

EDITORIAL I always carefully file away anything that I'm sent about systems which are mainly composed of wooden or plastic parts, even though there isn't usually room in OSN to do more than mention them briefly. At least then readers know what I have and I can pass details on to anyone who's interested. I've generally included such items in the 'Letters' section but for the future I thought it would be better to have all of them in a separate column. Having said that, this Issue is so full that I've not been able to find room for anything on them, but the new section will I hope be in OSN 13, along with one or two other pieces that have had to be held over.

My apologies if this Issue is late, preparation

has been delayed by over a month while I recovered from an unexpected operation. And even when you get this I may not have entirely caught up with answering letters, but I hope to do so before too long.

Overseas letters usually arrive intact but from time to time, and there have been several recently, envelopes containing parts, photos, or even those packed full of folded papers, turn up with an end open, apparently abraded through. I don't think anything has been lost so far, but as a precaution in such cases, it may be worth reinforcing the ends with strips of Scotch tape, which seems to prevent the problem occurring.

Please see p315 for more details.

N° 69. Pèse-lettres
 4 pièces n° 3
 10 — n° 6
 22 — n° 9
 12 — n° 12
 4 — n° 18
 2 — n° 27
 46 — A
 30 — B
 7 — BB
 1 — E

N° 62. Cheval
 10 pièces n° 3
 2 — n° 6
 8 — n° 9
 4 — n° 15
 22 — A
 13 — B

N° 23. Patinette
 14 pièces n° 3
 4 — n° 6
 4 — n° 12
 4 — n° 15
 20 — A
 13 — B
 2 — BB
 2 roues

N° 55. Pas du géant
 14 p. n° 3
 14 — n° 9
 14 — n° 12
 2 — n° 24
 41 — A
 23 — B
 4 — BB

N° 43. Chaise
 4 pièces n° 3
 18 — n° 6
 4 — n° 15
 24 — A
 18 — B

N° 67. Charrette
 12 pièces n° 3
 16 — n° 6
 8 — n° 9
 6 — n° 12
 8 — n° 15
 6 — n° 18
 58 — A
 33 — B
 5 — BB
 4 roues

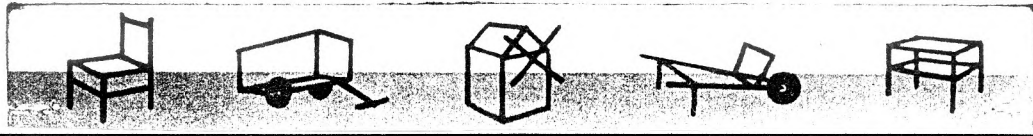
N° 59. Monoplan
 22 pièces n° 3
 12 — n° 6
 4 — n° 9
 8 — n° 21
 4 — n° 30
 38 — A
 29 — B
 1 — C
 2 roues

N° 68. Moulin
 12 p. n° 3
 10 — n° 6
 4 — n° 9
 16 — n° 15
 4 — n° 18
 4 — n° 21
 4 — n° 24
 43 — A
 35 — B
 2 — BB
 2 — E

AJUSTO

NOUVEAU JEU DE CONSTRUCTION

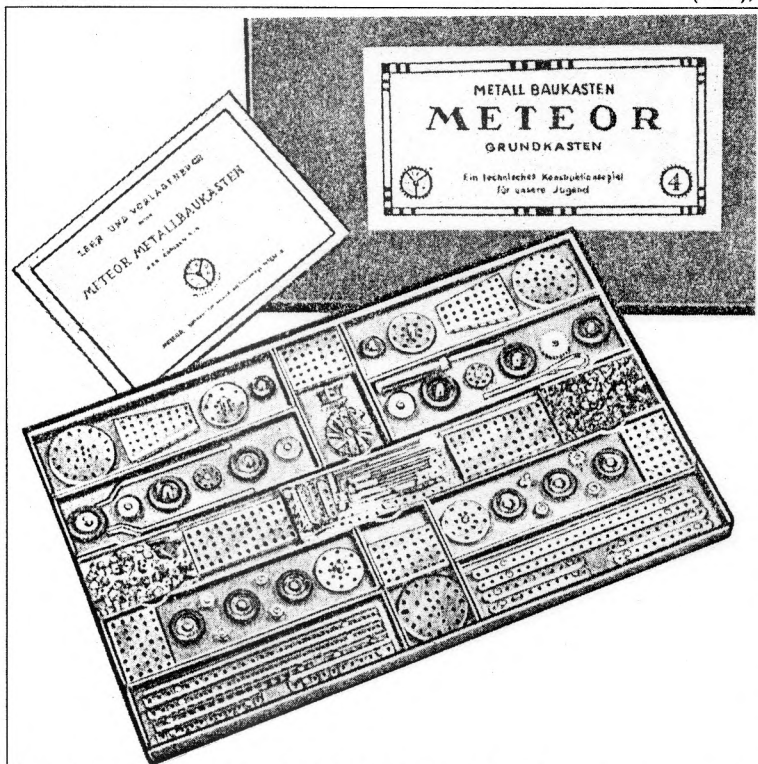
BOIS ET MÉTAL



METEOR FROM VIENNA The name has been known for a long time but with no details at all. Then recently Clive Weston acquired a #3 Set and was good enough to let me examine it and lend me the manuals. If one only saw the latter it would appear that METEOR is nothing more than an exact copy of MÄRKLIN. There are a few very minor differences but otherwise it looks as if the same 1930s printing blocks have been used for the models and the Illustrated Parts. The same PNs are used, and the Contents are nearly the same too.

The parts however are quite different, tiny with a hole pitch of 8mm, and even though most are more or less scaled down versions of MÄRKLIN, they don't look like it because the holes at 3.5mm are larger in proportion, as are the bosses. The colours differ too, with nickel plated Strips and A/Gs, and red and blue Plates.

THE SETS Four outfits are listed in the manuals, Nos. 1-4, with linking 'A' sets. Their contents are almost identical to those shown in two MÄRKLIN manuals to hand, for 1931 and '39. The main differences arise from parts that are not included in the METEOR system, Spring Clips (and therefore more Collars are included), the MÄRKLIN 'pastry cutter' Gear Rings, Ships' Funnels, and the large Propellor. Also although the parts are shown in the Illustrated Parts, no Cord or Spring Cord are listed for the sets. One last difference, the number of N&B for Set 4 has been reduced from 175 to 150.



Unterteilung der „Meteor“ Metallbaukasten: Grundkasten 1, 2, 3 und 4 / Ergänzungskasten 1 a, 2 a und 3 a / Zusatzkasten für den Autobau Nr. 101 Elektro Versuchs-Baukasten Nr. 401

Clive's Set is packed in a dark green box measuring 20x10x1", with a large white label stuck on the lid (above). This carries a design in red which is very similar, apart from the colour, and the METEOR logo in the bottom left corner, to that used by MÄRKLIN (and MECCANO) in the 20s and 30s for their linking outfits. The inside is orange and there are card boxes for the small parts, while the larger ones are held on card trays by bifurcated clips. There are 4 parts in the Set that are not mentioned anywhere in the manuals: a Strip formed into a 4x1-hole Bracket and 3 rather unusual Flexible Plates described later. They match in with the other

parts but it is I suppose possible that they were not in the original Set, but were later additions to the METEOR range.

THE PARTS The illustrations of nearly all the parts in the Manual are identical to those in the two 1930s MÄRKLIN manuals, although the range of parts for METEOR is smaller. (The only changes to the MÄRKLIN illustrations is that the holes/slots in the faces of Gears, Sprockets and Pulleys have been shaded over, although their outline can still be seen in most cases.) MCS doesn't contain an 'Illustrated Parts' from the 1930s to use as a reference but the 1949 version that is given [FB (B) p3/4], is nearly as good, just ignore all the Flexible Plates #163-180 which hadn't been introduced prewar, and the 1300-series electrical parts. Also in the 30s there was only one size of Gear #31, with 96 teeth.

Apart from those already mentioned, the parts that weren't in the METEOR system were mainly those which were not included in any MÄRKLIN sets, such as most of the 3-hole wide Flanged Plates, the Bevels, the Spoked Wheel, the Racks and Lead Screws, and many of the special brackets and plates. Also a number of the circular parts that were only in the larger MÄRKLIN outfits, the large Circular Flanged Plate and the Flanged Rings for example. One surprising omission, a part in all the equivalent MÄRKLIN sets, was the Windmill Sail. There are three METEOR parts which are not in the '49 List, an '0' gauge Wheel/Axle Set (#80), a shorter Crank Handle (19a), and a 2x1x2 Double Bracket with Boss (#44a - in MCS only the later style #44, which has 3 holes each side and no boss, is listed).

In all there were 156 METEOR parts of which only about 68 were packed in the sets. The others included all the many lengths of Strip, Angle and Flat Girders that were listed by MÄRKLIN at that time; the 38, 57, and 96t Gears; the Pinions and Pulley with dog clutch bosses; and the 5 lengths of MÄRKLIN style Braced Girder.

Notes on the parts found in the #3 Set follow, with any differences in basic design from the equivalent MÄRKLIN part, as shown in the 1949 List, noted.

DATA (in mm) Strip (9-hole): •Hole pitch/dia, 8.0/3.5; •width, 8.1; •thickness, .8; •ends near fully radiused. Boss: •o/d, 6.95; •i/d, 3.50; •natural aluminium; •single tapped. Thread: M3. Axle Dia: 3.37. DP (Mod): approx 60 (.42). Nut: hex 5.4 A/F, plain steel. Bolt: cheesehead with slight taper, 5.5 dia, plain steel.

- All elongated holes are 5mm long. The corners of Flanged and Flexible Plates are slightly rounded.
- The arms of the A/G are both about 8.3mm wide and .6mm thick; the corners are slightly rounded.
- The Bolts are 5mm u/h; Nuts are the pressed sort, slightly irregular, about 1.8mm thick; Washers are 8mm dia and have a brown metallic finish.

- Axles and Crank Handles are unplated and have square, sheared ends. The Crank Handle is 127mm o/a with the handle part about 12mm long.

- The o/d of the Circular Flanged Plate (#66) is 57.5mm and it is painted blue; it has no holes in its flange. The Flanged Pulley (#67) is 40mm dia and is nickelled, there are 8 holes in the outer ring and no slots. The 'V' of the 23mm dia Pulley #21 is 4.3mm wide; it is nickel on one side and red on the other. #22 is 17.5mm o/d and is brass plated one side and blue on the reverse; the (black rubber)

Tyre for it measures 31mm o/a when fitted. The small Pulley without boss is 12mm o/d and is made of aluminium.

- Flanged Plates are red. The ends of the Sector Plate are straight.

- The three Flexible Plates are 9 thou thick and basically have holes all around their edges, but all have peculiarities. The 32mm 3-hole side of the 5x3h has a hole spacing of 12mm, that is one central hole between 2 holes 24mm apart. It is red one side and brass on t'other. The 9x5h has all slotted holes (lengthways) except for the centre five of each long side. The 11(nominal)x5h has no centre hole on each on its long sides. These last two sizes are blue on one side and brass on the reverse.

- Only the 19t Pinion and the Worm had survived in the Set and both are aluminium. The Pinion's dia is 8.7mm and since it has the same number of teeth as the MÄRKLIN part of 13mm dia, the pitch of the teeth are quite fine. It is 10mm long with a tooth face of 4mm. The Worm is 14.5mm long o/a and its o/d is 8.8mm.

- The Coupling and Collar are also aluminium and are the same dia as the bosses. The former is 19mm long o/a and the only two transverse holes are about 10.2mm apart and both are tapped right through. The Collar is 5mm long and single tapped.

- The DAS are nickel plated and the 1x5x1 is MÄRKLIN pattern with round holes in the lugs and the outer ones of the 5 elongated. There is also a 1x2x1 with all round holes.

- All brackets are nickelled except the Flat Bracket which is made of aluminium. The Double Bracket is 14mm wide.

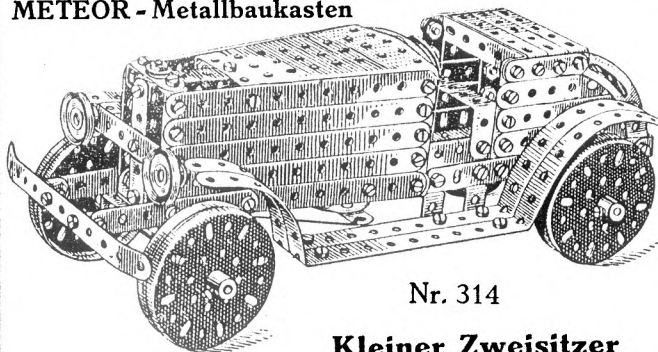
- Other nickel parts are The Bush Wheel (24mm dia), and the two types of Pawl. The Curved Strip (#110) is brass plated. The Spanner is steel (possibly nickelled) and is single ended; it is about 60mm long and the base of the jaws is curved.

- All the parts are well made and finished.

THE MODELS As indicated earlier the models shown are virtually identical to those in 1930s MÄRKLIN manuals. The only differences are that in a few cases the name 'MÄRKLIN' that appeared on the side of vehicles has been obliterated, and the Parts Lists have been changed where necessary, to reflect the replacement of Spring Clips by Collars for example. Said Clips are still shown in the illustrations though. Where Spring Cord was originally called for, it has simply been removed from the List. Although a good selection of models are included, there are not nearly as many as in the MÄRKLIN manuals of the day. Some of those left out were not feasible in METEOR because there were no Gear Rings.

There is nothing to date the Set but on the cover of the Manuals is 'Sixth Revised Edition'. Nearly all the models in the MÄRKLIN 1931 manual were unchanged in the 1939

METEOR - Metallbaukasten



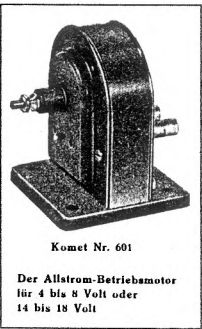
Nr. 314

Kleiner Zweisitzer

Mit Baukasten Nr. 3 oder 2 + 2 A gebaut

edition, but a few were updated and where these have been included as METEOR models, some are the '31 version and some are from 1939. So unless something strange happened, it seems that METEOR dates from around the mid 1930s, probably well before MÄRKLIN's own miniature system, MINEX, appeared in 1939.

MOTORS AND OTHER SETS The 'Komet Nr. 601' motor is advertised in both manuals, though not shown powering any models. It is said in the '1-2' Manual to be for 4-8v ac/dc, and in the '3-4', 'or for 14-18v'.



Komet Nr. 601

Der Allstrom-Betriebsmotor für 4 bis 8 Volt oder 14 bis 18 Volt

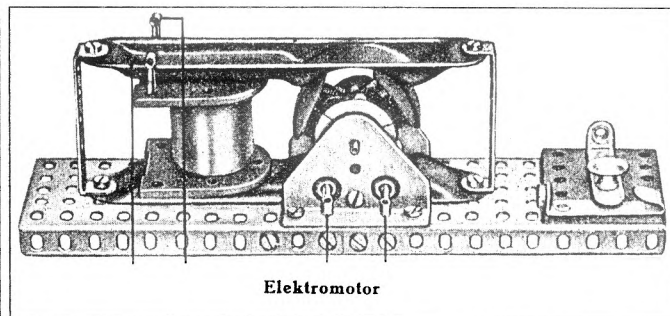
In both Manuals there is mention of an add-on Set, Autobau Nr. 101, but with no details at all. There's also an Electrical Outfit, METEOR ELEKTRO, Nr. 401, with a photo of it in the 1-2 Manual and 2 pages showing 6 models in the 3-4. (It's actually called Nr. 410 in one place in the 3-4 but that's no doubt an error.) The parts look similar to MÄRKLIN ELEX but some have not been completely scaled down. The Coil for instance, and the special Trunnion is 5



Elektro Versuchs-Baukasten Nr. 401

Ein Lehrgang v. Magnetismus bis zur Fernmelde Technik

holes wide instead of 3. The models shown are typical ELEX but with some redesign to allow for the METEOR parts. From the photo of the Outfit it appears that the contents don't correspond exactly with any of the ELEX Sets, more Flanged Plates and Trunnions can be seen for example, but the Telephones in the largest ELEX Set are certainly absent.



Elektromotor

SUMMARY OF MANUAL. #Name: METEOR-METALLBAUKASTEN. #Details of maker: METEOR, WIEN · X. #Dates &/or Ref Nos: 6th revised edition on cover. #Page size: 246x170mm deep. #No of pages: 40 + covers. #Language: German. #Printing: all black on white, models are line drawings. #Page Nos of Parts List & highest PN: 36-39,

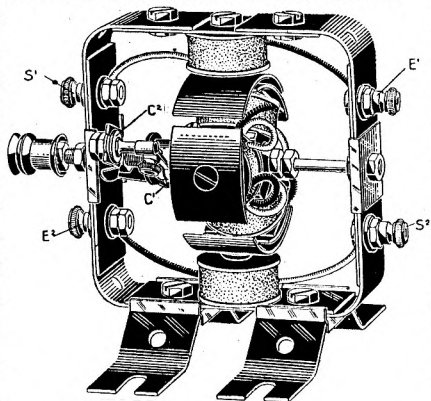
209/22. #Page Nos. of Set Contents & highest PN: 40 & IBC, 153a. #Sets covered: 1,2. #No. of models for each set: 28,32. #Name, Model No., Page No. of first & last model of each set: 1: Transmission, 1, 9; Fußtrittpresse,28,16.



2: Fahrbare Treppenleiter mit Plattform,201,17; Autolastwagen mit Verdeck,232,35. #Other notes: MÄRKLIN-style standard constructions A-Z3 are shown on pp3-8. There is an ad for an Electrical Set #401 on p1, with photo.

SUMMARY OF MANUAL (only details which differ from those above are given) #No Parts List or Set Contents. #Sets covered: 3,4. #No. of models for each set: 31,16. #Name, Model No, Page No of first & last model of each set: 3: Verladebrücke mit Portalkran,301,1; Buchdruckerpresse,331,20. 4: Eisenbahnbrücke,401,21; Friktions-Spindelpresse,416,37. #Other notes: an Electrical Set #410 is described on pp38-39, and 6 models are shown. There is an ad for 'Metallum' batteries on the IBC.

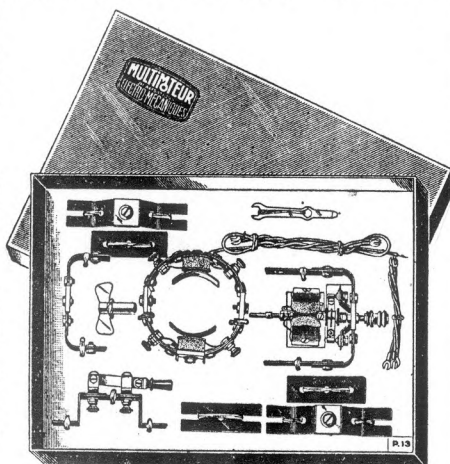
SOME NOTES ON MULTIMOTEUR Thomas Keel was kind enough to send me a copy of a manual for the 'Prospection' Outfit, which, together with the MCS entry, provides one or two items of interest. For those without MCS, there were 9 'Groupes' in the MULTIMOTEUR (MMR hereafter) range, called Prospection, Diffusion, 1^{er} Cycle, 2^e Cycle, Alimentation, Appareillage, Mécanique, Éclairage, and 3^e Cycle. These might mean Prospecting (?), Distribution (or Broadcasting though that isn't mentioned anywhere), 1st and 2nd Cycle, Supply, Installation, Mechanical, Lighting, 3rd Cycle. Some of these make sense in terms of the long list of electrical machines and equipments that it is claimed can be made with MMR, but what exactly the 'Cycles' indicate I don't know, and the 'Prospecting' Manual actually gives instructions for making a knife switch, and 2 motors that are similar to one another in principle. The one not in MCS is shown opposite. There are some 170 parts listed in MCS, with a great variety of brackets, discs, and small fittings which use 4 different threads from 2 to 4.5mm dia. Coils come ready wound, as does the 3-pole rotor for the motors, and complete with commutator.



MOTEUR 3
(Culasse carrée - Arbre horizontal)

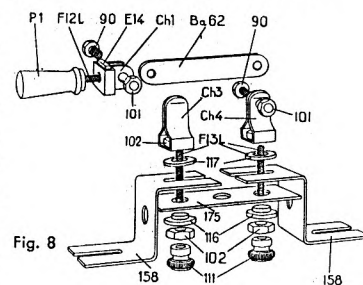
The only parts which really look mechanical are the 17 gears (Mod. 0.75). These are unusual, there are 4 Pinions 3mm thick (9-18t), with bores threaded 4.5mm, and 13 Gears 1.5mm thick (21-60t) with plain bores. None had bosses and nuts were used to lock them on special bored out bolts or threaded sleeves. Both of these were available in 3 lengths so that multiple gears could be made up. They were also supplied in two forms, one a tight fit on the 3mm shafts used, and one a running fit. The former are shown with shaped split ends which could be tightened onto the shaft using a special (collet) nut.

Going to the Manual, it has 12 pages, including covers, of about A4 size. The front cover is as in MCS but at the bottom, (probably cut off in the copying for MCS) is 'P 13'. This seems to be the number of the Set, because inside (opposite) there's an illustration of it bear-



ing the same number. As can be seen many of the parts come ready assembled although some would have to be taken apart to make the second motor.

There is a fairly lengthy introduction along the lines of being up to date, and preparing for the future by learning about all aspects of electricity, at minimal expense, and as you amuse yourself with the splendid MMR Outfits. It goes on to say that the 'le Groupe Prospection' is the simplest and includes bells, telegraph transmitters and receivers, télégraphie optique, and the two types of motor shown in this Manual. It's possible that there were additional manuals that went with the P 13 Set, 3 for example ('Album 1-3') are shown with Diffusion Outfit illustrated in MCS. But the P 13 Set looks as if it contains only those parts needed for the switch and motors already mentioned, and this is confirmed by the Illustrated Parts in the Manual, which is headed 'Materials and Tools (P 13)', and shows only the 55 items used in this P 13 Manual. These by the way include 10 or so small parts not shown in MCS, and all have a prefix letter before a number which doesn't usually relate to the equivalent part without the prefix. One exception is the Coil #125 which has the same illustration as in MCS but is labelled 125 P and 125 bis. Most of the other new parts are used in the knife switch opposite.



So perhaps there was more than one set in the Prospection group, and perhaps in the other groups. But what does 'P 13' indicate, if anything? 'P' for Prospection maybe, but it's hard to believe that there were 13 sets in that group.

The manual contains excellent overall and exploded views of the motors. The first is 'Moteur 5' and there's also a version of it, called 'Moteur 6' with the armature shaft vertical and suitably modified mounting feet. The second motor is 'Moteur 3' and is electrically similar to #5, and again there is a version with the shaft vertical, probably Moteur 4, but the number has got cut off in the photocopying. All are shown connected to dry cells giving 9v, or to 10-12v ac from a transformer, and are rated for intermittent use only. To reverse the motors the electrical connections have to be changed, the knife switch is used for on/off only. No attempt is made to give any explanation of how an electric motor works.

MCS gives the end date for MMR as 1947, but no start date. On p2 of this Manual is, 'Copyright 1940 by Maurice Latour et Louis-Pierre Montchanin'.

UK PATENTS

I asked David Hobson some questions about patents and his replies, summarised below, are I think of general interest.

From 1852 to 1915 patents were annually numbered, starting at 1 each year, and it is therefore necessary to quote the year as well as the number of the patent specification, e.g. 3646 of 1913. From 1916 to date, UK patents have been numbered in a continuous sequence from 100,001. However sometimes a year is still added, e.g. 1,020,015 (1963). Each application for a patent is given an Application No. which starts at No.1 each year: under the old system the year again needed to be added e.g. 3479/1916, but since 1976 the first 2 digits of a 7 digit number are used to indicate the year, so the first application in 1994 would be numbered 9400001.

Under the old scheme, it was usual (but not compulsory) to make a 'Provisional Application', and then 12 months were allowed to decide the exact claims, before a 'Complete Specification' had to be submitted to the Patent Office. This was then examined and if a patent was granted, it was published with any amendments that were necessary. Under the current system an application is filed, and the specification is subject to a preliminary examination before being published as document 'A'. If the inventor wishes to proceed, a thorough or 'substantive' examination is made, and if a patent is granted the specification is published a second time, with any necessary amendments, as document 'B'. Also under this system it is now possible to file a single application for a European Patent, which can give cover in up to 14 countries, rather than having to make multiple applications. UK patents used to be valid for 16 years (starting from the date of filing the 'Complete Specification'), but to harmonise with agreed European practice, the period is now 20 years from when the application was first filed, .

Inventions can only be patented if they have been kept secret until the application is made. Once the application has been examined and accepted by the Patent Office, the specification will be published, and this effectively blocks anybody else from patenting the same invention. Patents once granted only remain valid and in force if annual renewal fees are paid, and if the patent is not being worked it will tend to be abandoned. Only a few percent of all patents survive to their full term. A patent cannot be kept in force simply by paying the fees, if it is not being worked, merely to stop others from benefiting from the invention. After 3 years a third party can apply for a compulsory license to use an invention if it can be shown that it has not been worked.

The various dates and other information which are shown at the head of patent specifications are sometimes very useful in tracing historical developments. For instance, many of the older UK patents which are of interest were granted to applicants from overseas, particularly to French and German nationals. Under the International Convention, an applicant can apply for a patent in a number of foreign countries, and have the advantage of being granted the original priority date of the first filing in his own country. The application in foreign countries must be made within 12 months of the original filing date, and this date is sometimes marked 'Convention Date'.

On the question of what can be patented, yes, inventions which are granted patent cover do sometimes seem obvious. However there is considerable scope for what is allowable as an 'inventive step'. In fact, the invention often turns

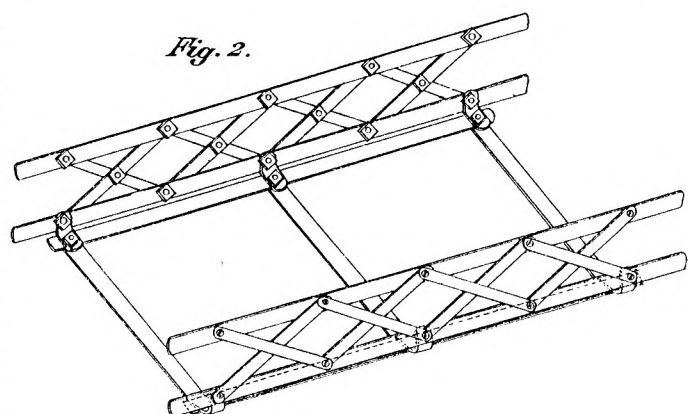
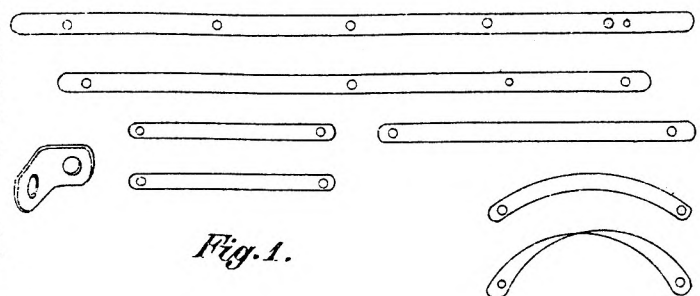
out to be a combination of known articles, or the application of a 'new' technique to an old article. Strictly such inventions are not patentable, but there is no absolute way of testing for novelty, and what is allowed is often a matter of opinion. In fact UK patent specifications were only officially examined for novelty before grant, from 1905 onwards. Patents can still be challenged even after grant of course.

As indicated above many patents deal with improvements rather than something completely new. Frank Hornby's first Patent of 1901 for example is titled 'Improvements in Toy or Educational Devices for Children and Young People', and in this case the basic article - a constructional building set based on metal strips which are joined together by nuts and bolts - had been described before. One such was a Patent of 1895 to Emil Jeness (see later), and Hornby's invention was to improve the basic article by providing strips which have a plurality of equidistant holes, and this greatly enhances the versatility. The inclusion of wheels and axles was also a fundamental improvement.

THE JENESS 1895 PATENT Emil Jeness was a locksmith of Lübeck, in the 'Empire of Germany' and his Patent (No.10,040) is called 'A Method of Preparing Frame Models of Various Structures'. It is said to be particularly suitable for 'children and unoccupied persons', and 'there is no end to the models which may be formed'. There may be a corresponding German patent but the International Convention is not mentioned.

Metal is the preferred material for the parts although whale bone is also suggested, and they were to be simple strips (of any length, width and thickness) and angle pieces, with holes formed in them, preferably near the ends. The examples in the patent are shown below (Fig 1). The parts were to be 'fastened together in any conceivable shape or form' by means of 'tiny screws and nuts'.

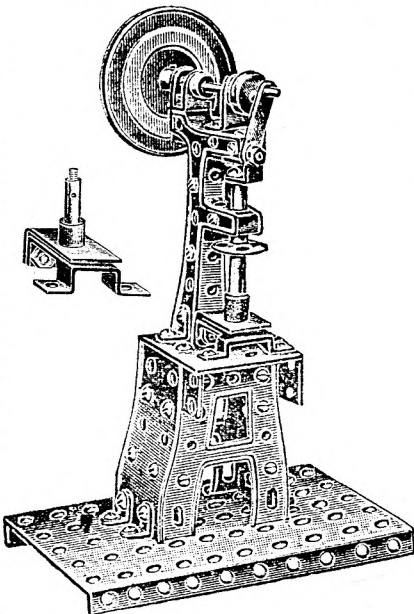
The bridge section below (Fig 2) is shown as an example and interestingly the longer strips have a series of regularly spaced holes, but this feature is not mentioned or claimed. The diagonals on one side are bolted together where they cross, and for that it looks as if one of the two short strips shown among the individual parts ought to have had a central hole.



3 NEW SYSTEMS FROM CONSTRUCTORAMA

Jeannot Buteux kindly sent some details of these rather unusual systems, taken from the Constructorama archive. Lack of space prevents full particulars being given here, especially of the individual parts, but everything available is included in MCS Extra Sheets, details on page 331.

The first, **MABA**, is (West) German from the 1950s, made by H. Hülter of Iserlohn. The parts are specifically intended to allow the construction of realistic looking machine tools. No other types of model are shown in the manual for the only set known, a No. IV. The Press below gives a fair idea of the over 50 different parts in the system, notice the upper and lower shaped Side Frames, and the formed Side Plates joining the base Frames. The hole spacing is 15mm although 13.4 is also used in some parts; two sizes of hole are also found, 4mm and 5mm. Axles are 3.9mm in diameter.



Other parts not used in the Press include a number of special Brackets and small Plates and fittings, several smaller Pulleys, two types of Triple Pulleys, and a Circular Saw. Hex Nuts and 3 lengths of roundheaded Bolts are shown. Surprisingly perhaps there is no mention of a motor to drive the models. Most of the parts are steel and are very well made; the majority have a black metallic finish but Pulleys, Axles, and N&B are nickel plated.

The second system, **KINEMA**, is again German, and was made by RADA of Frankfurt am Main in the late 1940s and 1950s. The main elements are 14 Tubes, of about 6mm dia and from 15 to 300mm long. They have a series of 1.5mm holes through them, spaced at an estimated 10mm

apart, to allow them to be held together by Split Pins. Alternatively joints can be made by inserting the ends of the Tubes into various Unions, right angle, 'T', angled, 4-way, etc. There are also end fittings for the Tubes and other parts which slide over them or clamp onto them.

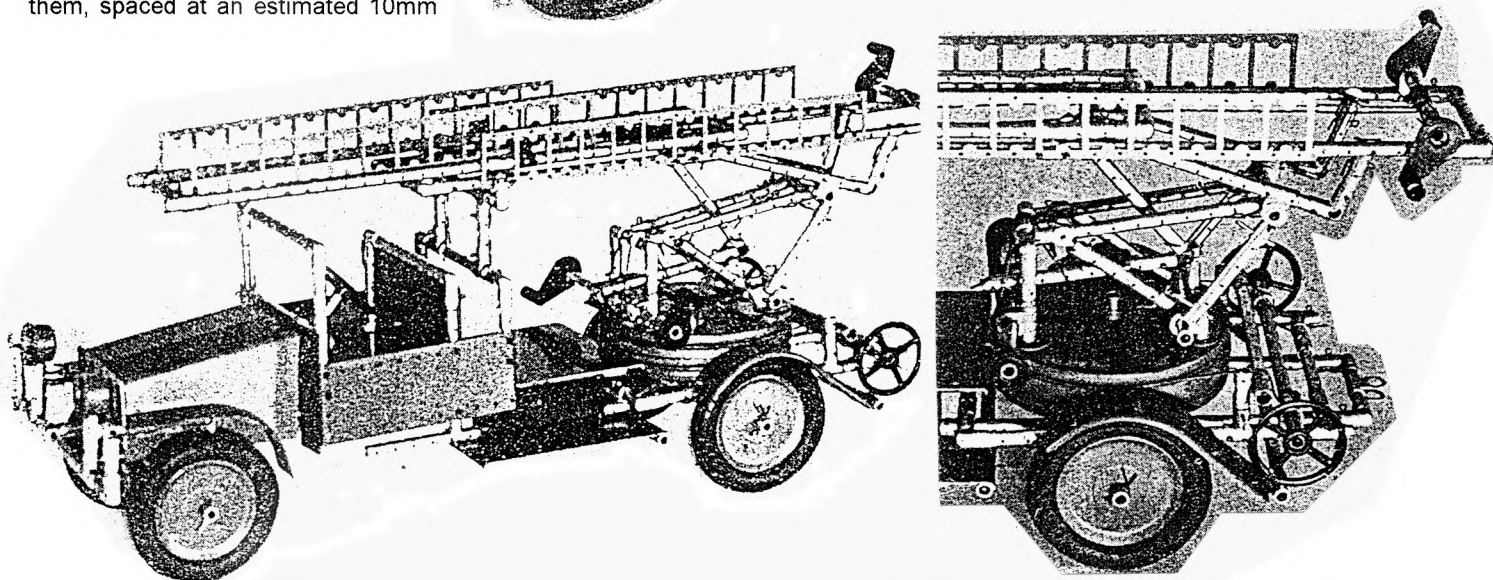
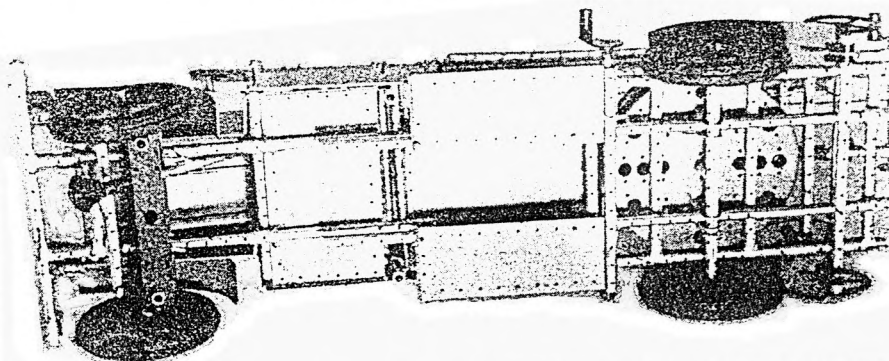
Some 10 different Plates are provided, perforated around the edges with small holes to allow them to be pinned to the Tubes. Then there are 5 patterns of Braced Girder (none of which is the one shown in the Fire Engine below); all are about 200mm long and from 30 to 43mm wide. They look as if they are what is left of strips of metal after parts have been stamped out of them, cf the BOYCOY 'Plates' in 11/276.

Among the other parts are a good size Wheel and Tyre (the Tubes are used as axles), 2 Sprockets and Chain, and 2 sizes of Crank Handle which fit onto the Tubes. No N&B can be seen, but there is a Threaded Pin with a hex Nut for it. Special vehicle parts are also shown including Mudguards, Headlamp, Radiator and Bonnet Side - some of them can be seen on the Fire Engine.

In all around 70 parts; the Tubes are polished steel, and the other main parts, also of steel, are painted, red for the Pulleys and Plates, and blue or black for the special Plates and Braced Girders.

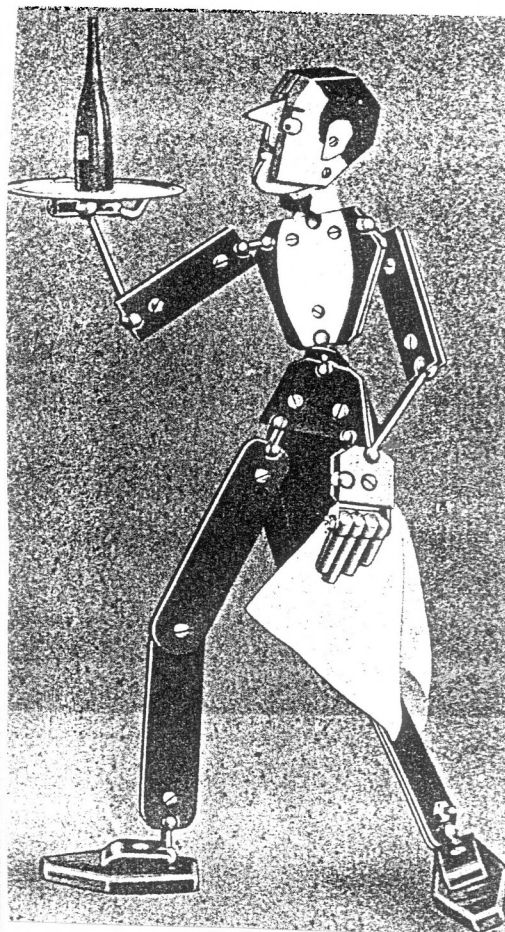
4 Sets are known, Nos. 0, 1 and 2, and a supplementary set. The Fire Engine is made from the No.1. Instructions take the form of loose sheets of models contained in a folder. The illustration on the outside shows a selection of models including a Motorcycle, Bridge with Signals, Crane and Windmill. Some of the parts used in these, a grab on the Crane and the tank on the Motorcycle for example, are not shown in the Illustrated Parts.

This looks to be the most flexible of all the systems using tubes as the basic element, and with few holes showing in



the finished models other than the small 1.5mm ones along the Tubes and around the edges of the Plates. Comments from anyone who has made models from this system would be most welcome.

Finally **TUPO**, made in Belgium in the 1950s, and the like of which I've certainly never seen. The set, only one is known, has parts to allow human and animal figures to be made, and as can be seen from the Waiter opposite, the use of ball joints allows them to be set to any required pose,



or at least any which keeps the centre of gravity between those (large size) shoes.

There are 30 different parts (plus N&B), 22 metal and 8 plastic. The latter, for the head and fingers, are pink; body parts are either black or beige. They are similar regardless of colour but the two heads provided have different shaped noses, chins and eyes. The ball ended rods, and the N&B, are brass plated steel. All the parts are of good quality.

BUILDER BOY The name of this minor American system was mentioned in OSN 6/136 and recently Richard Symonds sent photos of a No.1 Set that he owns, and a photocopy of its Manual. The name BUILDER BOY is on the box lid but not on the Manual, just 'Norwood Self-locking Steel Construction Set No.1'. The box is about 12x16" and the lid shows a boy and a model against a red ground, with a large white panel on the right containing 4 more models. The parts are mounted on a grey card, many clipped under wings die cut out of the card. No N&B are used in the models, pressed out prongs on some of the parts engage in rectangular holes ($3/16 \times 5/16$ ") in others. There are also $1/8$ " dia holes at intervals for the Axles, and the plastic Wheels are a pushfit on them. The smaller dots that may be able to be seen on some of the parts are 'pips' that help to 'lock' the parts in place.

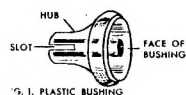
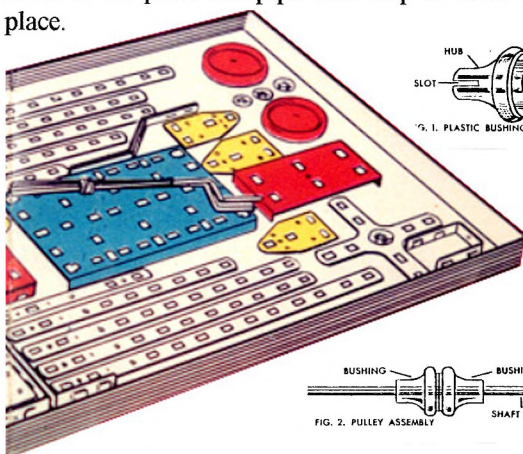


FIG. 1. PLASTIC BUSHING

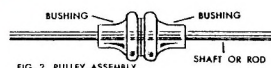


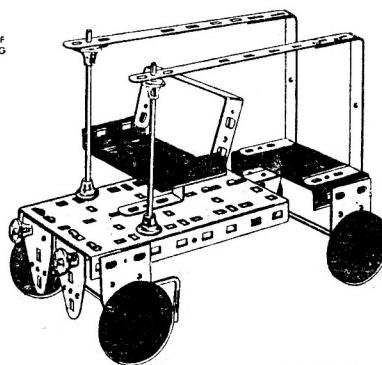
FIG. 2. PULLEY ASSEMBLY

There are 20 different parts including handed versions of the Trunnions, necessary so that they line up when used in pairs, one either side of a Flanged Plate, say. Details are given below with approximate dimensions scaled from the photos, including, in curly brackets, the quantities of parts that can be seen in the photo of the Set. Most of the parts can be seen in the illustrations above - part of the set shown on the front of the manual, one of the manual models, and the 'Bushing' part.

- Strips are $1/2$ " wide and there are 4 lengths. The shortest is $4 1/2$ " {2} and has 2 prongs at each end. The others have 2 prongs at just one end and are $6 3/4$ " {2}, $8 1/2$ " {4}, and 10 " {2} long; they are stamped 6, 8, and 10 in the space between the prongs and the slots. The pitch of the latter is $3/4$ ".

there are 3 round holes in the centre long row of slots, not shown in the illustrations. They are between the outer pair of slots at each end, and the centre pair. Likewise the small Flanged Plate {2} has round holes between each of the 3 pairs of slots in its face.

- Axles are $1/8$ " dia (3.17mm) and are 2" {2} and 5" {2} long. The straight part of the Crank Handle {2} measures $5 1/2$ ". Plastic 'Bushings' {6} are used to locate Axles and, as shown, two together form a small pulley. The 2" dia Wheel {4} is plastic too, with a tyre shaped rim, and a split hub like the Bushing, to grip the Axle.



DELIVERY TRUCK

- The Flat Trunnion {4} can be seen opposite and has 2 prongs at the bottom. They are on the flange of the plain Trunnion {2}.

- Not shown in the illustration are a hank of thin, brown Cord, and a flat wire Hook which is about $1 1/4$ " long with a small eye.

- All the strip parts are bright plated, perhaps nickel; the large Plate is dark blue and the small ones, and the Wheels, are red; the Trunnions are yellow.

The 12 page manual (140x215mm) contains a fair selection of simple models, and they aren't too bad considering the limitations inherent in the system. The biggest problem is that bracing, or even a simple triangle, isn't easy to achieve with prongs at only one end of most of the Strips.

BUILDER BOY was made by Norwood Co. of Chicago and the date given in OSN 6 is 1949. Patent No. 2226763 is printed on the box lid. It isn't known if there were sets other than this No.1.

LITTLE GENIUS - A NEW INDIAN SYSTEM

Ashok Banerjee found this set on sale last year and very kindly send an example over. It's made by Creative Toys of Bombay and they've managed to create quite an original little system. Its parts haven't any names so I'll invent some. Basically there are 40mm long, 6mm dia, steel Spindles which screw into one another, and chunky steel Strips. These have a cross section of about 7.8 x 2.2mm and holes at 36.0mm pitch. There are two types of Spindle, one drilled and tapped at each end, and the second with one end like that and the other threaded externally. N&B are used to fasten the Strips to the Spindles, and of course to each other. Models are most often frames made from the Strips with the Spindles used as cross members.

Two types of steel fittings are provided. There's a double tapped 12.0mm o/d Collar bored to suit the Spindles and this when screwed to one of the Strips, can be used as a bearing. Then there are 2 hexagonal Unions, 12.7mm A/F and 7.5mm long, which are tapped radially inwards from each face and are bored halfway through for the Spindles and halfway at a reduced diameter to take the Bolts. These too can provide a bearing but are also used as a hub, and to angle two Strips by bolting them to the faces of the hexagon.

Square, rectangular and triangular flexible plastic Plates are included which are grey on one side and woodgrained on the reverse: they are used as table tops, chair seats and the like, and have holes only at their corners. Other plastic parts include 20mm black Wheels, Horses, Teddy Bears (with bow ties), and DAS 24mm long by 12mm wide with holes only in the lugs, 2.9mm dia. They are used as swing seats, attached by 70mm lengths of fine steel chain which have a ring at one end and a spring clip at the other.

That's about all except for a single ended Spanner and two lengths of ribbon, about 37mm wide, one in a delicate shade of light blue, stitched to act as a chair seat and back, (or a rather odd flag), and the second in a delicate pink, stitched to be part of a push-chair, or the sail of a ship.

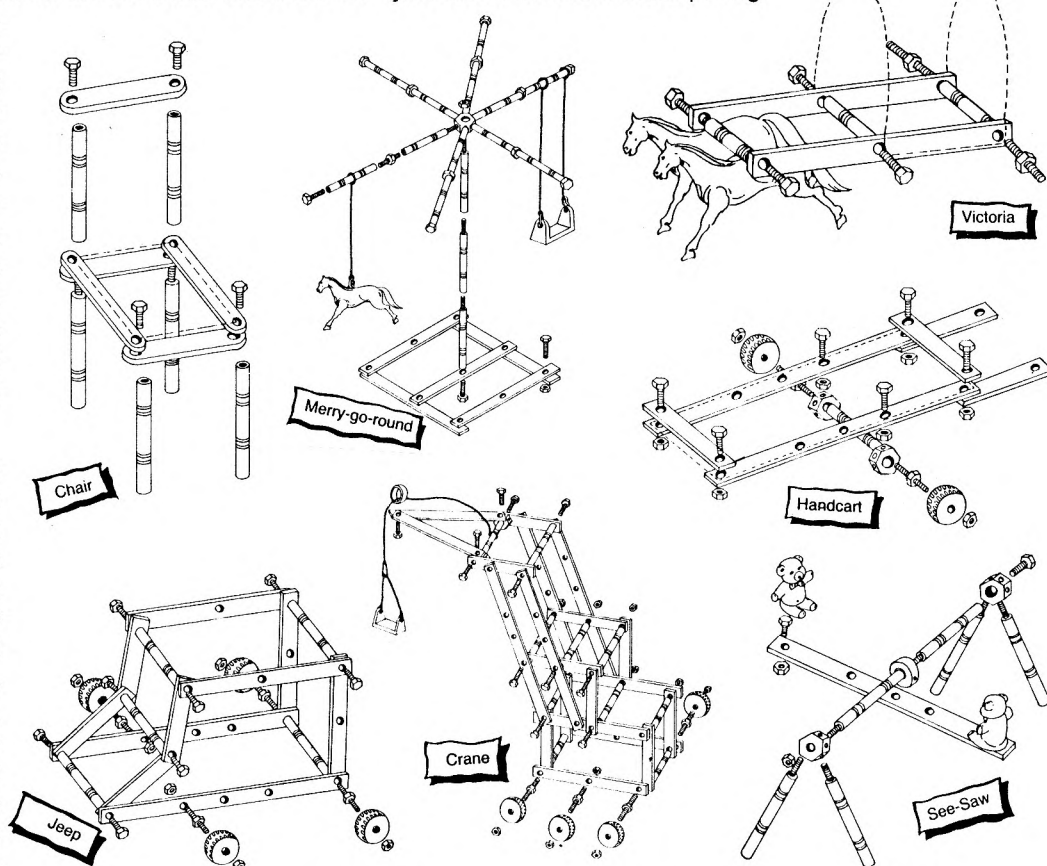
More on the parts:

• DATA (in mm) Strip: •Hole pitch/dia, 36.0/4.3; •width, 7.8; •thickness, 2.2; •end radius, 4mm. [No bosses, Collar double tapped, bore 6.1.] Thread: M4. Axle dia: 5.96 (Spindles). DP (Mod): NA. Nut and Bolt: hex 6.9 A/F, steel, iridescent finish.

• The Strips are 2, 3 and 4 holes long, and the latter has a central (5th) hole. There are two types of the 3-hole, one with standard spacing and one with the holes 26mm apart.
• The N&B are probably standard commercial items. The Bolts are 10 and 15mm u/h. 21mm long Studs are also

supplied, and they have a central hex spanner portion.

• The effective size of the Plates is 2x2, 2x4, 3x3, 3x4-hole; the sides of the Triangle are 3h long. All corners are sharp.
• All the steel parts except the N&B are nickel plated. The Horses, DAS, and Teddy Bears are variously coloured. All parts are accurately made, except that a few of the threads were rather tight; the finish is very good in the main with just one or two flaws in the plating.

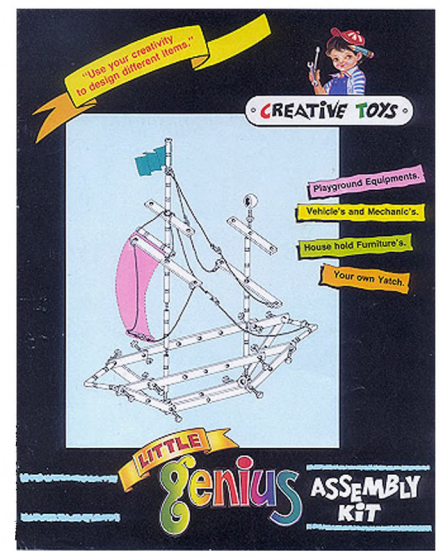


The box has a flap style lid and measures 330x230x40mm. It is black but with brightly coloured photos of a boy and many of the models that are shown in the manual. On one edge is 'Date of MFG' - MAR94, and 'Toy Code No: C.T.L.G. 2/302'. Inside the parts are housed in a light blue moulded tray with a transparent cover. The main elements are 28 Strips, 20 Spindles, 5 Plates and 26 Bolts/Studs. The manual consists of 8 pages, about A4 size with a multi-colour cover. The 30 models are shown as line drawings in exploded form. Flexible Plates are indicated by dotted lines. Most of the parts can be seen in the models reproduced here.

Judge for yourself their attractiveness, though the drawings hardly do them justice: they look much better on the box lid, and, to me, when made up, they have a certain delicate elegance. Most were easy to put together but there were a few difficulties, the main one being that although the Spindles could normally be gripped adequately using the grooves machined into them, there wasn't enough grip to hold them if there was any stiffness in the threads. The Wheels were unsatisfactory in that they were usually mounted on Studs and their central holes were too small to allow them to rotate freely. And in fact they are shown held fast by a single Nut in the Manual, and not held by lock nuts. (The exception is in the Handcart where the Wheels are locked to the Spindle axle, which rotates in the two Unions.) Apart from that the only problem was that the hole in the base of the Teddy Bear was not big enough to allow him to sit securely (or comfortably?) on the bolthead at the end of the See-Saw.

The only comparable system that come to mind is the Austrian STAHL-KLEMM in MCS, and that has a wider variety of parts and also uses clamps to attach strips to rods. Clearly any such system is not so flexible in use as conventional ones using strips, etc, but the models do have a different look to them. It must be considerably more expensive though to produce the Spindles than to stamp out the normal run of strips and brackets. One other similarity between LITTLE GENIUS and STEEL-KLEMM, a coincidence I'm sure, is that both use bolts with hex heads.

MANUAL SUMMARY #Name: Little Genius. #Details of maker: Creative Toys, G-5, Laxmi Estate, Chimat Pada Road, Marol Naka, Andheri (East), Bombay-400 059. Tel: 835 1035. [Also blacked out is 'C/o Selvans Metal Industries'. #Dates &/or Ref Nos: none. #Page size: 220x 277mm deep. #No. of pages: 8 unnumbered, inc covers. #Language: English. #Printing: multicoloured cover on black ground. Models are shown as black line drawings on light blue ground. #No Parts List, Part Nos. or Set Contents. #Sets covered: the only one known. #No of models: 30. #Name, Page No of first & last model: Sailing Ship (unnamed), 1. Ladder, 8. [No Model Nos.] #Other notes: none.



LYNNCRAFT This is another of the small sets that appeared in America soon after WW2. It is well covered in MCS but a few more details can now be added thanks to Richard Symonds, who sent over a handful of parts and photos of his Set. Page 2 of MCS actually shows the lid of the box, which measures about 16x10", and p5 the blueprint style Model Leaflet (there's no manual) which is stuck inside the lid. Two of the models and a photo of the set are shown below. The semi-circular 'cutouts' that appear in some of the parts are of course the wings which are pressed out of the red backing card to hold the parts in place. Also the centre holes that can be seen in four of the Strips were probably put there by a previous owner.

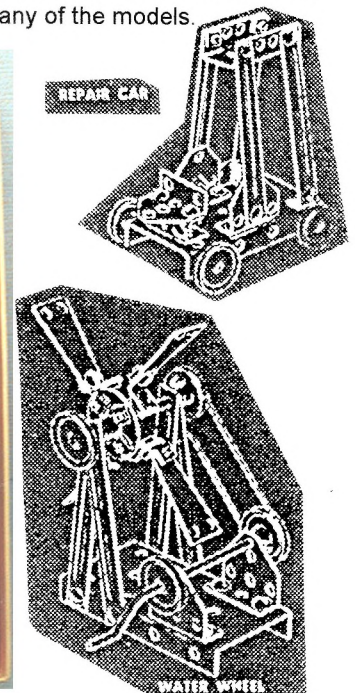
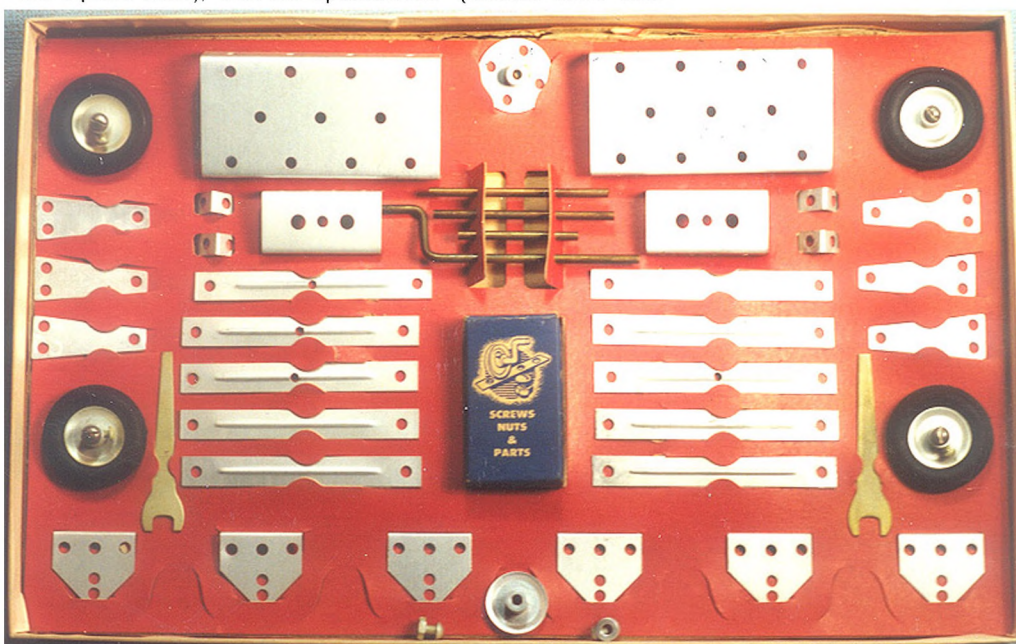
None of the parts are identified in any way so MECCANO-style names are used in the notes on the parts below:

- **DATA** (in mm) **Strip:** •Hole pitch/dia, 3½"/3.8; •width, approx ½"; •ends square. **Boss:** •o/d, 9.6 (¾") •i/d, 4.22; •aluminium; •single tapped. **Thread:** 8-32, 6-32 in bosses. **Axle Dia:** 3.95. **Nut:** hex 8.6 A/F, treated steel with pale green tinge. **Bolt:** roundhead 7.5 dia, material as Nut. **Notes:** •The pitch of holes in the parts is mostly in multiples of ¼" but there are several exceptions, noted later. •Square Nuts are shown in the models on the Model Sheet.
- All parts are of aluminium except the N&B (see above), the Axles and Crank Handle (steel, brass plated including the square ends), and the Spandrivers (treated steel with

pale green appearance). All the corners of the parts are square.

- The sketches of the parts in MCS correspond to those in the Set except that the smaller Axle is 2" long, and the straight part of the Crank Handle is 3½". There is a stiffening groove in the centre of the Strips.
- The Plate have flanges on their longer sides, and each contains 4 holes. Those in the large Plate (4x2x½") are at 1" pitch, in line with those on top, and in the small Plate (2x1x½") they are spaced ½", ¾", and ½" apart. The two outer holes in the top of the small Plate are ¼" dia and at 1¹⁄₁₆" centres: their purpose isn't known.
- The Bush Wheel is 1¼" dia and the holes in it are spaced 7⁄₁₆" from the centre. Collars (one is at the bottom edge of the box below) are similar to the bosses. Angle Brackets are ¾" wide and both ½" long arms have round holes. Only 4 can be seen in the photo but 8 seem to be needed for the Water Wheel below. The 3 holes in the flange of the Trunnion match those at the base of the face.

The name and address of the manufacturer is given on the end of the box lid: Lynn Engineering and Manufacturing Co., Glendale 1, California. Also on the lid: Model No. 146 - no other sets are known. There is a copyright date of 1946 on the bottom of the Model Sheet. Although the Set contains black rubber Tires (with LYNNCRAFT moulded into their sides), none are used in any of the models.



NEW SYSTEM - MEK-STRUCT MEK-STRUCT came into the shops just before Xmas (1994), 2 years after STEEL TEC appeared. Again the parts are made in China, although in this case for a Hong Kong firm, the Artin Industrial Co. Ltd., 2/F., 21-25 Sze Mei Street, Sanpokong, Kowloon. Whether the sets are available in Hong Kong I don't know, so far they have been reported on sale in the U.S.A., Canada and Belgium. The two systems have more than their source of manufacture in common, comparing the largest MEK-STRUCT (M-S) set, the '450' with the largest STEEL TEC (S/T) standard set, the #4 (there aren't any M-S theme sets), they are of comparable size and the range of parts, just over 60 in each, is quite similar. Several of the unusual S/T features are repeated, 8x7 and 6x5h Plates for example, and 2 sizes of sliding Struts. Apart from the S/T gears, the only part with a boss in either is the Bush Wheel, and neither have any long parts - with the M-S 11-hole Strips and 3x11h Plates the longest.

The most noticeable differences are that instead of a motor and a few gears, the M-S has a motor/gearbox unit, and, a unique feature, nearly all the ends/corners of the M-S parts are cut back (notched). The exceptions are the triangular shaped parts. There doesn't seem to be any great constructional advantage in this but no doubt it is meant to distinguish M-S from the hoi polloi. Most who have written have thought it quite attractive. Another distinguishing mark is that, unlike S/T where Strips and some small Plates are BZP, all M-S metal parts, except possibly the Bush Wheel, are painted.

RANGE OF SETS The main designation is the number of parts in the set, which is displayed prominently on the box lid, and on the cover of the 3 manuals I've seen. In addition there is a much smaller Article No. on each box. The following have been reported (with the lowest prices found):

From Canada. All boxes have bilingual text. • Small single model sets, Art. Nos. 3201-3208, **146** Buggy, **143** Truck, **152** F3 Racer, **147** Bulldozer, **163** Jeep, **160** Helicopter, **154** Plane, **150** Cannon. \$9.97 from Zellers. • **210** (#3821). • **270** (#3827), 9 models, motorised. The ad speaks of forward and reverse by 'radio-control' but shows the standard Battery Box with a push buttons for each direction. \$24.97 from Zellers. • **370** (#3837), 9 models, motorised. \$44.97.

From the U.S.A. • **450**, 9 models, 4.3 lb, motorised. \$39.99 from J.C.Penney.

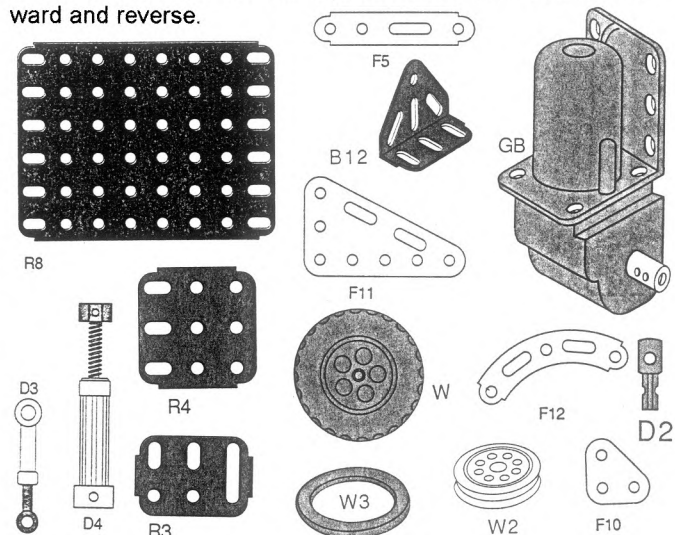
From Belgium. • **150**. 6 models. 499 Fr (£10). English and Flemish text on the box. One of the 6 models shown in the ad is the same as the 143 Truck above, and another looks very similar to the 163 Jeep.

PARTS The parts are accurately made (except for the N&B) and well finished. All measurements are over the paint which is generally rather thick. • **DATA** (in mm) **Strip** (9-hole): •Hole pitch/dia, 12.7/4.2 but varies between 4.1 and 4.3 depending on paint thickness •width, 12.9; •thickness, 1.07; •ends fully radiused and of unusual shape, as shown later. **Boss**: •o/d, ?; •i/d, 4.22; •single tapped. **Thread**: M4. **Axle Dia**: 4.00. **DP (Mod)**: NA. **Nut**: square, 6.8-7.2 A/F, bright, probably nickel, plated steel. **Bolt**: roundhead with Allen recess, 6.6 dia, BZP steel.

The known parts, in fact those in the 450 set, are listed below using MECCANO-style names, with illustrations of the more unusual ones. All have PNs, consistent between the different sets, but no names. The colours mentioned are those of the actual parts, the North American ads and the

models on the covers of manuals show some differently coloured, mainly some blue parts as yellow. Only slotted holes which are not in the equivalent MECCANO parts are noted.

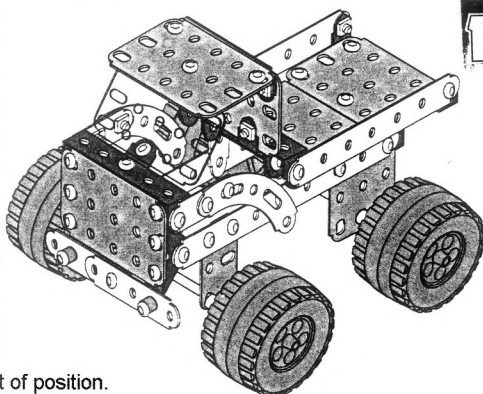
- Strips: 3,4,5,7,9,11 holes; 5h (F5) and 7h with holes 2 and 3 joined to make a slot; Curved, 1½"r, end holes 2" apart (F12). (All yellow.)
- DAS: 1x1x1, 1x2x1, 1x3x1, 1x5x1, 2x1x2. All blue.
- Brackets: 1x1, and Obtuse, 1x2, Reverse (no slot), Angle Brackets. 3h A/G. Trunnion (B12, see below). All blue. Yellow Flat Bracket, 1" Corner Bracket (F10) with straight hypotenuse, and 3x5 Triangular Plate (F11, see below).
- Plates: 5x3 Flanged Plate; 3x5, 3x11, 5x5, 5x6, 6x8 (R8) Flat Plates, fully perforated with slots along the edges underlined; 3x3 similar but slots on one edge only (R4); 2 and 3h Flat Girders, and 3h with hole and slot at one end joined (R3). All these parts are orange. Also plastic 3x5, black and transparent, as above but flexible.
- Wheels: 45mm dia, 28mm wide, black rubbery plastic, push-on Road Wheel (W1); yellow 22mm grooved Wheel (W2) and black Tyre (W3); 8-h Bush Wheel, bright plated.
- Fixings: 6,12,18,28mm Bolts. The thread is almost certainly M4 but is undersize with the o/d as small as 3.8mm. Despite this some Nuts were tight to run down. The Nuts are slightly larger than MECCANO ones and most in a 143 Set were too big to fit into the ring end of the Spanner. S/T N&B weren't satisfactory either. The Spanner (TL3) is 3" long and is nickel plated with ARTIN stamped faintly on one side. It isn't like the illustration, the open end is square and the (angled) ring end has 8 star points. The other tools are two sizes of Allen key. Washers are 9mm dia and nickel plated. Other parts are a black plastic Sleeve, 5.7x8mm dia, and some not yet seen - a longer Sleeve, a neat looking Rod and Strip Connector (D2), and a Spring Clip which looks plastic.
- Geared Motor (GB). The black casings of the 3v motor and gearbox are held together with tiny screws. There is probably a first stage worm and second stage spur reduction to the output shaft. This projects only some 5mm each side and short couplings are provided to allow extensions to be fitted. The Couplings are 9.5mm long and with two parallel single tappings 5mm apart, and their bore allows a MECCANO Rod to fit in comfortably. In the models the driven wheels are on axles fitted directly into these Couplings, and given the latter's short length and their slightly oversize bore, one wonders how true the wheels run. The yellow Battery Box is connected to the motor by a 54" flex: it takes 2xAA cells and has push button switches for forward and reverse.



- Misc: nickel plated Axles, 25,40,50,60,110,125mm long, with chamfered ends; 2 yellow and black sliding Struts (D3, D4), one spring loaded; a black 57c pattern Hook; and some Cord. And one little mystery - the Belgian ad for the 150 Set shows a Racing Car with a driver in its cockpit; I can't spot him in any of the other models, including racing cars from larger sets, and he isn't shown in the 450 parts.

SETS, MODELS AND MANUALS Some details of 3 sets are available. The **143 Truck/Camion** Outfit is packed in a full colour box, 7 $\frac{3}{4}$ x6x2", with tuck-in ends, and is described as a 'Free Wheeling Construction Set', which really means it doesn't have a motor. The top and bottom are the same with a large photo of the model, and mention of a '1 Year Limited Warranty' and a toll free Service Hotline. Inside there's a leaflet giving the address of ARTIN USA, INC. - Room 662, 200 Fifth Avenue, New York, 10010; Fax: 1-212-633-1926; Hotline: 1-800-97-ARTIN. The latter offers help and free replacements for defective parts. The contents of the Set are all in one thin plastic box, packed in bubble pack bags. The full colour Instruction Leaflet (P/N 3205144) shows the parts, but with no quantities, and the model, in exploded form, with 3 sub-assemblies which are then joined up, 6 steps in all. There is no text beyond Mek-Struct and Artin, not even the name of the model. The Truck (below) is 6 $\frac{1}{2}$ " long and is I suppose reasonable of its type. When finished it felt quite solid, in part at least because most

of the pieces are of a slightly heavier gauge than normal. It wasn't that easy to make tidily, the main problem being that with the hard paint and no washers, when tightening down a Bolt in a slot, it tended to slide out of position.

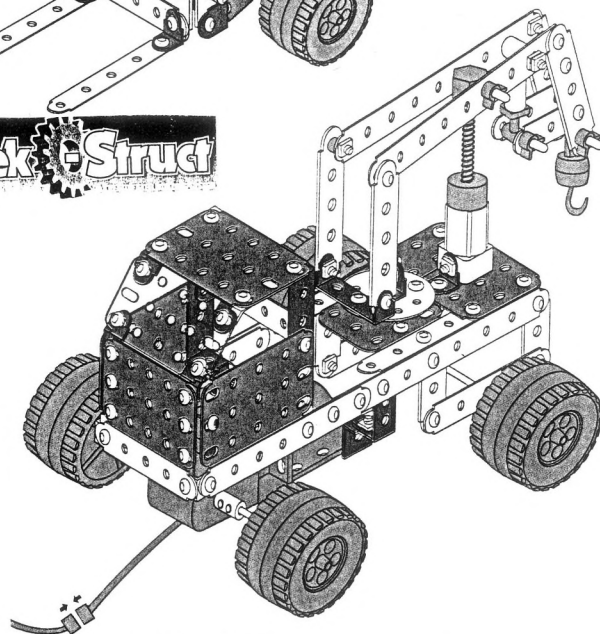
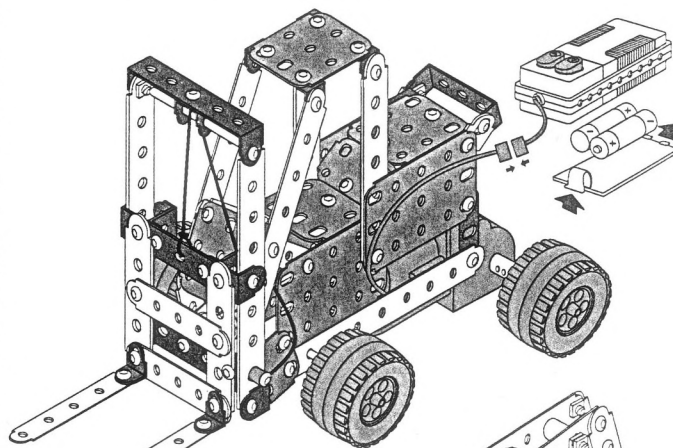


There were actually about 180 parts in the set including about 60 N&B. 9 parts, plus some N&B, remained after the model had been made as per the Leaflet, and looking at the ad illustrations of the other 'one model' sets, I suspect that several of them could be made with the parts in the 143. And of the 6 models shown in the ad for the 150 Set, one is the 143 Truck, and they all look possible with the 143 parts, give or take that Racing Car driver. It seems odd not to even hint at the full potential of the 'one model' sets.

A **270** Set was found to contain 297 parts (including 161 N&B). This time they are packed in a foam block, some in cavities under clear covers, and the rest in a parts tray with divisions and a clear lid. Photos of the 9 models in the A4 size (portrait fashion), 32 page manual are shown on its front and back covers. Inside the presentation of the models is similar to that on the 143 Leaflet and again there's no text in the Manual, and the models have no names, even on the box. Some of them look like the 150 models but with the motor unit built in; the others, a Loading Bucket and a Go-kart for example, are a little larger, but similar in concept, with the motor driving the Wheels and any other movement operated by hand. None of the models use anything like the number of parts in the set.

The **450** has 203 parts plus N&B, a total of 473, so again well over the nominal content. In round figures there are 50 Strips, 50 Brackets, and 30 Plates. The style of the manual is as that of the 270, and there are 40 pages covering the 9 models. One of them is familiar, a Helicopter that looks identical to the one from the 160 Set, and hasn't been motorised. But most are new and have a little more character than the models from the smaller sets. A few are longer, with a 15" long Dragster; and two, such as the Wrecker Truck in the next column, use the Struts, which aren't in the other sets. Several of the models, apart from the installation of the motor, bear a distinct similarity to their S/T #4 Set

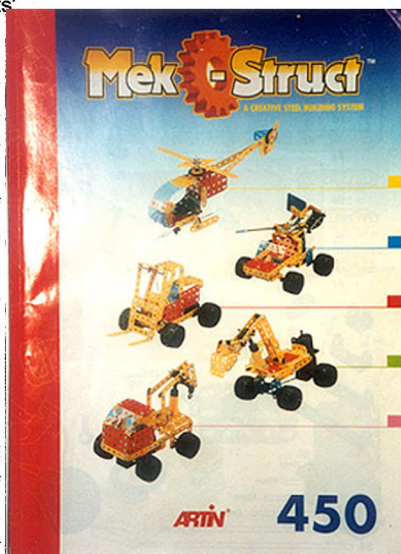
counterparts, and the Fork Lift Truck below is virtually identical. Like the S/T models all are mechanically very simple - no steering on any of them, or even a bolt-on steering wheel, and the fork of the Fork Lift is raised by pulling down on a cord, there's not even a crank. Generally the models use less than half the parts in the set and, unless I missed them, the two Slotted Strips aren't used at all.



Thank you to Kendrick Bisset, Don Redmond, Tony Rednall, Chas Shrubsole and Richard Symonds for the material used in this piece. By the way M-S doesn't claim to be compatible with MECCANO but the boxes carry in small print, 'MEK-STRUCT has compatible parts for use with other steel building sets'

SUMMARY OF MANUAL.

#Name: MEK-STRUCT #Details of maker: ARTIN #Dates &/or Ref Nos: P/N 3205138 on back cover. #Page size: 209x286mm deep. #No of pages: 40 inc covers (page nos. 1-36 start from 'p3'. #Language: English. #Printing: all colour - photos on covers and solid inside. #Page Nos of Illustrated Parts & highest PN: '2-3', W3. #[No Set Contents] #Sets covered: 450. #No of models: 9. #Name, Page No. of first & last model: Wrecker



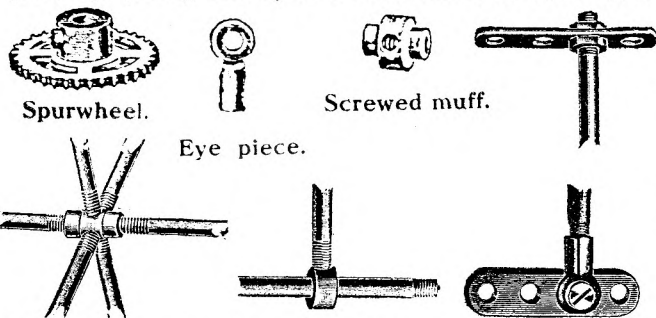
Truck,1; Bucket Digger,33 [no Model Nos.] #Other notes: • the only text is on the front cover; • the model names above have been made up; • the '270' Manual is similar except the Ref. No. is P/N 3205136, it has 32 pages with the Parts shown on p'2', the models start with a Buggy on p1 and end with a Shovel Loader on p27.

MODELLO There is quite a bit in MCS on this prewar German system made by Ernst Plank in Nuremberg, but a few points can be added, particularly from an English language manual that, courtesy of Mike Rhoades, I now have as a photocopy. The Set Contents and Big Wheel model in MCS Part 5 came from this manual.

MCS gives the 1920s and '30s for MODELLO and Bauklötze Staunen says it came onto the market almost 20 years after STABIL, so in the early to mid '20s. The prices in the original (German) MCS pages are prefixed by M (for Marks) and not RM (Reichsmark) so that would seem to put it before 1924, and since the prices are not astronomical it would have been before serious inflation started in 1922-23. I have it in mind that Ernst Plank ceased making toys sometime in the 1930s, but MODELLO may not have lasted until the end. One oddity is that the German MCS pages show the Plank logo, incorporating the letters E P, several times, but it doesn't appear on the English Manual: on its cover is a different one with crossed keys and the letters J B. If anyone recognises this please let me know. Nor is there any reference to the maker or country of origin, but this might be because for some years after WW1 there was some feeling in the UK against German goods.

The MCS German range of sets was A-D, and I-VI, although the latter have Arabic numerals on the box lids shown and in the list of manuals. The English manual is for outfits 1-6, and these seem to be identical to their German equivalents in content and models, although the Nos. 5 and 6 were also offered in wooden boxes. There's no mention of the small A-D sets although (from MCS) there was an English version of the A-D manual, as well as others in French, Spanish and Italian. Also listed in MCS are a 1-2 manual (no language given so presumably German, but a 1-2 is shown in the English Contents of Sets 1 and 2), and the 1-6 in English, French and Spanish.

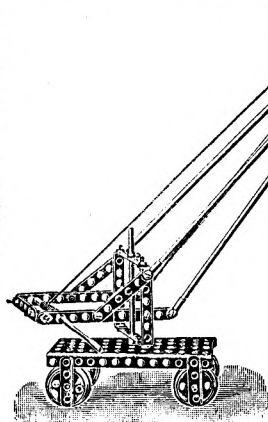
So it would seem that Ernst Plank took their system fairly seriously and despite the fact that there were only 36 parts in all, including 3 Screwdrivers, the largest set was a fair size with 44 A/Gs, 14 gears and 600 N&B. On top of that were an extra 50 Nuts and these were needed because of the one unusual feature of MODELLO. All the Rods (called Round Stays) had threaded ends, and as well as serving as axles were also used as structural elements. Obviously they could be nutted to Strips, etc, but they could also be attached in the plane of the Strip using a threaded connector (#18, Eye piece), and up to 6 Rods could be united in a



Threaded Coupling (#27, Screwed Muff). Three of the parts that are not very clear in my MCS are shown above, plus some of the standard constructions from the Manual. No-

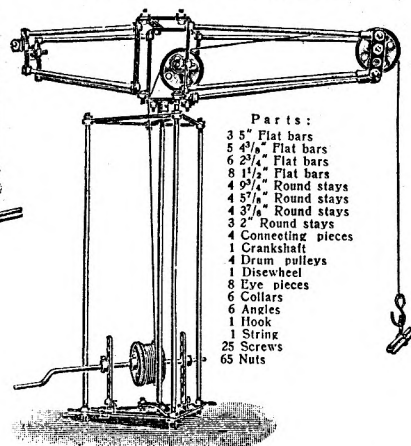
tice that Nuts are not used to lock the screwed ends into the unions - the only exception is when a Rod used as a connecting rod is held in a Collar (big end). The No.6 outfit contained 124 Rods, 48 Eye Pieces, and 17 Screwed Muffs and though they were used extensively in certain large models, in a Lifting Bridge for instance, often they were only employed in the larger models as handrails and the like. Nevertheless an interesting idea which might be worth developing further even today.

Model Nr. 104. Railway crane.



- Parts:
- | | | |
|---------------------|---------------------|-----------|
| 2 4 7/8" Flat bars | 8 Eye pieces | 6 Collars |
| 3 2 1/2" Flat bars | 3 Connecting pieces | 1 String |
| 6 1 1/2" Flat bars | 1 Plate | 1 Hook |
| 4 9/16" Round stays | 1 Crankshaft | 20 Screws |
| 3 3/4" Round stays | 4 Drum pulleys | 29 Nuts |
| 2 2" Round stays | 1 Grooved pulley | |

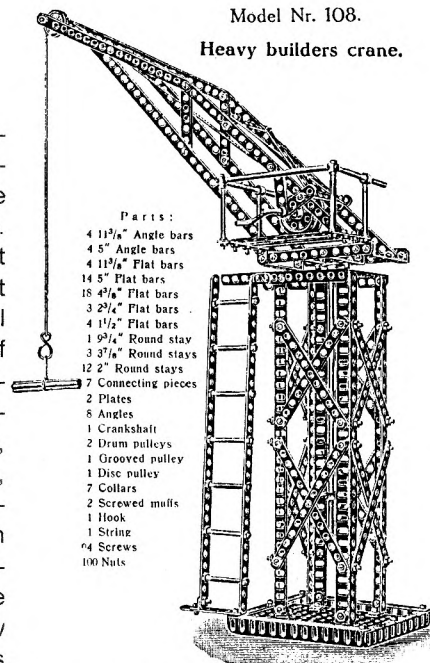
Model Nr. 103. Swing crane.



- Parts:
- | |
|----------------------|
| 3 5" Flat bars |
| 5 4 7/8" Flat bars |
| 6 2 1/2" Flat bars |
| 8 1 1/2" Flat bars |
| 4 9/16" Round stays |
| 4 5 7/8" Round stays |
| 4 3 7/8" Round stays |
| 3 2" Round stays |
| 4 Connecting pieces |
| 1 Crankshaft |
| 4 Drum pulleys |
| 1 Disc wheel |
| 8 Eye pieces |
| 6 Collars |
| 6 Angles |
| 1 Hook |
| 1 String |
| 25 Screws |
| 65 Nuts |

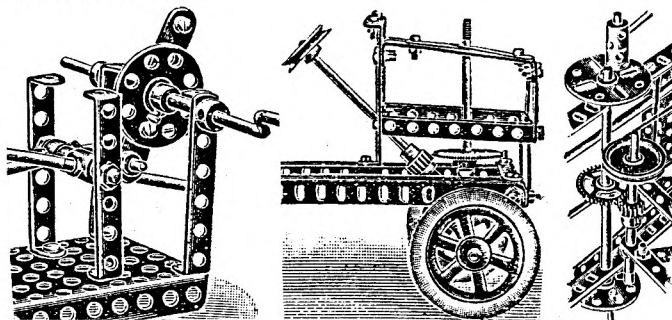
Model Nr. 108.

Heavy builders crane.



- Parts:
- | |
|---------------------|
| 4 1 1/2" Angle bars |
| 4 5" Angle bars |
| 4 1 1/2" Flat bars |
| 14 5" Flat bars |
| 18 4 7/8" Flat bars |
| 3 2 1/2" Flat bars |
| 4 1 1/2" Flat bars |
| 1 9/16" Round stay |
| 3 3/4" Round stays |
| 12 2" Round stays |
| 7 Connecting pieces |
| 2 Plates |
| 6 Angles |
| 1 Crankshaft |
| 2 Drum pulleys |
| 1 Grooved pulley |
| 1 Disc pulley |
| 7 Collars |
| 2 Screwed muffs |
| 1 Hook |
| 1 String |
| *4 Screws |
| 100 Nuts |

The models are simple mechanically but, given the limited range of parts, are reasonable in appearance. The one opposite is from Set 4 and the two above from Set 3. There are many small anomalies in the drawings of the manual models: for example, the 29h Strip is sometimes shown with 28 holes, and the 13x7h Flanged Plate, as 4, 5 or 6 holes wide. Another part to vary is the Bush Wheel (see below): sometimes 4 of the holes are shown as slots, and in a few models, when the part is called up as a road wheel, a 6-spoke wheel with tyre is shown. The Flanged Wheel is shown without any holes in its face in the Illustrated Parts but in all the models, as above, it has four.



Finally one or two more notes on the parts:

- From the dimensions given the hole spacing is 10mm. There's nothing to say what the size the holes are, but they look at least 4mm.
- In several models it is clear that the Collar and the boss

of the Contrate are double tapped, so probably all the bosses are.

- The Gearwheel and Pinion mesh at two hole spacing and their teeth look coarser than MECCANO. From the illustrations they appear to have about 33 and 17 teeth respectively and if that is correct their module would be 0.8. In one model the Gear is shown with six spokes instead of four.
- All the parts except those made of brass are said in the Manual to have a black metallic finish.

SUMMARY OF MANUAL. #Name: MODELLO. #Details of maker: none but logo with crossed keys and 'J B' on front cover. #Dates &/or

Ref Nos: none. #Page size: Approx. 290x200mm deep. #No of pages: 40 + covers. #Language: English. #Printing: B&W line drawings. The cover is shown in MCS, Part 5. #Page Nos of Parts List & highest PN: 3,36. #Page Nos. of Set Contents & highest PN: 38,37. #Sets covered: 1-6. #No. of models for each set: 40,40,25,20,15,10. #Name, Model No., Page No. of first & last model of each set: 1: Sawing jack,1,4; Handcart, 40,6. 2: Stool,41,7; Water wheel,80,12. 3: Chair,81,13; Portable bridge crane,105,17. 4: Swing crane,106,18; Log saw,125,23. 5:Overhead crane,126,24; Pit head,140,29. 6: Hauling Gear,141,30; Large lift bridge, 150,36-7. #Other notes: all particulars were taken from a photocopy.

COZZONE *Builds a thousand Toys, Brings a thousand Joys* - ah, me! That's the slogan in the illustration opposite of the #500 COZZONE Construction Set, which Richard Symonds spotted in a 1992 issue of Collecting Toys (#6). The top half is the lid of the Set, and although it won't be very clear, you may be able to make out a Ferris Wheel in the background and a Jeep type vehicle that the boy is working on. It's essentially a framework of rods, or more likely tubes, with some panels with formed ends that slide over or clip onto them. Some unions can be seen and may apparently be located anywhere along the tubes, perhaps the latter have threaded ends and screw into the unions.

The lower half shows the set itself, with some tubes and panels of different lengths, and 4 wheels with tyres, like those on the Jeep. It's not absolutely clear but I think the ruler at the top is 12" long, and in that case the diameter of the tubes might be about 1/4" and the wheels 3", and the longest tubes and panels, 10 or 12". Although it can't be seen an electric motor was included in the set.



A Mr Lawrence Giancola supplied some historical details that accompanied the illustration and a letter from him appeared in The Southern California Club N/L for July 1990. In it he gave more details that he had obtained from contacts with the children of the original Mr Cozzone. Putting these two accounts together it seems that The Cozzone Corporation was founded by John A. Cozzone during the 1930s and was located at 18 Nuttman Street in Newark, NJ. Originally they made fishing reels and during the war, parts for incendiary bombs. Afterwards it was decided to develop a constructional toy and the Set #500 was manufactured around 1948 and 1949. There were other Outfits shown in their catalogue but they were never actually produced. The machined parts were costly to make and the

sets were probably too expensive to sell well; \$12.99 was found crayoned on one surviving Set. Most were sold by mail order as few stores carried them. As late as the mid 50s one member of the family remembers there being 40 or 50 sets unsold.

The Company never made any other toys; John Cozzone died in 1968 and his son Tom took over - the firm's name was changed to the Tomrette Corp.

The piece in the S. Cal N/L gives the impression that there had been mention in a previous issue of a set that Mr Giancola had found, but I haven't been able to find an earlier reference.

DER KLEINE KONSTRUKTEUR? Ignore the question mark for the moment, DER KLEINE KONSTRUKTEUR (DKK, say) is covered well in MCS and is a small 1950s East German system that has quite a few parts that rather resemble STABIL, but the Flanged Plates are extra wide like those of KONSTRUKTION. The hole spacing is given as 12mm and the question mark is because Richard Symonds has come across some parts that look virtually identical to those shown in MCS but have 10mm spacing.

A mistake in MCS? Possibly, but trying to use the information in MCS didn't provide a positive answer. And if the pitch is really 12mm there's another system, as yet unknown, which looks very like DKK, only smaller.

Richard's find didn't include any circular parts, N&B, and fittings, but most of the other items shown in MCS were

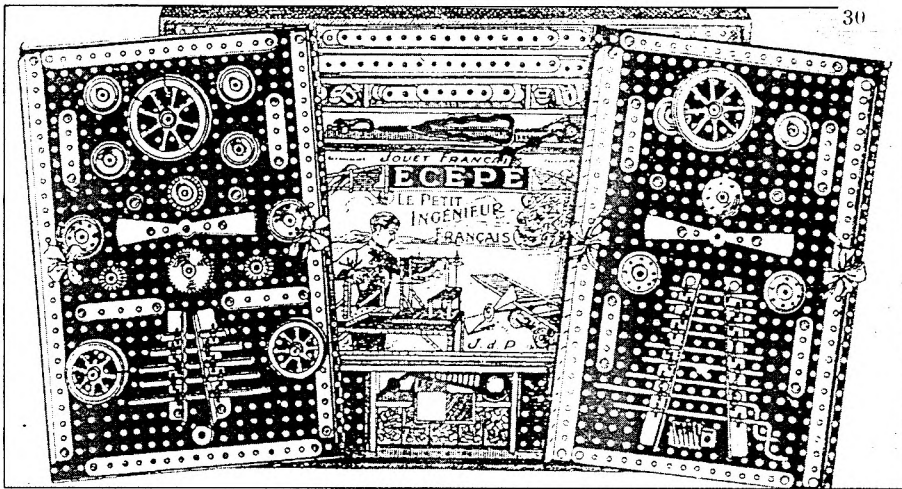
there, including 2h Strips and normal Fishplates. He kindly sent over samples of many of the parts and a photo of the rest. All are nickel plated but rather dull looking, and the only differences from the MCS illustrations is that the slotted holes have large radius (BRAL-like) ends, and are all about 9½mm long, and the ends of the Strips are not fully rounded - at 6.4mm radius they are more like those shown for the Fishplate. Holes are all 4.3mm dia (except 4.2mm in the one 11h A/G he sent) and the parts are accurately made except that the hole pitch in that A/G is 10.1mm.

While discussing DKK, I noticed when looking at MCS, that the FB p7 shows the #2 Set and that on its box lid it is called ELEKTROBAUKASTEN. It is said to be an add on outfit and it probably contains a motor and some gears, but whether any new (electrical?) parts are included isn't clear.

L'INGÉNIEUR CONSTRUCTEUR, ÉCÉPÉ, et MÉCANIC

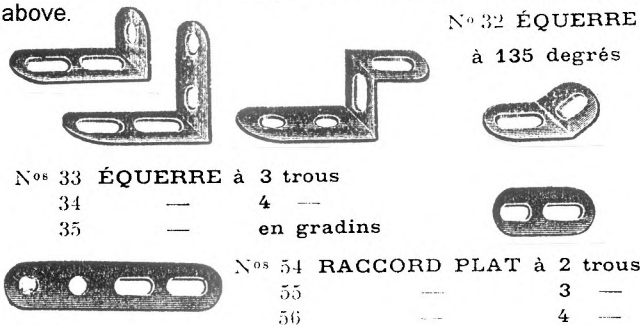
There is a piece on these systems in the French CAM Magazine No.47 and as many readers won't see it, I'll give an outline here. All three were made at Montreuil just outside Paris by Jouets de Paris (J.d.P or J.de.P), which later became Jouets en Paris, (JEP), part of la Société Industrielle de Ferblanterie (SIB). All were basically the same system under different names, but the range of parts grew with time, to finally reach about 80. L'INGÉNIEUR CONSTRUCTEUR (LIC here) was the name used in 1912/1913, ÉCÉPÉ during 1914/1919, and MÉCANIC in 1920/1923. All dates are approximate but production definitely stopped in 1923 after Meccano had won a legal action, started when the name MÉCANIC was first used.

With a good number of exceptions the parts look much like MECCANO and the hole pitch is 1/2". The diameter of Axles is given as 3.9mm and the holes as 4.1mm. However those in some 3x4h Architraves to hand are up to 4.3mm. Some of the non-MECCANO looking parts are illustrated in MCS; the Architrave, nicely shaped with no cutouts; the 2-bladed Propeller; a Signal Arm and Discs; an 8-spoked Wheel; 14h Strips (and 4x42h listed for a Tour Eiffel); and a Sector Plate with no flanges and a centre row of 8 holes, the middle 6 of which are elongated lengthways.

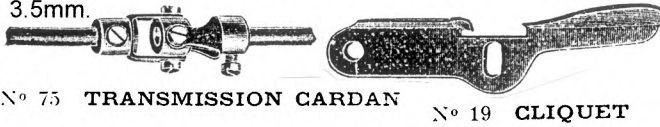


In the ÉCÉPÉ set above those fully perforated backing boards, some 28x20h are presumable made of card. The 2 sizes of the 8-spoked Wheel scale at rather under 2" and 3" diameter. Other parts are 15 and 16h Strips, and 28h A/Gs, so an artist's hand may have been at work. The full list of MÉCANIC Parts includes some not in MCS and these, with other points of interest, are as follows:

- A 'wide' Double Bracket, 1x5x1 and 3x5x3 DAS, a Double Bent Strip.
- 2x1h and 2x2h Angle Brackets with 2 slotted holes in one arm of each. The 2x2 is also shown as a 2x1x1 Reversed Angle Bracket, with the slots in the 1x1 part.
- An Obtuse Angle Bracket with a slot in the longer arm and a shorter slot in the other. The ordinary Angle Bracket is similar, like the one shown in MCS.
- Flat forms of the Angle Brackets with holes/slots as above.



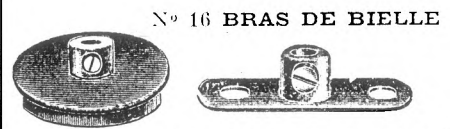
- A 25mm Loose Pulley with 3 holes in its face, a 70mm Pulley with 6 holes interspersed by 6 radial slots, a Pawl, and a Universal Joint. All these parts look of similar design to those in MCS under FORGEACIER, a later JEP product. But note that the FORGEACIER Axle size is thought to be 3.5mm.



- Braced Girders (25,11,7,5 hole) which scale at 1 1/2" wide.
- A Double Arm Crank with one round hole in each arm. A Coupling that looks just like the s/t MECCANO #63. A 34mm Flanged Wheel.

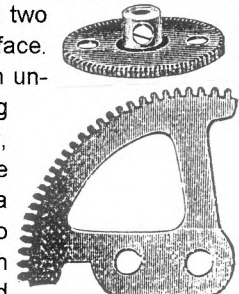


27	ÉLÉMENT CROISILLONNÉ de 25 trous	
28	—	11
29	—	7
30	—	5



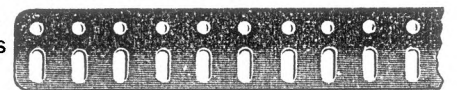
48 POULIE plate à rebord de 34^m/_m à vis

- Two Gear Wheels with 50 and 56 teeth: the one shown appears to be the larger, with two holes in its face. There's also an unusual looking Gear Segment, and 4 can be bolted onto a Bush Wheel to



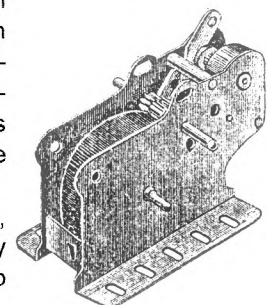
make a large gear. There are 28 teeth on the one illustrated but one I've had for years, and not known what it was, has 25. In either case the end teeth would overlap if a gear wheel was formed. My one was stamped from .031" brass.

- 25, 11 and 7-hole Flat Girders.
- A 5x7-hole Flat Plate - that's the 'petite' version in MCS.
- Windmill Sails are listed (also in MCS) but not illustrated. Like- wise 50 and 60mm Roue Vernie



(Spoked Wheels I assume though 'verni' probably means lacquered). Notice that the list on p6 of MCS gives 50 and 70mm, and In another illustration the small Spoked Wheel is shown with 6 spokes. Also a Spring, Ressort de Rappel, which might possibly be a spiral spring, the name was used for springs employed to centre small bells.

- There are two clockwork motors, No.1 Small and No.2 Large. They have governors and a start/stop lever, but nothing is said about reversing.



N° 76 MOTEUR "MÉCANIC" N° 1. petit modèle
N° 2. grand modèle

- All the parts have PNs, 1-77 including the Motors: there are none in MCS.
- The parts were of good thickness and quality, though the paintwork wasn't very durable. Various finishes were used on the steel parts at different times, tin plating, metallic black (acier bruni), nickel plating, and for some black paint. Certain parts were made of copper, aluminium, brass, and brass plated steel, with some of the changes due to the war.

No details are available of the LIC sets that were marketed; for ÉCÉPÉ there were outfits A,B,C,D,(E), and linking sets A bis, B bis, C bis, (D bis). It isn't explained what the brackets signify. The same range (with no brackets) for MÉCANIC and in addition BB, CC, DD, EE. The latter were sets B to E with a motor added, No.1 for B and C, No.2 for

D and E.

The MÉCANIC manual, which covered all the sets, was developed from the ÉCÉPÉ one, and changed from year to year. The manual mentioned had 52 pages of models against 30 for the one in MCS. The Set Contents were the same in both. There were also leaflets which showed some models.

ACKNOWLEDGEMENTS The material above is published by kind permission of the Magazine of the *Club des Amis du MECCANO*, of the *Section Champagne* of the Club, and of the *CONSTRUCTORAMA* Archive. My thanks also to André Leenhardt, Editor of the *CAM Magazine*, for the additional material he sent.

AJUSTO This is another French system but rather an unusual one. There isn't much about it in MCS, but now thanks to David Hobson, much more has come to light. He came across a manual and a No.1 box, empty unfortunately, but the manual explains all, see the illustrations below. Semi-circular section wooden rods, grooved along their flat side are clamped together by push-on steel clips (A, Fig 1). Other clips push into the hollow centre of the united rods to allow them to be joined lengthwise (using clip C, Fig 4) or at right angles (B, Fig 3). As in Figs 4 and 9 the clips C and B can be bent to give an angle between the rods joined. BB is like B but is dimensioned to allow rods to rotate in it, H is similar, and E provides a bearing at 90° to a rod (Fig 6). G allows cross rods be joined in-line (Fig 7), and D allows a 3-way junction (Fig 5). F is just a hook.

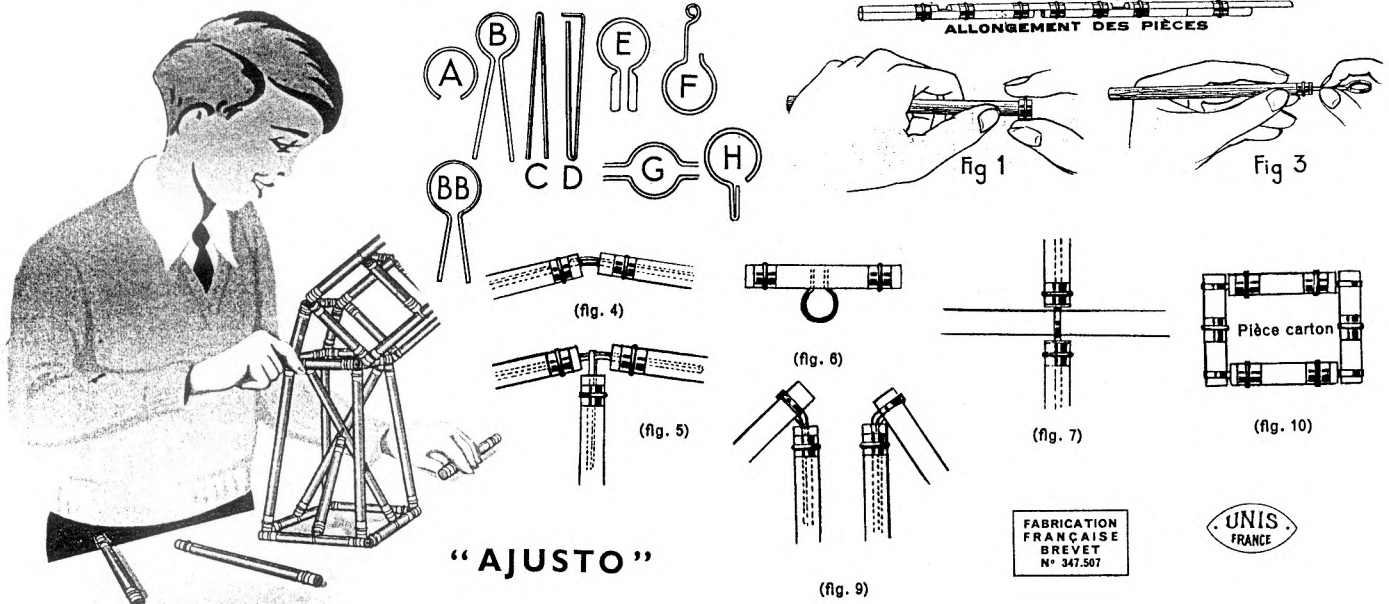
There are 10 different rods from 3 to 30cm long, in steps of 3cm, and each has a No. which is its length in centimeters. Then apart from the 9 clips, the only other part is a pulley wheel, possibly wooden but it doesn't say so. A larger disc is shown in one Crane but there's no reference to it anywhere as a part. It might be card - rectangular pieces of card are shown in some of the models but it isn't clear whether they came in the sets: it is explained that they were held in the gaps in the clips A, suitably aligned (Fig 10).

There were 5 outfits, numbered 1 to 5, and packets and boxes of extra parts were said to be available. No details of contents are given but the largest Set 5 model shown needs

over 300 clips and over 200 rods. The Set 1 box lid measures 19.5x14.3x2.5cm and is very nicely coloured with a stylish looking lad and two models, a bridge and a van. Rods and wheels are red and the panels of the van are dark red-brown. The models are the ones shown in MCS but it's a different boy.

The manual has 8 pages and all the models in it can be made with Set 5. The front cover shows the different parts, and, as on the lid, a logo 'UNIS FRANCE', and a Patent No.347.507. On the next page is the name and address: Établissements LÉON LEVILLE, 48, Faubourg du Temple - PARIS (XI^e), and on a leaflet that was with the manual, this firm is given as the wholesale supplier. 75 numbered models are shown, 1-70, and then, on the last page, Nos.73 and 75-78. Those on the front cover of this Issue are typical: it isn't said which models can be made with which Set. The clips other than A and B aren't used very often and 'D' isn't called up at all. In just one model (the Moulin) pulleys needs to be fixed to their axles, but it isn't clear how this could be done.

Some idea of the diameter of the rods can be obtained by scaling from the models in the Manual but the answers from the 4 or 5 I tried, vary from 8.5 to 11.5mm - 10mm sounds a good round figure. On dates, MCS/FB says the ad shown is from 1933 - the manual gives no information but the boy on the box lid does look like a 1930's boy. Perhaps someone could find out the date of the Patent.



MECCANO IN THE U.S.A. Several readers have asked about the differences in parts, sets, etc, between the Liverpool products and those sold, and in the later years made, in America. This area has not been covered systematically elsewhere and although OSN doesn't deal with MECCANO as such, it would perhaps be appropriate to record these differences. I don't have anything like enough information to even sketch out the complete picture, so in this and future Issues I'll include, piecemeal, whatever is to hand or readers contribute.

The story of Meccano in the US falls into several phases and at the start of each, by way of introduction, I'll set out briefly its history, so that the details of parts and so on, can be related thereto. Accounts already published differ in detail and I've chosen from them those that seem to me the most likely. Readers may care to comment if they disagree. Most of my information has come from pieces that have appeared in the 'Southern California Meccano and Erector Newsletter' over the years.

Phase 1. IMPORTED MECCANO, 1908-22.

Hornby applied for a US patent in 1901 but it wasn't granted until 1906. The first sets reached America in 1908 and a company called the Embossing Co. of Albany, N.Y. was the sole Meccano agent until 1913. The Embossing Co. was not founded until mid 1909 and its stated purpose was to make and sell paper products. There is speculation that A.C.Gilbert (ACG), who of course invented ERECTOR, was the first Meccano agent but I've not seen any direct evidence of this or of any connection with the Embossing Co; it may well be entirely coincidental that this company ceased to be the sole agent in the year that ACG marketed ERECTOR. The Embossing Co. was a 'special agent' in 1914 but Joshua Lionel Cowan, who made LIONEL trains, became the main agent in 1913, probably as a principal, perhaps the majority, shareholder in the Meccano Company of America (MCA) which was registered on Sept 8, 1913.

Between 1913 and 1915 Hornby took action against AMERICAN MODEL BUILDER, STRUCTO and ERECTOR for alleged patent and copyright infringements. The last of these cases (against ERECTOR) was settled in 1923 and all parties had lost the use of some of their patents. All but the AMB case were settled out of court so full details are not in the public record, but the net result was that AMB and STRUCTO ceased to market their systems, and ACG bought their remaining valid patents and used them in his redesign of ERECTOR in 1924. The MCA factory at Elizabeth, New Jersey was opened early in 1922 and the main reason for this may have been increased levels of duty on imported toys. ACG had founded the USA Toy Manufacturers' Association in 1916 to fight imports.

SETS The earliest ad that I've seen is one from **1913** but it doesn't give details of the sets available. The next earliest is on the centre pages of the **1915** Lionel train catalogue. Outfits 0,1,1x,2,2x,3,3x,4 are mentioned plus 2 other more expensive ones, and the Inventor's Accessory Outfit. The 'x' sets are 'with Electric Motor' and similarly numbered sets were advertised in the first UK, 1916, MM. The Lionel pages show a toy train crossing a MECCANO bridge, largely made of Braced Girders: Hornby had applied for a patent for these in June 1915.

A **1917** ad lists all the above (including Nos.5 and 6) plus the 00 and 5x sets, and the conversion sets 00a-5a. The 1x and 2x contained the E1 motor and the 3x and 5x, the E2, which had the reversing lever - these are the motors that

were made for Hornby by Lionel. They were also available separately, together with a Spring Motor, which looks like the one with square corners, the UK No.1, made by Märklin pre WW1. Also listed were two wooden Builder's Cabinets.

MANUALS & CONTENTS A **1916** No.0 manual is very similar to the UK equivalent, the most noticeable change is that the cat on the front cover has been replaced by a small dog. Inside the Meccanograph is featured in the introductory pages and there are very minor changes of layout; the models are the same but the name Lurry is changed to Truck in one place and Lorry in another. The contents are identical except that 2x12½" Strips and 2x5½" Braced Girders are included: some of the models incorporate the latter but none use the Strips. In the list of Outfits at the back of the manual, Sets 5, 5X and 6 are said to be in 'Cloth bound boxes'.

In a **1917** List of Contents for Sets 0-6, the No.0 is as above and the others differ slightly from their UK 1916 counterparts. There were 2x12½" Braced Girders in all sets except the No.0, as well as 2x5½", and the No.6 had a 57t Gear and 6 extra Collars. Braced girders weren't included in UK outfits until 1922. As in the UK, Sprocket Chain was listed for the two largest sets but no Sprocket Wheels. The contents of the 00 set aren't given but from the illustration in the 1917 List, most of the parts in the #0 can be seen except the 12½" Strips and the Braced Girders.

PARTS As far as is known parts during this phase were identical to those sold in the UK. Some, at least for part of this period, were stamped with U.S. Patent Nos. It would be interesting to know whether parts with the black finish seen on some UK pieces eg, the Crank, during WW1, and with other 'utility' features of that time, the formed 'U' bosses for instance, were ever sent to America.

Phase 2. ELIZABETH MECCANO, 1922-30.

This period covers all the parts and sets produced at the New Jersey factory, including the final 2 years after ACG had gained control of the MCA in April 1928. This change came about when Cowan sold Gilbert his shareholding in the company. The details of the subsequent agreement between Gilbert and Hornby are not known but apparently allowed ACG sole use of the Meccano name, and the MECCANO range of parts, in the USA. It is said that Hornby couldn't use the Meccano name there as long as ACG was still producing at least one MECCANO part, and the 18½" A/G remained as ERECTOR part MB until the system was redesigned in 1962. In 1930 the Elizabeth factory was closed and production of a new range of MECCANO sets started at ACG's New Haven plant.

SETS & CONTENTS A **1922** Sears ad shows sets 0,1,1X,2X and 3X, with illustrations of all of them. It is noticeable that none show any Braced Girders although most other major parts can be seen. But perhaps outdated printing blocks were being used.

The MCS/FB (B) entry shows the Contents list from a **1928** manual (ref. 0528/6.5), and the outfits listed are 00,1,1x-6x, and 00A,1A-5A. The contents are as for the corresponding 1928 UK set numbers except that the US No.00 is the same as the UK No.0. The 'x' sets all have an E2 reversing motor, with a transformer in the 5x and 6x. The Parts List in the Manual shows nearly all the Liverpool range at the time, with, apart from the specialised railway parts, only the Special Screwdriver and the Girder Bracket missing.

A brochure dated **September 1928** shows the same sets

but in addition there is a No.2x Special, also referred to as a 'Leader Outfit'. It came in a wooden box and featured Tyres for the 4x3" Pulleys that were in a normal No.2x. The model shown for the new outfit was a standard No.2 set bi-plane. There is an illustration of both the 2x and the new set and one oddity is that the Braced Girders shown in the 2x are the type with closed ends (that were introduced in the UK in 1926), but those in the Special are the early open ended type. Perhaps Gilbert, not a man to waste anything, had found a superfluity of the obsolete Girders at Elizabeth.

A list from a year later (**October 1929**) shows the same number of outfits but their set numbers were now 0,10, 5 Special,20,30,40,50,60,70, and 0a,20a,30a,40a,50a,60a. As far as can be seen from the illustrations in MCS, sets 30-70 were similar to the former 2x-6x except that 4x3" Tyres were included in each. A manual, copyright 1929, with 'For Outfits 0-40' on its Liverpool style cover, contains models which are labelled as being made from Sets 00-3.

- The **No.5 Special**, which cost \$5 against \$3.50 for the Set 10, had a motor that looks very like the Liverpool E1, but was probably 4v, and 4x2" Pulleys fitted with Tyres. In the List they are called 'Real Dunlop Balloon Rubber Tires' but in CQ12 it is said that they were 'New Firestone Balloon Tires'. Not much can be seen of the Set but it may have been the old No.1 plus the motor and tyres. It contained a Supplement to its Manual which no doubt showed the use of the extra parts.

- From the look of the the **No.10** it is probably the old No.1; there's no picture of the **No.0** but most likely it was the former 00.

- The linking sets **30a-60a** simply made each set into the next highest number, but the **20a** converted both the No.10 or 20 into the No.30. Likewise the **0a** was for the 0 and 5 Special and presumably made either into a No.20.

PARTS Not much information is available on whether the design and finish of the Elizabeth parts differed from those made in Liverpool. Nor is it known whether the US made parts were stamped MECCANO, or if the whole range was made at Elizabeth. The 1928 List in MCS shows many parts that were not included in the largest American set, and it might be thought that the volume of sales of these might not have justified their being made in New Jersey, even if the Liverpool tooling was 'borrowed' to do so.

One of the features mentioned in the 1928 Manual is 'Green and red enamelled parts', but whether all parts were painted isn't clear. It seems more likely that Strips, A/Gs, etc, continued to be plated, when the plates and some other parts were in colour. It has been said that all plating at Elizabeth was tin rather than nickel, but the 1922 ad mentions nickel parts. When found today tin plating, originally shiny, has usually turned to a matt dark grey.

There is nothing to suggest that any other than standard pattern MECCANO parts were used in the Elizabeth sets after ACG took control. The only anomaly is that, as already noted for the late 1928 2x Special Outfit, illustrations of the 1929 0-70 sets show open ended Braced Girders.

Phase 3. NEW HAVEN MECCANO, 1930-38.

Early in 1930 a new range of sets numbered 1-150 was announced and these continued until the end of 1931. What happened after that is not clear. Two new small sets, 1025 and 1050, were introduced, possibly as early as 1932. They have been called the 'Wide Beam' sets and the parts in then were somewhat similar to MECCANO 'X'. Then, probably from 1934, there was a No.5 Outfit which contained 'wide

beam' along with standard parts, and Snap Rivets for most joints instead of N&B. The only known ad of this period, from Dec 1934, featured only the No.5 and no other sets were mentioned. MCS/FB has a J.C.Penney LITTLE JIM entry which is a set of this type but although there is 'Outfit No.1' on the cover of the manual, the models shown are for Outfit 5. On p7 of this MCS entry larger sets than the No.5 are mentioned, and by inference there were smaller ones too. Sets 0, 1, and 3 are listed on the MCS 'Data' page. Possibly the larger sets (above #5) were gradually discontinued as stocks of them were used up.

The final range of MECCANO sets sold by ACG were marketed by his American Flyer Division in 1938 and were in the blue and gold colours then being used by Liverpool for its home market.

MECCANO-MORECRAFT hasn't been mentioned because it's really a totally different system. Gilbert also sold other products under the Meccano name during the 1930s, microscopes and detective kits for example, but they too fall outside this discussion. The Meccano Company of America was dissolved on Oct 13, 1947.

1930 PARTS The 7 new sets that were announced early in that year were numbered 1,3,5,110,115,125,150, and were made up from a mixture of MECCANO and ERECTOR parts. The Parts List for this period has been published several times elsewhere, as well as in MCS, so only a summary will be given. With a few exceptions all the Strips (now called Beams), Angle and Flat Girders, Plates, Brackets, Pulleys and other circular parts were retained. All the Sprockets disappeared and ERECTOR gears replaced all the MECCANO ones except the bevels. ERECTOR chain, which engaged with every other tooth of their gearwheels, was provided. ERECTOR Braced Girders (the earlier 2" wide type) replaced the Liverpool ones. Many of the specialised parts and much of the brassware was dropped, or in a few cases replaced by equivalent ERECTOR parts. There were no Screwed Rods in the new line up and the lengths of the Bolts (now called Screws) indicate that they were the ERECTOR pattern with probably the 8-32 thread. No doubt the ERECTOR parts that were introduced had the standard $\frac{5}{16}$ " dia ERECTOR bosses, single tapped 6-32, and it seems likely that these were fitted to many, if not all, of the MECCANO parts made in the New Haven period. Fork Pieces with ERECTOR bosses have been reported.

Notable additions from ERECTOR were the Radiator (for trucks), a 16 $\frac{1}{2}$ x5 $\frac{1}{2}$ " Flanged Plate, the 6" Curved Beam (Braced) Girder, and at least one $\frac{1}{4}$ " dia Axle, with a Bush Wheel and Foot Block (Double Bent Strip) to use with it. Totally new were the 18 'ship' parts, which were patented by Gilbert in mid 1930 (Pat.No.1815708).

All the motors were ERECTOR, the E2A (the P58 without its flanged feet), the E2B (the same motor mounted between special 5" sideplates), and the 110v E3 (P56G 'Polar Cub'). The E3 was also used in the Disc Clutch Power Hoist unit, geared to 2 winding drums, each of which could be engaged by a (friction?) clutch. Apart from a Transformer this was the only part that didn't get a MECCANO style PN, it was called the P66 but was never listed as an ERECTOR part, it was apparently the 1928 P65 slightly modified.

In all the number of parts had been reduced to about 200, some 30 or 40 less than in 1928. Some of the changes were understandable, ERECTOR gears would have been much cheaper to make and were no doubt adequate for the relatively simple models, mechanically, that ACG favoured;

and some of the substitute parts, like the Braced Girders, could be considered as being of better design. But perhaps it also partly depended on what stock Gilbert found at Elizabeth. Some cases are hard to understand, why for example were all 3 sizes of MECCANO Bevels continued, but plus the (cheaper, cast) ERECTOR Mitre Gear. Why didn't the Bevels go to Canada with all the other gears? Perhaps they simply got overlooked and later had to be used up. The Parts List may not be entirely accurate either, for instance it includes the 1½" DAS but not the 2½", even though the latter is widely used in the models in the Gilbert manual for Sets 1-5, even in those which appear to be new designs. Many such enigmas arise.

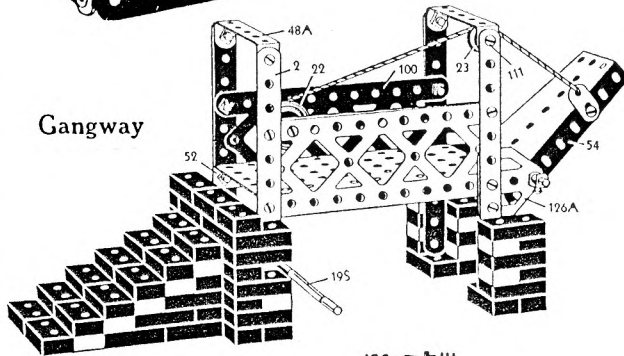
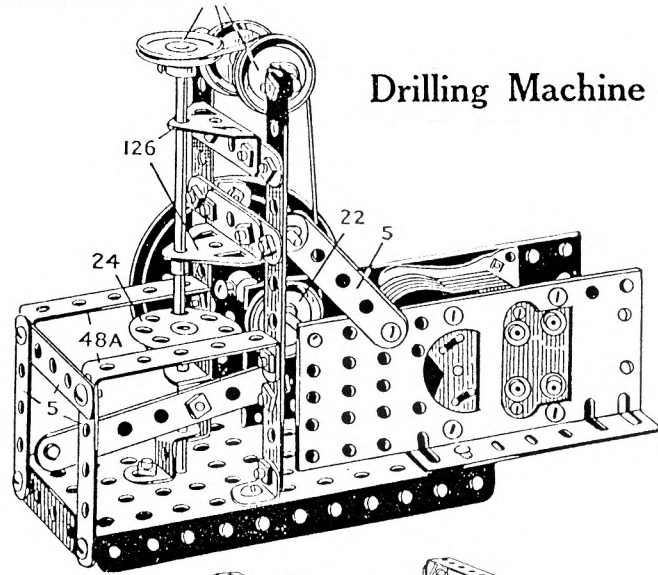
Kendrick Bisset has sent some notes on the parts he found in an incomplete No.5 Set. • The Beams (#1,2,3), 1½" DAS (48), Cranked Bent Strip (44) are tin plated, now turned dark grey. • The Angle and Double Brackets (12,11) aren't tarnished and are probably nickel plated. • The 3" Pulley (19b) is green, as are the Trunnions (126,a), Curved Beam, (90a), and (ERECTOR pattern) 5½" Braced Girder (100). • The Flanged Plate (52) has 2 flanges and the Flanged Sector Plate (54) has only one row of holes; both are red. • The 1" Pulley (22), the Bush Wheel (24), and the gears (Worm 32, 12t 26c, 36t 27c) are all ERECTOR pattern. • The boss of the 3" Pulley is 5/16" dia and ¼" long. • The N&B seem to be ERECTOR style but there's some doubt because there were other 'genuine' ERECTOR parts with the set. • The 'Briks' with the parts are hard and stone-like. • Except as noted the true MECCANO parts are as would be expected.

The colour of some parts can also be seen in the photos of the #115 Set and ship model in Greenberg. Strips, DAS, Brackets, 11h A/Gs, and a Flat Girder are bright looking; a 37h A/G looks dark grey (tin?); a 5h Curved Strip and 11h Braced Girder are mid green; Flanged Plates are mid red and so are 3" Pulleys, unlike those above; gears, 1" Pulleys and Bush Wheels are brass coloured. The ship's Hull is black and all the Decks and the Cabin Top are yellow. Funnel are mid red with black tops and the steam pipes are 2" Axles held in ERECTOR Collars (#59a). Screw heads are round and look nickel plated. In a photo of Joel Perlin's #115 Set, sent by Richard Symonds, the colours are the same except that the 3" Pulleys are green. Green Face Plates can also be seen and the 16½x5½" Flanged Plate is red.

1930 SETS There isn't much information about the contents of the sets and most of what follows on Sets 1,3 and 5, has come from the models shown for those outfits on some pages of Kendrick's manual (M 1363). Each set had its own name, the **No.1** was the Apprentice Outfit and all the models are standard UK 0 or 00. And all but one of the **No.3** (Junior Engineers Outfit) models are those for the UK No.1. So this gives an indication of the contents of the No.1 and 3 Sets. The **No.5** Super Power Outfit doesn't follow the same pattern. This set has a motor, the E2B, and while some of the models have a MECCANO look, many seem new and have the motor as a more or less integral part of them; none show any A/Gs, four of which were in the 1928 No.2x Outfit. 4x3" Pulleys were included but no tyres. Some of the models are shown mounted on bases from the MECCANO BRIKS which were included in this and larger sets. These blocks, square or oblong in plan, have one or two 'bumps' on their upper face and corresponding hollows underneath. Not very secure but there's a note that they can be secured together using rubber cement or water glass

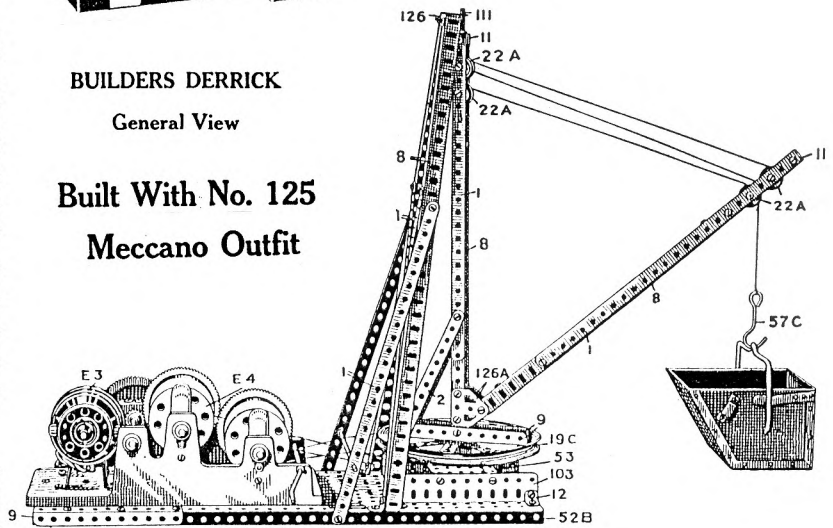
(sodium silicate dissolved in water, eggs used to be kept in pails of it to preserve them). Two of the 'new' No.5 models are shown below. 22

Drilling Machine

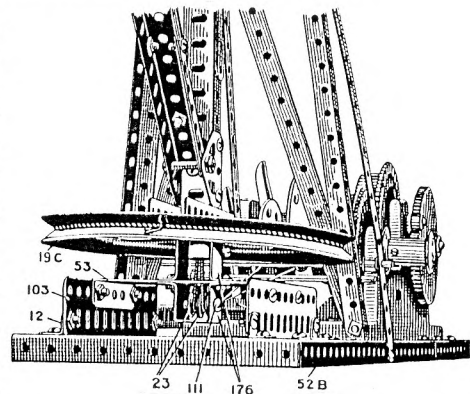


BUILDERS DERRICK General View

Built With No. 125 Meccano Outfit



The 4 larger sets were packed in green wood boxes and each contained parts for a featured type of model as well as the models from smaller sets. The **No.110** Big Motor Car Set included the Radiator (like that on the ERECTOR White Truck), 4x3" Pulleys with Tyres, 18½" A/Gs and a Boiler. The model shown in the ads is a Truck some 20" long and the load carrying floor is the 5½x16½" Flanged Plate. Don Redmond wrote that he has one of these and its



two centre cross rows of holes are only $\frac{3}{8}$ " apart, which means that the 25h Braced Girders which are used as the side rails of the body, can't be readily attached. Al Sternagle commented that this appears to be standard for this part.

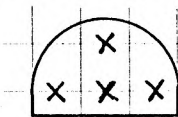
The **No.115** was the Shipbuilding Outfit, there's a photo of it in Greenberg and apart from the special ship parts, 3 Funnels and $12\frac{1}{2}$ " Flat Girders, can be seen. The Boiler End was used as a turret on warships and had 2 holes in the skirt to allow Axle Rod 'guns' to pass through. The rubber 'motor' which powered the ships was described as a 5ft Elastic Band. The box has two layers and the upper parts are clipped to a red metal tray, with the edges flanged upwards and then outwards. It measures about 25x10" and is perforated with holes 1" apart.

No.125 was the Electric Hoisting Outfit and the main additional parts were the 110v E3 motor/P66 Hoist unit, a Tip Bucket and a Dredger Bucket. These were used in cranes, such as the Derrick in the last column, and the Steam Shovel shown in MCS.

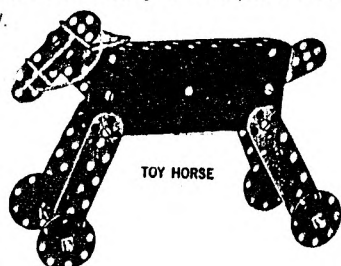
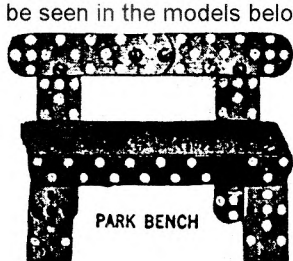
The **No.150**, Master Engineers' Outfit was a large set which was packed in a box 32x18x6". It included a Geared Roller Bearing (grey), 24 Chain Buckets (black), 56 of the curved braced girders (red-orange), many straight Braced Girders (lime green), $24 \times 24\frac{1}{2}$ " and $50 \times 18\frac{1}{2}$ " A/Gs, and a host of the more unusual ERECTOR parts that had been imported into the system, often obsolete ones. Only four No.150 models were shown and many of the extra parts in the Set were not used in them. Two models are shown in MCS and those plus the Giant Revolving Crane are illustrated in CQ11; all, including the very large Ferris Wheel are shown in detail in MJ41.

When sold by Sears the 110 and 115 Sets were numbered 10 and 15: they probably didn't sell the two larger sets.

THE WIDE BEAM SETS No details of actual parts known to be from **Sets 1025/1050** are available. From models in the Instruction Leaflet the wide Beams were like MECCANO 'X' Strips but, except at the ends, every other hole was missing (below). As far as I can see there were 3 lengths of



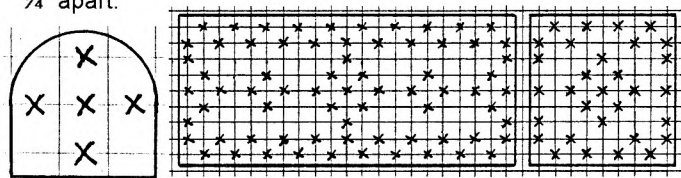
Beams, $2\frac{1}{4}$ ", $2\frac{3}{4}$ " and $3\frac{3}{4}$ " (all measurements are overall). The DAS is approximately $1\frac{1}{4}$ " wide and is made from a $2\frac{3}{4}$ " Beam, but it has an additional hole at its centre. The size and pattern of holes in its lugs, and in the Angle Bracket, look similar to 'X' parts (above, right, the crosses represent holes). The Discs too look the same and Screwed Rods are used as axles. The big difference is the $4\frac{1}{4} \times 1\frac{3}{4}$ " Flanged Plate in the US version. The $\frac{1}{2}$ " deep flanges have holes, $\frac{1}{2}$ " apart, in two staggered rows, and although they don't show clearly in all the illustrations, the top face has a centre hole and 3 across each end. Many of the parts can be seen in the models below.



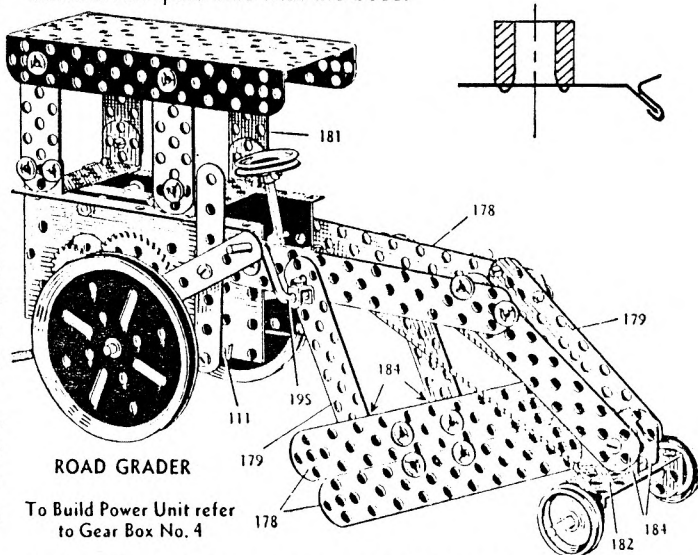
THE SNAP RIVET SETS As already indicated only the No.5 is known. From a photo of a Set and some of the manual models, it's clear that the set contents are considerably different from the 1930 No.5. There are still 4x3" Pulleys, Bush Wheels, some gears, 1" Pulleys, and Flat Trunnions, but apart from a couple of standard 5 and 7h Beams, all the other parts are new and the following can be identified (with their PNs as shown against the parts in the models):

- | | |
|-----------------------------------|--|
| 177. $12\frac{1}{4}$ " Wide Beam. | 182. $2\frac{1}{4}$ " Wide DAS. |
| 178. $5\frac{1}{4}$ " Wide Beam. | 184. $\frac{3}{4} \times \frac{3}{4}$ " Angle Bracket. |
| 179. $3\frac{3}{4}$ " Wide Beam. | 187. $5\frac{1}{4} \times 2\frac{1}{4}$ " Flanged Plate. |
| 181. $2\frac{1}{4}$ " Wide Beam. | 188. $2\frac{1}{4} \times 2\frac{1}{4}$ " Flanged Plate. |

Don Redmond sent notes on some of the parts. The Beams are $\frac{3}{4}$ " wide and have a similar pattern of holes to the 1050 ones. Holes are usually 4.3mm in diameter or slightly larger, but are up to 4.5mm in a few of them. The ends are not quite fully radiused (.42"r). The DAS is longer than before and is made from a $3\frac{3}{4}$ " Beam, but again with the extra centre hole; the lugs (and the arms of the Angle Bracket) are longer too at $\frac{3}{4}$ ", as shown below. The Flanged Plates are actually nearly $2\frac{3}{8}$ " wide over their 2 flanges; the latter are $\frac{3}{4}$ " deep with a pattern of holes like those in the Beams. Their top faces are perforated in a complicated fashion, see the diagrams below - the background grid represents lines $\frac{1}{4}$ " apart.



Don sent over one of the Beams and also a 1" Pulley of unusual construction. It seems to be a disc flanged on its outside at an angle, with a separate 'V' rim formed around the flange. I'll try to sketch it (below right). It's made of steel, which may once have been brass plated, and the $\frac{5}{16}$ " dia brass boss is single tapped 6-32. The rim seems to be solidly attached but one side of the 'V' is nearly vertical and it doesn't run quite true with the boss.



In the 1934 ad the parts are said to be enamelled red and green, and in Don's photo the Beams and DAS are indeed medium green, and the Plates medium red. The paint on the Beam Don sent was a rather fresh, light shade.

Inside the lid of the (green wooden) No.5 box is a large orange label which shows a boy in colour, B&W illustrations of 5 models and the 'New Snap Rivet', and the address of MCA as 200 Fifth Avenue, New York, N.Y. The 'M' of the

main MECCANO heading on it has its left vertical stroke extended downwards well below the right one. This is the style used on the manual shown in MCS for MECCANO-MORECRAFT, and it can also be seen in an exaggerated form on the cover of a No.1 manual (M1351) shown in CQ11. It is said to be from 1929 but with its New Haven address it is probably from 1930 or later. This form doesn't seem to have been used consistently because both the manual (M1363) from the 1930+ No.5, already mentioned, and the one from the No.5 Snap Rivet Set use the normal 'M'. All these covers are in the Meccano-style with 2 boys at the top looking at a Crane. [Gilbert reference numbers are confusing, that on the 'Snap Rivet' LITTLE JIM No.1 Manual in MCS is also M1351.] Going back to the Snap Rivet Manual, one of the models is shown in the last column of the previous page: its front wheels look like the 1" Pulleys already described.

One other PN shown in the manual is 358, against what looks like an ERECTOR DB (Motor Pulley). The motor is 110v and has 4½" sideplates with full length flanges. It looks identical to the MORECRAFT M-3.

THE 1938 SETS These were illustrated in an April 1938 ad. 6 outfits are shown, Nos.1-4, 6, and 7. Two of them are reproduced here. **Sets 1-3** look nearly identical to those in a UK 1938 catalogue. The parts of the manual visible also look like the UK one, and the number of models claimed for each set also correspond.

- The parts in the **No.4** (opposite) look the same as those in the UK outfit but the layout has been changed somewhat to accommodate the inclusion of a small spring motor. From its size it is more likely to be the ERECTOR A48 than the Magic Motor. The ad says that the motor permits the mechanical operation of the models in the manual.

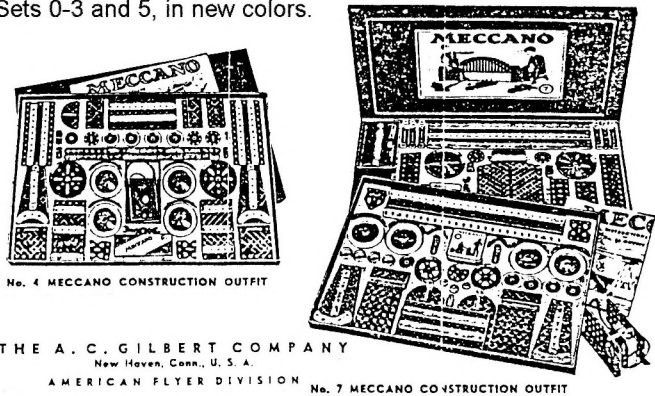
- **Nos. 6 and 7** were packed in metal boxes and a 110v motor was included in each: it looks like the one in the No.5 Snap Rivet set. The No.7 box (opposite) looks much the same size as the Liverpool one but the No.6 has been wid-

ened by a few inches. In both the UK Meccano cover label can be seen inside the metal lid; the layout of the parts was in the UK style but with numerous changes of arrangement. The No.7 is said to have had 2 manuals, and these might have been the UK 6 and 7-8, although something more would have been necessary to use the motor to advantage.

- In the ad it is said that the parts are in 'new colors' and that the Road Wheel is red. In the whole range of sets the parts boxes, card or metal, look just like the UK ones. It has been said that ERECTOR Bush Wheels and gears were used in the sets.

- Certain parts believed to be from these sets have been reported: Road Wheels and a red painted 1" Pulley, both with ERECTOR bosses and a very short 8-32 bolt as a set screw [there may have been a slip of the pen since ERECTOR bosses are normally tapped 6-32]; 1" Pulleys 'made differently' and single tapped with a roundheaded set screw; and 'all screws roundheaded'.

- Alongside these sets were advertised MECCANO-BRIK Sets 0-3 and 5, in new colors.



ACKNOWLEDGEMENTS As well as those already mentioned, thanks are also due to Ed Barclay, Ed Furness and Harry Mariën for the material they have sent, and to the Editor of the Southern California Newsletter for permission to reproduce some of the illustrations used in this account.

TECC 1994-95 Karst Quast was good enough to send the pages from the Xmas 1994 Bart Smit catalogue which show their current range of TECC Outfits. All four, numbered 4-7, are made up from MERKUR parts, with none of the repackaged CONSTRUCTION Sets which used to be sold under the TECC name.

Sets 5 and 6 continue unchanged (OSN 8/201). Set 4 is primarily to make the Helicopter shown on the box lid, see below; it weighs 1kg and costs Fl.29.95, against 2.8kg and Fl.49.95 for the No.5. All the parts appear to be standard and the model looks very simple; it is, like all the TECC models, unmotorised and there's no interconnection between the main and tail rotors.



The No.7 is to make the Fire Engine and 5 other models: it weighs 4.5kg and costs Fl.79 - the No.6 is 5.6kg and Fl.99. The photo (below) shows steering and a 2-stage ladder but otherwise the only noticeable feature is the two bulbs fitted on top of the cab roof. I think the Dutch says that they flash.

The parts in both new sets look to be in the normal MERKUR colours except that the 23mm Pulleys used as the headlights and steering wheel of the Fire Engine are painted yellow instead of the usual green.

In the ad it is said that packs of extra parts are on sale, and that the instructions in all the sets are in Dutch.



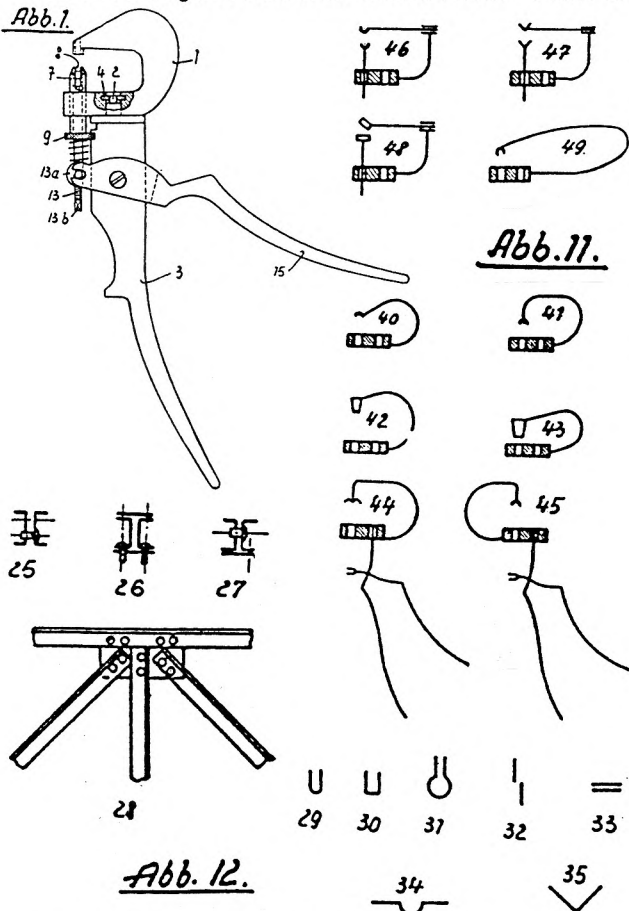
GERMAN DIY SYSTEMS MECHANIKUS from Heller is mentioned by name in Bauklötze Staunen (BS) and is no doubt the same as HELLER-MECHANICUS, for which details in French are given in MCS. The set mentioned in BS is No.1941 and that is one of the sets listed in MCS. The BS outfit is said to be from around 1933. The plier type tool used is described in MCS, it could punch holes in the 12x.5mm steel strip provided, shear and bend it, and to some extent curve it. Rod could also be sheared and bent. The parts were held together with N&B and a fair range of accessories was available including Pulleys, Discs, formed Circular Strips, all in a range of sizes, together with Gears, Sprockets, Couplings, Screwed Rod, and 75mm Dunlop Tyres. The gears (opposite) look like the early STABIL ones, with the teeth made by joining two discs which each have radial 'spikes' formed into the outside shape of half a tooth.



Roue dentée No. 16
12 18 24 36 dents

The rest of this account is taken from BS or from German patents that Toby Haffter kindly send. Grateful thanks also to Mrs Al Sternagle who translated the German text.

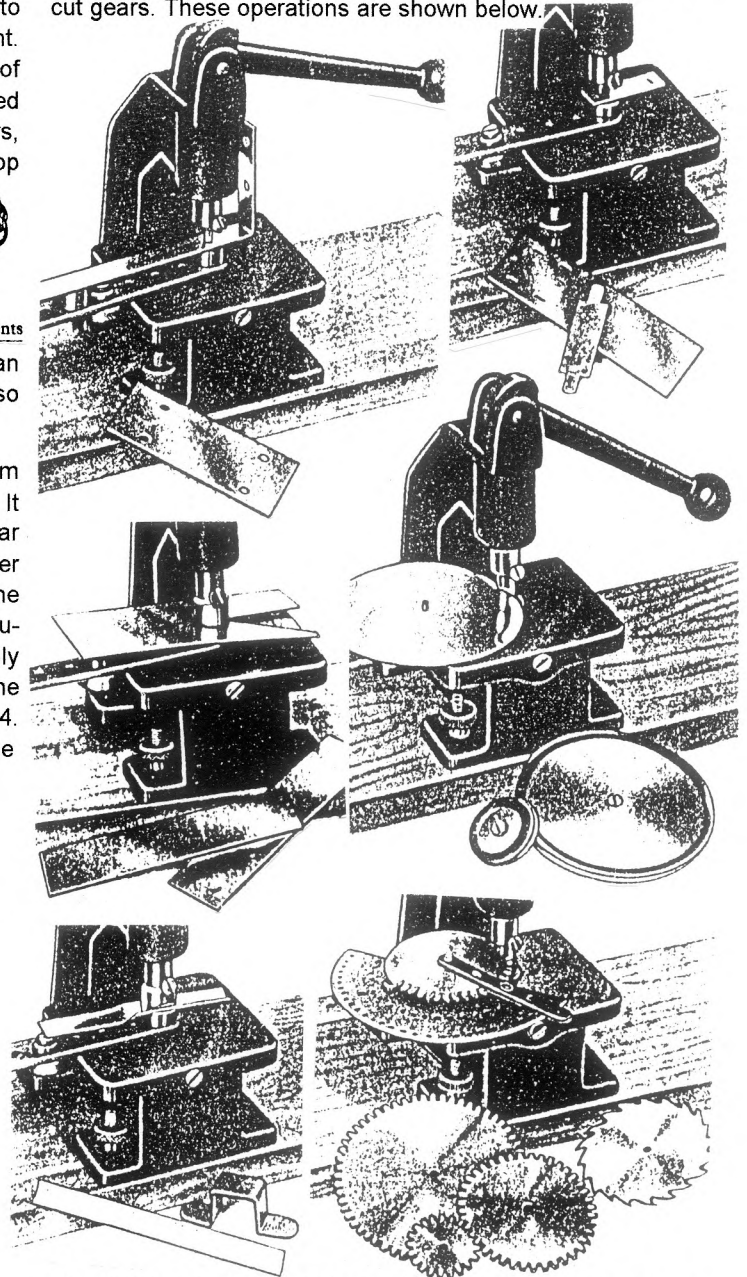
As well as MECHANIKUS, Heller also made a system called **MECO** which had a much more sophisticated tool. It is referred to as the 'Constructor' tool and is said to be near (neben) the 'Mechanikus' tool on the market, but whether 'near' means in time or in general type I don't know. The MECO tool has interchangeable heads and could accurately cut, punch, rivet, bend and form material. The only details of it are from the patent (Nr.618764), which is in the name of the Heller brothers and dates from January 1934. Some of the figures from it are shown below: Abb.1 is the



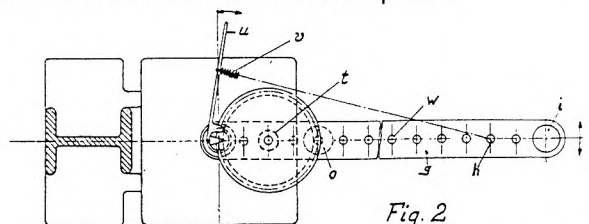
complete tool; Abb.11 (40-49) illustrates the various forms of head, and Abb.12 (25-35) shows riveted joints and formed shapes using some of the different heads in Abb.11.

The other system in BS is **MEWEKA**. The name comes

from METall-WERk-KASTen (Metalwork Set) and it was patented in 1932 by Julius Frommherz of Ettlingen, Baden, after it is said, he had made it for his nephews. However it did not come on the market until 1953, and in 1954 it was a success at the Nürnberg Toy Fair. A hand press is used and carries various tools to punch holes and slits, cut thin metal sheet, form bevelled edges, form right angles, and cut gears. These operations are shown below.



The 1932 patent (621577) shows the Press and a simple device for locating a gearwheel while the next tooth was being pressed out (below). However in the illustration above an indexing plate is used which was patented (Nr.922461) by Frommherz in 1953. MEWEKA was actually made by a firm called Reichmann & Co. of Wuppertal-Barmen and in 1954 Frommherz made an impressive 4m long model of the Wuppertaler overhead railway, which at the time attracted much attention from the local press.

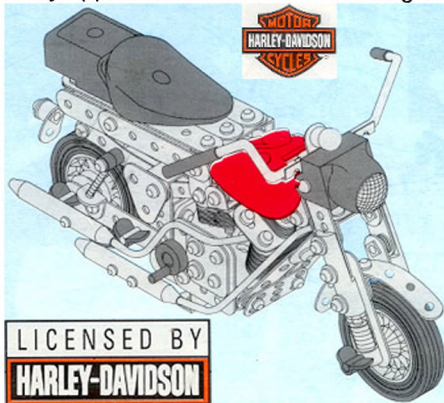


This is all the information to hand on these systems and MCS Sheets will not be issued yet in case further details become available.

STEEL TEC UPDATE Readers have kindly sent details, mostly ads from around Xmas 1994, showing the new sets, half a dozen at least, or the earlier ones still on sale. Summaries follow, in no particular order, with comments on the ads in square brackets. Some of the illustrations won't be very clear but may give an idea of the models. Strips and Brackets are BZP in appearance unless otherwise noted.

The first item isn't an ad, Eric Sinton kindly sent copies of the cover and Illustrated Parts of the **No.201 (#7090) and No.202 (#7010) Outfits**. The latter is the original No.2 with the same number of parts (262), friction motor, Ref. No., models and Part Nos.

The 201 is a motorcycle set with 430 parts and no motor (that I can see). 3 Harley-Davidson models are shown on the cover and are called '1930'S STYLE', 'SPORTSTER' (shown below), and '1960'S STYLE RACER'. They appear to be about 9 or 10" long.



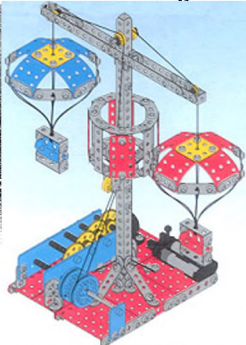
There are over 70 different parts in the Set with 3 patterns of several such as the tank, handlebars, and exhaust system. It's not always clear from the illustrations which parts are plastic but probably over half are. Eric says that nearly all the special parts, save some formed strips, are plastic. Among the standard looking parts are a few that I haven't recorded before, a 4h NS, a 1x5x1 narrow DAS, and a 1" Triangular Plate. A set of three 'beautifully produced' decals is provided, one for each model, showing the Harley-Davidson tank logo of the period.

Unlike Set 202, the (limited) text on the manual pages I have is, except for the names of the bikes, multilingual, in English, French, German, Italian, Spanish, Dutch, and (I believe) Portuguese.

The U.S. **J.C.Penney** catalogue lists:
 • **Set #2**. Approx. 267 parts, 2lb, \$24.99. With friction motor. [Marked 262 Parts on the box, which is exactly as before.]
 • **Set #5**, approx. 348 parts, 4.5lb, \$39.99. [Again as described before.]

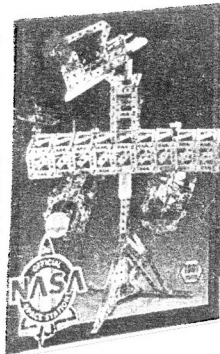
• **#301. Harley-Davidson Motorcycle Set**. Approx. 545 parts, 4.3lb, \$49.99. Builds three classic cycles. Motor included. [Similar models to those in the 201 Outfit but fitted with screens, and on one I think I can see panniers. Again the names of the bikes are on the box lid but only one can be seen - 'CAFE RACER']

• **#401. Parachute Drop Set**. Approx. 695 parts, 5lb, \$69.99. Motorised automatic lifting/lowering of the two parachutes.



[The name on the Set shown is Parachute Ride. The side-plates of the gearbox look plastic, as do the seats under the parachutes. How automatic reversing is achieved isn't clear. The Pulleys or whatever they are that form the 'winding drums' would have to rotate more than 1 turn to give the parachutes a reasonable travel. Not in the same class as the 1950s ERECTOR model.]

• **#403. Space Station Freedom Set with Shuttle**. 1001 parts, 10lb, \$89.99. Working lights, motor, and gears. [I'm not sure what it does but it's best value for parts per dollar.]



• **Roaring, Walking Dinosaurs Set**. Approx. 399 parts, 4.6lb, \$54.99. 3 motorised dinosaurs featured. [Set No. can't be seen. That's one of the parachutes from #401 in front of the box. One animal looks to be about 15" long. The feet and 3 different heads are probably moulded plastic.]



Steel Tec Roaring, Walking Dinosaurs Set.

• **Work Center/Storage Case**. 18x13½x3¾". 4.3lb, \$29.99 or \$19.99 with any set. [As 1993.]

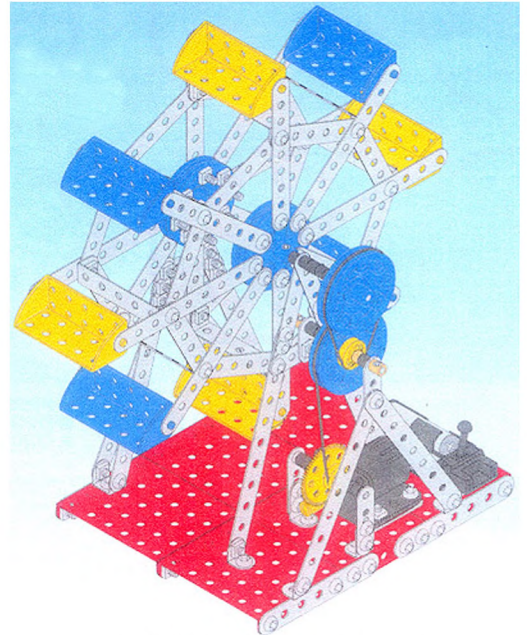
• **Power Wrench Set**. 1.25lb, \$10.99. [As 1993.]

And from **Hills**, a US discount firm:

• **Set #2**, 262 parts, \$19.97. [The outfit shown is identical to the 1993 one.]

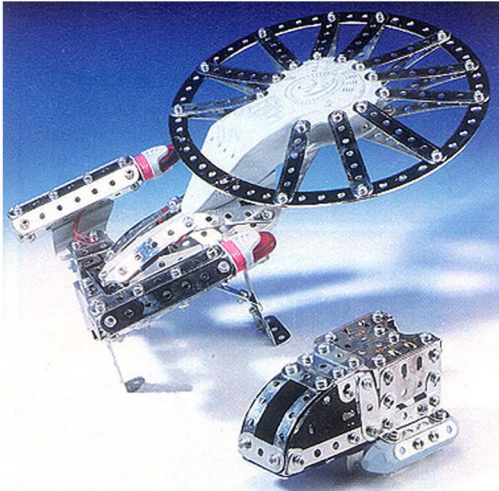
• **Harley Cycles Set**. 430 parts, \$34.97. Build 3 or more cool hogs. [Probably the #201 Set - the same number of parts with no mention of a motor or batteries, and the motorcycle shown is virtually identical to one in the 201 manual. BZP parts with black trim, tank, headlamp and silencer.]

• **Battery Operated Harley Cycles Set**. \$39.97 but \$34.97 with coupon expiring 3rd Dec 1994. Build them and watch them ride. [This is perhaps the #301 Set but there's not enough information to be sure. The bike shown could be one of the ones that can't be clearly seen in the Penney ad. It has a khaki tank and headlamp, a completely clear screen, brown panniers, and a bright silencer.]



• **#402. Ferris Wheel**. 254 parts, \$39.97. Motor driven. [The base is made from red 5 and 10h long Plates, 6h wide and flanged either side. The cars are blue or yellow plastic with 2x5 holes in the back face, and spigots at the sides which are journaled in the end holes of the radial arms. The overall diameter looks less the 12". Drive is probably to another of the blue plastic Pulleys to which the arms are bolted - they look rather like the ones at the base of the Parachute Drop.]

• **Star Trek Set.** \$49.97 or #44.97 with coupon. Build the USS Enterprise with stand. Personal shuttle also. [White plastic centre to the disc; the ends of the nacelles are white with red tips. The disc is some 8" across and the outside strip looks to have no joins in it, that is a large Circular Strip. But more likely largish radius Curved Strips will have been used. No mention of motor/batteries.



• **Work Center Storage Case.** \$19.97.
 • **Power Wrench.** \$9.97. [Called Power Drill in the ad.]

Toys-R-U's had just one item in each of two of their Canadian catalogues:

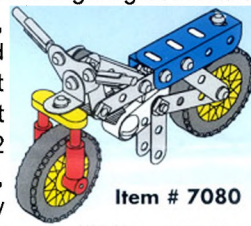
• **System 3.** Build one of 8 battery powered vehicles. \$56.99 less \$7 with coupon valid up to 30th Nov 1994. [The model shown in the ad is almost the same as the Sand Buggy in the #3 Set Manual; the same parts are used, in the same colours, but one or two are placed slightly differently.]
 • **Set #6.** 370 parts, \$74.99. Build 8 different vehicles. [There's no mention

of the Dinosaur which was the featured model for the #6. The model shown in the ad is the Dump Truck, in standard colours. As noted in 11/277 it is the one model, apart from the Dinosaur, which isn't common to Sets 4 and 6.]

Another Canadian ad from **Consumers Distributing** (but date unknown) has:

• **System 1.** Helicopter. \$12.98. [One of the #1 models seen before but red plates are shown instead of yellow.]
 • **System 2.** 250 parts. 8 vehicles, friction motor. \$29.98. [A #2 box is shown: as before but with '250 Parts' on it instead of 262, no set name panel and other slight changes.]
 • **Power Drill Set.** \$16.98. [The standard Power Wrench Set.]

STEEL TEC is on sale outside North America. Apart from Spain (11/277), my daughter brought me back one of the little **SK Sets** which she found in Australia. It is a **Motorcycle** and like the Tractor (11/277) is marked Item #7080, © 1993. The other SK models are shown, but not named: there's a neat looking jet fighter and 3 rather rudimentary vehicles which I find it hard to put names to, but all run on 4 Wheels and Tyres similar to those of the Tractor. The Motorcycle has special yellow plastic Wheels, with Tyres 1 5/8" o/a, a diecast engine/gearbox unit in two halves, and sprung red plastic front forks. The seat is made from 2 blue 2" A/G, another new part. Of the listed parts the 1 1/2" Nar-



row Strips supplied were actually standard width, but this didn't detract from the model's quite good appearance. The front wheel doesn't steer though and the sprung forks have to be near vertical, or they jam when pushed down.

STEEL TEC seems to have been on sale in The Netherlands too, but in a recent issue of the Dutch magazine 'Meccano Nieuws', it is reported that a Dutch judge found the product to be 'a pure imitation of Meccano' and the distributor, Otto Simon, was directed to remove it from sale.

Thanks are due to Kendrick Bisset, Don Redmond and Richard Symonds for sending the ads mentioned in this article.

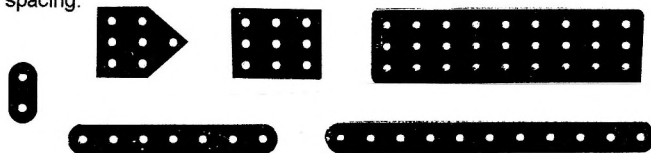
END NOTE Since this piece was written Chas Shrubsole has sent a list of sets he has found and these include the following not yet mentioned:

• **#204** (Item 7075), **Mutant Bugs** (221 parts).
 • **#151 Series:** various sets, each of which makes 3 small models - Helicopters (209 parts); Planes (148); Competition Vehicles (159). Some of the models are as in the SK Series and the others are similar in style.

In addition he gives the Item Nos. for a number of the sets and one day I'll try to compile a list of all I have of them. He also sent a list of prices for a selection of sets, STEEL TEC and MECCANO, in various Canadian stores, and concludes that when like is compared with like, STEEL TEC is often little, or not at all, cheaper.

THE "EMPIRE" EDUCATIONAL KIT This little set was included in MCS Part 5 but without much detail and the illustrations of the parts are rather blurry. Courtesy of Malcolm Hanson I now have a photo of his Set, and I also recently came upon a handful of the parts.

The first thing one notices is that the spacing of the holes in the Plates, and Trunnions, is different lengthways and crossways, 5/8" (15.9mm) and 7/16" (11.1mm) respectively. All the Strips have the longer pitch and are a few thou over 5/8" wide. All holes are 3.9mm dia but look smaller in the Strips because of their greater than usual width and hole spacing.



Notes on the parts follow, with the likely number in the No.1 Outfit, the only size known, in brackets:

• Strips are 11h (4), 7h (2), and 2h (4), and the latter two lengths also appear as 1x5x1 DAS (2) and Angle Brackets (4). All have near fully rounded ends and are all red except that one of the two 7h Strips in the Set is green.
 • There is a 3x3h Perforated Plate (1) and 3x9h ones (2), which are also made into 3x7h Flanged Plates (2). Trunnions are the 7h type (2 +

2 Flat). The corners of all these parts are sharp or have a small radius, including the apex of the Trunnions; all are red except for green 3x9 and 3x7 Plates.

• The Balloon Wheels (4) are about 1" dia, or possibly slightly less, and have a coppery sheen in the photo; the 1" Pulleys (2) look silvery and appear to have no boss, but their centres are belled outwards. Again from the photo, the Axles (2x2" + 2x3") and Crank Handle (1) look appreciably smaller than the holes, perhaps 1/8" dia, and both seem to have that coppery appearance, as do the Spring Clips (4).
 • Other parts are a steel 'S' shaped Hook (1) about 3/4" long, a black looking Spandriver (1), about 2" long, and N&B (24 can be seen holding the parts to white card boards, but there's also a packet in the Set which could contain more). The thread isn't known but the hex Nuts scale at about 6mm A/F, and might be commercial 4BA - they have a brass look to them.
 • The parts are reasonably well made and finished; all the Strips and Plates are steel, .031" thick for the Strips, but other parts range from .021" for some of the Trunnions to .036" for some of the Plates. All holes are round. Some of the loose red parts are lighter in shade than the rest.

No manual is known but on the box there's a Crane and 'Make this Model and many others'. The war is also mentioned and probably this Set appeared soon after it.

BURGSTÄDTER

Clive Weston came across a No.7 Outfit from this 70 part East German system and kindly let me examine it, and lent me the Manual to study. This Manual gave rise to the original name used for the MCS Part 5 entry, because BAU was the most prominent name on the manual cover (followed by ANLEITUNG) and there was no mention of BURGSTÄDTER anywhere. But 'Bau Anleitung' it appears means 'building instructions' and hence by common consent the name BURGSTÄDTER, which is on the box lid, followed by METALLBAUKASTEN, has been adopted. BURGSTÄDT is the home town of the maker and the full name means something like 'Castletown Metal Construction Set'.

In MCS/FB it is said that there are similarities between BURGSTÄDTER (BUR for short) and BERGSTADT (literally Mountaintown), and perhaps there are, but the closest system is SCHEFFLERS (SCH). The MCS/FB pages for it show the same range of sets with the same contents, and also the parts have the same PNs and names. There are no illustrations of the parts in the BUR manual but the parts in the Set and those that can be seen in the models in the Manual look, with a few minor exceptions, identical to the SCH ones in MCS. The only important difference, if it's not an error, is that the pitch of the holes in the parts in the Set is 12.8mm against the MCS value of 12.87 for SCH.

It is also worth noting that in the original /NZ entry for SCH (which shows a rather smaller range of parts and fewer sets), the manufacturer is given as A.Scheffler of Sacks. In the later /FB it is VEB Metallspielwaren, 9112 Burgstädt, and the same address is given on the back of this Manual for VEB Plasticart, the maker of BUR. MCS gives the 1970s to 80s as dates for BUR and I noticed that Andreas Konkoly was advertising sets for sale in 1983.

The numbering of the BUR sets is unusual. Nos. 1, 2, 3 are basic outfits; 4 and 5 link 1 to 2, and 2 to 3; 6 adds to 3; and No.7, called Elektro-mech., is a 4.5v dc motor plus extra A/Gs, Pulleys, gears, etc. As an indication of size the #3 Set has 80 Bolts, the #6 another 80, and the #7, 40. A combined #3+6+7 would have 24 A/Gs ranging from 11 to 25 holes long, 7 Gears and 3 Sprockets. No flexible plates are provided. The #7 is packed in a box 15½x12x2", and the lid is blue with models shown against a yellow ground. Inside the parts are contained in a white plastic moulded tray.

DATA (in mm) **Strip** (7-hole): •Hole pitch/dia, 12.8/4.2; •width, 12.1; •ends near fully radiused. **Boss**:•o/d, 11.0; •i/d, 4.00 (a few up to 4.1); •nickel plated steel; •double tapped. **Thread**: M4. **Axle Dia**: 3.95. **DP (Mod)**: 25 (1.0). **Nut**: hex 6.9 A/F, steel with black finish. **Bolt**: pan head 8.0 dia, nickel plated steel.

Details of the main parts in the Set follow. Unless otherwise stated they look like the SCHEFFLERS parts in MCS, and most can be seen in the models/snippets shown opposite.

- Except as noted all the parts are steel with a rich black metallic finish.
- Both faces of the A/Gs are about ½" wide with round holes in both. Corners are slightly rounded.
- The large Pulley (64mm o/d) is the MÄRKLIN type but is made of bright red plastic with a boss as above. The rim is 10mm wide and the face contains an inner ring of 8 holes and an outer ring of 16, with every 4th elongated radially - there are none of the circumferential slots of the SCH part.
- The other Pulleys are nickel plated: the largest is 29mm dia and 5.8mm wide; the next is 24x5.3; and finally one with the groove machined into one end of a solid bar 14mm dia

and 12mm long. Other nickelled parts are Bush Wheels (35mm), and Collars and Couplings. Both the latter are the same dia as the bosses, and are 6 and 20mm long; they are double tapped and the Coupling has 2 such (but no plain transverse) bores. Axles are also nickel plated and have well rounded ends.

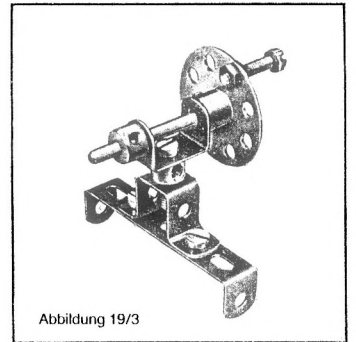
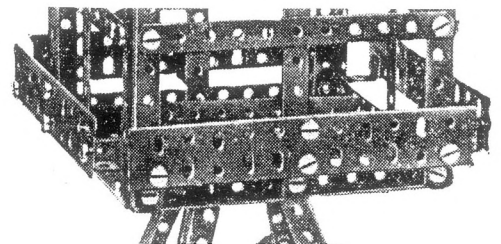
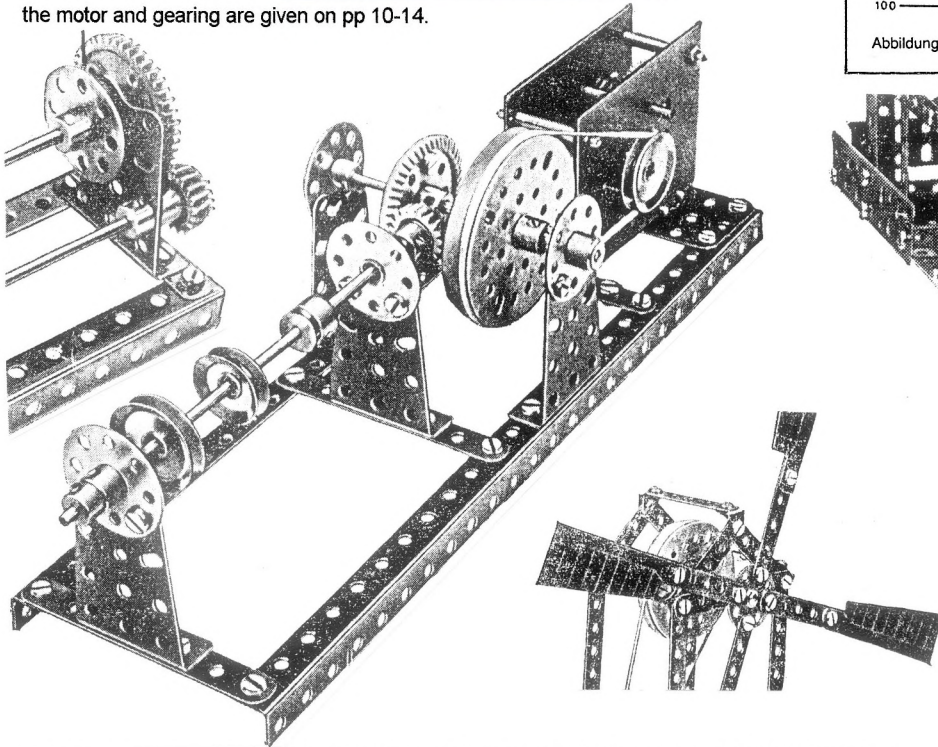
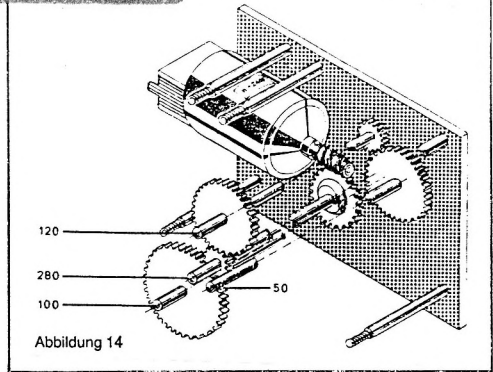
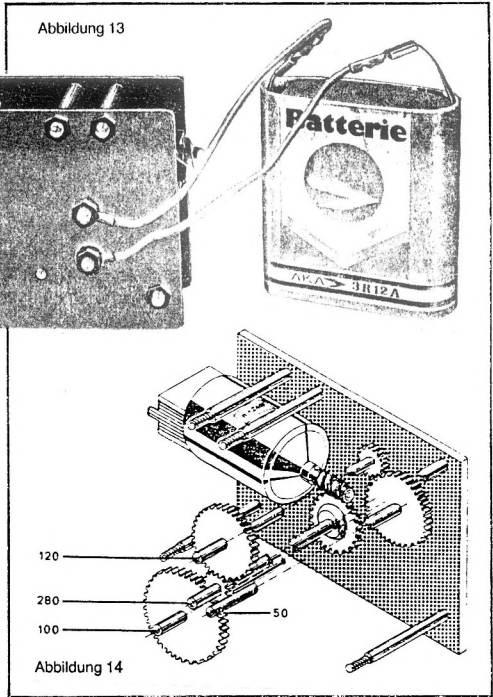
- The gears are moulded in dark brown plastic. The Pinion (18t, 20.1mm o/d) has a bevelled end which meshes with the larger Bevel. This has 45t and is 45.0mm overall; it has no boss but a 12.3mm centre hole so that it can be bolted to a Bush Wheel. To locate it there are 2 diametrically opposite pegs on the back face - between them are 3 equispaced holes each side. The SCH part shows only 4 holes in all. The Gear Wheel (43.4mm o/d) has a normal boss and 42 teeth.
- Gear drives are often shown running in super Trunnions, 4 holes high. These can be seen opposite. The 2 outer holes in the flange are elongated (f&a) as well as the outer ones in the 3rd row up. A Shafting Standard can be made by bolting a Bush Wheel to the top outer holes.
- In the Konkoly ad mentioned above the Plates are said to be dark blue but the 3x3h Perf Plates in the #7 are black, and have slightly rounded corners.
- The Bolts have pan heads that are slightly tapered at the sides and slightly domed on top. Their shanks are 6mm long. Longer Bolts are shown in some of the models but they are not listed, nor were there any in the Set. Nuts are 2.4mm thick.
- The single ended Spanner is 70mm long overall, and the Screwdriver, which doesn't look like the SCH one, has a red plastic handle and a nickel blade.
- The Motor (it's actually called a Gearbox with Motor) measures 90x68x30mm and has thick steel sideplates. The Manual contains a diagram showing the innards (opposite), and gives the motor speed as 2400rpm, with the speeds of the 4 geared output shafts as shown. The motor reminded me of the one in the C04 CONSTRUCTION Set. The white plastic reduction gears used are a push fit on their shafts. I didn't check but I think these gears are slightly finer than the gears in the Set, and in any case there are no holes in the sideplates which would allow a geared offtake. Instead a Pulley is used on one of the output shafts and a stout, round section rubber driving band is supplied.

Most of the parts that comprise BUR are not in the #7 Set but a few unusual ones can be seen in models in the Manual (opposite). For example a 5x11h Flanged Plate with a 3x7h central cutout, MÄRKLIN style Curved Strips with the long centre slot, Flat Girders with alternate holes and slots both ways, and Windmill Sails which are tapered and have 9 'bays', unlike the parallel 4 bay SCH ones. Other unusual SCH parts which are listed by name for BUR, though the design will not necessarily be the same, are a 6x6h Plate flanged on two sides; a Crankshaft, like the MECCANO #134 but with the crank nearer one end than the other; a Rod and Strip Connector like MECCANO #212a but with a longer 'arm' containing 2 holes, with one elongated; and 2 Sprockets, one with 20 teeth and a boss, and the other with 35 teeth and a very large centre hole - it probably bolts to the 64mm Pulley.

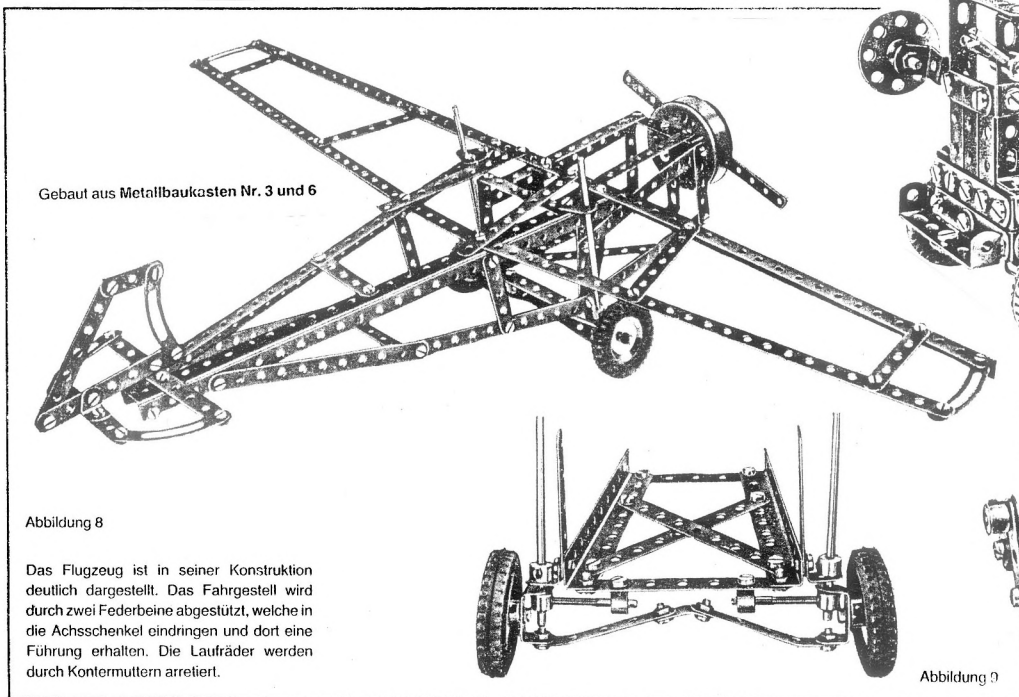
The cover of the Manual in the #7 Outfit says it is for Sets 1-7 and there are a few models for each Set in it but the range is limited, there's no car or lorry for instance. Quite a number of the parts in the Sets are not used in any of the models, the Sprockets and Chain for example, and half of the 24 pages is given over to the Motor and its use in 4 not very advanced models. So even though only one manual is

listed in the Set Contents, perhaps it isn't the same in all the sets.

SUMMARY OF MANUAL. #Name: BURGSTÄDTER but this name is not shown in the manual, see before. #Details of maker: VEB PLASTICART, ANNABERG-BUCHHOLZ, Werk Zschopau, Prod.-Stätte Burgstädt, 9112 Burgstädt, Karl-Marx-Straße 15. #Dates &/or Ref Nos: Print Ref, III-8-9 Ke 44 84 4079, on back cover. #Page size: 210x147mm deep. #No. of pages: 24 inc covers, all unnumbered. #Language: German. #Printing: cover is white with blue panel on left; models are b&w halftone photos. #Page Nos. of Parts List/Set Contents & highest PN: 22-23, 59. [no Illustrated Parts List] #Sets covered: 1-7. #No. of models: 12 for the various sets, but not in order. #Name, Model No., Page No. of first and last model: Drehkran, Abb 1,3 (Set 2); Revolver-Drehmaschine, Abb 18-21,17 (Set3+7). #Other notes: details of the motor and gearing are given on pp 10-14.



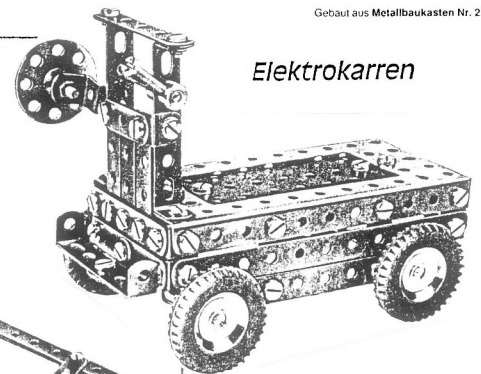
Gebaut aus Metallbaukästen Nr. 2



Gebaut aus Metallbaukästen Nr. 3 und 6

Abbildung 8

Das Flugzeug ist in seiner Konstruktion deutlich dargestellt. Das Fahrgestell wird durch zwei Federbeine abgestützt, welche in die Achsschenkel eindringen und dort eine Führung erhalten. Die Laufräder werden durch Kontermuttern arretiert.



Elektrokarren

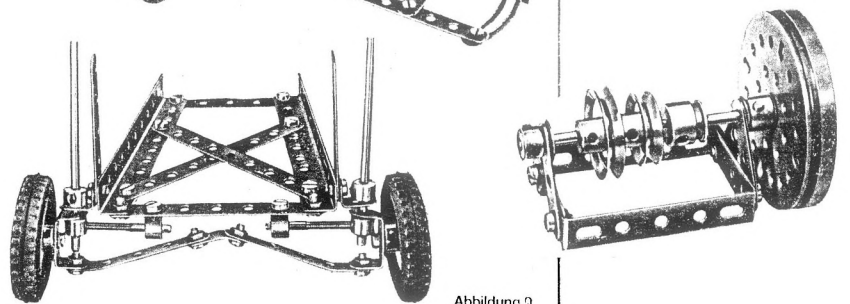
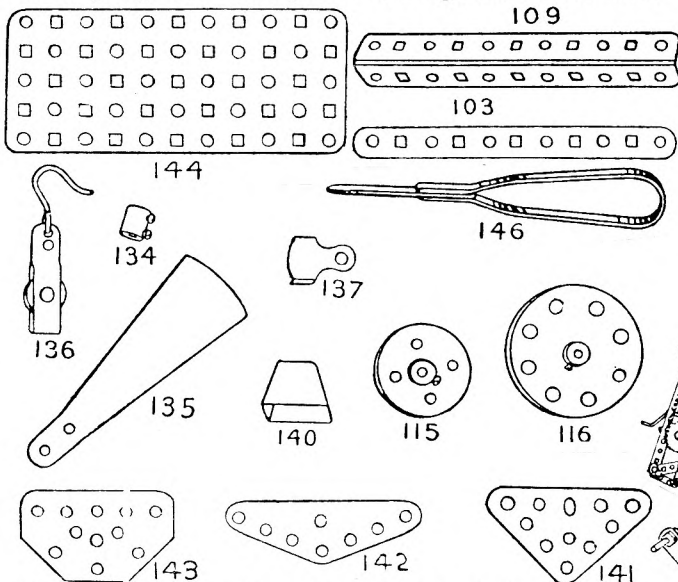


Abbildung 9

MODELIT PHASE 2 The MODELIT in MCS has a few unusual parts but mostly they are rather like MECCANO: a No.3 Outfit was described in 8/186. But now Kendrick Bisset has sent details and photos of a No.B Set owned by George Wetzal, together with copies of the important pages from its manual. Thank you to both. The parts are very different with the pitch of the holes reduced to $\frac{7}{16}$ " and every other hole square instead of round. If that sounds familiar it's because it's the description of Richard Symonds' Mystery Parts No.19 in 11/283. I now have a photo of them and they look exactly like those in the Phase 2 manual and in the Set B.

Calling this different MODELIT Phase 2 perhaps implies that it came after Phase 1 (the one in MCS), and it very probably did, although there's no hard evidence to prove it. The main thing is that there are more and larger Sets in Phase 2, and many more models in the Manual. Also the Part Nos. begin at 101, no doubt to avoid any confusion with the previous ones. Incidentally the maker's name and address is the same for both Phases and the general presentation of the Sets and Manuals shows many marked similarities.

PARTS There were 59 parts in Phase 2 against 63 before. Most carried over without change apart from the different hole format. Those deleted were the 3, 8, and 9h A/Gs (now called Angles), the 2 and 4h Strips, one of the two types of Cord, and the 1" Axle, $\frac{3}{4}$ " Pinion, Washer, Eye Piece, 2x3x2h DAS, 3x11h Plate and Sector Plate. The 25h A/G and Strip were replaced by 27h ones, so slightly shorter at about $11\frac{3}{4}$ ". New parts, shown below, were a 2h Coupling (#134), a (small) Bucket (140), a Pulley Block (136), and 3 small Plates (141-143) called Triangular, 45°, and Intermediate Plates. Also below are 5 parts that were different in Phase 2, the Small and Large Spider Wheels (115, 116 - replacing the Bush Wheel), the Screwdriver (146), Propeller Blade (135), and Pawl (137 - although not shown both



Now some notes on the parts, mainly about differences:

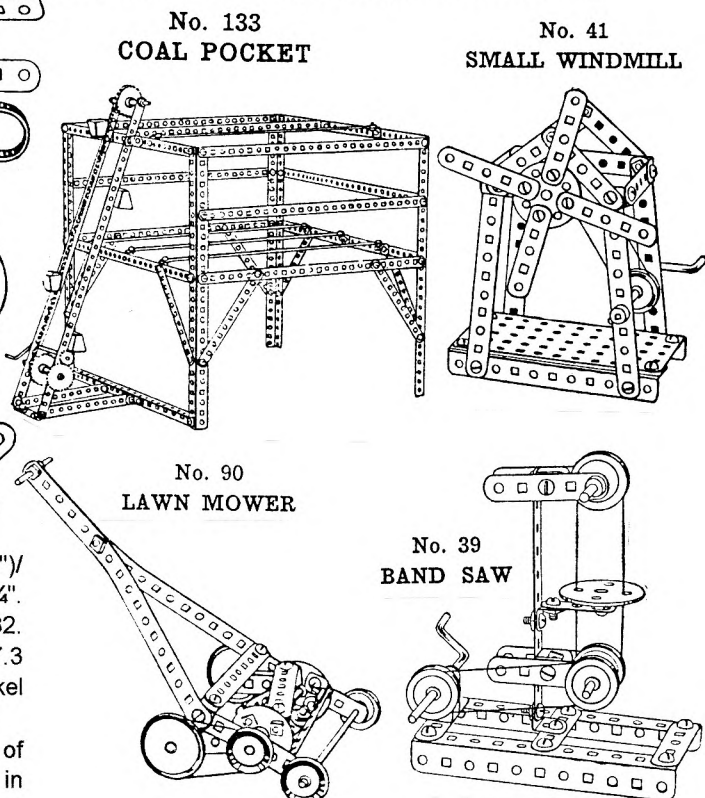
- **DATA** (in mm) Strip (11-hole): •Hole pitch/dia, 11.1($\frac{7}{16}$ ")/4.5; •width, 11.1; •thickness (3-hole), 1.16; •end radius, $\frac{1}{4}$ ".
- Boss: •o/d, 8.9; •i/d, 4.2; •brass; •single tapped 6-32.
- Thread: 8-32. Axle Dia: 4.01. DP (Mod): ? Nut: square 7.3 A/F, nickel plated steel. Bolt: roundhead 7.5 dia, nickel plated steel.
- Although the width of the Strip was reduced the arms of the A/G in the photos look at least as wide as they were in Phase 1, 14-15mm.
- The Phase 1 Bush Wheel was $1\frac{1}{2}$ " dia and had 8 holes;

in the photos the Small Spider Wheel (#115) looks the same diameter and its 4 holes look to be at $\frac{7}{16}$ " radius. In the manual models it is sometimes shown with 8 holes. Scaling the Large Spider Wheel from the Manual gives an o/d of 2"+ and the 8 holes at $\frac{3}{4}$ " rad., so that might be $\frac{7}{8}$ ".

- No Sprocket Wheels have been seen but in the Manuals the 2 sizes are shown with 10 and 16 teeth in Ph1, and 14 and 21 in Ph2. No Ph2 gears have been seen either.
- The three new triangular Plates are as far as can be seen the only structural parts without any square holes in them. All Plates have well rounded corners.
- From the photo the Screwdriver is made from flat steel at least $\frac{1}{4}$ " wide.

OUTFITS There were 7 main Outfits, A to G, and 6 linking Sets, A-S to F-S. Allowing for the new range of parts, A to E overall had much the same contents as Nos.1 to 5 of Ph1, and they were identically priced. The new smaller sets had a few more parts in them, and the E about 20 less at 288, (excluding the 150 N&B). In a few cases the introduction of some of the more exotic parts like Sprockets and Flanged Wheels was delayed by one set compared with Ph1. The G Outfit was packed in a hardwood box and had 478 parts plus 250 N&B: also included were 30 A/Gs, 8 Flanged Wheels, and 14 Gears. Compared with 1921 MECCANO, the G lay between a No.5 and a No.6. A motor (#159) was included in all the new MODELIT sets from D upwards.

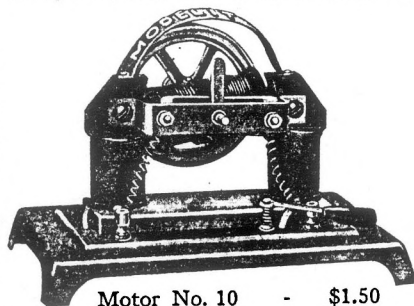
MANUAL MODELS Clear line drawings of models replaced the Ph1 photos and there were many more, 117 for Sets A-E against 40 for 1-5, and another 22 for the two largest sets. Some of the Ph1 models reappeared, including the Sand Shovel shown in 8/187, but its name had been changed to Steam Shovel. It was a straight transformation to the new parts and although they could have been used to advantage, none of the new triangular Plates were incorporated. In fact although they were included in Outfit C on, little or no use is made of them in any but the largest models. Perhaps many of the models dated back to an earlier, more extensive, Ph1 manual, or competitions before Ph2.



M O D E L I T W I T H M O D E L I T

The models are generally fairly simple: the small selection shown includes a G model, the Coal Pocket. It could I'm sure have been much improved if more of the parts in the set had been used (even if I'm not exactly sure what a Coal Pocket is meant to be). Notice the Buckets attached to the Sprocket Chain, was this a first for MODELIT? Without a date for Ph2 one can't be sure - the MECCANO Dredger Bucket was introduced in 1921. The Loom on the back cover of this Issue is more complex than most of the models and is motor driven. Several railroad wagons are shown in the manual pages I have, but no cars or trucks: a coincidence perhaps but possibly a reflection of the absence of a decent size road wheel in the system, even after all the revisions for Phase 2.

MOTORS It isn't stated which motor was included in the Sets and the one shown in some of the models (see the Loom) is not the same as the No.10 (opposite) advertised in the back of the Manual. The latter had a reversing switch and would run on one or two dry cells. At \$1.50 it cost \$1 less than the fully enclosed No.100 in the Ph1 Manual.



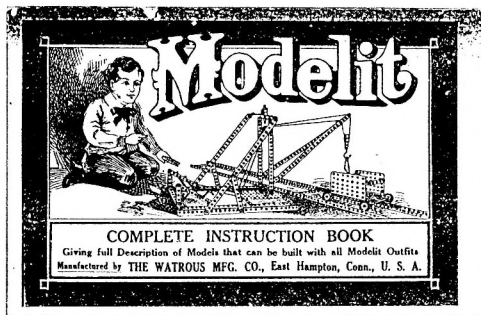
Motor No. 10 - \$1.50

QUESTION Why did Watrous Mfg. decide to change horses? Perhaps because there was concern over infringing Hornby's patent, and many of the MECCANO-style parts, the Sector Plate, albeit without flanges, the Eye Piece, and the original Pawl, did all disappear. So perhaps that was why, but it may have been that the 1/2" hole spacing and the MECCANO look didn't allow the product to stand out clearly from

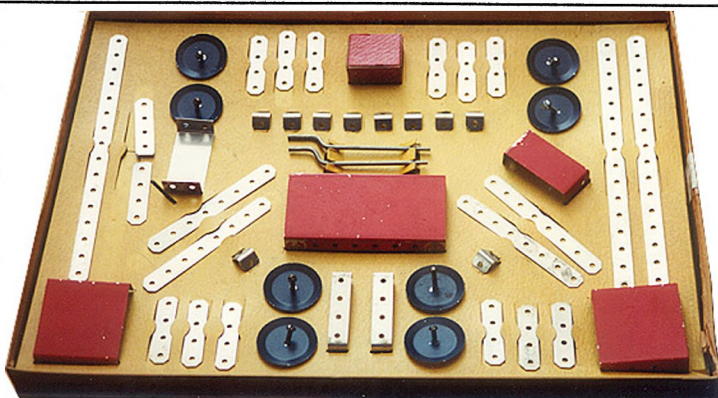
its (many) competitors. The thinking may have been that the square holes would give it a distinctive appearance (it's hard to think of any other reason for them), and the nonstandard spacing would deter new MODELIT owners from buying extra parts from other systems, or from buying secondhand parts, the worst nightmare for an MCS manufacturer.

SUMMARY OF MANUAL.

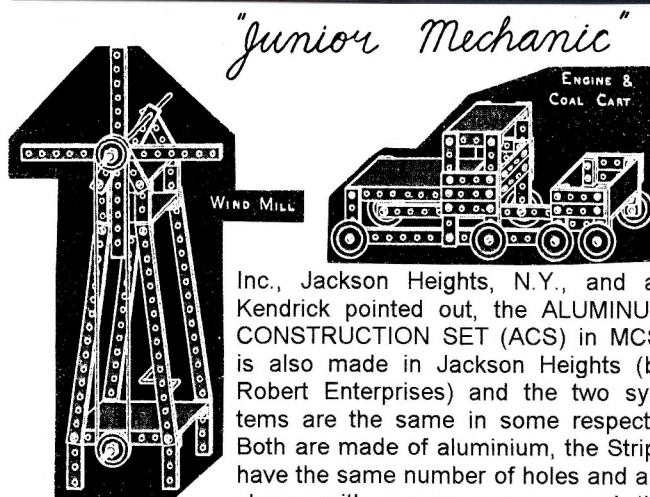
#Name: MODELIT.
 #Details of maker: Watrous Mfg. Co., East Hampton, Conn., U.S.A. #Ref Nos. &/or Dates: none. #Page size: 255x165mm deep. #No. of pages: 52 + covers. #Language: English. #Printing: Line drawings except photo of motor. Black on white: cover blue on grey. #Page No. of Parts List & highest PN: 51 (illustrations p50),162. #Page No. of Set Contents & highest PN: IBC,162. #Sets covered: A-G. #No of models for each set: A,41;B,28;C,18;D,14;E,15; F,14;G,8. #Name, Model No., Page No. of first & last model of each set: A: RAILROAD WARNING POST,1,2; SMALL WINDMILL,41,11. B; PISTOL, 42,12; POWER HACK SAW,69,18. C: PILE DRIVER,71,19; OVERHEAD ROTARY CRANE,88,23. D: STEAM ENGINE, 89,24; PANAMA CANAL CRANE,102,28. E: ARMORED RAILROAD CAR, 103,29; GEAR TRAIN, 117,35. F: AERO ICE BOAT,118,36; LIFT BRIDGE,131, 42. G: STEAM ROLLER,132,43; WEAVING LOOM,139,48. #Other notes: Part Nos. start at 101. Motor No.10 and Transformer shown on p10; price list of outfits A to G, A-S to F-S, on the back cover.



New System: JUNIOR MECHANIC On the box lid is "Junior Mechanic" | CONSTRUCTION SET | Number 201, and I'm assuming that JUNIOR MECHANIC is the name of the system, although it could be the name of the #201 Outfit. Kendrick Bisset kindly sent details of this little American set, with photos of it and a photocopy of the lid. The latter measures 16 1/2 x 11 1/2" and is half red and half blue, divided by a wide white diagonal band. The parts are mounted on a yellow card, specially cut to receive them. The Set is near complete and in very good condition (except that one Strip has been chopped up into shorter lengths), but there was no manual with it. However 6 models are shown on the lid, and 2 of them are reproduced here, together with a general view of the Outfit.



There are 13 different types of part, all made of aluminium except for the steel N&B. Notes on the parts follow:
 •**DATA** (in mm) Strip (8-hole): •Hole pitch/dia, 12.7/3.5; •width, 12; •thickness, .81; •corners of ends cropped at 45° (shown square on lid). Thread: Believed 5-40 (.123" dia). Crank Handle Dia: 3.16(nominal 1/8"). Nut: Hex. 7.9 A/F. Bare steel. Bolt: Roundhead, 5.8 dia. Bare steel.
 • There are 4 each of the 16 and 8-hole Strips, and 12 of the 4-hole. The 16 and 4-hole are 1.27mm thick. The two 1x4x1h DAS are .81mm, and the 10 Angle Brackets, 1.04mm thick; both have cropped corners.
 • The Flanged Plates are 2" wide and 2h, 4h, and 8h long. with holes only in the flanges. The corners are square and the outsides of the Plates are painted red.
 • The Bolts are in two lengths, 3/8" and 3/4". The Crank Handle end remote from the handle is threaded; there are no axles.
 • The 8 Wheels are .71mm thick, 36.5mm dia pressed discs, angled near the edge. They are painted blue on their concave side only. Two together form a pulley and are used thus, locknutted on the end of the Crank Handle. Otherwise the Wheels run on locknutted Bolts.
 • The parts are quite well made. Strips are smooth and without burrs though some of the holes are a bit off centre. The red paint seems to be easily scratched.
 • All holes in all parts are round.



Inc., Jackson Heights, N.Y., and as Kendrick pointed out, the ALUMINUM CONSTRUCTION SET (ACS) in MCS, is also made in Jackson Heights (by Robert Enterprises) and the two systems are the same in some respects. Both are made of aluminium, the Strips have the same number of holes and are shown with square corners, and the form of lettering used for the name and address is similar. The Wheels are different though and there are no Flanged Plates in ACS. There's no indication of date for either but most likely they are both from soon after WW2.

When the details of this Set arrived I was reminded of the Flanged Plates described in Mystery Parts No.23 (11/283). However the JUNIOR MECHANIC ones aren't quite the same - they are much thinner (.017"), have smaller holes, and their flanges are only 1/2" deep. Also as already noted, they are painted on one side only.

The name of the manufacturer on the box lid is Mechanicraft

THE ENGINEER The British Columbia Meccano Club reported the existence of this small Canadian system some years ago. Soon afterwards Don Redmond came by some of the parts and I realised that a few 'mystery' strips that I'd bought at a local Toy Fair here in Salisbury, must be from the THE ENGINEER too. More recently Richard Symonds has obtained a copy of a manual, courtesy of the BCMC, and has hunted out all the parts mentioned in it, and some others too, which are probably from a later phase. This account is based on a copy of the manual, and the photos and parts that Richard kindly sent over.

The most noticeable features of THE ENGINEER are the Axles which are larger than usual at $\frac{3}{16}$ " dia, and the Strips which are about $\frac{9}{16}$ " wide and have impressed shallow grooves, about $1\frac{1}{2}$ mm wide, running along each side near the edge. No doubt this adds somewhat to their stiffness but they're made of soft steel and are easy to bend despite the grooving and being 1.1mm thick.

The Manual is for a 'Senior' Set and two others are mentioned in an announcement of prizes for the best models, a 'Junior' and a 'Deluxe'. No details of Set Contents are given, nor illustrations of individual parts, but there is a price list of THE ENGINEER parts, probably the whole range then available because the longest Bar (strip) isn't shown in any of the models that can be made from the Senior Set.

The Parts List includes a Book of Giant or Master Models, and a Large Steel Box for Holding Toys; details of the other 19 items are:

• DATA (in mm) Strips: •Hole pitch/dia, 12.7/5.1; •width, 14.5; •thickness, 1.1; •ends fully radiused. Boss: •o/d, 9.5; •i/d, 4.86; •brass; •single tapped 6-32. Thread: 8-32. Axle Dia: 4.74. DP (Mod): NA. Nut: square 8.4 A/F, BZP steel. Bolt: pan head 8.0 dia, BZP steel.

• There are 4 lengths of Bar with 2, 8, 12 and 16 holes. The nominal $\frac{1}{2}$ " hole spacing varies slightly from Bar to Bar, from 12.63 to 12.73mm in those seen; and in some the hole dia is only 4.8mm. The 8-hole one is also formed into a Curved Bar, with a radius of about $1\frac{1}{2}$ ". Flat steel, not grooved, is used for the Angles (angle brackets): the arms are about $\frac{3}{4}$ " long with partially radiused ends (8.3mm) and a round hole in each. All these parts are nickel plated, and so are all mentioned below, except as noted.

• The only plate (Base Plate) is 5x11h, flanged on all sides, and is painted medium red. All holes are round, dia 4.9mm.

• The Large Wheel is a $2\frac{1}{2}$ " dia pressed road wheel. Its outer form is similar to that of the original MECCANO #187 but it is in one piece with a long ($\frac{1}{2}$ ") boss: it's quite rigid. The centre is slightly conical and the tire doesn't curve over at all at the back. The centre is light red; the tire, the back, and the boss, are white.

• Pulleys are $1\frac{1}{8}$ " dia and $\frac{3}{16}$ " wide across the 'V'. Shafts are 1, 5, 7, 9" long, and the Crank is one of the largest to be found I should think, 6" along, then a 2" 90° crank, then a 1" handle. Collars are $\frac{5}{16}$ " long, with the same dia and tapping as the bosses, but nickel plated.

• The single-ended Wrench is about $2\frac{1}{2}$ " long; the wire Screwdriver has its handle held together with a brass ferule.

• All the parts are of reasonable quality. There are some slight burrs and the grooving of the Bars isn't always quite parallel to the edges.

These then are the parts which it is believed correspond to those listed in the Manual. The others are as follows:

• Bars of the same length as the 8, 12 and 16-hole but with

the two middle holes replaced by one in the centre. The (now) 11h Bar has also been found formed into a 2x7x2h DAS, and the 7h shaped into what might be a mudguard (fender): both were found painted red. There's also a 2h Bar without grooves, in fact it is the Angle before bending and the holes are about $1\frac{1}{16}$ " apart.

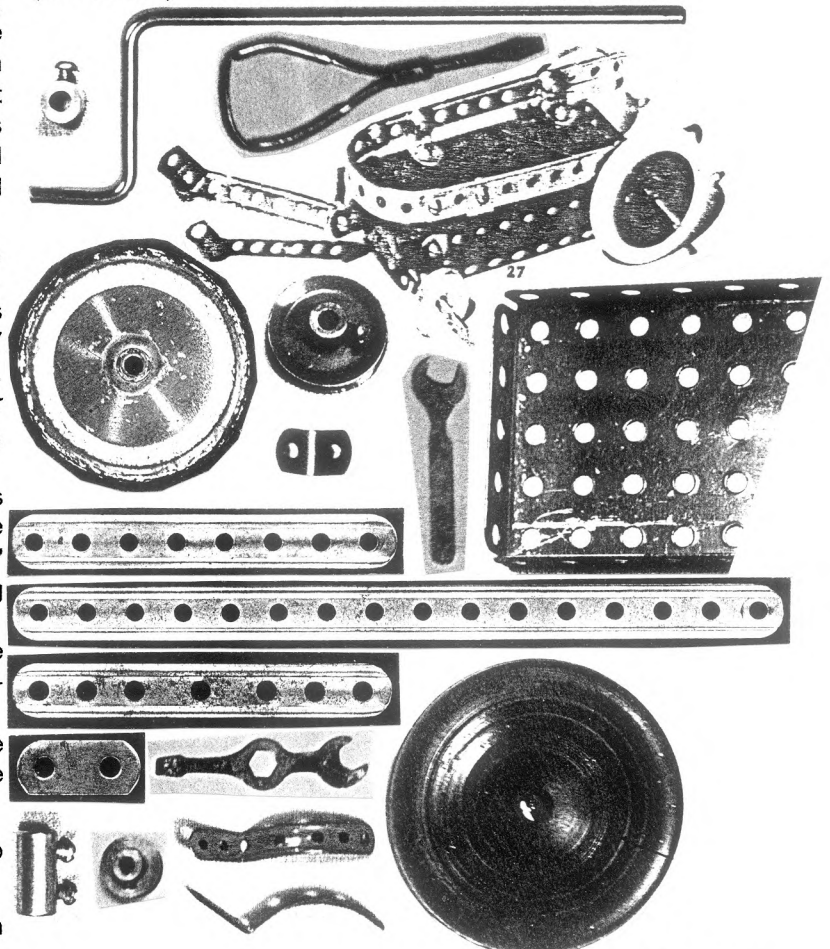
• A different Road Wheel which is $1\frac{7}{8}$ " dia with, on its outer face, a $\frac{1}{4}$ " vee-pulley groove. The whole is moulded from black rubber, and is a good fit on the Shafts. A similar $1\frac{1}{8}$ " Pulley to that already described but painted green, and a brass one of about $\frac{3}{4}$ " dia.

• Shafts of about $1\frac{1}{2}$, 2, $3\frac{1}{4}$ and 4" (scaled from a photo). A Coupling $\frac{3}{4}$ " long, single tapped at each end.

• A hex Nut, and a Spanner for it with a screwdriver spade at the other end, and a hex hole in the centre.

The Manual is small, with pages 135x104mm deep, and some of it may be missing because the models run up to #39 but with no 5 - 20 or 28 - 34. The models that can be made from the Set are fairly basic and having decided to have a decent size Road Wheel, it looks from the models that there may have been only two of them in the Senior Set. Some larger models are shown which need additional parts, including a Bridge with Elevator Shafts that must be at least 4ft long and over 3ft high. Not much detail can be seen of any of the models and the copies are not good because of the poor state of the original. The Introduction is interesting - it's headed 'The Story of Two Little Boys in Trouble' and claims that a THE ENGINEER Set is the answer if your child is destructive or is always getting into mischief. How could they not succeed with a potential market that large? The address given for entries to the model competition was The Engineer, 136 Adelaide St. West, Toronto. There's no indication of date but the 1940s is thought possible.

One of the models and some of the parts are shown below (not to scale) - those below the 16h Bar are the 'later' ones.



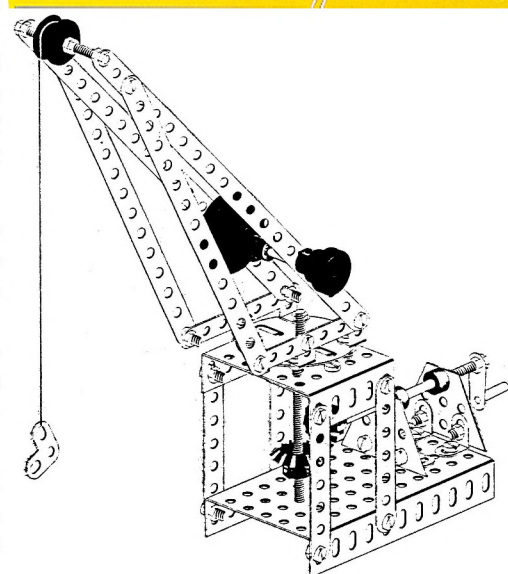
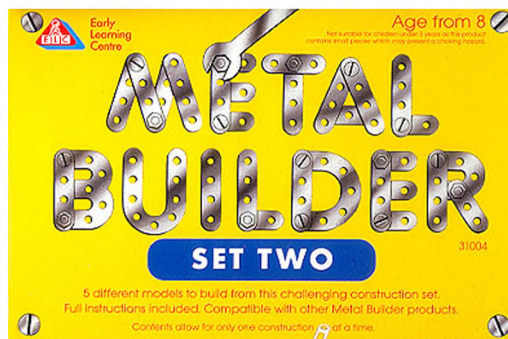
METAL BUILDER Thanks are due to Bill Charleson for sending details of this new set which appeared in Early Learning Centre shops here just before last Xmas. It is almost certainly a repackaging of the CONSTRUCTION 02 outfit mentioned in 11/293, although it does contain 8 more parts than the 220 given in the German list. The box measures 8½x11½" and the name panel from it is shown opposite.

The original C02 contained 275 parts and as this new set has about the same number of N&B, it means that the number of parts proper has been reduced by a third from 154 to 108. Judging from the models in the C02 manual, the axe has fallen on the parts that were not used, or not often used, in them. The 5 models shown for METAL BUILDER are virtually the same as their C02 equivalents, with a little redesign in one or two of them, the Crane opposite for example. So far so good, but when it comes to a lad making up his own models, some of the omissions are to be regretted, the 4 A/Gs for example. But worst of all, there are now only 3 Pulleys and 2 Tyres instead of 4 of each. To my mind that isn't good in a Set selling at £14.99. As in the C02 no flexible plates are included.

The A4 size manual has a new, smart look with large illustrations of the models that look as if they are computer generated. Generally they are clearer than the (good) photos that were used before, but in one or two the hidden detail which was previously shown in an auxiliary view, isn't given, although there would have been plenty of room on the page for it. Also there is no longer a list of parts for each model, or even a title. There are a few mistakes too, notice that on the Crane the two far Strips of the jib appear not to be bolted to the base.

At my local Early Learning Centre there was a display model of the Windmill that's featured on the box lid. All the parts in it were as would be expected except the plastic Windmill Sails - they were blue instead of the yellow of earlier parts, and of the ones shown on the box lid. Also 'eitech', the name of the company who make CONSTRUCTION parts nowadays, was moulded into their ends. There's was no indication of the manufacturer on the box itself.

Bill and I share a liking for CONSTRUCTION parts and I hope they survive - it will be interesting to see if the relatively simple METAL BUILDER models, made essentially from Strips and Perforated Plates, prove as attractive to youngsters as the more realistic ones now being featured by MECCANO, at comparable prices.



SMALL ADS

- WANTED: odd O.S. parts, any condition. Please list and price in first letter. Thanks. R.T.Symonds, 15170 Dove Place, Surrey, V3R 4T5, Canada.
- URGENTLY REQUIRED TO COMPLETE MODEL - 4 MARKLIN part 10380 80mm Flanged Discs. Also any other Marklin parts in good condition. Bill Charleson, 144 Sunnybank Road, Mirfield, W. Yorks, WF14 0JQ. 0924 493413.
- For sale. The #6 and #9 Indian MAXHINA sets described in OSN 11, p286. The #6 has manual but no box; parts undamaged and strung, slight rust on one plate. Weighs .4kg. The box of the #9 is battered with one edge of the lid missing. The two layers of parts are strung and look complete but a few have broken loose. Complete with manual. (1.1kg). Also another #9 with no box and photocopied manual. Parts are strung but small portions of the backing cards have been cut off and a few parts have some damage. 4 x 1" Pulleys with Tyres, 1 DAS, and 1 Flat Trunnion appear to be missing. (.9kg). Offers to the Editor please by the end of May
- OSN 1 to 9 in pristine condition. £15 plus postage, from Mrs Gwen Higginson, 7 Buckthorn Avenue, Stevenage, Herts. SG1 1TT.
- For sale. The following sets which belonged to Mr Guillaumet of Switzerland: 1) HELLER'S STAHLBAU Set including manual; the box is poor and some parts are missing, particularly the special MECHANIKUS tool. 2) EFEL No. 0 Set inc manual. Aluminium parts from about 1946. Complete and in good condition. 3) EFEL No. 0A, details as above. 4) EFEL Set without manual. Steel parts from about 1960. Complete in good box with strung parts. Further details from CONSTRUCTORAMA, 23 rue Thénard, 10800 Saint-Julien les Villas, France.

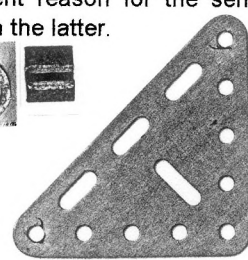
MYSTERY PART No.19 The parts with the alternate round and square holes are MODELIT, but from a different, probably later, phase to that described in 8/186. Please see p326 for more details.

MYSTERY PART No.23 The red painted aluminium Flanged Plates with no holes in the top face (from 11/283). Richard Symonds has sent more details of his parts. He has 2h and 8h long ones which are similar to Don Redmond's, but also an 8h one which is 2 1/8" wide, has slightly deeper flanges, 5mm holes, and paint on the outside only. And for good measure he also mentioned another, 1 5/8x2 1/2", with 5/8" flanges on the shorter sides, each with 3 holes (smaller as drawn) at 1/2" pitch. It's painted black on both sides and is made of steel.

MYSTERY PARTS No.24 A Coupling and a Collar from Don Redmond. Both are made from nickel plated steel, perhaps 1mm thick, formed into a (rather distorted) tube, in which a 4mm rod is a very sloppy fit. The join is opposite the tapped holes - one in the Collar and two in the Coupling; the thread seems to be 6-32. The Collar is 1/4" long and the Coupling 13/16". There's no apparent reason for the semi-circular cutout between the holes in the latter.



MYSTERY PART No.25 This Triangular Plate is rigid and has holes at 1/2" pitch. It's painted yellow with a hard, glossy finish.

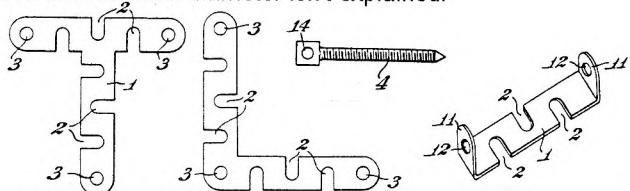


ITEMS FROM LETTERS

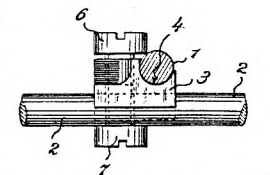
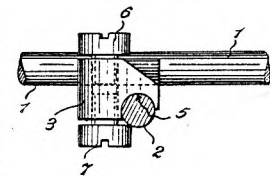
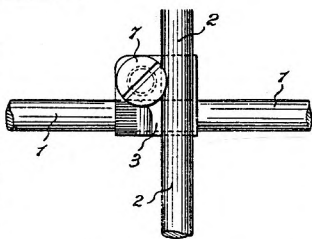
1. On TEMSI (see 11/292) René Mikkers wrote that: • The 15t Pinion isn't available because it would cost too much to produce. • The slight error in the hole spacing of the longer parts has certainly existed for at least the last 10 years. • The extra crosswise holes in the flexible plates is caused by the tooling used. • The Wheelbarrow Set was introduced some years ago and was a relatively expensive outfit.

2. On the KNIRPS aircraft (11/273), Peter Page said 'It's the first time I've seen a model of the revolving wing machine that impressed me in prewar boys' comics.' He also noted that Model & Prototype Systems Ltd. [who made, and perhaps still make, PROTO, one of the industrial 'Meccano' systems] is for sale.

3. David Hobson kindly sent copies of various patents. For the ULOX patent referred to in 10/254, he pointed out that since its application date was May 8, 1929, sets wouldn't have been on sale before then. The 4 parts below are shown in the Patent but as far as is known they were never marketed. The threaded rod with the square eye on the end, essentially similar to the Loop Spindle shown in 10/253, was intended to allow two screwed rods to be joined at right angles, but no specific applications are mentioned. I had hoped that the Patent might give uses for the four small holes in the Disc, but it only refers to them as housing a crank pin (Lever, see 10/252), and why the latter needed to be of a substandard diameter isn't explained.



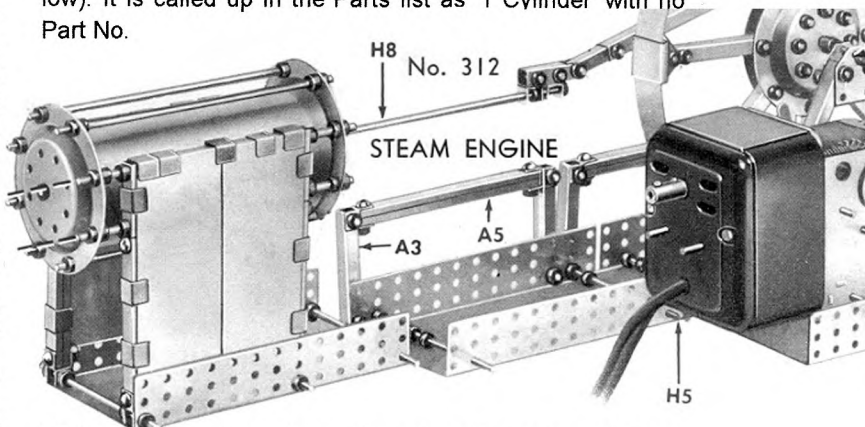
On the UK Patents relating to BOB, it turns out that the Joint (clamp) shown in 500629 (1939), mentioned in 9/233, is not exactly the type that is found in BOB sets. These are hexagonal in shape (as shown in 4/75) and are described in a later UK Patent, 622212 of February 1946, which is in the name of a Patent Agent, A.A.Thornton, who seems to have been the assignee of Charles Baumgartner. It was probably he who licensed the Patent to Ridinger & Co. David added that according to 'British Tin Toys' the Feeder Road address for 'Ridinger Metal Toys Ltd.' dates from 1948; before that they were at Bath Buildings, Bristol. It is said that Chad Valley took over the Company in 1949, and that no doubt was the end of BOB, even if it had lasted that long. The square shaped Joint from the earlier Patent is shown above. According to 6/121 Swiss BOB was marketed at the beginning of WW2, so it is possible that the earlier version was used at first. There is no Convention Date on 622211 and It isn't known if there was a Swiss patent for the hexagonal Joint.



Finally David noted that the two patent numbers quoted for BOYCOY (11/276) were in fact application numbers, and patents for them were never granted. This may have been because complete specifications were never submitted but,

perhaps more likely, the invention was found not to be new, MOBILLO for example had been patented in 1918.

4. In reply to my request for information on the LIONEL Cylinder part (11/271), Richard Symonds sent some details. It's red and rolled from .015" sheet with a butt joint, and is 4½" long and about 2.1" in diameter. There aren't any holes in it. He also sent a copy of a page from a #343 manual showing the Cylinder used in a Steam Engine (below). It is called up in the Parts list as '1 Cylinder' with no Part No.



Richard also sent a photo of a monoplane made from a DUX 104 Outfit, that he took at a Toy Show. All details agree with those in 11/287 except that the rear upper fuselage (and the logo on the nose) are blue. The painted control surfaces are red.

And on the NORELCO ME1200 Mechanical Engineer Set, he sent details and photos, and with them, and the MCS entry, I was able to make a good comparison with my own PHILIPS ME1200 Outfit. Apart from the change of name (everywhere except on one piece of cardboard packing which has PHILIPS on it in both cases), they appear to be identical (parts, manual, packaging), apart from the left end panel of the lid, which shows different models, and there's also some chat about the scope of the set on the NORELCO one.

5. Werner Sticht sent outline details of a universal coding system for parts which he uses to keep track of his parts from half a dozen different systems, and which could be extended as far as is necessary for any particular purpose. One or two examples from the many he provides are: A50 for a 50mm Axle, AT50 for a 50mm Threaded Rod, W36X for a Disc without Boss.

He also sent initial proposals for a Relational Database for MCS which could include full details of the systems entered, including outfits and parts, and would allow searches to be made in terms of any chosen single or combination of parameters.

Each of these topics is on a single A4 side and I can send copies to those interested.

6. In 11/272 Walther & Co. were said to have closed in 1968, but Don Blakeborough has pointed out that they were still in business in 1970, and sent a 1969 leaflet and a 1970 price list as evidence. On checking I found a note in MJ 28/821 that a letter sent to Walther's Berlin address in April of 1972 had been returned marked 'Firm closed down'.

7. Don Redmond wonders how to tell nickel MECCANO A/Gs from AMERICAN MODEL BUILDER ones, and adds that although AMB Sector and Flanged Plates have slotted holes longer than those in the MECCANO parts, this is not true for the A/Gs. Equally difficult is identifying the differences between the many parts that AMB, CASTLE BUILDER, MODELIT and STERLING TOY BUILDER have in common.

And he has spotted another link between Stanley and Morecraft. The friction drive unit of the MORECRAFT Variable Speed Motor (11/290), looks identical to that in the STANLO Universal Motor shown in MCS (p7a,b of /FB). It runs in STANLO Plates rather than in MORECRAFT Flanged Plates and its 110v motor is totally enclosed. Parts for the STANLO Motor Unit could be bought separately and

the driven unit is described as a 'Leather Disc and Pulley'. Finally: 'That Aeroscope AMB model [11/300] must use very strong cord; there's no counterweight.'

CORRECTION In the last line of the SUMMARY OF MANUAL in 7/153, EC21 should read EC23. My thanks to David Hobson for pointing this out.

TRIX MADE IN THE U.S.A. Kendrick Bisset kindly sent details of an X-ACTO TRIX Abridged Engineering Manual, which with a few changes is identical to the UK version summarised at the end. The front cover still has Printed in England on it and the only change is to the top banner:

x-acto TRIX system

The back cover has an ad for X-ACTO hobby knives instead of Trix bicycle accessories, but as well lists all the Units and Sets available under the heading,

Now made in the U.S.A.

and with the slogan, START ENGINEERING WITH A CAPITAL OF FIFTY CENTS - BUY AS YOU SAVE - ALWAYS COMPLETE YET NEVER FINISHED. At the bottom of the page: X-ACTO CRESCENT PRODUCTS CO., INC., 440 FOURTH AVENUE, NEW YORK, 16, N.W.

3 Sets are listed, • #702, Elementrix, Units A and B in display cardboard box (\$1.25), • #703, Units A,B,C,D,F in fitted wooden chest (\$3.95), • #704, Presentation Set in large fitted wooden chest. Contains 2 Units each A,B,D; 1 Unit C,F,G; Trix Motor and large engineering manual. (\$10.95). Kendrick wrote that he had seen a TRIX Set in a wooden cabinet belonging to George Wetzel, which has the X-ACTO name on decals both on the front and inside.

Units A - D, F and G are listed as 'Refills' and cost between \$0.50 for the A and B, and \$1.25 for G. A note underneath says 'An Electrical Unit E to come'.

Inside the only change is the deletion of references to the Trix Information Bureau. No change has been made to the

page giving details of Unit E, and 'Lorry' is still used in the title of two models despite being an unusual word in America.

There's nothing in the Manual to indicate its age, not even a print code on the back cover as in the UK version. The only possible clue is that Unit E wasn't yet available, but that may have been because production of the parts hadn't yet started in the U.S.

SUMMARY OF MANUAL. #Name: TRIX Abridged Engineering Manual. #Details of maker: only the address of the TRIX Information Bureau is given: 11 Old Burlington St., W.1 (the original address, 21 Regent Street, London, W.1, has been blocked out). #Dates &/or Ref Nos: T.L. IV R.P.495100/25 on back cover. #Page size: 215x140mm deep. #No of pages: 48 inc covers. #Language: English. #Printing: B&W with photos of models white on black. #Page Nos. of Parts List & highest PN: 3,W16 (for Units A,B); 27,V35 (for Units C,D). #Page No. of Set Contents & highest PN:

27,V35 (Units C,D only). #Sets covered: Elementrix (Units A+B), but later models need extra Units. #No. of models: 40 +10 needing extra Units. #Name, Model No, Page No of first &

last model: 90° ANGLE,1,6; REVOLUTION COUNTER,44,19 (for A+B). STAMPING MILL,21; FUNICULAR RAILWAY, 38 (for more Units). #Other notes: pictures and brief details of 4 larger models are given at the end.



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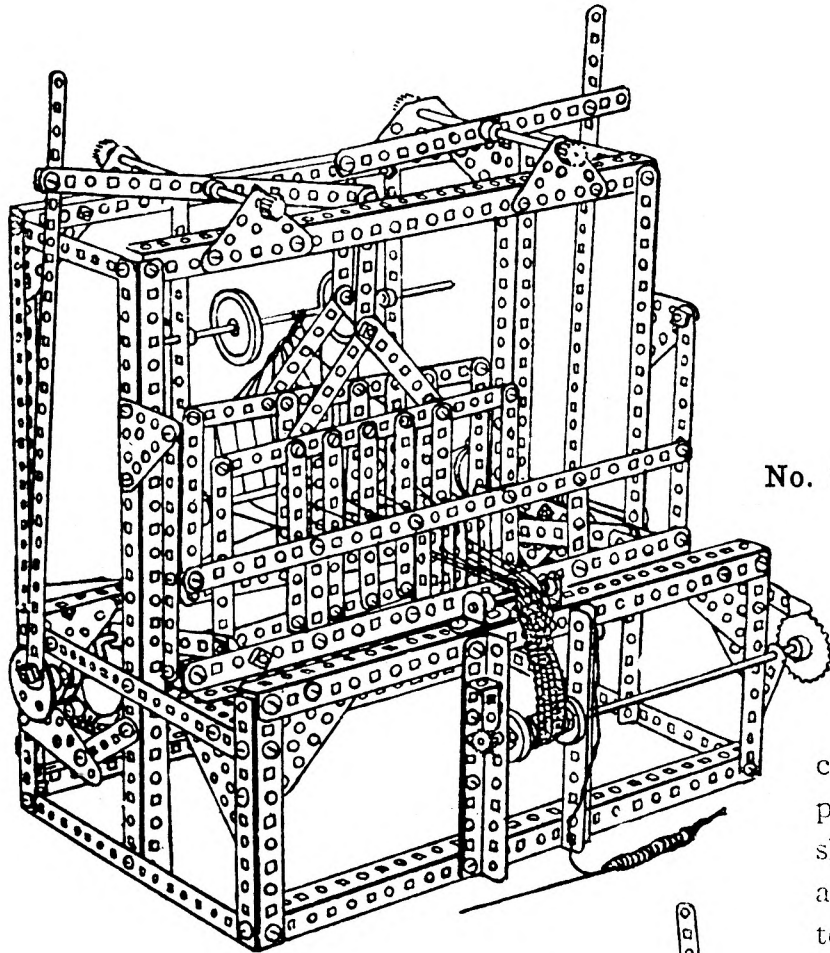
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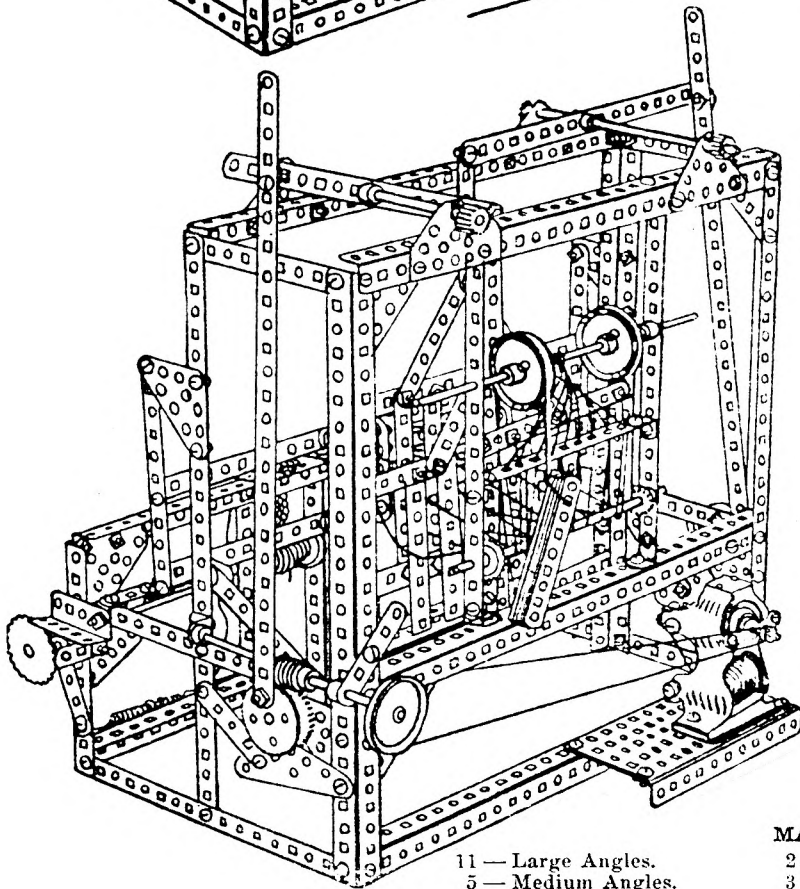
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Model from the 'Phase 2'
MODELIT manual
described on p327.

No. 139 WEAVING LOOM



The weaving loom looks more complicated than it really is. The principle thing about it is the main shaft which is made of two crank axles and one $4\frac{1}{2}$ inch axle fastened together with two couplings and runs the whole length of the loom with a small spider wheel on each end. A 9 hole strip is fixed on the crank axles and fastened to the lathe in front and as the shaft revolves works it back and forth. A 27 hole strip is fastened to each spider wheel that works the harness up and down, these strips should be fastened in opposite holes so that when one moves up the other will move down. The harness separates the thread so the shuttle can be run back and forth between the thread.

There will be no trouble experienced in constructing this model if proper care is used.

MATERIAL USED

- | | | |
|----------------------|-------------------------------|---------------------------------|
| 11 — Large Angles. | 2 — 8" Axles. | 2 — 1" Pulleys. |
| 5 — Medium Angles. | 3 — $5\frac{1}{2}$ " Axles. | 1 — $1\frac{1}{2}$ " Sprocket. |
| 1 — Small Angle. | 2 — $4\frac{1}{2}$ " Axles. | 1 — $1\frac{1}{2}$ " Spur Gear. |
| 4 — 27 Hole Strips. | 3 — 2" Axles. | 1 — Worm Wheel. |
| 12 — 17 Hole Strips. | 2 — Crank Axles. | 4 — 5 Hole Bent Strips. |
| 3 — 11 Hole Strips. | 10 — Triangular Plates. | 5 — Pinions. |
| 16 — 9 Hole Strips. | 4 — Intermediate Plates. | 20 — Collars. |
| 6 — 7 Hole Strips. | 1 — Large Plate. | 21 — Angle Brackets. |
| 13 — 5 Hole Strips. | 2 — Small Spider Wheels. | 152 — Screws. |
| 2 — 3 Hole Strips. | 3 — $1\frac{1}{2}$ " Pulleys. | 152 — Nuts. |