an 8-hole Wheel Disc, and the 2 Spanners with square tails shown below (enlarged), along with the top of the box lid (opposite). (JB)

• The parts in the **SACHSENMEISTER** theme sets (15/418) have only very limited compatibility with the ordinary parts. (JB)

• The parts in a photo of a **SCHWERKA** Set include the Windmill Sails illustrated in OSN 15, though they don't look black. (JB)

• On **TECHNOFIX** the parts are steel, brass plated, the holes are 3.5mm Ø, and the arms shown in Fig.5 can pivot independently. (JB)

• On **WEMA**, Nebenzweig is not a town, it means 'sideline' and thus constructional toys were only a sideline activity for the firm Eberspächer from 1946 to 1948. (They made and still make, heaters for cars.) (SG)

• The early 30s catalogue that listed ALPHA also includes **ZICK-ZACK** with as an illustration the box below. The WK logo (by Nr.) shows it to be from the Wilhelm Krauss period, and the main thing is the unusual hole pattern in the Strips. 3 sets are listed with 40, 80 and 147 parts. The largest one cost 18 Marks a dozen, against 66 a dozen for the ALPHA set with 150 parts, so it would have been aimed at the cheap end of the market. (SG)

The 'NEW' GERMAN NAMES

• **ANDERS**, blue and orange parts without many holes in them, and so not very adaptable. (JB)

• **BAUE SELBST**, from the 1930s with special parts for Cranes. (SG)

• **BOSCH**, MECCANO-type parts, painted black. A photo shows a wooden box with a sliding lid. The label on it is similar to the manual cover reproduced opposite. (JB)

• **COMBINATOR**, 1930, parts to make buildings. (JB)

• **CONRAD**, wooden parts but metal Brackets, Axles, and Wheels. (JB)

• **DUX Railway Sets**. (SG)

• **FRI-DIE**, a simple system with red and blue painted steel parts, and holes spaced at markedly more than ½". [It is probable that this is the FRI-BIE of 11/291; other mistakes in that list: KOHLER should be KOBLER, and WESFALIA, WESTFALIA.] (JB)

• **GECO**, preceded CONRAD and is identical to it. (JB)

• **GESCHA**, a simple system from the late 1940s, with an unusual hole alignment. (SG)

• **HEIKO**, MECCANO-type parts but only a limited number of simple ones. (JB)

• **INGENIO**, pierced or perforated sheet steel parts painted white, red or black, which slot one into the other to make Dolls' Furniture, parts of Buildings, and also Trains. (JB)

• **KOSMOS MASCHINEN**, from the 1930s, with semi-specialised parts to make machines. [Perhaps from makers of TECHNOFIX?] (JB)

• **MAGNETO**, heavy steel parts, with Wheels & Axles. (JB)

• **METALLIX**, from the 1950s, with MECCANO-style steel and natural aluminium parts. (JB)

• **RIAG Modelbau**, another simple system from the late 40s, with a hole pattern like that of ZICK-ZACK above. (SG)

• **ROCO**, possibly from the 1950s, & based on Rods. (JB)

• **UNSERE TAKTSTRASSE**, an East German theme set to make 2 different Tractors with mainly special parts. (SG)

• **WERNER'S Metallbaukasten**, an early postwar copy of TRIX. (SG)

An EGB-ELEKTRO Outfit Well actually most of the parts from one that Richard Symonds came across last year in Canada (for $5). He kindly sent a photo of the parts and as examples, a 3h Strip and a N&B. The Set is thought to be from the 1950s and is shown in MCS as ELEKTRO-BAUKASTEN. EGB was the name of the East German maker from Leipzig, and as well as this EM (Electro-Magnetism) Set, 3 others are noted in MCS - the M (Magnetism), RE (Static Electricity), and CE (Electro-Chemistry) - but no details are given.

The main parts of the EM Set are 2 8*14h Flanged Plates, various Strips and special Brackets, a ready-wound Coil and motor Armature, a Horseshoe and 2 Cylindrical Magnets, and a Bell. All the parts are shown in MCS but the following details can now be added.

• **DATA** (in mm) STRIP (3-hole): •hole pitch/dia, 10.0/4.2; •width, 10.0; thickness, .86; •ends fully radiused. [No bosses] THREAD: M3 [No Axles or Gears] NUT: hex 5.6 A/F; BOLT: tapered cheesehead 5.0 Ø; both nickeled steel.

• The **Flanged Plate** is moulded from dark brown plastic and has no holes in the flanges. The holes in the top look much smaller than those in the Strips.

• The 3 & 9h **Strips** are aluminium and have little material outside the end holes, so the 3h one is less than 28mm o/a. The 6h Strips look to be dark brown plastic.

• The **Trunnion** appears to be aluminium, and the long centre slot looks much longer than in the MCS illustration.

• Most of the other **Brackets** look as if they are nickel but some may be aluminium.

• The base and switch handle of the **Switch** #8 look to be red fibre, and the fittings, nickel.

• The **Coil** is about 20mm wide and its top and bottom are brown plastic. The **Armature** is about 10cm long o/a.

• The top contact part of #12 (**Contact Strip**?), and the **Brushes** #18 are copper.

• The **N&B** are in a flat square box that may be made of brown plastic. It's about 4*4cm with a hinged lid, and may be a substitute for the #21 shown in MCS. In Richard's parts the **Container** #22 (with Iron Filings in it I think) is a clear phial with stopper.

• The flat **Plates** #29 & 30 are red - plastic no doubt.

• The **Pointers** #31 & 32 are about 6cm long. #31 looks at first glance like light yellowy-brown wood, but is probably plastic; #32 is aluminium.

• Part 33 (**Nägel**, but I can't think of a suitable English word), looks aluminium, and is some 5cm long with a small hole in the 10mm long by 5mm wide spade end.

• The **Bell** is nickel and about 8cm diameter.

• What may be #35 (**Disc**?) is black and about 2cm Ø. **Axle** #36 is a brass looking Threaded Rod, 5cm long.

• There are 4 lots of **Wire** on the card former of #41, and the wording on it is Kupferdraht 0,10mm Ø; Kupferdraht 0,30mm Ø; Eisendraht 0,30mm Ø; Heizdraht 0,12mm Ø.

• The **Bolts** are 6mm u/h, and 2 longer ones can be seen, one 15 and the other 18mm long. Their (neat) heads are 2.0mm deep. The (machined) **Nuts** are 2.3mm thick.

• There are 2 identical nickel **Spanners** which look like the one in MCS and are about 8cm long. The **Screwdriver** is perhaps 16cm o/a and has a long, round wooden handle.

Richard wrote that parts 13,14,15,19,20,27 & 40 are missing from the Set, and I can't see 23,26,38,39 & 42-46 either.

ROCO This post-WW2 German system was noted in 17/477 but with no details. Now a set, made in the British Zone, and thought to be from 1949, has come to hand. It is probably unused and is complete except for its Hook.

ROCO was made by Roco-Gesellschaft Curt Krause & Co. of Hamburg 21. Nothing more is known of the company but Baukästen says that the ROCO sets were first shown at the Spring Fair in 1949.

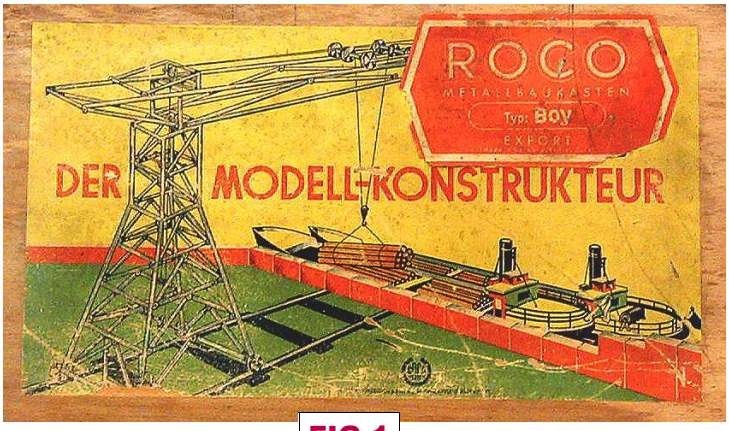


FIG.1

The parts are made of a fairly soft aluminium alloy and structures are made from rolled Tubes of about 6.4mm Ø, joined by Eye Connectors.

The PARTS Fig.3 shows the manual illustrations & names, Fig.5 actual parts from the Set (all types but only examples of the Tubes & Sleeves, and only the end of each Railing) plus, inset, part of the Hook from an Ebay set, at about the same scale. Below, a list of the parts, with my English names & some comments. The sheet metal parts are .8mm thick. The holes are 6.5mm Ø and are a sliding fit over the Tubes.

#S Tubes, 1,1½,3,4½,6,9,12cm long. The gap varies from 3.1 to 3.8mm in the different parts, with no particular pattern.

#M Sleeves, .8 (nominally 1), 3, 5cm long, 8mm o.d, with gaps from 2.6 to 2.8mm. They are a push fit on the Tubes.

#E (straight) Eye Connector.

#D Right Angle Eye Connector.

#V Coupling. A zinc die-casting with slightly tapered ends.

#K Plug. Turned with a slight taper on the shank.

#Mi Key. To lock a circular part to a Tube.

#Wv Angle Bracket. Not seen. In Fig.7 (bottom centre) the arms look longer than in Fig.3. It probably slides into a Tube.

#ZS Locking Ring. Not seen. The German description is: Zugsicherungs-Ring, "ZS", zur Sicherung des "V"-Stückes oder der Öse "E" bei starker Zugbeanspruchung. Perhaps a sleeve to push over a Tube to lock it to a #V or #E inside it.

#L Link, with holes at 27½mm pitch.

#B (Straight) **Railing**, 43*205mm, with 15 bays, and **Decorative Railing**, 31¼*194mm, with 14 bays. Obviously the scrap from pressing out Links & Eye Connectors.

#R Pulley with Rubber Ring. The Pulley is 30½mm Ø, 8½mm wide, with a 6.7mm bore and a 2.9mm wide keyway in each disc. The Ring's rubber has hardened and can't be removed from the Pulley. In situ it is 55mm Ø & 14mm wide.

#ZK Bevel Gear & 2,3,4,5,6cm Ø **#Z Gears**. Not seen but see Figs.3 & 7.

#P Flanged Plate. Seen only in Fig.7.

#LS-5 Wheel Disc. 50mm Ø. **#LS-9 Flanged Disc Pulley**. See Fig.7, with the centre different to Fig.3.

#H Hook. Not seen. Those in Figs.7 & 15 looks similar.

#Kb Handle Crank. Either end pushes into a Tube.

Drift. **Pliers**. Not seen.

Cord. Over 1½m in length.

ASSEMBLING the PARTS Fig.2, a selection of diagrams from the Manual, shows the basics, and some of the finer points are mentioned in the following notes.

In 'A' the joint can be reinforced by overlaying it with a Sleeve. Using a long Sleeve without the Coupling is also possible and allows some adjustment of the length.

In 'A' pushing the Plug into the end of the Tube locks the eye provided it is near the end of the Tube, and sliding a Sleeve onto the Tube before the eye gives an even firmer grip.

The Connector #E doesn't have to be pushed fully home into its Tube and thus a small adjustment of length is possible.

In 'B' one eye can also be between the arms of the Right Angle Connector.

In 'C' several eyes are joined by pushing a short Tube #S1 through them and then a Plug into it. But even the shortest Tube looks rather clumsy and a 5mm Tube would look neater. A small amount of adjustment can be obtained by pushing the Plug through the eyes into a Tube on the remote side, as in 'B' but the eyes are not held so firmly.

The eye of the Eye Connector can be bent to an angle as at 'gebogen' in 'F'.

Tubes are used as axles and eyes as bearings for them. The Pulley can be loose on a Tube, located by a sleeve on either side. The Key #Mi slides into a Tube and the Pulley is held fast by it. A Sleeve either side makes its location even more secure.

'D' shows a crankshaft with connecting rod.

The SETS The contents of the 5 sets are shown in Fig.4. They are progressive with two exceptions. Compared to the Boy, The Boy (Export) has, inexplicably, no Gears, no Pliers, and fewer long Sleeves. The other deviation, again inexplicably, is that the two largest sets have no Railings. It might be thought that this was an error but the Manual contains photos of both outfits (Fig.7 shows the largest, the Super) and no Railings can be seen in either.

The present Boy (Export) set is packed in the strong but slightly roughly made wooden box, 31*51½*3cm (Fig.6). It has the sliding lid shown in Fig.1, and the red ROCO hexagon top right is a label stuck on. The words along the bottom speak of patents at home and abroad, as on the Manual cover. The packaging of the Tubes is neat with all but 4x 3cm pushed onto pairs of tabs which have been pushed through a 2¾cm wide brassed steel strip.

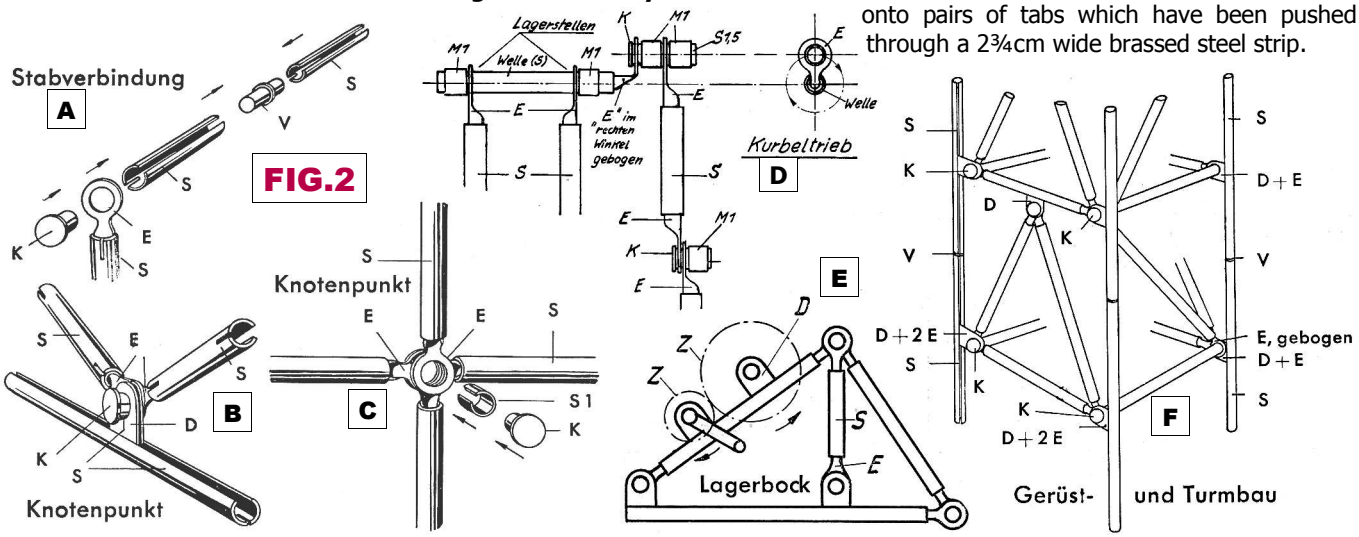


FIG.2

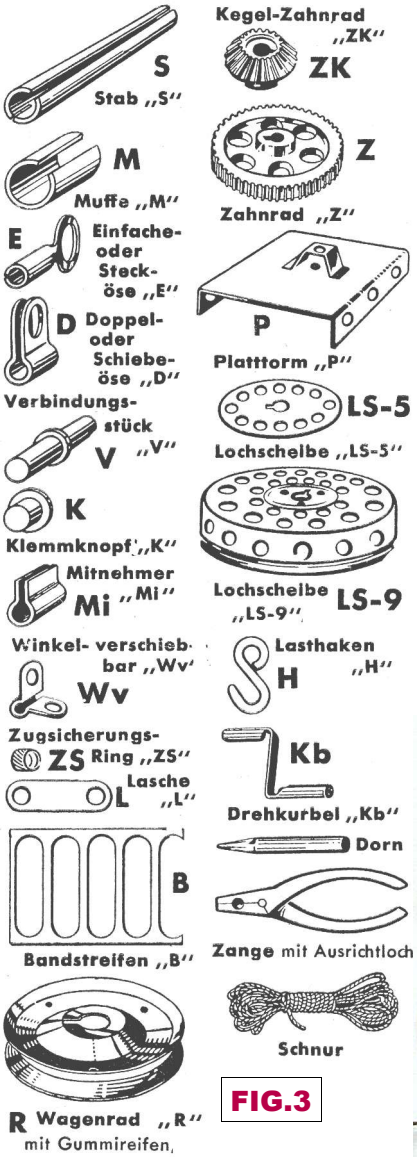


FIG.3

Bauteil	Piccolo	Boy	Boy (Export)	Standard	Super
S 12	6	10	10	12	30
S 9	4	6	6	10	18
S 6	10	10	10	12	16
S 4,5	8	12	12	14	25
S 3	8	18	18	20	25
S 1,5	—	8	8	8	8
S 1	8	10	10	10	12
M 5	2	3	2	4	5
M 3	4	4	3	6	8
M 1	10	25	25	30	40
E	22	45	45	52	80
D	18	29	32	45	60
V	6	15	15	20	30
K	18	35	35	40	60
Mi	1	4	2	4	4
H	1	1	1	2	2
B	2	3	3	—	—
L	4	10	10	20	40

Bauteil	Piccolo	Boy	Boy (Export)	Standard	Super
Wv	—	—	—	6	12
ZS	—	—	—	10	24
P	—	—	—	1	1
LS-5	—	2	2	2	4
LS-9	—	—	—	2	2
R	2	4	4	6	8
ZK	—	—	—	2	4
Z - 2	—	1	—	2	2
Z - 3	—	—	—	—	1
Z - 4	—	1	—	1	1
Z - 5	—	—	—	—	1
Z - 6	—	—	—	1	1
Kb	1	1	1	2	2
Dorn	1	1	1	1	1
Zange	1	1	—	1	1
Gummireifen	2	4	4	4	4
Schnur	1	1	1	1	1
Gesam	140	264	260	351	533

FIG.4

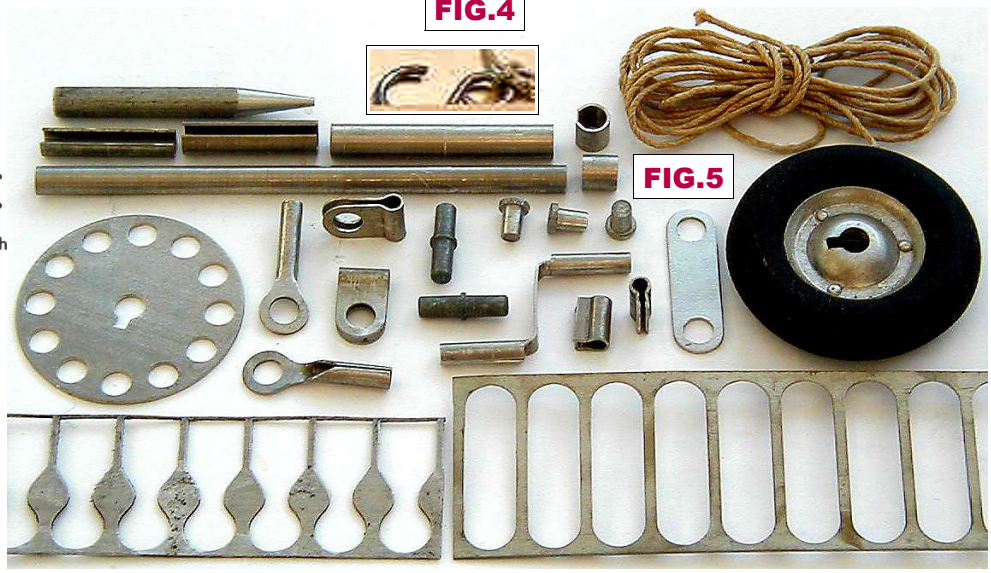


FIG.5

The only other ROCO set seen was on Ebay and was identical to the present one. Its Railings were, as in the present set, 2 of the Straight type and one of the Decorative.

Nothing is known of the other sets except that photos of the open boxes of the Standard & Super are shown in the Manual. Both look to be in cardboard boxes and both have 2 layers of parts. The Super is shown in Fig.7 and the Standard's parts are arranged in the same style. No Pliers can be seen in either set. The Standard's box size is given as 390*285*45mm.

Increasing the size of sets by buying packs of parts is mentioned in the Manual's Intro.

The MANUAL It consists of 24 unnumbered pages clipped between grey covers, 213*155mm. Below the front: C2 has the Illustrated Parts, C3 the Set Contents, and C4 the ROCO logo and details of the printing & photographic companies: Grbrüder Hoesch, Hamburg 1, EP 4 – 6510 4000 6.49 Klasse A. Fotos: Hansa Foto-Studio, Hamburg 1, Steindamm 10. The inside pages are printed on art paper with good halftones. p1 has an Introduction, pp2-3 Instructions & Advice with 18 numbered paragraphs & drawing which broadly cover the the same ground as the Assembling the Parts earlier. Then the next 3 pages have Basic Constructions A, B, & C,

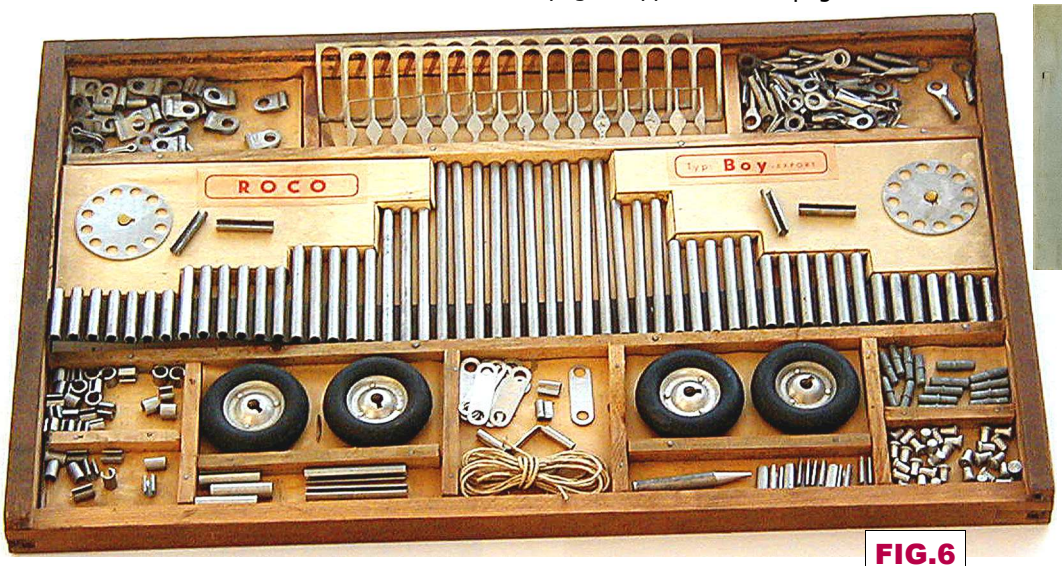


FIG.6

FIG.6a

with titled diagrams which cover much the same ground but add more examples, particularly of braced structures. All the examples in Fig.2 come from these pages.

pp7-13 have 21 model with a photo and Parts List for

FIG.7

ROCO, Typ Super, 445×320×45 cm. **533 Teile.**

each. Models PM 001-020 are for the Piccolo set, from Tisch [Table] to Dreibock mit Flaschenzug [Tripod with Pulley Block]. Then 20 models for Boy on pp14-22, from BM 051 Lastenaufzug [Goods Lift] to BM 070 Dreirad-Sportwagen [3-Wheel Sports Car]. The only additional instructions are drawings showing the steering for a Motorcycle and, on p23, for Cars, plus a note on the steering column bearings for two vehicles.

The sole mention of the Export set is to say that the only Boy model to use gearing, the Crane in Fig.15, should be made omitting the Gears. Gears are also used as a steering wheel on two 4-wheel models and the only substitute from an Export set would be a Wheel Disc, though it would look out of place.

The Piccolo models are a reasonable selection of the type of model made from rod/tube systems – domestic items, carts, simple railway items, 2-wheelers, etc. The only 'mechanical' models is the Tripod with Pulley Block.

The Boy models are more interesting with no domestic items, better railway models, the Goods Lift, a Swing, a Railway & a Mobile Crane, a Fire Pump Trailer, a Motorcycle, & three 4-Wheelers with linkage steering.

6 manual models are shown right & on the facing page. All are the original size except some of the diagrams in Fig.11. The Steps, Fig.8, the Handcart, Fig.10, & a similar Cart are the only ones in which the Railings are used. Fig.11 is taken from the manual p23 about the steering. Abb.1 & 3 show alternate axle assemblies of different widths. The track rod is the Tube shown in the centre diagram with a Connector E in each end.

USING the PARTS Some of the parts fitted together perfectly but many needed their diameters adjusting to fit properly. This was easy enough to do by squeezing with pliers (or a vice for long Tubes) or expanding using the Drift This was not unexpected given the variation of the gap in the Tubes etc already noted, and though this might have been the work of a previous owner, from their appearance the parts did not look to have been used, let alone abused.

Given a near perfect fit it was still sometimes necessary to adjust the parts if an especially tight or loose fit was needed. In the former case a hammer was needed to, for example, fully engage a Plug, and pliers to pull it our again. Another problem sometimes found was if a Tube in one place needed to be slightly below the nominal diameter to rotate freely in another part, but a nearby part of the Tube needed to be the nominal size to retain, say, a Sleeve or Connector. A Sleeve could be suitably closed up but not a Connector's eye.

I thought to make the Abschleppwagen in Fig.13 but as I couldn't work out quite how it was to be made I started by building the steering based on the Fig.11, Abb1 diagram. Then, little by little, the Buggy in Fig.14 emerged. It wasn't too difficult but, as is usually the case with Rod/Tube systems, it was tiresome to have to dismantle to a greater or lesser extent if one initially omitted to put the right number of Connectors in or on a Tube. There was to have been a nose to hide the steering gear but there weren't enough of some of the smaller parts to build it. The finished model was quite robust.

ROCO is certainly one of the neatest & more elegant Rod/Tube systems. It is doubtful though if many children would have the skills & patience needed to build any but the simpler models.

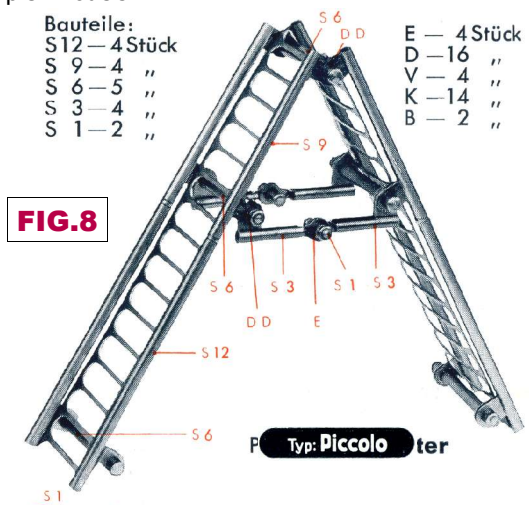


FIG.8

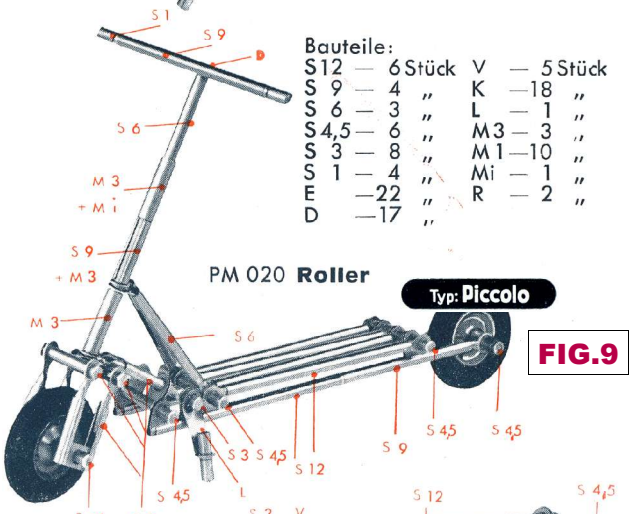


FIG.9

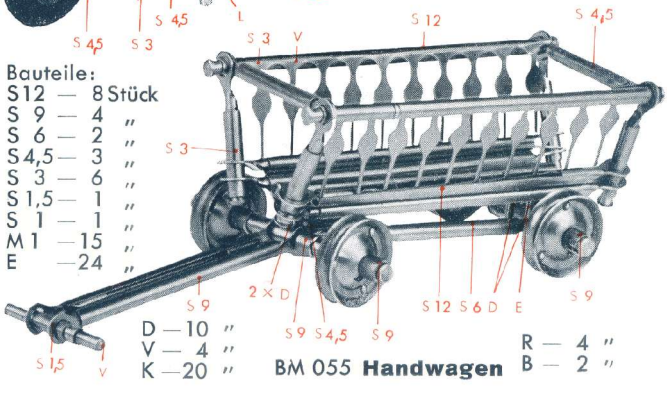


FIG.10

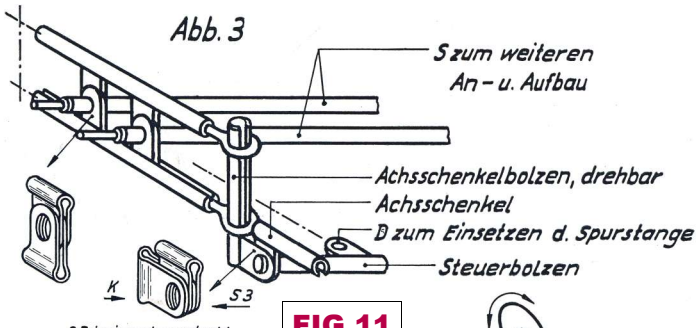
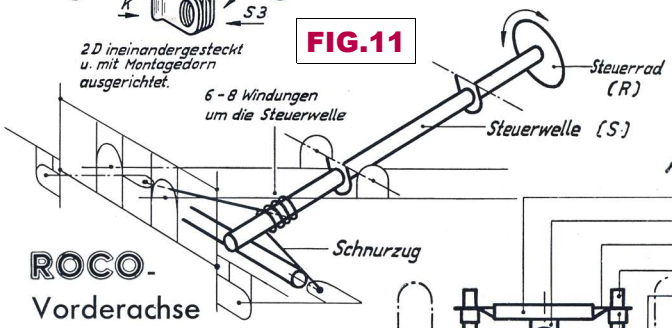
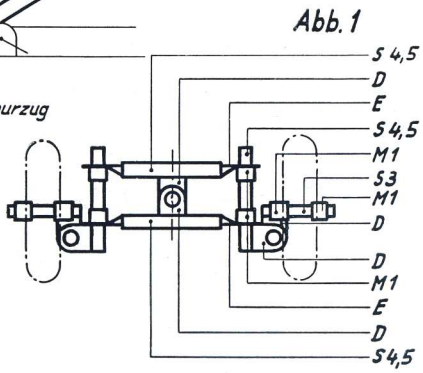


FIG.11



ROCO-
Vorderachse

Anordnung von Steuerwelle und Schnurzug



ROCO

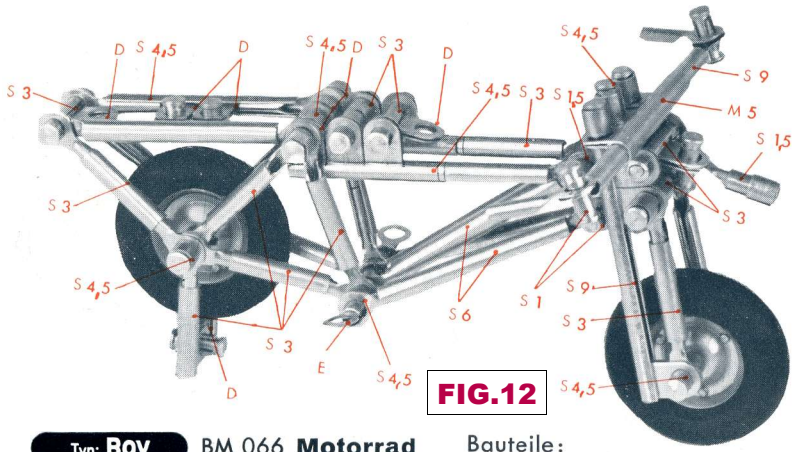
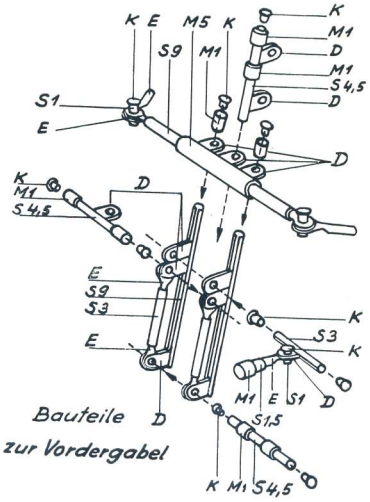


FIG.12

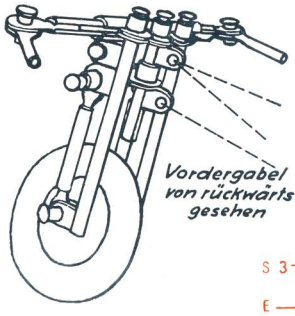
Typ: Boy BM 066 **Motorrad**

Bauteile:

S 9	3 Stück	M 1	25 Stück
S 6	6 „	E	43 „
S 4,5	11 „	D	28 „
S 3	16 „	V	2 „
S 1,5	1 „	K	33 „
S 1	7 „	R	2 „
M 5	1 „		



Bauteile zur Vordergabel



Bauteile:

S 12	10 Stück	M 5	2 Stück	Mi	2 Stück
S 9	6 „	M 3	1 „	L	4 „
S 6	10 „	M 1	25 „	LS 5	2 „
S 4,5	11 „	E	31 „	R	4 „
S 3	15 „	D	25 „	Kb	1 „
S 1,5	3 „	V	15 „		
S 1	4 „	K	33 „		

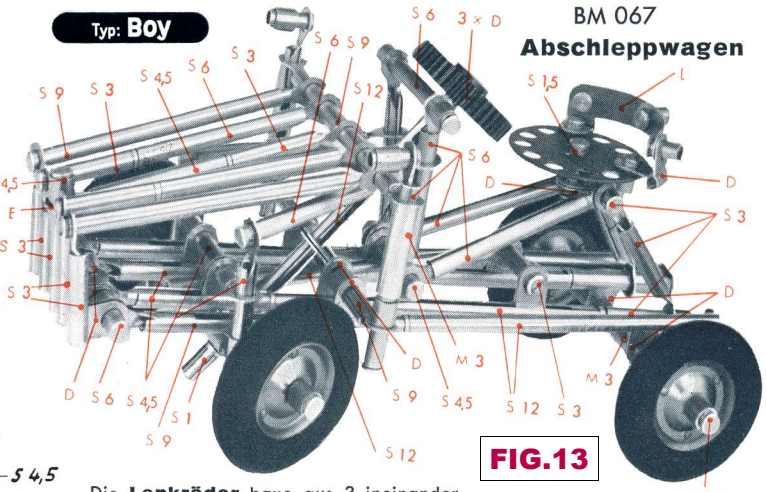


FIG.13

Die **Lenkräder** baue aus 3 ineinandergesteckte **Schiebeösen „D“**.
Bau der **Vorderachse** siehe übernächste Seite.

Bauteile:

S 12	7 Stück	M 3	3 „
S 9	6 „	M 1	25 „
S 6	10 „	E	45 „
S 4,5	11 „	D	32 „
S 3	17 „	V	13 „
S 1,5	4 „	K	34 Stück
S 1	6 Stück	LS 5	1 „
		Mi	1 „
		L	2 „
		R	4 „

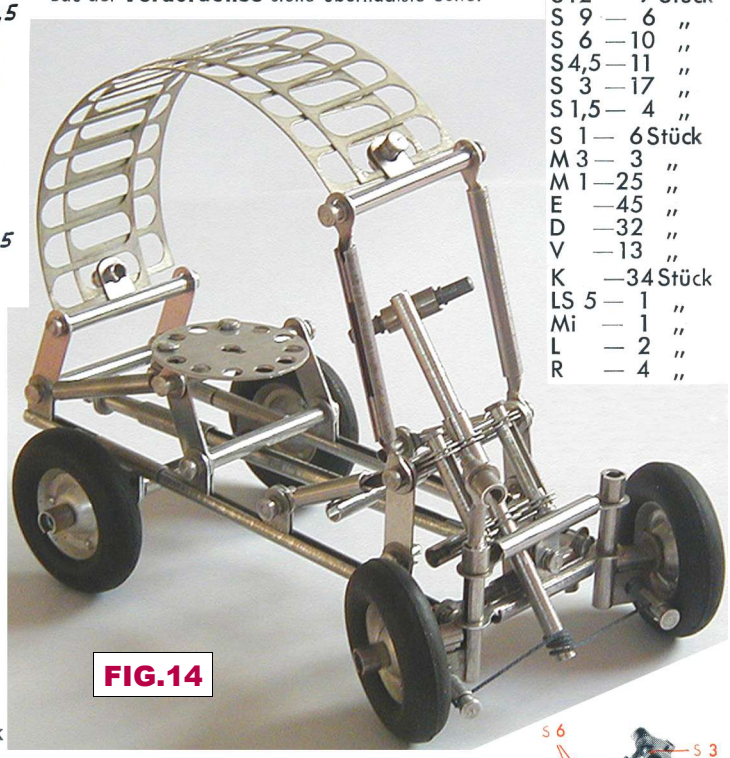


FIG.14

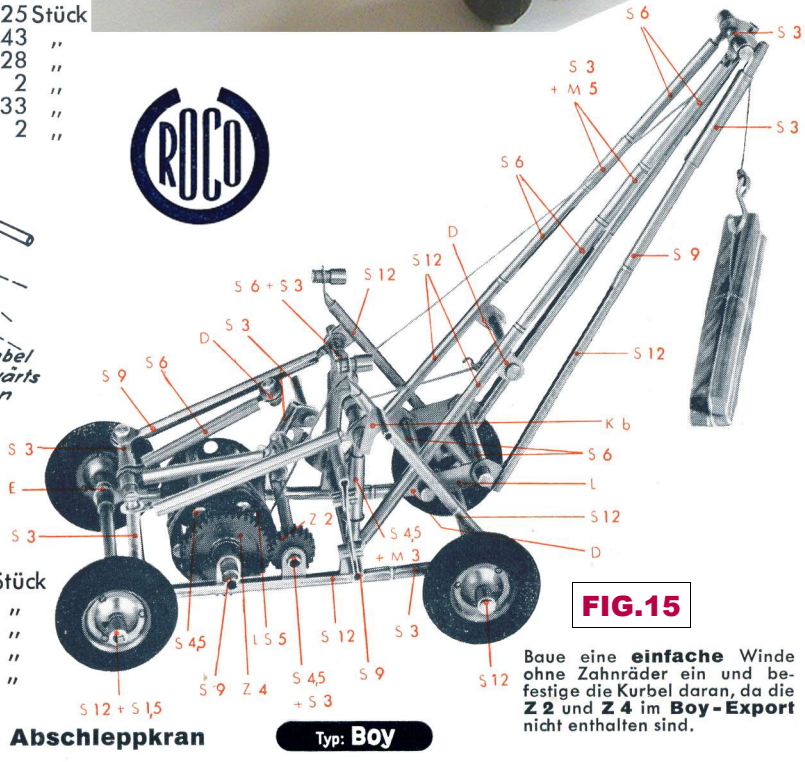


FIG.15

Baue eine **einfache** Winde ohne Zahnräder ein und befestige die Kurbel daran, da die **Z 2** und **Z 4** im **Boy-Export** nicht enthalten sind.

BM 065 **Abschleppkran**

Typ: Boy