

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.

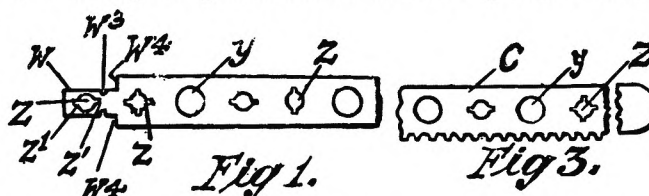
• On **STEEL ENGINEERING** (see 23/666), the wings of the formed Collar, X37, are near circular in shape, as opposed to the ERECTOR rectangle.

• 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.]

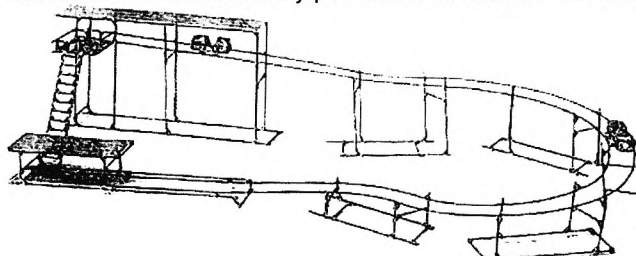
4. Josep Bernal wrote that **BRAL** is no longer being made. [The BRAL web site, www.bralsystem.com has just a home page with 'stiamo ritornando' on it - we will return? Let's hope so.]

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.

GEBRÜDER KELLER

by Jacques Pitrat

In the 1880s, the Keller brothers, Georg and Paul, worked for Richter in the manufacturing plant in Rudolstadt which produced ANKER Stones (Steine in German; the Stones are often called Blocks, or sometimes Bricks). Rudolstadt is now in Thuringia; at the time it was the capital of a small principality, Schwarzburg-Rudolstadt. In 1886 the Kellers quit and started another plant to make Stones, also in Rudolstadt. Their Stones were an imitation of Anker's; however, they were not sued by Anker, probably because its patent was questionable: it was invalidated in the following year.

In 1890 metal parts were added to the KELLER system; this was an innovation not only with regard to ANKER, but also all the construction systems of the time. Their patent is dated 1890, a newspaper advertisement for an Eisenbaukasten from November 1890 is known, and the manual of a Stone set (Fig.1), indicates that they started sets with metal parts in 1890.

From 1887 national exhibitions were organized in London for the products of particular countries. After the US, Italy, and France, a German exhibition was held in 1891. The Keller brothers did not present their system in Group VIII, which included toys, but in group V: Educational and didactic technical and industrial publications. There were two levels of awards: first and second class diplomas of honour. Only seven first class diplomas were awarded in group V, one of them to the Keller brothers for 'Model-Building Boxes'. Richter was also in the same group, and received another first class diploma for 'Stone-building Boxes'. It is likely that Keller showed the metal building parts: if only stone sets, it would have been impossible to honour a reproduction of Richter's blocks, and the award does not mention 'stones', as for Richter, but 'model building'.

In 1897 Keller received a silver medal at the Leipzig fair for an impressive 5 metres model of the Brooklyn Bridge (Fig.2). The access ramps are well designed, using Stones certainly improved the quality of the model. The Stones in the towers were probably glued so that they could support the 1.5 metres centre span.

Although KELLER sets are much rarer than ANKER outfits, the Keller system had some success, and the brothers were successful in exporting their system, I have seen several examples of English language sets.

In 1910 one brother died or retired (it depends on the author); the other brother returned to work with Anker, and Richter bought the company (just before he died). KELLER sets were still sold up to WW1, but it does not seem that Anker made a great effort to promote them. The main interest of this acquisition was probably to remove a competitor.

My information on this system is mainly based on *Baukästen*; notes by David Hobson on the history of the system and his own set; the 1891 British patent; early Keller ads from Mathias Lindenmann (via Werner Sticht); and my seven sets. *Richter's Anchor Stone Building Sets*, by George

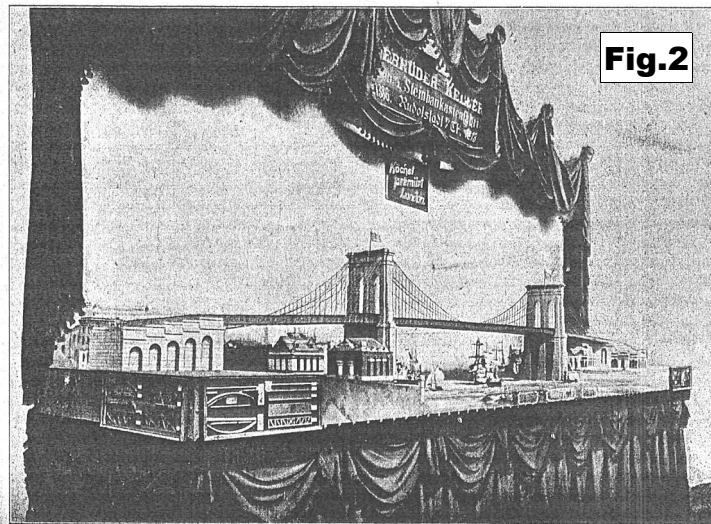
Verlangen Sie in besseren Geschäften Keller's Diamant
Eisenbaukasten
gänzlich zerlegbarer Baukasten für Brücken- und Dächer.
Seit 1890 im Verkehr. Mehrfach hoch prämiert.
Das schönste, einfachste und am leichtesten zu handhabende
Beschäftigungsmittel dieser Art.

Fig.1



Built with Keller's Diamond Bridge Builder. Bâti à Keller Boite à ponts.
Gebaut mit Keller's Diamant Eisenbaukasten.

Ask your dealer for Keller's Diamond Bridge Builder. Demandez Boite à ponts, à la marque Diamant de Keller.



Hardy, describes the links between the brothers and Anker, while the 1913 Keller catalogue, produced by Anker and including the photo of the Brooklyn Bridge, is reproduced at <http://www.ankerstein.ch/archiv/>.

Most of the KELLER sets with metal parts also contained Stones. These were almost identical to ANKER Stones, except in some details of the Arch pieces. ANKER had two sizes (often called calibres) for its stones, 20 & 25mm All the dimensions of a Stone were multiples or fractions of its calibre. The small size was called Kleines Kaliber (KK), and the larger one Grosses Kaliber (GK). The difference in size may seem small; however, as the cube of 2.5 is almost 16, a GK Stone weighs twice as much as the equivalent KK piece. All the Stones in a set had the same calibre. Of Richter's later ANKER sets with metal parts, a few had KK Stones, but most

had the GK size, while Keller sets always had KK Stones.

The Keller brothers produced two versions of their metal parts, the change from the first version to the second one probably happened c1896. The main difference was that flat Strips were replaced by Braced Girders – both versions have T-Girders with a double-thickness web with an open edge, and the Strips/Braced Girders are slid into the web of the T-Girders. They are held quite firmly but could not withstand the heavy loads which could be applied to structures fixed with Nuts and Bolts – for example those built with THE IRON CONSTRUCTOR four years after the Keller metal parts were introduced (see 29/854 & 38/1147).

First Version of the Metal Parts.

The SETS The name of the system on the lid was 'Eisen & Stein Bau', translated as 'Building with Iron & Stone' for English language sets. The label on the sliding lid of the boxes represents (Fig.3 overleaf) the glass roof of the Frankfurt railway station, and three famous bridges: the Brooklyn bridge, the Forth bridge, and the Garabit viaduct. Curiously enough, the first two of these bridges were the subject of the first super-models ever built: the Brooklyn Bridge with THE PRACTICAL IRON CONSTRUCTOR and DEMONSTRATOR (1895), and with KELLER (1897), both 5m long, and the Forth Bridge with MECHANICS MADE EASY (1904), again 5m long. For the Garabit viaduct we had to wait until Michel Bréal presented a MECCANO model (once more 5m long) at Novegro in 2013. The lid picture also includes an eagle on a stone with the inscription 'Gesetzlich geschützt', which means 'protected by the law'. This eagle is important: the manual indicates (as in ANKER manuals!) that one must be careful not to buy other construction toys which have not the same quality. To be sure that one has the good stuff, one must check that the eagle is

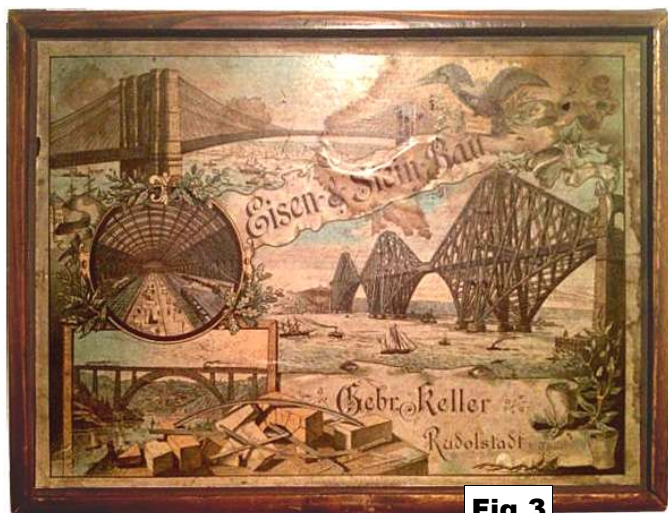


Fig.3

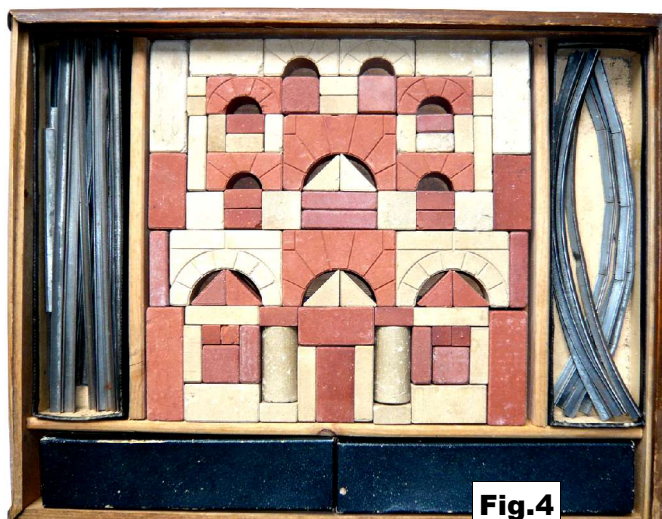


Fig.4

present (and, implicitly, not an anchor).

Three sizes of sets which included stone and metal parts were numbered 1 to 3. The set number appears only inside the lid with the packing plan of the stones. My #2 and #3 sets are in wooden boxes with sliding lids, like ANKER boxes: Set 2 measures 310*225*40mm; Set #3 345*270*40mm (Fig.4) and it contains four cardboard boxes, the two along the front still having their lids, covered in black leather-effect paper without any inscription.

David's set is probably a No.3, but of the packaging only four cardboard boxes remain. Their lids have the same black leather-effect covering but differ in size from those of my set and have 'London 1891 Höchste Auszeichnung First Prize' printed in silver on each (as in Fig.6). The 'First Diploma of Honour' has been upgraded to 'First Prize': so instead of an excellent product, we have the best one! Its Stones have disappeared, but David's set and my #3 set have roughly the same number of metal parts, especially for the large parts which are not easily lost. As nothing is printed on the lids of the cardboard boxes in my #3 set, it is possible that it was made before the London exhibition, that is in 1890 or 1891.

The manual indicates that there were also connecting sets, their number being followed by letter 'A': with Sets 1 and 1A, one had the contents of a No.2.

At least one set without any stone parts was marketed; perhaps it was the first set ever made that contained only metal parts. Unfortunately, as it was a metal only set, there is no packing plan, and no set number is shown on it anywhere. Its box, right, is the same size as Set No.2, and has four green boxes of the pull-out drawer type. Each is printed as already mentioned. The sliding lid is as in Fig.3.



Fig.6

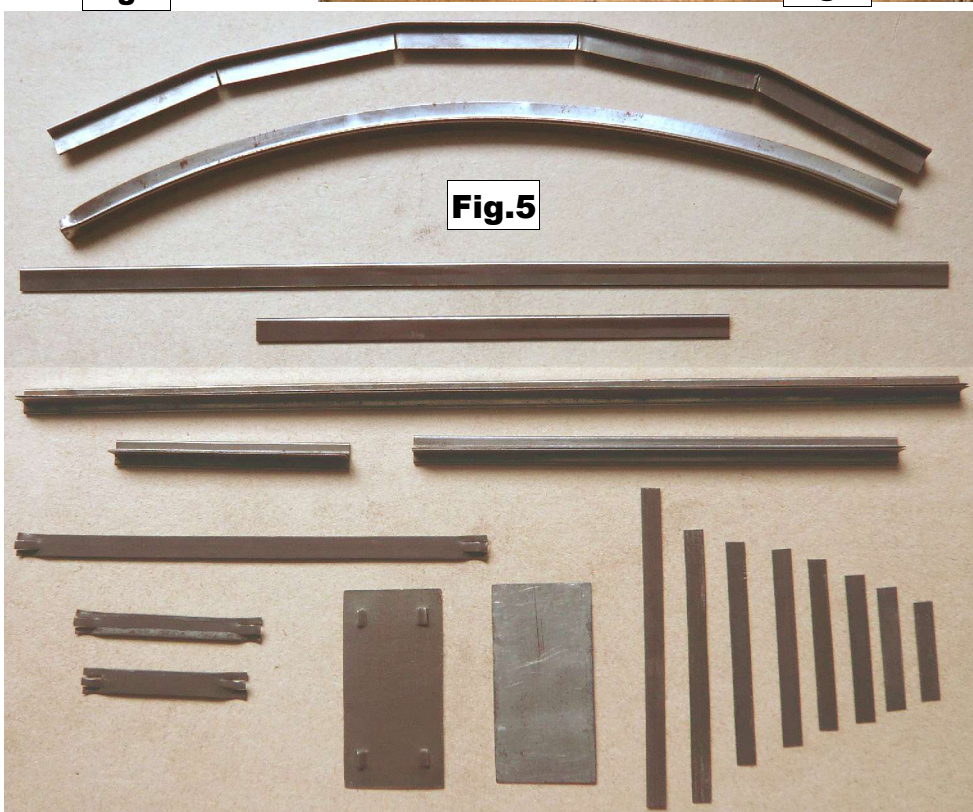


Fig.5

The PARTS are shown above and also in the Patent (Fig.7). They are described below and I will give the number of parts in my all-metal set in brackets. It contained around twice the number of metal parts as Set 3; however, because almost all of the Plates are missing, I indicate their quantity in Set 3. Certainly, several Strips are also missing, it is easy to lose them, they are very light: a Strip weighs less than a MECCANO nut. The parts have become rather black with age, but small areas are still shiny. David thinks that there was possibly a thin nickel plating, but some parts may be tin plated.

Strips 4mm wide in the following lengths: 65mm (10), 55 (33), 45 (32), 40 (20), 35 (51), 30 (38), 25 (119), 20 (41). As well as their main use they can join T-Girders end-to-end by inserting them lengthwise in the double-thickness webs.

T-Girders, folded double thickness, open at the bottom of the web, height 5.5mm, width over flanges 5.5mm: **Straight**: 200mm (11), 100 (19), 50 (11); **Curved, Convex**, with the web of the 'T' on the convex side: 200mm (10); **Curved, Concave**, with the web of the 'T' on the concave side: 200mm (8). It has the same curvature as the preceding part. However, as it has four slits, it would be possible to modify the curvature and even make it straight.

Folded Strips, double thickness, 4mm wide: 200mm

(3), 100 (4).

Claw-Strip, 4mm wide, a slit 5mm long at each end giving 3-prong claws: 100mm (11), 40 (16), 35 (7). They can link the sides of a Bridge by connecting the flanges of T-Girders. This part, which disappeared in the second version, is shown on the box lid.

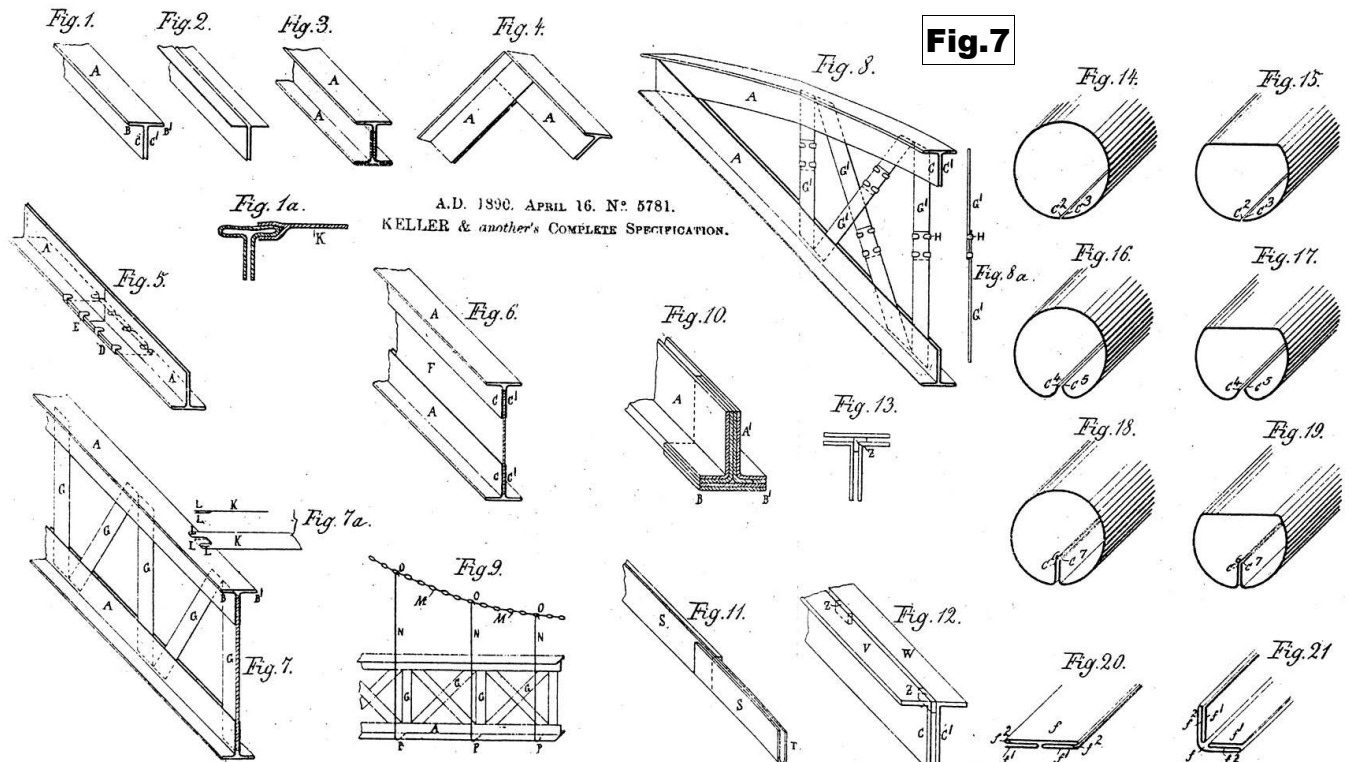
Plates, 40*20mm (11), very thin, they must be used cautiously if one does not want to bend them. They are useful for building a large I-girder by putting them between two T-Girders; they can also be used instead of Strips to join T-Girders end-to-end.

Claw-Plates, also 40*20mm (19), are thicker with a rectangular claw pressed out at each corner onto one side of the plate. These Plates are used for the deck of Bridges, or for roofs, in a similar way to the Claw-Strips.

on one side, and they are from the second version. Therefore, the change was made between 1895 and 1897, but it is possible that, for some time, both versions coexisted.

The main difference between the versions is the elimination of Strips, and their replacement by Braced Girders. Therefore, it is easy to see if a model is made with first or second version parts: when, in an X of a balustrade for example, one of the 'strips' passes under or over another, it is certainly a first version model; if it does not, one has the second version. For instance, the Bridge in Fig.1 has second version parts.

The SETS A new kind of picture (Fig.8) is on the lid of my four second version sets; it displays two Bridges, a roof, two buildings without metal parts, and a few isolated Stones and metal parts, one of them is the new Narrow Claw-Plate which replaced the Claw-Strip. Paradoxically, both Bridges and the



The PATENT. The figures from it are shown above, and their numbers will be indicated by #N. The parts in the known sets are shown in #1,1a,3,4,6,7,7a,8; the other parts include:

- The chain M and the wire draw-rods N for suspension bridges (#9).
- The tubular and other parts in #14-21. The patent indicates that they are employed 'in lieu of the T-girders', but it does not explain why it is interesting to have both sorts of part.
- Part H (#8), allowing a long strip to be made from two shorter Strips.
- Shoe D (#5) to join two Girders end-to-end.

The brothers finally chose a simpler solution using Strips.

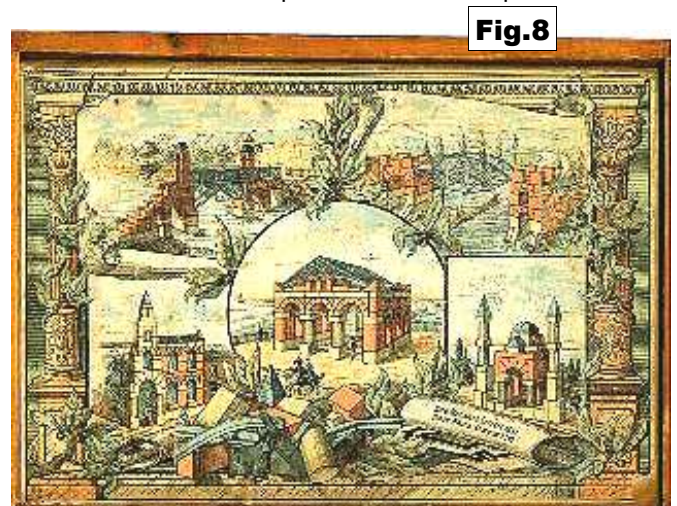
It is a pity that the girder shown in #13 was not produced. With it, it would be possible to connect a Bridge's deck, a vertical part above it, and a vertical part under it. In that way, the model would be in one piece: it could be moved as a whole, as with Bridges built with Nuts and Bolts. Without such a part, some substructures of the Bridge are simply layered, without being connected. However, as David said, the part 'would presumably be quite difficult and expensive to manufacture'.

Second Version of the Metal Parts.

The date of the introduction of these new parts is not known exactly. However, David has found a note in an April 1895 issue of the trade journal *Games, Toys and Amusements* which included an ad for Keller sets No. 1, No.2, and No.3. These sets are of the first version, the names of those of the second version begins with letter 'E'. On the other hand, in the picture of the 1897 Leipzig bridge, the parts used are displayed

roof are made with first version parts. No eagle now appears in the picture, and there is no indication of the maker; the set number is printed in tiny letters in the lower left corner, the letter 'E' followed by its number in Roman numerals (but it also may appear elsewhere, such as the side of the box, in Arabic numerals). When the same picture is used for several boxes of the same size, both numbers are on the lid (E V & E VII for example), and the actual number appears in the packing plan glued on the underside of the lid.

The first sets with this picture have no text printed on them



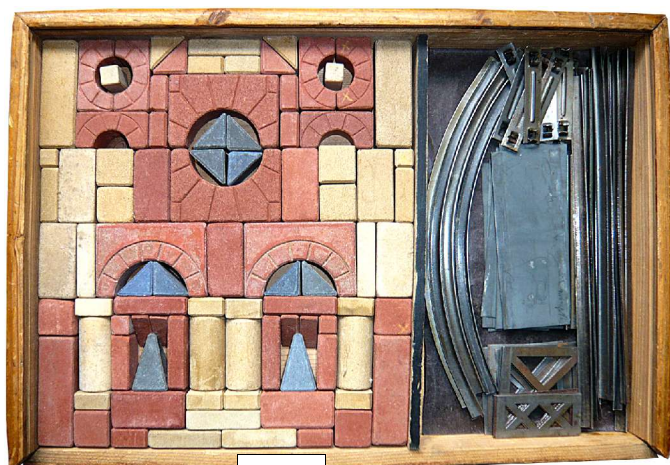
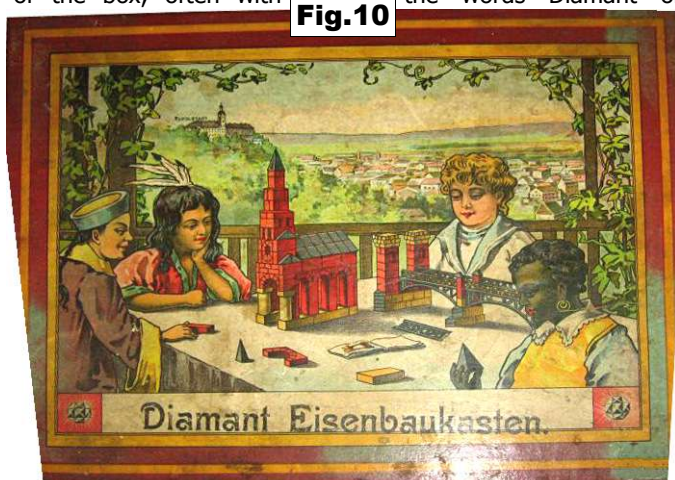


Fig. 9

while on later sets the awards from the London and Leipzig fairs are added. Unfortunately, they made a mistake for London, printing 'first price' instead of 'first prize', downgrading the best system to the cheapest one! More information on the sets may be on a label glued onto the side of the box, often with the words Diamant or

Fig. 10



Diamond, but also with Bridge Builder, or Keller's Rudostädter Eisenbaukasten. My four sets with second version parts have KK Stones.

With the packing plan, the total number of 'pieces for construction (steel, iron and wood)' is written – in English, German, and French for the sets intended for export. Unfortunately, one has only the global number of these parts. Here are the number of non-stone parts and the size of my sets: E I (22) 220*155*35mm, E II (30) (cardboard) 250*170*35mm, E V (Fig. 9) (55) 355*255*35mm, E III ½ (50) 310*220*37mm.

This last set has an unusual number; it contains too many metal parts to transform Set E III into E IV. I believe that it was an E III set improved by the addition of more metal parts. Indeed, one manual contains only models for set E III or E III ½; moreover, the inside of the E III ½ lid mentions 'proper supplementing box E 3A': the same connecting set was used for both the III & III ½ sets.

I have only the one set in a cardboard box. Most such sets have probably not survived with the weight of the stones. The 1913 Anker-Keller catalog gives an indication of the Anker strategy with cardboard and wooden boxes, which was possibly also used by Keller. At that time among ANKER Sets 1 to 17, 1 to 8 could be bought in a cardboard box, and 2 to 17 in a wooden box. When both kinds of boxes existed, the wooden box was naturally more expensive: wooden number N cost approximately

the same price as cardboard number N+1.

Other sets have a different lid (Fig. 10) with a European girl, and three boys (African, Chinese, and European) looking at two models including a Bridge with metal parts. The name along the bottom of this set is 'Diamant Eisenbaukasten' but in other known sets with the same picture it is variously 'Diamond Stones Blocks' 'Diamond Bridge Builder', and 'Diamant-Baukasten'.

The **PARTS** of the second version (Fig. 11) are nickel plated, and are listed below.

T-Girders. Straight: 200, 100, 50mm as before, plus 75 and 125mm. **Angled,** a 50mm length with one slit in the middle bent to form a 120° angle. **Curved:** the **Convex** as before; the **Concave** is not present in my sets, but appears in the centre span of the Fig. 1 model.

Narrow Claw Plate, The Claw Strips are replaced by this 55*10mm Claw Plate. A pair of rectangular claws is pressed out at each end. A T-girder can be inserted into each pair and thus it can be used to link both sides of a Bridge. This part is characteristic of the new version, and it appears in the picture on the new lid.

Braced Girders. The four types have the same thickness: they can be inserted inside the open edge of a T-Girder. They are: • **Rectangular,** 25*50mm. • **Square,** 50*50mm. • **Trapezoidal,** 50mm high with the parallel sides 25 and 50mm. • **Curved,** 50mm long with the vertical sides 35 & 15mm. It can be used between a Concave T-Girder and a Straight one.

Plates. There are several kinds in my four sets: one has none, and each of the others has its own kind of Plates: • Thick black 100*40mm metal Plates. • Thin metal Plates with lithographed planks, in two sizes: 100*40 and 25*40mm. • Wooden Plates, 2.5mm thick, in two sizes: 100*40 and 25*40mm. We have seen that inside the lid '(steel, iron & wood)' is printed after the numbers of these parts in the sets but the only wooden parts in my sets are the Plates

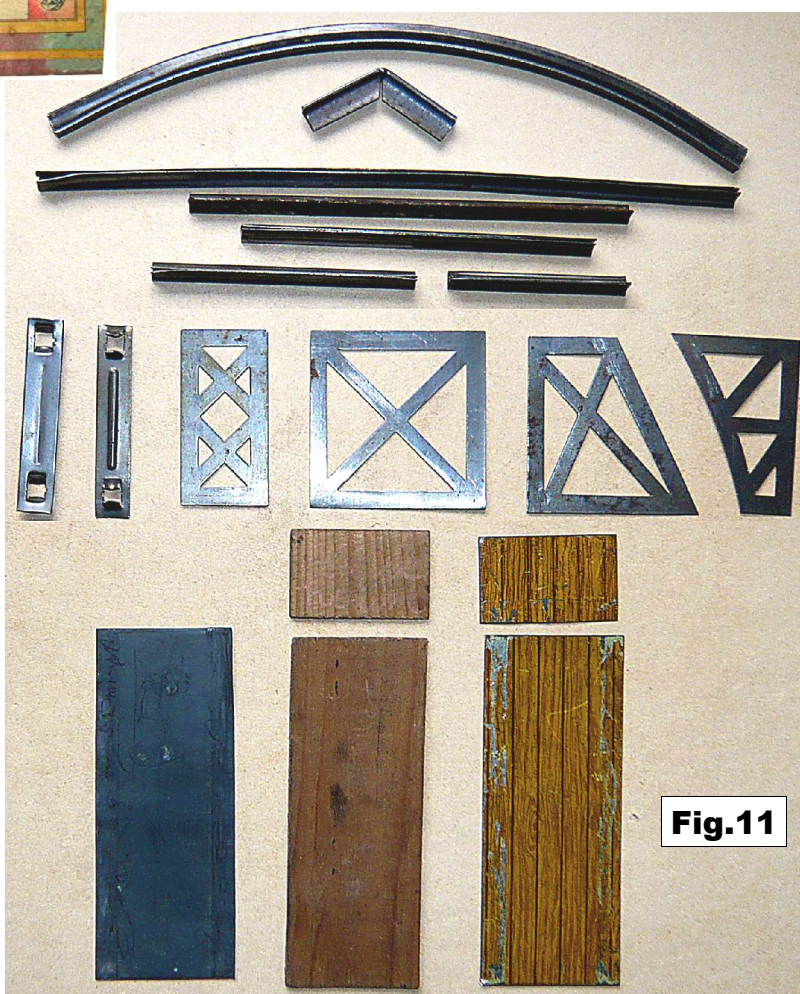


Fig. 11

above in one of them.

It is easier to use the new Braced Girders than the previous Strips, but the system has lost a part of its versatility; for instance, it is no longer possible to build models with metal roofs.

Other parts are shown beside the Leipzig Bridge, a Rectangular Braced Girder for instance, and a Deck Plate, whose lengths are probably 200mm. Such large parts were certainly very useful for improving the sturdiness of the Bridge. I believe that the realization of the five metre Brooklyn Bridge would be almost impossible with only the parts that are in my sets. I do not know whether the long parts were made specially for this Bridge, or if they were also included in larger sets.

The Manuals

The 'books of design' for Keller sets are very rare, most of them have disappeared with the years. The pages from them in Figs.13, 14, & 16-18 are about 2/3 of their original size.

Fig.12



One manual, above, entitled Heft 1, remains with Set 3. It looks very much like an ANKER manual: the models are shown with figures in a landscape, all in colour, printed on one side of the (20*14cm) pages. Most of the models are very simple; probably, there were other manuals for this set. The inside covers have text in Gothic letters indicating how to use the parts, illustrated by 17 figures on the first two pages. It also contains general information on the system, and recommends avoiding other construction systems, which have not the same quality: as we have seen, the presence of the eagle ensured that one had a Keller set. The last 10 pages display ten models: six Bridges (one is shown in Fig.13), two Buildings with metal roofs (Fig.16 overleaf), one Tomb with railings, and one Crane in a railway station (Fig.17). This Crane is not operational, there are neither Pulleys, nor Cranks in the system.

Set 3 also contained five 230*165mm sheets without text, but with illustrations, printed on one side, showing how to insert the pieces; the same pictures were reduced to 200* 140mm in the stoneless set. The goal of the first pages of the manual (and of the patent) was to present some substructures that could be built with

the system, such as I-girder or braced girders. In addition, these sheets indicate how one could actually build such substructures: for instance, one can use a T-Girder as a tool for pushing a Strip toward its correct place.

David used his parts to build the Bridge in Fig.15. The decking (Clawed Plates pushed into one another) and balustrades simply sit on top of the main structure, the two sides of which are joined by Clawed Strips. He found that 'the braced girders were surprisingly strong', but it was difficult to insert the strips into the web, and to adjust them: 'When it is desired to insert the Strips at intermediate points along the

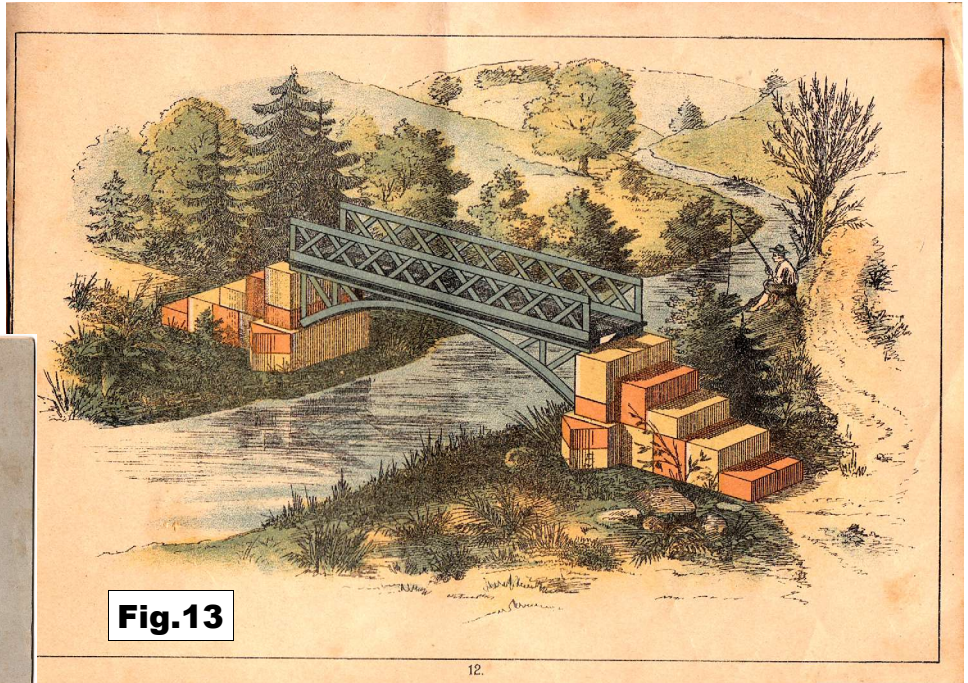


Fig.13

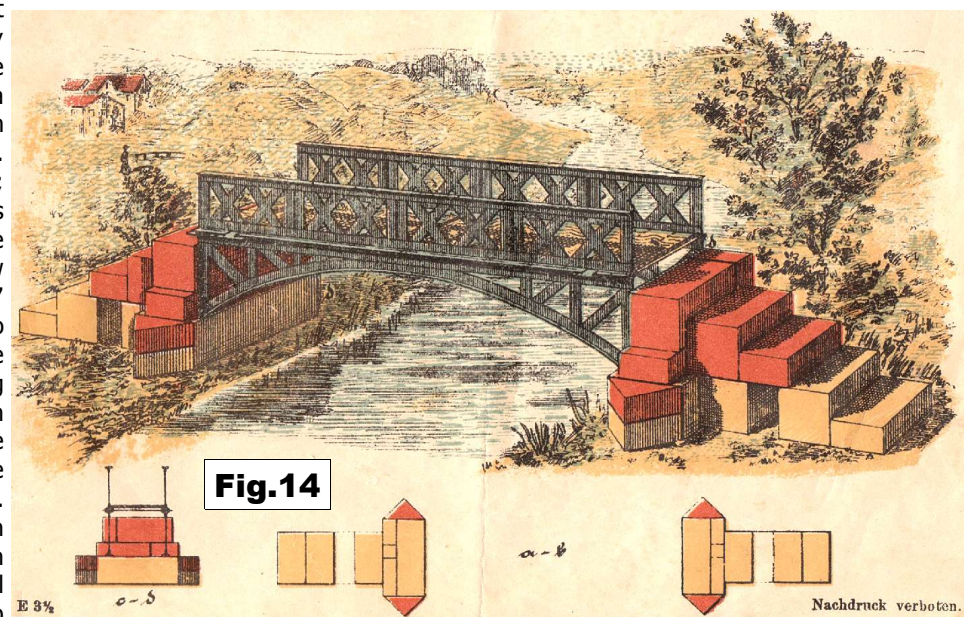


Fig.14



Fig.15

length of the Girder, this is almost impossible unless a sharp pointed blade is used to carefully open the double-thickness web slightly. This is a rather fiddly operation, and I think many children would be deterred. The use of a sharp blade to assist the insertion of the Strips along the length of the Girders could also present some hazard for both children and adults alike!" The Clawed Strips were found to be less satisfactory: their claws were relatively stiff, had rather rough edges, and gave relatively weak joints.

Anyway, the brothers introduced, probably c1996, new parts, so that it was no longer necessary to build braced girders with Strips.

The Second Version For this I have only one manual of eight pages, again 20*14cm, plus the missing covers. Three pages present several simple models without metal parts, except one with a metal ramp. More interesting are four pages with a Bridge on each. One is shown in Fig.14 (the page's edging frame isn't shown) under the Version 1 model. Fig.18 has the new versions of the Crane, and of the Tomb.

The pictures are less artistic than those of the preceding version: there are no longer figures in the landscapes. For each page, the name of the set is printed at the left bottom. Six pages are marked E 3, and two of the bridges E 3½: it is likely that my manual is for Set 3. The inside of Set E V lid states that it contains four manuals Nos.2, 3, 4, and 5; therefore, each manual probably displays the models of the set with the same number.

The models shown here, for both versions, do not do justice to the system, they are taken from manuals for small sets. The model in Fig.1, and the Bridges on the second version lids give a better idea of the possibilities.

END WORD It is not unexpected to find defects in a system that was probably the first to include metal parts. However, the 1897 Leipzig Bridge was a brilliant feat, and it certainly deserved its silver medal. We are accustomed to models made with Nuts & Bolts, which can be carried in one piece, while a Keller model is often built up from sub-structures, one just sitting on the next; nevertheless, this was (and is) normal for stone block systems.

Finally, I completely agree with David's conclusion: 'The absence of perforations in the Strips and Girders does mean that the models do have an undoubted charm and elegance.'

