)
- The 2h Ø silver **Loose Pulleys** fitted with **Tyres**, and the fat **Rubber Rings**.
- The 1926 Patent STABIL-type **Gear** bottom right. No bossed parts can be seen so perhaps Screwed Rods were used as axles.



OSN 30/905

BAU-KASTEN: S1

Snippet – Another Marusan CONSTRUCTION Set CONSTRUCTION JEEP & CONSTRUCTION TRUCK were described in 27/803 and now there is this outfit, which will be called CONSTRUCTION TRACTOR. The photo on the right shows the ready-made Tractor sitting on the box - the packaging is in the usual style, with the Tractor in the bottom of the box, and one side unfolding into panels, 3 in this case, with the parts attached to them. The front of the Model Leaflet is shown under the box.

The parts that can be seen are: 3x 10h Strips; a 3h Strip; a 1*5*1h DAS; a 1*2h A/B; a Reversed A/B; at least 3 other Brackets, probably Angle & Double Brackets; a long Axle; a Spanner; a wire Screwdriver; 2 Wheels with tread, rubber no doubt to push onto the Axle; 3 green Tines; a red 3*11h Frame; a red Blade; and bright N&B with square Nuts & round-headed Bolts.

Apart from those in red & green, all the parts look familiar from the other CONSTRUCTION sets. If as is very likely, the pitch of the holes in the Strips is 10mm, as in the JEEP and TRUCK sets, the Tractor model scales at about 12 or 13cm long.

One model that can be constructed from the parts is presumably the one on the front of the Leaflet, but the photo isn't clear enough to see exactly how it is made or whether the blue parts that can be seen in the box would be sufficient to build it. I'm not sure either what farming implement it represents. The Blade, if that's the right name for it, doesn't seem to be fitted to this model, but it is clearly on the one on the box label, so perhaps that's a different implement. But again what is it?

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OSN 30/905

CONSTRUCTION TRACTOR: S1

New System: MECHANTRIX Thank you to Richard Symonds for sending an Illustrated Catalogue dated Nov. 2002 for this new Canadian copy of MECCANO – ‘Compatible with other popular brands’ it says on the front cover, not with TRIX though. MECHANTRIX is made by John Overeem, Box 542, Picture Butte, Alberta, Canada, T0K-1V0; Phone/Fax: (403) 732-4974/5017; Email: mechtrix@telus.net. Richard has a set and wrote that the parts are well made.

The PARTS Over 150 are listed (using MECCANO PNs) and can be supplied unpainted or painted - the colours aren't stated but see SETS below. The range includes most of the strip/girder parts & brassware, many of the plates, and some gears. The complete list is given below with variations from the MECCANO pattern noted (Br = brass).

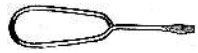
1-6a;6(4h);7-9f;9g(2h);10-11a;11b(1*2*1h);12-12c;12e(12b but 3 round holes);13-18b;18c(1¼");19h,s,b;20a,b(solid Br);21;22;23a,b;24-4b;25-26b;27,a,d;35;37a&b(brassed steel: Nut 6.3mm square; Bolt 6.0mm CH);40(white on a flat card);43;46-48e;51-52a,b(7*3h),f(25*7h),g(13*7h);55a;57;57c;59;62-62b;63,b;64;70;72-74;79;80a;80c;82;90a;97;99-100;103-103h;103j,k,l,r,t,u(13,15,2,49.37.31h);120c;125-126a;133a;142;144;155;155b,c(1½", 2" Flexible Rings);171;173a(Br);176;193,d(3*11h);194-194d;195-197;195a(11*5h);200;215. Note: the Flexible Plates 194-197 are all listed painted/unpainted & are thus presumably metal.)

The whole catalogue can be seen on the web (type mechantrix into Google).



The SETS The basic outfits are 00,0,1,2 with linking sets 0A-1A. Boxes are red (except the 00A is green) with the label above, and the parts are shown arranged on a yellow ground. The general colour scheme is 1950s MECCANO with green Strips etc, red Plates, bright small Brackets, & the larger Pulleys black. However in some sets all the major parts are shown red. The parts in the sets include some not in the list of separate parts (#34, 36, 38, 111c, 212), and the Flexible Plates

are numbered 188-191. The wire Screwdriver below is shown in the 00 & 0 outfits and one with a red plastic handle in the 1 & 2. The contents of the sets are given and are somewhere between those of 1950s & 1960s MECCANO. A No.00 costs \$30 & a No.2, \$100. No mention is made of manuals but 3 small models are shown that can be made from Set 0.



Various special sets are available. In the same packaging as Sets 00-2 are Packs V & W (6 in each of #22, 24), and X, Y, Z (4 each of #19b, 20a, 21). These cost around \$20 each. Also a Pulley Wheel Set (\$31) with 2 each of 19b, 20a, & 21. Then there are 3 Gear Packs A, B, & C with 6 each of #27, 25, & 25a. They are around \$40 each, and are packed in boxes with the design above on the label against a yellow or green ground.



Finally 4 sets with parts to make a particular model. These are: a Model 21 Self Propelled Massey Harris Combine, over 2ft long, at \$1650 including power supply; the John Deere Tractor below (\$375, power supply \$75); a Cultivator 32½" wide with 'wing sections, depth control, floating hitch, tandem wheels' (\$395); & a John Deere Swather, 22" wide, with 'power take off, transport feature & hitch jack' (\$410). They all look nice models and include some special parts for added realism.



MECHANTRIX: S1

OSN 30/906

A METALCRAFT Set The details of UK METALCRAFT (like VOGUE, see 25/714 & earlier) are slowly appearing, and the latest find is a box, the first one seen, with some parts in it, and 2 identical manuals, probably the remains of 2 sets. It's David Hobson's and he kindly lent it for this account.

The **box** is 9*16*1" and the lid, red edged, has its top printed all over with the same colourful scene as on the manual cover in OSN 25. The tray is yellow and the parts are strung to a yellow card with thin, red cord. The small parts are in 2 end-opening, yellow & red card boxes, about 1½*2½*½", which are glued to the card. Their tops are printed with 'METALCRAFT/ CONSTRUCTIONAL SET/ ACCESSORIES'.

The **parts** are as would be expected from OSN 15, painted dark green & the lightish red. No Axles remain but the Crank Handle, Hook, & Span'driver are painted black. The Semi-circular Plates have no extra holes in them. Nuts are square.

The **manuals** are identical to the one described in OSN 25.

No official **Set Contents** is known but from the parts needed for the manual models, and those in this Set & the OSN 15 lot, the likely inventory is: 2,6,2,4 of 25,9,7,5h Strips; 4 A/B; 4 Semi-Circular Plates; 2x 5*5h Plates; 2x 3*3h Triangular Plates; 4 Balloon Wheels; 2 Axles; a Crank Handle; a Hook; 2 Pulleys; 1 Flanged Plate; 1 Span'driver; perhaps 48 N&B (but 158 Bolts were in David's set); 4 each of the 2 types of Spring Clip; 2 DAS.

So compared with VOGUE, in terms of the number of parts excluding N&B, the METALCRAFT set has about a third more than the No.1, and about half of a No.2. The most significant change is the Flanged Plate (not included in the VOGUE sets until the No.3) instead of the 2x 11h A/Gs in the VOGUE No.1.

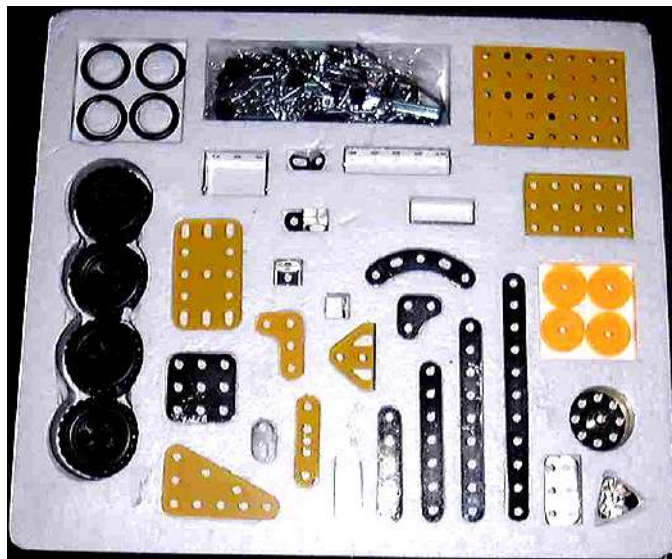
Also in David's set were the **VOGUE leaflets** in French & Dutch that were mentioned in 17/466. They have the same Abbey Lane address at the bottom (wrongly said to be Abbey Road in OSN 17).

METALCRAFT [2]: S2

OSN 30/906

'New' System: MECH-BUILDER Edmundo Veiga found some sets from this 'Made in China' MECCANO-like system in Buenos Aires recently and kindly sent some details. They seemed to be old stock and later John Stark from New Zealand told Edmundo that he saw the brand on sale some 4 years ago.

The SETS The 'NZ' sets were numbered M601 & M602, and



the tray of the M601 is shown above right. Edmundo saw 6 outfits on sale, a basic set at US\$17, a \$10 Racing Car set, & four \$5 'single-model' sets, M603B, D, E, F. The lid of the 603B above shows the 4-Wheel 'Car' that can be made from the Set, the 3-Wheel 'Motorcycle' from the 603D, & a Truck from, no doubt, another set in the series. The 603E makes a very simple Monoplane and the 603F the Snow Vehicle right.



are square and the Bolts have Allen heads. The exception is a BZP 3-Way Corner Bracket (right) in the 'NZ' set. Using MECCANO PNs the other parts visible (from all the sets) are: 2,2a,3,4,5,6,6a,9f,10,11,12,12c, 40,50,90mm Axles, 22a(very tight push-fit plastic), 24a,35,37a,37b,38,38a, 2*3*2h DAS, 48,48a,51,53,74,90a, 10,20mm Bolts, 125(all round holes),126,133a,133b,155, black Road Wheel, 188(or plastic), 221. The black looking parts in the 601 tray are, where it would be expected, BZP. The 3-Way Brackets are housed in the bottom right corner. Various combinations of yellow, red, & BZP parts are used in the small models.



The MODEL LEAFLETS Those for the Edmundo's 603 sets are all similar in showing the finished model, as for the M603F left, followed by 6 or 7 building steps, with the parts for each specified. There are no model names, just MECH-BUILDER and the slogan in English, as on the lid. In some Leaflets slotted holes are shown in the Trunnion's base but they are round in the actual parts.

OSN 30/907

MECH-BUILDER: S1

More on UMAKIT Notes on a small, unnumbered set appeared in 13/339, and some similarities with CONSTRUCTO were mentioned in 19/539 & 25/740. Now photocopies of 4 pages, 225*180mm deep, from a UMAKIT Model Leaflet have been found - perhaps they were from a folded-over sheet but references are made to illustrations which are not on any of the pages, so there may have been others originally. The front page has an introduction, then the Price List below (enlarged for clarity), and at the bottom is the address of Denton Claff Ltd, - 8/10 Charing Cross Road, London, W.C2. The other pages show 5 models for each of Sets 1, 2, & 3, one page for each Set.

track is explained in some detail, and finally 'The spare part list of over 80 different parts gives you great scope', but only 40 parts are in the List below. Not all the 40 parts are used in the Set 1-3 models - #60, for example, the 3*5h Flanged Plate, certainly isn't.

The intro gives practical hints: 'If you find you are short of a curved strip, take a straight one & curve it'; 'If a sharp bend is required - use pliers.'; and 'Rectangular and round "Medicine bottles" may be pressed into service as formers when bending strips or plates.' After that there is mention of models from Sets 4 & 5: 'two fire engines in the illustrations 4.1 & 5.3'. Then a Bogey Carriage running along an A/G

Compared to the list of CONSTRUCTO parts in MCS, the PNs are different but all of the names common to both are the same, including the unusual ones such as 8 Holes Wheel Disc, & Right Angled Trunnion. Some parts are in one but not the other and one is the Double Pulley, #50 below. The UMAKIT prices are the slightly cheaper of the two, so perhaps it came first.

There is one photo of each of the models and they run from 1.2 SCALES TO 1.5 ENGINEERS WORK BENCH, 2.1 MOTOR LORRY TO 2.5 WINDMILL; & 3.1 FLOATING CRANE TO 3.5 TRAMP STEAMER. Apart from the Wheels most are fairly close copies of MECCANO but only one, 3.2 DELIVERY VAN, is anything like any of the models in the CONSTRUCTO manual described in OSN 25.

| No. | Description | Price |
|-----|--|----------|
| 1. | Perforated Strip 12 1/2" ... | 5 1/2 d. |
| 2. | " " 7 1/2" ... | 4 d. |
| 3. | " " 5 1/2" ... | 3 1/2 d. |
| 4. | " " 3 1/2" ... | 3 d. |
| 5. | " " 2 1/2" ... | 2 1/2 d. |
| 6. | " " 1 1/2" ... | 1 1/2 d. |
| 7. | " " 1" ... | 1 d. |
| 8. | Angle Girder, 12 1/2" ... | doz. 1/1 |
| 15. | Angle Bracket, 1/2" x 1/2" ... | doz. 1/3 |
| 16. | Obtuse Bracket, 1/2" x 1/2" ... | " 1/6 |
| 17. | Double Bracket, 1/2" x 1/2" x 1/2" ... | 2 d. |
| 18. | Reversed Angle Bracket, 1/2" x 1/2" x 1/2" ... | 2 d. |
| 19. | Angle Bracket 1" x 1" ... | 2 1/2 d. |
| 20. | Double Angle Strip, 1 1/2" x 1/2" ... | 2 1/2 d. |
| 21. | " " 2 1/2" x 1/2" ... | 3 d. |
| 22. | Flexible Plate, 2 1/2" x 1 1/2" ... | 3 1/2 d. |
| 23. | " " 2 1/2" x 2 1/2" ... | 4 1/2 d. |
| 24. | " " 4 1/2" x 2 1/2" ... | 6 1/2 d. |
| 25. | " " 5 1/2" x 1 1/2" ... | 5 1/2 d. |
| 26. | " " 5 1/2" x 2 1/2" ... | 8 d. |

| No. | Description | Price |
|-----|--|----------|
| 27. | Crank handle, 3 1/2" ... | 5 d. |
| 37. | Axle Rods 4 1/2" ... | 2 1/2 d. |
| 39. | " " 3 1/2" ... | 2 d. |
| 42. | " " 1" ... | 1 d. |
| 43. | Wheel, 1 1/2" diameter ... | 6 1/2 d. |
| 44. | Wheel, 2" diameter ... | 8 d. |
| 47. | Jockey Pulley, 1" diameter ... | 5 d. |
| 48. | Bushed Pulley 1" diameter ... | 8 d. |
| 49. | " " 2" ... | 1/2 |
| 50. | Double Pulley, 2" & 1" diameter ... | 1/6 |
| 51. | 8 Holed Wheel Disc, 1 3/8" diameter ... | 6 d. |
| 52. | 8 Holed Bushed Wheel Disc, 1 3/8" diameter ... | 9 1/2 d. |
| 55. | Semi-circular Plate, 2 1/2" diameter ... | 6 d. |
| 56. | Right Angled Trunnion ... | 3 d. |
| 57. | Flat Trunnion ... | 2 1/2 d. |
| 58. | Curved Strip, 2 1/2" x 1 3/8" radius ... | 3 d. |
| 59. | Formed Strip, 3" x 1 1/2" radius ... | 3 d. |
| 60. | Flanged Plate, 2 1/2" x 1 1/2" ... | 5 d. |
| 61. | " " 5 1/2" x 2 1/2" ... | 1/2 |

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