

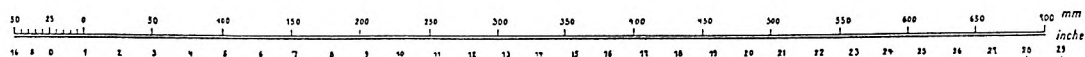
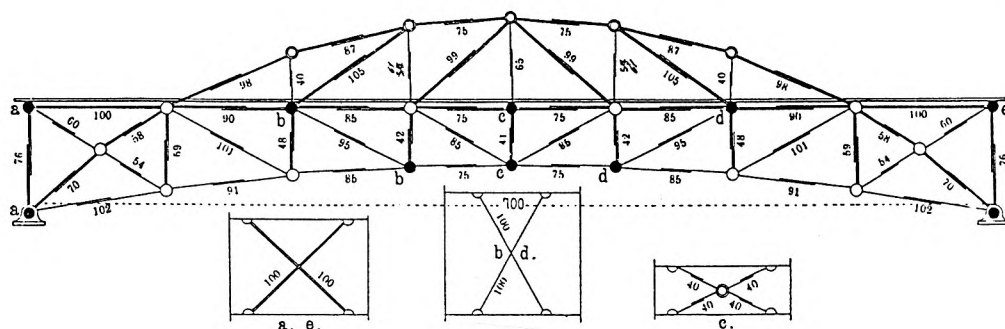
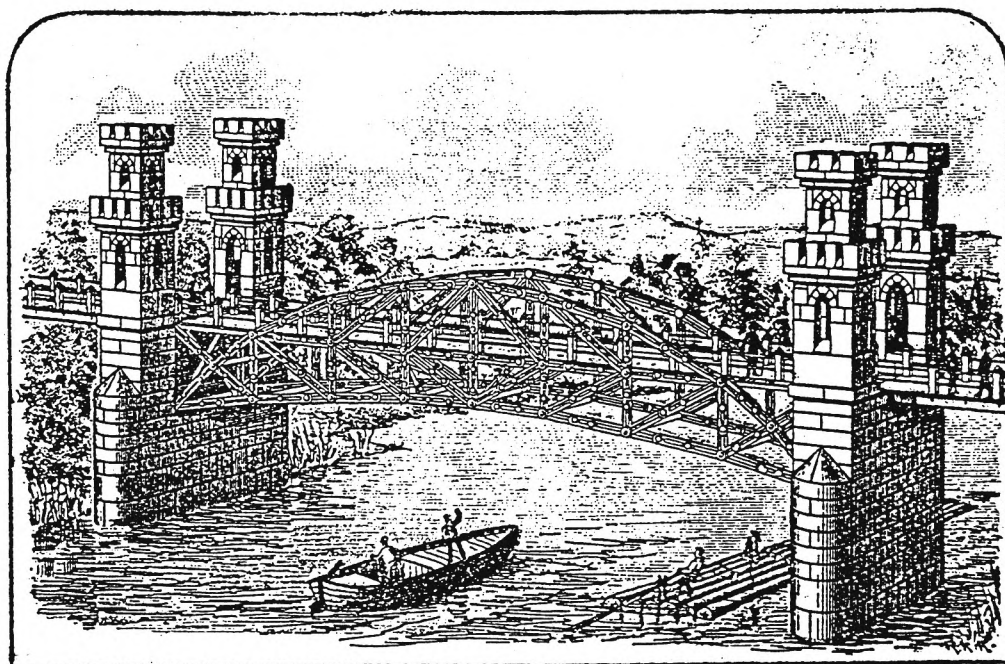
RICHTER'S METAL SETS. What follows is based on an article which appeared in MECCANO-NIEUWS the Dutch Guild magazine; it was originally written by George Hardy of the American Anker Club and Hans Klarenbeek was good enough to translate the Dutch version for me. The illustrations are reproduced by kind permission of the Editor of MECCANO-NIEUWS.

Richter's ANKER stone building blocks are well known but the firm also marketed two constructional sets that used metal components. The first in 1895 was a Bridge Building Set, with stone bricks forming the towers etc, and metal strips of various lengths for the arch. These strips were slotted so that they could be overlapped to make the various lengths needed for the outer members, struts and bracing. The method of fastening the strips together is not clear - in the model illustrated below there are small round circles at the joints, which might or might not be bolt heads. The metal span of the model was well over 2ft and scaled from the sketch the strips might be about 10mm wide. 16 models are shown in the manual, which is in both German and French, but no Set has ever been found.

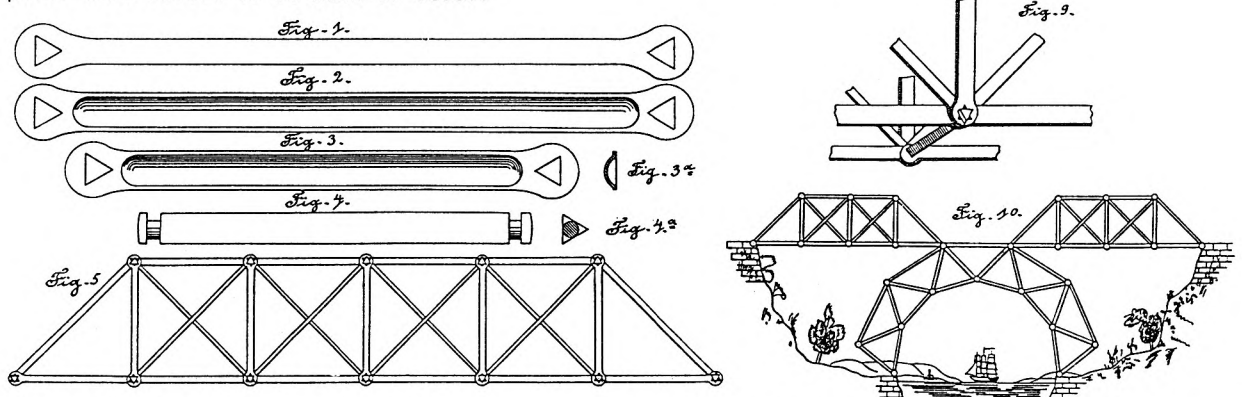
The second set, IMPERATOR, is in MCS; it was launched in 1914 and survived WW1 because it is included in a Richter 1919 List, but was marked 'no longer available' in the firm's 1925 Catalogue. ANCHOR, the English version, was included in Bassett-Lowke's 1926 Catalogue. There were 4 IMPERATOR Sets, Nos 0,1,2,3 and they contained 62, 97, 167, and 295 parts respectively. The PNs of the 31 different parts are given as, 501-6, 511-5, 521-2, 527-8, 531, 533-40, 543, 551, 553-4, 557, 559-60; but the parts are not described and only the 5 below are illustrated, without PNs. The model on the front cover was from the No 2 Set, no indication is given as to what it is. The full title of the set was IMPERATOR METALL-BAUKASTEN and it was also sold under the names ANKER-METALL-BAUKASTEN and INGENIEUR-BAUKASTEN.

AMENDMENTS TO MCS (as necessary, depending on version). SETS: 0,1,2,3. PARTS: 31. PERIOD: 1914 to early 1920s. COMMENTS: add 'The full title of the set was IMPERATOR METALL-BAUKASTEN and it was also sold under the names ANKER-METALL-BAUKASTEN and INGENIEUR-BAUKASTEN.

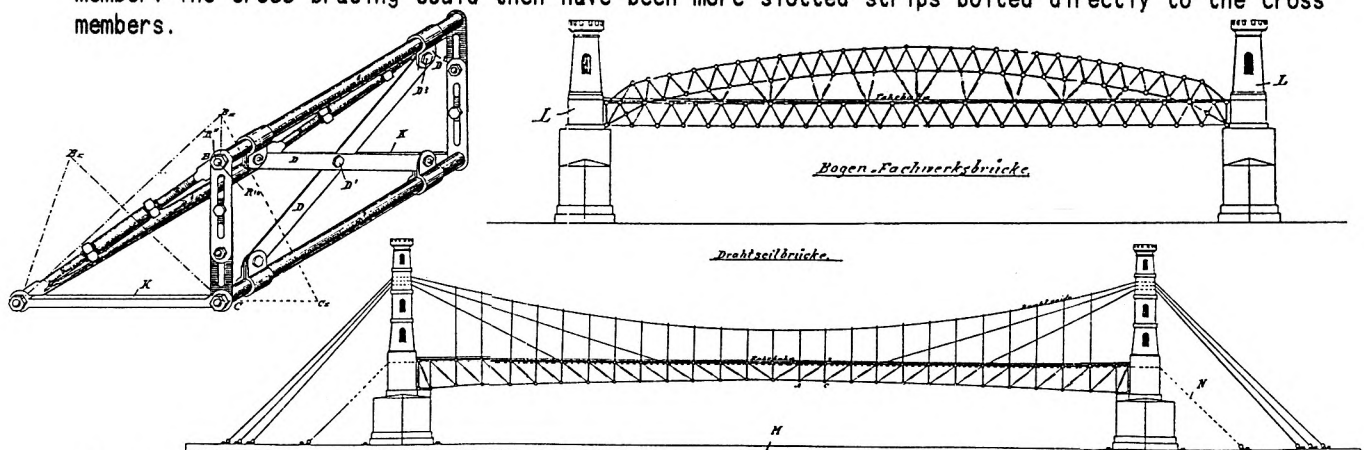
AMENDMENTS TO INDEX IN OSN 6: add the alternative names above to the list on p123.



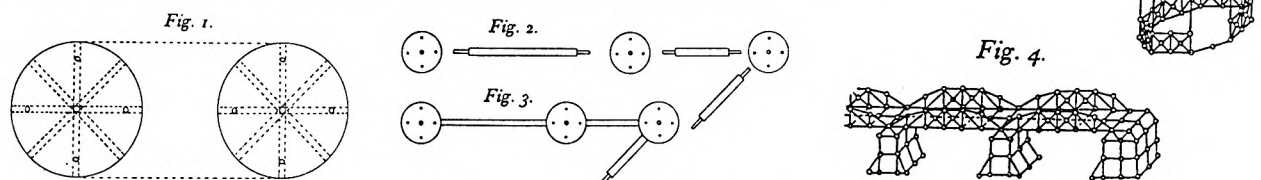
EARLY BRIDGE PATENTS. Since the piece opposite was written Toby Haffter has sent copies of several early German patents for constructional toy bridges, and I think they will be of general interest to many readers. The earliest is from 1890 and is in the name of Henry C. Zenke of St. Paul, U.S.A. Some of the Figures are shown below and are I think self-explanatory. All the parts were stated to be made of steel.



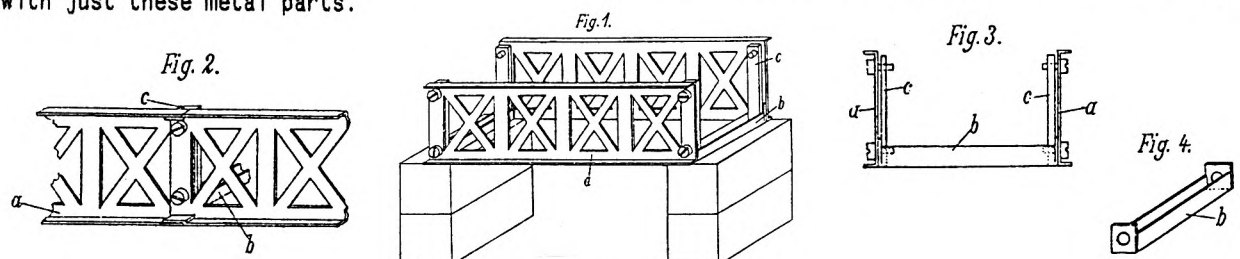
The second dates from 1892 and is in the name of Julius Weiss of Hamburg. Again the diagrams are clear, though I'm not sure of the advantage of using the adjustable length screwed rod element instead of the surely much cheaper alternative of two slotted strips. Each circular section cross member is made from a sleeve of suitable length fitted over a rod with threaded ends. The towers it is said, would be made of wood or a similar material. The 1895 Richter bridge clearly used several ideas from this patent, the slotted strips obviously, and the cross members and the method of attachment of the cross diagonal bracing, both look similar. It's hard to see now why DAS weren't used for the cross members, or better still the slotted strips with one end formed at right angles to attach to the side member. The cross bracing could then have been more slotted strips bolted directly to the cross members.



The next patent is from 1897, taken out by Franz Hendrichs of Solingen and is much simpler. The circular joints were to be made of an elastic material, rubber for example, which it was claimed would be better than the wooden ones then on the market. The rods were to be rigid, and their ends might be tapered.

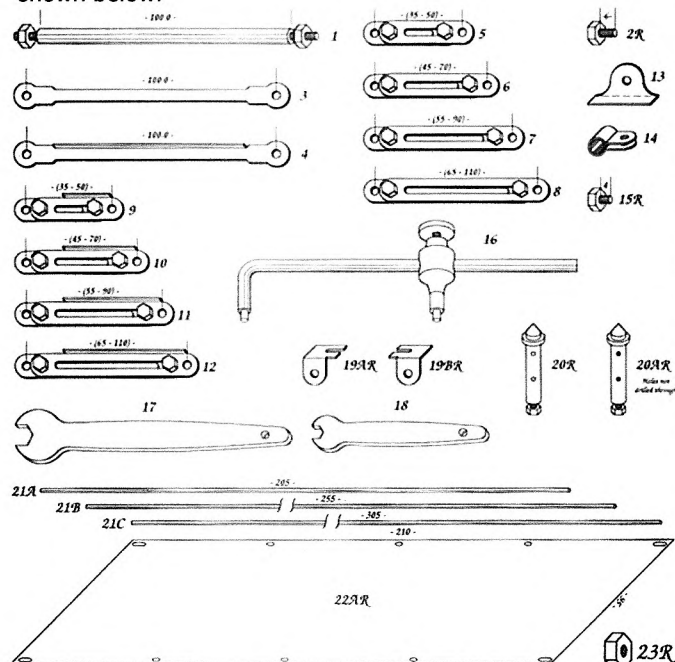


Finally what may have been the very first Braced Girder, in a 1901 patent by Richter & Cie of Rudolstadt. The parts shown were included in the RICHTER ANKER Building Sets, basically stone blocks with just these metal parts.



ANKER Metal Parts Jacques Pitrat kindly sent references to web sites which give information about these parts, and some notes on those in one of his sets. First, the **1895 parts** that were mentioned in 10/260. All the 16 models in the Manual are shown at: www.algebra.uni-linz.ac.at/~noebis/anker.html. Click successively Exhibition_Buildings; Bruecke_1895; Bauvorla. The model in OSN10 is one of the 16 shown, and the others are various configurations of Girder Bridges, all forming the span between stone towers.

No original parts have ever been found and it's possible that the only sets made were for exhibition purposes. However replicas have been produced, based on the parts shown in the Manual. Details of these are on the web site at Bruecke_1895; Neukopie, and the various types of parts are shown below.

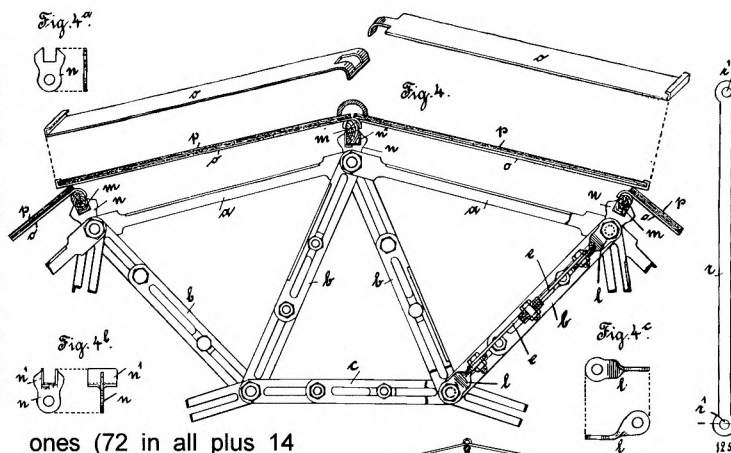


#1 is a Rod used to connect the side trusses made up from the parts. #3, & 5-8 are Tension Beams, with the latter adjustable over the lengths shown (there are 4 pairs of the slotted strips to cover lengths of 35 – 110mm); and #4, & 9-12 are Compression Beams, similar but with a small flange to stiffen them. #16 is a Gauging Tool. 19AR & BR are Brackets to attach the Road Plates 22AR, BR, & CR (the latter, not shown, are 260 & 310mm long respectively). #20R & AR are Pillars for the Railings 21A,B,C. The Bolt for the Beams, #2R, is M2.5; the other threads are M3. The steel plate used for the parts is .7mm thick, and all are nicked steel except the brass N&B and Rods.

The repro parts were sold as a Set called 'Bridge of 1895' in 1995. It contained 386 parts plus some 900 NBW, and included 170 Beams & 6 Road Plates. This Set is no longer available but a new batch may be made if there is sufficient demand. The cost would be €1250 per Set.

Some notes are given on the site as to the origins of the Richter Set. The parts were based on the 1892 Julian Weiss German patent (No.67599) which Richter bought from the inventor. Some of the parts look very similar to those in a slightly later Weiss patent (76747 of 1894), and this also included parts to allow glass panels to sit on the top of a series of connected trusses to form roofs over structures such as a railway terminus. These 'glass' parts were never included in the Richter system but examples have been made in recent years for ANKER enthusiasts. At the head of the next column are figures from the patent showing the 'glass' system. In Fig.4 the glass panels 'p' sit on the plates 'o' which rest on wooden beams 'm', carried in the brackets 'n' (Figs.4a,b). The RH diagonal of Fig.4 shows ties 'e' (in a range of lengths) bolted to Brackets 'l' (Fig.4c), to give cross bracing between the trusses.

The same web site illustrates all the **ANKER parts in 1904** - click on Special, then on Stein Kataloge. The metal



ones (72 in all plus 14

decorative spire parts –

Jacques mentioned that

MECCANO only had 59

metal parts in 1914) are

mostly variations of

those at the bottom of

10/261. They are of

course very much simpler

than the original type,

which were perhaps too expensive or too complicated in

use. The Bridge below shows some of the parts – the

Railings are held by lugs which engage the top Bolts of the

main arch Frames. Other Side Frames are humped with

cross bracing between the verticals, and a pair are about

either 8 or 12" long. (Dimensions in inches are approximate.)

There is also one one-piece humped Side Frame, 6" long,

and one oblong 4*4" Frame with 2 cross-braced panels.

The various sizes of Road Plates all have the criss-cross pattern,

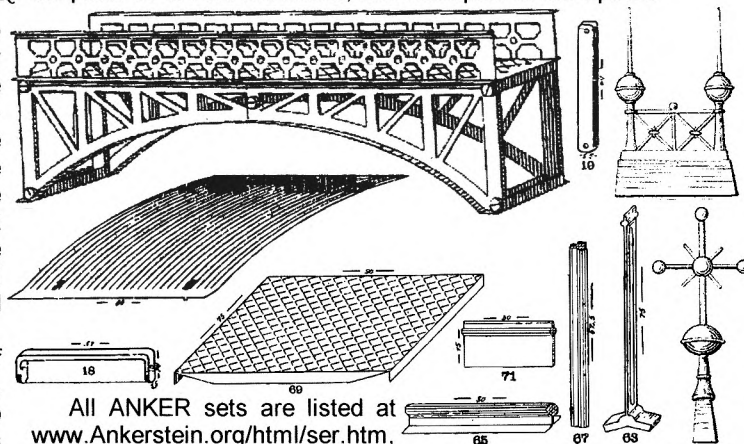
as below. Also below a Strip, #19, & DAS, #18, several

lengths of each are shown, and a Curved Panel, which might

perhaps be used as roofing. Then there are Uprights, as

#63, from 2 to 4" high, Bars, as #67, from 2 to 8" long, and

the parts 65 & 71. Also below, two examples of the Spires.



All ANKER sets are listed at

www.Ankerstein.org/html/ser.htm,

together with some details of the parts' finish. Between 1901

& 1909 all the bridge & roof parts were nickel plated, then

from 1910 onwards they were lacquered.

At some point the design of the parts was further

simplified to allow assembly without N&B. This is the method

mentioned in 19/555 and the illustration below is from

Jacques' 5A Set, made for the American market between

1911 and (probably) 1914. The holes in the flanges of the

Side Frames just slip over the deep DAS, and the Road

Plate sits between the Side Frames. The various parts in the

Set are shown on the

next page. The bridge

parts are smaller than

those in the 19/555

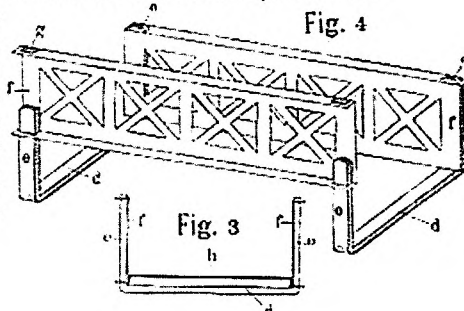
Eisenbrücken Set, for

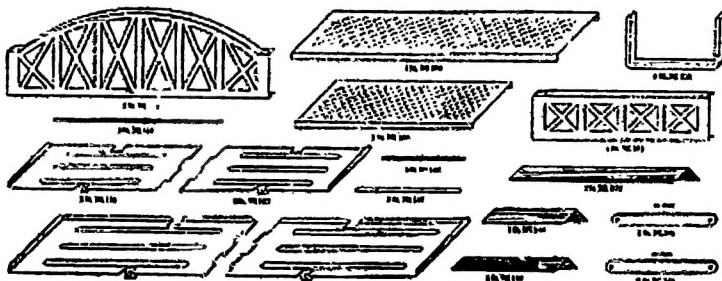
example the length of

the humped Frame is

15.5cm against 20.6, &

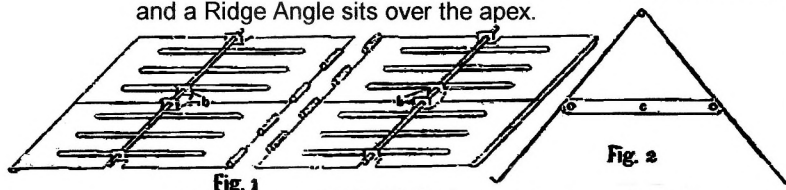
the rectangular Frame





10.5*2.6 instead of 15.1*3.4. It is now thought that the Eisenbrücken Set, with its longer 6-bay Rectangular Frames, was made just after WW1.

As well as the bridge parts there are others to make pitched roofs. Each sloping side is made from Roof Panels joined by a Rod passing through the lugs, as in Fig.1 below, and then the two halves are joined at the apex by another Rod as hinge-pin through the 'hinged' edges (shades of ASSEMBLO, only 20 years before their patent). A Strip is used as a cross brace (Fig.2). In the models thin blue, stone 'tiles' are used to cover the assembled Roof Panels in a diamond pattern, with their weight taken on the bottom lip, and a Ridge Angle sits over the apex.



The Frames, DAS, & Ridge Angles are a dark blue-grey, and the other parts a dark orange-brown, exactly the same colours as in the OSN 19 Set.

The Set The box scales at 9*11½", and the yellow lid is nearly covered by a label which is very similar to the centre panel of the manual cover, shown below. The parts are mounted on a yellow card with the Batteries & transparent tubes of N&B strung down on the Plates. The Strips & Brackets were 'stuck' on the red diagonal tapes. The bulbs in the top corners are held with strips of blue tape.

The Manual cover, 93*217mm, is pale brown with a yellow circle & boy making a model on the centre blue area. There are 8 pages, unnumbered, plus covers, & after some General Instructions, 18 Experiments. They cover every way of wiring up the Bulbs & Batteries, ending with a circuit allowing a light to be switched on/off at two different places. Then sending Morse from one room to another using copper wire from 'any hardware store', & adding another Battery if the voltage drop gets too high. Within the chosen field, a fair & instructive selection, & reasonably well explained. The circuits are made up by bolting Strips to the Plates, with a pivoting Strip as a switch blade for instance. The Batteries & Bulbs are clamped down by Strips & long Bolts, or held with Wire, with the A/Bs bent to contact the ends. Not so good. Some of the sketches are shown below, and an Experiment.

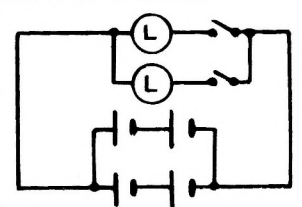
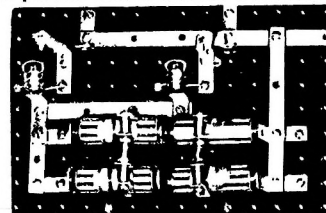


'New' Sytem: LECTROKIT The recently discovered LECTROKIT Set 'A' dates from 1946 and the main parts are some aluminium Strips & Brackets, Insulating Plates, 2 Bulbs, & 4 Dry Cells. Several of these Sets were sold on eBay recently and Kendrick Bisset kindly sent some details.

The Parts The holes, .140" Ø, are at ½" pitch, except they are 1" apart in the 2 longer Strips. The 16 or so different parts & the quantities of them seen in various Sets follow – most can be seen in the set shown below. • **Strips**, 5/16" wide: 8x 3h (½" pitch); 6x 4h & 5x 6h (1" pitch). • 20x 2*1h aluminium A/B. • 4 dark brown or black insulating **Plates**. Kendrick's are 5*7h, but some of the eBay ones look to be 9h long, and are possibly 7*9h, a size that can be seen in some of the Manual models. • **N&B**. They look bright plated with RH Bolts of perhaps ¼" & 7/8" u/h, with possibly other lengths, and hex Nuts about ¼" A/F. The thread might be 4-40. • A small **Screwdriver**, some 2½" long (top right on the Plates), with a yellow handle. • 2 torch **Bulbs** (described as Miniature Screw Base Lamps No. 222 or 223). • 4 AA RAY-O-VAC **Dry Cells**. • 2 Coils of **Wire**, one with a steel & one with a copper look; also in one Set, a third that might be insulated wire. • In a different Set, a roll of what looks like herringbone pattern **Webbing**, about 1" wide (top left on the Plates). • **Washers** are called for in the models. • A **Switch Arm** is shown in the Manual (right) but whether it is just a Strip bent to suit isn't clear.



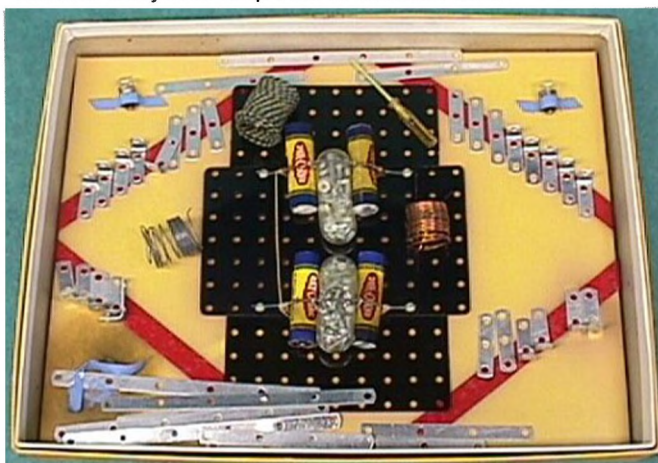
Suggestion: Replace the push buttons of Exp. No. 11. Use two flat pieces with a washer between them at the outer end.



As well as the Manual the Set contained a Model Sheet headed 'Fun with LECTROKIT'. It is about U.S. Letter size and a single photo of each of 6 models is shown, all incorporating the Bulbs as lighting. They comprise an Aeroplane, a Bridge, a Tower, a Flasher (with a dulum) & the Signal House best). Quite fair models Set. It's hard to see the the longer Strips may be models than noted earlier.

LECTROKIT was made Pasadena, California, and 'Published and copyrighted INSTRUCTOKIT SERIES'. this Series, is in the Manual, as (A/Gs) for var-The back cover of Railings, Girder simple Buildings possibilities which with parts included which comprise series'. 2 Set lids illustration but all ed from them is that they aren't LECTROKIT.

by DeVel Industries of on the Manual cover is 1946'. Also 'One of the STRUCTURKIT, one of **SIGNAL** mentioned twice **HOUSE** providing Angles ous purposes. has some models Bridges, Ramps, & which 'show the can be obtained in the different kits the INSTRUCTKIT can be seen in the that can be glean-



Correction The transliterated name BOENNAYA in 25/717 & 718 should read VOENNAYA (my thanks to Don Redmond). This set in question is no doubt similar to the one mentioned in 24/714, though some details are not identical.

ITEMS FROM LETTERS

1. From Thomas Morzinck. • On the **ANKER Metal Parts** (25/730) The set with the 1897 parts offered by Richter in that year cost (a very expensive) 60 Marks. One year later it was deleted. Tobias Mey mentioned in his book *Zum Bauspiel*, that the Keller brothers - former employees in Richter's factory - sold their own Bridge Set from 1897 using preformed metal parts. In their advertising literature the Keller brothers called Richter's 1895 Bridge Set 'a screwed idea'. ('eine verschraubte Idee' in German). [The Keller Set may be even earlier. A UK patent No.5781 in the names of Georg & Paul Keller is dated 1890, and the parts in it (owned by David Hobson) correspond to those believed to be from a Set which was awarded a prize at a London exhibition in 1891, and also to those in a photo of a Bridge made from the 1897 Set above. The main elements are Straight & Curved T-section Girders, joined by Flat Strips which push into the double wall web of the Girders to represent uprights & bracing. A George Wetzel sales list sent by Don Redmond has an illustration of a Keller Bridge Set called **DIAMOND BRIDGE BUILDER**, with 4 children ('one Chinese, one American Indian, one white, & one Ethiopian') looking at a Church made from blocks, and a Bridge with block piers and a span of the metal parts.]

• Tobias mentioned that the early **DUX** parts (c1938) look like the Julius Weiss parts from 1892.

2. From Don Redmond. • More on **NECOBO**. The parts mentioned in 24/714 were from a lot which are probably a large part of an early No.4 Set, plus some later parts, and some which may or may not be NECOBO. The manual with them covers Set 0-4 and its parts list goes up to only PN 99, so is earlier than either of the MCS lists, and fits between the 1st & 2nd manuals described in 4/57. The 11 & 25h Strips have large-radius ends but there are also 11h, and 3 & 5h, with half-round ends. There are 2 sets of 1" Pulleys: 3 have red painted steel discs and very fine (small, round) peening on the brass boss; the other 4 have aluminium discs and steel boss with very deep conical peening. The aluminium Pulleys had a set of fat white soft Rubber Rings of 5mm circular form, 35mm o.d. The red ones had black rubber Tyres with a tread of 5 circumferential raised lines & radial raised bars on one sidewall. There was also one Tyre about 7mm thick, 38mm o.d., with NECOBO in raised lettering on one side. The aluminium Pulleys are suspect since there were also red Loose Pulleys. All the Gears are Mod.1 and the 60t is the early unperforated type. The Flanged & Triangular Plates, and the Face Plate are red. The Flexible Plates are aluminium painted dark blue. Under a red & ivory daub of enamel the Windows (#126) seem to have been painted silver. Strips, A/Gs, & Railings are dark green, darker than the early MECCANO dark shade. The red is quite light, between Meccano's light & medium. The parts have a surprising range of thickness. 25h Strips are 1.38mm; 11h Strips 1.0mm; Railings .84mm; 5*4h Triangular Plates 1.18mm; Windows .81mm; but Trunnions are only .67mm. Two types of Collar were found, both tapped 5/32" BSW. One is 10mm Ø, 7mm thick, double-tapped, and the other 8.5mm Ø, 6.5mm thick, & single-tapped. Two later parts are the Cone Pulley, #176, machined from brass with a concave rear (boss) face, and the Eccentric, #180, which has a brass arm/loop held between two red steel discs by a brass boss and a matching brass stub, both peened with a very deep, conical bottomed recess. [A small lot of later Strips, Girders, & Trunnions (up to PN 195C but none more than 9h long) are also the very dark green - the Girders are about .8mm thick, the Strips 1.05mm, and the Trunnions

.85mm.]

In a later letter Don pointed out that the Hook #90 hasn't been seen, and isn't illustrated in any parts list, but in the manual models is shown as the wire type right. Also it seems likely that the Faceplate #83 with the 2 rings of 8 holes (see 24/714) is an early part because the 6cm Disc, #82 (a Faceplate without a boss), appears thus in several of the manual models. Later, as shown in 4/59, both had the pattern with radial slots.

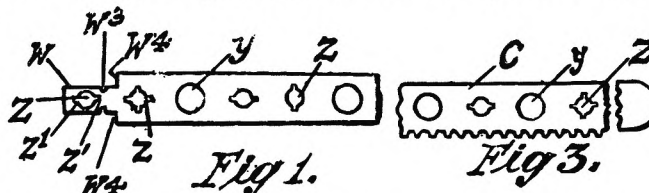
• On **STEEL ENGINEERING** (see 23/666), the wings of the formed Collar, X37, are near circular in shape, as opposed to the ERECTOR rectangle.

• In response to a question to Don about **WISDOM** (to include also CONSTRUCT-O-STEEL & CONSTRUCTION MODELS), he wrote that there are two patterns of slotted holes in Trunnions & 5*11h Flanged Plates. Most have rounded ends but some have large-radius 'BRAL' ends. The length o/a is 6.4mm for both. All the slots in known examples of the other sizes of Flanged Plates have rounded ends. Note that the Flat Trunnion is not made from the same blank as the Trunnion, and has no slotted holes. On colours, the 5*11h Flanged Plate is known in light, medium, & dark* blue, and medium, & dark* red; the Trunnion in medium, & dark* blue, and in two shades of dark red*. The asterisks denote a lacquered finish, with a metallic look.

3. From Tim Edwards. On Chinese **MECHANIX** (see 24/710), there is also a 001 Set with 68 parts, price £3.50. [A 002 Set with 108 parts has also now been seen.]

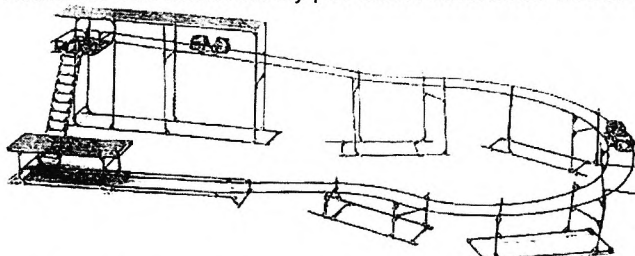
4. Josep Bernal wrote that **BRAL** is no longer being made. [The BRAL web site, www.bralsystem.com has just a home page with 'stiamo ritornando' on it - we will return? Let's hope so.]

5. From Jack Little. • On the **Day patent** (22/637), Jack sent a copy of the original Australian patent (No.6000/22, accepted 27th Nov. 1922), with added changes to the figures arising from an Application for Amendment on 5th August, 1924. The text is similar to the UK version but not identical and the original figures differ too in detail. Fig.1 below shows



a different pattern of holes for example, and the Strip in Fig.3 has a serrated edge & rounded end. The purpose of these features isn't explained. The changes made to the figures in 1924 took the form of overwriting some with a large cross and writing Cancelled & 18/11/24 alongside. 3 of the 4 cancellations are of the parts shown in Figs.8, 9, & the righthand end of Fig.4, in OSN 22. The parts in question are made in the same way as the EZY-BILT Clips (22/636) but whether that had a bearing on the matter isn't known. The fourth change was to delete the slitted end of the Fig.2 Strip, though similar ends with a slit with centre hole remain unaltered.

• Also from Jack, the cutting below from the Nov. 1947 *Sportsgoods, Toy & Canvas "Retailer"*, which confirms that CLIRO (described elsewhere in this Issue) was sold in Australia. It is: unfortunately p31 hasn't been found and so it



A Scenic Railway made from the Schofield Model Building Set. Further details of this set appear on Page 31.