

# OTHER SYSTEMS NEWSLETTER

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**EDITORIAL** Once again I haven't been able to find room for news of non-metal systems, and at least for the foreseeable future it's hard to see that enough space will be available to do them justice.

However a solution may be at hand. David Hobson has a particular interest in this area and would be willing, if there's enough support for it, to produce another Newsletter devoted solely to constructional systems with parts mainly of stone, wood, plastic, or any other material that


isn't metal. It would also include all architectural systems because it seems more sensible to keep them all together, given that so many of them are mainly non-metallic in character.

I very much welcome this proposal because it would allow an adequate treatment of a major area which is of interest to many enthusiasts. If you might be interested in subscribing please contact David at 'Woodington', Edford Green, Holcombe, Bath, BA3 5DB, England; or by telephone on 01761 232741.







*Pyfily est chic*




*Pyfily est resistant*



No end to my Pyfily  
I am m' Pyfily Bombier

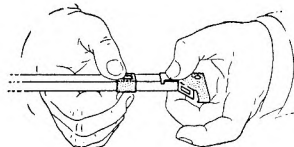


*Pyfily est solide*




*l'empereur des jouets*

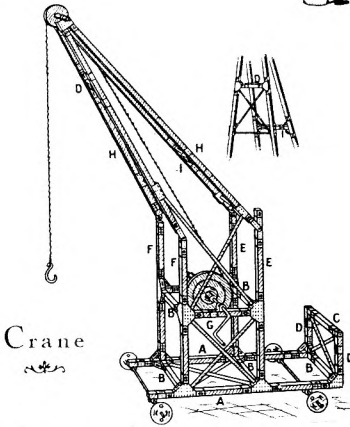
INSTRUCTIONS



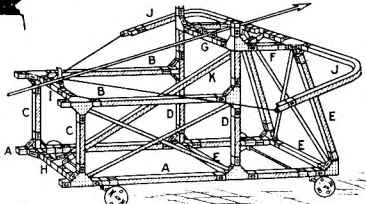
With one hand hold the metallic piece with the spur fastened into the notch, with the other make the locking-ring slip on the branch of the metallic piece.



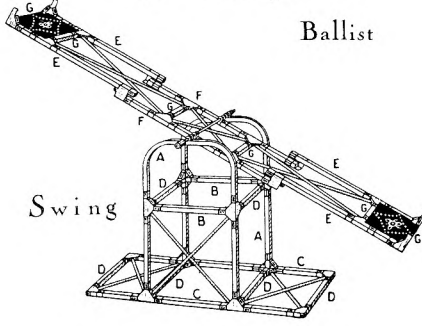
PYFYLY is adjusted very easily.



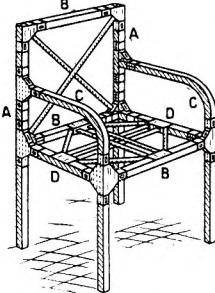
Crane



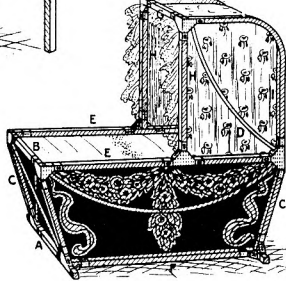
Ballist



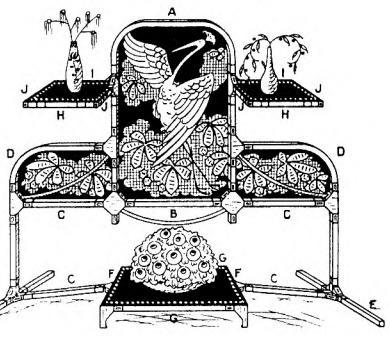
Swing



Rustic Arm Chair



Cradle



Japanese Screen

The 70+ parts in this early French system are made of bamboo with brass fittings. The joints are surprisingly rigid once the sleeves have been pushed home. The main strips, called 'bamboos', are 3mm square in section. Some oblongs of card covered in patterned material are included in the outfits, but most of the decorative effects are left to the ingenuity of the modeller. The illustrations here are from a No.1 manual and I would be grateful for information about larger sets or models.

## DAN DARE and the AJET Mystery by David Hobson

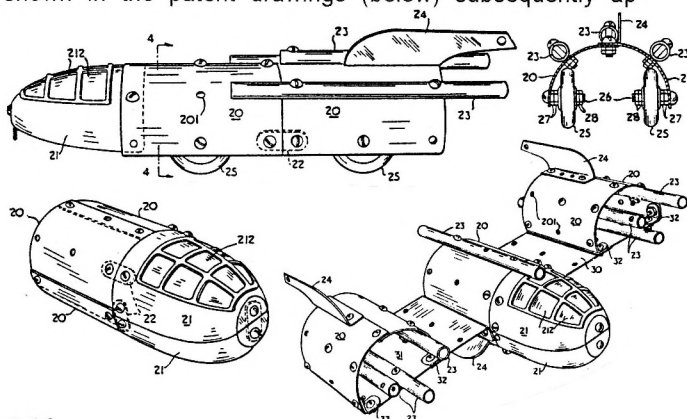
Rumours about unidentified flying objects led me to Mr. Len Champion, and through his good offices I have been able to photograph the box lid from a JUNIOR AJET set, and examine some of the AJET parts he has collected.

What is more, an advert from a trade journal has turned up which offers a 'Codeg AJET Constructional Set'. Dealing with this first, the text states that 'the outfit will make practically any type of jet aeroplane by following the simple instructions contained in the illustrated leaflet'. The size of the box is given as 18\*14\*1¼", and the price as 54/- (£2.70). The reproduction in the advert is not too clear, but an open two-layer box can be seen, and on the lid, under the heading 'AJET for the young aero engineer', there is an airfield scene with a number of models of military style jet aircraft. Three are shown in flight and one distinctly resembles an Avro Vulcan, one of the V-Bombers of the the 1950s - 60s. Codeg was a trade name used by Cowan de Groot Ltd., and according to British Tin Toys, they mainly traded in imported toys, but also had some toys made for them by specialist British firms in the post-WW2 years.



To return to Len's set lid and his actual parts - the lid (above) is very similar to the one in the advert, but the word 'JUNIOR' is printed in smaller type above 'AJET'. Any such word in the ad might not be visible, but it seems likely that there was more than one outfit, with a larger set called perhaps the 'Senior', or just plain 'AJET'.

Also on the actual lid is the patent number 738423. This Patent was granted to Max Bartram Holloway, with a priority date of 27 April 1953, and the object was to 'provide a kit of components for constructing toys of ultra-modernistic design such as simulations of space ships, aircraft and land vehicles adapted for rocket or jet propulsion'. It was clearly taken out in the first place to cover the DAN DARE Space Ship and Rocket Builder sets. For example the two models shown in the patent drawings (below) subsequently ap-



peared in the DD manual as the Jet Coach Mk.1, and the Interplanetary Battle Cruiser Mk.1. Even the preferred colours for certain parts stated in the Patent match those used for the DD parts.

This Patent has perhaps a special significance for those of us who are interested in that side of OS, because as far as I can find out, it seems to be the last example of the invention of a 'new' metal constructional system, before plastics swept the field.

The DD system is covered in MCS but the following additional information may be of interest. The inventor was presumably a director of A & M Bartram of Birmingham, who manufactured the sets. The outfits were linked with the Dan Dare space adventures which were the front page feature of the 'Eagle' comic, and the name was used by permission of the publishers. The Spaceship Builder set seems to have been sold first through mail order adverts in the Eagle during the pre-Christmas period of 1953, at a price of 27/11. It is not known when the system ceased to be available.

MCS lists two sets - the Spaceship Builder and the Rocket Builder. Some parts were common to both, the main difference being that the curved Spaceship parts formed a 2½" diameter fuselage, while the corresponding Rocket parts gave a diameter of only 1½". By 1954 Bartrams were advertising outfits Nos. 0, 1, 2, and 3, at 19/11, 27/11, 35/11 and 55/11, and they were available from 'all leading toy shops and stores'. By courtesy of Martin Hills, the four sets are as follows:

- No.0 The Rocket Builder set; a relatively small box with poor artwork; the parts limited the models to the smaller diameter rockets such as The Dart and The Whizz-bang.
- No.1 The Spaceship Builder set; a larger box with better artwork; parts to build the larger diameter models such as the Jet Coach and Interplanetary Battle Cruiser already mentioned.
- No.2 The Spaceship and Launch Pad set; as set No.1, but with angle girders and plates which allowed launching ramps and more elaborate models such as the Space Transport Mk.1, to be built.
- No.3. The Spaceship and Rocket Builder set; a combination of sets No.0 and No.2.

To return to AJET, the relationship with the DD system is obvious when the parts are seen. However thanks to the introduction of some new parts and some cosmetic changes, the AJET jet aircraft did not look too much like converted DD spaceships or rockets. It is not known if AJET was available at the same time as DD, but it seems more likely that it followed on in the late 1950s, and was possibly manufactured by A & M Bartram and factored in the toy trade by Cowan de Groot.

Many of Len's parts, the new ones and those which resemble the DD Spaceship parts, can be matched with those pictured in the advert and on the box lid. In addition there are some which are similar to the DD Rocket parts, and these turned up in the form of a model of a jet fighter aircraft. It seems that there were probably two classes of AJET parts - the ex-Spaceship type that were more suitable for the larger bomber aircraft, and the ex-Rocket ones intended for smaller fighter aircraft.

Notes on the AJET parts known so far follow, using the DD names and PNs for reference where possible. Unless stated the DD and AJET parts are identical apart from their colours.

- Nose 1 & 2, Curved Plate 3: DD aluminium (Al) paint; AJET pastel blue paint.

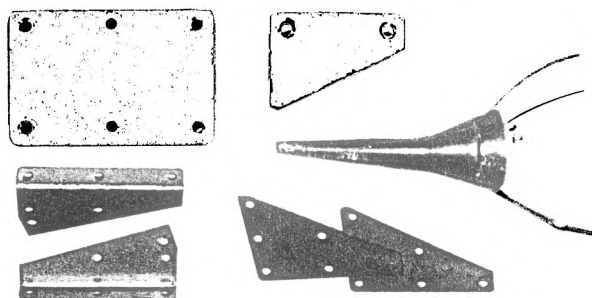
- Tube 4: DD black paint; AJET red paint.
- Tube 5: DD black paint; there does not seem to be an AJET equivalent.
- Fin 6 & 7, Flat Plate 8, Angled Plate 9: DD red paint; AJET Al paint.
- Nose 01: both nickel plated but AJET version has a half-hole at front so the probe can be bolted to the nose.
- Curved Plate 03: both nickel plated.
- Fin 08, 09, 10: DD red paint; AJET Al paint, with red/white/blue tail flashes on some 08 and 09.
- Flat Link: both probably nickel.
- Angled Link: no AJET version seen - may not be needed.
- Nuts and Bolts: seem to be the same for both systems with hex nut  $\frac{5}{16}$ " A/F, and roundhead 4BA bolts of various lengths, all of brass plated steel.

The following parts are thought to be unique to AJET:

- Small rectangular plate (opposite): 2\*3" with 6 holes; Al paint; cf No.8, 2½\*3½", 9 holes.
- Flanged wing root, handed (opposite): 3½" long; Al paint.
- Large triangular plate: 2½\*3½" (2 opposite overlapping);

Al paint; some may have roundel marking.

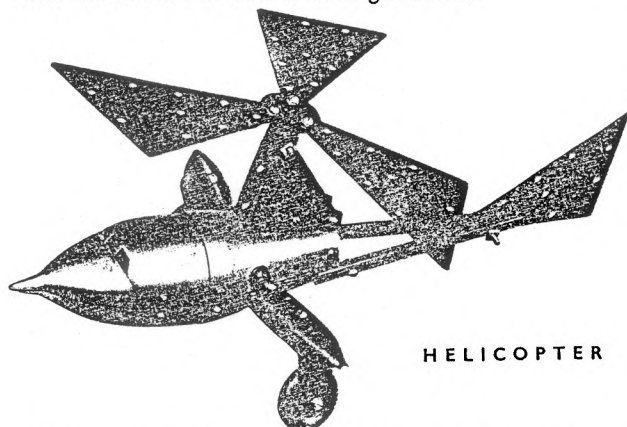
- Small triangular plate: 2\*1½" (below); 2 holes; Al paint.
- Hinged undercarriage assembly: may be in large and small sizes - only the hinge of small version has been seen so far, one arm measures  $\frac{3}{4}$ \* $\frac{5}{8}$ ".
- Nose probe (below): moulded orange plastic; in two parts, the probe proper is tapped and is held by a bolt to the small nose, or to the large nose with a base unit between.
- Wheel: about 1½" diameter; balloon type moulded in black plastic.



**And some Notes on SUPERSONIC** This is another system with parts comparable to those of DAN DARE. It was originally listed in MCS as a DD outfit but was separated in PART 5 in the light of later information. No set is known but thanks to Geoff Osborn, a photocopy of the manual is to hand, and I've been able to examine some parts, courtesy of Ed Furness.

The manual measures about 200\*145mm and has 8 pages plus covers. On the front is the full name of the set, THE SUPERSONIC JET-CRAFT & SPACE ROCKET BUILDER, and it was 'A MOKO Product, Made in England by Konstrukta Mfg. Co.' No address is given but MCS also contains a simple system with MECCANO-style parts called KONSTRUKTA, made by a company with the same name, of 14 Vesey Street, Birmingham.

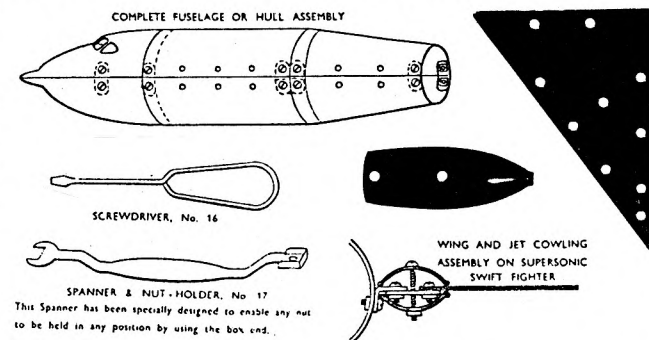
Also on the cover is 'Patent and registered design applied for'. Inside are 8 models, mostly jet planes but also a Jet-Car, a Jet Speed-Boat, and a rather futuristic looking Helicopter (below). The fuselage parts are much the same size as the DD Spaceship ones and the main differences are the shape of the nose, and the tapering sections that are used for the rear fuselage - the sketch opposite, taken from the inside back cover of the Manual, shows these parts. Half-Tubes were used instead of the DD Tubes and this type of part was mentioned in the DD Patent but not included in the sets. A useful part was the Half Jet Cowling, pairs of which can be seen on the sides of the Helicopter supporting the undercarriage. The latter was retractable, as in the AJET, with the Wheels mounted on hinged arms.



HELICOPTER

The parts are shown quite clearly in MCS and so only the colours and other points of interest will be noted.

- The Upper Half Nose has 3 pierced windows, one looking forward and two shorter, angled ones. It, like the Main Fuselage section, is about 4½" long: the Tail End is 3½". All the body parts are painted silver.
- The Large Wing (below) is bright red and some of its holes don't show in MCS. The Small Wing is light green.
- The Jet Cowling (below) is 3.1" long and is painted a darkish blue; the Undercarriage is light green with light blue Wheels, 1½" dia; the Half Tubes are black, about 6" long by .42" wide, with the 3 holes at 2" pitch.
- The Brackets, Axle, Spring Clip and 4-hole Bushed Wheel haven't been seen, but the colours of the parts have been written in on the Manual, with the Bushed Wheel red. The square Nut and roundheaded Bolts shown in MCS haven't been seen either, nor have the Screwdriver and the unusual Spanner (below). The Screwdriver looks very similar to one shown in a photo of an unused DD set from Martin Hills.
- All the main parts are made of .024" steel. Most of the holes are at 1" pitch with a diameter of about 4.2mm, but those in the Nose and Cowling sections are 4.5mm.



No indication of the date of SUPERSONIC is known, but the lines of several of the models in the Manual remind one of aircraft from the late 1950s.

**MAAKEETS** The date for this South African system is given in MCS as '? to 1970s'; in the Meccanoman's Guide issued in 1969 it says it was withdrawn in 1960 but reappeared in 1965. In 1973 Phil Ashworth visited S. Africa and afterwards wrote in the Midlands Meccano Guild N/L that he had seen it on sale and noted 'the atrocious finish on the parts and their flimsiness'. Although some unusual parts are shown in MCS, the sets that Phil saw were 'very similar to MECCANO, both in respect of number and type of parts in a given size of set, and flat box packaging with expanded polystyrene and transparent cover'.

**The STABIL ERFINDERBAUKÄSTEN** These Inventor's Outfits, to use their English name, were mentioned in the history of STABIL in OSN 13, and as explained there, they were intended to be used with the regular STABIL sets. This account is based on material sent by Werner Sticht, and has come mainly from an incomplete No.57 Set and the 1925 manual with it, for Sets 56 and 57, all of which Dieter Müller kindly made available to Werner.

There were three sets, Nos.56 and 57 introduced in 1925, and the smallest, No.55, which came later: just when isn't sure but certainly by 1929. Neither the sets nor the special Inventor parts were reintroduced after WW2. The new parts fell into three main categories:

- 14 and 25mm dia Rolled Shafts, and associated parts, including Ball Bearings for them to run in. Plus similar Bearings for the existing Threaded Rods and for new 4mm diameter Smooth Axle Rods.
- Flexible Bands with slots in them that would accept Single Gear Teeth, thus allowing large-tooth gear wheels to be made up. There was also a Crown Ring with slots for the teeth of a crown wheel.
- Various other parts including Curved Strips, Square and Rectangular Frames, T and L shaped Brackets, and a Circular Strip of 50mm pcd.

**THE BEARINGS AND SHAFTS** The Bearings were the cone and cup type (as used in bicycles) with the balls held in a cage. The parts and assembled Bearing for Threaded Rods are shown in Fig.1. To mount the Bearing the Cup part could be bolted to the Flanged Mounting Bracket, No.83, or to the local structure, using Angle Brackets for instance. The Bearings would have to have been used in pairs, and then the slots in the flange of the Bracket would allow adjustment of the play, provided the Cups were in about the right place on the Threaded Rod.

For Smooth Rods the same parts were used except that the Cone 63, was replaced by No.63a (see Fig.1), which was held on the Rod by a Set Screw.

Fig.2 shows the arrangement for the Rolled Shafts, in this case for the 25mm size. The Cone 63c is held by the Tapered Rolled Pin, 67a, made of springy steel. Its diameter goes from 4.5 to 4.0mm and it is ridged at the smaller end. So presumably it would be pushed through until the ridge pops through the far hole and the large end should then be tight in the holes on its side of the shaft - but would it be tight in the other side? It's possible I suppose if the dimensions of the pin were just right and there was enough spring to it. Werner says that their cross section is like the letter 'c'. There's no suggestion that the holes on opposite side of the Shaft and fittings were of different sizes but I don't know that for sure. The 14mm parts look like scaled down versions of those for the 25mm shaft. For both Flanged Mounting Brackets similar to those for the 4mm bearing were provided. None of the Mounting Brackets, Nos.83,83a,83b, are mentioned in Dieter's manual and were not in his set. They are included in the next list of parts available, from 1929. The Balls used in the larger Bearings are 4.75mm dia; those for the small size are missing from Dieter's set.

The Shafts were rolled from .7mm thick steel and the edges butt together. There were two 25mm Shafts, 11 and 15 holes long, but only one, 11h long, of 14mm diameter. As can be seen in Fig.3 both had rows of slots between their rows of holes, and the former were sized to allow a standard Strip to pass through.

Various fittings were used with these Shafts. The standard circular parts with a large centre hole could be bolted to Flanged Collars (66 and 66a), which were fitted to the

Shafts with the Rolled Pins (Fig.4). The 14mm Flanged Collar had one circle of 8 holes, 25mm (2 holes) pcd; the two (staggered) circles in the larger size were spaced at 3 and 4 holes across (although in some illustrations only one circle of holes is shown). The Flanged Collars were also used as a mounting when the Shafts were used structurally as columns, etc.

14mm Shafts could be joined using a 50mm long Rolled Shaft Coupling, No.61a, held by two of the Rolled Pins. Fig.5 shows this part and three other ways of joining either size of Shaft - by fitting Flanged Collars to the ends and bolting them together; or by fitting the special Hook Brackets into opposite slots and joining them with Strips or Threaded Rods.

**THE GEAR WHEELS** The various parts are shown in Fig.6. The Single Teeth (No.77) were made of spring steel, about .33mm thick, and are a bronze colour. They are 10.5mm wide and 9mm high. To mount them they had to be squeezed and to avoid overstrain, special pliers were included in the outfits, with jaws that were 3.6mm apart when fully closed.

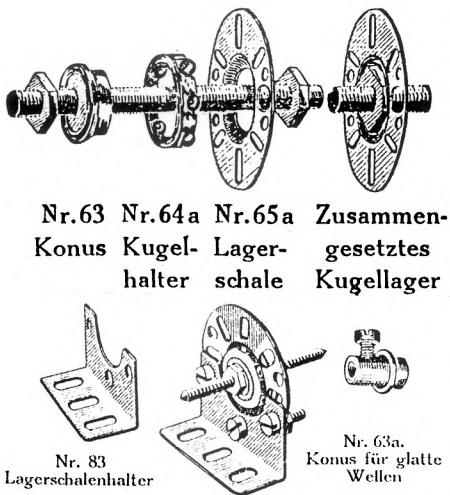
The Slotted Bands, 75-b, into which the Teeth are sprung, were made from very springy steel, .3mm thick and 12.5mm wide, and were in 3 lengths with 17, 33 and 65 slots. The two end slots were overlapped and a Tooth going through them held the Band together, giving 16, 32 and 64-toothed rings. A 64-tooth wheel would have a diameter of about 200mm. Claw Brackets, 69, were inserted at intervals inside the teeth, and gripped the ring when they were bolted to one of the Flanged Collars as a hub, using Strips as spokes for the larger wheels. A Claw Bracket was always used where two bands were overlapped because it held them tightly together.

More overlap could be used if smaller gears were required although it may not have been practicable to have had many fewer than 16 teeth. Larger gears could be made by using more than one Band but Werner found that the pitch of the slots in each size of Band was slightly different and so it wouldn't have been advisable to use ones of different lengths together, or indeed possible if more than one or so holes overlapped. The pitches measured were 9.0mm in the 17h band, 9.6 in the 33h, and 10.0 in the 65h. The corresponding slot lengths were 5.0, 5.6 and 6.0mm, and such a systematic variation in both measurements must surely have been intentional. If so was it to give better running or for some other reason? Taking a mean value of the pitches gives a Modulus of close to 3.

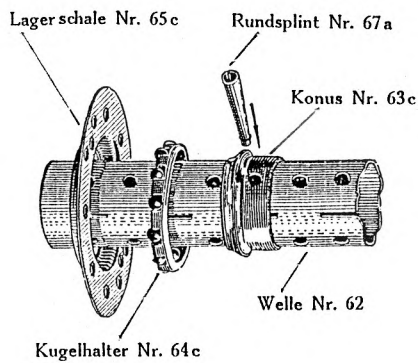
The manual also shows rack strips with the Claw Brackets bolted to a standard Strip, or to Curved Strips, No.79, to give a curved rack (S1, S3).

The o.d. of the Crown Ring, 76, is 171mm and there are 48 slots for the Teeth. The pcd of the inner ring of 32 holes is 125mm, so an 11h Strip would bridge across. The steel used was .55mm thick and this means that the Ring isn't very rigid: no doubt for this reason it is shown in the manual (BB and CC in Fig.6) attached to a substantial hub or braced by (Curved) Strips.

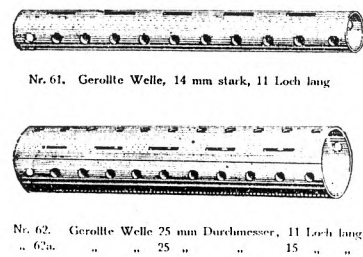
**THE OTHER PARTS** One of the problems that had to be overcome with the introduction of Smooth Axle Rods was how to attach Pulleys, Gears, etc, most of which at the time didn't have bosses. Two of the Inventor parts allowed all but small parts like the Pinion and Worm to be so fixed. The first was a Spring Sleeve with two Hooks at the base (No.70). How it was used can be seen in Fig.7(A) - the hooks engage in two of the holes in the 25mm Pulley and the Collar (7a) is held by the springiness of the Sleeve. No



**Fig.1**



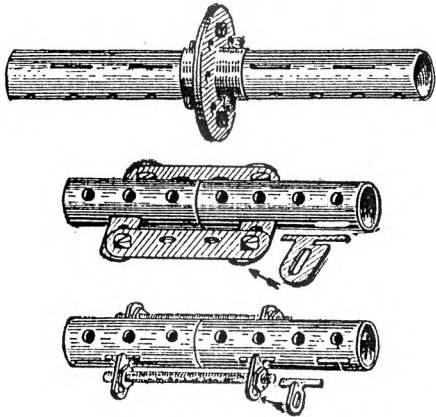
**Fig.2**



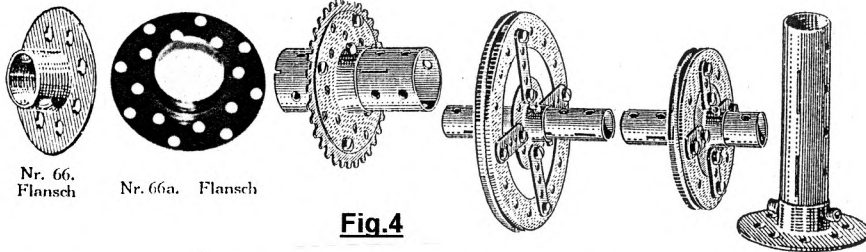
**Fig.3**



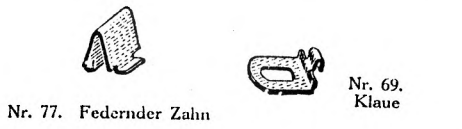
Nr. 61a. Kupplungsmuffe für Wellen 14 mm stark



**Fig.5**



**Fig.4**

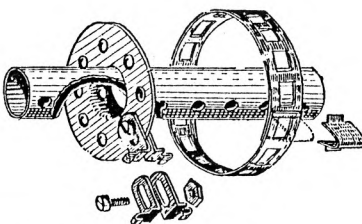


Nr. 77. Federnder Zahn

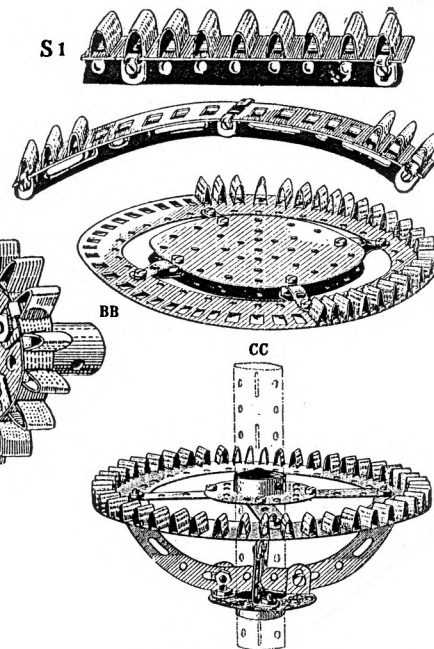
Nr. 69. Klaue



Nr. 75. Lochband für 16 Zähne  
Nr. 75a. " " 32 "  
Nr. 75b. " " 64 "



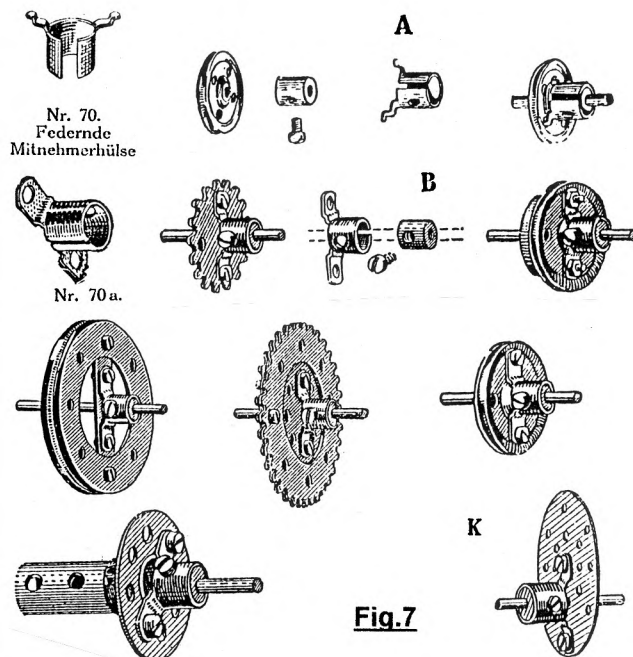
**Fig.6**



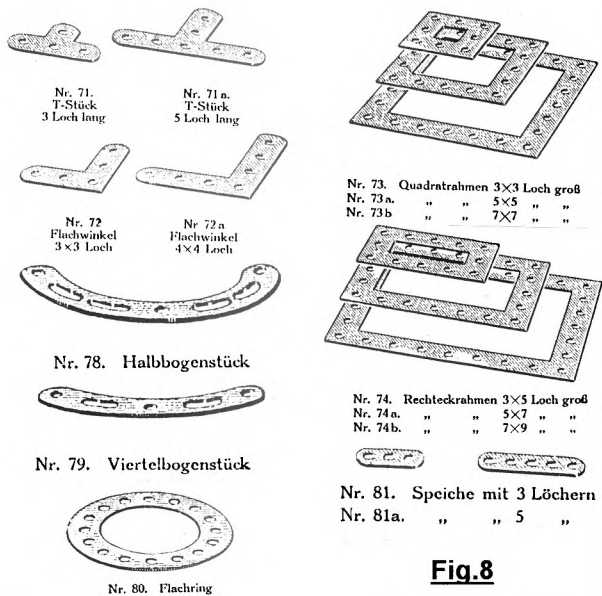
other use is shown for this piece. The other part was similar but with lugs replacing the hooks (No.70a), and it could be bolted to any part that had holes 25mm apart (Fig.7B). The holes in the lugs were slightly elongated. As well as providing a central boss it is shown offset on a circular plate (Fig.7K) to provide an eccentric. In effect the Lugged Sleeve with a Collar formed a double arm crank; later a proper Double Arm Crank, No.7b, was introduced but it isn't known if it replaced the Lugged Sleeves in the Inventor's outfits.

Fig.8 overleaf shows the various new structural parts. The T and L Brackets were missing from Dieter's set. The Frames are .95mm thick and each set of three was pressed out of one piece of steel.

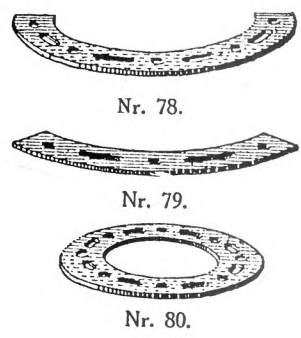
Two of the Curved Strips 78 make a circle 7 holes across when butted together, and similarly four of the 79's give a 9 hole diameter circle. The Circular Strip, No.80, is 5 holes across and the o.d. and i.d. are 62 and 37.3mm. Werner notes that the Crown Ring, the Curved Strips, the Circular Strip, and the Wheel Disc, 35a, are all .55mm thick and one circle of each of the Curved Strips, and one each of the other parts could have, and probably did, all come from one piece of steel. Apart from the Wheel Disc, this is the number of each of the parts in the No.58 set and none of them are included in the smaller outfits. And it is interesting to see that in the illustrated parts list in the manual the Curved Strips are shown with square corners. They also have a different pattern of holes there, with alternate round and elon-



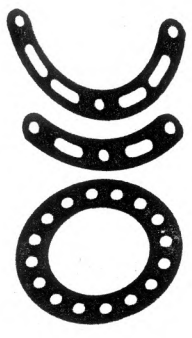
**Fig.7**



**Fig.8**



**Fig.9**



**Fig.10**

has a different pattern of holes there, with alternate round and elongated holes, as does the Circular Strip, but both are shown correctly everywhere else in the manual. Fig.10 shows actual parts, taken from a photograph.

Finally (in Fig.8), two narrow strips, called Spokes, with holes 6.25mm apart, half the normal pitch. No.81 has 3 holes and No.81a, 5. Their width isn't known, they were missing from the No.85 set.

All the Inventor parts except the Gear Bands and Teeth were nickel plated.

**THE OUTFITS** Illustrations of the sets are shown below. In the Contents of the largest set, No.58, given in the 1925 manual, the only standard parts included were 100 N&B and 5 Collars. The other main parts were:

- 2 complete Bearings for use with Threaded Rods, and 2 for the 9 Smooth Axles (50 to 250mm long).
- 6 of the Spring Sleeves, 2 with hooks (70), and 4 with lugs (70a).
- 2\*14mm Shafts (11h long), a Coupling for them (61a), 4 Bearings, and 4 Flanged Collars.
- 2\*11h and 2\*15h 25mm Shafts, 4 Bearings, and 4

Flanged Collars.

- 2\*17-slot Gear Bands, 1 each of the 33 and 65-slot Bands, and 1 Crown Ring. 120 Gear Teeth, and 24 of the Claw Brackets.

- 2 of each size of T and L Brackets, and of each Square and Rectangular Frame. 2 of the half circle, and 4 of the quarter circle Curved Strips. 1 Circular Strip. 8 each of the 3 and 5-hole Spokes.

The No.57 set had no 25mm parts, and about half the number of Smooth Axles and Spring Sleeves. For the gears there was only one each of the 17 and 33-slot Bands, 50 Teeth, and 16 Claw Brackets. There were no Frames, Curved or Circular Strips, and only 4 each of the Spokes. No 3-hole T Brackets are listed for this set in the manual but the part can be seen in the illustration.

No detailed list of contents for the No.56 outfit is available but from the illustration the main parts are 2 Bearing for Threaded and 2 for Smooth Rods, and 1\*14mm Shaft with 2 Bearings for it. All sizes of the T and L Brackets can be seen, and the Spring Sleeve with Lugs. No gear parts were included.

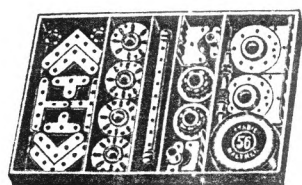
**THE MANUAL** It is the 1st Edition of June 1925, for Sets 57 and 58, with 32 pages plus covers. The pages are the standard size and the cover is the one shown in 7/157 with 3 children and the logsaw. At the front are 8 pages showing the parts and how they are used. Then 19 models starting with those needing Sets 50 and 57 and going through to a single model that needed the No.58 Outfit, with Set 53. Werner sent copies of 8 of them and 3 are shown on the back cover of this Issue, although space doesn't allow all the details to be included.

The Press is one of the better of the smaller models but as with others of this size, the gears look a little too coarse if anything - notice the Coupling, 61a, being used as the sliding tool holder. The Bearings for the main top Shaft are attached to the side Strips by Angle Brackets, and their slotted holes no doubt allowed adjustment of the play in the Bearings.

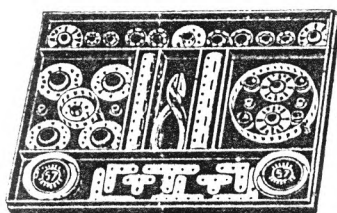
The Tipping Lorry is one of the medium sized models. The front and back axles are similar but the front Bearings are bolted to a frame which is pivoted centrally to provide steering. It's a very fair model but it does I think show some of the limitations of the new parts - how could a differential be fitted to the back axle? - how could Ackermann steering be arranged?

The last model in the Manual is the Flettner Rotor Ship. This was an up to the minute model in 1925 - the first report of such a craft in Meccano Magazine was in January of that year. In the real thing the wind acting on the vertical rotating cylinders produced an aerodynamic force normal to the wind direction, rather like a sail on a yacht. 25mm Shafts are used as the cylinders in the model, each running in a pair of Bearings, and driven by cord which passes around one of the Flanged Pulley Wheels on which the model can be pushed along.

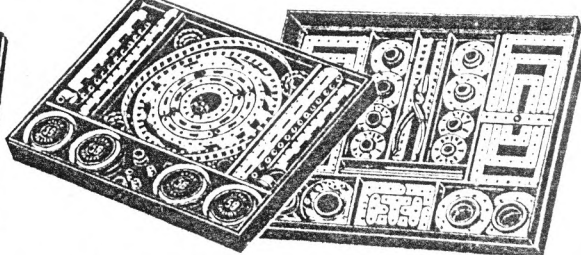
**THOUGHTS** In that not many of the Inventor's Sets, or



**Nr. 56** Pappkasten 250x175x25 mm



**Nr. 57** Pappkasten 350x250x30 mm



**Nr. 58** Pappkasten 360x270x60 mm

even the parts from them, seem to have survived, this STABIL innovation may not have enjoyed the same popularity as others of the period. Was price a factor? In 1930 Sets 56 to 58 cost RM7.50 to 34, compared with RM22 for a STABIL 20v motor; a MECCANO luxury item, the Geared Roller Bearing, cost £1, against the E20b motor at 18/6 (£0.93). On that basis, given that quite a few GRBs are still in circulation, one might at least expect to be able to find some Inventor parts without too much difficulty.

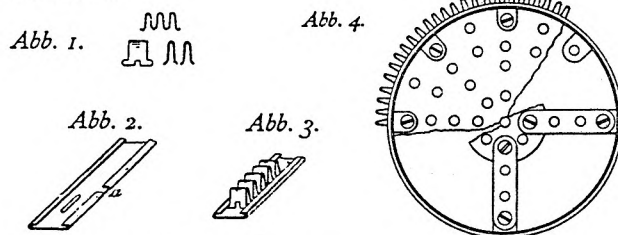
Other factors. The sets and parts would certainly have looked attractive but in practice did they get a name for being of limited usefulness? This is a problem which can still beset efforts to introduce large diameter axles. And another thing, it is difficult to see how the new parts could be used to provide a gear ring to use with the existing large Ball Bearing, PN46.

Or perhaps the new parts were difficult to use satisfactorily. Did the Rolled Pins really work well or did they allow play, and/or work loose? Was it difficult to make structures stiff enough to allow the proper adjustment of the Bearings? How effective were the Hook and Claw Brackets in practice?

And what of the models in the Manual? They look reasonable, especially bearing in mind that at the time many manual models of most systems didn't do full justice to the potential of the outfits they came from, but were they really going to tempt potential buyers? The Rotor Ship for instance - the point about the real one was that the speed of the rotors was controlled independently in order to steer the vessel, so shouldn't something of that have been built into the model, given the fair selection of parts in the No.53 outfit. Perhaps later Editions of the Inventor's Manual contained larger and more enterprising models but only the 1925 version is known at present. Some new models may have come from the 1926 Model Competition - entrants were told that models which included the new parts would have the best chance of winning.

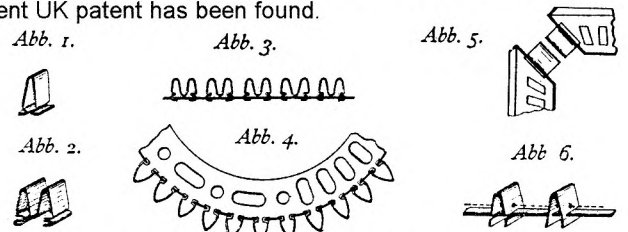
But even if all the possible criticisms were valid, I'm still surprised that more of some of the parts haven't survived. The Shafts and their fittings must have been very useful for all sorts of purposes, and those Frames, irresistible. And how could any STABIL boy have managed without the Curved Strips, the only ones in the system. None of these parts were particularly expensive to buy separately, for example in 1930, all were as cheap or cheaper than comparable MECCANO parts, compared in each case to the cost of an 11h Strip.

**PATENTS** Three German patents in the name of Wather & Co. are of interest. Nr.409396 (January 1924) shows a method of making gears or rack strips that, as far as is known, was never used. Solid or sheet metal teeth, singly or in twos or threes, were to be assembled in a metal strip with turned over edges. The strips were then fastened to a disc or to a hub using spokes. The equivalent UK patent is No.228197.

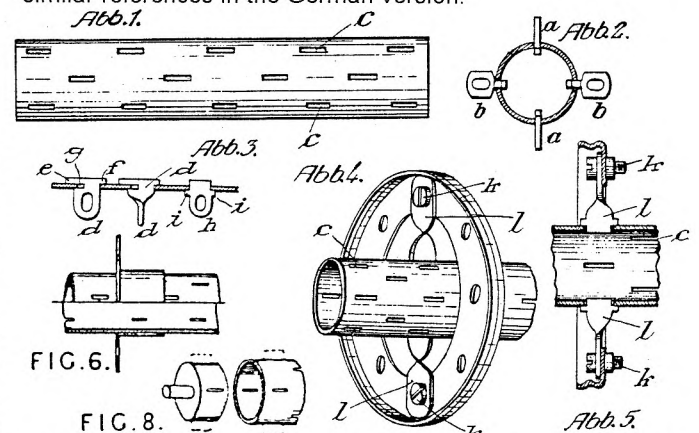


Nr.412504 (March 1924) follows on from the above and shows how single or double teeth could be mounted in slots in a strip (Abb.3), in a flange, or in a formed ring for bevels.

Abb.6 shows another method of mounting teeth on a strip, with alternate teeth sliding on from left and right, and with a wire passing through the holes to locate them. No equivalent UK patent has been found.



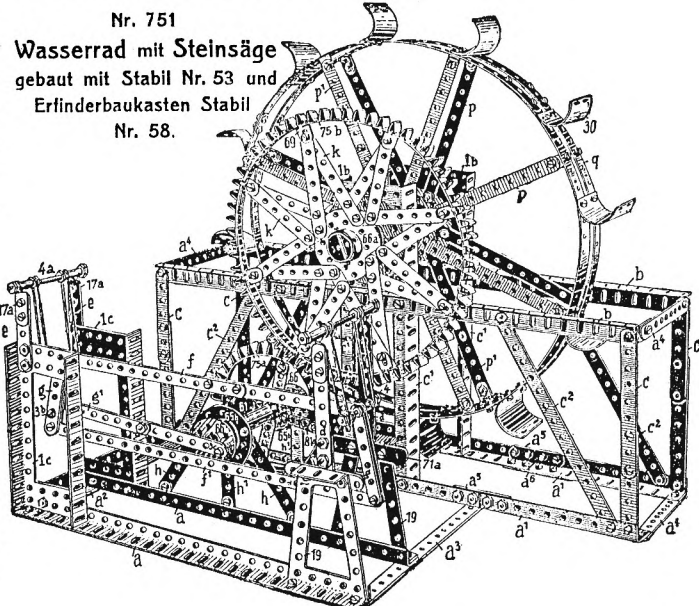
The rolled shafts, and fittings for them, are covered by Nr.438722 (January 1924). The figures from it show some of the ideas used for the actual parts, and one or two that were never produced. The illustrations in the equivalent UK patent (228539) include two additional features - the flanged collar (Fig.6), and a spigot (Fig.8) which could be inserted into the end of a shaft (and would thus allow it to run in a standard hole). This spigot was to be held in place by 'transverse wedges etc', the only mention of such a method of fixing, although I may well have missed any similar references in the German version.



The UK Patent Nos. were given in error as 298197 and 298539 in some STABIL literature.

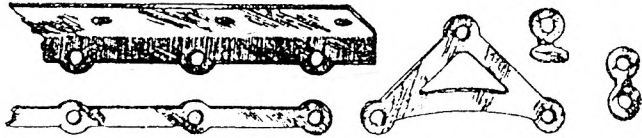
Thanks are due to Toby Haffter and David Hobson, as well as Werner, for the information on the various patents.

**ENDWORD** Since this account was written Werner has sent copies of 4 models from a later edition of the 1925 Inventor's Manual, and all are appreciably better to my eyes than the earlier ones. None are particularly complicated mechanically but in all the mechanical elements look right, and in some cases the new parts are used to good effect structurally or decoratively. A general view of the simplest, a stone saw driven by a waterwheel, is shown below.



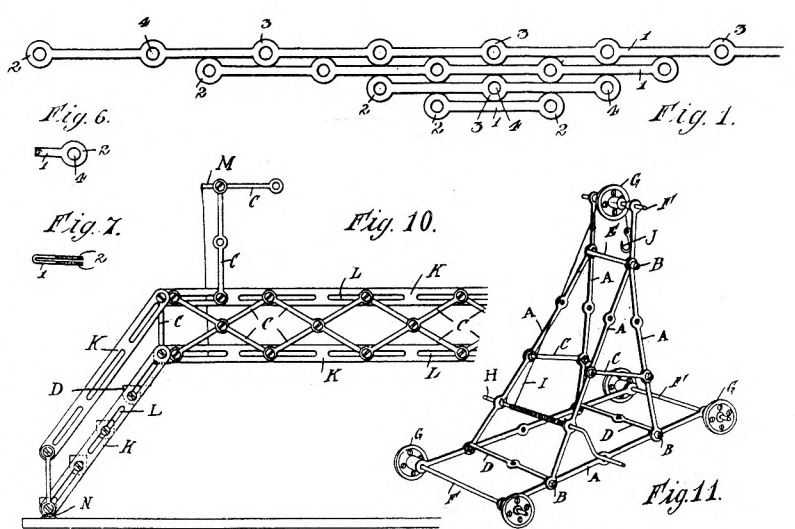
**KINCO ENGINEERING and like PATENTS**

KINCO structural parts are rather unusual, and their main features can be seen in the illustrations below. Top left is the A/G, and underneath the Strip: it was made in several lengths, and some were formed into DAS; the Flat Bracket was also



formed into an Angle Bracket. No details are given of the size of the parts in MCS and David Hobson has kindly sent particulars of a small selection of Strips and Architraves that he came across recently. The pitch of the holes is nominally 1/4" but in some cases it's a few thou shorter; the hole diameter is rather variable, but is typically 3.8mm (.150"), with a few as small as 3.7mm. MECCANO-size bolts (5/32" BSW) won't go through all the holes and so perhaps 1/8" BSW or 4BA were used. The parts are made of 18swg (.048") steel, nickel plated.

David also sent details of various kindred patents. KINCO Strips and Brackets are described in Patent No. 138824 (Feb. 1920) in the name of James Graham, mechanical model maker and designer, of Edge Hill, Liverpool, with an Application date of Aug. 1919. Before going further an earlier Graham patent (No. 125890 of 1918/19) is worth a look. It shows the Derrick Crane below, made of Strips, A/Gs and Flanged Plates, all characterised by their long slotted holes. Despite this the actual claim seems to have been only for the Wheel with curvilinear slots (Fig. 11) and the slotted

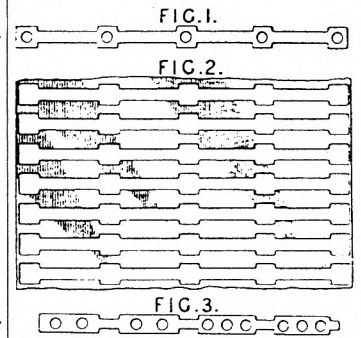
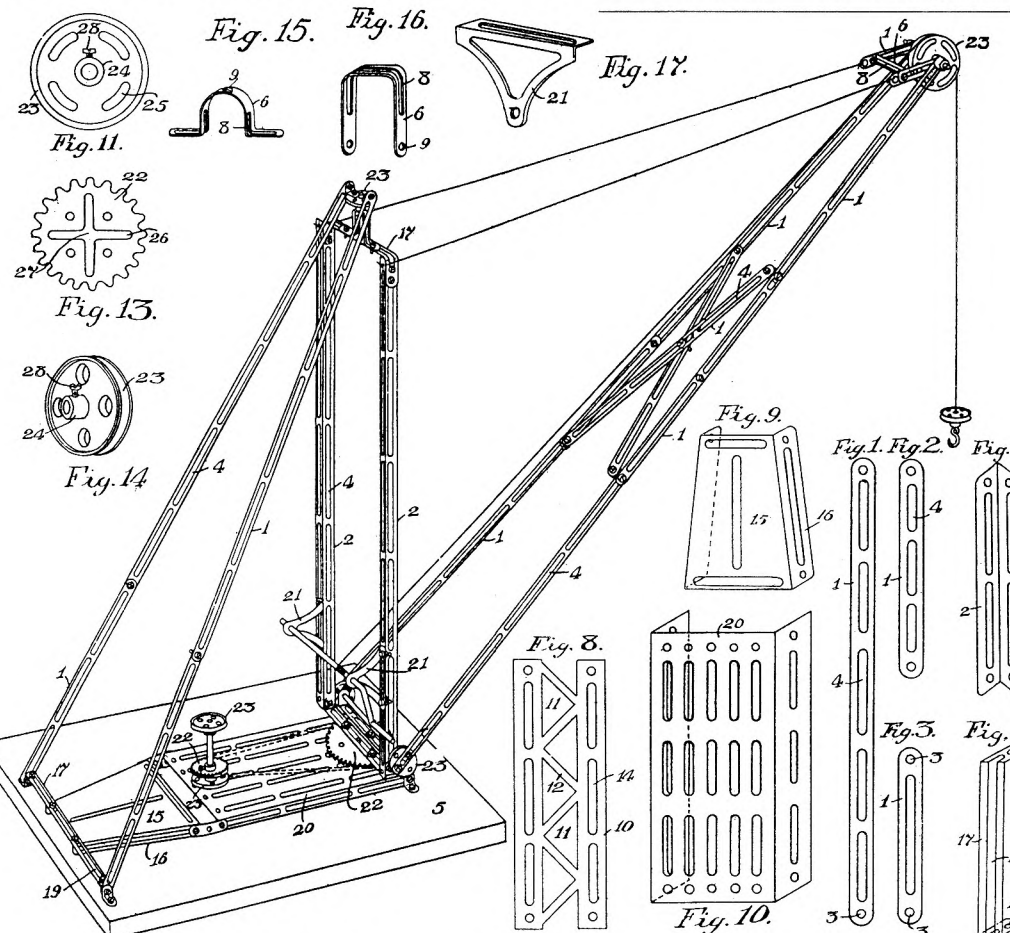


along a Slotted Strip. Not shown is the unusual KINCO A/G and the Architrave. No. 138824 is claimed to be an improvement on the original system, mainly because the narrow KINCO type Strips, as shown in Fig. 1, used less metal than the slotted ones, 'at the present time when sheet metal is so much more costly than it used to be'.

The 1908 starting date for KINCO given in MCS (1910 in some editions) seems unlikely in view of the date of the Patent. Also in British Tin Toys, p40, the starting date for toy making at British Metal (Kingston) Ltd., who made KINCO, is given as 1919. The 1920 GPO directory lists BM as a toy maker, with two addresses in Kingston-upon-Thames - The Factory, and 64 Basinghall Street. MCS

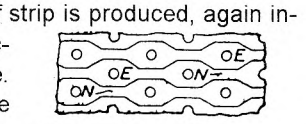
gives an end date of 1920 and, if that is right, and it was launched in 1919/20, it didn't last long. Any references to its existence at later dates would be of interest.

Saving metal when producing strips was also the theme of two 1920 patents to an M. Greenwald. In No. 166728 the claim is that 'perforated metal



**166,728. Greenwald, M.**

strips, Fig. 3, for building toy structures are made from the waste metal, Fig. 2, left after punching the ordinary strips, Fig. 1'.



**166,999. Greenwald, M.**

In No. 166999 only one type of strip is produced, again intended to be used for toy structures, and again with no waste. No examples of any of the Greenwald strips have been reported so far.

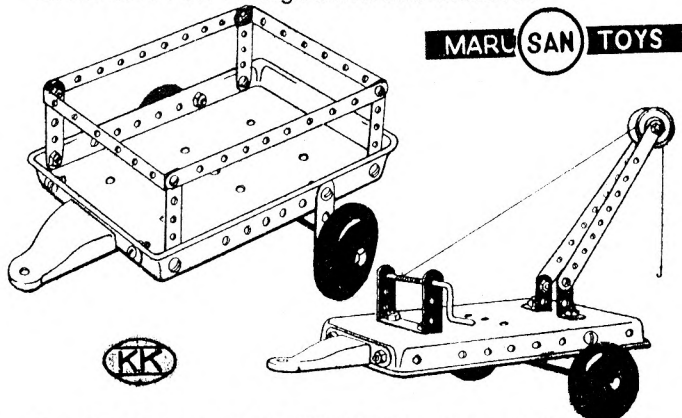
Flanged Sector Plate. As far as is known this system was never produced.

Some of the parts in the 1920 Patent are shown at the top of the next column, including KINCO-style Strips, most of the DAS and Brackets, and the Pulley with 4 holes in its face. Also included, but not produced, were Slotted Strips and a Clip (Figs. 6 & 7) which could be clamped at any point



## CONSTRUCTION JEEP, CONSTRUCTION TRUCK and some Similar Parts

CONSTRUCTION JEEP is included in MCS. It was a simple system made in Japan by the Marusan Shoten Ltd., after WW2 no doubt judging by the use of 'Jeep' in the name. The name Jeep is used not because you can make one with the parts in the Set, but because some of the models are intended to be towed by a toy jeep, perhaps one made by the same company. The limited range of parts includes a special pressed Towing Bracket. The set was packed in an 8\*4½" box with on the lid, a picture of the jeep towing the model crane below. Also on the lid are the KK logo below and 'No.3377'.

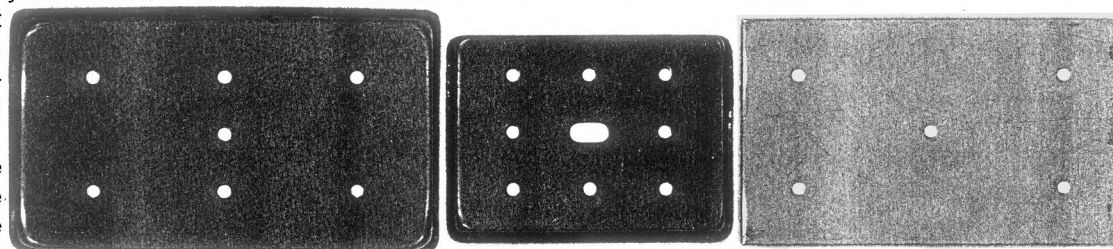


The 17 different CONSTRUCTION JEEP (CJP hereafter) parts are shown in MCS and most can be seen in the models above. Some notes on them follow:

- The red pressed Flanged Plate (below left) has rounded corners and a continuous flange with a rolled over edge. It measures 11.4\*6.6mm overall.
- Strips are 9.5mm wide, 3, 5 and 10 holes long, with fully radiused ends. The Strip shown in the 'Parts' in MCS has 11 holes but those in the models all have ten.
- DAS with 1\*6\*1 and 3\*4\*3 holes; a 1\*1\*1 hole Double Bracket and a 1\*2 hole Angle Bracket.
- 38mm diameter black rubber Road Wheels, and a red 20mm Pulley with a brass eyelet bush. The Wheels probably push onto the Axle - the latter is 3.1mm dia and about 90 to 100mm long, with each end threaded over 2mm.
- A red Towing Bracket which is fixed by 3 tabs to a blue 5h long Strip, which has only its 2 outer holes.
- The parts are of quite thin metal but are well enough made and nicely finished. All are blue except the red ones already mentioned. Holes are 3.2mm diameter (3.3 also reported), with 10mm spacing except on the Plate (below left) where some are omitted and the centre crosswise holes in the face are 15mm apart, and 35mm from the outer pairs.
- The 'brass-coated' hex Nuts and roundheaded Bolts of the Leaflet are known to exist, also zinc N&B with 7mm A/F hex Nuts. A few square Nuts (6.0mm A/F) and 5.2mm dia roundheaded Bolts, both of nickel plated steel, were with one lot of parts. Their thread is 3mm dia by .6mm pitch. The Spanner is black and the Screwdriver nickel plated.

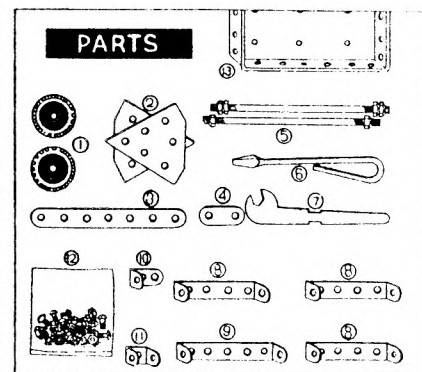
The CJP Leaflet is printed in black on light yellow paper, and has 4 panels, each 96\*179mm. It shows 13 models on one side, and the parts and instructions on the other.

Now for **CONSTRUCTION TRUCK (CTK)**. This is a rather similar Set to CJP but some of the models are meant to be used with a toy truck. The box label has the same KK logo as CJP but there's no mention of Marusan, instead: 'DAIYA' and 'Made in Japan'. The parts are shown below - the strip parts and the



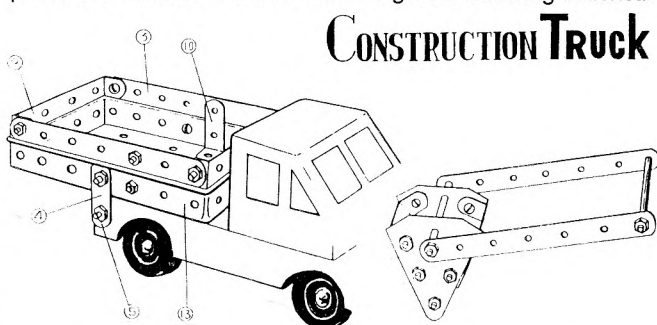
Flanged Plate have been seen and though most are similar to CJP their are differences:

- The red Flanged Plate (below centre) is made like the CJP one but is much smaller (76\*56mm). The spacing of the holes in the top face is 15mm across and 20mm lengthways. The large elongated centre hole (not shown in the Model Leaflet) is just long enough to allow a Strip to pass through it. The long and short flanges have 7 and 5 regularly spaced holes in them, at 10mm pitch.



- The holes in the parts are slightly smaller at 3.1mm.
- The strip parts are a lighter blue, though other shades of blue have been reported.
- Axles are shorter, probably between 75 and 80mm long, and again have threaded ends. The Screwdriver and Spanner look similar in the two Leaflets, though the CJP one doesn't have the indentation in its sides.

The Leaflet is printed in green on light green paper and is 177\*185mm overall, probably folded into three. On one side are the parts and instructions, and on the other 5 models. Two are shown below though what the one that uses the Triangular Plates represents I don't know. Another is a simple Trailer with a 2\*1h Bracket acting as the towing bracket.



## CONSTRUCTION TRUCK

Finally a few **similar parts** that have turned up and which can't be positively identified. First some red strip parts - 1\*6\*1 and 3\*4\*3 DAS, 2\*1 Brackets, and 5h Strips, including one that has been bent into a 4\*1 Bracket, and it looks as if it may have been made like that. There are 10 of these red parts in all and none of their edges have paint on them, even though the paint is generally in good condition.

Secondly a Flanged Plate (below right) which is quite different to the others. Compared to the CJP one, it's slightly smaller (100\*60mm), has 4 normal square flanges, and is made of steel nearly twice as thick (.55mm). It has fewer holes (and they are only 3.0mm dia) but all the CJP models could be made with those that remain, except that in the shorter flanges the two outer holes are replaced by one in the centre, so the Towing Bracket couldn't be fitted.

Thanks are due to Don Blakeborough, David Hobson, Peter Kessler, Ernst Leuthold, and Richard Symonds for the material which has been used in this account.

**3 OTHER SYSTEMS from BRAZIL** The only Brazilian system in MCS is MECANIC, and the 4 sets illustrated were in a catalogue No.20 of 1956/57, from a company with a logo in the form of a 4-point star with 'ESTRELA' underneath. They look just like the MECCANO outfits of the period except that the name on the box lid is MECANIC instead of MECCANO. Now thanks to Carlos Machado of São Paulo, some details of three other systems, all certainly made in Brazil, are available - he gave Geoff Wright some parts and copies of literature, and Geoff kindly lent them to me for this account.

**MEC-BRAS** I'll start with this one because it seems to have been made by the company above, Brinquedos ESTRELA S.A. (Star Toys), Rua Joaquim Carlos, 508 - São Paulo; the logo on the manual cover is as in MCS. Carlos said that it was made from 1950 to the mid 1960s. From the manual and the handful of parts available, it seems to follow MECCANO of the 1954-61 period quite closely, including the same general colour scheme, although the hole and axle diameters are very slightly smaller.

The manual is for Set 5 and as well as models for that outfit a few for Sets 1-4 are included. All are MECCANO 1954-61 models, in the same order, and with the same page layout, although the text is in Portuguese of course. One noticeable difference is that the set numbers are greater by one than their MECCANO equivalents, so the MEC-BRAS No.1 is the MECCANO No.0, etc. The illustrations used are identical except that most of the evidence of the Magic Motor fitted to some of the No.1-4 models has been removed. The Magic or No.1 C/W motors in the No.5 models remains and in the Introduction it is suggested that a MEC-BRAS electric motor (Set No.9110) should be used instead.

The Set Contents shows Outfits Nos.1-6 and Nos.10 & 11. As would be expected the former follow their MECCANO counterparts almost exactly, and small differences, like a 1½" dia 6-hole Wheel Disc, are probably misprints. Sets 10 & 11 both contain a Bulb with Socket, an Electric Motor, and a Control Box, which no doubt houses the 3 off 1.5v Batteries that are also included in both Sets. None of these parts are illustrated. In addition the No.10 contains a small selection of common parts including 10 N&B and an 11\*5h Flanged Plate, and is clearly an accessory set. The No.11 has many more parts, more than in the No.3 Set, but with a different mixture: it could have stood on its own, but would have needed special models to use the parts in it to advantage. It is possible that the No.10 is the No.9110 Set mentioned above. Neither Set contains the 6" Driving Band and the Gear and Pinion that are in the No.6 Outfit.

Most of the parts are shown on the page of Illustrated Parts. None of the illustrations has been copied directly from MECCANO, but only the 1" Pulley without Boss, which has a fourth hole in its face, and the 8h Wheel Disc, in which two opposite holes have been omitted, look unusual. Apart from the 12½" Strip none of the PNs correspond to MECCANO, and the last of the 80 odd parts that are listed, (all of which are included in the Sets) is No.250. Notes on the actual parts to hand follow and unless stated they are very similar to their MECCANO opposite numbers.

• DATA (in mm) Strip (11-hole): •Hole pitch/dia, 12.7/4.1

•width, 12.8; •thickness, .82; •ends near fully radiused. Boss: •o/d, 9.6 (1 of 4, 10.3); •i/d, 4.06-4.17; •brass (some painted); •double tapped. Thread: 5/32 BSW. Axle Dia: 3.95 (Crank Handle). DP (Mod): probably 38. Nut: sq., probably 6.4 A/F; Bolt: RH 7.2 dia, CH 5.4 dia, both brass.

• The 11h Strip is a mid, bright, slightly emerald, green; the Flanged Sector Plate is medium red, and the 5\*5h Flexible Plate (with no centre hole) is slightly lighter.

• The Road Wheel (red/black) is very similar to the original MECCANO pattern except that the rim is not so rounded. The 3" Pulley (77mm dia, 4mm wide rim) is glossy black; the 1" is steel painted yellow, including the brass boss. Its Tyre is a bluey-grey colour with a near rectangular cross section, ribbed circumferentially around the outside.

• The Bush Wheel is brass and the boss is larger in diameter than the others at 10.25mm. The Crank Handle has a wooden grip dyed red. The Spanner has MEC-BRAS stamped on it, the only part seen that is so marked.

• The parts are well made and with a generally good finish.

SUMMARY OF MANUAL •Name: MEC-BRAS Catalogo No.5. •Details of maker: Brinquedos ESTRELA S.A., Rua Joaquim Carlos 508,



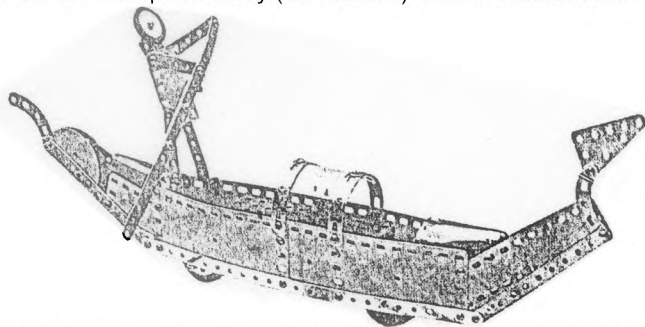
São Paulo. •Dates or Ref Nos: none. •Page size: 287\*204mm deep. •No. of pages: 32 + covers. •Language: Portuguese. •Printing: models are halftones. •Page No. of Illustrated Parts & highest PN: IBC,240. •Page No. of Set Contents & highest PN: OBC,250. •Sets covered: 1-5. •No. of models for each set: 6,11, 12, 8,35. •Name, Model No., Page No. of first & last model of each set: 1: ELEVADOR, 1.1,1; CAVALINHO BRAVO, 1.6,1. 2: FORD BIGODE,2.1,2; CARRO DE CARGA,2.11,3. 3: PONTE ELEVADORA, 3.1,4; PRENSA DE PEDAL,3.12,6. 4: ROLO COMPRESSOR C/ REBOQUE, 4.1,7; CARRO DE CIGANO,4.8,9. 5: MISTURADOR DE CONCRETO,5.1,10; CARRO COUPÉ, 5.35,32. •Other notes: Model No.3.10 has no title or number. Details taken from a photocopy.

Given the models in it, the Manual above couldn't have appeared before 1954, and given also that Estrela were selling the MECANIC sets in 1956/57, it seems likely that it would date from after that. In MCS it is supposed that the MECANIC outfits, or the parts for them, were made in Liverpool, but it must be a distinct possibility that they were produced by Estrela in Brazil. Perhaps there was an arrangement with Liverpool, rather like that which existed with EXACTO in Argentina.

**KITSPOCK** This is another system that was compatible with MECCANO, except perhaps for the size of the Axles, and it was made in São Paulo from 1980 to around 1990, by Spock Brinquedos (Spock Toys). The address on the literature (of Spock Industrial Ltda.) is Rua Acopiara 203, Alto da Lapa, São Paulo. In this case a manual isn't available but there are some parts, and copies of three leaflets, two of which (in Portuguese, English and Spanish) are mainly about the sets.

'Steel construction sets' Nos.1-5 are listed in what seems to be the earliest leaflet and for each there's a picture of the (trilingual) box lid, with some of the models from that particular Set on it. The sets are also named - Junior, Senior, Master, Super Master, and Premium (with no Portuguese or Spanish equivalents). The Gondola, the main model featured on the leaflet is shown on the next page. The number of parts in each set is given and also the number of manual models for each - 163 parts/35 models for the No.1, to

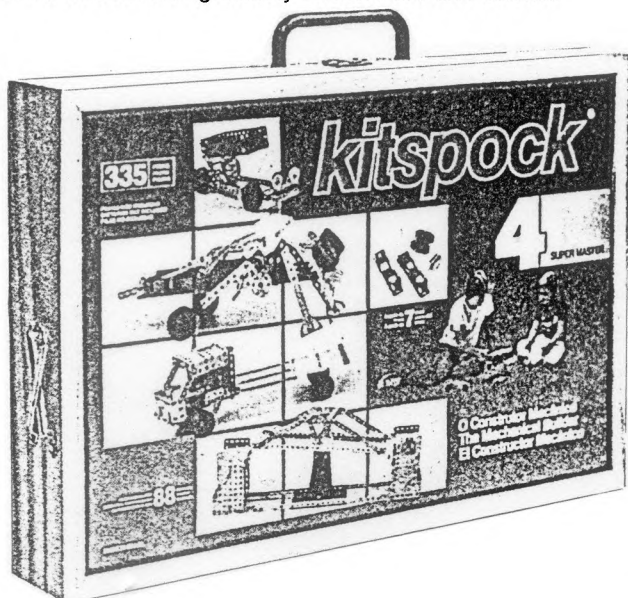
408/137 for the No.5. In terms of the number of parts the No.1 is nearly as large as the MEC-BRAS No.3, and the No.5 lies between the M-B Nos.5 & 6. The sets are progressive and Complementary (conversion) Sets 1-4 are shown.



All the sets except the No.1 have an electric motor, and the motor itself looks about the size and shape of the one in Meccano's 'Crane' and M0 motors; the accompanying parts can't be clearly seen but may be shaped mounting brackets to hold the motor in position. The No.3 Set box is also shown open and two Flanged Sector Plates, a 2" Pulley, Road Wheels or Tyres of about 2" dia, and various smaller pieces can be seen. From them, and from other parts which are shown around the box, and from the parts in the model above, the following can be identified, using MECCANO PNs: 2,3,5,6,6a,9f,10,11,12,Axles,19s,20a,22,24,34,35,36a,37,38d,48,48a,54 (but 8h long),57c,90a,126a,142c,188,189,214,215,221. The parts all look like their MECCANO counterparts except that the Spanner isn't cranked, the Flat Trunnion has a flat top like the BRAL version, and all the slotted holes have large radius ends, again like BRAL. In addition to the MECCANO Hook, a flat MÄRKLIN pattern one can also be seen.

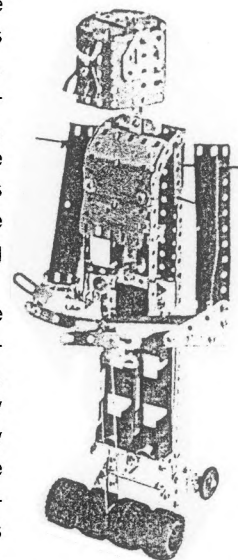
The models shown on the box lids don't remind me of any I remember from elsewhere and seem a fair selection ranging from a Horse and Chariot to a Helicopter, and a Windmill to a Swing Bridge. The majority run on the four 2" Wheels that are included in all the sets.

The second leaflet is headed 'New Kitspock'. It shows the same number of sets as before, but they no longer have names. The number of parts in them, and the number of models for each set, remain the same, and while the Ref. Nos. for the main sets have changed, those of the Complementary Outfits are as before. So probably the contents remained similar. The new features that are evident are that the main sets are packed in wooden boxes with hinged lids, and the casing for the motor now looks identical to the MECCANO M0 type, with the flanges at each end to run Axles in. The matching Battery Holders are also shown.



OSN 14

The illustrations on the lids of the sets are unchanged, and the No.4 is shown at the foot of the last column. But some of the models shown elsewhere in the leaflet are probably new, like the Robot opposite in which the Battery Holders form the main parts of the legs. And there's a reasonable looking Jet Plane and modern Racing Car.



From the various illustrations the following parts, not already mentioned, can be seen: 23,26(?),52,126,190,199. Also a 3\*11h Plate, fully perforated. The third leaflet mainly shows how to assemble the M0 style Motor and Battery Box but also notifies some changes to the parts shown in the then current catalogue.

The main points are that the 25 and 15mm dia Pulleys with Boss are made of aluminium; the Washer is 10mm o.d. and not 19; the 5\*11h Flanged Plate is only flanged on the long sides, and not on all four; the Flat Trunnion does have a flat top; the 3\*5 and 3\*11h Plates are fully perforated instead of having the hole pattern of a Flexible Plate; the Semi-Circular Plate has extra holes around its edge; a 45mm black plastic Road Wheel is shown instead of the previous #76; and 11h Angle and Flat Girders are introduced (with a paint finish). Some of the 'before and after' illustrations are shown below. The highest PN mentioned is No.76, but the Girders aren't numbered. Under the list of changes is a note - 'Em todas as nossas os furos redondos são equivalentes aos furos oblongos, permitindo sempre a montagem de todos os modelos independentemente do formato dos furos.' My rough translation is that some parts have oversize round holes instead of oblong ones but the models can be made with either type. I'd welcome an authoritative version.

Especificação Correta			Seu Catalogo Atual		
Polia 25mm c. cubo		Alumínio Nº18	Polia 25mm c. cubo		
Meia lua c/11 furos		Pintada Nº73	Meia lua		
Pneu 45mm "Estridado"		Plástico preto Nº76	Pneu 45mm		

Notes on the sample parts follow:

- DATA (in mm) Strip (7-hole): •Hole pitch/dia, 12.7/4.1 •width, 12.0; •thickness, .90; •ends near fully radiused. Boss: •o/d, 9.6; •i/d, 3.98-4.19; •brass; •double tapped (1 of 3 single). Thread: 5/32 BSW. Axle Dia: probably 4mm. DP (Mod): ? Nut: hex., probably 6.4 A/F; Bolt: RH 6.9 dia; both steel/BZP.

- The 7h Strip is slightly less than 1/2" wide. The 3" Pulley (75mm dia, 5 1/2mm wide rim) at 50g is noticeably heavier than a MECCANO one (30g), and runs very truly. Its boss is double tapped while that of a Bush Wheel is single tapped. The latter is in worse condition than the Pulley and so might be from an earlier phase of production. The flanges on a 5\*7h Flanged Plate are 16mm deep against 13 for the MECCANO part. A fully perforated 11\*3h Plate is .60mm thick and so is not equivalent to a Flexible Plate. It has slotted holes at each end - so does a 5\*11h Flexible Plate, and the latter also has a centre hole.

- The 25mm Pulley is turned from aluminium with an integral d/t boss, which at 10.4mm, is greater in diameter than the brass ones.

[Cont. >]

- The Trunnion has a flat top, and all slotted holes, except those in the 3" Pulley, are BRAL pattern, 7mm long. Bosses are deeply recessed at the peened end and have a definite chamfer at the other.
- The Strip, Trunnion and Bush Wheel are BZP; the 3" Pulley and 3\*11h Plate are light red; the Flanged Plate is white; and the Flexible Plate is dark blue on one side and yellow on the other. The parts may not all have come from the same period of course: for instance the comparatively thick modern powder type of paint has been used on the red and white Plates. All the parts are very well made except that the bore of the aluminium Pulley is rather oversize. The paint finish is excellent - the Flexible Plate has obviously been sharply bent across its middle and straightened again without any flaking. Two of the zinc parts have corroded a little but probably looked smart when new.

On dates, Meccano announced the M0 motor late in 1983 so the new KITSPOCK sets must have been after that.

**CONSTRUCTA** This system, for which only a manual is available, looks as if it was influenced by STABIL, with touches of MÄRKLIN, rather than by MECCANO. Threaded Rods are used as axles, exclusively in the 2 smallest sets, and as far as can be seen only the Road Wheel has a boss. The hole spacing can't be given positively but is probably either 12.7mm or the STABIL 12.5mm. The size of MECCANO parts were described in inches; KITSPOCK used the number of holes; CONSTRUCTA used both, plus millimetres. It was made in Brazil by a company called EFTA but no address is given.

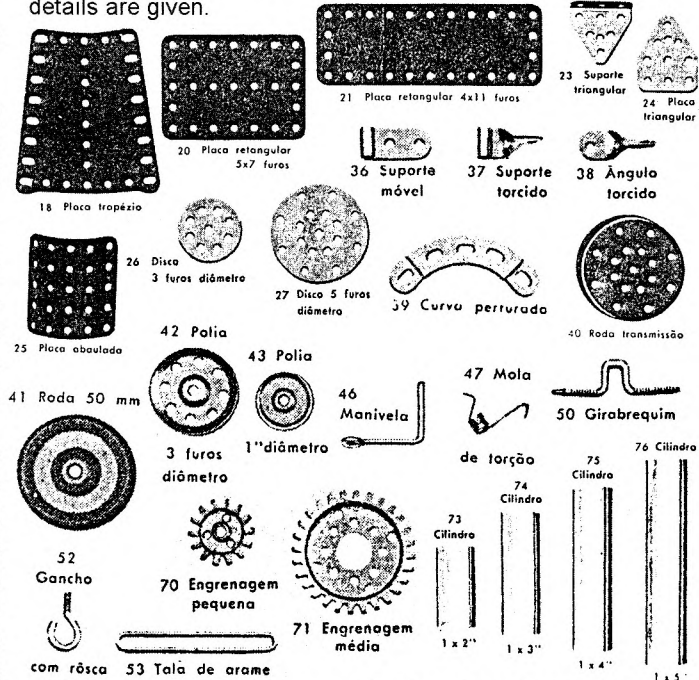
The cover of the manual has No.1 on it, on what may be a sticker. On the first introductory page it is said that there are 4 basic sets; on the second a No.V is mentioned and also V-a, VI-a, and VII-a, to give Nos.VI to VIII. Elsewhere in the Manual arabic numbers are generally used, and I will use them too. The Set Contents are given for Sets 1-5 only and all the parts listed are included in Set No.5 (the 2 Gears that are illustrated aren't in the Set Contents list), but there are gaps in the PNs, so there may be other parts in the system that are used in larger outfits.

The parts shown or listed in the Manual are described below. Unless otherwise stated they look like MECCANO parts - the PNs of the unusual ones are given in brackets and are illustrated at the end of this section. MECCANO PNs are indicated by an 'M' before them.

- Strips with 3,4,5,6,7,9,11,17,25 holes. A Curved Strip like M90a but with all slotted holes (39). DAS: 1\*3\*1,1\*5\*1,1\*7\*1,1\*9\*1,2\*5\*2,2\*7\*2,3\*11\*3,3\*1\*3. Double Bent Strip. Formed Strips with 5,7,9 holes (no illustration). A short Strip twisted through 90° with a hole at each end (38) - a useful part sometimes.
- Angle, Flat, and Double Brackets. Reversed Angle Bracket with no slotted hole. Trunnion and Flat Trunnion rather like the MÄRKLIN parts simplified (23,24).
- A/G 5,7,9,11,17,25 holes long with square corners. Also parts of the same length which aren't illustrated: they may be 5h wide Plates but are more likely to be Flat Girders.
- Flanged Plates: 5\*11h MÄRKLIN-style with slotted holes along the 2 flanges and lengthways outer edges; 5\*7h; Sector Plate with a single centre row of 8 holes.
- Flattened versions of the three Flanged Plates (the Sector Plate is PN18). Other Flat Plates: 5\*5h, fully perforated, and a formed version curved through some 60° (25); 5\*7h with the outside holes and a centre row (20); 4\*11h (21) and 4\*25h with only the outer holes - and none slotted.
- The parts that resemble STABIL are: Bearing Brackets (36, 37); Threaded Hook (52); 5h dia Flanged Disc with pul-

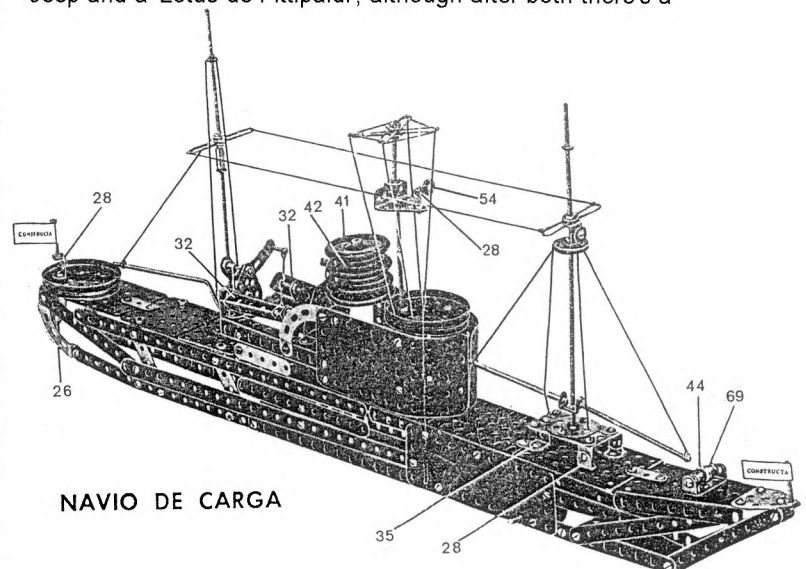
ley groove, but without the large centre hole (40); 3 & 5h dia Wheel Discs (26,27); 1" and 3h dia Pulleys but with 0 and 8 holes (43,42); Wire Crank (46); Crankshaft with threaded ends (50); Wire Stay (53); Gear Wheels with 14 & 28 teeth that look like the STABIL '1926' type (70,71), see 13/349.

- Hex Nuts; roundheaded Bolts,  $\frac{3}{16}$ ",  $\frac{3}{4}$ ",  $1\frac{1}{4}$ " long; Washers. 7 Threaded Rods from 30 to 300mm; 6 smooth Axles from 30 to 200mm; a Crank Handle; a Rod Connector and a Threaded Rod Coupling (M63e); a Collar.
- A 50mm Road Wheel which appears to be a pressing with a 'half' tyre (41). A 1" Flanged Disc which looks like one half of the Pulley. A  $1\frac{1}{4}$ " Tyre for the 1" Pulley. 1" dia Cylinders, 2,3,4,5" long, with no holes showing (73-76). A flat S wire Hook. A Torsion Spring (47).
- An Electric Motor is mentioned in the introduction but no details are given.



The sets are above average in size. Apart from 92 Nuts, Bolts and Washers, the No.1 contains 49 parts including 4 off 1" Pulleys, but only 2 tyres. There are 4 in the No.2 plus 2 Road Wheels, and by the No.5 there are 8 of each. Said No.5 has 530 parts (plus 794 N,B&W), including 28 A/Gs, 40 Plates, and 8 of those Cylinders.

Although the Manual has '1' on its cover, models for Sets 1,2 & 3 are included, and the 10 for Set 1 differ in presentation to the others, and are on pages within the sequence of No.2 models. Some of them look more modern too with a Jeep and a 'Lotus de Fittipaldi', although after both there's a

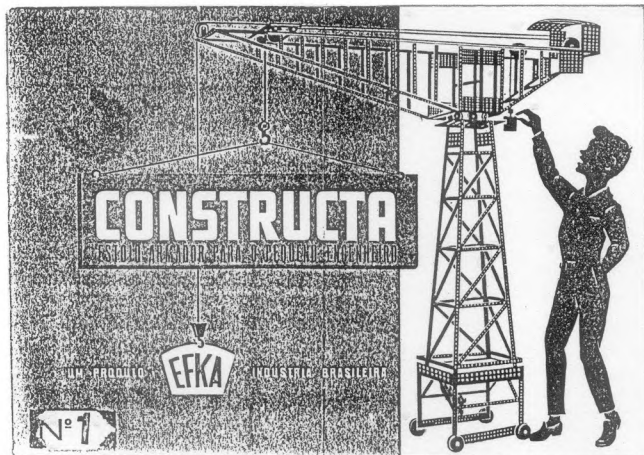


NAVIO DE CARGA

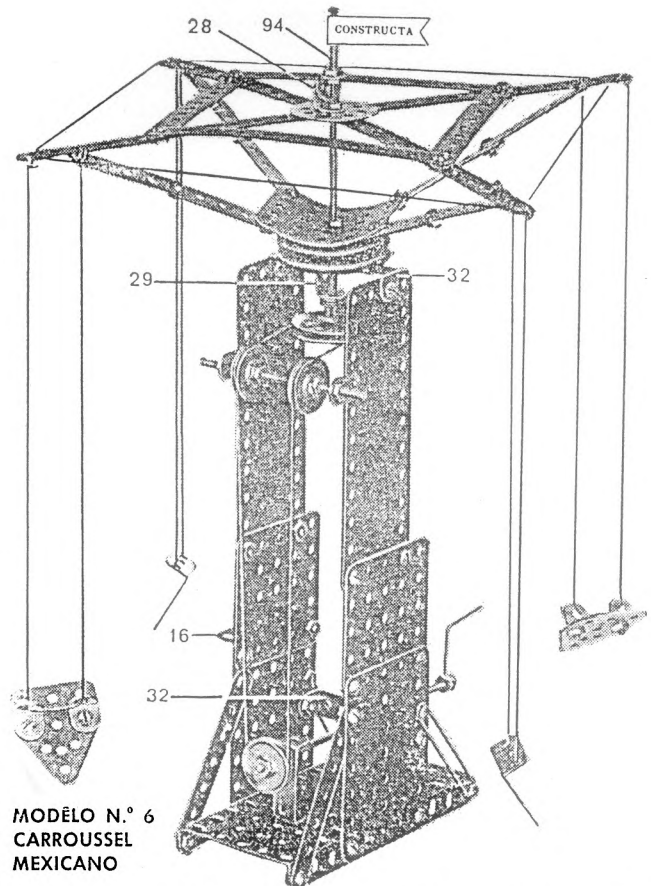
Note saying that 2 extra Tyres, not in the No.1 Set, are needed. What a turn-off, Fittipaldi's Lotus running on 2 tyres and 2 bare Pulleys. All the models are reasonable and two of the better ones are shown here, the Roundabout from Set No.2 and the No.3 Ship. Each of the models in the Manual has a list of the parts needed for it, and they are generally grouped into those needed for the different parts of the models, another STABIL-like feature.

The only clues to when the system was produced are (i) the boy on the manual cover who doesn't look prewar to me, (ii) Fittipaldi won numerous races in a Lotus in 1972-73, and (iii) the Gears, if they are really the STABIL formed metal type, might indicate a much earlier date. No information on colours is available but in the Illustrated Parts in the Manual, the Plates, A/Gs, Strips over 5 holes long, and the Flanged Disc No.40, appear much darker than the other parts.

**SUMMARY OF MANUAL** •Name: CONSTRUCTA No.1. •Details of maker: EFKA. •Dates &/or Ref Nos: none. •Page size: 292\*206mm



deep. •No. of pages: 20 inc covers, unnumbered. •Language: Portuguese. •Printing: all but 2 models are halftones. •Page No. of Illustrated



MODELO N.º 6  
CARROUSEL  
MEXICANO

Parts & highest PN: 19,99. •Page No. of Set Contents & highest PN: 20,338 (the last 8 indicates the 8th variation of PN 33, basic parts go to PN 100). •Sets covered: 1,2,3. •No. of models for each set: 10,13,3. •Name, Model No., Page No. of first & last model of each set: 1: MESA COM POLTRONA,1,2,5; GUINDASTA DE TORRE,1,11,7. 2: CARRINHO DE CARGA,1,4; GUINDASTA GIRATÓRIO,13, 15. 3: TALHA DE CARGA,1,15; GUINDASTA SÔBRE PONTE,3,17. •Other notes: Models 2 & 3 appear on both pages 8 & 9; details from photocopy.

## SMALL ADS

• To assist in the research of the **Trix Construction system** and its production I would be grateful to hear of pre and post-war French produced sets and literature including catalogues. The latter would be most welcome as they give an idea of what was produced. Dutch language products are also wanted, and early German. And has anybody seen a Experitrix, Scientrix or Chemietrix set?

It is hoped that if I can obtain enough factual information of the system as produced in Germany, France and Britain, a definitive book on the subject can be produced. I have already written a book on the Trix model railway system which includes a comprehensive early history of the German origins of the Trix companies.

If you can help with any of the above please telephone or write to me - Tony Matthewman, 12 Ballagarey Road, Glen Vine, Isle-of-Man, IM4 4EA, G.B. Tel: 01624 851 693 (country code from European mainland 0044).

• **PRIMUS ENGINEERING.** I am writing a history of this system and would be interested in the loan or purchase of original/copies of literature/advertising material, and also sets or parts. Particularly interested in information on the PRIMUS electric motor/accumulator and steam engine, W.Butcher & Sons CHEMICAL MAGIC CABINETS, and their wooden constructional systems called POLYTECHNIC, THE YOUNG BUILDER, and PRIMUS BUILDING BLOCKS.

I am also developing a PRIMUS Gauge 1 railway layout for exhibition purposes, and would like to purchase PRIMUS parts for this project, particularly parts which would benefit from repair and restoration; especially seeking BIG WHEEL segments in any condition.

Please contact David Hobson, 'Woodington', Edford Green, Holcombe, Bath, BA3 5DB. Tel. (01761) 232741.

• **OTHER SYSTEMS ARTWORK.** Would like to exchange high quality colour photocopies or colour photographs of interesting artwork from OS set boxes, manuals and advertising material. Please contact David Hobson, address and telephone as above.

## EISENZEIT - Geschichte des Metallbaukastens

This book by Helmut Schwarz, Ansgar Henze and Marion Faber has been published by the Nürnberg Toy Museum, to coincide with the large exhibition of OS that was held during last winter. My thanks to Werner Sticht who kindly bought me a copy and sent it over. The title means Iron Age (as opposed to Richter's 'stone age') - The Story of Metal Construction Sets. It has 190 pages, about 220mm square, including some 90 colour plates, mostly in a one section of 60 pages.

The rest of the book has good B&W photos and the two main parts are first about real engineering masterpieces and some models of them; and then the main part, a chronological survey of some 80+ systems with their history and main features. Well over half are German and most of the rest are French and other European, including MECCANO. I think, though I'm not sure, that the systems covered are those that were on show at the Exhibition. Many are new to me or are ones about which I know very little, and the colour photos of the sets, many from the early years and through the 1950s, are a delight. My German isn't good enough to comment on the text but one can get at some of the facts and figures with the help of a dictionary.

The last chapter is about girls and MCS, and after that, brief notes on some of the firms who made metal systems, and an Index.

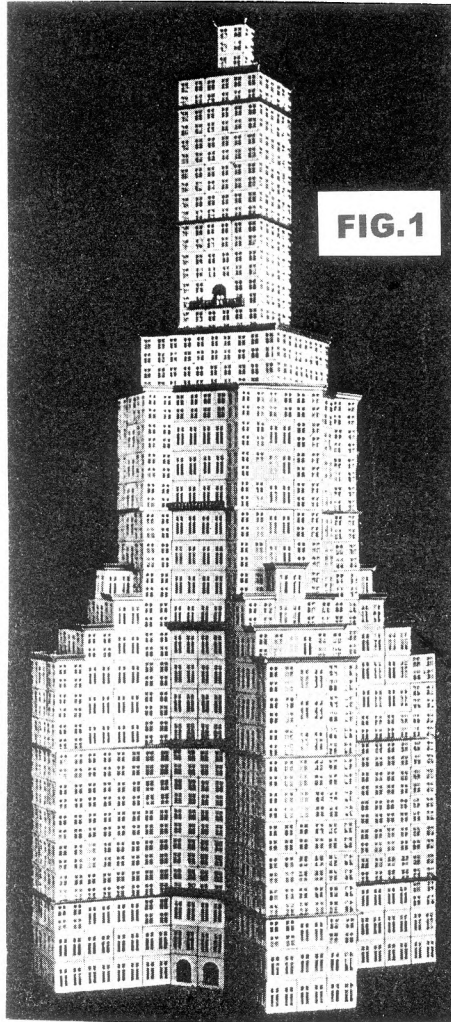
The price is DM58. Werner has offered, as time allows, to translate certain parts of the book about systems of particular interest, and I shall include these in forthcoming Issues. He also wrote that (inevitably) some errors have crept in and again I hope to mention these in due course.

Bilt-E-Z is a metal architectural construction system, made by the Scott Manufacturing Company, Inc., Chicago, Illinois, U.S.A. There are few parts in the system; a basic structure can be built using floors, connecting pieces (called "frictions"), walls, and windows, and perhaps a few trim pieces. The parts are assembled by fitting tabs on the walls and windows into slots in the edges of the floors, see Fig. 10 on p382 - no further fastening is either needed or available. I have had great fun assembling buildings from my set - my enjoyment has expanded my collection well beyond my first outfit, and prompted me to find out more about the system, and to write this.

**The Company** The Scott Manufacturing Company is listed in the 'Certified List of Foreign and Domestic Corporations' [a list of the corporations registered in Illinois, issued by the Illinois Secretary of State] in 1927 and 1930, but not 1926 or 1931. With this guidance, investigation of Chicago city telephone books, which were issued twice a year, yielded some idea of the time the company existed. It certainly is possible that they did not have a telephone during their early years, so the first appearance in the directory is only proof of existence at that time. The earliest listing is in the June 1924 issue of the alphabetical directory, as "Scott Mfg Corp toys", with an address at 7400 S. Ashland Ave. A listing under "Bilt-E-Z" was added in the July 1925 classified directory, with both names under 'Toys, Distributors and Manufacturers'. The November 1925 alphabetical listing shows a new address (and phone number) of 1701 W. 74th Street, which is one block (about 660 feet) west of the first address. (Joe Freed writes that the move actually took place in the summer of 1924; it might have taken that long for the telephone directories to be updated.) Listings continue under both names through the summer 1929 issue, and there is no listing in the winter 1929-1930 issue under either name.

While the patent date on the manuals and boxtops is December 14, 1920, I suspect that this might not represent the beginning of production. The earliest copyright dates I have seen are 1923, which seems more reasonable as a start of business; it appears that the end of production was in the latter half of 1929. The listings in the 'Certified List' were probably prepared a year before the publication date, since the book is quite large; the late first appearance may have been a delayed registration, or Scott might not have been incorporated immediately.

**The Manuals** I have nine manuals in my collection (one from Joe Freed), and have viewed about a dozen more through the courtesy of Joe Locher and George Wetzel. I have identified six different designs, identified here by reference numbers. Ref 4 matches the one illustrated in MCS; the supplementary page from OSN is from ref 6. A chart is appended summarizing some of the features of the manuals. I have been able to sort them in chronological order



with only a little conjecture. I actually arranged them in a suspected order, and then found positive indications of the proper order - the same as the provisional order. The order of refs 1 and 2 is only a guess, based on the line drawings illustrating the parts in ref 1 and photos in ref 2, but the rest seem fairly solid. Ref 3 has the earlier address and 1924 copyright date, while the other 'copyright 1924' manuals carry the later address. Refs 4, 5, and 6 have the same internal references (to parts lists, instructions, and a doll house model), but those in ref 5 and 6 are incorrect because of the rearrangement of the pages. In ref 5 and 6, page 1 shows the boxes; ref 5 shows the black boxes, while ref 6 shows the later blue boxes with the printing around the edges. Ref 6 is later than ref 5, because one of the box size listings contains a typographic error consistent with modifications to the ref 5 page (on page X1.6a, the box size for set 00 has the word "high" repeated; ref 5 has only the "high" on the last line).

Ref 1 is very likely not the earliest. The model photos show plain doors with a single arched opening, as in Fig. 1, while the parts illustration shows an embossed door with two rectangular openings (Figs. 2-5). The plain door exists, so there ought to be a manual showing it in the parts illustration. Ref

6 is the latest I have seen.

Some particular points of interest:

The copyright date cannot be used for dating, except perhaps for the earliest manuals. I have seen no date later than 1924.

Ref 1 shows "structural" parts and structural sets AA and BB with those parts - see Figs. 2 & 6. I have not seen any of these parts; since no method is available to connect the tops of the "structural" wall pieces, the bridges illustrated would be quite weak. Perhaps this was recognized and these sets were short-lived. Ref 1 and 2 are the same except for the parts illustration (Figs. 2 & 3), and the last page (which would be 20 if it were numbered). Ref 1 has the description of sets AA and BB, while ref 2 has an illustration of the very large model (Fig. 1 above). It is some 66" high and has some walls with other than 90° corners. I have built a model (much smaller, of course) based on the principle illustrated and, while providing a complete roof was awkward, it looked very nice. I have only seen one copy each of refs 1 and 2: those in my collection.

All the copies of ref 3 I've seen have a list of set prices on a slip of paper pasted (or formerly pasted) inside the front cover. While the manual only shows sets A through F, the price list also shows sets 0 and 00. One copy of ref 3 I have includes a loose sheet illustrating models from set 0; the models are the same ones shown in the later manuals.

Refs 3, 4, 5, and 6 include a center spread of a BILT-E-Z village (Fig 7). The "doll house" shown at top left seems to be stretching the system a bit to encourage girls to build something.

Other than pages 1 and 2, refs 5 and 6 are the same. As

mentioned, page 1 shows the boxes and set prices; page 2 lists the set contents and box sizes. Courtesy Joe Freed, I have a variant of ref 5 with different typesetting; the easiest way to spot this is by the italic page numbers; all other manuals (with page numbers) use plain roman type.

**The Models** The models illustrated in refs 1 and 2 are identical; refs 3, 4, 5 and 6 also show identical models, but different from the earlier ones. The most notable difference between the two groups is that the later models use the embossed doorway, while the early models illustrate the simple open doorway. Some of the larger models in refs 1 and 2 show columns (Fig.8) and small peaked roofs, which are not shown in any parts list, and which I have not seen. These parts might not exist. The earlier models also use the 4" balconies, while the later ones only use the 2" ones.

The later models have more sloped roofs (made with floors and frictions bent to suit) than the earlier ones, but these are not very effective since there is no provision for closing the gable ends.

**The Pieces** The floors are 2" square plates made from two pieces of sheet steel formed to make slots in the edges which accept frictions or the flanges of walls (Fig.10). The earlier sets contain painted floors - manuals ref 1 and 2 list four colors. Later sets have tin plated floors - refs 3 and 4 list silver and 5 and 6 explicitly indicate that floors are polished tin. I have both styles, and find that the painted floors have remained very attractive, while the tin has oxidized to an unattractive dull dark gray. The sketch in Fig.10 shows how the floor piece is made, so others will not have to tear one apart to see. I still wonder what the machine looks like which would fold the edges over inside each other to make this part. The construction makes the slot off center in the edge, and the instructions indicate that the "thick" and "thin" edges of the floors should always face the same way throughout the model - either on top or on the bottom. They neglect that the "thick" edge will be on top on one edge and on the bottom on the adjacent edge. When assembling the floors, the floor pieces must be matched properly or a gentle stair-step effect will occur, and the building will not be square.

The "frictions" are thin metal plates used to hold the floors together. I have two forms: a simple flat tin plate nominally 0.012" (0.3 mm) thick and 1.375" x 1.75" (35 x 44.5 mm). The other is thinner tinplate, with the edges turned over and three ridges embossed, 1.15" x 1.5" (29 x 38.5 mm). The ridged version is the later type shown in Fig.5 - it apparently was introduced to reduce sharp edges, though I have had no difficulty with the earlier type. According to Joe Freed, from his upcoming book on construction set manufacturers, this change took place in July of 1925.

The walls are made of 0.0075" to 0.009" (0.20 to 0.23 mm) thick steel, formed to 2" squares with about 1/4" flanges top and bottom to fit the floors. The sides are folded over to reduce sharp edges and for reinforcement, but the flanges don't have any protection other than diagonal cuts to eliminate sharp 90 corners. For discussion here, I will refer to the part numbers as listed in the MCS sheet (the same as manual ref 4, see Fig.4), which were also used in manuals 3 and 5. There are two versions of window No. 3: the earlier one with slightly larger windows and more pronounced embossing than the much more numerous (in my collection) later version. As indicated above, the door No. 6 was made early with a single arched opening and no embossing, and later with the two rectangular openings and a solid embossed arch and trim as illustrated in MCS. Manual ref 5 (Fig.5) seems to show a door with the two rectangular

cutouts below, and three pie-shaped cutouts forming the arch above. I have not seen any examples of this variation, and am not sure it exists. The single window No. 7 is included only in the two largest sets (G and H early on, or E and F later). Again, the parts illustrations show two versions: a simple single four-paned square window centered in the wall in the early (Ref 1) manual (Fig.2), and the one with the embossed decoration and two-pane rectangular window shown in MCS (and in Refs 3-6). Ref 2 shows neither window, but then it doesn't show the No 4 windows either, but they were included in the set with that manual.

Balconies came in two styles: 4" long in Refs 1 and 2, and 2" long in the remainder. Both versions are found, though not in the same set. It would appear that the style of balcony might be an aid to dating a set. The material is about the same thickness as the walls, but with no reinforcement, so these parts are easily bent. Note that the tab(s) would usually be placed into a slot which already has two wall flanges, so perhaps thicker material would have made assembly difficult.

The cornices are listed in MCS - the variety is clear there, though earlier manuals did not show so many different sizes. There are 15 different pieces, more than all the rest of the parts together. Again, the material is similar to the walls and unreinforced, and these parts are frequently bent or smashed flat. It is not difficult to place two together when a longer cornice is needed. It is surprising the effect these parts have on a building. Without the trim, a model is quite plain. Adding cornices and balconies, especially in a contrasting color, does much to improve the appearance.

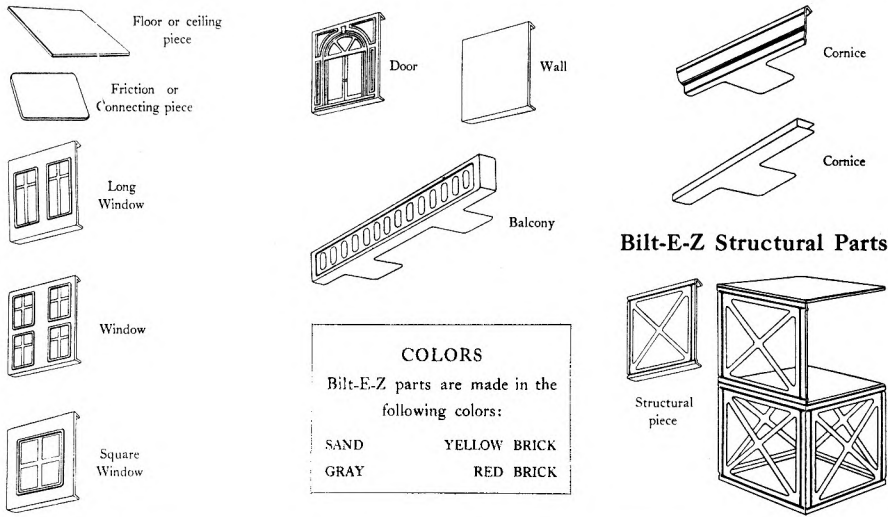
The part colors are listed in refs 1 and 2 as sand, gray, yellow brick, and red brick. Ref 3 lists gray, red, white, and silver; ref 4 adds buff. Ref 5 replaces silver with polished tin - one would suspect that this, at least, does not represent an actual change in color. I have not yet seen any significant differences in the colors to be able to distinguish between yellow brick, sand, and buff. There are three shades of red, one somewhat brighter and one a bit more orange than the other, but they all are dark or oxide red.

**The Boxes and Sets** I have studied about 20 sets and boxes. While this sample does not include all sets and box designs, it appears that the boxes fall into three major groups. The last type is the blue box, which appeared by 1928, according to Joe Freed. The lids of these are printed all around, with a blue background, "Bilt-E-Z" and a few models on all sides, and a color picture (the same as the manual cover) on the top. All examples seen include a listing of the set contents printed inside the lid, along with some advertising material, one such is shown as Fig.9. These boxes are illustrated in the MCS supplementary page. (Incidentally, the D size box should be 4.5" deep, not 2" as listed in ref 6.)

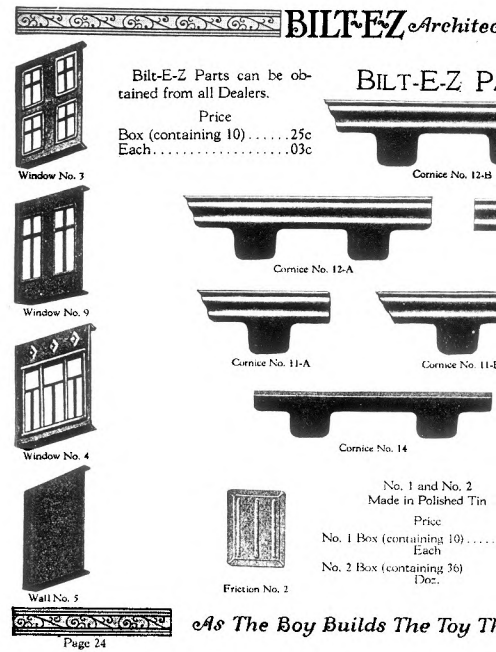
The earlier designs are all in black boxes, with a picture (the earliest are black and white, the later are in color) pasted to the top of the lid. Labels pasted to the ends of the lid show the Bilt-E-Z name and the size of the set. There appear to be two different sizes (except perhaps for set D), with the larger being the earlier of the two. The smaller boxes are listed in manual ref 5. Some boxes, particularly those with black and white labels, have no contents list; I have seen one with just a contents list pasted inside the lid; later boxes have only the contents list printed inside the lid; and the last black boxes have the contents and advertising printed inside, the same as the blue boxes.

The prices of the sets remained the same in all of the lists seen, though the contents changed. Comparing the

# BILT-E-Z PARTS

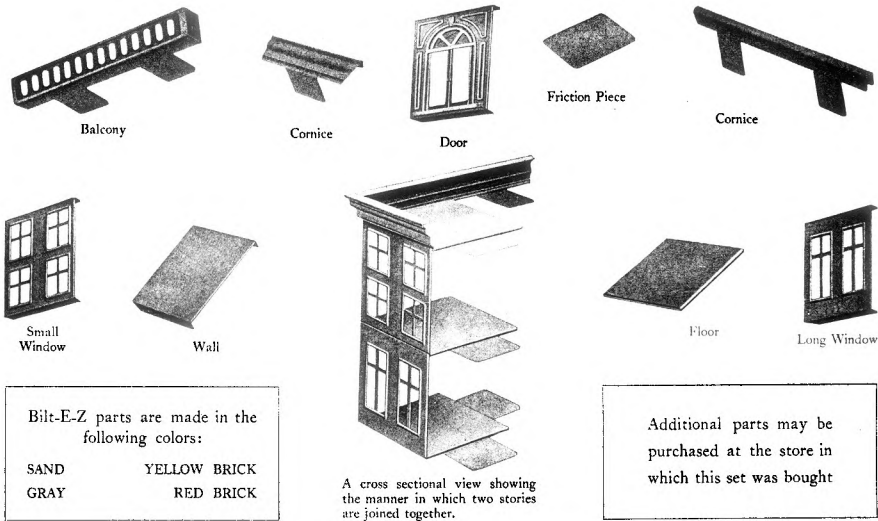


**FIG.2** Parts listing, ref. 1



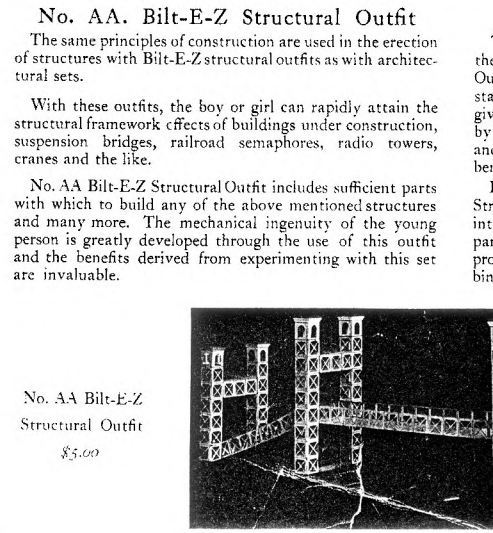
**FIG.5** Parts listing, ref. 5

# BILT-E-Z PARTS



**FIG.3** Parts listing, ref. 2

# Bilt-E-Z Structural

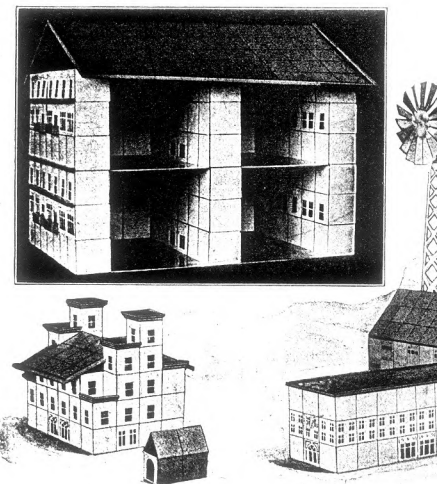


**FIG.6** From page [20], ref. 6

# BILT-E-Z Architectural Outfits



**FIG.4** Parts listing, ref. 3; ref. 4 is similar except: "Buff" is added to colors  
Page number is on right instead of left  
Prices are added for parts

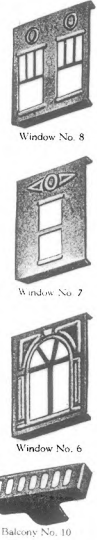
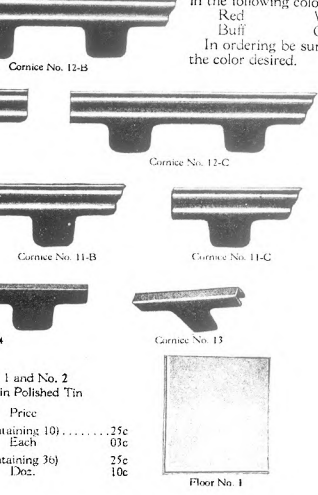


**FIG.7** Center pages from ref. 6  
OSN 14



BILT-E-Z PARTS

All parts with the exception of (No. 1 and No. 2) are made in the following colors:  
 Red White  
 Buff Gray  
 In ordering be sure to state the color desired.



No. 1 and No. 2 in Polished Tin  
 Price  
 containing 100.....25c  
 Each.....03c  
 containing 300.....25c  
 Dec.....10c

The Toy The Toy Builds The Boy

...ing, ref. 5 and 6 (identical)

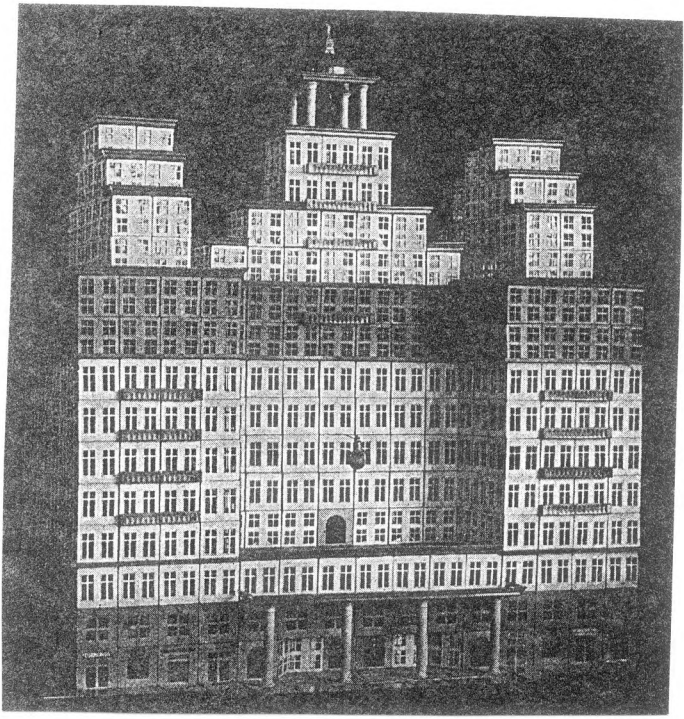


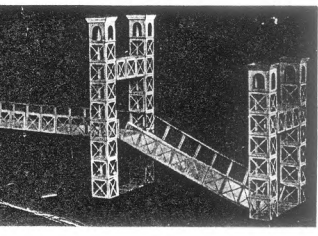
FIG. 8

Structural Outfits

No. BB. Bilt-E-Z Structural Outfit

The suspension bridge illustrated on this page is one of the many interesting models built from No. BB Structural Outfit. The floor of the bridge is made by joining together standard Bilt-E-Z floor pieces with friction pieces, which gives the bridge sufficient solidity and strength to hold up by its own weight. The approaches are also of floor pieces and are joined to the main part of the bridge by means of bent friction pieces.

Remarkably realistic effects are attained with the No. BB Structural Outfit. Sets may be added to at any time with the interchangeable structural parts or Bilt-E-Z Architectural parts. By using the latter it is possible to make lifelike reproductions of watch towers, radio stations, and other combinations of buildings and structural framework effects.



No. BB Bilt-E-Z Structural Outfit \$7.50

...e [20], ref. 1

YOU CAN GET ADDITIONAL PARTS OR LARGER SETS FROM ALL BILT-E-Z DEALERS

Additional Parts are Put up in Boxes of 10 which Retail for 25c

INSTRUCTIONS:

A book of instructions showing the various types of models you can construct is included with every Bilt-E-Z set. If you did not receive this book with your set or if you should lose it at any time, you can get another free by writing us.

It is a good idea first to try to copy one or more of the buildings illustrated in this book so that you can learn just how easy it is to do. But after that, you'll have heaps more fun designing and putting up your own buildings.

LEARN TO SAVE

Learn to save your pennies, nickels and dimes and to buy more Bilt-E-Z parts. Think of all the fun you'll have building those great tall skyscrapers, factories, stations—anything you want. Soon you'll have enough pieces to make buildings as high as you self and even higher. Just show dad, and mother too, that you know how to save. They'll help you get more parts.

TO PARENTS:—Bilt-E-Z sets are far more than mere toys. Not only are they fascinating for the youngsters, but they have the additional merit of teaching them how to think.

THIS BOX CONTAINS THE FOLLOWING PARTS	
"A" SET	
Floors.....	45
Friction.....	90
Windows.....	58
Walls.....	33
Doors.....	6
Cornices.....	24
Balconies.....	3
<b>TOTAL PARTS.....</b>	<b>259</b>

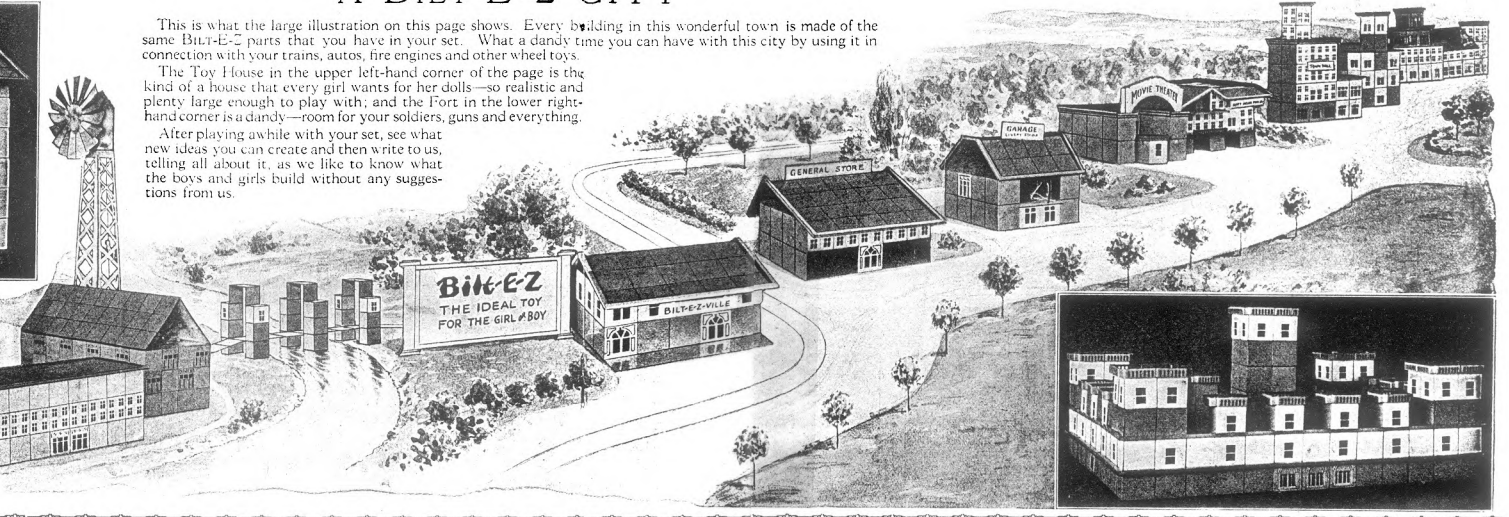
FIG. 9 Inside of Blue Box lid (and late black box lid)

A BILT-E-Z CITY

This is what the large illustration on this page shows. Every building in this wonderful town is made of the same Bilt-E-Z parts that you have in your set. What a dandy time you can have with this city by using it in connection with your trains, autos, fire engines and other wheel toys.

The Toy House in the upper left-hand corner of the page is the kind of a house that every girl wants for her dolls—so realistic and plenty large enough to play with; and the Fort in the lower right-hand corner is a dandy—room for your soldiers, guns and everything.

After playing awhile with your set, see what new ideas you can create and then write to us, telling all about it, as we like to know what the boys and girls build without any suggestions from us.



...ref. 6 (ref. 3 same except on pages 10 and 11; ref. 4 same except on pages 11 and 12; ref. 5 identical)

two earliest contents lists I have, from sets B and C, with the listings in refs 5 and 6 (and as shown in MCS), shows that at least these sets had more parts in later years. Neither of these boxes contain enough parts to date the set exactly. It is not clear if there was an adjustment in set sizes when sets G and H were dropped, since I was unable to correlate the two contents lists available with any dates. As already indicated the early sets had no list of contents in them - they do seem to have a lot of extra space; perhaps customers complained that the sets did not appear complete, and the first response was to put the contents list in the lid, and then to reduce the box size.

**Conclusion** I have attempted to summarize some of the significant changes described above on the "Timeline" chart

below, with dates where they are known. The arrows indicate the approximate dates of the vertical lines to which they point, in those instances where there is some confidence in the year. For example, a set with smooth frictions and an address of 1701 West 74th Street is from the period between 1924/1925, when the company moved, and the introduction of ribbed frictions in 1925. Blue box sets are from 1928 or 1929.

I thank Joe Locher for sending data on his sets, and allowing me to visit and view his collection; George Wetzel for allowing me to view his collection; and Joe Freed for sending me a manual and the draft of the chapter on Bilt-E-Z from his proposed price guide on pre-war American construction toy manufacturers. I have learned a lot from these three, and without their help this article would not have been nearly as complete.

### BILT-E-Z Manuals

Ref	© date	Key	Page #s	Sets Listed	Set Prices	Sets and models described on pages: #										Parts		Notes	
						0	00	A	B	C	D	E	F	G	H	AA, BB	Illustr.		Prices
1	1923	1,a	[1-20]	A-H, AA, BB	in intro to each set	-	-	[6,7]	[8,9]	[10,11]	[12,13]	[14-16]	[17]	[18]	[19]	[20]	dwgs [pg 3]	none	c
2	-	2,a	[1-20]	A-H	in intro to each set	-	-	[6,7]	[8,9]	[10,11]	[12,13]	[14-16]	[17]	[18]	[19]	-	photo [pg 3]	none	d
3	1924	3,a	1-20	A-F	0-F on slip	-	-	6,7	8,9	12,13	14,15	16,17	18,19	-	-	-	photo pg 2	pg 20	
4	1924	3,b	2-21 +	0, 00 A-F	none	5,6	7,8	9,10	13,14	15,16	17,18	19,20	21,22	-	-	-	photo pg 2	pg 2	e
5	1924	3,b	1-24	0, 00 A-F	pg 1	6,7	8,9	10,11	14,15	16,17	18,19	20,21	22,23	-	-	-	photo pg 24	pg 24	
6	1924	3,b	1-24	0, 00 A-F	pg 1	6,7	8,9	10,11	14,15	16,17	18,19	20,21	22,23	-	-	-	photo pg 24	pg 24	f

# = Sets are listed in order of increasing size; note that "0" and "00" are reverse of common order.  
 [ ] = pages not numbered; numbering provided for reference only.  
 + = IFC = page 1, IBC = page 22; all others, the inside covers are blank and not numbered.

**Key:** 1 = Black and white cover, no decoration across pages, models with plain open doors.  
 2 = Missing cover, no decoration across pages, models with plain open doors.  
 3 = Color cover, decoration across pages, models with

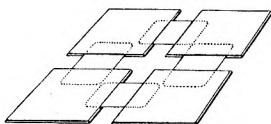
embossed doors.  
 a = address "74th ST. & ASHLAND AVE." (7401 S. Ashland Ave.).  
 b = address "1701 West 74th Street".

**Notes:** c: BC missing; FC (with date) loose.  
 d: Covers missing.  
 e: As shown in MCS.  
 f: As shown in supplementary page; differs from ref 5 only in page 1 illustration and pg 2 box sizes.

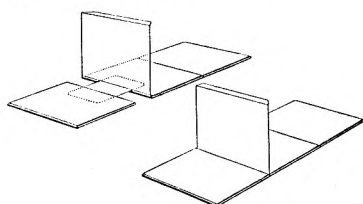
### BILT-E-Z Timeline

Manual Ref. Number	0?	1	2	3	4	5	6
Door Openings	Single, smooth		Double, Embossed				
Balcony Length	4"			2"			
Floors	Painted			Tin		Tin	
Address	74th and Ashland (7401 S. Ashland Ave.)				1701 West 74th Street		
Frictions	Smooth					Ribbed	
Boxes	Large Black-and-White			Smaller Black-and-White		Blue Colored	
	←1923		1924		←1924/1925	←1925	←1928 1929→

Manuals are listed by reference number, as listed in the BILT-E-Z Manual table above. Where vertical lines are shown, the time division is clear and known. Where no vertical line separates features, the time of change is not clear.

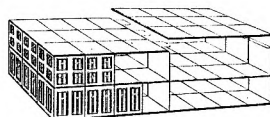


When the floor has been laid out in the desired shape, wall pieces may have to be inserted in one or several places toward the center of the building. This is done in the manner illustrated below.

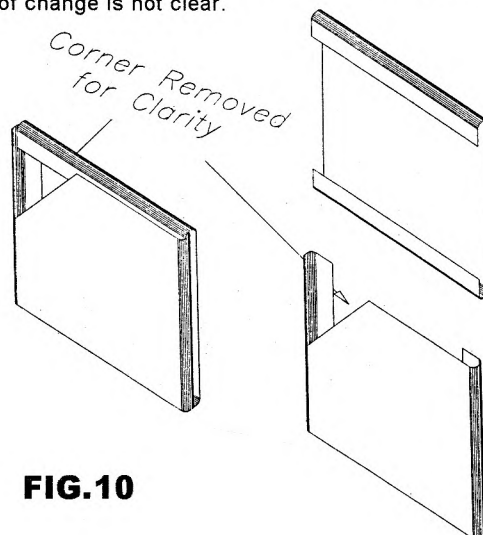


The insertion of wall pieces in the center of the floor plan necessarily depends on the number of floor pieces. The object of these wall pieces in the center of the buildings is for support. Therefore, should the entire floor be not more than four squares each way—no wall pieces should be used. However if the plan is of larger dimensions, wall should be used as support as illustrated below.

We are now ready for the second floor of our building. The easiest way to add another floor is to put the floor pieces of the second floor together before placing them over the floor below. If the building is over four squares wide or deep this may be accomplished by placing the second floor on in two or more sections of connected floor parts.



As the building goes higher it must necessarily be shaped according to the plan in mind.



**FIG. 10**

**MORE CONSTRUCTION SETS** The range of sets produced by *eitech* GmbH was given in 11/293, with notes on some of them in 13/342. Since then Chas Shrubsole has sent from Canada a colour leaflet showing illustrations of the tops of all the boxes. Those of Sets 01 to 09 are blue with a large colour photo showing one of the main models from the outfit, with two boys behind (one for the #01). The main text is in German, English and French. The 'Startboxes' have a colour photo of the model on a white ground and the text in English only.

Chas also sent some blue sheets printed in black, probably copies, and again the same 3 languages are used for most of the little text there is. One sheet shows the range of sets above but the lids of Nos.01-09 have only a photo of the set model, with no boys. Each of the other seven sheets shows models from one of the sets in the range No.11 to No.17, none of which were known to me before. They haven't copied well and only the main features of most of the models can be seen.

The No.11 has 175 parts and the models are 4 three-wheel carts and buggies, plus a monoplane and a helicopter. All are made from Strips and a few plastic parts like the Steering Wheel, Seat and 3-bladed Propeller (tail rotor).

The No.12 has 275 parts and the models are a racing car and 5 tractor/light truck vehicles. They all run on 4 Wheels that look like the #1423 plastic push-on ones that are used in the 'theme' sets, and their bodies are made up from the plastic theme set sections joined by Strips. One has a spare wheel on the short back platform and another has a slewing crane made of metal parts mounted there. A third has a metal hoist unit built onto the front.

No.13 has 230 parts and a friction motor. The 5 models are buggies or racing cars and use the same Wheels as the No.12, but the bodies, apart from the plastic Seats and Steering Wheel, are made from metal Strips, Plates, etc. I think that only a 3-wheel Motorcycle has working steering but all the models look the part. Nothing can be seen of the motor.

No.14 (270 parts) also has the friction motor. The models are a Motorcycle, a 3-wheel Motorcycle, and a 4-wheel Buggy, but with handlebars like the others. This time the wheels are Pulleys with Tyres, and the front forks are sprung with Coil Springs. All attractive models I think.

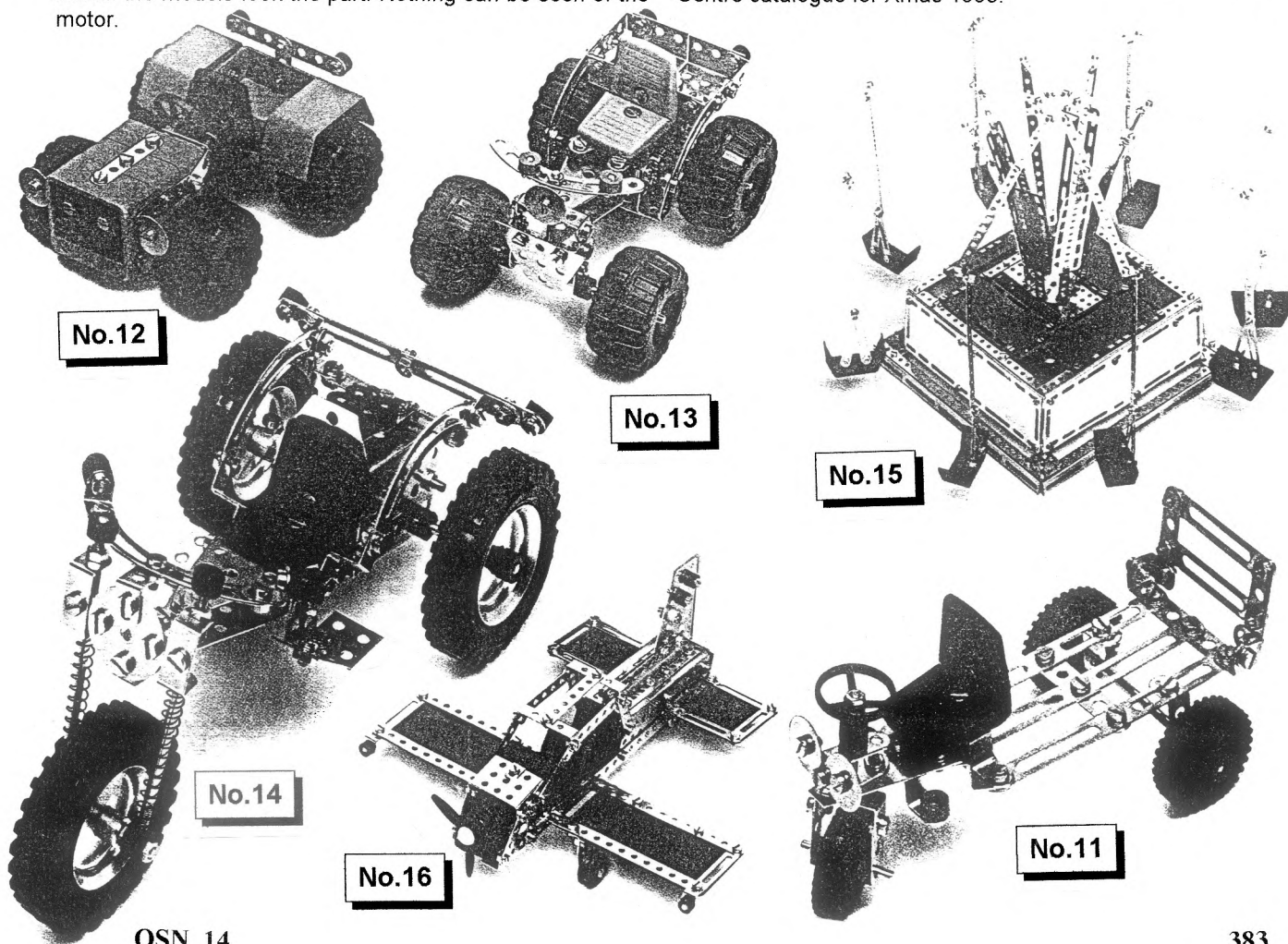
The No.15 outfit has 590 parts and an electric motor. 3 fairground models are shown, all of a reasonable size with bases 20 or 25 holes square. There's a simple roundabout with 4 cars on the ends of arms, a double swing, and the star, an 8 arm chair-o-planes with the base filled in with standard Flexible Plastic Plates. No details of the motor or drive can be seen.

No.16 has an electric motor too and 470 parts. 4 aero-plane are illustrated and all have rectangular wings and stabilisers made from Plastic Flexible Plates outlined with Strips. They look rather clumsy, as do the boxy fuselages. There's also a better looking helicopter, although as far as can be seen the tail rotor isn't driven. The fuselage is a framework of Strips, and the plastic main rotor blades are those used in the No.09 outfit.

The No.17 set has 570 parts and again an electric motor. The models are an elevated jib crane, a lorry mounted crane, and a tractor and trailer. They are mostly made of metal parts with Plastic Plates used as necessary to fill open areas, but not enough detail can be seen to judge their finer points.

It isn't known whether these Nos.11 to 17 of sets are current, or if not when they were available. All that can be gleaned from the leaflets is that the plan size of their boxes is 354\*292mm, the same as those for the 01 to 09 sets on the blue leaflet, the ones without the boys on the lids (it has a logo on it that looks like a fox with 'EDS associates inc.' by it). The size of the blue boxes with the boys is 350\*290mm.

While on the subject of CONSTRUCTION, the **METAL BUILDER** Set (12/329) is still listed in the Early Learning Centre catalogue for Xmas 1995.



**STEEL TEC STARTERS** For Xmas 1995 Remco introduced 3 sets under this name, called Level 1, level 2 and Level 3. They are stated to be aimed at 4 to 7 year olds and consist of steel Strips, Brackets and Plates, plus special plastic parts, all held together with large diameter plastic N&B. The #1 has 119 parts; the #2, 155; and the #3, 277. The holes in the parts are at the normal 1/2" pitch but are 6mm dia, and to accomodate them the Strips and Brackets are 14.8mm wide. The sets are not progressive and the notes that follow are about the Sets 2 and 3 that I've seen. The theme of Set 1 is racing cars and it contains plastic parts for them that aren't in the other sets; its metal parts are probably mostly a selection from those in the larger outfits. All the sets are packed in attractive boxes and the models on their white lids show to better advantage than do those against the black of the regular STEEL TEC line. A friction motor is included in Set 3.

Sets have been reported on sale in the U.S. and Canada, at K-Mart, Walmart and Toys "R" Us. U.S. K-Mart prices are \$18 for a #2 and \$28 for the #3; Toys "R" Us in Canada list the #2 at \$30.

Thanks are due to Keith Cameron for sending the sets over, and to Chas Shrubsole and Richard Symonds for the Canadian ads.

**THE PARTS** Of the 85 different parts in Sets 2 and 3, 33 are metal, including:

- Strips with 3,4,5,6,7,9,11,&15 holes. A slotted Curved Strip which spans 8 holes. 5 DAS - 1\*3\*1, 1\*5\*1, 2\*3\*2, 2\*5\*2, and 1\*2\*1 with obtuse angled ends.
- Perforated Plates 3\*3, 3\*7, & 5\*7h, and a rigid 3\*5 Plate but with the hole pattern of a Flexible Plate. Also a 3\*5h rigid Triangular Plate.
- 10 different Brackets ranging from a 2h Flat Bracket to a 1\*5 with a slot spanning the 2 end holes. Some are angled; there isn't a 1\*1h Angle Bracket.
- A 3h A/G and a 3h Flat Girder.

The plastic parts are too many to describe in detail but are all illustrated in the Extra MCS Sheets. Apart from one or two plates they are mostly intended for a specific purpose and would not be easy to use otherwise. The 100mm long loco boiler for instance could be a useful part except that its end, smoke stack and dome, although made separately, are permanently attached to it. Some of the parts have extra holes in them which aren't needed to mount them in the manual models, but they aren't always where they would be most use - for example the two halves of the cement mixer drum each have 18 holes but not one at the end to allow it to be bolted upright on a base. One unusual part is a Crank Handle with a double keyway, to take a push-on Winding Drum and push fit Collar.

The thread used is a coarse square section Acme type, and the N&B are made from a dark grey, slightly flexible plastic. The Bolts have cheeseheads with a square recess in them, and the Nuts are square. The 'L' shaped Key to drive

the Bolts, and the two Spanners, are made of the same plastic.

Apart from a few Plates painted red or blue, all the metal parts have a BZP finish. Plastic parts are red, blue, yellow and black. All the parts are well made and the paintwork and plating is very good. Strips from 5 holes up are stamped STEEL TEC, and the tools, and soft plastic Tyres, have STEEL TEC STARTERS moulded into them.

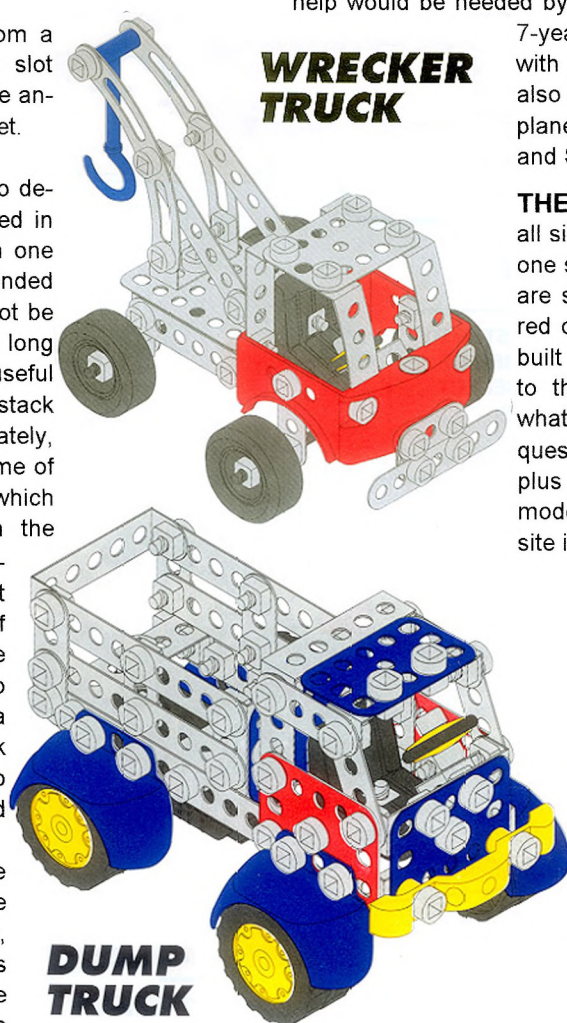
• **DATA** (in mm) **Strip** (11-hole): •Hole pitch/dia, 12.7/6.0 •width, 14.8; •thickness, .82; •ends fully radiused. **Boss**: •i/d, push fit. **Thread**: Acme type, 5.5 dia\*.30 pitch. **Axles**: 5.5 dia plastic with threaded ends; also 3.00 steel with plastic sleeving. **DP (Mod)**: NA. **Nut**: square, 10.3 A/F; **Bolt**: cheesehead 10.2 dia, with square recess.

**THE MANUALS** The manuals for both Sets are similar in layout with the parts shown at the beginning, with PNs which are consistent between the Sets, followed by the usual step-by-step instructions for the models - 6 for the #2 and 10 for #3. The illustrations are line drawings with the parts shown in colour, good of their type and much better than colour photos. The parts needed for each assembly step are listed by quantity and PN, and each length of Bolt needed is shown full size. A novel feature in the drawings, to try to make building the models easier, is that the PN of each part used is colour coded red, yellow or blue, and so are the lines from each Bolt, through the holes in the parts, to its Nut. The 'red' parts are meant to be assembled first, then the yellow ones, and finally the blue.

Basic instructions on how to screw the N&B together, and assemble the models are on a separate sheet addressed to Dear Parents. One may imagine that quite a bit of parental help would be needed by a 4-year old but perhaps a keen 7-year old could manage on his own with just the manual. The loose sheet also shows a rather clumsy looking Bi-plane made from a mix of standard and STARTERS parts.

**THE MODELS** The #2 models are all simple but quite attractive Trucks of one sort or another. All their front ends are similar with the cab made from a red one piece plastic lower half and a built up top. A rear platform is bolted to the back of the cab and carries whatever is appropriate for the truck in question. The overall length of the cab plus platform is about 7" for all the models, and the Wrecker Truck opposite is typical.

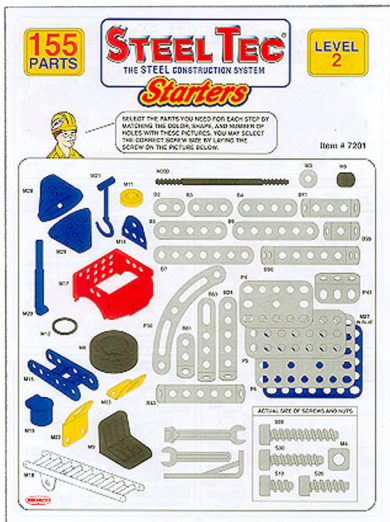
There is more variety in the #3 models, with a Helicopter, (3-wheel) Trail Bike, and Locomotive, as well as various Trucks and a Police Car. The Dump Truck is a little over 8" long. The cabs are built up from Strips and Plates, and the mudguards give an improved appearance. The Ambulance though looks more like a cattle truck, and all the trucks would look better if, like the #2 models, a Plate was used at the back to provide a base for the rear structure. The plastic casing of the Motor is moulded to look like a car engine, and



Wheels are pushed on the shafts which emerge from it on both sides. It is used in all the models, usually driving the rear Wheels.

This 60+ year old found the models reasonably easy to build, and they had a solid feel to them when completed. The N&B could be well tightened with the Tools provided although it would have been easier if one end of one of the Spanners had been angled. The Nuts didn't seem to work loose but some were too tight on the thread to be run down without using a Spanner. Pivoted joints were made by tightening a N&B onto one of the soft plastic Washers provided, and this seemed satisfactory. Sometimes though lock nuts were shown but there was no mention of them in the instructions. Initially the Motor seemed rather feeble but this was because its shafts were rubbing in the holes in the inside faces of the Mudguards, which they had to pass through. It was possible with some difficulty to rectify this, and then the model performed well on a hard floor.

**SUMMARY OF MANUALS** [Details for the #3 manual, where different, are given in square brackets.]



(No Model Nos) •Other notes: none.

[Name: Steel Tec Starters Level 2 [3]. •Details of maker: Remco, Tel: 1-800-243-2961. •Dates & Ref Nos: ©1995; 3/23/95 [6/10/95 and 5/12/95]; Item #7201 [7203]. •Page size: 217\*280mm deep. •No. of pages: 16 [36] inc covers. •Language: English. •Printing: coloured line drawings. •Page Nos. of Illustrated Parts & highest PN: 1, S38 [1-2, X1]. (No Set Contents) •Sets covered: Level 2 [3]. •No. of models: 6 [10]. •Name, Page No. of first & last model: WRECKER TRUCK, 2; CEMENT MIXER TRUCK, 14. [INDY RACER, 3; WRECKER, 33]

**And COOL STEEL** Don Bock kindly sent an (American) Sears Holiday 1995 Wish Book and the illustrations from one item in it are shown below. The accompanying text reads 'Get Ready to Rule with COOL STEEL™ Dynamic Vehicle Set! The only steel construction toy for 4 to 7 year olds. Rough 'n tough pieces are sized just right for little hands while designed to work with big imaginations! 125-piece set includes 4 plastic tools. Pictorial instruction book contains plans for 7 projects. Ages 4 through 7. Wt. 1.25 lbs. \$29.99.'

No indication of size is given but by the look of the (plastic?) N&B the holes are quite large and the basic hole spacing might be 1".

The model truck featured looks a little nondescript perhaps but the biplane on the box lid is better, and the small models shown along the bottom include a jet plane and a helicopter.



The parts that can be seen in the ad are 3,4 & 6h Strips, Plates of the same lengths and 2h wide, Angle Brackets, and Flat Trunnions with 7 holes at half the standard pitch. They are variously coloured grey, yellow, red or blue. The N&B are shown grey and red, and both are hexagonal with a wide screwdriver slot in the bolt heads.

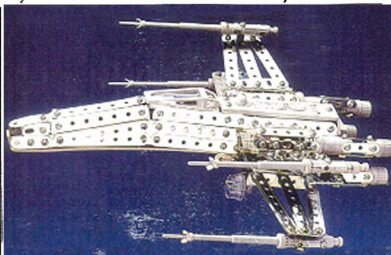
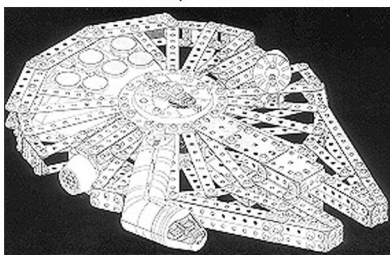
The box lid is white with a blue border and the word MYKIDS can be seen, no doubt a brand name.

**Update for Normal STEEL TEC** Thanks are due to David Hobson, Don Redmond, Chas Shrubsole and Richard Symonds for sending details of ads or sets that they'd seen prior to Xmas.

From Canada. At 'Toys R Us': • #7127 Vehicles, 1182 parts to make 58 models. \$130. This set contains only standard parts, including a 17h A/G. • #7130 Helicopters & Planes, 564 parts, 6 models, \$100. Special plastic parts are used for major areas of each model, and are specific to that model. • #7140 Millennium Falcon, 1063 pieces, \$130. • #7141 X-Wing Fighter, 450 parts. Mostly Strips with some plastic trim, \$70.

Kmart had Sets No.2 and 3 (see 10/240), No.201 (12/322), and an 'ADJUST-O-MATIC' Power Wrench for which the drive can be at 90° to the handle, like the normal Power Wrench, or at 135°, or straight ahead at 180°.

From Dufferin Game Room Store: • A Star Wars Millennium Falcon set at \$150 (below). The top deck is mostly Strips with some plastic fill-in parts. • A Star Wars Wing Fighter at \$100 (below) - it is said to be 'exclusive' but the illustration is identical to the one in the Toys R Us ad. • Also a Deluxe Power Wrench at \$25 (Eaton had this too with a picture which looks similar, but not identical to the adjustable one mentioned above).



An Irwin ad shows a 262-piece No.2 at \$30. An unidentified ad shows some of the outfits already mentioned plus 16 of the single model sets -

no details can be seen except that 6 are No.1's, 7 are SK's, and 3 might be either. There have also been references to the Work Center/Storage Case at \$40, and a Road/Rail/Air Set (302?) at \$50.

In England sets were seen on sale in Bath and Midsomer Norton, and at 'Toys R Us'. The Argos set (13/357) was still available, at £38. Sets known, or shown on the back of the boxes, with what details are available, are:

- #950992 U.S.S. Starship Enterprise Star Trek 410, including battery lights and electronic sounds. ©1994 on box. £35.
- #950712 Harley-Davidson Electra Glide, Café Racer, WW2 Cycle. Motorised. 545 parts. £40 (later reduced to £25 in Bath). This looks like the No.301 of 12/322.
- #700502 Speedsters. 6 models. These are the 6 SK models mentioned in 12/323.
- #950682 Road Wreckers, 262 parts, 8 models, £20. This is the original No.2 (10/240), which was later called the No.202 (12/322).
- #950692 Speed Demons, 8 motorised models. The original No.3 (see 10/240)
- #950702 Heavy Duty Destructosaurs, 9 models. The original No.6, including the dinosaur head (10/240).
- #950722 Power Wrench, £10.
- #951012 Heavy Duty Power Pack (?).
- 6 sets to make a single model at £10 each. All are ex-No.1 models with different names and in some cases parts that were yellow are shown as red:
- #950622, Rhino Hauler.
- #950672 Tough Truck.
- #950822 Rescue Ranger, 154 parts.
- #950832 Dirt Digger, 139 parts.
- #950922 Road Grader, 141 parts.
- #950932 Hover Hawk (helicopter), 168 parts.

Boxes seen had the 'Peter Pan' logo of the UK distributor on them, and were marked 'Made in China. © 1993-1995 Remco Toys, Inc. New York, NY 10010. Peter Pan is the registered trademark of Blurbird Toys [UK] Ltd. Customer Services, Peter Pan, Dragonparc, Merthyr Tydfil, CF48 1PQ. Tel: 01685 721456'.

**MECCANO in the U.S.A.** Thanks are due to Kendrick Bisset and Ron Michalowski for further information on U.S. manuals and other literature from 1912 to 1930. A summary is given in the Table opposite, compiled mostly from copies of key pages that Kendrick and Ron kindly supplied, but where enough detail is available the usual Manual Summaries are given at the end. The picture which emerges is that in 1912 and 1913 the manuals and product range in the U.S. was almost identical to that in the UK. This continued through 1921 with a few minor differences, except that in the UK the 'X' sets had been discontinued by that time, and there was never a No.5X. After that more divergence gradually appeared but apart from there never being a No.7 Outfit in the U.S., there were no really fundamental differences, even when the numbering of the sets was changed in 1929. The most noticeable change was in the large number of models for the smallest sets included in the later manuals of that period, but only a handful of them were unique to the U.S. manuals. In 1930 the large outfits were very much a mix of MECCANO and ERECTOR but the small sets 1,3 & 5 were still, apart from the inclusion of a few ERECTOR parts and the motor in the No.5, largely a rehash of what had gone before. New models were introduced for the large outfits and some for the No.5. What follows is intended to supplement the contents of the Table and to enlarge on some of the points of interest.

**The Companies** From two independent sources it appears that The Embossing Co., of 37 Church Street, Albany, the original Meccano agent, was founded in 1870 and mainly made embossed wooden items, such as toy blocks, dominoes and the like; they were also agents for Harbutt's plasticine. A firm called Halsam bought the company in Dec 1955, and a newspaper article at the time mentioned that they had a Meccano sales agency 'up to the mid 1920s'. Their name, 'American Agents: THE EMBOSSEING COMPANY, ALBANY, N.Y.' appeared on the covers of the 1912 and 1913 manuals with MECCANO LIMITED, LIVERPOOL underneath in slightly smaller letters.

The first known reference to the MECCANO COMPANY Inc., was on the 1913/14 flier mentioned in 13/346 and the same addresses (71 West 23rd St., and 46 West 24th St, New York.) were in the 1915 Ref.3. West 23rd St. (which it is said was also Lionel's address) was in Ref.4 and Masonic Hall, New York is in Ref.5. In the 1918 Ref.6 it was Building 10, Bush terminal, Brooklyn, N.Y., but Ref.7 (1921) gave 'Masonic Bldg., New York'. Part of the cover including most of the address, of Ref.8 (1924) is missing, but inside Elizabeth, N.J. is mentioned and this address continued through Ref.16.

The full name of the company, The Meccano Company of America, Inc., was used in Ref.17 with Gilbert's New Haven, Conn. address, and with U.S.A. after it for good measure.

**1912-13** Like UK ones, early U.S. editions of manuals had no date code, but the latter usually had a copyright date. Those for 1912 and 1913 appear to be very similar to the UK versions, and don't have AMERICAN EDITION on the cover. Except for Ref.4 and of course Ref.17 from New Haven, all the later ones did, including all the ones from Elizabeth after ACG had bought the Company.

All the sets available in Britain were listed through 1915, including the HSMD Outfits in 1912. Nos. MSB and MSC were Accessory Sets which with a No.3, allowed all the A-B and A-C models to be built. HSMD outfits were not listed in 1913 but 8 of the models were shown at the end of the Manual, and the special parts needed for them were included, for the first time, in the Parts Price List.

**1915** This was the year in which the outfits with electric motors, 1X-3X, were introduced, and in the Price List for sets for this year it was stated that a Spring Motor was given free with Outfit 4, and with No.5 in cloth-bound box, and that the No.5 & No.6 in 'mahogany stained boxes with lock and key' were complete with No.1 Spring Motor. (In Ref.2 it was said that the No.1 was suitable for models from Outfits 1-3.)

From the following year to at least 1918 all the large sets were packed in 'cloth-bound' boxes instead of the walnut or mahogany stained ones of 1912-15. Cloth-bound boxes, whatever they are, weren't used for the home market.

The illustration of the newly introduced No.2X Outfit is identical to that in the first UK Meccano Magazine in 1916.

**1917** The main points about the No.160 Manual were discussed in 12/316. The Set Contents were also mentioned there but note that the No.6 had an extra 50t Gear and not a 57t as stated.

The model at the top of the Book No.1 cover was still the Monoplane which was used in the UK only in 1913 and 1914, but was retained on the U.S. manuals until at least 1921. Also on the front cover was a quote from 'Opinion U.S. District Court, Southern District of Ohio' - 'This manual is in reality a key by which the really wonderful treasures contained in the various parts of Meccano outfits may be unlocked.' This would have been from one of the earlier court actions that Hornby instigated, and the same quote is on ref.7.

The 1917 Price Lists include the No.5X Outfit which had no UK counterpart; and the 00 (and 00A) Sets which didn't appear here until 1923. No details of the contents of these small U.S. Sets are available. It is also noted that Accessory Outfits do not contain motors and this was always the case; later, when appropriate, transformers weren't included either.

**1918** Book No.2 (Ref.6) had only one unusual feature - the text on the front cover (opposite), apart from the name MECCANO, is in an unusual, slightly oriental looking, type-face.



**1921** No Braced Girders were shown in the Set Contents - they would have been the last items in the table so perhaps their omission was a mistake. The Electrical Parts (PN 301-315) were shown in the Illustrated Parts pages after the normal parts - in Britain they were only shown in the Electrical Manual.

**1924** In Ref.8 Sets 4-6, as well as 1X-3X, were shown as having an electric motor, and the two largest outfits had a transformer as well. Set contents were practically the same as the UK for Sets 00-5, but the No.6 was much different and was near that of the UK No.6 of 1922.

The manual models (0-3) were identical to the 1923-24 UK ones, and their names were the same except that the UK Hand Trolley was Hand Car, a name not used here after 1921. One model is still called a Motor Lurry. At the back of the Manual were pictures of 4 (UK) No.7 models and readers were offered an Instructional Sheet for Special Model No.701, Auto Chassis (10 cents), and a Meccanograph Instruction Book (Special Model 708, 25 cents).

Ref. / Notes	Likely date	Print ref.(k)	Front Cover (a)			No. of pages	Models for sets	Last model	Sets listed			Motors listed		Top PN
			Text (b)	Model	©				Main // Accessory // Other	C/W	Elec.			
1	1912		In. for 11 progressive outfits. <sup>TM</sup> 38385	W'mill	Torn off	80	1-6	90 Mech. Navy	0-6 // 0A-5A // HSMD: A, B, C, AA, AB, MSB, MSC		None		59	
2	1913		In. for 13 progressive outfits. <sup>TM</sup> 83171	'Plane	1913	100 (c)	1-6	109 Mech. Navy	0-6 // 0A-5A // None	Nos. 1, 2	None		61	
3	1915		Pages from 1915 'Prize Models in MCS/FB'.						0-6, 1X-3X // 0A-5A / Young Inventor's Accessory	S1 (d)	E1, E2 (d)		100 (d)	
4	1917		In. No.160	Small Crane	1916	20 inc covers	0	78 Truck	00-6, 1X-3X, 5X // 00A-5A // Inventor's	S1	E1, E2		106	
5	1917		Mol. Book No.1. No.16. <sup>TM</sup> 83171+Can. 13476	'Plane	1916	136	1-6	325 Stiff Leg D'r'k	00-6, 1X-3X, 5X // 00A-5A // Inventor's	S1	E1, E2		106	
6	1918		Mol. Book No.2. No.18. <sup>TM</sup> 83171+Can. 13476	'Plane	1918	80	0-6	428 Pulley Block	00-6, 1X-3X, 5X // 00A-5A // Inventor's Accessory		None mentioned		108	
7	1921	3-21/80	Mol.No.21.Outfits 1,2,3 <sup>TM</sup> 83171+Can. 13476	'Plane	1921 (e)	64	1-3	196 Rocking Chair	0-6,1X-3X,5X // 0A-5A // Inventor's Acc. A, B. Electrical Acc.	S1	E1, E2		128/315	
8	1924		In. Outfits 0-3. Part of cover missing.	Br Gir Crane	Torn off	64	0-3	344 Scales	00-6, 1-3X // 0A-5A // None	S1	E1, E2 (f)		140	
9	1926		Price List ref. B1026300						00-6, 1-3X // 0A-5A // None	C/W	E-1, E-2		N/A	
10	1928	0528/6.5	In. Outfits 4X-6X	Girder Crane					00, 1, 1X-6X // 00A, 1A-5A //	C/W	E.2		170	
11	1928		Details taken from a Price List dated Sept 1928, which was reproduced in CMN #30, p11.						00, 1, 1X-6X, 2X Special // 00a, 1a-5a // None	C/W	Reversing		N/A	
12	1928 or '29	0628/50	In. Outfits 0-40 printed on tape, over 00-3X	Girder Crane		112	00-3	3.51 St'm Wagon	0, 10, 5 Special, 20-70 // 0a, 20a-60a // None	S1	E-2		170	
13	1,929		Standard Mechanisms	Rly B. Crane		50 inc i'covers	N/A	S.M. 283	0, 10, 5 Dollar Special, 20-70 // 0a, 20a-60a // None	C/W	E-2 (6-volt)			
14	1929		Details taken from a Price List dated Oct 1929, which was reproduced in CMN #30, p11.						0, 10, 5 Special, 20-70 // 0a, 20a-60a // None	C/W	Reversing		N/A	
15	1929	1129 25	In. Outfits 0-40	Girder Crane	1929	136	00-3	3.51 St'm Wagon	0, 10, 5 Special, 20-70 // 0a, 20a-60a // None	S1	E-2		170	
16	1929		Supplementary Instruction Manual for Outfit 10	None	1929	12 inc covers	1	1.164 Gravity Convey'r	None		None		No list	
17	Prob. 1930	(g) M 1363	Mol.	Girder Crane	1930 (h)	About 48	1, 3, 5	Windmill (i)	1, 3, 5, 110, 115, 125, 150	None	E2A, E2B, E3		177 (j)	

### List of American MECCANO Literature - Manuals unless otherwise stated.

#### Notes

(a) The general design of the front covers of manuals is the same as that used by Liverpool until 1934, except Ref.16 (shown overleaf). The full wording of the Canadian Trade Marks is '55 Fol. 13476'.

(b) The main wording including the main title is either In. (INSTRUCTIONS), or Mol. (MANUAL OF INSTRUCTIONS).

(c) See (2) below.

(d) Described and illustrated but not numbered.

(e) A copyright date of 1916 is given on the front cover, together with 'REPRINT COPYRIGHT, 1921'.

(f) First indication of motors with full 4-hole high sideplates along full length.

(g) M1274 on list of Separate Parts and Prices included in Manual.

(h) In SEC.3, the Introduction to Standard Gearing.

(i) Followed on next page by 4 models for No.5 Outfit in which Meccano Briks are used.

(j) PN 177 is Reverse Switch Attachment.

(k) The PR for Refs. 12 & 15 are preceded by 'O -'.

(1) Dating is from the close similarity of the pages seen to the 1912 UK Manual. On the cover is 'INSTRUCTIONS // For the whole series of Models, comprising eleven progressive outfits'. With the Nos.0 and 0A listed in the Manual, there were 13 outfits, but models were only shown for 11, Sets 1-6 plus the 'A' sets.

(2) Pages seen are virtually identical to the 1913 UK Manual. Another U.S. version with 99 pages (pp88 & 89 are combined into one) and a Brandon Press stamp is known. (Brandon Printing Co., Albany, N.Y. printed all The Embossing Co.'s catalogues but this is the only

known manual with this mark.). The cover now refers to 'thirteen progressive outfits' but no models are shown for Sets 0 and 0A.

(4) See 12/316 for details. Dating is from Price List in the Manual, 'Revised January, 1917'.

(5) The last model is the same as in the early version of the UK No.16. Again the dating is from the Price list in the Manual headed 'Revised January, 1917'.

(6) Contents probably very similar to UK Book No.2, No.18.

(7) A copyright date of 1916 is given on the front cover, together with 'REPRINT COPYRIGHT, 1921'. The models are probably as in Ref.5.

(8) The bottom half of the cover is missing and the date is based on the sets and parts listed being almost identical to a U.S. 1924 Magic Carpet catalogue. Apart from one minor difference the models are as a UK 1124 Manual and the parts are the same except that Nos.103k and 142-146 aren't included in the U.S. manual.

(10) The details are from pages in MCS/FB.

(12) The cover before the Outfit Nos. were changed to 0-40 was no doubt for the standard 1928 Manual but whether the models were changed is not known.

(13) The number and title of the last SM (283), and the general look of the front cover, are the same as the 1929 UK edition, and it has PRINTED IN ENGLAND on the back cover.

(15) As explained later the content of this Manual is radically different to UK manuals.

(16) No equivalent UK manual is known.

(17) This has the New Haven address and the Parts List, discussed in 12/317, which includes many ERECTOR parts as well as the special ship parts.

**1926** Ref.9 introduced 'The New Multicolor Meccano', in the same year that coloured parts were introduced in the UK. On the cover is the large Windmill used in 1926 UK literature, and the motor shown is the then UK pattern with 5h deep sideplates, flanged full length, and the 3-spoke reversing lever. Full colour illustrations of Outfits No.1x and 3x are included and the parts are as would be expected, with slightly pinkish red Plates, Flat Trunnion and Face Plate, and the soft, medium green Braced Girders and 5h Curved Strips. All the other parts are shown with a bright finish except the 4-spoke 3" Pulley which looks black. The Braced Girders shown are the type with open rounded ends; the motor is the 1924 U.S. type (see later).

**1928-29** What is known of Ref.10 was discussed in 12/316. Ref.12, before it was adapted to cover the 0-70 sets introduced in 1929, was no doubt a corresponding mid-1928 Manual for the smaller 00-3X outfits, although one can't be sure what material may have been added or subtracted. It actually contained models 00.1 to 3.51, and on a new page it was explained which models could be made with which of the 0-70 sets. There was a note that the new 1929 outfits had necessitated changes and additions to the Manual. The models listed for the 0-70 sets are shown in the Table below, with, in square brackets, the highest Model No. actually in the Manual. As can be seen there were many models for the new sets which weren't included.

Manual:	Ref.12. 0628.	Ref.15. 1129.	Ref.16. © 1929
Outfit(s)	0-40 over 00-3X	0-40	10 Supplement
0	00.473 [310]	00.472 [472]	
5 Spec.	00.496 [310]	00.496 [472]	
10	1.266 [184] exc 'X' models	0.255 [255]	1.214 - 1.264
20	1.267 [194] inc 'X' models	1.10 [10]	
30	2.60 [48]	2.48 [48]	
40	3.52 [51]	3.51 [51]	
50	4.58	4.57	
60	5.43	5.43	
70	6.47	6.47	

**Range of Models for each Set, from 00.1 unless stated.**  
**[In brackets the highest Model No. actually in the Manual.]**

Full details are to hand for Ref.15 and are summarised in the Table. Again the models in it were numbered for the 00-3 outfits, with the models for the 0-70 Sets shown on a page at the end of the Manual, with a reference to the models 'in this and other manuals'.

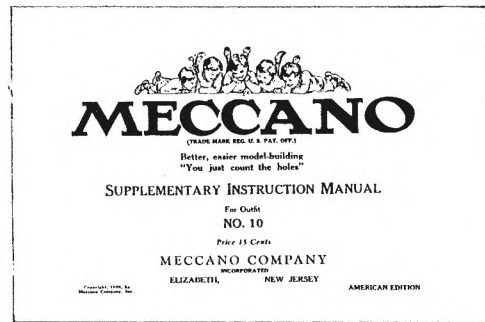
The 0 models were mostly 0 and 00 models that appeared in UK manuals through 1929, but I don't recognise a handful of them. Models 00.473 to 496 for the No.5 Special must have been in a separate supplement. The No.10 models are mainly UK No.1 models, but again there are some others and they are in the last 10 pages of the '0' models (in Ref.15), which I found were identical, page by page, to those in Ref.16, except that there they were labelled as the No.1 models shown in the Table (for Ref.16).

Some of the 10 (No.1) models for the No.20 Outfit have a familiar look to them but they all include the latest style E-1 or E-2 motors, so all the illustrations must have been re-made. They are probably the No.1 'X' models referred to in Ref.12. In the relatively few other models in the Manual that were fitted with an electric motor, UK types were shown.

All the No.2 and 3 models for Sets 30 and 40 were as in the 1929 UK Manuals, apart from a few changes of name, and again are probably those in Ref.12.

11 Supermodels are shown at the back of the Manual and a free Leaflet was offered listing all the models in the series; Instruction Leaflets for them could be bought from 1004 Elizabeth Avenue, Elizabeth.

From the numbering of its models, Ref.16, the Supplementary Manual, must have been issued earlier in 1929 than Ref.15. Perhaps it related to Ref.12, although the Model Nos. don't tie up, or perhaps to some other Manual of that time, as yet unknown. Its B&W cover (opposite) is unusual with, instead of the usual 2 boys and a model at the top, a line drawing of five small boys, apparently peering down at the name MECCANO underneath.

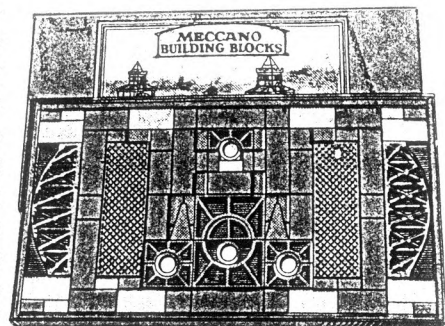


I haven't mentioned Ref.13. Its date is uncertain but the details available match the UK 1929 Edition. Its Price List includes a couple of items of interest. First it explains how the No.5 Special Outfit got its name. It's obvious really, it cost \$5, and in the SM Price List it is listed as the '5 Dollar Special Outfit'. Hence despite being a No.5, it was always between the No.10 at \$3.50 and the \$7.50 No.20 in Price Lists. Also in the SM List, Sets 30-70, and 60a, are said to be in wooden boxes, the only reference to packaging since the cloth-bound boxes in 1918.

I suspect that the sequence of events in 1928-29 may leave you feeling as confused as I do. There are many aspects unexplained but I'll resist the temptation to speculate about them, and perhaps confuse matters still further.

**1930-31** Nothing new is available on the 1930-31 Manuals but a 1931 catalogue provides some further information. There are illustrations of all the Outfits 1-150, and those of Nos.1 & 3 support the impression gained from the models for these Sets (12/318), that their contents were similar to the early 1928 Nos.00 & 1. The dimensions of all the boxes are given and the weight of the No.150 - 80lb.

4 MECCANO Building Block Outfits, Nos.201,203,205 & 210, are also illustrated. Most of the parts can be seen in the No.205 below. Whether these blocks are the same as the BRIKS shown in 12/318 isn't clear, but the 'dimples' of the latter aren't apparent in any of the blocks shown. They are described as having the appearance of stone but much lighter in weight, and were in 3 colours: red, blue and buff. 'No intricate connections' are said to be necessary. The large rectangular cross hatched plates that can be seen in the sets are metal 'path pieces' and could be used for the road way of bridges.



No. 205 Ret. \$4.95 ea.

**MOTORS** Two [spring] Meccano Motors, the Nos.1 and 2 were advertised in 1913, as in the UK, with an illustration of the No.2. In Ref.3 (1915) the smaller No.1 Clockwork Motor, and two Electric Motors were listed. The latter were made by Lionel and were the same except that one was fitted with a (patented) reversing switch (DMS 2028, and

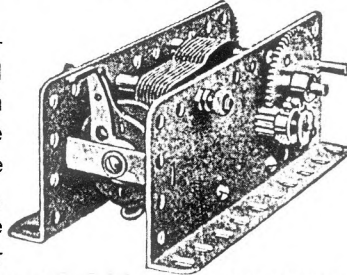


2029 with the switch). Their sideplates were 4h deep, cut back to 3h at one end, with a hole to accommodate the field coil.

By 1917 these motors were called the S1, E1 & E2, and they continued to at least 1921. In the UK the new 4v Motor with 5-hole high sideplates and the side reversing lever had been introduced in 1920.

In passing it is worth mentioning that variants of the original E1 and E2 motors (DMS 2028/2029) are known. Their sideplates have no cutouts, there are holes all along the top row, and the holes in the flanges are slotted: other changes are field laminations which are enlarged around the armature (instead of being straight) and the brush holders and terminals differently positioned. These motors may be Nos.2028A/2029A in DMS.

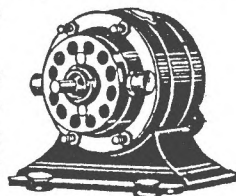
A new 4v motor (opposite) had been introduced by 1924 and was shown in Ref.8. Its sideplates were still 4-h deep, but over the full length, with no cut outs, and slotted holes in the flanges. The reversing lever



looks to be of the same general type as before. This Motor was still called the E2 and a non-reversing version, the E1, was also listed. By 1926, and perhaps by 1925, these designations were being written with a hyphen, thus E-2, or sometimes, later, as E.2, using a full stop. Also in Ref.9 it is said that they give good power on 3 or 4 dry cells, whereas in Ref.8, and earlier for the old motors, 2 or 3 cells were mentioned. In 1928-29 only the E-2 was listed, and in Ref.13 it was described as being 6v, which would equate to the 4 cells mentioned in 1926.

As far as is known this motor was never sold in Britain - it looks similar to DMS 2027A, but that is listed as a HV motor, and with no mention of its provenance. There is doubt too as to whether Lionel or Meccano made these motors. There is reference to a motor with similar sideplates in Newsmag 42, p20, with, it is said, 'American type' on its (by inference) Liverpool drawing; there are also (rather blurry) illustrations of similar looking 6v motors (called E2 and E3) in the NZFMM Magazine, Vol.8, No.5, p118, taken from a Canadian 1932 manual. These motors may have been sent to Canada when ACG took control of Elizabeth. It may be noted that, as far as is known, the thread on the terminal posts of all known pre-1928 U.S. MECCANO motors, and probably the Canadian ones too, is 4-36, which points to a strong American, (and perhaps Lionel?) connection.

In the 1931 Catalogue the motors mentioned in OSN 12 are listed together with the P-57-M (opposite) which looks similar to the ERECTOR P57. It is described as a 3500rpm, extra powerful, 110v universal motor.



P-57-M  
Ret. \$4.95 ea.

**SUMMARY OF MANUAL** •Name: MECCANO Instructions for the



No.0 Outfit. •Details of maker: MECCANO CO., Inc., 71 West 23rd Street, New York. •Dates & Ref Nos: No.160. ©1916. Price List 'Revised January, 1917'. •Page size: 250\*

169mm deep. •No. of pages: 20 inc covers. •Language: English. •Printing: Models are B&W line drawings. Halftone cover with boy, dog and small model Crane. •Page No. of Price List & highest PN: 18,106. •Page No. of Set Contents (#0 only) & highest PN: 17,100 •Set covered: #0. •No. of models: 78. •Name, Model No., Page No. of first & last model: [One page of] Trucks and Baggage Carts,1,7; Truck,78,16. •Other notes: Mostly identical to UK No.160 but extra page on Meccanograph. Intro on pp2-6 show some classic models. Details above taken from photocopy.

**SUMMARY OF MANUAL** •Name: MECCANO Instructions for Outfits Nos. 0 to 3. •Details of maker: Torn off cover but Meccano Co. Inc., Elizabeth, N.J. inside. •Dates & Ref Nos: On missing cover if any, but probably 1924. •Page size: 252\*171mm deep. •No. of pages: 64 + covers. •Language: English. •Printing: Halftone models. Classic cover with 2 boys & Braced Girder Crane at top. •Page Nos. of Parts List & highest PN: 3-4,140. •Page Nos. of Set Contents & highest PN: 63-64,135. •Sets covered: 0-3. •No. of models for each set: 70,36,57,43. •Name, Model No., Page No. of first & last model of each set: 0: Flat Truck,1,5; Pen Rack,70,14. 1: Tandem Car, 101,15; Steering Truck,136,22. 2: Truck,201,23; Beam Scales,257,39. 3: Rotating Crane,301,40; Scales, 344, 57. •Other notes: Models are as UK 1924 but there is no Model No.330, so numbering different thereafter. Use of electric Motor, ads, supermodels, Price List, 4 Standard Constructions on pp2,58-62,64. Details taken from photocopy.

**SUMMARY OF MANUAL** •Name: MECCANO Instructions for Outfits 0 to 40. •Details of maker: MECCANO COMPANY Incorporated, Elizabeth, New Jersey. •Dates & Ref Nos: © 1929; O-112925. •Page size: 255\*171mm deep. •No. of pages: 136+covers. •Language: English. •Printing: Halftone models. Red/yellow classic cover with 2 boys and Girder Crane at top. •Page Nos. of Parts List & highest PN: 134-5,170. •No Set Contents. •Sets covered: 00-3 with list of models that can be made with Sets 0,5,10-70 (up to 00.472,00.496,0.255,1.10,2.48,3.51, 4.57,5.43,6.47). •No. of models for each set: 472,255,10,48,51. •Name, Model No., Page No. of first & last model of each set: 00: Viaduct,00.1,3; Saxophone,00.472,36. 0: Lever of the Third Order,0.1, 37; Gravity Conveyor,0.255,90. 1: Hay Elevator,1.1,91; Breakdown Motor Wagon,1.10,93. 2: Steam Truck,2.1,94; Railway Bridge,2.48,110. 3: Fire Escape,3.1,111; Steam Wagon,3.51,131. •Other notes: 'This Outfit Builds all Models up to Page 110' stamped on front cover. 11 Supermodels shown on pp 132-3. Details taken from a photocopy.

**SUMMARY OF MANUAL** •Name: MECCANO Supplementary Instruction Manual for Outfit No.10. •Details of maker: Meccano Company Incorporated, Elizabeth, New Jersey. •Dates &/or Ref Nos: ©1929. •Page size: 251\*172mm deep. •No. of pages: 12 inc covers. •Language: English. •Printing: Halftone models. B&W cover (illustrated earlier). •No Parts List or Set Contents. •No. of models: 10. •Name, Model No., Page No. of first & last model: Newton's Disc,1.214,2; Gravity Conveyor,1.264, 11. •Other notes: Model Loom shown at centre of back cover.

**Two U.S. No.3 OUTFITS** Kendrick also sent details of these Sets, which, though they have no positive indication of date, are both thought to be from 1924. The Manual in one is Ref.8 above, thought to be from 1924, and the quantities of the parts, including various extras, that were found in the Set had been added in the Manual in pencil. The remaining pages, 7-58, of the Manual with the second Outfit match those of Ref. 8, and include a page showing the later, U.S. only, E-2 Motor. This seems to make it certain that this is a U.S. manual but one can't be absolutely sure that it was with the Set originally.

This qualification may be important because while the lid of the first box has the expected Elizabeth address in small letters along the bottom, the other lid has the New York address. The contents of the 'N.Y.' Set, most of which remain, are consistent with a date of 1924, and what remains of the

ng is the same as that in the other Outfit. So on the face of it the N.Y address was used well after Elizabeth opened in 1922, and perhaps up to some time in 1924. The tin plated parts in the N.Y. Set (see below) is a sure indication that they were produced at Elizabeth and not imported.

The finish of the parts in the two Sets is as follows:  
 Tin: all Strips, DAS, A/Gs; PNs 11,12a,44,45,90,125,126a.  
 Nickel: all Flanged Plates, Braced Girders; PNs 62,116.  
 Brackets No.10 and 12 are tin plated in the N.Y. Set and nickelled in the Elizabeth Outfit.

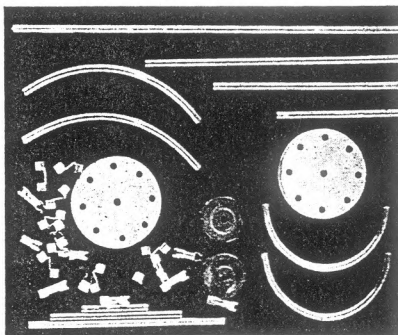
Some of the parts had been obsolete for some time in Britain. In the Elizabeth Outfit the Pawl is the first type (DMS 1276, replaced in 1921); the Screwdriver is the early

triangular shape (DMS 1822); one of the Pinions has 20 teeth (19 from 1920); and the 5½" Braced Girders have sharp corners (DMS Type A, obsolete in 1918). The 2½" ones have rounded corners. All these parts are missing from the N.Y. Set.

The 3" Pulley in both Sets is the 4-spoke type, replaced here by the slotted version in 1920. The one in the Elizabeth Outfit is painted black and has a normal 3/8" dia boss, but the N.Y. one is nickel plated and its boss is ½" dia. The latter variant is not included in DMS.

Perhaps Liverpool sent all its outdated parts to the U.S. market, or perhaps obsolete tooling was sent to Elizabeth when production started there in 1922.

**CLIP-CRAFT** A CLIP-CRAFT set was mentioned in 6/136 in a list of items that George Wetzel had for sale. Now Kendrick Bisset has sent a copy of a page from the magazine *Popular Science* for December 1947 which gives a few details of this 'new construction set'. The accompanying illustrations are shown below. The main parts are the straight



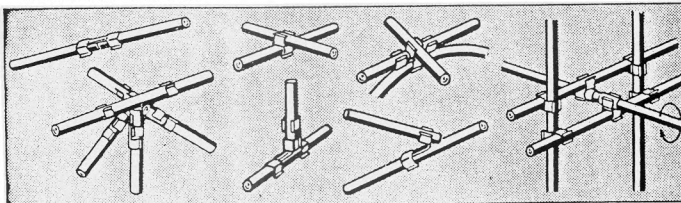
Using only these basic parts, hundreds of different toys can be clipped together. Arcs can be used to form complete circles.

and curved aluminum Rods which are said to be held tightly together by the half dozen or so different, tempered steel spring Clips. A tubular Bearing can be held in a Clip to allow a Rod to rotate or slide. Other parts that can be

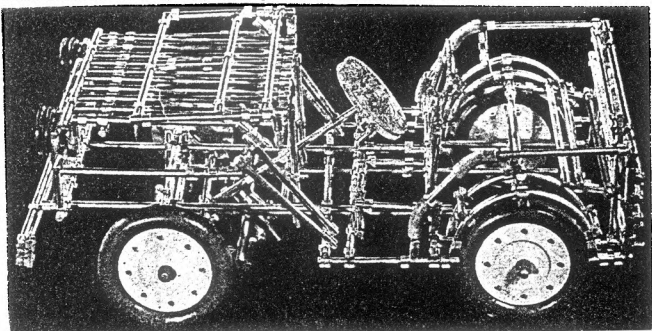
seen are two sizes of wooden Wheels (pulleys), with Tyres for the larger ones, and on the Jeep, Flexible Tubing to join Rods in-line at an angle, and Spring Clips or short tubular Collars to retain the wheels. Flat sheets of aluminum are 'furnished for covering surfaces of the models and for fashioning fins for planes', but how the sheeting is attached isn't mentioned. It is also said that 'the wooden wheels can be used for gears'.

No indication of the size of the parts is given but scaling from the illustrations, if the Rods were 1/8" dia, the large Wheels would be 2" dia, and the Jeep would be some 13" long.

The Set was made by the Clip-Craft Corp., of New York City. Yonkers, which is near New York I believe, was mentioned in OSN 6.



These are a few of the joints that can be formed by combinations of the rods, arcs, and clips. A bearing added to a joint makes it a support for rotating or sliding shafts.



**MYSTERY PART No.5** Don Blakeborough sent a photocopy of the parts listed below and some of them reminded me of those from Gary Higgins, also from New Zealand, in OSN 3/47.

- Strips, 5-hole red and 15h light blue.
- A/Gs, 10\*10mm in section, 5h light blue and 15h red.
- Perforated Plates, 5\*5 light blue and 5\*15h green.
- Flanged Plates with 10mm flanges on the two opposite sides underlined: 5\*5 and 15\*3 red; 7\*3 13\*5 green. Note that last one.
- All have 3.8mm holes at 9.5mm pitch; all the corners are square and all the holes are round.
- Green and red 1¼" dia Pulleys. A red 1½" dia Bush Wheel with 12 holes in the face at ½" radius. Both have brass 3/8" dia bosses, 5/16" long, double tapped 1/8" BSW, and bevelled as shown in OSN 3. The Collar is similar but 1/32" shorter. The bore of these parts is 3.5mm.
- Brass cheeseheaded 1/8"BSW Bolts, 9 and 17mm u/h, and hexagonal Nuts, ¼" A/F.

Don didn't mention whether the Pulley had the hatching on the top face, that Gary described.

**MYSTERY PARTS No.23** These are the red 2" wide Flanged Plates with no holes in the top, and the 8-hole Strips, all made of aluminium. See OSN 11/283 and 12/329. With the notes above Don also sent a photocopy of some similar parts he has, which probably came from America. There's a 4-hole long Flanged Plate as well as 2 and 8h ones, and 4 and 16h Strips as well as 8h. In addition an Angle Bracket with round holes in both arms and a 'Half Pulley' of about 37mm dia. All holes are 4.7mm and all the parts are natural aluminium except the 2 and 8h Plates which are painted red. Finally a 4mm dia Crank Handle with 90° bends, 5¼" o/a with a 5/8" handle. That range of parts begins to look very like that of JUNIOR MECHANIC (12/327) except for the larger holes.

**MYSTERY PART No.27** The medium red Semi-circular Plate opposite, with the two extra holes 1" from the centre hole on 45° radii. The holes are 4.1mm dia - too large for VOGUE - accurately spaced at ½" pitch. There's pronounced burr around much of the outer edge and some of the holes. It's possible that this is a BILT-E-ZE part although the extra holes aren't shown in the MCS illustrations. I've some other parts that I believe to be BILD-E-ZE and I'd be glad to hear from anyone who has parts that they are sure are from this system.



**MYSTERY PART No.28** From Richard Symonds, a Flanged Sector Plate, 8 holes long and like the original MECCANO pattern (a single central row of holes) except that the holes are 3/16" dia. Also there is 4mm of metal outside the end slotted hole in each flange at the 3-hole wide end, and only 1mm at the other. The finish is black metallic and the part was found in a mixed lot of old U.S. parts.

## CANADIAN STEEL INSTRUCTOR - New System

John Wapshott has kindly sent details of a set he came across recently. It was in a box approximately 14\*9\*1" and on the green cover, in gold, faded but readable, 'Canadian Steel Instructor // No.1 Set \$1.' Also a Canadian red ensign flag (a symbol of Canada until well after WW2), with 'Made in Canada' under it. Inside the lid is a sticker on which are listed the contents of a No.1½ Set. The lid hasn't copied well enough to reproduce here but the sticker is shown below.

John wrote that all the parts in the box are nickel plated and that about a third are American MECCANO (1916 patent date), about a third Phase 2 MODELIT (the one with alternate round and square holes, see 12/326), and the rest are MECCANO-like but include some unusual parts which seem to correspond to those on the Sticker - 2 of 4" A/Gs, a flat Sector Plate, and a 5\*7h Perforated Plate, which would be the Medium Plate. In fact all the main parts in the '1½' Contents List are present and John sent dimensioned sketches of them. My first reaction was to think of Phase 1 MODELIT (see 8/186) or the Canadian CASTLE BUILDER, both of which had a similar range of parts, including a 4" A/G, and the flat Sector and 5\*7h Plates. CASTLE BUILDER can probably be ruled out because the ends of the Sector Plates are a slightly different shape. The MODELIT parts described in OSN 8 are very similar but there are some differences:

- The CSI Strips are wider (.556" against .500±.005"), and thinner (.038"~.042"). The CSI Plates are 8 thou thicker at .032". The average CSI hole size is .167", against .173" for most MODELIT ones.
- The CSI Axles and Crank Handle are a thou or two smaller in diameter (.157") and the Crank Handle doesn't have a hole through it. The CSI bosses and Collars are

### No. 1½ Set Contains

6 1½ inch Strips	1 Medium Plate
10 5½ " "	24 Nuts and Screws
2 4 " Angle Girders	2 ½ inch Cranks
2 2½ " " "	3 5 " Axle Rod
2 1 inch Wheels	1 4 " " "
2 Collar and Set Screws	4 Wood Screws
1 Double Bent Strip	1 Instruction Sheet
1 Sector Plate	1 Cord

.388" o.d. against the MODELIT .376". Both are single tapped 6-32. The thread of the N&B in both systems is 8-32, but the CSI Nuts are rough cut a nominal 5/16" square.

Of course these differences could be ascribed to production at different times, but given the close correspondence between the types of part found and the ones in the '1½' Contents List, it seems likely that the original parts were in the box.

I wondered about the Contents sticker. There's no explanation of why the Set No. on it is different to the one on the outside, unless there was originally a '1½' label over the '1' and it has fallen off. It's reasonable to assume that the '1½' contents are those of a linking set, and with some differences they correspond quite closely to the MODELIT No.1-A outfit. The use of '½' numbers to denote linking sets is unusual - AMERICAN MODEL BUILDER used them but their parts aren't at all the same. Many of the names of the parts are the same or similar to those used by MODELIT, but not all. I can't draw any firm conclusions from all this but it may point to a definite but perhaps tenuous connection between MODELIT and CSI. One day a manual will surface, and that may help.

The manufacturer of the Set isn't known - the dealer it came from marked it Proule Co., Toronto, c1910, and, perhaps not by coincidence, that name and town is stamped in large capital letters on the underside of the box. However John searched the City of Toronto Directory from 1910 to 1925 and didn't find a Proule. There were some Sproules and the only likely connection was Collett & Sproule, listed as box makers from 1913 onwards. In that case the first part of the name would have been chopped off during manufacture. If CSI was not made by Proule, then John suggests that one possibility would be the Reliance Toy Co. of Toronto (1916-24).

Since all the available information has been given here, an MCS Sheet will be deferred in case anything new comes to light.

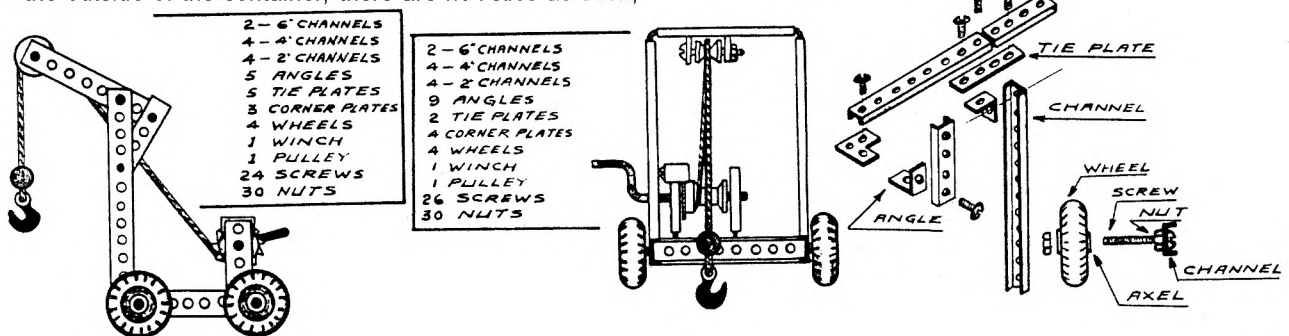
**Another TECHMASTER Outfit** In OSN 13/346 an account of this system was given based on a Model Leaflet which referred to Sets 1,2&3. Now John Seaverns has kindly sent details of an actual Set, the #50, and a copy of the single side Model Leaflet that was in it.

From John, 'The Set is packed in a pasteboard tube with a 'tin' top and bottom, and is covered with paper printed in yellow, red, blue and green. #50 appears in small type near the bottom of one side. The majority of the parts are made of steel, with a bright, perhaps plated finish, but the Corner Plates are aluminum. The pitch of the holes is ½", they match MECCANO spacing perfectly. The 2" dia Wheels are moulded from black plastic. The Spool is wood, painted green, and the Handle is aluminum. Despite being listed in the Contents on the outside of the container, there are no Axles as such,

but ¾" long Screws are included for the Wheels to run on. The thread is 6-32 and the Nuts are made of aluminum, about 9mm square.'

The Leaflet shows 8 unnamed models, all running on 4 Wheels, and all cranes or winches of one sort or another. For each a list of the parts needed is given, together with a side view, or for one an end view. Two are shown below, plus two of the illustrations showing how the parts are used.

Notice the 6" Channel not seen in OSN 13, and also the Corner Plates with 3 instead of 5 holes, and the Angles with 2 instead of 4 holes. The #50 Set includes 10 Channels, 2,4 and 6" long; 21 brackets; and about 30 N&B. The complete contents and the entire Leaflet will be included in an MCS Extra Sheet.



**MEK-STRUCT Update** The range of sets known pre Xmas 1995, with sources and details, where available, is as follows:

In **Canada**. • The small sets #3201-3208 mentioned in 12/310 have been changed around 20 extra parts in each and slightly more elaborate models. The new range, in order, with the number of parts in brackets, is: Classic Formula (181); Bulldozer (166); Racer Car (156); Earth Loader (177); Go-Cart (169); Snow Mobile (186); Plane, now a bi-plane (174); Mountain Truck (181). There is also #3821 (210) which builds a selection of the above; #3827 (270) similar but powered; and a larger outfit #3837 (370).

• Emergency Vehicles Sets. #3213 Foam Injector (224); #3214 Classic Fire Engine (190); #3215 Fire Engine (224); #3721, unpowered set to build any of above; #3830, powered set for any of above with a sound/light unit which blinks an LED and makes assorted noises when the motor runs; #3856 (560), builds a different selection of Emergency Vehicles of more elaborate design. [The number of parts in the larger sets is indicated by the last 2 digits of the Item No., thus #3856 has 560 parts. In fact these sets usually have more than this nominal number of parts, and this explains why the #3721 with nominally 210 parts appears to have less parts than some of the models that can be made from it, #3215 for example, with 224. Prices at Zellers seem tied to the last digits and the xx21,27,30,37,56 are \$30,40,55,60,90.]

• Space Vehicle Sets: #3216 Space Plane (197); #3217 Robot (196); #3218 Space Shuttle (224); #3921, unpowered set to build any of the three above; #3930, similar but powered with sound/light; 560 part Set for several larger models, some running on wheels.

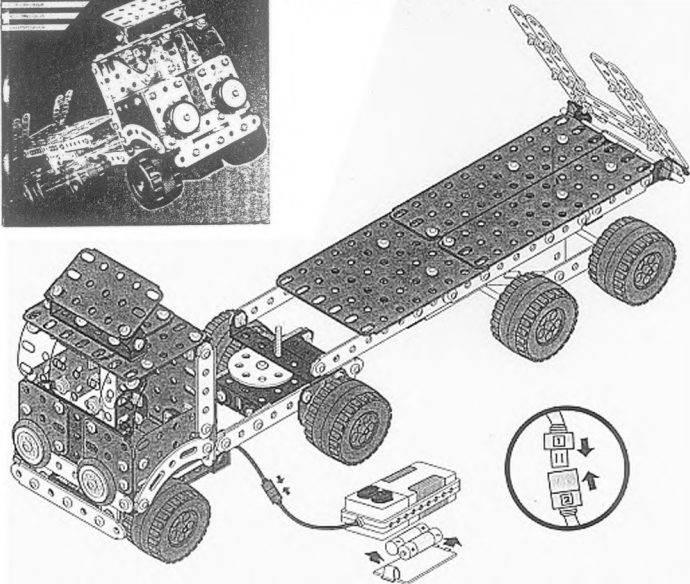
Most if not all these sets were at Zellers and some, for the first time, at Toys R Us.

**U.S.A.** Sears catalogue lists 3 sets: • Emergency Vehicle Set, motorised with lights and siren, 300 parts, \$40. This may be the #3830 above. • Space Vehicle Set, 560 parts with again motor/lights/sound, \$50. Probably as the Canadian Set - the model shown runs on 8 of the W1 Road Wheels. • 600 Piece Set, \$60. Again 8 Wheels, not in the Canadian list. More details are given below.

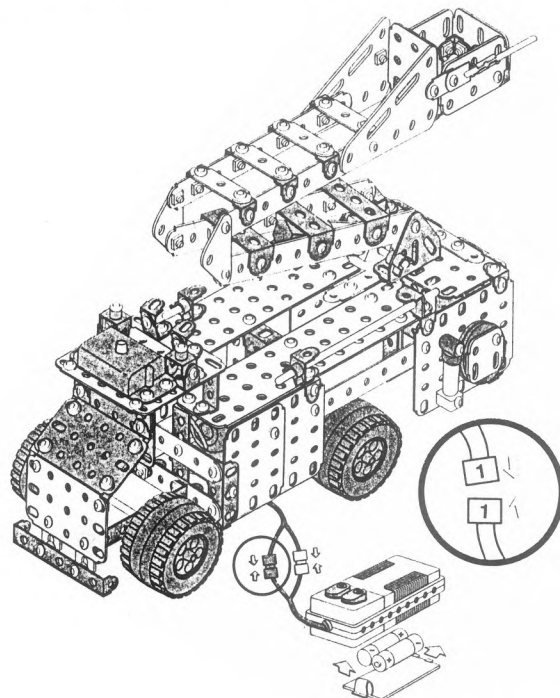
**PARTS** No new parts are known except the sound/light unit, and this is permanently wired to the motor/gearbox GB. There are two versions, GBS in the Space, and GBE in the Emergency Sets. The light is on while the motor is running but the sound sequence continues even if the motor is switched off part way through. Flat Plates and Flat Girders are red in the Emergency Vehicles, and grey in the Space Sets, but remain orange in the regular outfits.

**The 600 PIECE SET** The part count for this outfit from its manual is 611, slightly more than in a 1970+ MECCANO No.6. They both have around 150 N&B but there the comparison ends. There are over 80 different parts in the No.6 against 60+ in the 600; 30 Flexible Plates against 6; and while the 600 has a Motor/gearbox, there are no gears, and the single Bush Wheel is the only part that can be positively fastened to an Axle. The 600 does have a good selection of Strips and Brackets but none of the parts is longer than 11 holes, and the only A/G is 3h long. So which would you buy for junior? In the Sears catalogue the 600 costs \$60, the ERECTOR (Meccano) No.5 with 556 parts, \$85, and the No.6 with 640, \$120. Both have motors nowadays of course. I'd say that the MEK-STRUCT with its relatively straightforward models would be a better introduction to model making with N&B, but for an intro to engineering you need the ERECTOR.

One disappointment with the No.600 is the manual. It has 16 small (193\*143mm) pages, plus covers, and though the step-by-step colour illustrations are good, only 4 models are shown. 3 of them are typical MEK-STRUCT, a Wrecker Truck for instance, very similar to the one shown in OSN 12, but one, the articulated Low Loader below, is different and some 18" long. However it only uses about half the N&B, and about half the other parts, in the Set. For the record the only reference on the manual is P/N 3205216 on the back cover Opposite the front cover.



**The 560 EMERGENCY VEHICLES SET** A typical mix of 569 parts but the two models copied to me, although still very simple, have a little more character in their appearance. The Fire Engine below would be getting on for a foot long and the sound light unit can be seen on top of the cab. The page size of the Manual is the same as the 600, but the text on the cover is in French as well as English, as one might expect from a Set bought in Canada, but also in German and Spanish. As in all the manuals there are no words at all inside, not even the names of the models.



Thanks are due to Don Bock, Chas Shrubsole and Richard Symonds for the material used in this account.

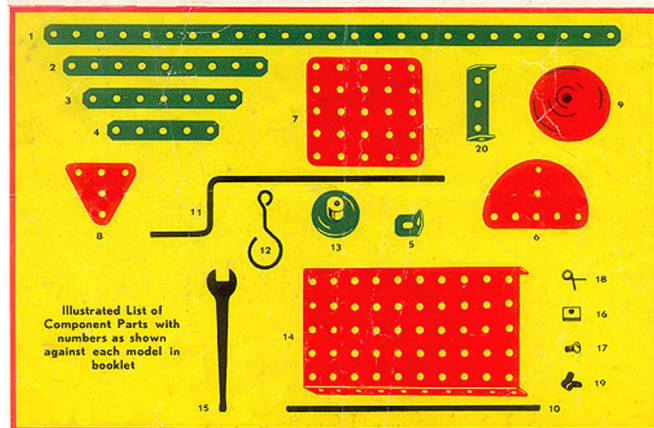
**New System - METALCRAFT** Chas Shrubsole came across the back page of a manual in Canada and kindly send a copy (opposite) via Don Redmond. That is all that's known of this system, but apart from there being no A/G, the page is virtually identical to the back cover of the PIONEER manual, as shown in MCS. The pages are the same size, and the layout of the parts and the PNs are the same; there are the same strips on either side of *MODELS* under the name, and the same 'Designed and printed in Great Britain' underneath. The PIONEER heading is shown opposite above the METALCRAFT page. So it must be likely that the two systems were made by the same manufacturer. It isn't known for sure who made PIONEER but because of the obvious resemblance of the parts to VOGUE, it may have been Vogue Playthings Ltd. of Melton Mowbray. Whether METALCRAFT was intended for the Canadian market isn't of course known. Looking at the PIONEER and METALCRAFT back covers it does look as if the latter came first and the 11h A/G was squeezed in afterwards. Of the 25 models in the PIONEER Manual, this part is used in 8 of the last 11. A new MCS Sheet will be prepared for METALCRAFT later, in case in the meantime anyone comes up with anything else on it. Metalcraft Corp. was the

PIONEER

MODELS

METALCRAFT

MODELS

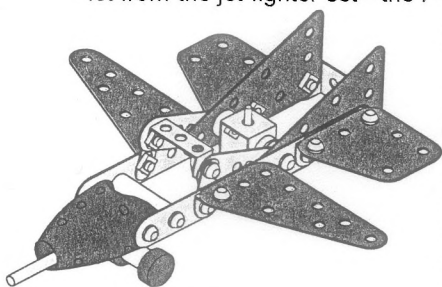


Designed and printed in Great Britain.

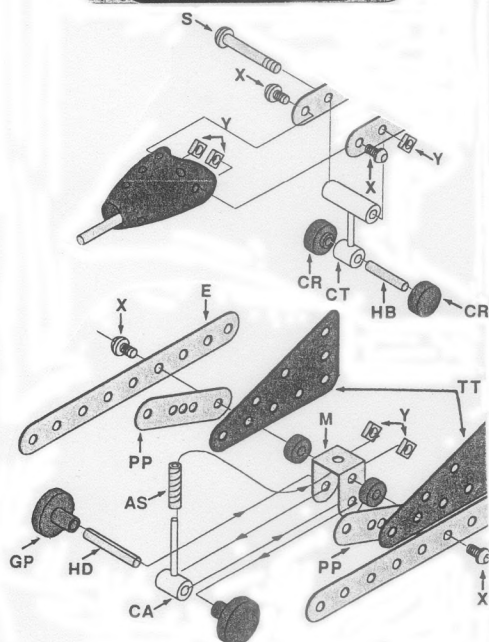
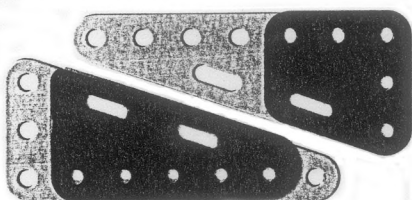
name of the American company that made METALCRAFT aircraft and train constructional sets, and so the new system will be listed as METALCRAFT [1].

**THE STEEL TEC F-18 FIGHTER 'SK' SET**

In OSN 12/323 I mention the various SK sets shown on the Leaflet for the Motorcycle. Chas Shrubsole has now kindly sent the Leaflet from the jet fighter set - the *F-18 FIGHTER WITH SPRING SUSPENSION* - and again it's labelled item #7080, © 1993. It contains 78 parts and there are one or two points of interest. The nose is a 5\*3 hole blue Plastic Plate curved around and fastened underneath by a N&B. The latter also carries a Rod and Strip Connector which holds the Rod that comes out of the nose. The Triangular Plates, all red, are shown with different hole configurations in the different illustrations in the Leaflet, but the actual ones are as shown opposite, superimposed on the 3\*7h MECCANO part. Pairs of black Wheels, CR and GP, push onto axles that pass through the yellow front and rear undercarriage members, CT and CA. The rear unit is shown with a Spring, AS, but it seems not to do anything because the Axle HD passes through the bottom (round) holes in the Double Bracket, M. But that's odd too because the other parts M are 1\*2\*1h DAS (plus a centre hole) and there's no Double Bracket shown in the Set Contents. One of the DAS, M, can be seen over the cockpit and it looks as if it ought to be the NS style, but in the set it's of normal width.



**F-18 FIGHTER WITH SPRING SUSPENSION**



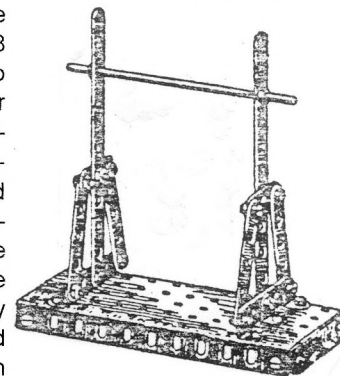
**QUERIES**

1 and 13. On the TRIX thread, from 9/224, and the hole spacing, from 7/166. Tony Matthewman kindly sent copies of postwar UK official workshop drawings for a Strip and an A/G, and the pitch of the holes is shown as .307", both lengthways and crossways. That works out at 7.798mm and so probably the original German dimension was 7.8mm. Why 7.8? Tony suggested that it might be the minimum value to ensure that the Nuts in the different holes didn't interfere with one another, and in fact if all the holes in the outside rows have N&B in them there is just room for the Nuts to turn. The centre holes are all free but with no room for a Nut or Bolt in any of them.

So if the idea was to have the Strips as small as possible given the size of the Nuts, why that size of Nut? Perhaps because it was the standard for whatever thread was originally used. But we don't know exactly what thread that was; its diameter was probably 3.5mm or .138", and the pitch was .8mm or, almost the same, 32tpi. The Belgian No.19 thread (OSN 8/203) might fit the bill but would a German firm have used a Belgian thread? Can anyone suggest an equivalent German or Continental thread, now obsolete.

Another point from the drawings, the hole size is .145", very close to 3.7mm, the probable German diameter.

22. Richard Symonds kindly sent a copy of the 2 panel model leaflet for Australian CONSTRUCTO, with illustrations that look just like the MCS entry. Most of its 18 simple models appear to be direct copies of prewar MECCANO manual models, and include all 4 patterns of 5 1/2\*2 1/2" Flanged Plate. But I don't recognise two or three of the models and they have Flanged Plates with only the two long flanges, and with elongated holes in them. For example in the Horizontal Bar opposite.



**HORIZONTAL BAR**

So I'd like to know what the CONSTRUCTO Flanged Plate, and the other parts, were really like.

## ITEMS FROM LETTERS

1. From Don Blakeborough: • Some notes on the New Zealand **LEDOM / MODEL ENGINEERING** systems. Three Sets have been examined, a No.0 and two No.2's. (Penciled on the No.0 box is 37/6d.)

The Axle Rods are 3.25mm dia and have deburred, sheared ends. The holes in the steel Clips that clamp the Rods are about 4mm dia (MECCANO Axles will not quite fit into them). There were no N&B in the Sets seen. The brass Adapters (Couplings) measure  $\frac{3}{4} \times \frac{1}{4}$ " (double) and  $1 \times \frac{1}{4}$ " (triple) and their holes are in the range 3.3 to 3.35mm; they are double tapped  $\frac{5}{32}$ " BSW with roundheaded ( $\frac{3}{16}$ " dia) brass Set Screws,  $\frac{1}{4}$ " long u/h.

The 1" Pulley,  $\frac{9}{16}$ " fixed and loose Pulleys, and  $1\frac{3}{8}$ " Hub Wheel (8 hole Bush Wheel), are also all turned from solid brass; their bosses are 10mm dia, 7mm long, and are again double tapped with brass cheeseheaded ( $\frac{3}{16}$ " dia) Set Screws,  $\frac{3}{16}$ " long u/h.

The tinplate Road Wheels, pressed in two halves, are  $1\frac{7}{8}$ " dia by  $\frac{11}{16}$ " wide, with 3.5mm centre holes. The Hook is made from 1.3mm brass wire with a small eye above the bottom  $\frac{1}{2}$ " dia part circle.

- The following data to fill gaps in the OSN 6 List:
  - **CLOU** ('matchbox' set) - the hole pitch may be 8.3mm.
  - The diameter of **AMB** Axles is 3.95mm.
  - **MAC ET NICK**. Axle dia 4.15mm, and thread  $\frac{1}{8}$ "BSW.
- On the **classification of parts**, "I have listed my MCS parts in a data base. The headings are (1) system; (2) material; (3) type; (4) form; (5) prefix; (6) No.; (7) suffix; (8) (Meccano) name; (9) space; (10) dia; (11) length; (12) width; (13) size; (14) thread; (15) holes; (16) colour; (17) notes/special features; (18) stock; (19) largest set; (20) odd features. I find it well suited for sorting the parts in any chosen order and for example, if I was looking for a green Perforated Strip with 13mm spacing and 4.0mm dia holes, I could sort by any or all of (16), (9), (15). However, I am not able to sort in, for example, the different types of Flanged Sector Plates. This may need to be set up in a second data base, with a third for Trunnions. Both of these parts can be found with different styles. The system I'm running is a 486, IBM compatible, 345mb HD, and I use a Works database. I started to run out of memory, so split the database into various data files depending on the spacing, for example."
  - "I believe I have **HAO WANG** (8/182) parts Nos.1,2,9,10, plus a 5\*3h Flanged Plate not listed in OSN. All these parts are light blue and have 4.5mm dia holes at 12.5mm pitch. The holes in the base of the Trunnion are slotted." [Don kindly sent over a Flat Trunnion and at first glance I would have taken it to be a **WISDOM** part, but it is actually slightly larger all round,  $37\frac{1}{2}$ mm across against 36mm. The **WISDOM** Trunnion too has slotted holes in its base.]

2. From David Hobson: • **STABILA** (13/343) is the subject of UK Patent No.360314; it was granted to F.Walther of 60 Harzer Strasse, Berlin, and the date of the original German Patent was Feb 27, 1930.

- **UK Patents** (12/305) - it's worth adding that prior to the 1919 Patent Act the term of a UK patent was 14 years, thus Hornby's general patent of 1901 would have expired on 8 Oct 1915. In 1915 the term of a patent in most European countries was 15 years, but 20 in Belgium and Spain; in Canada it was 18 years and in the U.S.A., 20.
- On **MULTIMOTEUR** (12/304,13/360), the inventor seems to have been Maurice Latour (mentioned in OSN 12), according to two UK patents in his name, 181020 (1922) and 411289 (1933). Convention dates are given (4 June 1921 and 6 June 1932) so there will be corresponding

original French patents. Both Patents are concerned with electrical machines to be used as toys or for demonstration purposes, which can be made using a limited number of standard parts. The approach seems to have been systematic and logical and for example, 13 different devices are listed in 411289 which can be constructed using 12 notches on the rotor and on the stator. These include dynamos, alternators, rotary converters, and various single phase and 2- and 3-phase motors.

- The **TRIX** connection with **X-ACTO** wasn't confined to the U.S.A. (see 12/331). In a 1957 *Hobbies Annual* there is an ad for **TRIX X-ACTO Hobby Knives and Tools** Hobby Knives and Tools, and readers were invited to send for illustrated leaflets from Trix Ltd., 11, Old Burlington Street, London, W.1.



- And some thoughts following Tony Matthewson's comment about UK **TRIX** A/Gs being aluminium (13/361). The Flanged Base Plate, E1, in my prewar Gears set is steel, and seems to be tinplated rather than having the zinc finish found on most steel parts; the postwar 'E' and 'G' Units I have contain both steel and aluminum versions of this part. Perhaps Tony would know if there was a specific point at which the change of material occurred, and if so when. In my unpainted **TRIX** parts there are 25 steel and 25 aluminium E1's. The later blue painted ones are all steel and like some of the other painted parts, seem to be nickel plated under the paint. Perhaps this gave more reliable paint adhesion than the usual finish.

Out of curiosity a check on my accumulation of several kilos of **TRIX** with a magnet (to the eye, some of the better zinc plated parts look identical to aluminium ones), gave 61 aluminium parts (1xF13 and 28xF9 Strips; 14xP29 Discs; 5xW10 and 13xW16 Washers). This represents only a very small proportion of the total but indicates that at some time, some parts were supplied in aluminium. Perhaps this was in the immediate post-WW2 years when there was a shortage of steel, and indeed, when the aluminium A/Gs were introduced.

- For the record, the UK Patent covering the **GILBERT NEW WHEEL TOY** (8/198) is 140101 with a Convention Date of 11 March 1919, but there is nothing in it that wouldn't have been expected. The note on **GILBERT RIDE-IT ERECTOR** (13/360), brought to mind a comment in the 1983 Heimberger House book *A.C. Gilbert's Heritage*. Under 'The Beginning of the End' on p139 he says, "Another 'new' idea for 1965 was 'Ride-em Erector' with gigantic parts to build any of the five toys that the boy could then get on and ride. This idea didn't work. A boy small enough to ride the toys was too small and too young to put it together. They should have checked the company archives. A.C. tried this idea prior to 1920 and it didn't work then either, and for the same reason." Presumably 'Ride-em Erector' was a slip of the pen. There's a similar comment on p23 in *Greenberg*, quoted in 9/219, about the '1919 Gilbert Outdoor Wheel Toy'.

- Still on **ERECTOR**, I noticed at a recent toy fair what appeared to be a new Greenberg reprint of a **1934 ERECTOR 'How to Make 'Em' manual**. It had a price of \$10 printed on the cover and I wondered if in fact it is a recent publication.

- Some of the Slovenian **METALLICO** sets (see 13/336) were available before Xmas from Kittle Hobbies, 24 Pennard Road, Kittle, Swansea, SA3 3JS; tel: 01792 232508. The range of outfits that were in stock isn't sure but a No.4 was £37 and a No.10, £66. Early in January all the No.10's had been sold and it wasn't known when new

supplies would be available.

3. Al Sternagle wrote about the **GILBERT RIDE-IT** set too. He once made up all the models from a Set for his 5 year old son, and the biggest hit was the 'Kenworth' tractor complete with double exhaust stacks. His daughter's favourite was a Fire Engine. Conclusion - a much underrated toy for young children, though they might have difficulty building with it.

4. Clive Weston sent a copy of a page from his wife's magazine **Doll's House World**, which shows an ad for a 1/12 scale **MECCANO Set**, 'price £19 (instructions included)'. You can see the name MECCANO on the lid but you can tell it isn't genuine, the Strips are red and the Plates green.

He also recounted a cautionary tale about the interesting looking 'mystery part' opposite (1/4 scale), that he once found in a mixed lot. Was it an architectural part? or a trunnion from a large axle system perhaps? Well no, all was revealed at an outdoor market where numerous examples could be seen on a rail with necklaces and chains hanging from them. Clive added, 'My wife was amazed by my sudden interest in jewellery stalls but quickly lost interest when I explained what had attracted my attention.'



5. Richard Symonds sent an ad showing the **Hook** which was loose in the **UMAKIT Set** (13/339), and it is listed as a **TONKA** replacement part.

6. Notes from Don Redmond. • **ERECTOR** and **AMB Worms**. The first phase **ERECTOR Worm** is steel, 21mm overall. It has a 3-turn length of thread (16 DP) and a rather long and slightly tapered boss with a small countersink to the bore at that end. The thread-end is flat. My **AMB Worm** is brass, 16mm long, with 4 turns of thread at 3mm pitch, and a round or bulbous end. The boss is very short (6mm long), and is fitted with a Grub Screw. It is 16mm long overall and is much shorter than it looks in the manual. (The reason the **ERECTOR** boss has to be so long is its round-head Set Screw) [A couple of first phase **ERECTOR Worms** to hand are as described above and are nickel plated. The pitch is about 5mm. Later 24 DP **Worms** are steel but brass plated, and the pitch is about 3 1/4mm, much nearer the **AMB**. Again there are 3 turns of thread and the ends

shapes are similar. The boss is even longer (11mm), but with no taper. The overall length is 19mm.]

• Some orange-red heavy steel **Disc Wheels**, 13<sup>13</sup>/<sub>16</sub>" dia, with 1/4" axle bore, which came in a job lot, turned out to be **ERECTOR** part DM. It was listed from 1927 through 1932, and was included in the larger sets. The 'Duplex' parts of the period had alternate standard and 1/4" holes. DM Wheels are shown on p107 in *Greenberg* fitted with white Tires (#DR) which are actually rubber 'skins' that fit over the formed 'balloon' rim of the wheel. The brass bosses are on the outside face of the wheel and take an 8-32 setscrew. [The original DM was the 6-spoked Front Wheel shown on the Van in OSN 2, p28, and there was a different spoked Rear Wheel, DN, with a much larger hub. The Tires for them, DR, look as if they are of rectangular section, with one on the front, and two on the rear wheels. These three parts were only listed in 1926.]

• Some aluminium parts in a miscellaneous lot, including blue Wheels Discs and a Crank Handle. They correspond to **JUNIOR MECHANIC** (12/327, 13/361) except that the Strips and Angle Brackets have rounded ends. There were also some 6-32 N&B, but 1/4" and 1/2" in length.

7. Karst Quast sent the Jan. 1962 issue of a Dutch hobbies magazine called *Na Vijven* (After Five), and in it were featured 6 models from a **JUNEERO** competition that had been announced the previous September. One of them is a nice Lifting Bridge that looks about 3' high. There's also an ad from a company called *Uitgeverij Esks N.V.* of Utrecht which offered a **JUNEERO Set** at f17.50, material (by the kilo), and parts, including plastic gears.

The end date for **JUNEERO** isn't known but it was obviously alive in Holland in 1962, some 10 years on from the last ad in *ME*, noted in 9/216.

8. Kendrick Bisset mentioned a book on Richter Anchor Blocks that he enjoyed despite not being a Richter enthusiast. It describes the history of the company and the stone block sets, and covers the metal additions used with the blocks, as well as (briefly) the metal construction sets. It costs about \$60 and can be obtained from the author/publisher, George F. Hardy, 1670 Hawkwood Court, Charlottesville, VA 22901, U.S.A.

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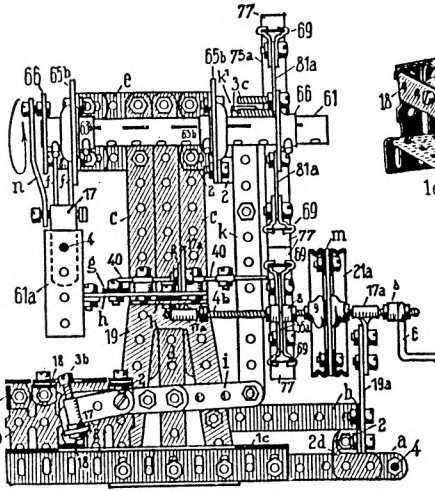
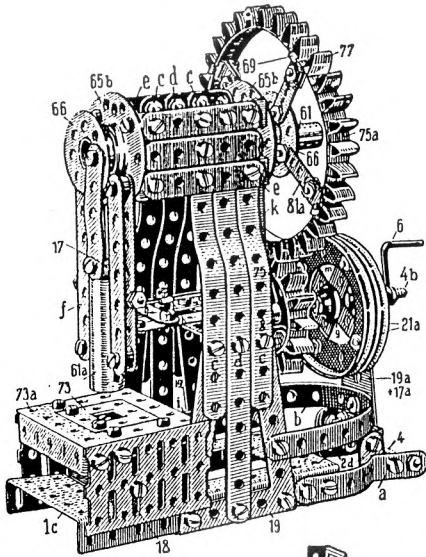


Fig. 652 a.

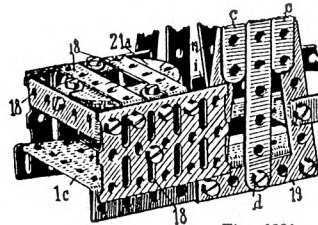


Fig. 652 b.

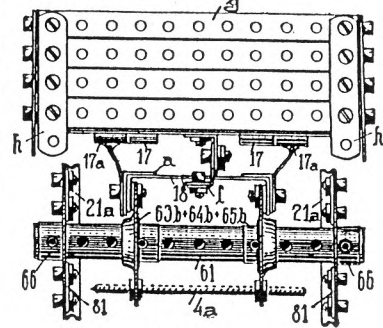


Fig. 700 d

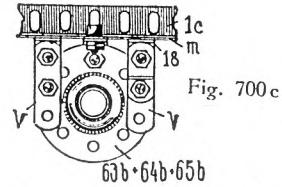


Fig. 700 c



Fig. 700 e

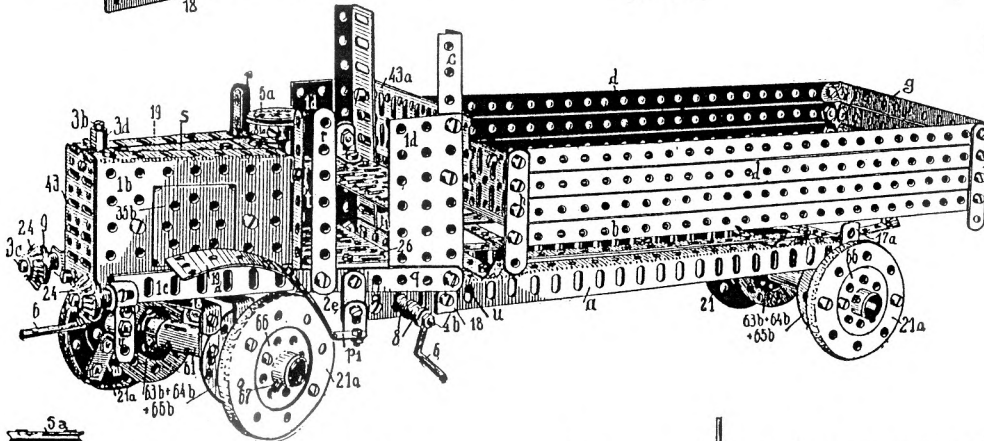


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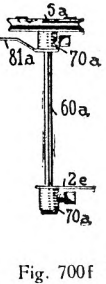


Fig. 700 f

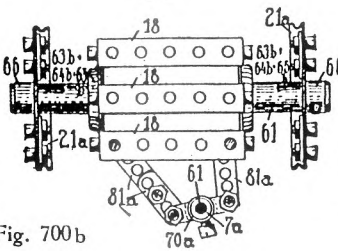
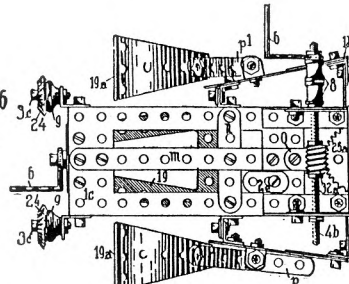


Fig. 700 b



Nr. 700 Lastkraftwagen mit kippbarem Ladekasten

gebaut mit Stabil Nr. 52 und Erfinderbaukasten Stabil Nr. 57.

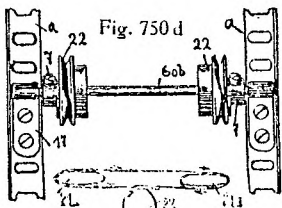


Fig. 750 e

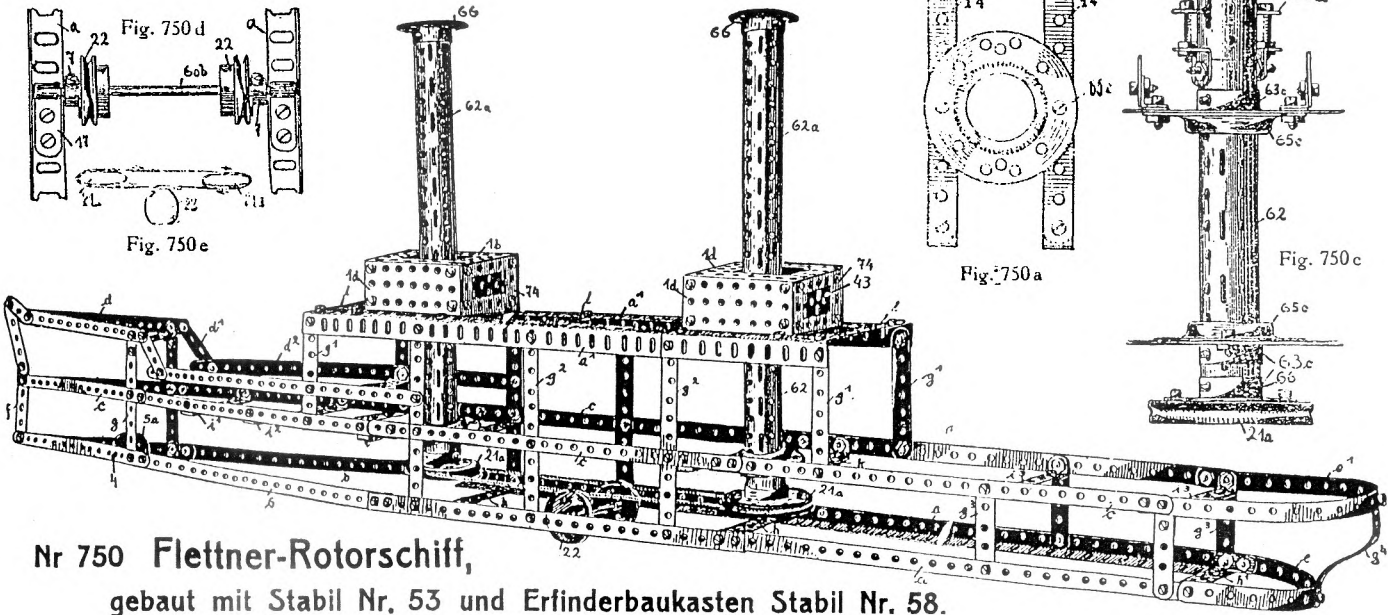


Fig. 750 a

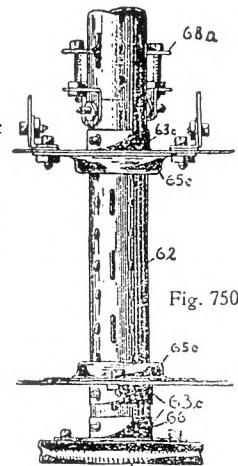


Fig. 750 c

Nr 750 Flettner-Rotorschiff,

gebaut mit Stabil Nr. 53 und Erfinderbaukasten Stabil Nr. 58.