39

OTHER SYSTEMS NEWSLETTER

OSN 39 OCTOBER 2008

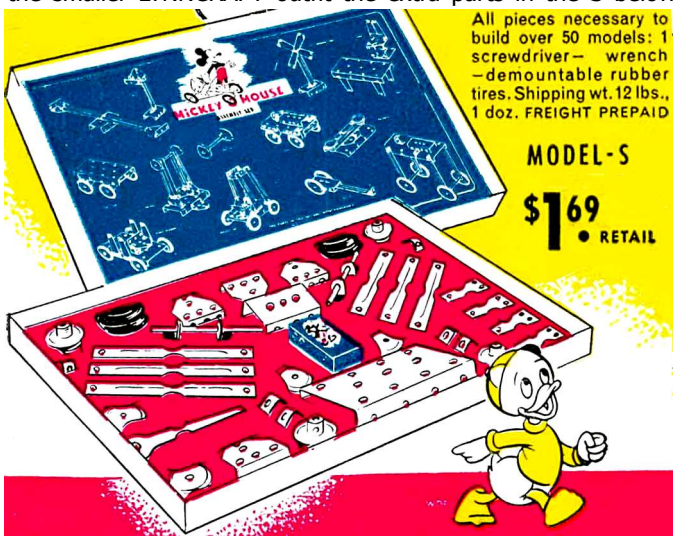
Editor Tony Knowles
7 Potters Way
Laverstock
Salisbury
SP1 1PY
England

Email: tony@osnl.co.uk

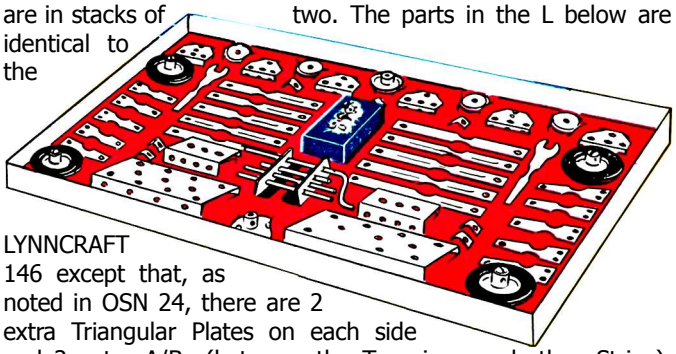
EDITORIAL Nothing that needs any comment comes to mind, so I'll take this opportunity to thank all those who send me news & contributions, and those, sometimes unsung, who help when I get stuck over a language problem, etc. The Newsletter would be much more difficult to produce, and would be of lesser quality, without you all. And thank you also to those who simply subscribe to OSN, because in doing so you ensure that it remains viable.

Shorter NOTES, with thanks to all contributors.

1. **MICKEY MOUSE** Kendrick Bisset sent a scan of a page in the March 1948 Playthings which announced the S & L sets (see 24/713). They were manufactured by Hollywood Toycraft Inc,. 6223 San Fernando Road, Glendale 1, Calif. Sales representatives were Bernard Funk, 200 Fifth Avenue, New York; Al Auger, 1355 Market Street, San Francisco, Cal; & D.D.Ottsott Co., Second Building Sante Fe Building, Dallas, Texas. These MICKEY MOUSE sets were very similar to LYNNCRAFT, the latter made by the Lynncraft Engineering & Manufacturing Co., also of Glendale 1, but no street name is known. Both sets were illustrated in the ad and compared with the smaller LYNNCRAFT outfit the extra parts in the S below



are 4 Pulley Discs, & 2 A/Bs (beneath the Pulleys in the top corners of the box - the other 4 are either side of the Flanged Plate: in the LYNNCRAFT they are all to its right). The 4 Tyres are in stacks of two. The parts in the L below are identical to the



LYNNCRAFT 146 except that, as noted in OSN 24, there are 2 extra Triangular Plates on each side and 2 extra A/Bs (between the Trunnions and the Strips). The Sets retailed at $1.69 and $2.95.

The canister Set A described in 27/808 was featured in an Ebay snippet of a trade ad, said to be from 1948. Two other outfits are mentioned in it, no doubt the S & L. Not much of the wording can be seen but the maker is the same and the prices are $3.??, $6.??, & $13.??. They would probably be the wholesale prices for 6 sets and the A would retail at about $1.

MICKEY MOUSE: S1 [39/1164]

2. **TECHNICO** Some notes on his parts & manuals from Urs Flammer add to the details in 36/1071. He described the parts as elaborate, precisely made, and no doubt expensive at the time. They include both types of joint shown in the UK patents (see 24/686), and a wooden Baseboard, 165*265mm, as in Urs's model below. The Saw Bench is a No.6 manual model

and Urs added the 2-stage transmission from the Pulley with winding handle on the far side. The Rods are brassed steel and the structure was rigid but difficult to build, and not helped by the 3 threads used, 3, 3.5, & 4mm Ø. The Cube Hub (PN1) has a 8mm side.

Urs has two manuals, both in German, a 1-5 and a 1-10. Neither is quite complete but they have virtually the same content as the English 1-10, with a similar cover design and the same models – ending with No.66 on p24 for the 1-5. The dimensions in these manuals are given in inches, as in the English version, but the parts were almost certainly designed using the metric system. This may point to the German editions being produced after the English one.

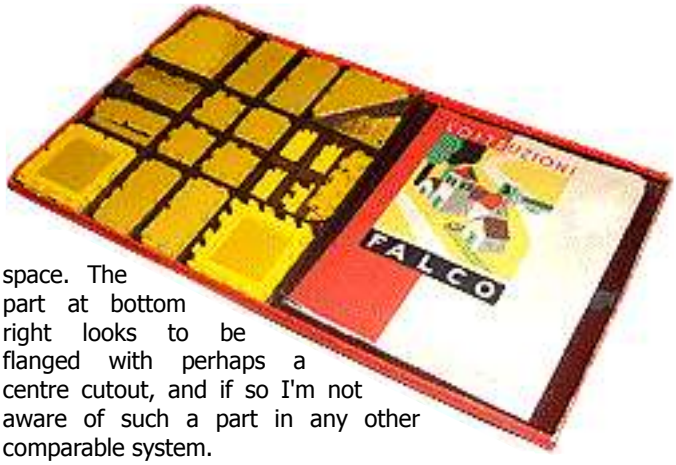
No trace of a German patent has come to light but there was an American one, No.1400066 of Dec. 13, 1921, although the application was filed in July, 1914. The patentee's name and address are as in the UK patents, and the Patent's content covers the same ground as the two UK ones.

TECHNICO: S1 [39/1164]

3. **Snippet. A FALCO Set** A little on this Italian ASSEMBLO/ DINKY BUILDER style system was given in 26/758. This Ebay 2-layer set has '1' on the lid below and an animal head logo in

the top left corner. It was said to have been made by a firm called S.A.I.C.E. and to date from the 1940s or 1950s.

Below its partitioned tray with the manual sitting in its own



space. The part at bottom right looks to be flanged with perhaps a centre cutout, and if so I'm not aware of such a part in any other comparable system.

Below, the tray, without the manual, resting on the

partitioned box and presumably the parts shown have been taken out of it. The Rods etc are in/from the blue and red-brown packets.

FALCO [2]: S1 [39/1165]

4. **POLYLONG Etc.** Graham Aldous wrote that he has compared sets which are definitely from Polylong (see 37/1123) with TECH & METAL KITS outfits (see 37/1125), and he thinks that the latter are from a parallel manufacturing system in China. The parts are very similar but there are small differences, for example the Curved Strip has a slightly different shape. Also the TECH metal parts are more smoothly pressed with more uniform plating, and the plastic parts are slightly better moulded. The TECH parts right (and a Flanged Corner Bracket of opposite hand) were not among those in the Polylong outfits. It was also noted that TECH has a different numbering system for its parts (Polylong tend to use Eitech numbers, sometimes changing the first digit from 1 to 2), and that TECH models, though similar to POLYLONG items, differ somewhat and are perhaps rather more attractive and more solidly built.

TECH & METAL KITS boxes have a UK address on them and Graham wondered if the components are imported and packaged here. The larger TECH models are the Dragster shown in OSN 37, a Plane, a Tank, & a Helicopter; the smaller ones are as METAL KITS.

[John Peach and several other readers have sent details of the various 'POLYLONG' sets they have seen or bought, often multi-model outfits which are 'bundles' of single-model sets, not all of which are the same brand. I don't think that it's really sensible to try to record all these piecemeal and so for the moment I am filing them away against the day when an overall picture can be written. Needless to say though, I am grateful for all such comments and especially for details of parts not recorded so far – Ed.]

POLYLONG: S12 [39/1165]

5. **METALLIX** The Metallus range now includes (at the end of the 'Single Components' web page) a selection of TRIX-like parts which are listed under the name METALLIX. They include all the parts that were in the old TRIX Sets A, B, C, D, & G, plus 2 Tyres. New parts are more Strips & A/Gs up to 57h long, longer Bolts (M3.5), and 4 Flexible Plates, material not stated, from 5*5 to 5*26h. They are blue; the other parts yellow, except the Brackets, Hook, Spanners, Worm, and N&B which are shown black. The Gears are light coloured Delrin discs with and without brass bosses. The Bosses are also sold separately in a range of lengths (of the shank that goes through the disc, that is) and no doubt more than one Gear could be mounted on the longer ones. The shanks have flats and they are presumably a push fit in the discs. Also listed a METALLIX set called 1ABCD, but nothing is said of its contents.

Postscript. Revisiting the site a few weeks ago the Flexible Plates are no longer listed but a 12v Motor has been added, a cylindrical motor mounted on a red, TRIX-like flanged base.

METALLIX [2]: S1 [39/1165]

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OSN – Your Credit Balance:

was	after OSN 38
was	after your remittance of
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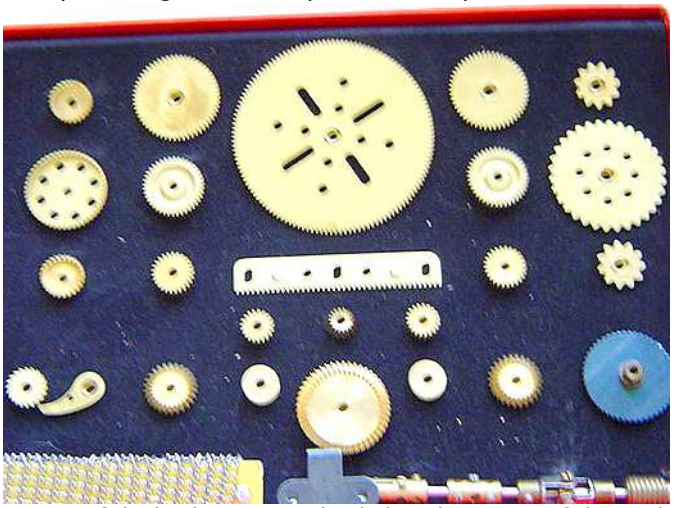
Please send at least £ if you wish to receive the next Issue.

6. **BRAL Gears Outfits** The cover of **a manual** to hand, left, has the Bral logo in the top left corner & Scatola ingranaggi (= Gear Set) top right. It is 215* 152mm, with 16 pages plus covers, all blank except C1. After an introduction 13 gear meshing examples are shown, followed by 9 mechanisms (Fig.14 to Fig.22 on pp7-15). They include Reversing using Bevels, a 3-Speed Gearbox, & a Pinion/ Contrate Differential. p16 has ads for 3 Motors (Tipo P clockwork, 9*7*4cm with 5*7h sideplates; Tipo Ma 20, 20v, 9*6*3.5cm, also with 5*7h sideplates; & Tipo MM/CC, 4.5v cylindrical, 7*4*4.5cm) and a Tipo A 15w Transformer with 6-12-20v outputs. There is no indication of set contents and no reference to any particular sets. Some of the larger models though would need more Gears than are in a set seen on Ebay and described next.

The Ebay outfit has a lid label identical to the Manual cover. Its box, 12¾*9¾", is red and the parts in the outfit can mostly be recognised in the photo of the open box below. But



in case of doubt the 16t Bevel is below the centre of the Rack Strip, the parts either side of the 48t Bevel are ½" Pulleys, the blued part bottom right is a Circular Saw, & along the bottom are: Sprocket Chain, a chemically blackened, MÄRKLIN-style Worm Housing, and, mounted on an Axle, a Strip Coupling, a Coupling, a Universal, & a Worm. One point of interest, the faces of the 57T Gear & 48t Bevel are not pierced like their MECCANO equivalents. The Ebay photos of this Set included the manual cover & 4 inside pages, and all were identical to those of the Manual described above.

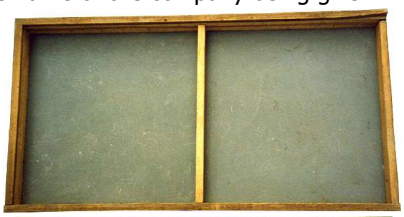
Looking through the **Bral material** in my file there are only 3 references to Gear Sets. Two are in identical undated catalogues, one sent to me by Bral in the early 1970s, and the other which had 1968 in pencil on the cover. Two sets are shown in it, one of which looks identical to the Ebay outfit and is called No.2. The No.1 is smaller with the same style of packaging and contains 2 each 19 & 25t Pinions, a 50 & a 57t Gear, a 50 & 2x 25t Contrates, 2x 30t Bevels, a Worm, a large & 2 small Sprockets, and Sprocket Chain. The third reference was in a manual, possibly from the 1960s, with the same illustrations of the No.1 & No.2 sets. There is no mention of the sets in later manuals although the Bral electrical sets continued to be advertised in them for some years.

There was though at least one change to the Gear Sets — another Ebay offering shows both sizes of sets, with the lids and contents as before, but with the parts in light blue formed plastic trays.

BRAL: S3 [39/1166]

7. **EZI-BILT Notes** Jack Little wrote that a manual, complete except for its cover, & thought to be from the 'Melbourne' period (see 22/636-7), has been found. It is 9¾*7⅛", covers Sets 1-3, & prices are given in its parts list. The Colton, Palmer & Preston Ltd (CPPL) 1-3 version of the 1-5 manual described in 19/544 was almost certainly based on this manual.

Said manual was found with a No.4 set which is believed to date from when production was restarted in 1944 (see 22/638). Its date is known from the '660' stamped on the base of the box, the serial number of the permit, dated 24th November, which allowed the resumption. The applicant was actually a Mrs B. Bishop, presumably a CPPL officer, and it was not unusual for such permits to be granted to a representative of a company, without the name of the company being given.



At 19¾*10⅛", the box's base, right, is very nearly the same size as the '1941' No.4 (see 22/637) but its wooden sides and partition are nailed to a painted steel plate; its sliding lid is painted steel too with the top covered to within ½" of its edges by a paper label similar to the '1941' one but extended outboard of its centre and 4 line wide surround.

The parts in the box were from several periods but several of the 1" Pulleys were made from a different pressing to later ones and are thought to be from an early Melbourne set.

EZY-BILT: S7 [39/1166]

8. **Another address for S.J.MILLER** The Executive Erector Set produced by S.J.Miller was described in 24/692. Most of the parts in it were gold plated and a selection of such parts were recently offered on Ebay by a seller from Boulder, Colorado, the town in the address on the front on the Set's manual. Your editor succumbed to temptation and when the parts arrived they were in a cardboard box printed with '1 dozen Royalty Games' on its ends, & 'S. J. Miller Co. Inc., 1707 Surf Ave., P.O.Box 130, Brooklyn, N.Y. 11224' on one side.

ERECTOR [4a]: S2 [39/1166]

9. **Snippet. More on METALLBAUKASTEN [6]** Another Nr.301/302 (see 38/1153) set was offered on Ebay. It was in the same wooden box but the lid, identical looking to the one in OSN 38, was said to be cardboard. Part of the manual cover, below, was shown. The parts were aluminium and those that could be seen were 2,4,5,6,8h Strips with fully rounded ends; A/Bs with 2 round holes; a 5*6h Perforated Plate and a longer one, probably 6*9h, both with square corners; a 5h Ø Disc; and Hexagonal Nuts about MÄRKLIN size. No Wheels, wooden or otherwise were present.

METALLBAUKASTEN [6]: S2 [39/1166]

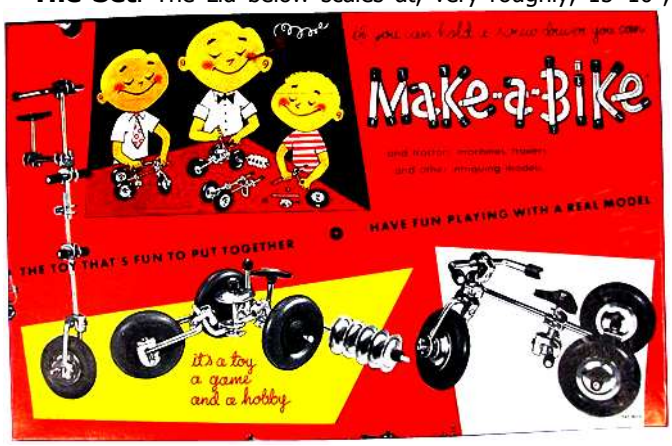
10. **TECNIKIT** A loose-leaf manual with models for Sets 0-3 was described in 10/250, & now another has been found with the same outer wrapper (with No.0 models on the back covers, as before) but inside a loose double-sided sheet for Set 4, & one for Set 5. This is the first real evidence of a Set 5. Each of the loose sheets has 4 models, from 4.1 AMERICAN LOADING BAY to 4.4 WINDMILL, and from 5.1 DRAWBRIDGE to 5.4 FLOUR HOIST. All are presented in the same style as before with the Parts Required given for each.

The parts needed for the No.4 models are within the Inventory in MCS. Extra parts for the No.5's are 2 each of 8 & 12h A/Gs, 1x 1" Bossed Pulley, & 2 each of #U7 1*7*1h DAS, & #F9/5, 5*9h Plate. Those last 2 parts were not in the No.4.

TECNIKIT: S2 [39/1166]

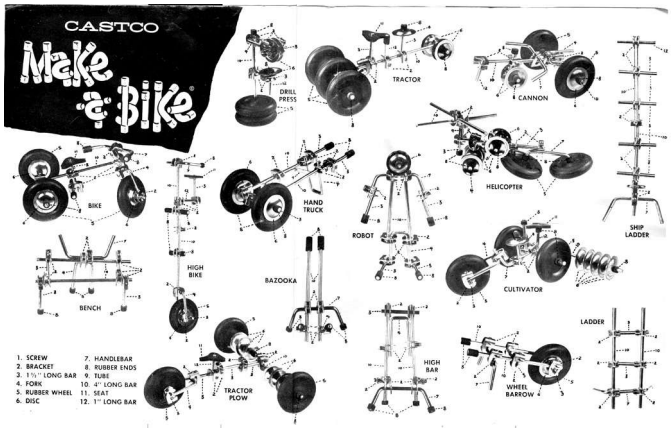
'New' System: CASTCO's MAKE-A-BIKE MAKE-A-BIKE (MaB henceforth) is similar to LIL 'N-GINEER (see 27/780), in that both use Rods and Clamps as the primary parts. An unused set has been seen on Ebay and Kendrick Bisset kindly sent details of a complete set of parts and a model leaflet that he had acquired. In the Ebay ad it was said that MaB was made by Castco Inc., Long Island, N.Y.

The Set. The Lid below scales at, very roughly, 15*10", and the details of the maker are probably on its aprons. The parts fit into holes or recesses, mostly individually, in a white formed tray, probably made of cardboard, with PNs alongside them. Also printed on it are sketches of the Unicycle & Trike models that are on the lid, with some of the parts positioned over them, and 6 drawings showing how to make the Trike.

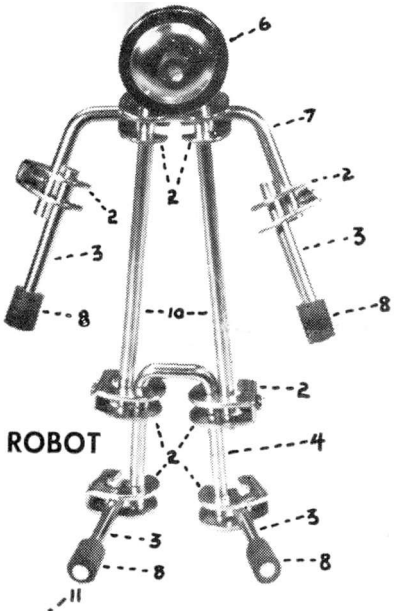


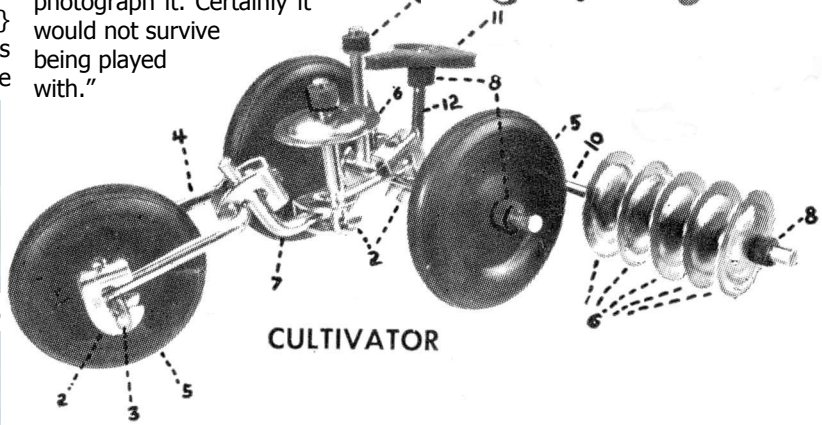
The parts are listed below with the names as per the Model Sheet, plus their quantities and notes on them in curly brackets. They are shown in Fig.1a with, for comprison, some of the LIL'N-GINEER parts in Fig.1b (below the white line).

• #1. **Screw** {9. 8-32 Set Screws for the Clamps with small diameter cheeseheads.} • #2. **Bracket** {9. J-Clamp. It is not as well designed as the LIL 'N-GINEER version which can hold three Rods, the MaB only two. Also the jaws of the MaB part are shorter and not so snug on the Rods, so a Rod placed perpendicular to one in the bottom of the Clamp can swivel quite a bit more than in the LIL 'N-GINEER part.} • #3. **1½" Long Bar** {4. Rod, 0.148" (3.76mm) dia. (as are all the 'rod' parts)}. • #4. **Fork** {1.} • #5. **Rubber Wheel** {3. 1¾" dia.} • #6. **Disc** {6. 1" Ø. Discs fitted to either side of the Wheels look quite nice, providing attractive 'hubcaps', and as can be seen in the models below, they are sometimes used on their own as wheels.} • #7. **Handlebar** {1.} • #8. **Rubber Ends** {11. Axle Stops.} • #9. **Tube** {1. A Rod Connector.} • #10. **4" Long Bar** {2.} • #11. **Seat** (1. Rubber.}• #12. **1" Long Bar** {1.} • A **Screwdriver** with a translucent yellow plastic handle.



The **Model Sheet**, above, is about the size of the box, & of its 16 models the best are the 3 on the lid. The centre one of these is shown below, and right, one of the better static models, both about natural size. Also below, Kendrick's Bike (Trike). He wrote "Building the model was a bit frustrating. The 1" Rod, used for the front axle, was barely long enough even after the Clamps and Fork had been bent to reduce their widths. None of the right angle joints were truly right angle because the Set Screws have pointed ends and the Rods were forced out of alignment when the Screws were tightened. In the end, the assembly was so fragile that I was afraid to move it much to photograph it. Certainly it would not survive being played with."





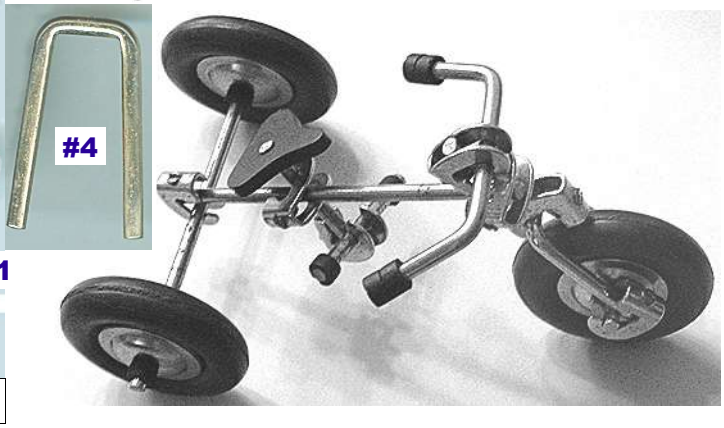


Fig.1b

THALE Matters Graham Aldous has kindly sent some information about his THALE material.

A Geometrie-Baukasten This set is in a black & white mottled box, 342*272*28mm, and the base, not used for any other set as far as is known, is shown left. The label is the Jib type shown in 24/698 with 'Bestell-Nr.0606100' and the first few letters of (probably) 'Geometrie-Baukasten' rubber stamped in purple in the top left corner.

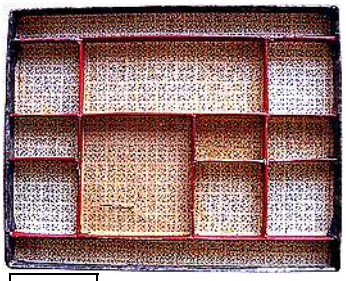


Fig.1

There was a 4-page leaflet with the Set and on the front it says that although the Set is made by Krause & Co. KG, the only supplier is Staatliches Kontor für Unterrichtsmittel und Schulmöbel (National Office for Instructional Material and School Furniture), Wittenberger Str.8, Leipzig C1, and that the Stock No. is 0606100, as on the lid.

It isn't known when the Geometrie set was introduced but this example was from the mid-1960s, with the PRs of the label & leaflet ending in P206/65 & Pn822/63 respectively.

The **set contents** are given in the Leaflet, with a colour for each part except the Tools & NBW. Some are from the standard range and some, #34 & 56-66, are specials, see Fig.2. All are listed below with my English names and relevant notes in square brackets. All are black except where stated.

- 2,4,8,2,4,16,2,10x #1,2,4-9 [2,3,5,7,9,11,17,25h Strips], 2x 9h, 4x 11h, & 4x 25h are red;
- 1x #15 [5*5h Perforated Plate], light green; • 7x #17 [A/B];
- 2x #24 [L-section A/G], green;
- 1x #25 [5*3h Flanged Plate], light green;
- 1x #27 [Flanged Disc Pulley], red;
- 1x #30 [6h Wheel Disc], red;
- 50x #36 [M4 Nut]; • 40x #38 [M4 Bolt, 6-8mm u/h]; • 10x #39 [M4 Bolt, 10-15mm u/h]; • 4x #39 [M4 Bolt, 20mm u/h];
- 1x #43 [110mm Axle];
- 1x #47 [Spanner]; • 1x #48 [Screwdriver, not seen but one in an Ebay photo is the wire type);
- 2x #56 [Bolt, 20mm u/h with pointed end];

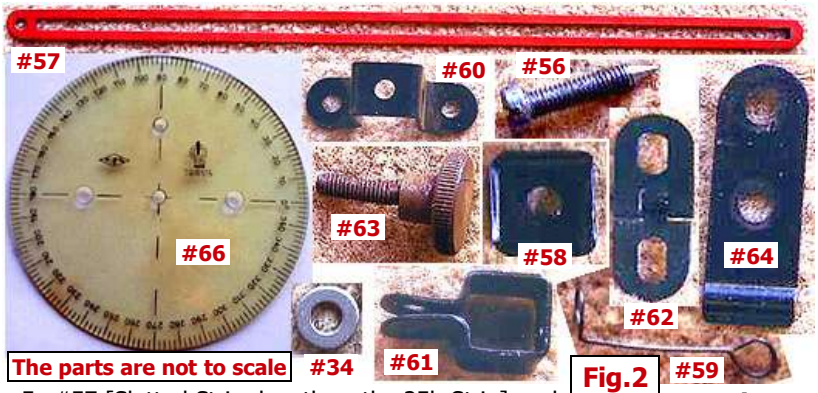


Fig.2

- 5x #57 [Slotted Strip, length as the 25h Strip], red;
- 6x #58 [Strip Crossover Bracket];
- 8x #59 [2-eyed, wire Cord Support, from 25 to 29mm long];
- 1x #59 [Double Bent Strip]; • 1x #61 [Strip Connector];
- 6x #62 [Hinge]; • 3x #63 [Thumbscrew];
- 1x #64 [Rod Clamp]; • 10x #34 [Washer];
- 1x #65 [24.6cm Ø Disc, not among Graham's parts but one in an Ebay photo is a pale pink-red with only a centre hole – it is not clear what it is made of], light green;
- 4x #66 [360° Protractor, 100mm Ø, transparent plastic].

The colours of the parts in Graham's set are as above except that the green parts are 'Hammerite' grey.

The **Leaflet** is headed 'Thale GEOMETRIE-BAUKASTEN aus Metall-Normteilen', and the text is headed "Oh, diese Mathematik!!!". I don't think any geometrical demonstrations are explained but reference is made at the end to Geometrie-modelle aus Baukastenteilen by Dr. Rudolf Beilin, Publication 24 in a series of teaching material from Volkseigener Verlag, Berlin, Art.No.003490 (earlier 342590).

Rolled Bosses Another new item, a photo of a 6h Bush Wheel, a 26mm Pulley, & a Flanged Disc Pulley, all with 8mm o.d. rolled bosses. They are double-tapped and all three parts have a light olive Hammerite finish, including the bosses. The 26mm Pulley diameter is listed in all the later manuals but no example, with any type of boss, has been reported before.

26mm Tyre The Tyre is 46mm Ø and fits the 26mm Pulley with rolled boss above. It too is a rare part and has a ribbed circumferential tread instead of the block pattern found on all other known THALE Tyres.

Two Hats The final items from Graham are the 2 variants of the #32, 18mm Hut (= Hat), right. It is a part often used as a headlamp and the green one with the dished centre is the type commonly found.

Fig.3

Snippet. An Early Set While on the subject of THALE it's worth mentioning this set because from its lid (below) and

Fig.4

contents, it almost certainly predates the earliest set, from 1957, mentioned in 38/1138.

The box is wooden with a sliding lid, and the base, which scales at about 26cm wide, is partitioned into 10 bays. The Telpher Span model on the lid is not in any of the known manuals. The parts that can be seen look like the later ones but are all black. They comprise: Strips, probably up to 25h; 1*5*1h DAS; 5*3h Flanged Plates; a Flanged Disc Pulley; 2 small Pulleys which scale at 30mm Ø, the size in the 1957 set; and numerous small Brackets etc. There are also some silverish TRIX-style 'foreigners', and some Tyres or Rubber Rings, but they may not be genuine either.

The Krause Company History Finally a note from Thomas Morzinck who some years ago spoke with Mr. Krause, the last owner of the company. The Krause family went into business in 1912 with the production of baking tins and similar items. In 1946 they started producing metal construction sets as a sideline. Mr. Krause, born around the start of WW2, & his cousin, posed as models for the 2 boys on some of the set lids (Mr. Krause was the dark haired one). Production of the sets ceased in 1975 due to problems over pricing policy, which was controlled by the GDR authorities in those days. In addition to the standard outfits a Gears Set (see 24/698) was added around 1960, and there was also the Geometrie Set, said to have been used for many years in East German schools. By 1995 Mr. Krause was a car dealer in the town of Thale.

LE CONSTRUCTEUR

by Jacques Pitrat

I bought a LE CONSTRUCTEUR set from Belgium, but I am not sure that it is a Belgian system because the manuals are only written in French, without any Flemish explanation or title. There is no indication of date, however I guess that it was made in the 1950's.

THE SETS There are 4 sets: 1, 2, 3, and 4. This account is based on a No.4 which is in a mint condition, the parts still attached with paper fasteners, and also on Ebay photos of a No.3 in an equally good state. The sets are in red cardboard boxes, and the size for Set 4 is 555*430*30mm. The lid label of the No.3 is shown right; the No.4 is identical except that the blue areas are green and a '4' has been rubber stamped under the name top right. The contents of the sets are neither indicated in the boxes, nor in the manual.

Fig.1

THE PARTS can be seen in Figs.2 & 3 below, taken from the manual, and in the left side of the No.4 box in Fig.4. The layout of the parts in it is symmetrical about the large, red Face Plate except that on the right side the House Front #28 is replaced by the Gable End #27, and there is a 3h high Double Bracket #10 to the right of the Double Bent Strip (below the green Face Plate) instead of the 2h part on its left (the end hole of the 3h can just be seen in Fig.4).

The pitch of the holes is 13mm, slightly larger than MECCANO, and their diameter is 4.0mm. All the parts are made of steel. All the bosses are brass and are double tapped with the standard Bolt #19 as the set screw. The parts are listed below and I indicate the number of the part in the manual, its French name, its English translation, its colour and the number of parts in Set 4. In some cases I also mention the differences between the real part and its picture in the manual - the drawings of the parts are often incorrect and do not respect their proportions.

#1-5: Bande 2,3,5,11,7 trous, **2,3,5,11,7h Strip**, green, 4,4,4,6,2.
#6: Support, **Flat Trunnion**, green, 2.
#7: Support plié, **Trunnion**, red, 2.
#8: Equerre, **Angle Bracket**, nickelled, 4. It has 2 round holes.
#9: Equerre double, **Double Bracket**, green, 1. Like M11a and contrary to Fig.2, it has two holes on each side.
#10: Equerre grande, **Large Double Bracket**, green, 1. There are three holes on each side.
#11: Etrier 7 trous, **DAS**, 1*5*1h, green, 6.
#12: Etrier 11 trous, **DAS**, 1*9*1h, green, 4.
#13: Pont, **Double Bent Strip**, green, 1. Contrary to Fig.2 there are two holes on each vertical side.
#14: Roue de 30, **Small Pulley** with boss and screw, 23mm Ø, green, 4.
#15: Barillet, **Bush Wheel**, 50mm Ø, red, 1. In Fig.2 there is only one circle with 4 holes, the real part has rings of 4 and 8 holes.
#15 bis: Roue de Ø 40, **Pulley**, red, 4. It is not shown in the Illustrated Parts but is 69mm Ø with no face holes.

Fig.2

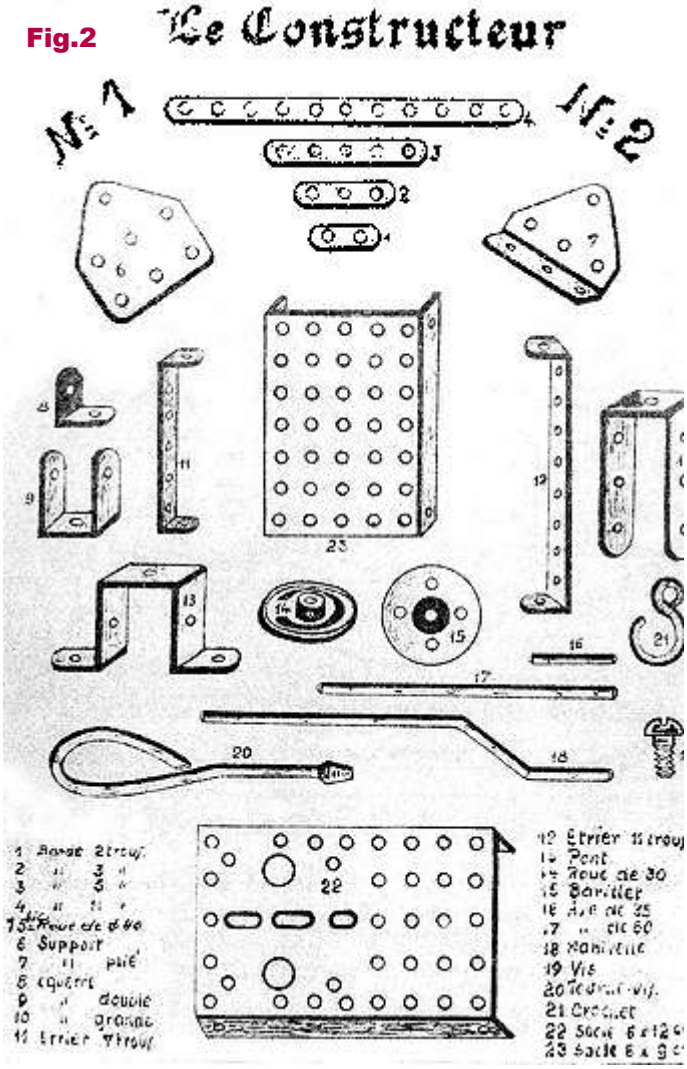
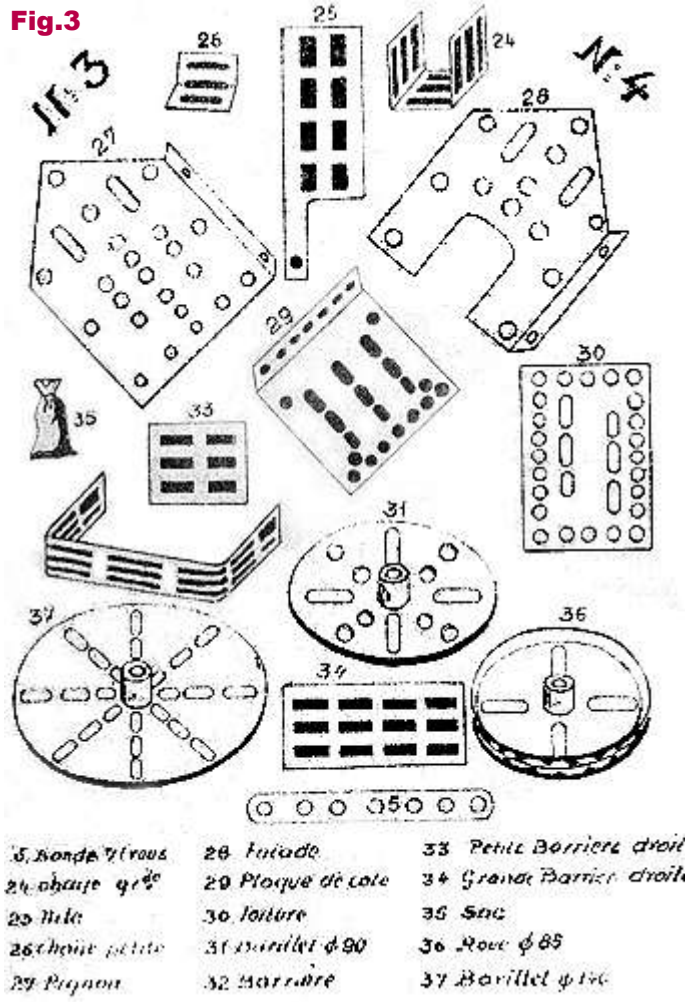


Fig.3



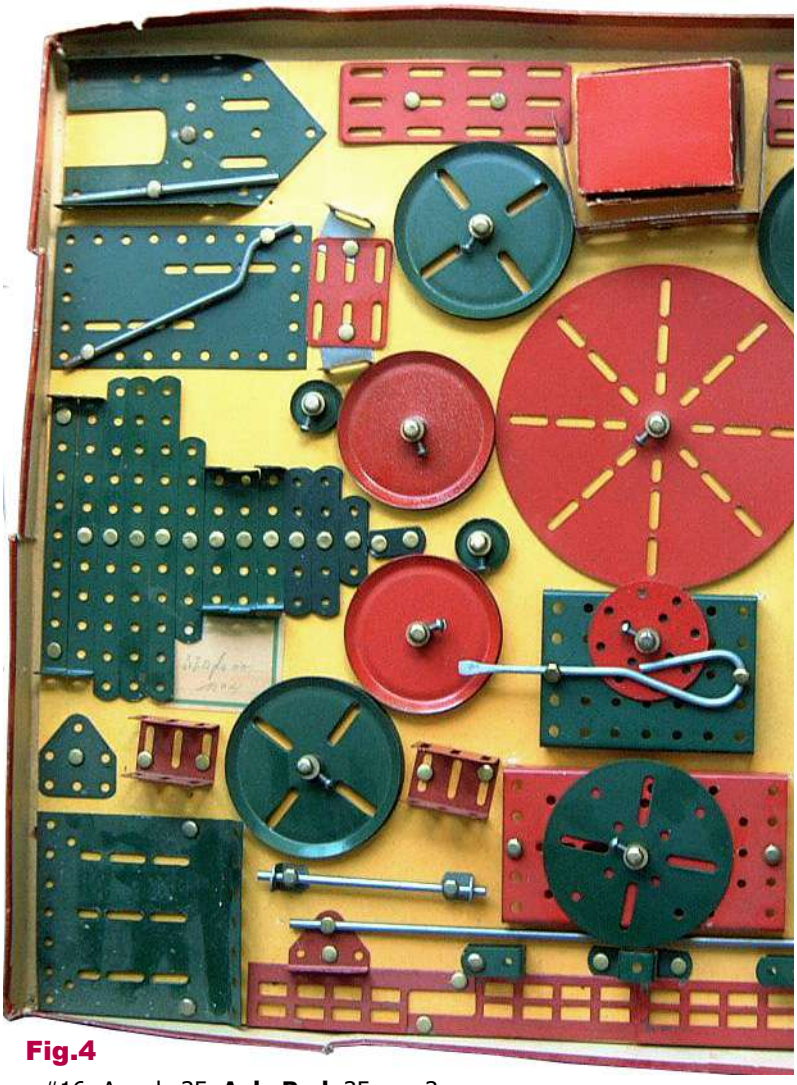


Fig.4

#16: Axe de 35, **Axle Rod**, 35mm, 3.
#17: Axe de 80, **Axle Rod**, 4. It is 100mm long.
#? (no PN): A 320mm **Axle Rod** is in the set but is not in the list. It is needed for only one model, the Carrousel in Fig.6, but is called up for said model as 200 mm long.

NB All the **Axles** are 4.0mm Ø.

#18: Manivelle, 90mm shaft **Crank Handle**, 2.
#19: Vis, **Bolt**, 30. There are also 30 **Nuts**. Both parts are plain steel. One of the models requires 40 of each. The Bolt is roundheaded, with a shank 8 mm long and a diameter of 3.5 mm. The Nut is square with a 9mm side and it is 2.5mm thick - it looks too large.
#20: Tourne-vis, **Screwdriver**, nickelled, 1.
#21: Crochet, **Hook**, 1.
#22: Socle 6x12cm, **Large Flanged Plate**, red, 1. Nominally 5*9h but some of the holes do not fit the normal pattern, and some of those shown in Fig.2 do not exist in the real part. The two large holes are used for the cord in the model of a Windmill. There are only two holes in each flange.
#23: Socle 6x9cm, **Flanged Plate 5*7h**, green,1. It has 35 holes on top, regularly placed. There are two holes in each of the flanges.
#24: Chaise grande, **Large Double Bracket**, red, 4. It is 35mm wide and has 3 slotted holes in each of the three faces.
#25: Aile, **Windmill Sail**, red, 4.
#26: Chaise petite, **Large Angle Bracket**, nickelled, 4. It is 22mm wide with a slotted hole across each arm and one along the fold. In the box it is clipped under the Small Plate #33.
#27: Pignon, **Gable End**, green, 1. This is the rear part of the house. Each flange has two holes. The slotted holes in Fig.3 do not exist in the real part.
#28: Façade, **House Front**, green, 1. A cutout hole represents the door. It has the two slotted holes and the flanges match #27.
#29: Plaque de côté; **Side Plate**, 2. It has an obtuse flange with 7 holes for the Roof #30.
#30: Toiture, **Roof**, green, 2. It is a 5x9h flat plate with only the two staggered rows of 3 slotted holes.
#31: Barillet ∅ 90, **Face Plate**, green, 1. 80mm Ø.
#32: Barrière, **Railing**, red, 1. It is around the small parts box in Fig.4 and is used for the balcony of the Windmill. It has two rows of slotted holes instead of the three in Fig.3.
#33: Petite barrière droite, **Small Plate**, red, 2. This 45x36mm flat plate has 3 rows of 2 slotted holes.
#34: Grande barrière droite, **Large Plate**, red, 4. This 100x36mm flat plate has 3 rows of 4 slotted holes.
#35: Sac, **Loaded Sack**, 0 (none found in the Set). In the manual, this part was only used for the Windmill.
#36: Roue ∅ 85, **Large Pulley**, green, 4. 78mm Ø. The part with only four long slotted holes. One of these in my set has a defect, there are no holes at all.
#37: Barillet ∅ 140, **Large Circular Plate** with **Boss**, red, 1.

The parts are well made except for the Bolts. For half of them it is impossible to screw more than a few turns. Moreover, the number of Nuts and Bolts is inadequate for such a large set: a set as small as a MECCANO #1 had 30 Nuts and 28 Bolts.

THE No.3 OUTFIT As in the No.4, most of the parts are individually attached to a yellow card. The contents look to be the same as the No.4 less 2x 5h DAS #11, the 320mm Axle, the Large Circular Plate with Boss #37, and all: the 7h Strips #5; Large Brackets #24, 26; Railings #32; Small & Large Plates #33, 34; and Pulleys #36. The quantities of the 2, 3, & 5h Strips are uncertain because they are stacked in two's in the No.4 and may not be in the No.3). The Nuts and Bolts are in a red box as in the No.4, together with a Hook & 35mm Axles, if these parts were in the Set. The parts are the same colour as in the No.4 except that the Bush Wheel #15 & Trunnion #7 are green, and the Flat Trunnion #6 is red.

THE MANUALS I only have photocopies of two manuals, one for Set 3 and one for Set 4. Fig.5 below is the front of the No.3 and notice the name on it, "LE PETIT CONSTRUCTEUR". It only has three pages, one for each set: 10 models for Set 1, 8 models for Set 2, and 5 models for Set 3.

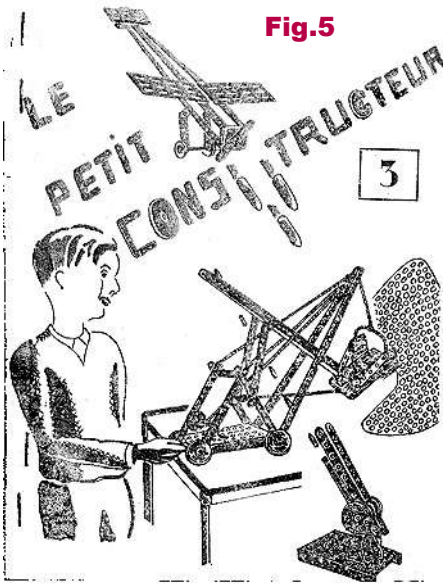


Fig.5

The cover of the manual for Set 4 is the same as the lid label. Two of its pages include the description of the parts. Two pages are for Set 1 (models 1 to 24), two pages for Set 2 (models 25 to 37), two pages for Set 3 (models 38 to 43), & four pages for Set 4 (5 unnumbered models). The manual gives the list of parts used for the Set 3 and Set 4 models, but there are no instructions except for the Windmill. The models are quite simple and it would have been possible to build more sophisticated models with Set 4. Two Set 4 models are shown in Figs.6 & 7 overleaf. [Cont. >]

REMARKS The sets of this system are good-looking but their models are rather disappointing.

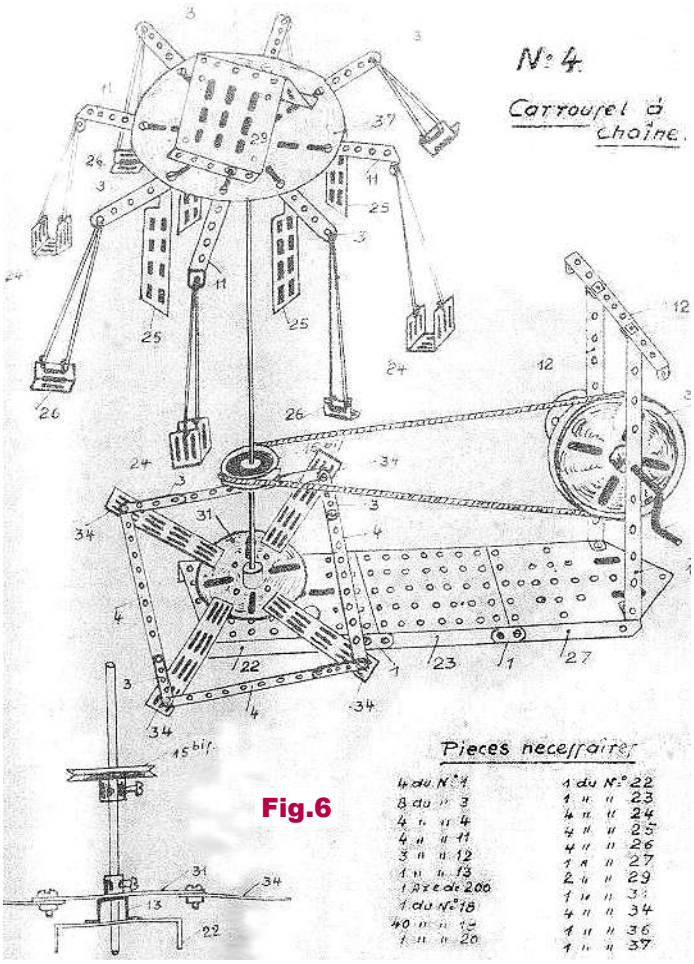


Fig.6

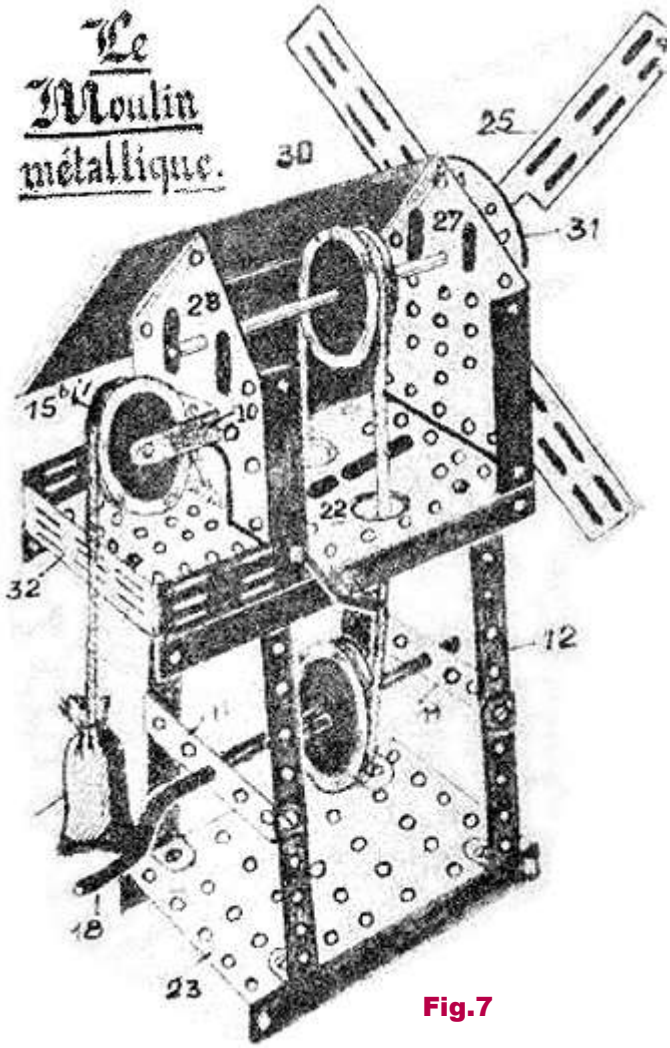


Fig.7

INGENIUM 2 manual models from this French system are shown in MCS without any other details, but further particulars are given in EJCM (see 37/1108), and last year the set right was offered on Ebay. All three sources have been used for these notes. EJCM says that INGENIUM was made by G.M.L. from 1947 to 1955 and had 33 different red, blue or nickel parts. **Holes** are 3.8mm Ø at 12mm pitch.

The Parts The 29 that can be identified are listed below and except where stated they are probably nickeled (though some of the lighter grey parts, the Axles & bosses for example, could be aluminium).

- **Strips**, 3,5,7,12,27h (the 7,12,&27h are blue). • **DAS**, 1*5*1h.
- **Angle, Flat, & Double Brackets**.
- **Pulleys**: 2½h Ø Fast; 2½h Ø Loose (red); 2h Ø Loose (if genuine). **Tyre** for the 2½h Ø Pulleys. • 6h **Bush Wheel** (blue).
- **Flanged Plates:** 5*5 & 5*10h (red with round holes in the flanges).
- **Triangular Plate**, 3*3h.
- **Axles**: 50 & 95mm. **Crank Handle**.
- **Collar**; **Wire Hook**; **Cord** (light brown).
- **Bolts**, Short & Long. **Nut**. (In the models Bolts look roundheaded and the Nuts hexagonal.) **Set Screw**. **Washer.** • **Span'driver**, black, with a 'T' head cranked on one side with open jaws, and a ring opening on the opposite side.
- EJCM shows a 110v, .32amp, 2800rpm **Motor** with red sideplates. A red cylindrical motor is bolted between them with its drive shaft passing through one sideplate. The sideplates look to be made from the blank used for the 5*10h Flanged Plate but with only one flange, along the bottom.

Variations EJCM has photos of a different box lid and a slightly different manual cover. The lid is mainly white with INGENIUM; BOITE G.M.L.; and 3 models in blue on it (a Helicopter, a Gantry Crane, & a Roundabout). G.M.L also appears on the manual cover, which is otherwise the same as the Ebay one (the latter said to have 20 pages). Another difference, EJCM shows 2 manual models and the parts for them are listed with PNs rather than just the names that are used in the MCS models. Perhaps G.M.L. did not make INGENIUM throughout its entire life. There is no indication anywhere that there was more than one set but 2 of the models on the EJCM lid, and possibly one of the models in the EJCM manual, can be seen to need more Flanged Sets than are in the Ebay set.

Snippets. MWK A brief account of this post-WW2 East German system was given in 15/416. Baukästen says that it was made in Kronach (40km NW of Bayreuth) around 1945-47 by a firm, Metall Werkstätten Kronach, founded by Ober+ ingenieur (Chief Engineer) Erich Schwass, and that there were at least 2 Ausführungen (versions).

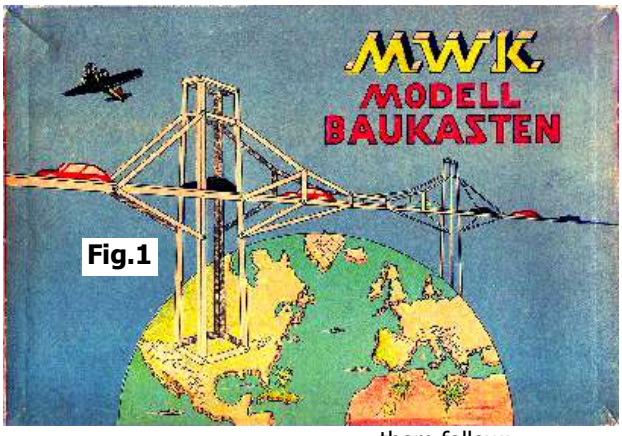


Fig.1

These notes are based on the 2 sets shown on p220 in Baukästen and 3 sets seen on Ebay. The parts in one of the Baukästen, & 2 of the Ebay sets, look as if they are the aluminium mentioned in OSN 15, but those in the other two are a dull black or very dark grey, and are perhaps made of steel. With one exception (see later) the parts common to the 'black' & 'aluminium' sets look the same, so the difference in material & finish could possibly account for Baukästen's two versions.

All the sets have the label in Fig.1 above which nearly covers the lid and on some sets it has a thin red border. It has no indication of size or maker except that sometimes the latter is given in tiny letters in the bottom left corner, and on one, the largest aluminium outfit, there is '4' in a circle bottom right.

The 'Aluminium' Sets The No.4, from Ebay, was by far the largest and a selection of typical parts from it is shown in Fig.2, but none are to the same scale. A better impression of the relative sizes of the parts can be gathered from Fig.3, the other Ebay set. A list of the various parts and a few notes on them follow:

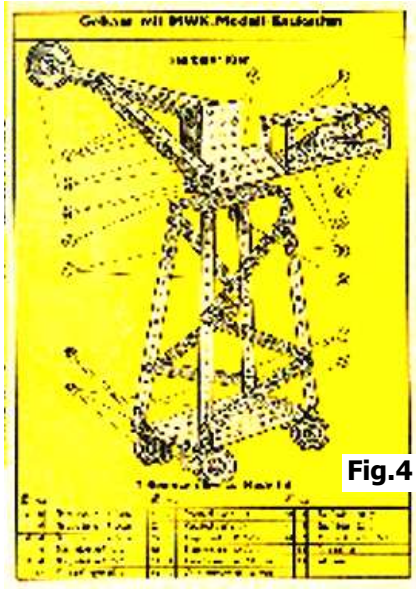
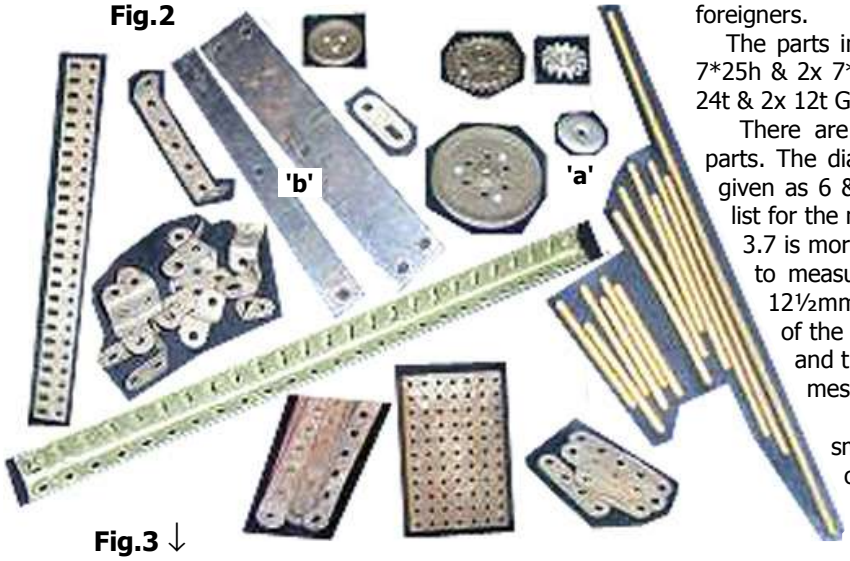


Fig.4

• **Strips**: 4,5,6,7,9,11, 11,15,19,25h. • **DAS**: 1*3,5,7,11*1h & 2*5* 2h. • **A/Gs**: 5,11,15, 19,25h. All are pale green, no doubt anodised - these and probably the Flat Girders are the only coloured parts. • **Flat Girders**: 5,7,11, 15,25h. • **Perforated Plates**: 7*11, 7*25, 3*7, 3*11h. • The **Trapezoidal Plate** (see Fig.3 & 15/417). • **Brackets**: A/B; 1 & 2h deep D/Bs; Flat Bracket; Reversed A/B; & Double Bent Strip. Also, in the Baukästen set, the small, 2h Triangular Plate mentioned in OSN 15. Only the Flat & Angle Brackets have a slotted hole. • **Pulleys**: 28 & 62mm Ø, and also what appears to be a **Pulley Disc** at 'a' in Fig.2, a little smaller than the smaller Pulley. • **Gears**: 12 & 24t. • **Screwed Rods** which scale at 6, 9, 15 & 27cm. • Also at **'b'** two parts that don't match the rest and are likely to be foreigners.

Fig.2

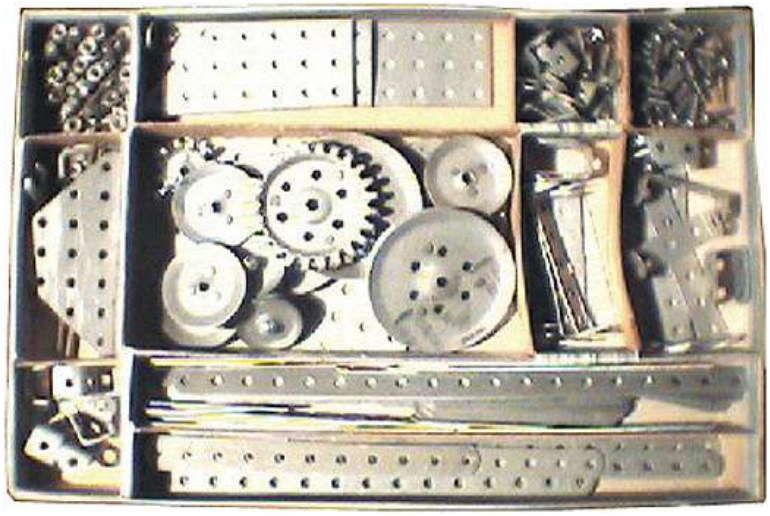


The parts in the No.4 lot include 4 each of the A/Gs, 1x 7*25h & 2x 7*11h Plates; 8x 62mm & 6x 28mm Pulleys; 3x 24t & 2x 12t Gears, and 8 Pulley Discs.

There are some anomalies in the **dimensions** of the parts. The diameters of the Pulleys in the Ebay No.4 were given as 6 & 3.7cm, against the 6.2 & 2.8cm in the parts list for the model in OSN 15, and scaling does indicate that 3.7 is more likely than 2.8. Also the 7*25h Plate was said to measure 31.5*9cm and thus a hole pitch of about 12½mm, a figure confirmed by scaling parts in several of the sets. On the other hand Eisenzeit gives 12mm, and the Gears would be Mod.2, a likely value, if they mesh with their centres at a multiple of 12mm.

The other two 'aluminium' sets are much smaller than the No.4 and don't have any Girders or the 7*25h Plate. A 24t Gear can be seen in both though and the matching 12t part in the Fig.3 set.

Fig.3 ↓

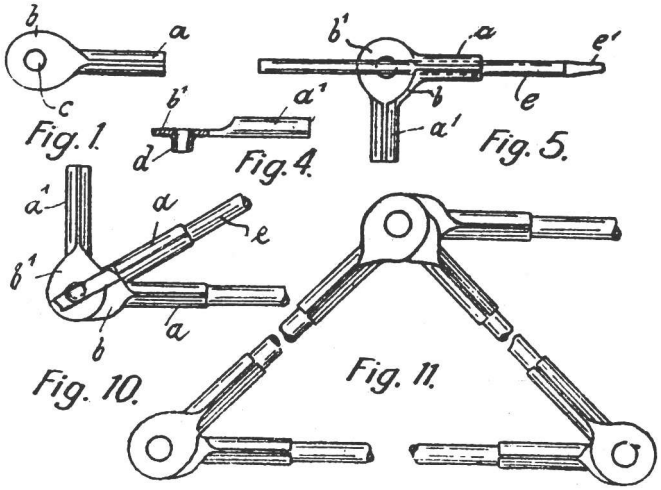


The 'Black' Sets Both the 'black' sets look smaller again and both have wooden boxes (against cardboard for the 'aluminium' outfits). Only the smaller Pulley can be seen but a large Gear is in each. The only unexpected part is a black 5*11h Flanged Plate with a 3*7h centre cutout in the Baukästen set.

The Model Sheets The models are on separate sheets. The presentation is similar to that shown in OSN 15 but they are actually printed black on yellow with 2 small or 1 larger model per Sheet. There were 4 each of 1- & 2-model sheets with the Fig.3 set and they included all the sheets shown with the other sets. The Sheets vary a little in size but are probably about A5. The photos of them are poor but it is clear that all the models are quite simple - the larger ones include a Windmill, a Swing, and the Crane in Fig.4.

Snippet: TECHNOFIX A little about this unusual prewar German system, largely based on the Summary of a UK patent, was given in 15/419. Now more details are available from the full UK patent (thanks to David Hobson), and 2 items seen on Ebay: a Kosmos brochure, and a set, said to be largely complete.

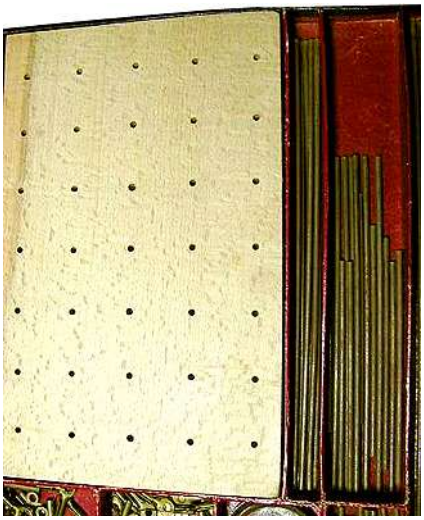
Starting with **the Patent**. The address of the applicant, Berthold Buxbaum, is given as Königin Luisestr. 16, Charlottenburg, Berlin. 2 or more Rods in one plane can be joined using one or more connectors (Fig.1 below, similar to a MECCANO



Rod & Strip Connector), and a linking connector (Fig.4), a similar part but with an upstand around the hole which fits into the hole in the Fig.1 connector(s). Then a rod through the outermost connector prevents the linking connector from falling out, as in Fig.5. Figs.10 & 11 show typical ways of creating structures.

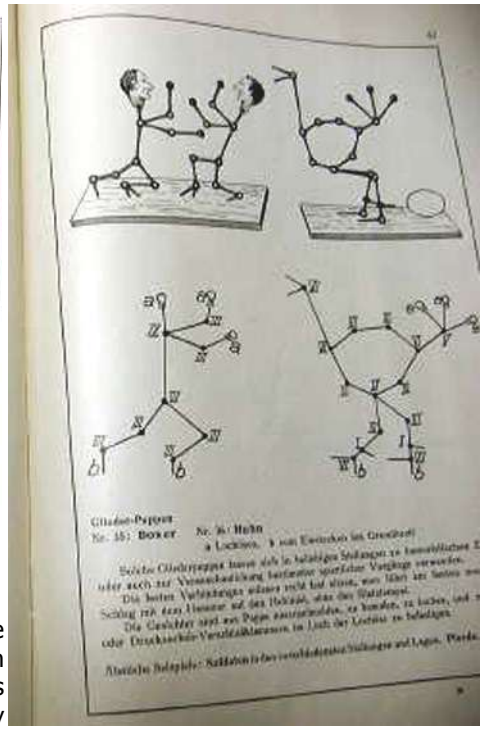
The Set is in a box 33*23*2cm and the lid is shown below. The small print on it talks of a system without screw connections, a claim stressed on the manual cover shown later, and in the Brochure. In the next column the upper & lower parts of the open box, and a close up of the small parts.

From the box's dimensions the Rods scale at 3mm Ø, but notice that in 17/477 the holes were reported as 3.5mm Ø. Again by scaling, the Pulley is 48mm Ø and the holes in the (wooden?) Base Board are at 32mm pitch. The 2 types of Connector are in the righthand compartment and the Linking ones have a dimple instead of an upstood hole. The parts in the lefthand compartment



appear to include Spacers, 2-Way, and possibly one or two 3-Way Connectors. Some of the Connectors have a ring of 8 'serrations' around the centre hole and I wonder if this in some way allows the arms to be locked at multiples of 45° apart.

The Manual is in German, with 80 pages. The cover is shown on the next page and 44 Abbildungen (diagrams) and 83 Baubeispielen (models) are claimed on it. 6 manual pages were shown on Ebay and the models on the two on the next page are Boxers, a Hen (which has probably just laid an egg), and a Travelling Crane. The other Ebay models were a Windmill, a Pigeon Loft, a Tent, a Sledge, and a simpler Travelling Crane. All are fairly simple frameworks with a few panels attached in some cases to add a degree of realism. Drawings of the panels are shown for two of the models and



one, the floor of the Pigeon Loft, is shown left. It looks as if it was meant to be attached by wrapping the end edges around the appropriate Rods, but it isn't clear what material was to be used, or who supplied it. Neither of the Cranes seems to have a winding handle.

History At the bottom of the Manual cover, under the Kosmos name & address, is '1926', presumably the publication date, and if so, 2 years earlier than the start date given in Eisenzeit & Baukästen. It is said that TECHNOFIX lasted until at least 1935 and if the joints were adequately rigid then their relatively neat & simple nature would make it one of the more successful 'rod' systems.

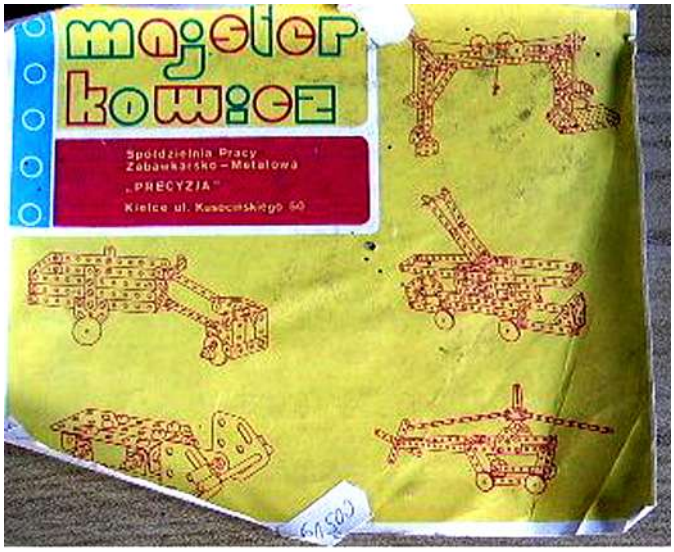
The manual models are a far cry from the Crane and Bridge on the lid but the latter were no doubt, in 1930s fashion, meant to be something to aspire to, like Meccano's Giant Block-setting Crane. It would take a good many of the present set to provide enough parts for either of them and as far as is known there was only the one size of set. But perhaps extra parts were also available.

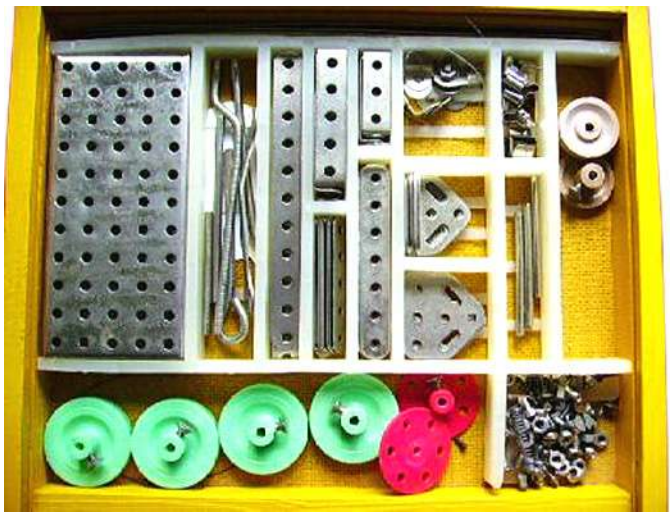
The 4 page **Brochure** shows the 2 types of Connector as in the Set, and a small Letter Balance, but otherwise the only point of interest is that the price of the Set was RM.9,50.

TECHNOFIX: S2 **OSN 39/1174**

Snippet. 'New' Polish System: MAJSTER KOWICZ

The photos show a wooden box with a sliding lid (right), a larger view of the label, and the parts in the base. MAJSTER KOWICZ means Handyman and the wording under the name on the label includes PHECYZIA, which may be the name of a company, and an address in Kielce, a town between Warsaw and Krakow. The box was said to measure 23*27½cm and the partitioning in it looks to be a quite complex plastic moulding. By scaling the pitch of the holes is around ½". The parts look fairly conventional with smooth Axles and tapped bosses (on, most likely, plastic Wheels). The wire Screwdriver is in the compartment with the Axles and its very small round handle can be seen in the centre at the bottom. The long slots in the Trunnions look useful. The models on the label don't bring any other system immediately to mind.





MAJSTER KOWICZ: S1 **OSN 39/1174**

METALL-BAUKASTEN mit Batterie-Motor This was an East German outfit from the late 1950s, early 1960s, with some parts that remind one of MÄRKLIN. But there are many differences — the thread for example is M4, Screwed Rods are used as axles, and the hole pitch is, by design or otherwise, 12.63±.02mm (and not the 12mm given in the brief note in 15/416). This account is based on a set, near complete, and photos of 6 other sets, all similar, 5 from Ebay and one on p221 of Baukästen.

The SET The parts are tightly packed into 2 black Bakelite trays which sit one on top of the other, with the flat, very dark red Bakelite lid (below) that sits in a shallow recess in the top

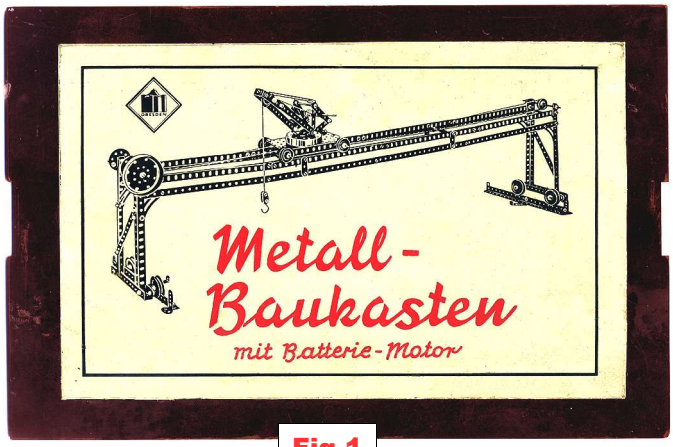
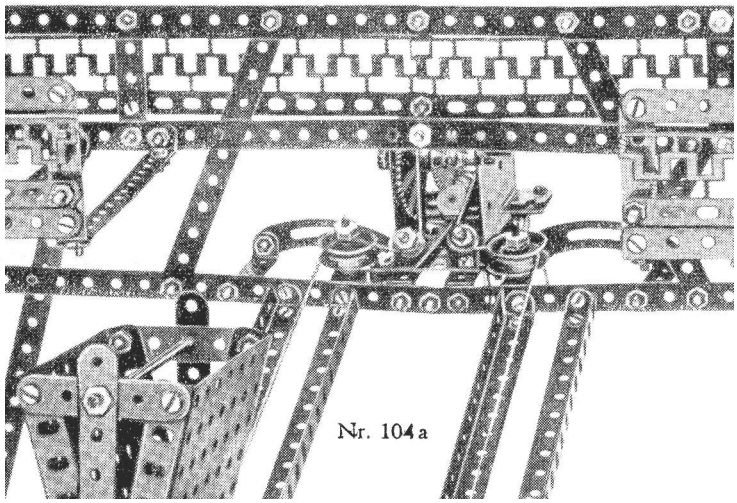


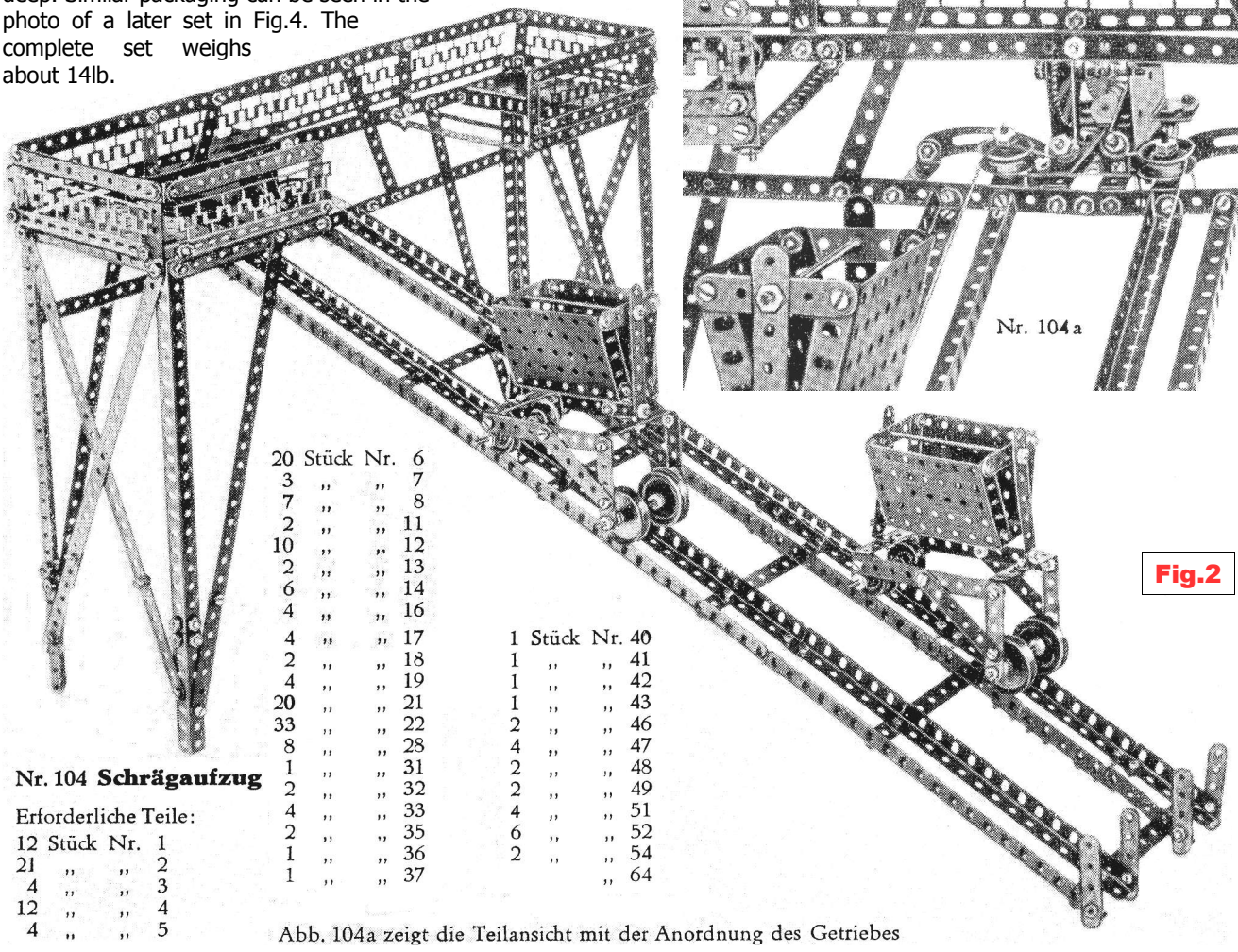
Fig.1

tray. The trays are identical except that the lower one has a riveted stud on the outside of each end wall to (presumably) take a strap which holds the trays & lid together. Interlocking aluminium dividers inside the trays give 4 (full length) compartments in one, and 8 in the other (a full width one at each end & 6 in between). Small parts are in 3 round, black Bakelite containers with screw-on lids, 7¼cm Ø & 2¼cm deep. Similar packaging can be seen in the photo of a later set in Fig.4. The complete set weighs about 14lb.

The PARTS in the Set. The manual illustrations of them, which include their quantities, are shown in Fig.3 right. **Holes** are mostly 4.1mm Ø with a few 4.2mm. **Slotted holes** are 8.2-8.3mm long except 7.2-7.3 in the A/Gs, 5*7h & Sector Flanged Plates, Slotted Strips, & Railings. The **width** of Strips & Brackets is generally 12.4-12.6mm but can be from 12.2 to 12.9mm. Their **ends** are fully radiused; the **corners** of the Plates are only slightly rounded. **Bosses** of #51,53,55,56 are steel, 8.0mm o.d., 4.1mm bore, 2½mm deep, with a very narrow ring of almost flush peening (and nearly half of them are loose). **Finish**. All the parts except the N&B, have a uniformly good, black chemical finish. The notes that follow include a few dimensions and differences between the actual parts and those in Fig.3.

• **Brackets**. #24 is 21½mm wide o/a, and #25, 15½mm. #26 has round not slotted holes. • **A/Gs** vary from 14.0* 13.8 to 14.2*13.7mm in section • The **Spanner** has a slightly angled end and is 100mm long. • The **Gears** are zinc die-castings with integral bosses and discs about 2mm thick. They are Mod. 1.0 and 20.7, 40.2, 50.0mm o.d. As in the illustrations, all the bosses are different. • **Pulleys** #51 & #52 are 37.8 & 27.0mm o.d. (the manual dimensions are for the throat, approximately), and 6½ & 8½mm wide respectively. #52 has its discs joined by a rolled sleeve peened over at each end. • The Bush Wheel is 39mm Ø. • **Flanged Discs**. Neither has a pulley groove in the flange, which seriously limits their usefulness. #55 is 66mm Ø. • The **Hook** is made of 1.9mm Ø wire and is 29½mm o/a. • The **Washer** #59 is 12.1mm o.d. • **Tyres**. #60 & #61 are 55 & 44mm o.d., and have SWL 55x 11,5 & SWL 40x16 respectively moulded into one wall (but the S may be wrong). #61 is fitted to Pulley #52 and probably isn't removable. • **N&B**. All are nickeled steel. The **Bolts** have





Nr. 104 Schrägaufzug

Erforderliche Teile:

12	Stück	Nr. 1
21	„	„ 2
4	„	„ 3
12	„	„ 4
4	„	„ 5
20	Stück	Nr. 6
3	„	„ 7
7	„	„ 8
2	„	„ 11
10	„	„ 12
2	„	„ 13
6	„	„ 14
4	„	„ 16
4	„	„ 17
2	„	„ 18
4	„	„ 19
20	„	„ 21
33	„	„ 22
8	„	„ 28
1	„	„ 31
2	„	„ 32
4	„	„ 33
2	„	„ 35
1	„	„ 36
1	„	„ 37
1	Stück	Nr. 40
1	„	„ 41
1	„	„ 42
1	„	„ 43
2	„	„ 46
4	„	„ 47
2	„	„ 48
2	„	„ 49
4	„	„ 51
6	„	„ 52
2	„	„ 54
		„ 64

Abb. 104a zeigt die Teilansicht mit der Anordnung des Getriebes

Fig.2

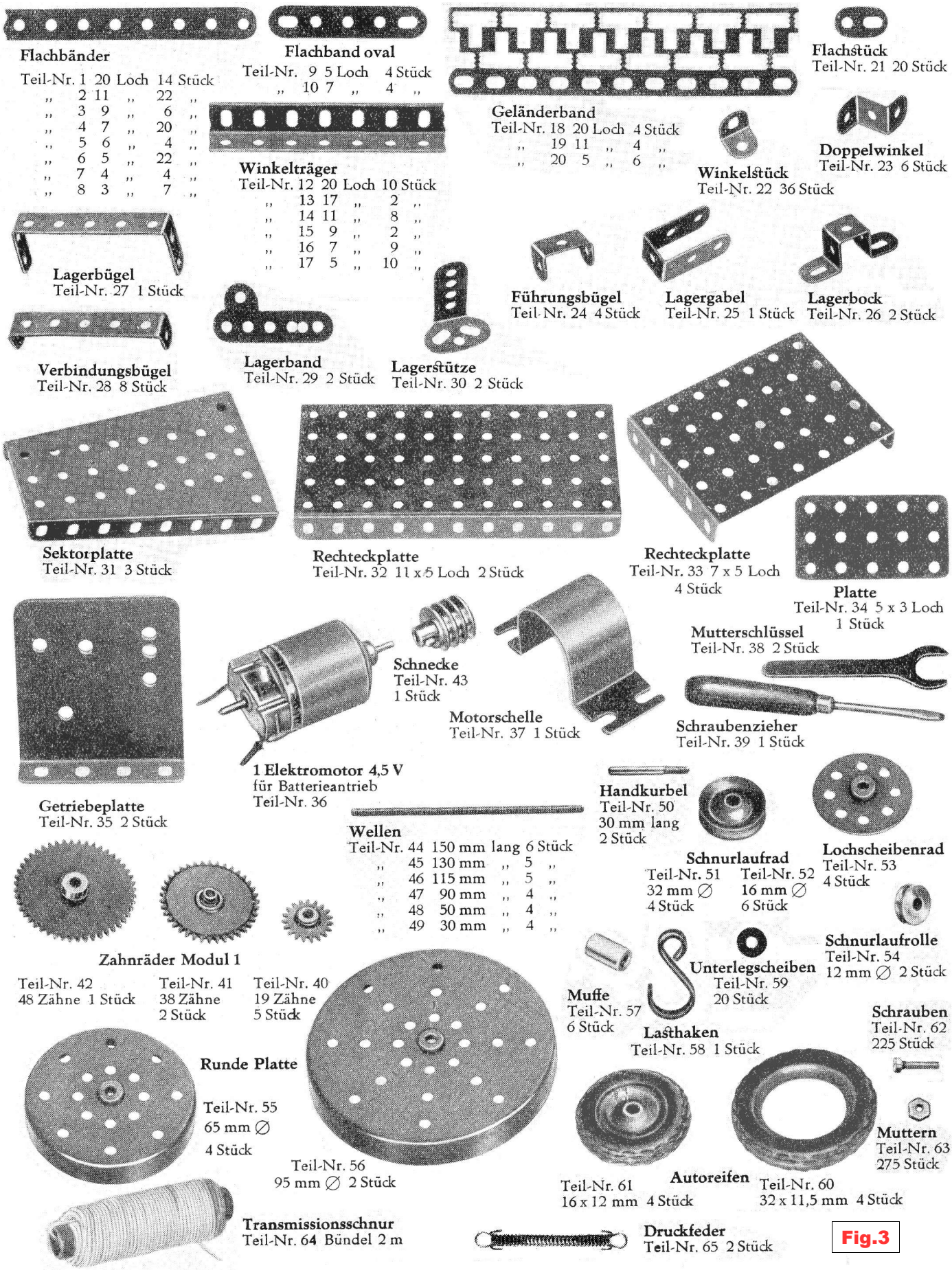


Fig.3

6.8mm Ø cheeseheads, & of those remaining 44 are 8mm u/h; 122, 10mm; & 3, 20mm. The pressed **Nuts** are 9.1-9.2mm A/F & 2.5-3.2mm thick; their size makes for difficulties in model building. • **Tension Spring** #65. The spring is 5.6mm Ø & 46mm long. A long U-shaped wire with an eye at the closed end passes through the coil from each end & hooks formed at the open end of each 'U' hook over the end of the coil. So pulling the eyes outwards actually compresses the coil. It's a neat arrangement but one disadvantage is that the Spring can't be curved, to wrap round another part for instance. • **Not seen.** • The Motor & Worm, but a similar looking East German motor has a 2.5mm Ø shaft, and the Worm looks

brass in Ebay photos. • The Screwdriver, but there is one in Fig.4. • Pulley #54. • Threaded Coupling #57. Cord #64. • **Remarks**. The Flanged Plates & Flanged Discs are made of 1mm thick steel and are noticeably heavier than is usual.

The MANUAL It has 72 pages, 230*162mm, plus covers. The front is identical to the lid label except that the background colour is pale brown. C2-4 are blank. p1 has an Introduction, much of it about the Motor. p2 is blank & p3 has a photo of a Crane (a halftone, as are all the illustrations) identical to Model 109 on p65. pp4-5 has 19 standard constructions; p6 gives the different gear ratios possible with the Gears, p7 shows 4 gearboxes with the Gears between Side Plates #35, driven by the Motor through the Worm. pp8-10 are the Illustrated Parts. pp11-71 have Models Nr.1-111 from Rollekarre (a #32 running on 4x #61) to Aussicht+ sturm (Observation Tower). Model 101 is the Gantry Crane on the cover. There is one reasonable photo & a Parts List for each model, with extra views for the larger ones. p72 is blank apart from the PR: Druckerei "Berthold Haupt" Dresden A 17. lll-9-89 5673 lt 3504 58.

Well over half the models were easily spotted as having been copied or inspired by models (line drawings) in the prewar MÄRKLIN manuals to hand, and many of the others looked as if they might have come from the same source. It had been necessary to adapt most to use the actual parts in the Set, and 7 of the 12 larger ones had been motorised, sometimes using one of the gearboxes on p7. The Funicular Railway in Fig.2 is one of the better examples of those (at the original size but Abb.104a has been cropped). Apart from the Motor drive, few of the models have any mechanical complexity and only one Vehicle is fitted with steering.

OTHER SETS & HISTORY Neither the Set's box nor manual mentions a maker but Baukästen gives it as VEB Energieversorgung Dresden, & a date of 1958. That date perhaps corresponds to the last numbers in the Manual's PR.

Various changes can be seen in the Ebay photos and in a possible date order the present set is an early example followed by: • Sets with the Flanged Plates & Flanged Discs painted green, and the Pulleys #51 & 52, red. • The same colour scheme but with a new lid label & manual. Such a set is shown above and the manual was said to have 71 pages, and to date from 1960. Of the 2 pages of it shown, one has the same 4 models as the '1958' version, though with different model numbers, while the largish 2-car Cable Railway on the other is not in the '1958'. The Tram on the new manual cover/lid label isn't in the '1958' either. • A manual with the same cover but with (if correct) 62 pages and said to date from 1961.

Fig.4

POSTSCRIPT When I came to make a model I discovered (eventually) that the hole pitch of 8 of the 22 11h Strips was 12.45mm. Otherwise both types were identical.

MECA An Ebay snippet about a No.2 set from this Mexican system appeared in 36/1070, and now David Hobson has kindly lent me his recently acquired, unused No.2. With one or two very minor differences it looks exactly like the earlier one.

The BOX is 26½*34*2cm and the lid, and pale yellow formed plastic tray, look identical to the Ebay set. Some of the parts are slightly too big to fit into the recesses in the tray.

The PARTS Many of the parts can be seen in OSN 36 and the following notes fill in the gaps, with quantities in curly brackets.

• **Holes** are at 12.7mm pitch; many are 4.7mm Ø but some are smaller, down to 4.2mm, and more than one size of hole can be found in some of the Strips.

• **Finish**: Plates are red; the 5-13h Strips, the Trunnions, and the Wheel Disc are green; the N&B are BZP; and the other parts including the 3h Strip are nickeled. The paint has been applied by dipping.

• **Ends & corners** are fully rounded, or for the 5-13h Strips, nearly so.

• **Strips** 13,11,7,5,3h {2,2,4,4,2}. • **DAS** 1*3*1h {2}.

• **Brackets** These are made of quite thick metal (.9-1.3mm) {3x A/B; 4x D/B; 1x Rev. A/B}.

• **Plates** 5*5, 5*11h, and 5*11h Flanged {2,2,2}. All are rigid, made of .8mm thick steel. The pattern of holes is as in OSN 36 with no holes in the centre '5h row' of the 11h long parts, nor in the centre of the flanges.

• **Trunnions** Angled; Flat {4,4}. 5h pattern; the bend point of the Angled version varies considerably.

• **Pulleys**: • 34½mm Ø with a 4mm long, 7.9mm Ø boss, untapped of course, and fitted with a 46mm Ø Rubber Ring {4}. • 25.3mm Ø and 5½mm wide with a 9.4mm Ø boss single tapped 5-40 (the pilot hole goes right through) {1}. • The bosses' bore is 4.1mm.

• **Wheel Disc** 44mm Ø, with the holes on a 33mm pcd, and an eyelet boss {1}.

• **Axles** 100 & 20mm long and 3.88 & 4.08mm Ø respectively {2,1}. • **Crank Handle** 4.08mm Ø and 154mm long o/a, with a 35mm handle offset 17mm. All these parts have sheared ends. • **Axle Stop**: an unclenched eyelet with a 7.7mm Ø head and 5½mm long {14}. It is a push-fit on the 3.9mm Axles and very, very hard to push onto the 4.1mm Ø parts.

• **N&B** The thread is 7-32. **Nut**: square, 8.8*8.7mm, 2¼mm thick, pressed {25}. **Bolt**: 7.1-7.3mm Ø RH, 9¾mm u/h {24}. **Set Screw**: 5.9mm RH, 6½mm u/h {1}.

• **Tools**. • **Spanner**, 75mm long o/a with a cranked end {1}.

• **Screwdriver**, 118mm long o/a, made of 4.06mm wire {1}.

The MANUAL It is in Spanish and has 8 unnumbered landscape pages, 260*186mm, plus covers, all printed on cream art paper. The front cover is identical to the box lid except that the '2' at the end of MECA-No is omitted. C2 has an introduction signed by Los fabricantes (the manufacturers) saying to start with the simpler models. There is a photo of

each of the 19 models, all copied directly from MECCANO manuals, with just the building instructions reference numbers removed, but in some cases not all the lines that linked them to the parts in the model. The models (with the MECCANO name in brackets) run from COCHECITO (Kiddie Kar) to FUNICULAR (Telpher Span), and were probably taken from the 1954-61 manuals. No set is specified for any of them but in the MECCANO manuals 5 were No.1 models, 5 No.2, and 3 were from each of Sets 3-5. They are not in that Set order but the smaller models are generally shown first. C3 & C4 are blank.

REMARKS The parts, though not wonderfully finished, and with a few of their holes a little out of line, nevertheless look perfectly usable. But they are a strange selection for a small set – why for example 2 Flanged Plates, and why include 13h Strips if the models are to be MECCANO copies. And why 3h long DAS when the 5h long type is much more common in MECCANO.

The lack of a centre hole in the Plates, presumably to save on tooling, would be one difficulty in trying to build the models, but what rules out most of them, even the small ones, is the lack of a Bush Wheel – I suppose the Wheel Disc with an Axle Stop on either side might be adequate in some cases but it's doubtful. In the absence of 5h long DAS, and without several more A/Bs, the Double Brackets would have to be used instead, or with the 3h DAS perhaps. Many of the models would also require Plates to be curved which, given their thickness, would be quite impracticable.

Even accepting the above, most of the small manual models look more or less unsuitable for the parts in the Set – one still has a Magic Motor driving it - but I haven't checked to see if a better selection could have been made. The No.1 models are: Kiddie Kar, Letter Balance, Stamping Mill, Railway Breakdown Crane, & Tricycle Van; the No.2's: Milk Delivery Wagon, Mechanical Hacksaw, Chariot and Driver, Autogiro, & Drilling Machine.

Snippets. Two Early Swedish TEKNIK Sets

The First Set. **The Lid** The Tradera (Swedish Ebay) photo right shows it to be different to the type most commonly found, see 20/572. The maker, CEGS LEKSAKSTEKNIK (= toy manufacturer), HUDDINGE, along the bottom is no doubt an allied company to the one given in OSN 20.

The Parts **The colour scheme** is much simpler than the multicolours used later. **The parts** are all of the early type with the small Triangular Plate, 4 & 6h Strips, and Plates in lengths with an even number of holes. Also most of the Plates are not fully perforated and this is a clear pointer to the Set being earlier than any of those in OSN 20. The Road Wheel cum Pulley Disk is the type seen in the early-1940s manual described in 20/574, but not in later editions.

The Manual It has a similar cover to the one in 20/574 one except that Handbok replaces Modellbok at the top. The models on the Set's lid are among those in the early-1940s manual except that the Plates in the latter are fully perforated, and the Plane has a tail skid instead of a Wheel.

The Second Set. **The Lid** is of the same basic design but it is printed on pale yellow board and the models, though similar, are not the same. It also has a '1' in a circle in the triangular space over the bottom right model.

The Parts Of the few remaining, the Strips & Plates are all of the later type, an odd number of holes long, and the Plates are fully perforated. These, plus some Brackets, are all painted the silver used in the later colour scheme. Also in the Set, a few parts that look like KONSTRUKTÖREN (see 38/1146) including two grey painted wooden Wheels.

There was no **manual** with the Set but the models on the lid, a Plane (slightly different to the one on the first lid) and a Lorry with Trailer, are both in the early-1940s manual but not in the later ones.

Dates **The First Set**. From OSN 20, the Huddinge factory was set up in 1939-40. The parts in the Set are not fully perforated and therefore predate the early-1940s manual. Thus the set would be from the few years between 1939 and the early 1940s.

The Second Set. From the parts it was later than the first but most likely came soon afterwards, and it may well correspond to the 'early-1940s' manual. The models on the lid are in said manual but are not in the mid- and late-1940s

editions described in OSN 20, nor in the 20/576 1950s No.1 model leaflet. Also other Tradera lots show sets with the new 1950s lid, multicoloured parts, and either the mid-1940s or the late-1940s manuals.

Range of Sets. If the models on the lids were from the largest outfit of the time, the first set was probably the only one then produced, and hence perhaps the absence of a set number on the lid. As already mentioned the models on the second lid are in the early-1940s manual and as this was labelled 'III' perhaps 3 sets were made at that stage. Then perhaps 4 were available by the mid-1940s, witness the OSN 20 mid-1940s 2-4 manual, and 5 by the late-1940s, given the late-1940s 2-5 edition.

In all the above it should be remembered that the dates of the manuals are largely unconfirmed.

DER JUNGE KONSTRUKTEUR (DJK from now on.) A brief note about this 12.5mm pitch East German system with all black parts was given in 15/412. More is now available from 4 sets to hand, a No.3, two No.33's, and an MTS; a few parts not from any of these (found in one of the No.33's); plus various photos, etc from Ebay, and from Joachim Kleindienst's website. Apart from details of the parts the other main items of interest are the contents of the 'standard' sets; more on the Gears outfit and the parts in it; and photos of a rare DJK Motor. In what follows items are dated from the 2 figures after the slash or hyphen in the PRs on boxes, documents etc, which are thought to indicate the year.

HISTORY DJK was made in Saxony by Hans Wünsch, Mühlenstrasse 2 und 20, Niederwiesa/Sa. The earliest known manual is from 1955, a year earlier than the 1956 date in Baukästen, and one outfit on Ebay was said to be from 1954. The sets mentioned in the 1955 Manual are 3, 33, 66, & MTS. The Nr.3 was the basic set; 33 & 66 were add-on outfits, and MTS (= Maschinen-Traktoren-Station – a repair facility for agricultural machinery) was a Tractor/Agricultural Implements theme set. A 3+33 from the 1950s is also known. By 1958 three new sets had been added: a Nr.0 with about half the number of parts in the Nr.3; the Getriebe- und Zahnrad-Kasten (Drive & Gears Set), another add-on set with plastic Gears running on special Flatted Axles; and Nr.1000 with all the parts, around a 1000, from Sets 3, 33, & 66, and enough of the other parts to allow the MTS models to be built. The Nr.0 is in a 1961 brochure but it isn't listed in the 1961 or later manuals. All the other sets are mentioned in the remaining manuals (the last from 1963). A set from 1964 is shown in Baukästen and 1972 is given as DJK's end point in Eisenzeit.

An MAS Set is mentioned in Baukästen, & in Eisenzeit both MAS & MTS Sets are referred to. MAS stands for Maschinen-Ausleih-Station, a depot which lent out agricultural machines, so possibly the MAS set might have been akin to the MTS outfit. Nothing more is known the later theme sets for bridges, cranes, rolling stock, & vehicles mentioned in OSN 15.

Another Gears set, said to be for schools, was offered on Ebay. It differs somewhat in content from the standard sets and includes a Worm & Worm Wheel.

THE STANDARD SETS

THE PARTS Below (Fig.1) the illustrations of the parts taken from the 3+33 manual (as in MCS), but without their German names (they are given in Fig.2, the Set Contents, on the next page). Also only one example is shown where there is more than one size of a particular part, but with the PNs of the others nearby on a blue ground. My English names for the parts are given below together with a few notes and dimensions.

The parts are mostly well made but some small variations in a few generally non-critical dimensions occur - in the metal outside the end holes in Strips for example, and the bend point in Brackets & other parts varies a little. The **thread** is M4. **Holes** are 4.2mm with a few 4.3 & the occasional one 4.1; their **pitch** 12.5mm. **Bosses** are 10.0mm Ø, single-tapped, with a 4.1mm bore. Ordinary Bolts are used as set screws but some 21mm Pulleys are fitted with a 6½mm long Grub Screw not listed anywhere as a DJK part. **Slotted holes**: except where stated they are 6.1-6.2mm long with large-radius ends.
#2-6 Strips 3, 5, 7, 11, 25h. They are 11.9-12.4mm wide (but typically 12.0-12.2) with very large, about 12-13mm, radius ends.

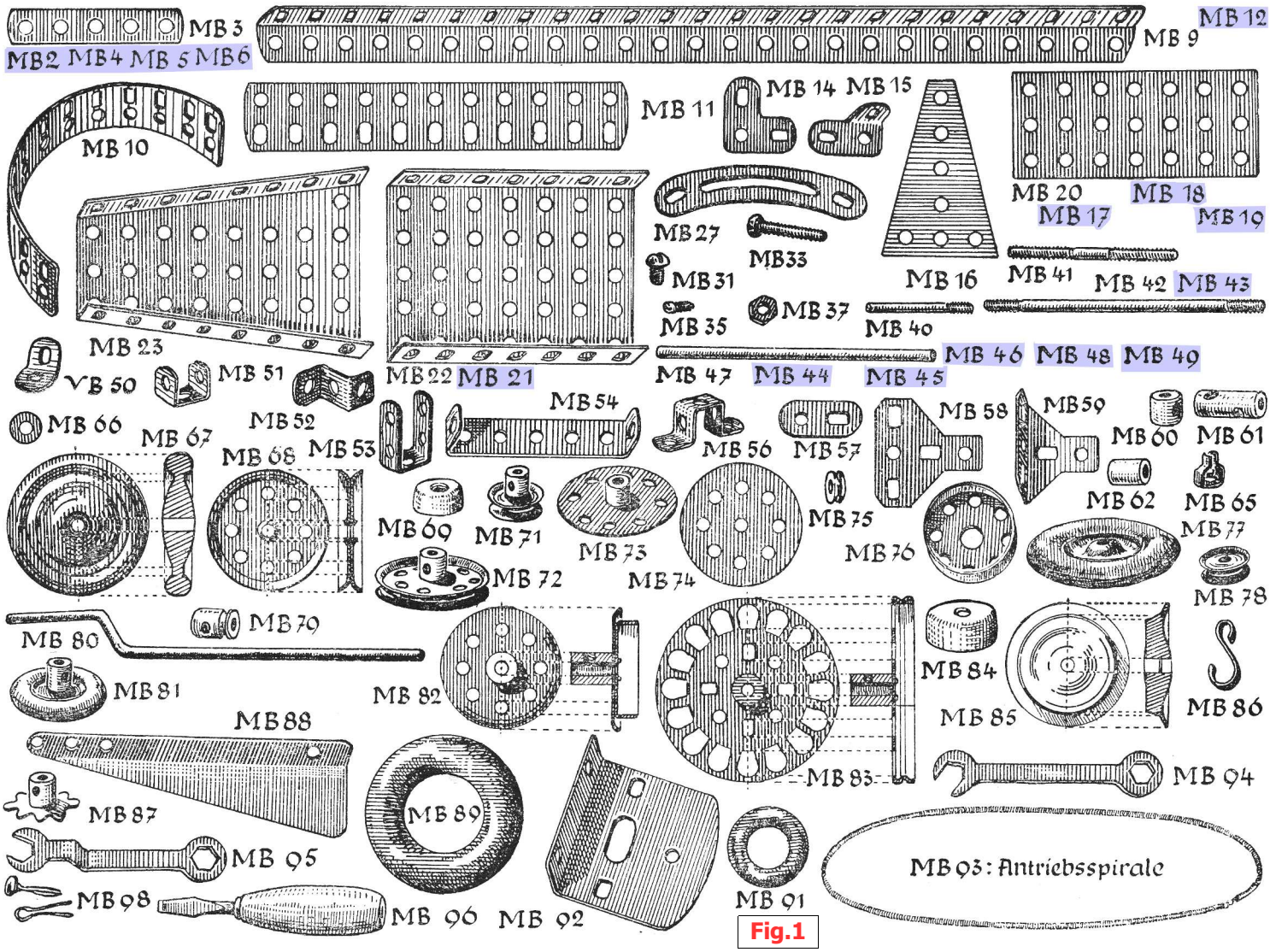


Fig.1

#9,12 A/Gs 25h (not seen), 11h. 13*13 to 12*14mm in section with large radius ends cut close to the end holes.
#10,11 Flat Girders. 11h long and 24.2mm wide, with ends like the A/G. #10 is formed into a semicircle.
#14,15 Corner Brackets with fully rounded ends.
#16 Triangular Plate. Not seen.
#17-20 Perf. Plates 5*5, 5*7, 4*7, 3*7h. Square corners.
#21-23 Flanged Plates, 11*5, 7*5h, with 7.6-7.7mm slotted holes, & 8h long Sector with flat ends and 7.5mm slots. All corners are square. Various examples of #21 & 22 are either about 61 or 62½mm wide o/a.
#27 Curved Strip with fully radiused ends & slots, the outer ones 7.6-7.7mm.
#31,33 Bolts, 6½ & 19½mm u/h with 7.2mm Ø RH. Flat-headed Bolts are called for in one of the MTS models & a few with cheeseheads, but otherwise similar to #31, were found; also a few countersunk Bolts, 6.9mm Ø & 6½mm long o/a.
#37 Nut, pressed, 6.9-7.1mm A/F, & 1¾mm thick. One 8mm Nut was found in one set, 7.9mm A/F & 2¼mm thick.
#40 Threaded Pin. A 3.96 Ø rod, 38mm long, threaded over 6mm at one end and with a screwdriver slot at the other.
#41-43 Screwed Rods. The 50mm is threaded over its whole length. The 90 & 120mm have about 38mm of thread at each end with the smooth centre 3.4-3.5mm Ø, too big to allow a Nut to pass from one end to the other.

#44-49 Axles, #80 Crank Handle. 3.95mm Ø with slightly chamfered ends. The 30 & 150mm Axles have not been seen. The **Crank Handle** is 145mm o/a with a 105mm shaft and a 27mm handle offset 15mm.
Bracketry. **#50 A/B**, **#51 D/B**, **#52 Rev A/B**, **#53 2h high D/B**, **#54 DAS**, **#56 Double Bent Strip**, **#57 Flat Bracket**. #57 is 25mm long and #50 is made from it. Both have fully rounded ends; those of the other parts are like the Strips. #51 & 53 are 15.1mm wide o/a. #54 is 65mm long o/a. #56 has base holes at 27mm pitch.
#58,59 Trunnions.
#60 Collar, #61 Coupling, #62 Spacer. All are 10.0mm Ø, single-tapped, and 10, 9, & 24mm long respectively. The 2 tappings in the Coupling are at 90° to each other, at about 13½mm centres.
#63,65 Axle Clips. #63, not seen, and only included in the No.0 set, is said to be an 'Elastik' Collar, so probably rubber. The MÄRKLIN style #65 is hard to push onto an Axle but grips it firmly.
#66 Washer. 12mm o.d. but 9mm in one Set.
#67 Road Wheel. As shown, 51mm Ø & 8½mm wide. It is made from 2 identical pressings joined by 4 spot welds around the 'neck'.
#68,72 43mm Pulleys. 43mm Ø. The discs are similar but in #68 they are belled out slightly at the centre. For #68 they are again spot welded together, but are held by the boss for #72.

MB-Nr.	Teil-Bezeichnung	Stückzahl enthalten im Kasten 0	3	33	66	MTS	1000
2	3-Lochschiene	6	10		4	6	14
3	5-Lochschiene	8	16	10	10	17	36
4	7-Lochschiene	4	4	8	5	5	17
5	11-Lochschiene	6	8	13	4	12	25
6	25-Lochschiene		6	4	4		14
9	25-Lochwinkelschiene				8		8
10	Doppel-Lochschiene, halbkreisförmig				4	4	4
11	11-Loch-Doppel-Lochschiene			2			2
12	11-Loch-Winkelschiene			4	8	1	12
14	Lochwinkel, plan		6	6			12
15	Lochwinkel, abgewinkelt			6		1	6
16	Lochplatte, konisch				4		4
17	Lochplatte, 5 × 5 Loch			1	2		3
18	Lochplatte, 5 × 7 Loch				2		2
19	Lochplatte, 4 × 7 Loch			1		1	1
20	Lochplatte, 3 × 7 Loch			2	2	2	4
21	Grundplatte, 11 Loch lang		1		1	1	2
22	Grundplatte, 7 Loch lang	1		1	2	1	3
23	Grundplatte, konisch, 8 Loch lang		2		2	2	4
27	Segmentband		4	4		3	8
31	Schraube M 4, kurz	30	46	40	75	108	240
33	Schraube M 4, lang	2	4	6	3	2	18
37	Sechskantmutter M 4; 7 oder 8 mm SW*	32	60	50	75	118	285
40	Gewindestift M 4, kurz						
41	Gewindestift M 4, 50 mm		6	2		3	8
42	Gewindestift M 4, 90 mm		1			1	1
43	Gewindestift M 4, 120 mm		2				2
44	Welle, 4 mm Ø, 30 mm lang						
45	Welle, 4 mm Ø, 50 mm lang						
46	Welle, 4 mm Ø, 70 mm lang	1	2	1	2		5
47	Welle, 4 mm Ø, 90 mm lang	2	2		2	3	4
48	Welle, 4 mm Ø, 120 mm lang	2	1		3	2	4
49	Welle, 4 mm Ø, 150 mm lang						2
50	Winkellasche	10	14	10	13	18	40
51	U-Bügel mit 3 Loch		2	4	2		8
52	Z-Winkel mit 3 Loch		2	1	1	1	4
53	Lagergabel mit 5 Loch	1	2	2		1	4
54	U-Bügel, 5 Loch lang	2	2	4	6	2	12
56	Brücke mit 5 Loch		2				2

* Bei Nachbestellung bitte angeben, ob 7 oder 8 mm SW

Nr.	Teil-Bezeichnung	0	3	33	66	MTS	1000
57	Lasche, plan	4	12	10	5	5	27
58	T-Blech, plan			4	4	6	8
59	T-Blech, gewinkelt			4	2	3	6
60	Stellring mit Gewinde M 4		4		2		6
61	Kupplung für 4-mm-Welle		1		1		3
62	Abstandshülse					8	8
63	Stellring, Elastik	10					
65	Stellring, federnd			10	6	8	16
66	Unterlegscheibe für 4 mm Bohrung		10	10		10	20
67	Laufrad für Fahrzeuge			4		4	4
68	Rillenrad, 43 mm Ø, o. Feststt.-Nabe			2			2
69	Spurkranz Becher, 17 mm Ø		4		2	3	6
71	Rillenrad, 21 mm Ø, mit Feststellnabe (ohne Bereifung)		4	4		1	8
72	Rillenrad, 43 mm Ø, m. Feststellnabe		2				2
73	Lochscheibe, 43 mm Ø, mit Feststell-nabe		2		2	1	4
74	Lochscheibe, 43 mm Ø, ohne Nabe	1	1				1
77	Traktor- bzw. Lkw-Rad				4	4	4
	mit aufgezog. Gummibereifung MB 89				4	4	4
78	Rillenrad, 21 mm Ø, ohne Nabe, ohne Bereifung	4	3		2	7	7
79	Schnurrolle, 12 mm Ø, feststellbar						
80	Kurbel, 4 mm Ø		1		1		2
82	Spurkranzrad				1	1	1
83	Rillenrad, 63 mm Ø, mit Lochung für Zahnrad, mit Feststellnabe			2	2	2	4
84	Becher		2	2			4
85	Eisenbahnrad			4	4		8
86	S-Haken		2	1	1	2	4
87	Zahnrad mit Feststellnabe				1	1	1
88	Windmühlenflügel				4		4
91	Gummireifen, aufgezogen auf Räder MB 71 bzw. MB 78	4	4	4		1	8
92	Seitenwand				2	1	2
93	Antriebsspirale						1
94	Mutterschlüssel, 8 mm SW, oder	1	1	1	1	1	3
95	Mutterschlüssel, 7 mm SW						
96	Schraubenzieher, komplett	1	1	1	1	1	3
98	Befestigungsklammer	10	20	21	20	10	
100/103	Bauanleitungen		1	1	1	1	4

Fig.2

#69,84 Bowls, 17 & 24mm Ø, 7 & 8½-10½mm deep.
#71,78 21mm Pulleys. The discs are similar, joined by the boss for#71, but riveted through the centre hole for #78.
#73 Bush Wheel & #74 Wheel Disc. Both use the 43mm disc which when formed is used for the 43mm Pulleys.
#75 Loose Pulley, a small Pulley not seen, and not in the Set Contents.
#76 Flanged Disc. #76, again not in the Set Contents, it is probably used as part of the Flanged Wheel #82.
#77 Tractor Wheel. 2 identical 33mm Ø formed discs spot welded together and fitted with a 59mm Tyre #89. Said Tyre is 14¼mm wide with a 4x V tread across its width, and HW moulded into one side wall. It would be very hard to remove.
#78, see #71.
#79 Pulley. Not seen and not included in the sets. As shown it looks smaller than #75.
#80 Crank Handle, see #44.
#81 Pulley with Tyre. This is the 21mm Pulley #71 fitted with the Tyre #91. The latter is either a 31½mm rubber ring, 6½mm wide, or, later no doubt, a 32½mm Tyre with a V tread and HW on one side wall.
#82 Flanged Wheel. A 43mm pulley disc and a flanged disc, #76 probably, joined by the boss.
#83 Grooved Wheel. 63mm Ø; the outer 16 'holes' mesh with the Gear #87.
#84 Bowl, see#69.
#85 Rail Wheel. 42mm Ø & 12¾mm wide at the centre, it is made from 2 pressings spot welded together.
#86 Hook. 27mm long and formed from 3¼mm wide strip.
#87 Gear, a thin disc 26.4mm o.d., with 8 sprocket-like teeth.
#88 Windmill Sail. Not seen.
#89 Tyre for the Tractor Wheel #77, q.v.
#91 Tyre for the 21mm Pulley with Tyre #81, q.v.
#92 End Plate, 50mm wide with holes at 25mm pitch in the flange. Used as a Lorry's radiator for example.
#93 Spring Cord. 2 lengths each about 30cm long and 1.7mm Ø were were found in one set. They had been ill-used and their ends had been crudely twisted together.
#94,95 Spanners. Only the #95 cranked pattern has been seen, 78mm long o/a, with openings for either 7 or 8mm Nuts. One example is the opposite hand to the illustration.
#96 Screwdriver. In one set it is 118mm long o/a with a 67mm wooden handle. In a later set it is 124mm long with a 73mm off-white, ribbed plastic handle.
#98 Clips. Nickeled (the only non-black part) and used to hold parts together in the boxes.

SET CONTENTS A leaflet or booklet with the contents of the standard outfits is sometimes found in sets. The 2 examples to hand, from 1960 & 1964, are identical and the details are shown in Fig.2. There are many gaps in the PNs and a few of the parts listed are not included in the any of the sets. These include the Threaded Pin #40 but 2 of these were found in a Nr.3 set and they are called for in some of the MTS models (though alternative parts are mentioned in one case). As already stated Sets 33 & 66 are add-on outfits and MTS is complete in itself. Apart from 8 Spacers & two 21mm Pulleys, the MTS models could be built with the parts in Sets 3+33+66.

PACKAGING It is often difficult to identify sets because the

Fig.3

same boxes were used for several sets and the small label giving their size has often fallen off. On cardboard boxes said label has been seen stuck to the top of the lid, as in Fig.3, on its apron, and on the side of the box. None of the few wooden boxes seen have such a label but on one the MTS name is rubber stamped in small letters inside the lid.

The first cardboard box, 22¼*34½*3¼cm, was used for Sets 3 & 33, and its lid is shown in Fig.3. Examples are known from 1954 (according to Ebay), and 1960 (dated from a manual with a Nr.3 set). The inside of the box is red with partitions and trays to give 8 compartments. It isn't known how the other sets from the 1950s were packed but most likely the 66 & MTS sets were in the wooden boxes used later. The 3+33 outfit mentioned earlier was in a 2-layer wooden box, 36*24*8½cm, with a sliding lid.

Fig.4

Four different boxes were used for the 11 sets in a 1961 brochure (9 sizes but with alternative suffixes for two of them: P for a cardboard box, and H for a wooden one). A 5 compartment card box, 23*19cm, was used for the Nr.0 (and also the Gears Set described later) while the Nr.3P & 33P box is like the 1954-60 one above (though it's size is given as 34*21cm). Identical 8 compartment wooden boxes, 22¼* 34½*4½cm were used for the 3H, 33H, 66, & MTS sets, and the Nr.1000 was packed in a 3-layer wooden box. The cardboard lid is shown in Fig.4. All the wooden lids have just the small triangular label (Fig.5) on them - the '1' is an official registration mark and not a set number.

In several of the sets seen 4 Road Wheels, 4 Rail Wheels, and 4x 21mm

Fig.5

Fig.6

Fig.7

Fig.8

Pulley with Tyres are clipped to suitable lengths of brown card, and Axles are pushed through the bent-up ends of short lengths of similar card. Other parts of a type are clipped together. The N&B are generally in a black or dark red 6¾cm Ø Bakelite box with a screw-on lid, but the 3+33 has a red, square version of this box.

THE MANUALS For Sets 3+33. The earliest manual known has the cover in Fig.6, and the four pages of it that have been seen are identical to four in the 1960s editions to be described next. These four pages are printed blue with touches of red, as are all the known manuals.

The contents of the two 1960s manuals to hand are identical but one (III/10/3 Kl 645/60 3000 923) has a slightly textured cover (Fig.7) while the second's (III/10/3 Kl 415/61 2000 645) is similar but smooth with a white ground. They have 20 pages plus covers, 208*146mm, and C2 is blank. The Intro on pp1-2 is followed by the Illustrated Parts on pp3-5. Then 33 Nr.3 models from Stern (a 2-D Star) on p6 to Gartenbank (Garden Bench) on p12, and 32 Nr.3+33 model from Licht- und Leitungsmast (Lighting Standard) on p13 to Dampfer (Steamship) on C3. C4 has a an ad for the DJK sets and the PR.

The models, even for the 3+33, are quite simple and the one blue shaded line drawing for each is adequate. There is a wide selection of models but relatively few vehicles, and none that look at all 'modern', a Jeep or a postwar Car for example. None of the wheels shown on the vehicles are fitted with Tyres, and the 63mm Pulley is shown as a bossed flanged disc with no face holes.

For the MTS Set Three examples are to hand and they too differ only in their covers (none of which have the DJK name on them). The earliest (III/10/3 Kl 299/55 2000 803) is shown in Fig.8, the next (3/10/3 Kl 69/61 2500 101) is the same design but on white paper with the bottom blue, like the 1961 3+33, and the last (III/10/3 Kl 374/63 2500 568) is the same but on light fawn slightly textured paper.

C2 has only a short note about looking after the parts by oiling them. Then there is a 4 page Intro about agricultural machinery, ending with an introduction to the first model on p5, the Traktor in Figs.9A & 9B. Next are 6 Implements, any one of which can be made from the Set as well as the Traktor, and can be attached to it. The first is a Dreischarpflug (3-furrow Plough) on p6 and the last an Ackerwagen (Trailer) on p10. The Mowing Machine on p5 is shown in Fig 10 above. Finally, 5 models which need parts from other sets, a Lorry on pp11-12, 2 Railway Wagons on p13, a Crane on p14, and an Exzenterpresse on p15. Only the Lorry has a Parts List. 4 of these model are shown in Fig.11 overleaf. p16 lists the other sets available and has the PR; C3-4 are blank, except that in the 1955 edition the PR is on C4.

There is a shaded line drawing for each model, often rather dark & blurry, and for the MTS ones, descriptive text, a parts list, and auxiliary views as necessary. Figs.9-11 are all natural size.

For Set 66 The only information to hand is a photo of an open manual shown by the Set in the Brochure. It shows the Lorry and the 2 Railway Wagons that were 'extra' models in

Fig.10

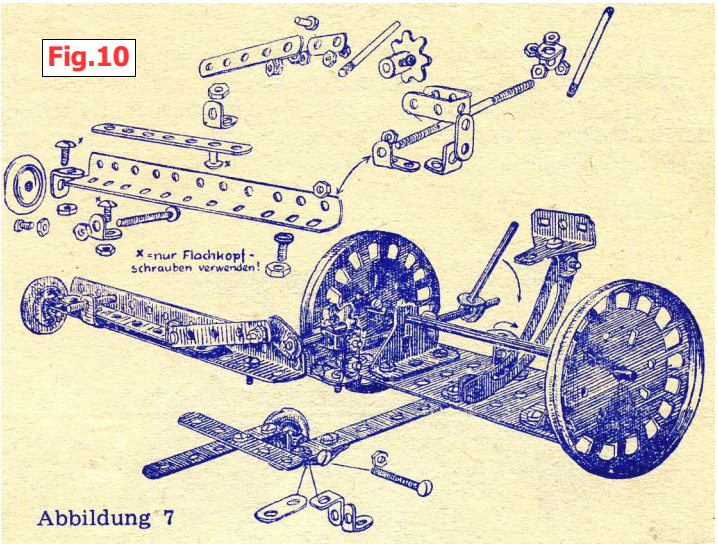


Abbildung 7

Stückliste für Mähmaschine

Teil-Nr.	Bezeichnung	Stückzahl	Teil-Nr.	Bezeichnung	Stückzahl
MB 3	5-Lochschiene	3	MB 50	Lasche, gewinkelt	9
MB 4	7-Lochschiene	2	MB 52	Z-Winkel (od. 1 Z-Winkel und 2 Winkellaschen)	2
MB 5	11-Lochschiene	1	MB 53	Lagergabel, 5 Loch	1
MB 15	Lochwinkel, gewinkelt	1	MB 57	Lasche, plan	3
MB 20	Lochplatte, 3 x 7 Loch	1	MB 59	T-Blech, gewinkelt	3
MB 27	Segmentband	1	MB 66	Unterlegscheibe	10
MB 31	Schraube M 4, kurz	29	MB 71	Rillenrad, 21 mm, mit Nabe	1
MB 33	Schraube M 4, lang	1	MB 78	Rillenrad, 21 mm, gepunktet	1
MB 37	Sechskantmutter M 4	37	MB 83	Rillenrad, 63 mm	2
MB 40	Gewindestift M 4, kurz (oder 2 Gewindestifte und 1 Schraube, kurz)	3	MB 87	Zahnrad	1
MB 42	Gewindestift M 4, 90 mm	1			

Fig.9A

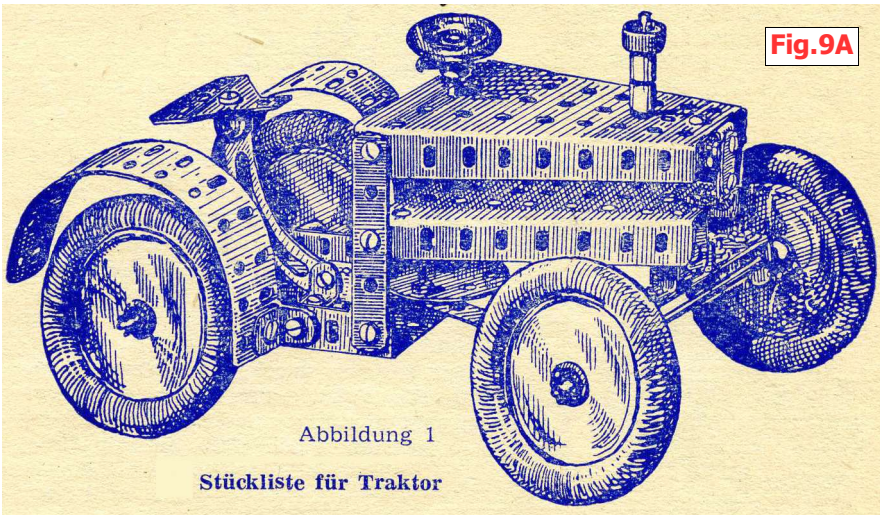


Abbildung 1

Stückliste für Traktor

Teil-Nr.	Bezeichnung	Stückzahl	Teil-Nr.	Bezeichnung	Stückzahl
MB 3	5-Lochschiene	2	MB 50	Lasche, gewinkelt	8
MB 4	7-Lochschiene	2	MB 53	Lagergabel aus 5-Lochschiene	1
MB 10	Doppellochschiene, 11 Loch gebogen	2	MB 54	U-Bügel aus 7-Lochschiene	1
MB 20	Lochplatte, 3 x 7 Loch als Seitenverkleidung (nicht gezeichnet)	2	MB 57	Lasche, plan	3
MB 22	Grundplatte, 7 Loch lang	1	MB 58	T-Blech, plan	2
MB 23	Grundplatte, konisch	2	MB 62	Abstandsring, 10 mm	2
MB 27	Segmentband	1	MB 65	Stellring, federnd	5
MB 31	Schraube, 6—8 mm lang	44	MB 69	Spurkranz, 17 mm Durchmesser	1
MB 34	Schraube, ca. 25 mm lang	1	MB 73	Lochscheibe mit Nabe, 43 mm Durchmesser	1
MB 37	Mutter M 4	48	MB 77	Traktorrad mit Gummibereifung	4
MB 40	Gewindestift, kurz	1	MB 81	Rad mit Nabe, 23 mm Durchm. mit Gummi	1
MB 47	Welle, 90 mm lang	1			
MB 48	Welle, 120 mm lang	2			

Fig.9B

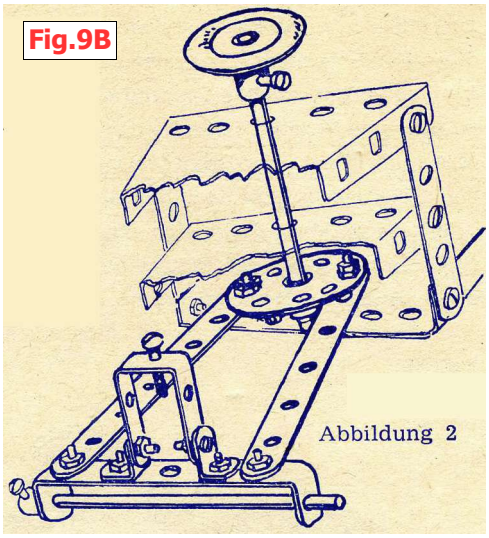


Abbildung 2

the MTS manual.

OTHER 'PAPER' A booklet about the size of the manuals and entitled 'Deine Forschungs-Werkstatt' (Your Research Workshop) has been seen in several Ebay sets as well as the usual manual. Those with Fig.6 manuals have a cover in the same style but in portrait format; those with Fig.7 manuals are in that style but again in portrait format.

Another booklet in one Ebay outfit is again about the size of the manuals and its cover is shown left. Perhaps it's a brochure; the 1961 one mentioned earlier is about the same size but the very large Builders Crane on it, about as high as a man, is a much more inspiring model (unfortunately the photocopy to hand is too dark to be able to see any details).

Fig.12

THE GEARS OUTFITS

First **the standard set**. The box is the same as the Nr.0

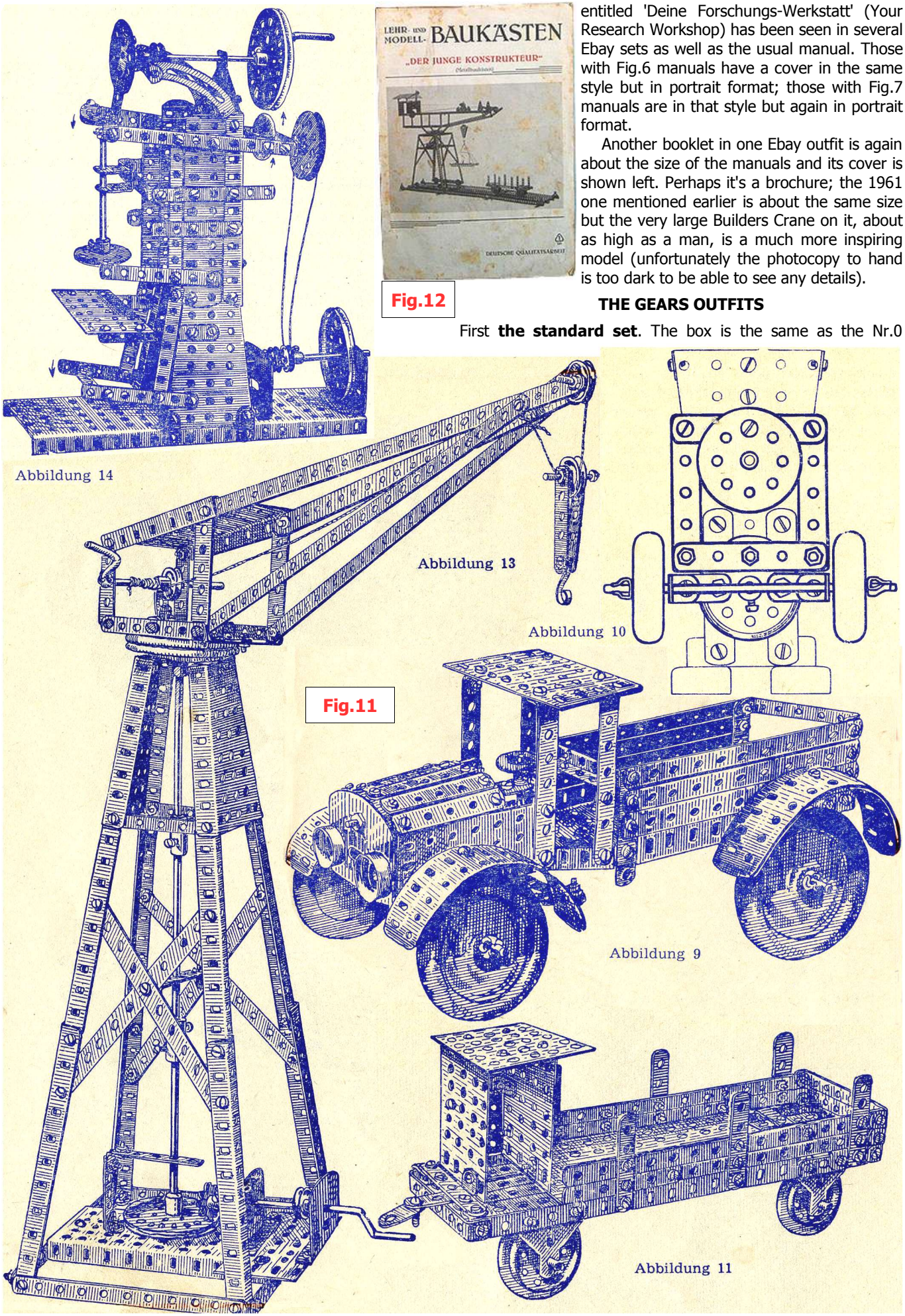


Fig.13

already described; its label in 1958 was similar to the blue & white 3+33 manual cover (Fig.7 apart from the colours), but later it was similar to the 1960s Nr.3 & Nr.33 sets (Fig.4 apart from the name of the set). The set's contents are as follows:

Strips: 2x #2, 3h; 3x #3, 5h.

Plates: Triangular: 4x #16; Perforated: 2 each #17, 5*5h, & #20, 3*7h; Flanged: 1 each #21, 5*11h, & #22, 5*7h.

NBW: 26x #31, Bolt; 18x #37, Nut; 14x #66, Washer; 1x #95, Spanner.

Brackets: 8x #50, A/B; 2x #59, Trunnion.

Axles: 1 each #151-155, 50,60,70,80,125mm Profilwelle (Flatted Axle); 1x #157, Kurbelwelle (Flatted Crank Handle).

Plastic Pulley & Gears with flatted bores: 2x #162, Rillenrad mit Profilbohrung (Pulley with Flatted Bore); 3x #165, Ritzel (Pinion); 3x #166, Zahnrad (Gearwheel); 2x #167 Kegelrad (Bevel).

Misc: 1x #60, Collar; 1x #61, Coupling; 2x #73, Bush Wheel; 18x #160, Elastik-Stellring (Elastic Collar).

The plastic Pulleys & Gears with flatted bore can be seen in the Fig.13 set. The Pulleys are blue and on a card with the Pinions; the Bevels are between the Gearwheels. Black Gearwheels and white Pinions are also known. The Pinion & Gear have 14 & 36 teeth, and are Mod. 1; the Bevel also has 14 teeth and, from the Fig.15 model, it has a boss.

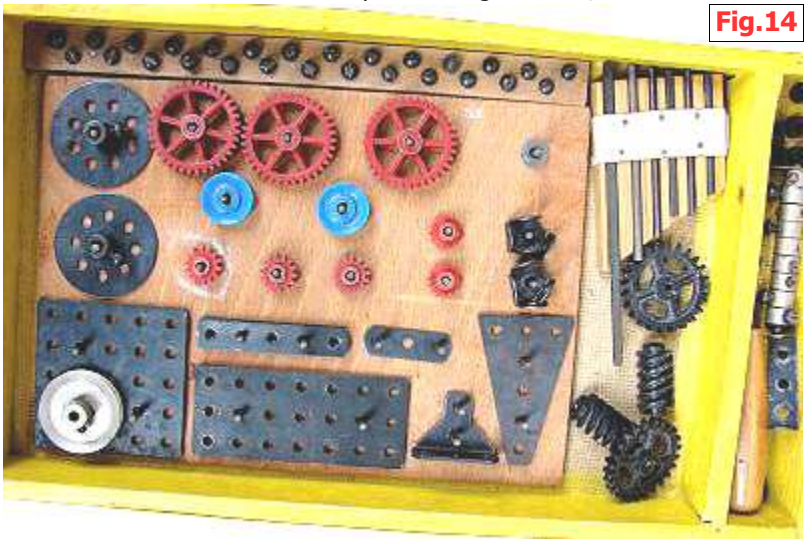
The manual to hand (III/10/3 KI 737/58 2000 1113) has 24 pages plus covers, the same size as the 3+33 manual, and the cover is in the same style as the blue & white version of the Fig.7 1961 3+33 cover. The Set Contents are given on C2 and the Intro on p1 includes the gear ratios obtainable. 14 Gearboxes are described from 1. Stirnrad-Getriebe (Spur Gear Drive) on pp2-3, to 14. Kranlaufwerk (Crane Drive) on p24 & C3. C4 has the list of DJK sets available and the PR.

In the models an Elastic Collar is used on either side of the Spur Gears & Pulley and presumably they are not a tight enough fit on the Axles to stay in place on their own. None of the models require any of the Gears to move along the Axles. The Bevels though are on the end of Axles and so must be a push fit (and the extra length from their bosses would help). All the Gearboxes are simply various combinations of 1, 2, or 3 gear reduction stages, with a right angle drive in some, and the output to the Pulley #162, or a winding drum made using the Bush Wheels. In the last 2 models the input drives 2 output shafts.

The models are shown as engineering drawings with one or two views for each, along with a Parts List and written instructions. The two below in Figs.15 & 16 are 75% of their original size.

The Schools Gears Set 3 of these were shown on Ebay as one lot, each packed in a yellow wooden tray, with an end compartment, as below. All the main parts in the normal Gears Set can be seen except the Flanged Plates, with most of them mounted on wooden boards. Loose in the Set are some extra parts: (i) At bottom left a silver metal Pulley with boss, about 3h Ø, and there are similar parts, but only 2h Ø, in the other 2 sets. (ii) Under the Axles 2 each of a black plastic Worm and a 4-spoke, 24t Gear, presumably a Worm Wheel. These parts are missing in one of the Sets. (iii) In the end compartment some metal tapped Collars, a 1*3*1h DAS, and a Screwdriver. The DAS can't be seen in the other Sets and in one the Screwdriver has a red plastic handle. One Set has a Spanner in it.

Fig.14



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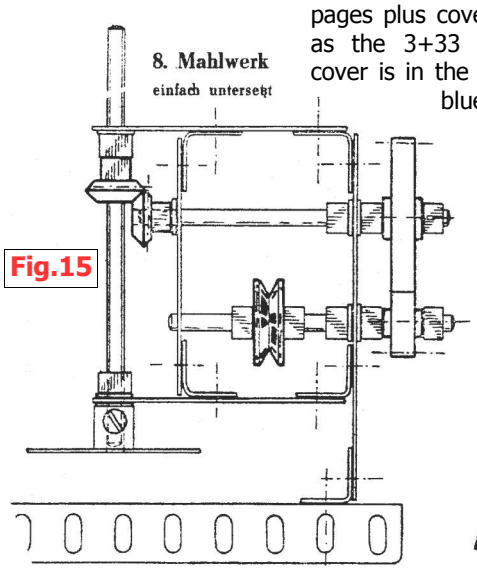


Fig.15

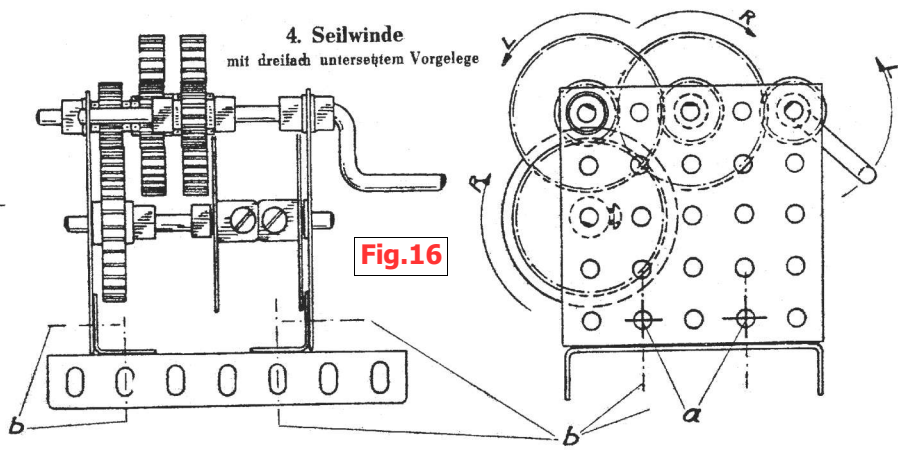


Fig.16


Fig.17A

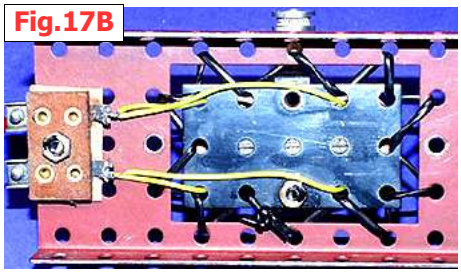


Fig.17B

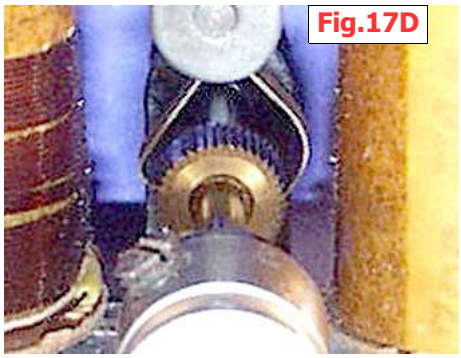


Fig.17D

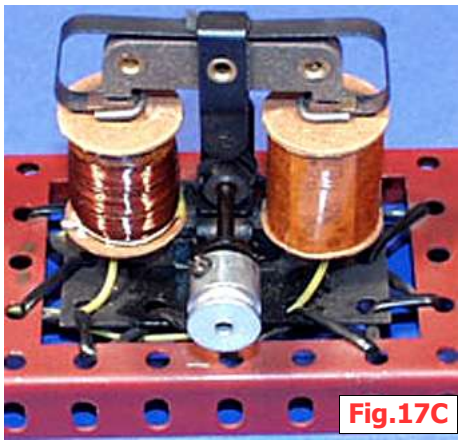


Fig.17C

THE MOTOR

The main parts of the Motor, 14*8*6cm overall, can be seen in the photos above. In Fig.17A the casing is held to the flanged plate by a bolt on either side, and its black base plate is suspended as shown (Fig.17B) to minimise vibration passing to the model. 4-10v A.C. is supplied to the coils which causes the T-Rotor to oscillate, and the 'pallets' attached to its foot to turn the fine-toothed wheel on the output shaft. These last two parts are best seen in Fig.17D – in Fig.17C the wheel, pallets, and the white disc/washer above them all look black, and are barely perceptible.

USING THE PARTS

The MTS Tractor & Mowing Machine took my eye and the final, somewhat modified version is shown in Fig.18A below. First though I made them as per the Manual (Figs.9 & 10). The Tractor was quite straightforward to build, but despite the Mower's gear drive working smoothly (when the mesh was correctly adjusted) there were some problems with the cutting blade. To start with the mounting of the Long Bolt that the blade passes under. Although the A/Bs to hand had various bend points there wasn't one which gave the blade clearance under said Bolt. A little filing cured this but then it was found that the blade didn't stay parallel to the A/G over its full travel. Various 'fixes' didn't improve matters greatly and eventually the method used in Meccano's 1924 Reaping Machine was cribbed. The long arm of a Trunnion passes from the rear between the bottom face of the A/G & a Strip suitably spaced from it (2x #12b A/Bs were used in the original instead of the Trunnion), and the blade is bolted to the Trunnion's apex hole. Then the blade slides smoothly along the front edge of the A/G. (In the MECCANO model the slotted end holes of the A/Bs allowed adjustment but this wasn't needed in the present case because I was lucky enough to have picked an A/G with exactly the right bend point).

'Improvements' to the Tractor were also felt to be worthwhile. Ackerman steering was fitted, operated by cords from a 3h Strip nutted to the end of the (relocated) steering column, see Fig.18B. Also the lower Flanged Sector Plate was removed and an imitation engine etc was added (Fig.18A), though a few of the the parts used for this were not in the MTS Set. The system's reasonably large range of Brackets helped in all these changes though a handed version of the #15 Corner Bracket would have been useful.

THANK YOU

to David Hobson for lending me the Gears manual, and to Joachim Kleindienst for permission to use material from his website www.baukastensammler.de/. This is a site with good photos of numerous OS sets as well as the Motor above, and is well worth a visit – DJK is listed under Hans Wünsch.


Fig.18B


Fig.18A

MICRO-MECANO "GUINA" The parts in this small Spanish system have much in common with those in the 'Matchbox' sets described in 6/131, although they are painted and the Rods are steel instead of wood. In size they are similar to the MACÓN type, rather than those in the commonly found Matchbox sets such as the German CLOU, or the American/ Japanese MATCH BOX CONSTRUCTION SET. GUINA also differs from the Matchbox sets in the packaging, in having more Strips & fewer Flanged Plates, and in the models. Two types of packaging are known for GUINA, one conventional with the parts strung in a box, & one, Matchbox fashion, with the largest Flanged Plate packed with all the other parts, inside an outer sleeve. On models, GUINA has only 12 compared to the 100 for the Matchbox sets, but they are generally a little more attractive looking.

This note is based on several examples of the conventional sets, all complete except that none have a model leaflet, and photos of two of the matchbox type, both near complete with model leaflet; one was from Ebay and one from a Spanish dealer. In the latter's description the set was said to be from the 1950s and that Guina was the name of the company which produced it. MCS gives dates of '1935 to about 1939' but doesn't say anything of the type of packaging. One possible clue to dates is the Model Sheet (as in Fig.5 and in MCS) which has a model called 'HELICOPTERO', a name, I think, little used before WW2.

The Conventional Set The box is 21¾*16¼*2cm and the lid is shown below. There is no name on it anywhere but

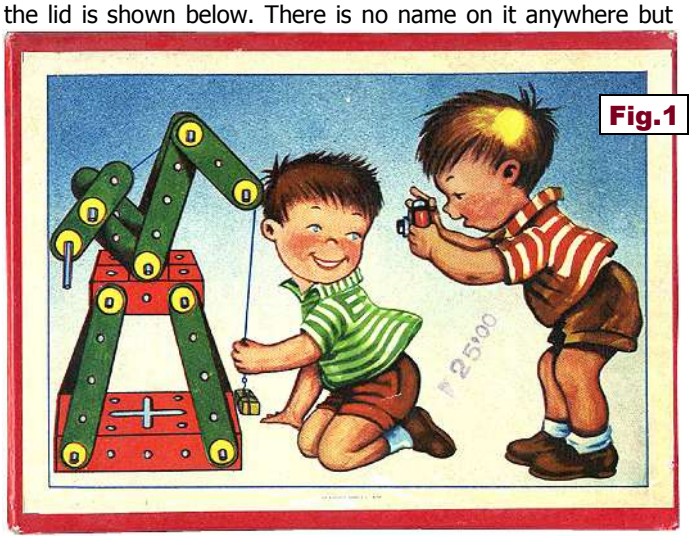


Fig.1

along the bottom in tiny, faint letters is: LIT. MIJOS DE C. ALBORS, S. A. - ALCOY. The '25,00' rubber stamped on is perhaps the price.

Most of the parts can be seen in the open box below, and

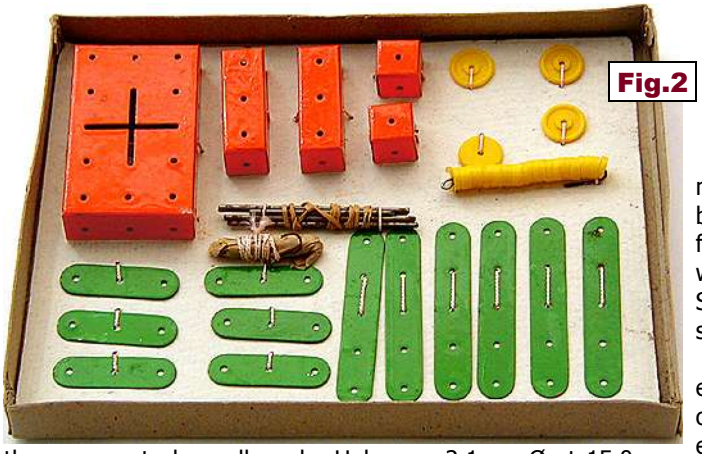


Fig.2

they appear to be well made. Holes are 2.1mm Ø at 15.0mm pitch. The Strips are 12.4mm wide. The Rods are 2.03mm Ø and there are 4 each 50 & 66mm long. Also 8x 26mm wrapped in brown paper which has about 30cm of the pink, silky Cord used to string the parts, wrapped around it, with a 16mm long Wire Hook at the end. All the parts are steel except the 4 yellow plastic Wheels and the 26 Stops (threaded onto a wire). They are respectively 15½ & 7¾mm Ø, and 1¾ & 2mm thick.

The Matchbox Set Below the top & bottom of the sleeve.

Fig.3

On the sleeve's side is: Fabricado por GUINA, and under that: Permiso núm. 5.542 |B|.


Fig.4

Fitting the parts into the 3*5h Flanged Plate (right) is much simpler than with other Matchbox sets. The 5h Strips sit across the bottom with the smaller Flanged Plates on top of them, & the other parts inside, or alongside them.

The Model Sheet, about A4 size or a little larger, is shown below, with its side edges folded over. The top & bottom

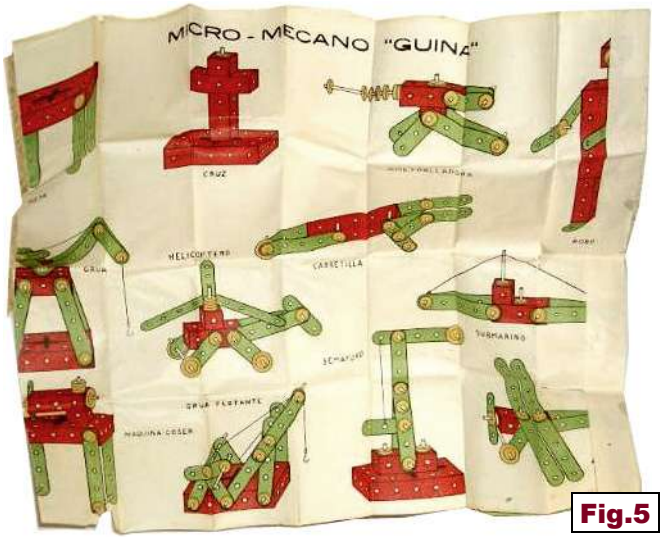


Fig.5

models on the left are a Table and a Sewing Machine. As can be seen the Sheet is folded 8 times one way and 4 the other to fit into the sleeve. The Rods of course hold the parts together with Stops at their ends. Compared with the other Matchbox Sets the greater number of Strips allows a little more scope for slightly more interesting models.

I made the Sewing Machine. The Stops were reasonably easy to push onto the Rods and gripped adequately. The legs of the stand needed some extra bracing and there were enough parts to provide cross members, but 2 more Stops would have been needed. The only other problem was that the 50mm Rods were not quite long enough to mount the legs outside the Flanged Plate, as per the Model Sheet. But having them inside was a simple remedy which both improved the appearance and prevented them from splaying outwards.

PHILIPS MECHANICAL ENGINEER This Dutch system was perhaps the most original constructional system since MECCANO, and it owed little to any that had gone before. The models that could be made from it included a number showing elementary mechanical features, several good clocks, and a selection using pneumatics or hydraulics. However most from the original ME 1200 Mechanical Engineer set are not very realistic looking & have a rather dull appearance. The 1200 appeared in 1965 and it was replaced in 1967 by 2 outfits: the ME 1201 Mechanical Engineer, and the ME 1250 Compact Mechanical Engineer. More models of improved design were shown for these later sets, & the coloured parts included in them gave the models a more attractive appearance. UK, Dutch, German, & American (called NORELCO) sets were made, all basically the same but with slightly differences in their packaging.

These notes are based on UK sets 1200 & 1250 to hand; photos of and the Instructions for the 1201; Ebay photos; and certain details from http://ee.old.no/mechanics/. My thanks to David Hobson for the material he lent me.

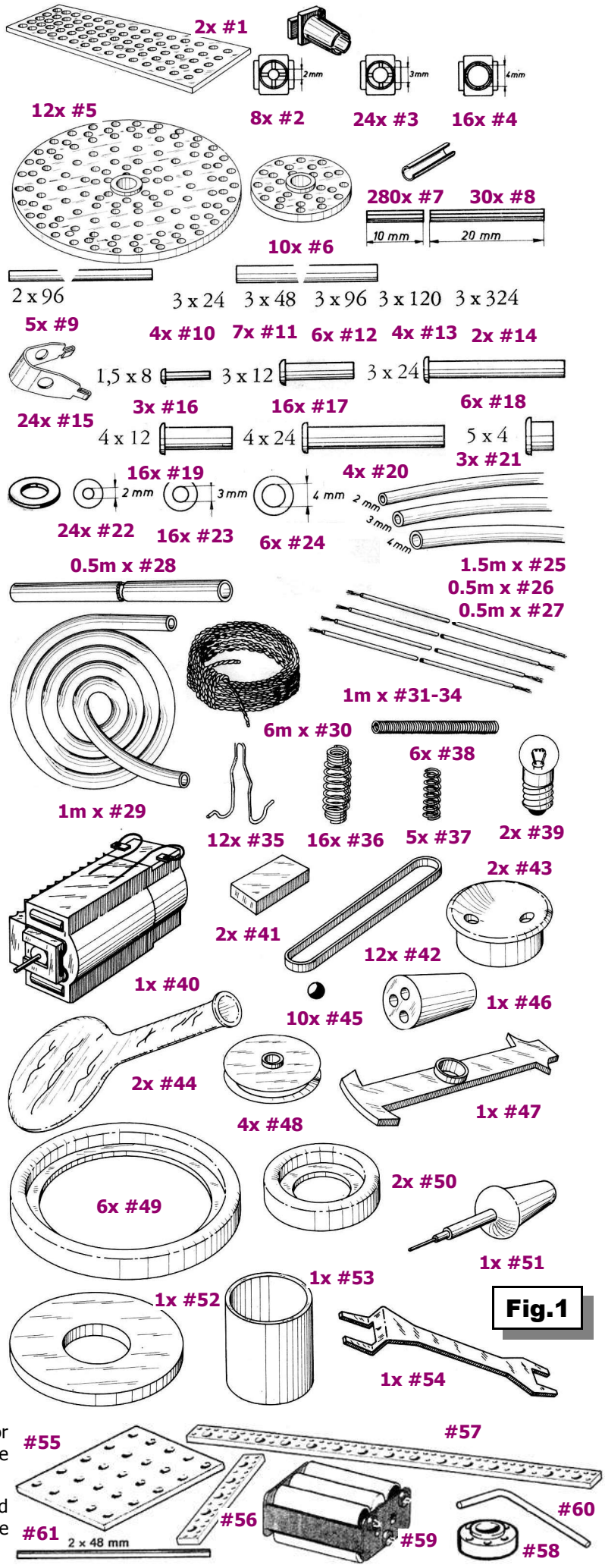
The 1201 set has 'Made in Holland' on the lid; the 1250, 'Made and printed in England' on the side of its lid, but in tiny letters on top is: Contains British and Foreign Parts. All the manuals and model sheets are 'Copyright N.V. Philips' Gloeilampenfabrieken – Eindhoven – The Netherlands – 1966 (or 1967 for the 1201 & 1250 material) Printed in The Netherlands'. Apart from that no address is given on the 1200 material but a leaflet with the 1201 is from Philips Electrical Ltd., R. G. Division, Young Engineers Dept., 19 Commerce Way, Purley Way, Croydon CR9 4JA. A different address was given in Meccano Magazine ads for the 1200 in 10/66 & 12/66, and for the 1201 in 12/68 & 1/69 (no mention was made of the 1250): full details were offered from Philips Electrical Ltd., Century House, Shaftesbury Ave, London WC2. The last two ads also included: 'Distributed in U.K. By Metttoy Playcraft (Sales) Ltd.'

USING THE PARTS Before describing the parts and sets a few words on how the main parts are used. Referring to Fig.1, the Plates & Strips (#1,55-57) & the Wheels (#5,6,58) are rigid plastic and the holes in the former, and the centre hole of the latter, have a slight taper to take plastic Collets (#2-4; 2, 3, & 4mm bore). The latter hold the Spindles (#9-14,60,61) firmly in place as structural members when they are pressed hard into the tapered holes, and the Spindles often act as cross members between the Plates & Strips. The Collets also hold Bushes (#16-21) and the Spindles are used as axles running in them. The 3 & 4mm Spindles are hollow and the 2 & 3mm parts can run inside them. Spring Pins #7,8 can be pushed into 3mm Spindles to join them together. The other useful structural parts is the Clamping Spring #15 which holds 3mm Ø parts at right angles to each other. Short lengths cut from the plastic Sleeving #25-27 are used as axle stops.

Gearwheels are made by inserting the Spring Pins #7,8 into the various circles of small holes in the Wheels. Said gears can mesh externally, internally, or at right angles, and can also be used as pulleys, or to couple two shafts. Ratchet and free wheels can be made by using other parts with the 'gears'.

Apart from the Tools #51-54, the other parts are mainly used for electrical items and connections, and for the hydraulic/pneumatic models. Some of these uses are mentioned in the notes on the parts that follow.

THE PARTS Additional parts #55-61 were introduced for Sets 1201 & 1250. • **#1,55-57 Plates & Strips**. The



Plates are 3mm thick, the Strips 4mm, all made of clear, rigid plastic. Plate #1 was colourless in Set 1200, but it and the new parts #57, 58, & 61 were green in the 1201 & 1250 outfits. The tapered holes are 5.0 to 5.2mm Ø at 15.0mm pitch; the small holes are 2.3mm Ø at 5.0mm pitch. Moulded into the parts are letters and numerals to ease reference to particular holes. • **#2-4 Collets**. Plastic, for 2, 3, 4mm Spindles or Bushes. 12mm long. Originally black but in the 1250 the 2mm is white, the 3mm grey, and the 4mm black. • **#5,6,58 Wheels** are made from the same 3mm thick clear plastic as the Plates, colourless originally but red in the later sets. They are 53, 24, & 14mm Ø with 6 holes in the innermost circle and #5 has 30 in the outermost. In all the circles the holes are at the same pitch, about 5¼mm, and so the gears are Mod. 1.6. Also this spacing allows 3mm Ø parts to be a push fit between any pair of Pins in a circle. Each ring of holes is lettered for reference. • **Pins #7,8**. Nickeled spring steel, mostly inserted into the Wheels to make gears. • **Spindles #9-14,60,61**. The 2mm are stainless steel; the 3 & 4mm are nickeled brass tubes. #60 is 18*36mm. • **#15 Clamping Spring**. Stainless steel. It is mostly used to join 3mm Spindles but it has other uses, as a pawl for instance. • **#16-21 Bushes**. Silver plated brass. • **#22-24 Washers**. Nickeled brass. • **#25-27 Sleeving**. Flexible black plastic. • **#28 Plastic Tube**. Transparent, used as valve chambers and gauge glasses. • **#29 Rubber Hose**. 3.5mm o.d., used for air & water, and as a flexible coupling. • **#30 Cord**. Fawn, .6mm Ø. • **#31-34 Flex**, insulated electric, red, black, green, grey, 1.7mm Ø, for electrical wiring. • **#35 Hairpin Spring, #36,37 Large, Small Coil Spring**. These are mainly used to make electrical connections. • **#38 Contact Spring**. Chromium nickel steel, 2.3mm Ø & 24mm lon. Used in making electrical switches, and as a spring mounting for 3mm Spindles. • **#39 Bulb**. Standard 6V torch bulb. • **#40 Electric Motor**. 6-12v, it is mounted on 3mm Spindles which pass through its casing. • **#41 Magnet**. Not seen but probably about 15*10mm or a little larger. • **#42 Rubber Band**. Possibly plain brown and 7-8cm long. • **#43 Diaphragm Housing**. Black plastic, 29mm Ø. Used with a diaphragm stretched over it as a cylinder for a pump or air motor. • **#44 Balloon**. Green toy balloon, about 10cm long. It is used to provide pulses of air or water when squeezed, and is also cut up to provided the diaphragm for #43. • **#45 Ball**. 3mm Ø, nickeled steel, used as suction and pressure valves in pumps. • **#46 Rubber Plug**. For connecting to water tap. Soft brown or grey rubber, 20mm long, and tapering from 10 to 15mm Ø. • **#47 Escapement**. Black nylon. **#48 Pulley**. Black plastic loose pulley, 24mm Ø. • **#49,50 Tyres**. Black rubber, 60 & 30mm Ø when stretched over the Wheels. 'ME 60 x 7' or 'ME 30 x 7' is moulded into the side face. • **#51 Pin Insertion Tool**. 59mm long with black plastic handle. • **#52 Supporting Ring**. Nickeled steel, 48mm o.d. and 2¼mm thick. Used to support Wheels when Pins are being inserted. • **#53 Supporting Pipe**. Nickeled steel, 25mm o.d. and 25mm high. Used to support Wheels when Pins are being pushed out. • **#54 Spanner**. Chrome nickel, used to tighten and loosen Collets. • **#55-57**. See #1. • **#58**. See #5. • **#59 Battery Holder**. Black plastic. It takes 6 AA batteries and the voltage can be tapped off in 1½v steps.• **#60,61**. See #9.

THE SETS **The 1200 MECHANICAL ENGINEER** is in a wooden framed box, 27½*55½*4½cm, with the bottom and sliding top (Fig.2) of hardboard. On one end and on one side is a 'Philips ME 1200' flash. Inside there are 2 moulded plastic trays 35cm long, one yellow, 11¾cm wide, and one grey, 13¾cm wide. Most on the parts are in these but some, the 'wires & pipes' for instance, are loose at one end, covered by cardboard, and with the manual sitting on top. The contents of the Set are given in Fig.1 (#55-61 were not in this set). As well as the manual a loose sheet showing the Illustrated Parts was included in the Set.

Fig.2

The 1201 MECHANICAL ENGINEER KIT The box is cardboard, 56*26*5cm. The lid is in the same style as the 1250 in Fig.5 but the main model is a Bulldozer with a blue surround, and 2 other models are shown in smaller rings. The set number is on the lid's aprons. Inside the parts are in the expanded foam tray below. The quantities in Fig.4 are from a leaflet which was included in the set; the second figure for some parts is that on the German website. The Set differs from the 1200 in that the hydraulic/pneumatiic/clock parts are omitted, and there are fewer of some basic parts such as Pins and Bushes. Also the 5*15h Plates are replaced by the 5*5h and the Strips.

Fig.3

Contents of Sets ME 1201 & ME 1250								
PN	1201	1250	PN	1201	1250	PN	1201	1250
1		1	22	24	10;11	43	0	1
2	24	12	23	16	15	44	0	2
3	24	12	24	4;6	4	45	0	8;10
4	16	12	25	.5m	.5m;1.5m	46	0	1
5	10	2	26	.5m	.5m	47	0	1
6	7	4	27	.5m	.5m	48	4	0
7	80;120	50	28	0	.5m	49	8	0
8	18;26	4;2	29	0	1m	50	0	4
9	3	2	30	3m;6m	6m	51	1	1
10	0	4	31	1m;2m	1m	52	1	1
11	5	4;7	32	1m;2m	0	53	1	1
12	5	2	33	1m;2m	0	54	1	1
13	3	1	34	1m;2m	0	55	2	0
14	0	2	35	15;12	2	56	8	4
15	12	12	36	15;16	0	57	4	0
16	0	2	37	5;6	0	58	4	0
17	8	8	38	6	2	59	1	0
18	6	10	39	2	0	60	8	2;4
19	8;10	4	40	1	0	61	2	0
20	4	4	41	0	0	Fig.4		
21	0	0	42	12	12			

The 1250 COMPACT MECHANICAL ENGINEER The packaging is of the same type as the 1201 The box is 21*41*4¾cm, with the lid in Fig.5. The Collets and most of the Spindles are under the 5*15h Plate in the foam slab. No leaflet with an inventory, comparable to the one with the 1201, has come to light, so the parts found in 2 seemingly near complete sets are listed in Fig.4, with as before, the second figure from the website. The Set contains most of the clock/hydraulic/pneumatic parts in the 1200, though with only one Diaphragm

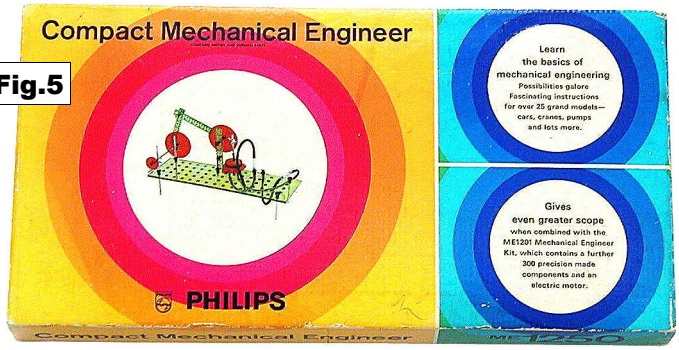


Fig.5

Housing. The 1201 plus 1250 have appreciably more parts overall than the 1200, although with fewer Pins, and they do not include the 5mm Bush #21 or the Magnet #41.

EXTRA PARTS The German website lists 19 packs of parts, ME 1800 to 1818, and they include all those in the 1200 set except the Bulb #39, but none of the later parts. Some of the packs contain a reasonable quantity of parts but many are said to have 10, including all the Tools, and I wonder if this is a misprint. The only pack mentioned in the UK literature to hand in the 1807 which has 150 Pins #7, and is needed for two of the 1201 models, and one of the 1250's. However the 1201 Leaflet also lists the names of all the parts in the Set 'so that you will know what to ask for if you wish to buy spare parts' – but nothing is said as to where the parts can be obtained.

NON-UK SETS The contents look the same in all cases, and the packaging very similar. • **1200**. A German set's lid is the same as the UK except its name: Mechanik Experimente. The Norelco set differs only in the lid's left panel which has only 2 of the models but text explaining the scope and virtues of the set. • **1201**. German, Dutch, & Norelco sets are known. All the lids are basically the same except that all but the UK are called Mechanical Engineer without the 'Kit' at the end, and the featured models vary. The German lid has a Windmill; the Dutch & Norelco a Bulldozer but facing to the right, the opposite way to the UK model. The website also shows a blue 'inner box' with a large Windmill and 4 small models in white circles on it, but it's not clear which set this relates to. • **1250**. The German set was also called Compact Mechanical Engineer but was packed in an end-opening box with one side as the UK lid (apart from having German text in the white circles) and the other similar but the model is a Windmill.

THE INSTRUCTIONS The 1200 The manual with this set has 136 portrait pages, 180*240mm, plus covers. C1 has the picture from the lid with 'instruction book' under it. C2 has a short preface which really sets the scene by saying that there are 41 assemblies described and 'the number ... you can make depends on your skill & technical ingenuity'. p1 is a title page and p2 lists the contents. p3 has general advice on avoiding damage to the parts, use of oil, etc, and pp4-6 have the Illustrated Parts with quantities and a short note on the use of each part.

The next 32 pages describe how to use the parts, including the lengths of Hose & Sleeving which must be cut from the lengths in the Set; gear ratios; how to assemble couplings, gears, the diaphragm pump, valves, switches, a battery holder, etc, etc; and how to use the Motor. The pages are solid text apart from numerous clear drawings of the various items, with the parts in them labelled with PNs. The loose Illustrated Parts sheet was a great help here but nevertheless 32 packed pages would be a little daunting for many, and in fact there is no need to read some of this section initially because the instructions for the models often refer back to the appropriate pages. As an example from this part of the Manual the complete instructions for Pumps are shown in Fig.7 on the facing page, full-size but rearranged.

p39 has a list of all the models, divided into 6 groups. All have several explanatory drawings & lengthy, detailed, written instructions, similar in style to the text in Fig.7. For the examples here (Figs.6 & 8) it is only possible to show 1 or 2 of the drawings to give a flavour of the models. All are full-size.

The first group is about vehicles starting with A1 STEERABLE CAR on pp40-41. It is a simpler version of the A6 SIX-WHEEL TRUCK in Fig.8 (on p1245), without the Motor but with the same centre pivot steering. The models A2-A5 add features to A1, flashing direction indicators for example. The last model, A7 CATERPILLAR TRUCK, on pp53-57, runs on tracks made of 2mm Sleeving, with drive from the Motor on one side.

The 2nd group is headed DRIVE SYSTEMS and the first model, B1 WINDMILL on pp58-59 has a rotor with Wheels as sails on the ends of 6 arms, angled so that the wind will give rotation. Then a Water Turbine in which water from a tap squirts onto a ring of Pins in a Wheel which drives the Motor acting as a dynamo. Then a Hand-driven Dynamo, followed by a Compressed Air Motor using the diaphragm unit with the inlet air from a car inner tube (not supplied and with nothing said about how to connect it). In the next model this Motor is used to drive a Merry-go-round, and in the last model, B6 COMPRESSED AIR MOTOR WITH PUMP, on pp67-68, to drive another diaphragm unit to pump water, see Fig.6 below.

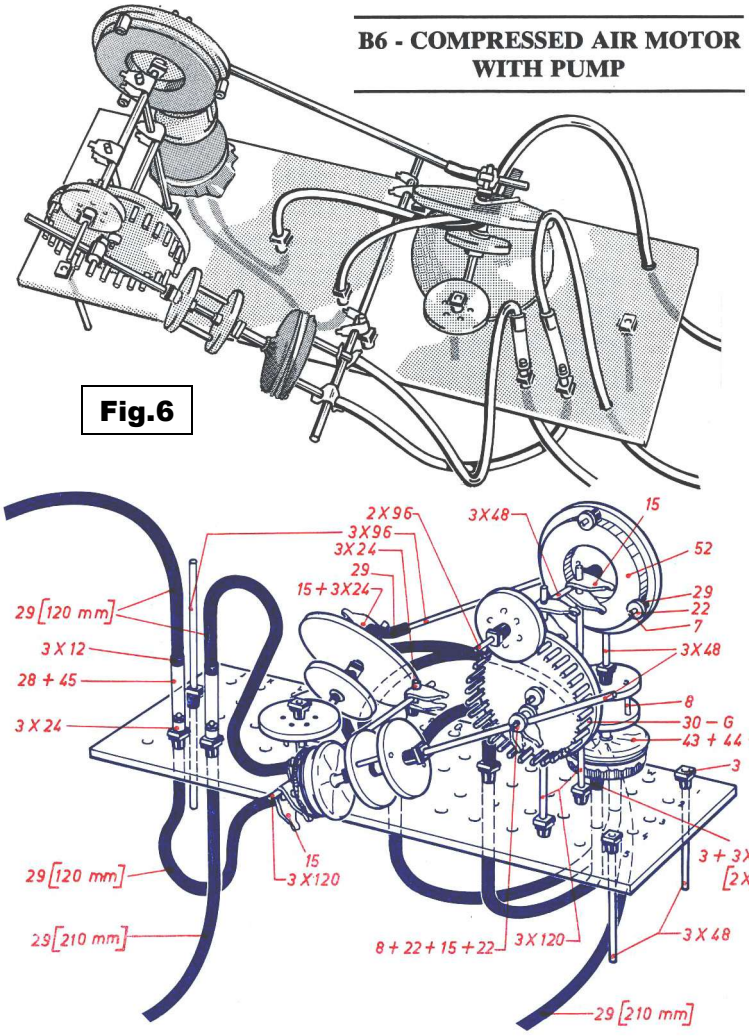


Fig.6

The 3rd group is about Cranes but the first model on pp68-69 is C1 BALANCE, the laboratory type but strangely with no pointer to indicate when the pans are level. The Cranes gradually evolve into the last model, C7 LARGE ELECTRIC CRANE on pp85-88, in which the Motor drives the hoisting and luffing independently. It is shown in Fig.8. Model C6 CABLE CAR is the most complicated model with 3 drums driven by the Motor, one to drive it along the (more or less horizontal) cable and

PUMPS

Diaphragm Pump

The diaphragm pump works using principles similar to the piston pump. The petrol pump in your father's car is a diaphragm pump. It lends itself more easily to small constructions, it has less friction and there is little risk of leakage. Its principal parts are the drive rod and the diaphragm housing.

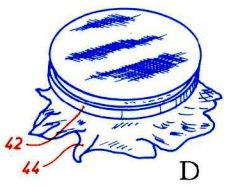
The drive rod (A). This consists of two small wheels (No. 6) with the under sides facing each other and kept apart by two 20 mm pins (No. 8), placed in the holes a1 and a7. The 3 mm drive shaft, whose length depends on the model, is fixed by means of a collet in the central hole of one wheel.

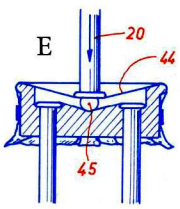
Diaphragm. Cut the neck off one of the balloons and cut the balloon along the fold to obtain two fairly flat pieces of rubber.

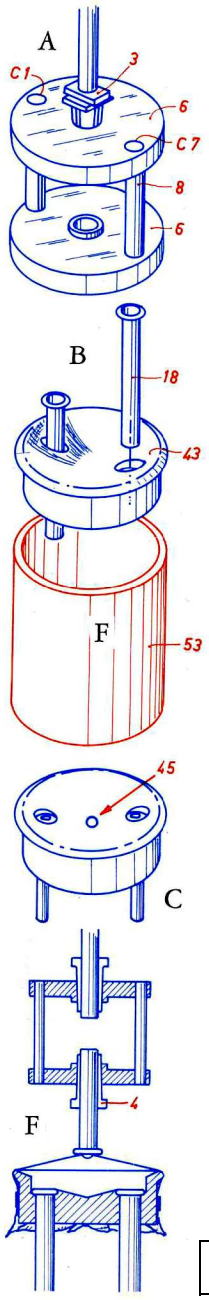
Diaphragm Housing (B). Push two 3 x 24 mm (No. 18) bushes through the two holes in the diaphragm housing (No. 43). Place this onto the supporting tube (No. 53).

The Diaphragm. First lay a steel ball (No. 45) on the diaphragm housing (C). Fix the diaphragm across the housing with a rubber band which should not be too tight (D).

The diaphragm should not crinkle yet not be taut. Then secure it by means of a second rubber band which should be quite taut. Remove the first rubber band.







Diaphragm Coupling (E). Take a 4 x 24 mm bush (No. 20) and place it, flange down, exactly in the centre of the diaphragm. Press down until the diaphragm with ball holds firmly in the bush. If the ball cannot be fixed properly, put an extra piece of balloon between bush and ball. If the ball still will not fit remove the diaphragm and push the bush onto it outside the housing.

Mounting. Mount the diaphragm housing on to the model with collets or clamping springs, supporting the bushes (No. 18) through the diaphragm by hand, if necessary. Then fix the 4 x 24 bush on the drive rod using a collet No. 24 (F). Further consult the Building Instructions.

Valves

A pump must contain valves in order to ensure that the water pumped up cannot flow back during the return movement of the diaphragm. The inlet and outlet valves are, however, of the same construction.

They consist of a length of plastic tubing (No. 28), a steel ball (No. 45) and two connecting pieces made of bushes or spindles.

The length of plastic tubing is shown on the construction drawings. The ball fits into this tube and the valve is sealed by pushing small pieces of rubber hose on to the 3 mm bushes or spindles before these are pressed into the plastic tube.

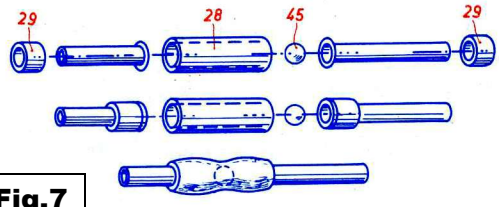


Fig.7

two for independent hoists. Levers engage/disengage each drum and there is a switch to reverse the Motor.

The 4th group is headed PUMPS with 6 models from D1 TWIN DIAPHRAGM PUMP on pp89-91, to D6 TRUCK WITH REVERSIBLE PUMP. All use 1 or 2 diaphragm units and in D6 the diaphragm stays still while the body oscillates. Two of the models caught my eye, a Double-acting Water Pump with 2 Diaphragm Housings, and an Electrical Dosage Pump which I don't fully understand. A number of the models would benefit from a paragraph explaining what is supposed to happen.

The next group is entitled CLOCKS but the first model is E1 SOS TRANSMITTER on pp102-103, the Motor driving a contact wheel which lights a Bulb to signal SOS in Morse. Then 5 pendulum Clocks which include two operated by a 'spring' of 6 Rubber Bands, and another is a timer with electrical contacts. The last model E6 SELF-WINDING CLOCK on pp118-121 is shown in Fig.8.

The final 9 models need an EE Electronic Set. They start with F1 MAGNETIC SIREN WITH EARPHONE on p123 and the others include two more Sirens and 3 Vehicles which react in some way when going into a dark area, by reducing speed and switching on lights for example. The final model F9 WHISTLE-CONTROLLED ELECTRIC CAR on pp134-5 stops when a whistle is blown and restarts after a few seconds.

p136 has 4 circuits which aren't needed for the models and 'It is up to you to find some uses for them.' C3 is blank and C4 has PHILIPS, the address, and the PR.

The 1201 With the new and coloured parts came a new approach to presenting the models. The manual was replaced by 11 huge (and unwieldy) sheets, 524*693mm, printed on both sides with drawings in colour, and folded into three to fit into the box. Of the 27 models, 24 are for Set 1201 alone, and 3 (Nos.25-27) need the 1250 as well, plus Pins from 1807 for two of them. Then there are 12 models for Sets 1201 plus the Electronic Set EE 1003.

For each of the 27 models there is a large drawing of it when completed and exploded views of different parts of it with most parts labelled with PNs. These detailed views are often smaller than they need be and too small to see the essential details easily. There are no model names and no text beyond the set & model numbers. The parts are shown on the back of one sheet together with drawings of basic constructions. Some of these are hard to understand but here the Leaflet mentioned earlier comes to the rescue with 'notes to help you to understand them'. Also listed in it are the names of all the models, which is a help in a few cases where it's not obvious what the model is meant to do.

The Motor is used in all but 2 of the 27 models and only 7

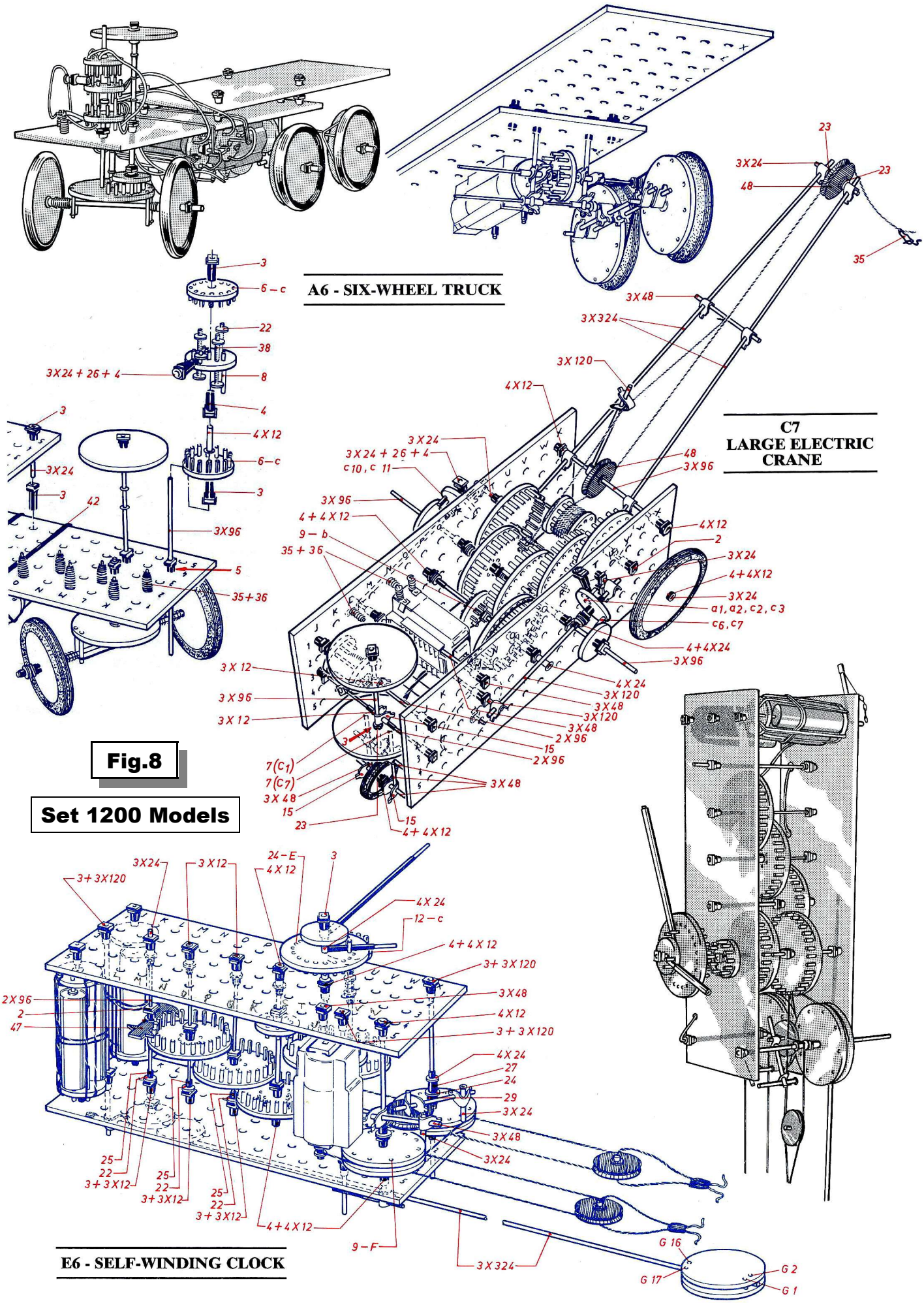


Fig.8

Set 1200 Models

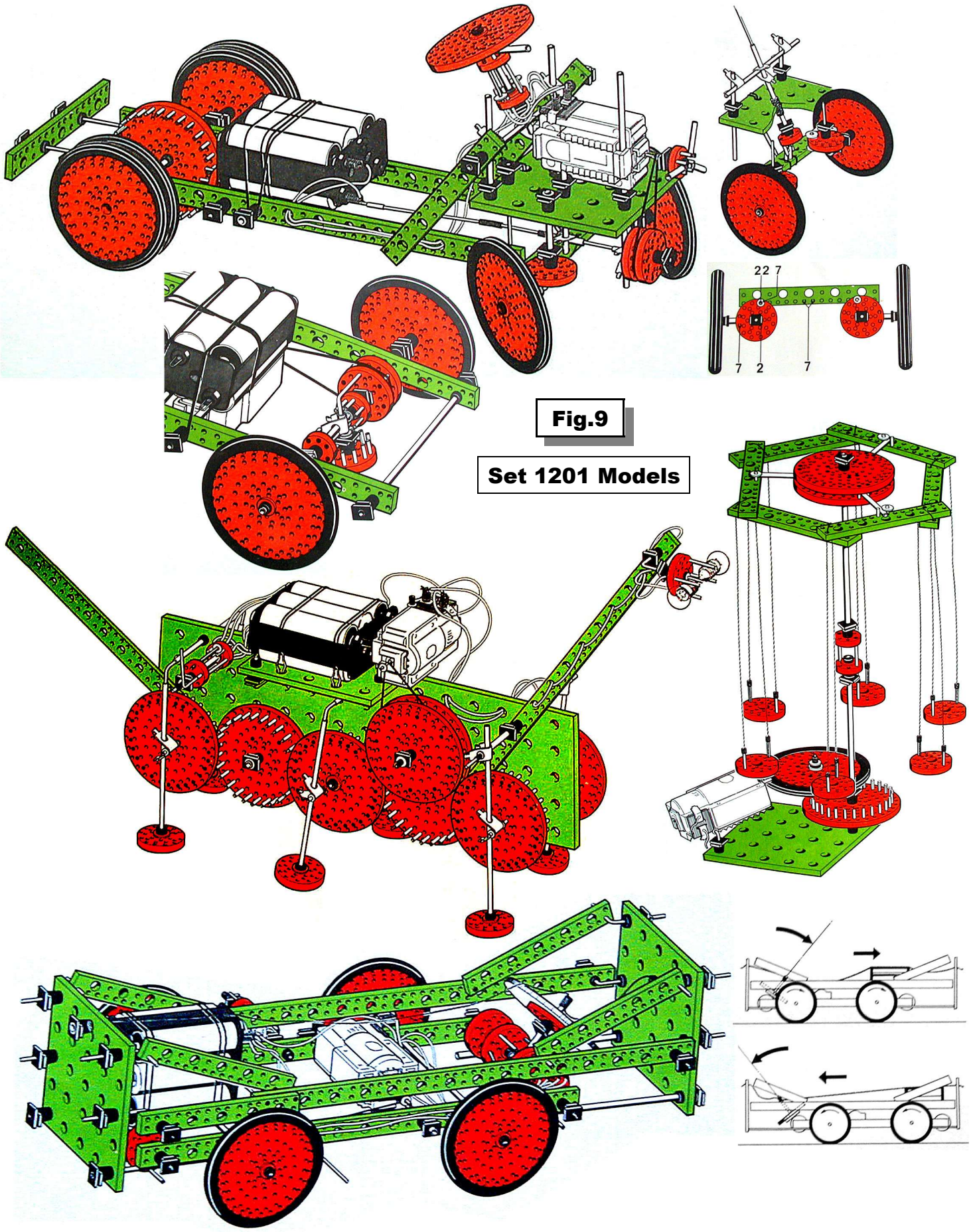
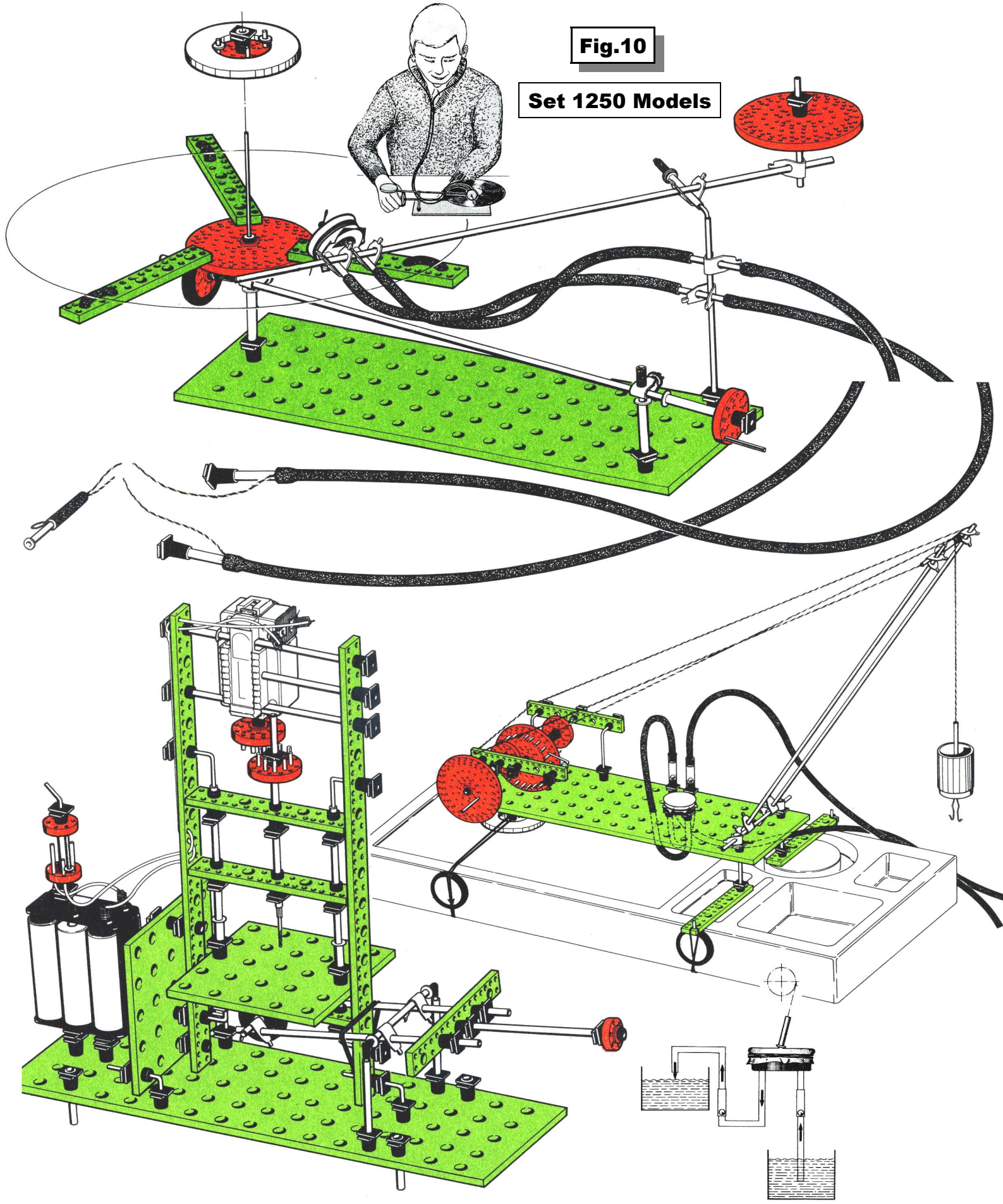


Fig.9

Set 1201 Models

have 1200 counterparts, although all these have been redesigned to use the new Plates and Strips, and some the functions differ a little. One improvement is that most of the Vehicles have Ackermann steering and one, No.13, has a differential. In general the models look more realistic and there is a much wider range of subjects. Some of the models are shown above, represented in most cases by just the main view, and that considerably reduced to around half full size. The Chassis at the top is No.05. Electric Car with Differential, but the final drive is actually a crown wheel & pinion. The



scrap view under it is the differential used in another Chassis, 13. Car with Universal Drive. The 'dinosaur' is 26. 6 Legged Walking Machine (with 2 Bulbs on its head), and the fairground model is 11. Merry Go Round. The final model is 22. Vehicle which reverses automatically on meeting an obstacle, and I think it functions as follows. The bottom Strips form the chassis which carries the Wheels, Motor, batteries, and a switch to reverse the Motor (at the right end in the main view)

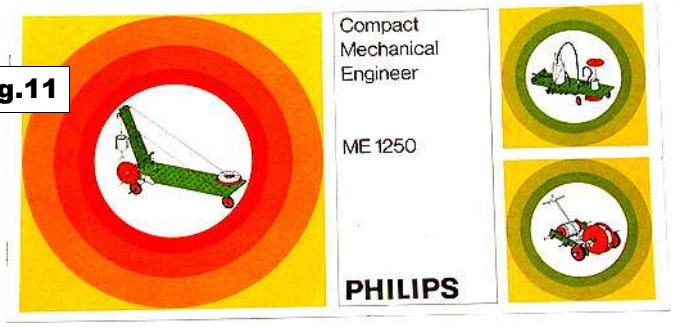
with a Supporting Ring #52 on its operating arm. Said chassis is free to slide along the Spindles at each bottom corner of the body and its inertia causes it to do so when the vehicle hits an obstacle. Then the switch is operated by the Cord which runs from end to end and is attached to the switch arm in between. The inertia of the Supporting Ring makes sure that the switching action is positive.

The other models include a Level Crossing Barrier; a Big Wheel; another Roundabout; a Bulldozer; various Cranes; a Self-winding Clock (similar to the the best of 1200 models), & a Car which avoids obstacles (it has 2 Large Wheels mounted horizontally on arms at either side of the front, and slightly ahead of it. Then one or other of them turns the car's single front wheel when it runs into a wall, say, at an oblique angle).

The 12 models which need the EE set mainly cover the same ground as the 1200 'F' models but for most only the layout of the electronic parts is shown and a drawing of how some of them are mounted. In the Leaflet it is said that full details are in the EE 1003 Manual.

The 1250 The instructions are in the same style as the 1201 but are in manual form, with 32 unnumbered pages, 169*342mm, plus covers (the front below). The Illustrated

Fig.11



Parts are on C2-p1 in the same style as the 1201 and the constructional details on pp2-4 are identical. For the latter to make sense there must have been a Leaflet similar to the one in the 1201. Using my names, the 31 models run from 1. Trolley on p5, to 31. Clock with Electrical Rewind on p31-C3. C4 has just the Philips logo and the PR.

12 of the models are hydraulic or pneumatic and only one of them follows on from a 1200 model. 5 are Pumps and 4 of the others are operated by squeezing a bulb (the Balloon #44). As with the 1201 there is a wide range of models including a Barrier and a Walking Machine, both bulb operated; a Record Player; a Tip Jet Rotor (used in some helicopters at the time); and a Floating Crane, using the polystyrene slab from the box as the floating base. The last three models, a Drilling Machine, a Motor-driven Pump, and a Clock, need Set 1201 as well, and the Clock also needs the extra Pins in Pack 1807 (it is not the same model as the 1201 No.25, and curiously to get the right gear ratio one Pin has to be omitted from a '6-tooth' pinion.) The Drilling Machine is the only machine tool model for any of the Sets and is shown in Fig.10 – as can be seen the Motor drives the spindle & the table can be raised and lowered. The other models in Fig.10 are the Record Player & the Floating Crane. The latter includes a pump (for the bilges?) and though the polystyrene slab corresponds in size to the 1250 item, the recesses shown don't match the one to hand. All the Fig.10 illustrations are actual size but are only the main ones for each model, with none of the exploded views. The latter are a reasonable size, unlike some of those on the Model Sheets.

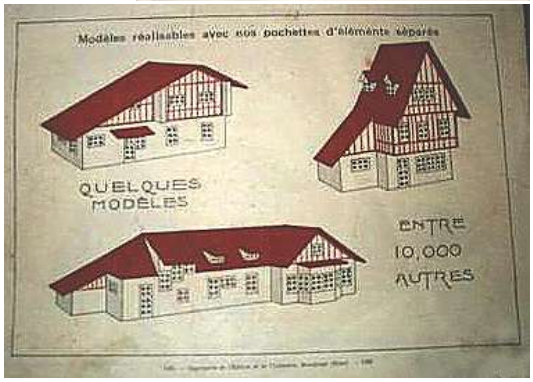
REMARKS An elegant system with 60 plus well made parts, and that so much can be achieved with them is a tribute to the ingenuity shown in their design, and in their use in the models. It would be ideal for the boy or girl with an enquiring mind, who has plenty of patience and perseverance (all those Pins and getting to grips with the instructions). But even then, though the models are adequately strong as demonstration pieces (or Clocks), I doubt that they would survive serious play for long. And though the pump demonstrates the principle well enough the somewhat meagre flow it produces (at least in my experience) might be a disappointment. And even when the system first came out my car tyres were tubeless, and all our taps had oval spouts, so the Rubber Plug couldn't be used to connect to them. But only minor problems for the resourceful youngster no doubt.

The dull look of the 1200 models and their lack of realism was overcome to a fair degree with the later sets, but the attempt to improve the presentation of the instructions was less successful. The 1250 manual was generally reasonable but the 1201 Sheets were merely the lesser of two evils compared to the 1200 manual. Their size means having two of them (one for the model and one showing the parts) on the floor or on a large table, and often having to leaning over them to try to follow the intricacies of assembly from the usually far too small exploded views. Even trying to find one particular model in a pile of Sheets which all look the same is tiresome.

Was there an alternative to the Sheets? It looks to me that 2 facing pages in a manual with pages a little deeper than the 1250 size, would have given enough room for a large enough view of the completed model, and all the exploded views at a sensible size, with a zigzag cut in them if necessary.

PHILIPS: S8 **OSN 39/1194**

Snippet. 'New' System: ARCHITECTOR The set shown here contains cardboard Panels and metal Plates & Brackets, with Bifurcated Paper Clips to join them all together. The Ebay notes on the Set included 'Paris 1929' and this is credible because the parts and models clearly relate to the 1927 French patent described in 13/359. In concept the parts are comparable to the WW1 BUILDO system (see 11/274). The box, 39*28cm, has a red lid with a label very similar to the manual cover right. By scaling the holes might be at about 15mm pitch and each storey about 10cm high. The manual has 15 pages and the three models on the single page shown, right, need some extra parts said to be available in 'pochettes'.



ARCHITECTOR: S1 **OSN 39/1194**

Fig.1

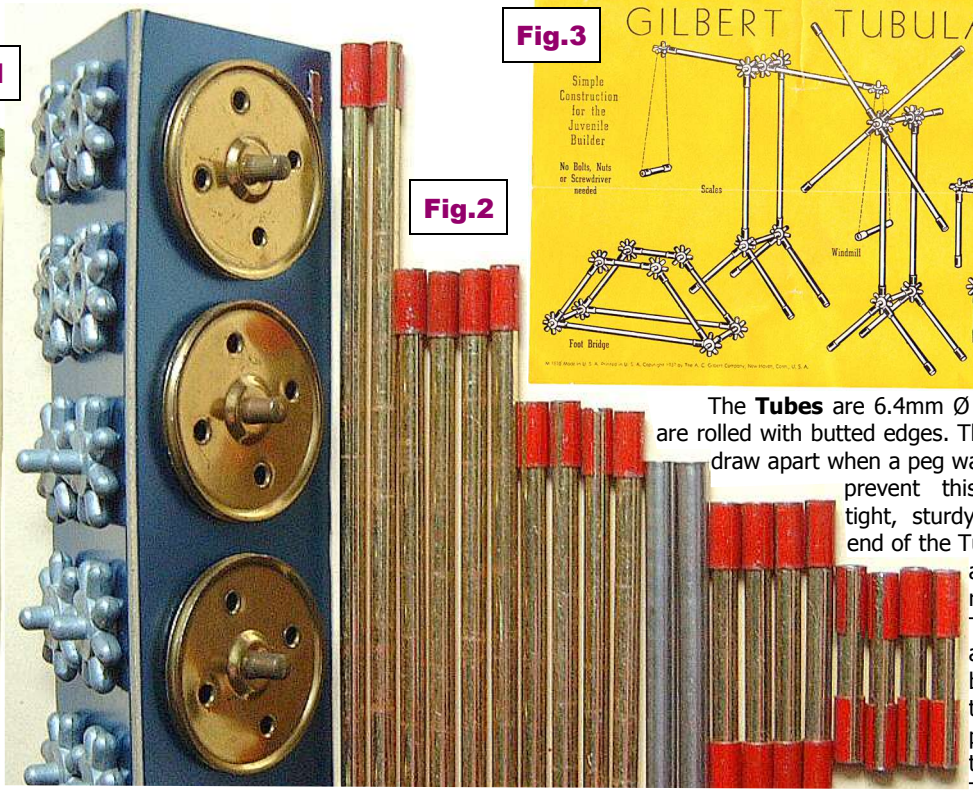


Fig.2

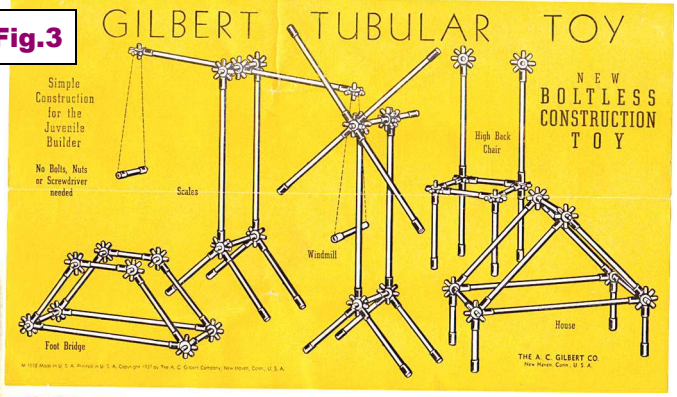


Fig.3

'New'System: GILBERT TUBULAR TOY

by Jacques Pitrat

The Gilbert Tubular Toy was manufactured by the A.C.Gilbert Company, & one of the model sheets has copyright 1937 on it. It is a simple 'boltless' metal construction toy with 3 kinds of part: Connectors & Pulleys, both of which have pegs on them which push into Tubes. They can be seen in Fig.1, behind the set's transparent casing, & Fig.2, the (truncated) contents.

The **Connector** is die-cast alloy, a disc with 8 radial pegs. Its diameter, over the pegs, is 30mm. Four of these Connectors have a centre hole larger enough to allow any of the Tubes to pass through; the other eight have 2 pegs in the centre, one on each side.

The **Tubes** are 6.4mm Ø brassed steel, and are rolled with butted edges. These would tend to draw apart when a peg was pushed in and to prevent this, and ensure a tight, sturdy connection, each end of the Tube is overlaid with a 16 mm long red rolled steel tube. These red tubes are not meant to be re-moved and to do so would probably damage the base tube. There are 5 lengths of Tubes: 237 mm (2), 162mm (4), 110 mm (4), 73 mm (4), and 47 mm (4). There are also two 89mm plain steel Tubes without red end tubes - their wall thickness is greater than the other Tubes.

The diameter of the 4 brassed steel **Pulleys** is 52 mm, and they have a peg on either side at the centre. Their four face holes are not used in the models.

The **packaging** is a 268mm plastic tube of 78mm diameter, with green wooden ends (Fig.1). A 4mm metal rod is fixed in the lower end and passes through the upper end; then the tube is closed by a blue wooden ball but although the end of the rod is threaded, the hole in the ball is not, so it cannot be firmly tightened.

The Pulleys & Connectors are fixed with their pegs (or clips for the Connectors with a hole) to a blue cardboard insert. This insert is folded into an equilateral triangle fastened with 2 Erector T clips. The Tubes pack into the space between its third (empty) face & the outside of the tube.

The two 135*230mm yellow **Model Sheets**, printed on both sides, are folded to fit inside the triangle. There are 24 simple models in all without any instructions explaining how to use the parts. Fig.3 is the front of one sheet, & Fig.4 shows a selection of the models which use the Pulleys, near f-s. In the Scooter the 3 horizontal & 2 vertical Tubes seem to be tied together in some way, but no cord was found in the Set. Other models include a Hoist & a simple Crane.

Remarks The Set was obviously intended for young children and in principle all the models can be built and dismantled quickly. But in practice there are problems, the pegs vary slightly in size & whereas some are very difficult to push into the Tubes, even for an adult, some turn freely, particularly in the 89mm Tubes. Fitting the tight ones becomes a little easier with use but even so these defects may well explain why this system is little known and was no doubt short-lived. But Gilbert had faith in the concept and launched a similar, more successful version around 1950, JUNIOR ERECTOR (not to be confused with the wooden ERECTOR JUNIOR), this time with the parts made of plastic.

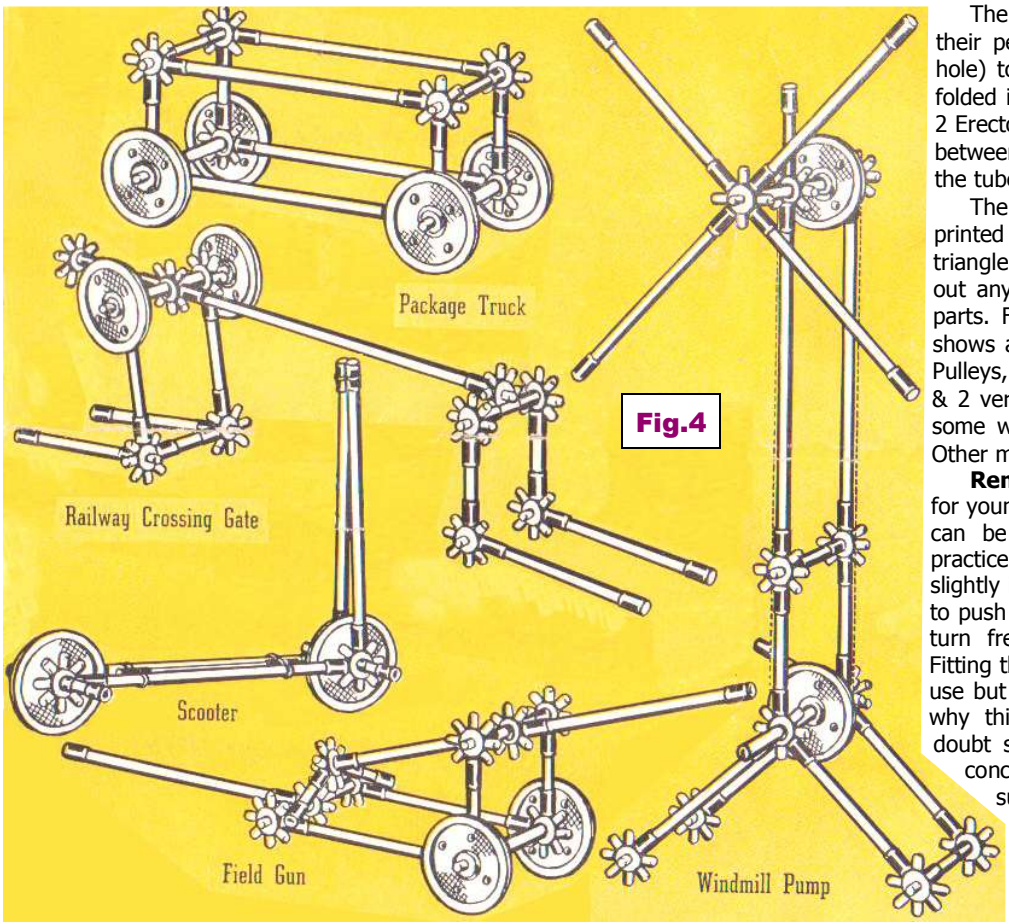


Fig.4