AMERICAN MODEL BUILDER AND CASTLE BUILDER Looking at these systems in MCS there are many points of difference between them but there are also some remarkable similarities. In particular many of the illustrations of the parts are identical and some of the parts common to both systems are unusual. For example the 2x1x4 hole DAS called in each Hanger Strip, and then both have 3 Cranks (MECCANO Crank Handles) 4½", 5½" and 6½" long. Was this a case of straightforward copying or was there some connection between these two systems?

[I had suggested to Don Redmond that there might be a connection and he responded: "There are some intriguing coincidences in the illustrations of parts in MCS, but not as many as would be expected if there were any actual linkage between the manufacturers/distributors. Would it be more likely that some parts were bought in, probably by Castle? Or just designs copied? AMB copied Hornby, so probably AMB designs were not as closely protected as they might have been - Hornby won his suit. Incidently the AMB screwdriver illustrated was almost certainly a commercial 'bought in' part, as it is identical with a screwdriver used for the White Rotary sewing machine of approximately the same period (c1917-20)".]

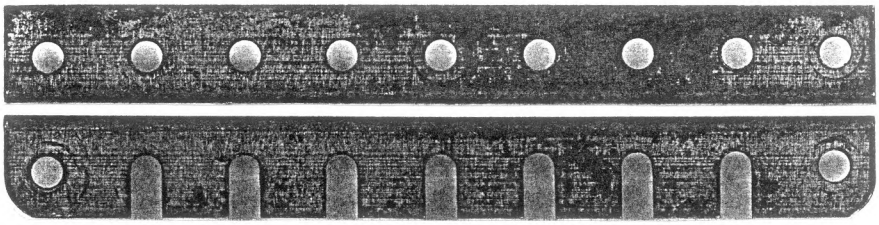
SMALL ADS

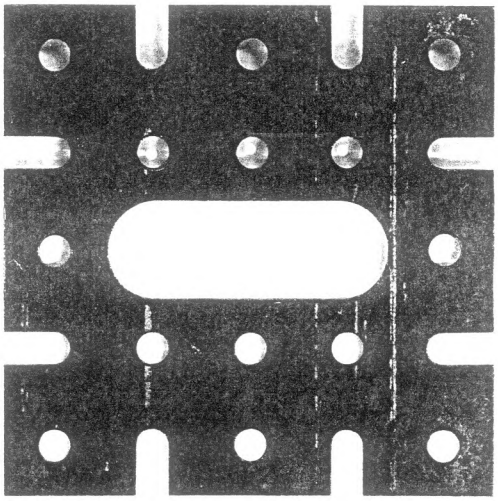
WANTED: VOGUE nuts & bolts. D.A.Redmond, 9 St. Catherine St, Kingston, Ontario K7K 3R9. Canada.

WANTED. • To complete a boxed No 6 KLIPTIKO set - original manual, one of each of the following parts:- Large Chute Side, 3-3/4" Wheel, 1½" Wheel, 10" Bent Tube, 6" Bent Tube, Hook, Bucket, Cord; also 2 Cables, 3x2" Tubes, 2x4" Rods, 8x6-5/8" Tubes, 17x10" Tubes, 20xHub Caps, 2xHalf Clips, 17x4" Clips. PX or cash.
• Info and/or details on internal arrangement of No 3 STRUCTATOR set (thought to be later set as it has square steel Joints).
• Any N-G-NEERO parts especially Hole Punch, Screwdriver, Instruction Manual, Model Plans and 'consumables'.

Contact Roger Baker 079 710358.

MYSTERY PARTS NO 14 ULOX Strips and Discs turn up fairly often and with a few of them recently was the Plate opposite, and then with another half a dozen or so, a Plate and the Angle Girder. Their finish is typical ULOX grey plating except that the second Plate is painted dark red; the paint doesn't look very even though so it may have been put on by a previous owner. The hole spacing and diameter is the same as ULOX parts, 13.0 and 4.1mm. Can anyone confirm that these are ULOX? Also is any literature or sets of ULOX known, there must have been some but all that has ever been been found are several of the small tins of parts that are shown in MCS.

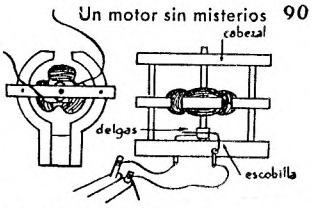




MYSTERY PART NO 15 From Don Redmond, "Two seperate groups of brackets, including Reversed Angle Brackets, Double Brackets, and in one group also Flat Brackets (Fishplates) and an Angle Bracket. The peculiarity is that the Double Brackets are stamped from the same piece as the Reversed Angle Brackets, ie there is a slot in one lug. One group has Double brackets 5/8" across (not quite as wide as the old style MECCANO part); in the other it is 9/16in."

MYSTERY PART NO 16 Another from Don - "The Strip opposite, 1/16" short of 4", .033" thick, nickel plate, 4 holes at 20mm spacing and 20mm from the ends."

A fair range of experiments are shown, with permanent and electromagnets, bulbs and resistors, made up cells, and an electric motor. A No.3 Outfit is mentioned, to be ready shortly. Although certain specialised parts have to be assembled for the experiments, this isn't exactly a constructional system I think, so I won't go into more detail here. A box, from the manual cover, and one experiment are shown opposite. There's no indication of date except that it is said to be a toy of the atomic age. There's nothing on the manufacturer either - MECANO is included in the name of the small Spanish system MICRO-MECANO "GUINA" but there's nothing else to link the two.



Josep also sent a copy of the 12 page manual of another Spanish set, made by the well known firm Payá in 1962, called **CONSTRUCCIONES ELECTRONICAS.** It falls into the same broad category with electronic parts (transistors, capacitors, a coil, etc.) wired together on a chassis using special spring connectors. Details of 7 different simple morse and radio (I think) transmitters and receivers are given.

3. Ted Van Klink mentioned that there is a good, albeit slightly pricey, supplier of **TEMSI** in Toronto.

4. Sven-Ulrich Glage from Hamburg sent a list of his sets and the following names were new to me: - **DER JUNGE BAUMEISTER**; **EIFEL** (seems to be a Danish system of MECCANO or MÄRKLIN style, with the name on the Brackets); **FERMO** (German, the models are mostly built of triangular plates); **GA** (German, very simple with unusual parts); **GORDON** (most parts including Strips and Plates are brass plated, possibly an early East German system); **HERSA** (simple system, of small scale, made in Berlin immediately after WW2); **HW MAS-BAUKASTEN** (from the DDR firm that made DER JUNGE KONSTRUKTEUR); **LEICHTMETALL-KONSTRUKTIONS-BAUKASTEN** (aluminium parts similar to MÄRKLIN); **METABA** (German); **PICO ELEKTRIK** (looks like a 1970/80s version of ELEKTRO in MCS); **STUDIO ELEKTRIK**; **SV INGENØR**. He hopes to send more details in due course.

Other points: • On **AWS** (11/294), a later version of the set was sold with an updated manual containing additional models, and included in the set as new parts were 4 rubber Tyres. As far as is known none of the parts were coloured but there was an AWS clockwork motor which isn't mentioned in the manuals. • A **CONSTRUCTION JEEP** set that is different to the one in MCS and 14/373 - it is complete with a nice little tinplate Jeep, and the parts to build a Trailer and other models differ. It was made in Japan by Daiya. • An **INVENTRIX** outfit that was made in Germany in 1947/48 and has a clear resemblance to the Liverpool INVENTRIX in MCS. • A postwar **KONSTRUKTION** set which seems to be an earlier version of the system in MCS [and that in turn is thought to be earlier than the set described in 8/181]. • A **METALLO** set that seems to be pre-WW2 and Danish perhaps. It may be a 'new' system. • There was a German version of the **PHILIPS** ME 1200 set described in MCS. • Two 1930s model plans for **HELLER MECHANIKUS** (15/415) are for model sailplanes made of aluminium that could really fly!

5. Photocopying tubular containers is always a problem and Kendrick Bisset has tried rolling the tube along to keep it above the moving light during copying. Rubber bands were put at either end to minimise slipping. The example he sent, of a GIRDER BILT tube, is very good indeed.

6. Don Redmond sent a note about research that he and John Wapshott had done into the history of the Canadian **CASTLE BUILDER** system. The firm who made it, Castle Manufacturing Co. of Toronto, and its manager, Percy V. Jermyn, are listed in the city directory for 1917-18, but not before or after. A Jermyn family lived in Mimico, then a Toronto suburb, both before and after those years. The company's address was 69 Richmond St. East in 1917 and then at 80 Duchess St. As a working hypothesis Don suggests that Percy enlisted in 1914, was invalided home and founded the business in 1917, and died of Spanish influenza late in 1918 or early 1919, whereupon the business ceased. The resemblance to certain U.S. systems of the time has still to be explained.

Don also wrote that a MECCANO enthusiast of his acquaintance saw a metal construction set in a carton marked **BARUM CHEZ** (or similar) in an antique shop in Marmora (north of Kingston, Canada). It had gone when Don rang but was apparently made in Eastern Europe and had E984 on the box. Contents may have included 2x2" & 4x1½" Pulleys with Tires, 4 Rubber Tracks, Plates, N&B, and a small manual. Don wonders if it was repackaged MERKUR.

7. Dennis Snowdon mentioned that he bought a new **No.0 ERECTOR Set**, just like the one shown in 15/411, with 1" Pulleys and the FO Plate, etc, from a shop in Stanhope in 1943 or 1944. It cost 2/6, the amount he got from a local lady for digging her garden. He later swapped it for some MECCANO parts and now wishes he hadn't.

8. A friend of Tony Matthewman has pointed out that the text in the MCS pages for **RODOPI** is not Russian but may be Bulgarian. Could well be because a map shows some Rodopi mountains in the south of Bulgaria, and though I couldn't find Bratsighovo, the manufacturer's town in MCS, there are several names thereabouts that end in 'ovo'.

9. Last year Richard Bartlett found some sets called **MECHANIC** on sale in Malta, and they are probably akin to WISDOM (see 10/238), though some of the colours of the parts are different, with air force blue Strips and white (plastic) Flexible Plates. The Flanged Plates are still metallic red. 3 sets were available, and the largest included the special Cab with the motor built into the lower part, as in the WISDOM No.6 outfit. [Roger Baker has also reported sets on sale in Kuwait for the equivalent of £4 up to £15.]

Richard has also found the remains of what was probably a **SCHEFFLERS** set (see 12/324). There was no box and as would be expected the manual didn't have a name on it. However its cover, Illustrated Parts, and Set Contents agree exactly with those in MCS/FB, and the maker, VEB Metallspielwaren of 9112 Burgstädt, is the same too. Another clue is the Windmill Sail which is parallel rather than the later tapered one shown in OSN 12. The 7 sets available are shown on the back cover and though they retain the unusual SCHEFFLERS set numbering, their prices are identical with those for the Sets 1-7 in the BURGSTÄDTER manual described in OSN 12 (and included in MCS pt.5). So that would seem to put its date at near the point the name changed, although prices may not have changed as quickly in East Germany as they did in the West. The manual's PR of KE 51 76 III-8-9 690 might indicate a date of the 51st week of 1976. That at least puts it earlier than either of the 2 possible analogous dates from the BURGSTÄDTER manual.

The major parts in the set have a dark grey, nearly black finish with a sheen to it, except that the Flanged Plates are dark blue and the 5h Ø MÄRKLIN-type (metal) Pulley is a dark red.

10. To add to what was in 15/424, Kendrick Bisset sent the following notes on the **STRUCTO** parts in his #2, 2A and 3 sets. • The A/Gs have round holes in one flange and 4.7*7.6mm slotted holes in the other. • Wagon Wheels are 1½" Ø, and have a very smooth tread, ⅜" wide. The ones in the #2 set have 6 spokes and are painted black; the others

Corrections • The page numbering of OSN 23 should read 23/xxx instead of 22/xxx. • In the MCS Database 2000, the 'SM' in 'Codes C' on p44 should read 'SH'.

ITEMS FROM LETTERS

1. From Don Redmond. • John Wapshott recently found a **CASTLE BUILDER** box (22*11½*2½") with no set number on it, and the bulk of the contents turned out to be most of a **STRUCTOMODE** No.6 Set. No manual or other 'paper' was with it. Characteristic STRUCTOMODE parts found included the Windmill Sails with large round holes, Braced Girders with semicircular cutouts, & a Little Hustler motor. Also present were Flanged Plates, whereas CASTLE BUILDER had Perforated Plates & A/Gs instead. The two Propeller Blades of the No.6 were found but they are 'sickle' shaped (as sketched left, ½-full-size) instead of the broad, early MECCANO type shown in STRUCTOMODE manuals. The parts nicely filled the compartments in the box, with the Motor fitting into a full-depth section, and raised level packaging in the other sections.

As noted in 16/458, CASTLE BUILDER was made in Toronto by the Castle Mfg. Co., probably from 1917 to 1918/19. Canadian Toys Ltd. of Hamilton, the makers of STRUCTOMODE, were listed in the Hamilton directory for 1921-22 (after that the manager, R.H.White, appeared until 1925). Is it possible that Canadian Toys acquired and made use of some CASTLE BUILDER boxes?

Points of interest concerning the (supposed) STRUCTOMODE parts found are: • ½" & ¾" Loose Pulleys made of tin discs eyeleted together; • the early MECCANO pattern Pawl is made of ordinary not spring steel, and is nickel plated; • the 5*11h Flanged Plate is as shown in the manual with the flange holes near the bend; • the Motor is as the manual but without the wooden base. (The type was illustrated in 19/551 with 'KNAPP' on the base.)

No Trunnions (see 23/681) were in the box.

• The 1924 **ERECTOR Car Truck** had the top hole raised compared to the STEEL ENGINEERING pattern (see 23/666), and then in 1926 the original hole was restored giving 2 holes at the top. [Referring to *Greenberg*, this last pattern was shown in the Illustrated parts (Fig.1) for 1924-26, and then changed to Fig.2 in 1927 (with a single hole at the top and the side holes elongated). In 1928 & 1929 the Fig.3 type is shown, and no later illustrations are provided. But these changes may not represent the (whole) truth of the matter because where the Car Truck can be seen in the photos of sets, it is the Fig.2 type in 1924, 1928, 1929, & 1933 (all in nickel). It is said that the extra hole was added in 1935 (Fig.4) and this part, painted red, is shown in a 1935 outfit and in later sets. *Greenberg* also has a photo of a set, said to be a 1920 No.1, which clearly shows 4 of the Fig.3 parts. Said part isn't listed in the 1920 Parts List or Set Contents, so was this an early trial set, or has it been mislabelled/badly restored? Figs.1-4 above have been copied from Al Sternagle's *Erector Parts Illustrated*.]

Fig.1

Fig.2

Fig.3

Fig.4

• Re the **ERECTOR 24t Gear** (23/666), the standard pattern prior to 1924 was plain with no face holes. My 2-hole version has a 7mm centre hole and no boss. [My mistake over the standard Gear, the 2-hole version was listed from 1914 through 1920 and was never included in any sets. I wonder if Don's example was a disc that 'got away' before it was 'bossed'. It's true that in some brochure illustrations it doesn't appear to have one but it always cost 15c against 10c for the unpierced one with boss.]

• Were the **STEEL ENGINEERING** Curved Girders the same curvature as the equivalent ERECTOR parts D & E?

• Colin Hinz has a pretty Russian set with the transliterated name of **VOENNAYA TEKHNIKA** (Military Engineering), which was apparently made in St. Petersburg in 1999. It is packed in a transparent plastic box and the parts resemble KONSTRUKTOR [3] (see 22/648), but are steel rather than aluminium. The 16 models in the manual are chiefly army units, & vehicles.

• The 2000 Database lacks some figures for **NECOBO**. The following are from a batch of parts including Mod.1 Gears (see 7/147): bosses are 4.1mm bore & double-tapped 5/32" BSW; Axles are probably 4.06mm Ø, though some with the parts were 4.02mm. Other points: the bore of the Cone Pulley, #176, is less than 4.06mm; the nickeled boss of the Face Plate (#83 but with 2 rings of 8 holes) is single-tapped; the tapping of the Handle Crank, #124, appears to be 1/8" BSW & the Set Screw is machined brass with a cheese head; the 16/60t Gears run freely at 1½" centres; the 20mm Bevel has 20 teeth and meshes nicely with MECCANO #30.

2. Details of an 11th Edition **C.I.G.E.A. manual** were given in 23/657. Luciano Luppi wrote that his 11th Edition is dated 'X 54'. He also sent some details of a 4th Edition from 1946, as follows. •Name: LA MECCANICA per ragazzi. •Maker: C.I.G.E.A., Milano, Via Nino Bixio, 15. •Date: XII 46, Quarta Edizione 50000 (could be the number of copies printed). •Page size: 246*170 mm deep. •64 pages + covers. Paper quality is much better than in the 11th ed. •Printing: half tones of models; cover is green with off white, grey, black inset. The inset is the same as the lid cover on 23/656. The 'something else' on it is a steam locomotive. •Language: Italian plus French/English/Spanish/German Introduction. •Sets covered A,B,C,D,E. •No. of models for each set: 23,20,21,10,10.

3. From Werner Sticht. • On **Korbuly's MATADOR patent** (22/623 & 23/682), the Austrian patent can be seen at http://members.xoom.com/oelli/matador/Patente/Nr.11515/Seite_1.gif & /Seite_2.gif). It is similar to the German one but also includes a vehicle with wheels, the Cart right. [On dates, it was applied for on 2 Nov. 1901 and was granted (Beginn der Patentdauer) on 1 Dec. 1902. Hornby applied for his patent on 9 Jan. 1901, added to his application on 9 Oct. 1901, and his patent was granted on 30 Nov. 1901. The 1 Nov. date mentioned in OSN 23 is the application date for the UK patent, which was granted on 6 Feb. 1902. No application date is given on the German patent.]

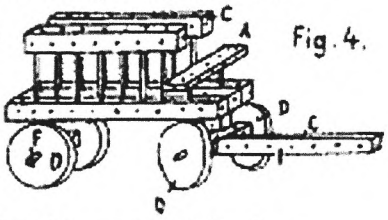


Fig. 4.

• Due to a typing error the **5 STABIL DRGM numbers** given in 22/650 (248034-8) were incorrect – they are really 248934-8, as stated in OSN 13/348. [Due to another typing error the numbers from OSN 13 in OSN 22 were incorrectly given as 249934-8.]

• News from Jürgen Kahlfeldt: • Confirmation of the 1933 date for the introduction of **STABILA** given in 13/343. It is said in an ad leaflet dated 5/33 that it would be launched soon, and in one dated 11/33, Sets 1 & 2 are advertised as being 'new'. • The first known ad for the **KNIRPS** Motor (see 11/272) is from early 1933, and also listed at that time were the KNIRPS Conversion Sets 1a & 2a. The Nr.1a was mentioned in 11/273; the 2a was to make the Nr.2 into the STABIL Nr.48, & the same Set was also available as Nr.46a, to make the STABIL Nr.46 into the Nr.48. • A **Walther's Maschinenbaukasten** with manual has been found [it was mentioned in 13/348, and has mostly wooden parts].

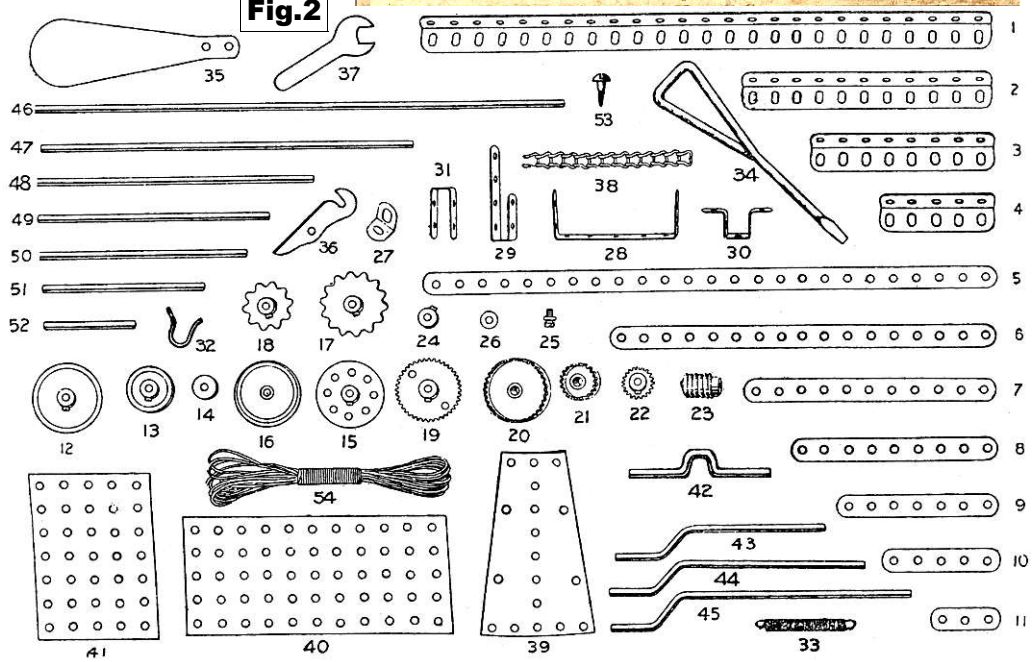
• As would be expected nothing of MÄRKLIN METALL, TEMSI or TRIX at the **Nürnberg Toy Fair** in February, but AMI-LAC had a stand, and so did Eitech. The latter showed a Lorry-mounted Mobile Crane which stood about 3m high. Also present, the firm **Dickie-Schuco**, who use the old Schuco trade mark, and have started to sell a system which looks like repackaged MERKUR. [It is hoped to have more

Another CASTLE BUILDER CASTLE BUILDER was a Canadian system and the version described in MCS is fairly well known. Its date isn't certain but it was most likely introduced towards the end of WW1, see 16/458. The Illustrated Parts from a manual are shown in Fig.2 and a number of them, including the Pulleys, Gears, Sprockets, & Brackets, look like AMERICAN MODEL BUILDER. On the other hand the Perforated Plates & flat Sector Plate resemble the first version of the American MODELIT, and as with the latter, suitable lengths of A/Gs were provided to allow bolt-on flanges (see 8/186). It isn't known if any of these parts were bought in, or merely copied.

Fig.1

But there was another version of CASTLE BUILDER which I didn't know about until recently. Kendrick Bisset has kindly sent scans of the key pages of his incomplete manual, and Jean-Pierre Guibert has kindly agreed to my using the illustrations of this new version that are in his Encyclopédie. The parts are shown in Fig.3, and are listed in Fig.7. It is reasonable to think that this was a later version because there are more parts in it, suffix 'a' PNs are used, and the prices of parts common to both versions are higher. As an example the price of 25h A/Gs rose from 30c per ½-doz to 40c (Version 1 prices from MCS).

Fig.2



The PARTS The 'AMB' Brackets remain but the Wheel #57; all the Pulleys except the Loose Pulleys #13a & 14a; the Gears & Sprockets; & the Shafting Hanger now look identical to the cast parts in STRUCTO (see 15/424). STRUCTO Axles were grooved but their lengths don't correspond to CASTLE BUILDER's. (I wonder if these 'STRUCTO' parts were bought from Structo when it ceased making STRUCTO sets in 1919 – it was noted in 30/876A that Meccano acquired certain STRUCTO strip parts at the time.)

The earlier 'MODELIT' Plates are retained, also the A/Gs used with them, though the Plates' corners are now shown rounded.

The main new parts are the Plates #64-67, the Architrave, the Trunnions, & the Latticed Girder parts #60-62. Details of the 6 & 12" Girders were given in 17/475 & 20/567 (as Mystery Parts 32). The end holes are at 5½ & 11½" centres; the end pairs of holes at 5/16" pitch; the rows of holes along the top & bottom are at 1.0" pitch, & at 9/16" centres across. The Extension #62 was Mystery Part 41, see 20/567. The Architrave & Trunnions were also found in Canada with the Latticed parts. The latter seem to be an original design; the Architrave, apart from its rounded corners, looks similar to the PRIMUS part.

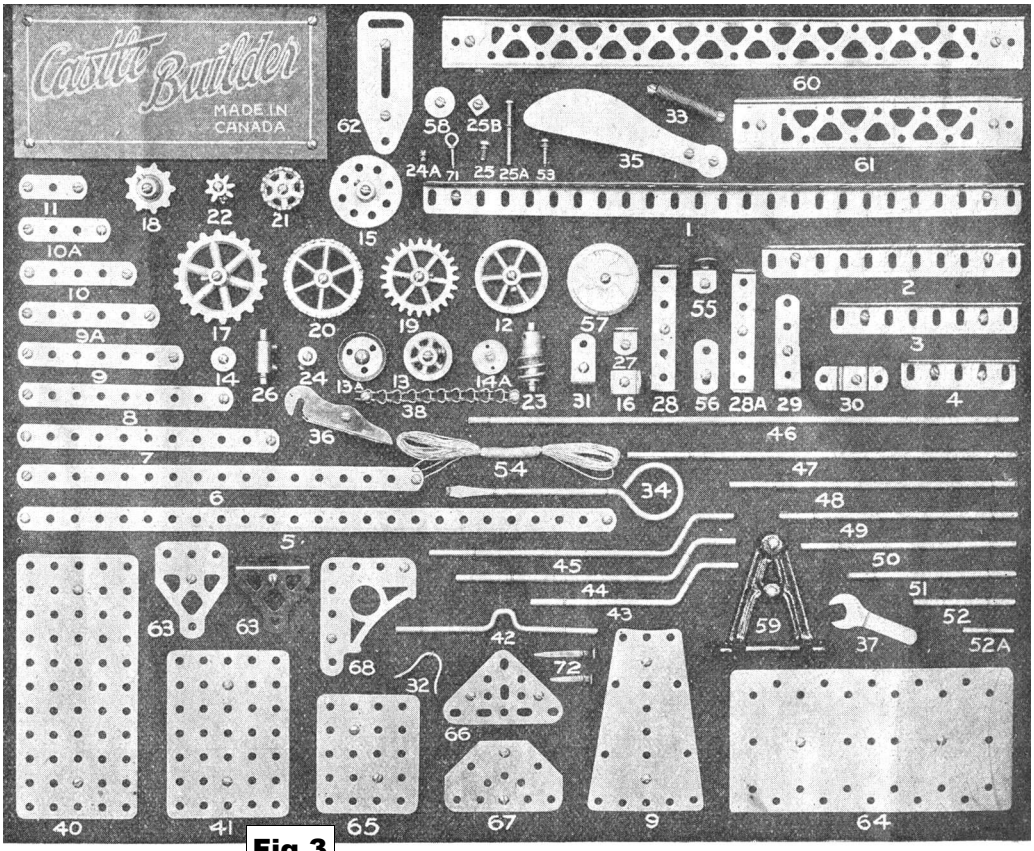


Fig.3

The SETS in Version 1 were progressive from 0 to 7 with linking sets 0A-6A. All the parts in Fig.2 were included and the No.7 was quite large with 12x 25h A/G, 30x 25h Strips, 15 Gears, 250 N&B, 13 Plates with enough A/Gs to add flanges to all, and a Motor. (For reference the Version 1 Contents are given at the end.)

The Version 2 Contents in Figs.8 differ in several ways.

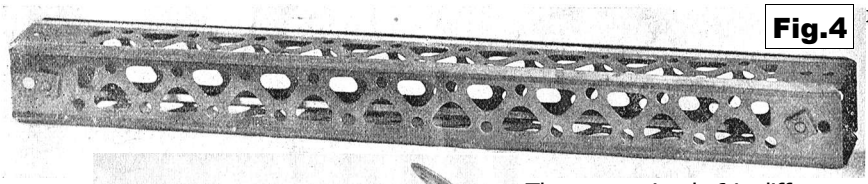


Fig.4

Fig.5

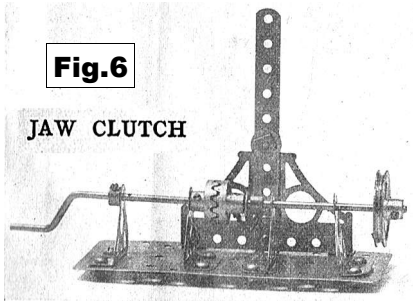


Fig.6

No.	Part	Price
1	12½" Angle Girder	½ doz. 40c
2	5½" " "	" 30c
3	4" " "	" 25c
4	2½" " "	" 20c
5	12½" Perforated Strip	" 35c
6	8½" "	" 30c
7	5½" "	" 20c
8	4½" "	" 11c
9	3½" "	" 10c
9a	3" "	" 8c
10	2½" "	" 7c
10a	2" "	" 7c
11	1½" "	" 5c
12	1½" Grooved Pulley	each 20c
13	1" "	" 15c
13a	1" " free	" 15c
14	½" " brass	" 10c
14a	½" " tin	" 5c
15	Bush Wheel	" 20c
16	Double Bracket	doz. 30c
17	Sprocket Wheel, large	each 25c
18	" " small	" 20c
19	Gear Wheel, large	" 25c
20	Crown Gear Wheel, large	" 25c
21	Crown Gear Wheel, small	" 20c
22	Pinion	" 20c
23	Worm	" 20c
24	Collars	" 8c
24a	Set Screws	doz. 8c
25	Machine Screws, short	" 8c
25a	" " long	" 15c
25b	Nuts	" 4c
26	Shaft Couplings	each 20c
27	Brackets 90°	doz. 15c
28	Bent Strip, 9-hole	each 5c
28a	" " 7- "	" 5c
29	Hanger Strip	" 5c
30	Double Bent Strip	" 5c
31	Bent Strip, 5-hole	" 5c
32	Hook	" 5c
33	Coil Spring	" 8c
34	Screw Driver	" 8c

No.	Part	Price
35	Propellor Blade	pair 20c
36	Pawls	each 10c
37	Wrench	" 5c
38	Chain	foot 6c
39	Angle Plates, No. 1 Sector	each 15c
40	Rectangular Plate, 2½" x 5½"	" 15c
41	Rectangular Plate, 2½" x 3½"	" 10c
42	Crank Axle	" 8c
43	4½" Crank	" 6c
44	5½" "	" 8c
45	6½" "	" 8c
46	12" Axle Rod	" 10c
47	8" " "	" 8c
48	6" " "	" 5c
49	5" " "	" 4c
50	4½" " "	" 4c
51	3½" " "	" 3c
52	2" " "	" 2c
52a	1" " "	" 2c
53	Wood Screws	doz. 20c
54	Cord	each 5c
55	Brackets 135°	doz. 20c
56	" 180°	" 15c
57	Car Wheels	each 20c
58	Washers	doz. 15c
59	Shaft Hangers	each 15c
60	12" Latticed Girder	doz. 85c
61	6" " "	" 50c
62	3" Girder Extension	" 35c
63	Trunnions	each 5c
63a	Flat Trunnions	" 5c
64	Rectangular Plate, 3"x6"	" 20c
65	" " 2"x2½"	" 10c
66	Angle Plates, No. 2 45°	" 10c
67	" " No. 3 45°	" 10c
68	Architraves	" 10c
69	Motor with Switch	" $2.25
70	Book of Instructions	" 25c
71	Screw Eyes	doz. 20c
72	Paper Fasteners	100 40c

Fig.7

They contained 64 different parts against 56 but not all the new parts were included. Sets 0 & A were not progressive: sets AA & AAA together gave a No.1. The sets were generally smaller than before: the No.1 had 55 parts plus 26 N&B against 61+30; the No.6 365+170 against 388+200. There was no No.7 (474+250 before), nor a Motor in the No.4. All the sets from the AA upwards contained the Latticed Girders but at the expense of fewer Strips & A/Gs. Their usefulness in the smaller sets is doubtful.

The Manuals Fig.1 is the Encyclopédie front cover & Kendrick's is identical except that to the right of the boy's neck is INSTRUCTION BOOK No.1. To hand the Version 1 equivalent of the latter and from Kendrick's 8 remaining pages the two are very similar. They both have 16 pages, 10½*6½", plus covers, and their front covers are identical. All the models are carried forward with the same illustrations – they are quite simple and do not contain any parts that would have necessitated a change. None of course include the Latticed Girder. But by having the Illustrated Parts & Parts List on one page, p15 is spare and is used to introduce the CASTLE BUILDER GIRDER. Under the Fig.4 photo (of 4 Girders making an ERECTOR-style box girder) it is said to be the only girder that will fit every other steel Builder set, and that the holes along each side are a feature which allows endless opportunities for construction not possible in other Builders. No mention of the box girder (patented by ACG). Also shown are two mechanisms which use some of the new parts (Figs.5 & 6) with no text other than their titles. The Clutch has 2 Contrates, presumably operated by the vertical Strip. A Contrate can also be seen at the end of the steering column of the centre-pivot Steering but not what it engages with.

Version 1 Contents The quantities of parts are given for Sets 0-7 but without any initial zero values. Part #1 4,8,8, 10,12. #2 2,2,2,4,4,4,6,8. #3 4,4,8,8,8. #4 2,4,4,6,8,8,10. #5 2,6,12,12,18,24,30. #6 2,4,6,8,18,18. #7 2,4,6,12,18,24,30, 36. #8 2,4,6,6,6,12,18. #9 2,4,6,6,12,12,18. #10 10,10,10,20, 20,30,40,50. #11 2,4,6,6,12,12,18. #12 2,4,5,5,5,6. #13 4,4, 4,4,4,4,5,6. #14 1,1,1,3,3,4,4. #15 1,1,1,2,2,4,4. #16 4,8,8. #17 1,1. #18 1,1. #19 1,2,2,2. #20 1,2,2,2. #21 1,2,2,2. #22 1,3,4,5,6. #23 1,1,1,1. #24 4,6,6,8,10,15,20. #25 18,30,45, 72,100,150,200,250. #26 1,2,3,4. #27 8,12,12,24,36,48,60, 72. #28 1,2,4,6,8. #29 2,2,4. #30 1,2,2,2,3,4. #31 1,2,2,2,2, 3,4. #32 1,1,1,2,2,2,2. #33 1,1,1. #34 1,1,1,1,1,1,1,1. #35 2,4. #36 1,2,2,2,3. #37 1,1,1,1,1,1,1. #38 1,1. #39 2,2,4,4,4. #40 1,1,1,2,2,2,3,4. #41 1,2,2,3,4,4,5. #42 1,1,1,1,2,2. #43 1,1,1,2,2,3,4. #44 1,2,2,2,2,2,3. #45 1,2,2,2. #46 2,3,3. #47 1,1,3,3. #48 1,2,2,3,4. #49 2,4,4,5,6. #50 2,2,2,3,4,4,6,6. #51 1,2,3,3,3,4. #52 2,2,3,4,4,6,6. #53 4,4,4,8,8,8. #54 1,1, 2,3,4,4,5. #55 1,1,1,1. #56 Sht.,A,B,B,B,B,B,B.

Fig.8a

No.	Name	0	A	AA	AAA	1	1A	2	2A	3	3A	4	4A	5	5A	6
1	Angle Girder, 12½"								4	4	4	8		8	4	12
2	" " 5½"		2	2		2		2		2	2	4		4	4	8
3	" " 4"	2							4	4		4	2	6		6
4	" " 2½"										6	6	2	8	2	10
5	Perforated Strip, 12½"				2	2		2	2	4		4		4		4
7	" " 5½"		2	2		2	4		4	6	10		10		10	
8	" " 4½"	2														
9	" " 3½"						1	1	1	2	4	6		6	10	16
9a	" " 3"										2	2	2	4	4	8
10	" " 2½"	6	9	9		9		9	3	12		12	8	20	28	48
12	Grooved Pulley, 1½"										1	1		1	1	2
13a	" " 1", free						2	2		2		2		2		2
13	" " 1"		4	4		4		4		4		4		4		4
14a	" " ½", tin	4		1		1		1		1		1		1	4	5
15	Bush Wheel			1		1		1		1		1	1	2		2
16	Double Bracket						1	1	3	4		4		4		4
17	Sprocket Wheel, large														1	1
18	" " small														1	1
19	Gear Wheel, large										1	1		1	1	2
20	Crown Gear Wheel, large												1	1		1
21	Crown Gear Wheel, small												2	2		2
22	Pinion										2	2		2	1	3
23	Worm										1	1		1		1
24	Collars										4	4	4	8		8
24a	Set Screws		4	5		5		5	4	9	11	20	21	41	5	46
25	Machine Screws, short	12	18	24		26		4	30	18	48	20	68	44	112	44	156
25a	" " long							4	4	4	8		8	4	12	2	14
25b	Nuts	12	18	24		26		8	34	22	56	20	76	48	124	46	170
26	Shaft Coupling											1	1	5	6		6
27	Brackets 90°	6	8	8		8		4	12		12	12	24	12	36	18	54
28	Bent Strip, 9-hole													3	3		3
28a	" " 7- "			1		1		2	4	2	6		6	3	9		9

Fig.8b

No.	Name	0	A	AA	AAA	1	1A	2	2A	3	3A	4	4A	5	5A	6
30	Double Bent Strip								1	1		1	1	2		2
31	Bent Strip, 5-hole			1		1		1		1		1	1	2		2
32	Hook			1		1		1		1		1		1		1
33	Coil Spring												1	1		1
34	Screw Driver	1	1	1		1		1		1		1		1		1
35	Propellor Blade														2	2
36	Pawls										2	2		2		2
37	Wrench			1		1		1		1		1		1		1
38	Chain														1	1
39	Angle Plates, No. 1								2	2		2	1	3		3
40	Rectangular Plate, 2½"x5½"		1	1		1		1		1	1	2		2	2	4
41	" " 2½"x3½"	1									3	3	1	4	1	5
43	Crank, 4½"			1		1		1		1	1	2	1	3		3
46	Axle Rod, 11½"														2	2
48	" " 6"								3	3	1	4	2	6		6
50	" " 4½"			2		3		3		3		3		3		3
51	" " 3½"								1	1	1	2	2	4		4
52	" " 2"						2	2		2		2	2	4		4
52a	" " 1"						1	1		1	1	2		2		2
53	Wood Screws								4	4		4	4	8		8
54	Cord			1		1		1	1	2	1	3	1	4	2	6
56	Brackets, 180°			4		4		4		4		4	4	8		8
57	Car Wheels								4	4		4	4	8		8
60	Latticed Girder, 12"			2		2	2	4	4	4		8	4	12		12
61	" " 6"			2		2	2	4	4	8		8	4	12	4	16
62	Girder Extension, 3"				2	2		4		8		8		12		12
63	Trunnions						2	2		2	2	4		4		4
66	Angle Plates, No. 2								2	2		2	2	4	2	6
67	" " No. 3										2	2	2	4	2	6
68	Architraves				2	2		2		2		2		2		2
69	Motor												1	1		1
70	Book of Instructions	1	1	1		1		1		1		1		1		1