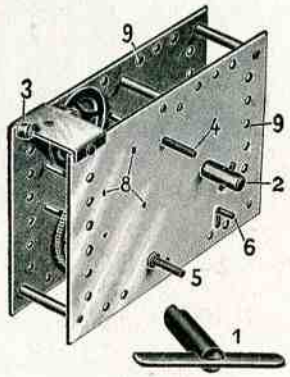

Constructional Box
STABIL
WALTHER & Co.
BERLIN
Instruction Book
For Sets No.
49-52

Walther's STABIL Motors

In order to set in motion a constructed model, or other technical toys, according to what is needed, one turns to the **Walther's Stabil Spring Motor.** The greatest joy is attained from the full-action of the STABIL Construction Toys and it justifies completely its very name, and it is very stable and is a well-contructed, powerfull clockwork with strong springs, and endures in action from 7 to 20 minutes, according to the speed required.



The Spring-motor is delivered in 2 sorts:

1. Model with speed action and one propulsion cylinder, duration of action 7 to 20 minutes.
2. Model with speed action, and two working cylinders, reversing apparatus for right and left movements of one propulsion cylinder, duration 7 to 20 minutes.

The Spring-motor STABIL can goe for quickly, in right-hand or left-hand circles, or straight forward.

Further models for example: No. 427 page 124, 433 page 128, see also Edition 53—55. Directions for use are enclosed in every Spring-motor.

the working of almost all „STABIL" models. It is especially suitable for building into such machines as: Engines, Autos, Rope-railways, Swings, Mills and Twellissaws.

Example of the application of the „STABIL" Spring Motors:

Iron Horse (Model 238 page 59, Edition 49—52) built out of „STABIL" Construction Parts No. 50 with „STABIL" Motor built in. The finished Model drives on its own power backwards and forwards according to wish, slowly or

Special offer can be obtained on demand, about all STABIL Motors by any party concerned.

„STABIL" **awakens interest in children for technical construction.** It pleases them if they can produce a uniform movement from a built up machine, like large machines which they have stood before in wondering admiration.

„STABIL" **sharpens the attention of boys.** They can observe the correct working of all the details of the running machine by observation of the copies contained in this book.

„STABIL" **serves as a touchstone for the intelligence of boys,** for their suitability for a technical profession, be it as construction engineers, machine engineers, or technical or building masters.

„STABIL" **brings out and awakens the talents for a technical calling.** Already parents give their attention to the talents of their sons by means of „Stabil". Corrections sent in of the given models, inventions of new ones, and our particular prize scheme for important work performed, indicate to parents the way in which their sons can rise to the position of proud constructors of modern technical science as capable men.

„STABIL" **supplements the instruction given in schools,** as these give no simple instruction in technic. It is just this technic, which has impressed itself on modern life and has made its mark on the march of humanity. Technical science as everybody knows, has intervened in almost all departments of human activities, and to whose judgement all business men are influenced, and existence made secure by means of entrusting our youth to its performance.

„STABIL" **alone is constructed among all such toys by experts in a correct manner,** all parts and details carry such expert markings and indications, as to be useful for the carrying out of large buildings and machines. The boy learns in play how the details of a machine, an aeroplane, crane or locomotive, etc. are named, and that „Stabil" takes the lead in this direction is amply demonstrated by the circumstances that english and foreign firms, **who produce such toys, copy and imitate the expert nomenclature, in their printing matter. No other construction toy is finished in such a correct technical style as „Stabil".**

With no other toy can so many and numerous toys be constructed as with „Stabil". No other similar toy has such a varied constructionparts as „Stabil". In great part, these are protected by means of patents and must not be imitated toy-makers.

Prize Models The new list here, 31 th Edition, has been revised. It gives many new prize-models and, in addition our newPatentCog-wheel, which can also be used as cnown-wheel or cone-wheel.

Patent Cog Wheels The advantages enjoyed by „Stabil" home and abroad over similar toys, will be sonsiderably enlarged by the addition of the new cog-wheel. The new

„Stabil" patent Cog Wheel

(German and foreign patents applied for) causes no disappointment in use (unlike the tin metal ones of flat edges of other makes, with wich a child can do nothing, because the edges glide off) but with its powerful grip excels in a correct and effectual technical manner and demands machine-like precision. The new „Stabil" Cog-wheel is enclosed already in the smallest box size No. 49.

Material and Care Material for „Stabil" is of an equally durable quality of faultless construction, and does not matter whether it is the question of a small or large „Stabil" box for building-work. It will allways keep its beautiful nickel polish, if rubbed over, from time to time with a woolen rag dipped in terpentine oil.

Motors „Stabil" Boxes and accessories, and „Stabil" motors can be bought in all the high-class toy-shops or businesses for instruction purposes as well as in many optical businesses.

Single Parts All working parts, all cog wheels, all screws with bolts can be bought singly.

In order to represent wall-work and roof-coverings of high buildings printed carboard pieces can be delivered on demand, which have the appearance of tile-work, tiles, slates and sheet-metal roof. Smooth black cardboard pieces needed for wapping up machines can also be delivered. The fastenings of such cardboard pieces are done with screws and bolts or paper clamps. Further information of „Stabil" single parts can be found under No. 48 of the sketches page 8.

Complete Boxes Complete boxes have made their appearance in shops. These boxes complete any of the contents of a building box size to the next size number. There are thus contained all those parts ready packed, which are lacking to the boy for the contents of the next size building box. These complete boxes carry the signs: 49a, 50a, 51a, 52a, etc., and „Stabil" No. 49 with 49a contains all together the contents of „Stabil" 50, „Stabil" 50 + 50a = 51 box, etc. In consequence of this arrangement one can begin with the purchase of a popular box as a basis. The following box comes then into question, which is to be supplied in turn (thus after the beginner's box for basis work No. 50 for an example the next to be bought is No. 50a, then 51a, 52a, etc.) In this manner the awakened intelligence of the boy enlarges itself, also the contents of the building-boxes, and then larger and more difficult models can be erected.

„STABIL" is a most interesting building play, with which one can construct hundreds, indeed thousands of various machines, cranes, stations bridges, aeroplanes, automobiles, house and agricultural tools, in short all wonder-works of modern technic. As every model is movable and can be hand driven with „Stabil" motor or steam-machine, the occupation of oneself with „Stabil" always brings new joy. It will also enlarge your knowledge if you study the given details in this edition attentively.

„STABIL" Parts are according to the metric system, exactly fitted to each other, and prepared so that they can be easily assembled, taken apart or exchanged. The apertures in the building parts are 12,5 millimetres separated from each other from the middle of the hole to the middle of the other hole. The small holes of the level and square strips one counts from the place where the built part is assembled, and from where shafts, axles, rivets and linch-pins are set in.

„STABIL" edition books (illustrations) are so treated that special worth can be placed on them to adopt the correct technical nomenclature for the building parts of the various machines and buildings, as well as for the practical uses of the same. Only in „Stabil" illustrated editions are given the technical building signs, the ground plans, inspections, aspects, plumb-line and horizontal levels, besides lengths and transverse sections, represented by means of machines, building works or parts of same, in order to awaken interest and understanding for technical nomenclature.

„STABIL" models should bring notice to the beholder, as the many-sided instruction play of these are numerous. The built-up models show only a moderate number of things, which can all be produced with „Stabil".

„STABIL" Competition for presenting prizes for the best „Stabil" Models takes place every year. Take notice of the prized models in this instruction book and you will find confirmed that your school-comrades and comtemporaries of the same age invent with eagerness and love new machines and building-works. Models have oftenly been sent according to the sketches for approval which show a special talent of the executors for techniss and mechanics.

Only with „STABIL" do you achieve the goal.

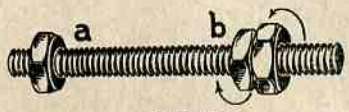
FRANZ WALTHER.

Representation of applied designs for forming the basis of the building-constructions of „STABIL" models.

Building instruction:

Before you come to the building of the first model make the following attempt: rotate two nuts on a screw-shaft. So long as these two do not touch, let them rotate freely and easily. But as soon as they screw up against each other with the aid of both screw-keys, the one turned round to the right — the other one to the left, fixed together (fast tightened, as the simple expression goes), in this manner they are immovably fixed on the winding pencil — screw-shaft. One calls two such fixing nuts in the technic by the simple expression-opposing nuts. (Sketches 1 and 2)

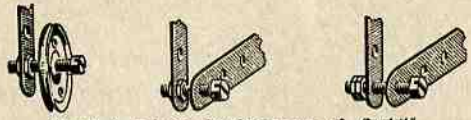
Sketch 1



Sketch 2

These opposing nuts occur very often with the construction of „Stabil" models, and indeed they are always necessary there, where parts should be connected for **movement** (not fixed). These for example, as with a wagon wheel, which is itself free, and must rotate on a fixed built in axle but must be also secured against a side shift or slip (Sketch 3). Between the two pairs of opposing nuts and the rotatory wheel is some room for play to be allowed so that the wheel itself can freely revolve. (In this case 4 nuts are necessary. Try this yourself).

Sketch 3



Sketch 4—6 loose binding parts of „Stabil"

Should a part, on the rontrary, be connected to a screw-shaft, one needs for this only 2 nuts.

Sketsch 8

Sketch 7

A special application for the fastening on to a flat and screw-shaft requires the two-division rope-wheel No. 5b (Sketch 8)

which, with the aid of the screw-driver is screwed tightly against the building part from both sides (Sketch 7).

As the difference between tight and loose binding is very important, learn from the sketches in doubtful cases, the special signs for such (Sign nomenclature see page 11).

Sketch 9

„Upper-lap thrust". Carried out by 2 flat-strips laid on each other and screwed down.

Sketch 10

„Lapped or flattened thrust" with lappet binding.
Produced by means of two flat or angle strips pushed down on each other with screwed lappets.

Sketch 11

„Coupling of 2 winding shafts by means of long nut No. 3d or shaft-coupling No. 36.

Sketch 12

Coupling of winding shafts by means of a double angle No. 2b.

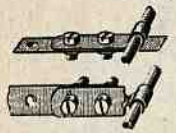
Sketch 13

Coupling of smooth shafts by means of shaft coupling No. 36a.

Representation of applied designs for forming the basis of the building-constructions of „STABIL“ models.

Sketch 14

Sketch 14. Shaft-bearing, strengthened by means of a screw-on baseblock No. 2c or by means of a one or several screwed on flat-strips.

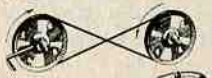


Sketch 15. Shaft-bearings built up by flat bearings No. 17 or projecting flat bearing No. 17a.

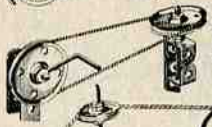
Sketch 16. A clamped on screw-nut serving as a spindle-guide.

Sketches 15 and 16

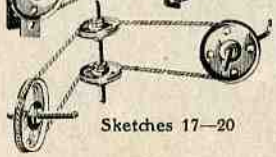
Sketch 17. Direct string-guide, giving a rotation in equal direction.



Sketch 18. Crossed string-guide giving a rotation in an opposite direction.



Sketch 19. Half crossed string-guide with rectangular opposing shafts which do not lie in an equal plain.

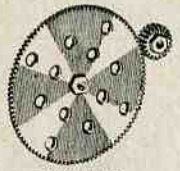


Sketch 20. Angle string guide with right angled opposing shafts, which lie in an equal plain.

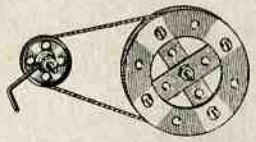
Sketches 17—20

Sketch 21

Sketch 21. Equal rotatory speeds with equal size wheels.



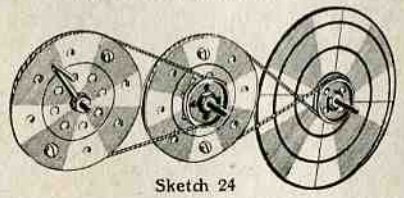
Sketch 22



Sketch 23

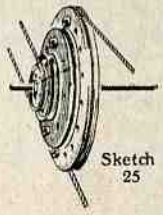
Sketch 22. Speeding up of the rotatory speed by large size wheels on a small one.

Sketch 23. Abatement of the rotatory speed by smaller wheels on larger wheels.



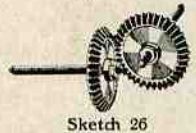
Sketch 24

Sketch 24. Multiple rotatory motion by manifold transposing by means of string or cog wheels suitable for trials for optical illusions (Stuck on paper-shields with coloured lines, spirals, colour stars, points etc.)



Sketch 25

Sketch 25. Graduated plates for making an alteration at choice of the rotation speed, and which will need wheels that carry strings for transmission.



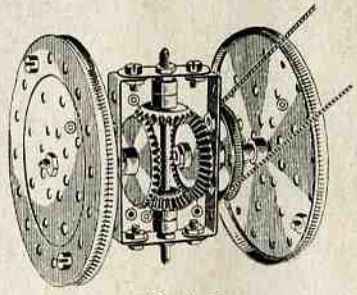
Sketch 26

Sketch 27

Sketches 26 and 27. Power transmission by bevelled wheels or patent cog wheels, which are here used as bevelled wheels.

Sketch 28

Sketch 28. Power transmission by crossed connections (carriage connections) from shaft to shaft B. The application takes place with shafts the direction of which deviates somewhat from each other.



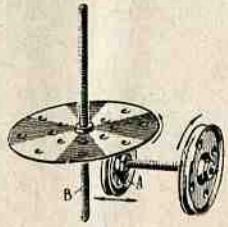
Sketch 29

Sketch 29. Differential gear. The application is found in the axle at the rear of the motor-car and makes an adjustment of the various rotatory speeds by the curves of the hinder-wheels. The drive of the differential gear occurs from the motor by means of chains or by a shaft with carriage-connections-crossed connections (Sketch 28).

Sketch 30

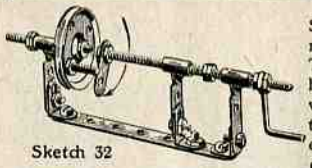
Sketch 30. Power transmission by friction. The wheel on the upright axle moves in consequence of its own weight on the under-wheel and is by the friction of the pressure of the additional wheel put in motion.

Sketch 31. Variable power transmission by friction. (The nearer A and B are, so much faster The B shaft turns round).



Sketch 31

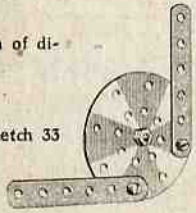
Representation of applied designs for forming the basis of the building-constructions of „STABIL“ models.



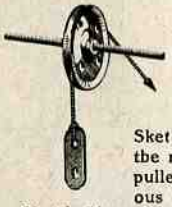
Sketch 32

Sketch 32. Power transmission through a driver. This driver (iron strip 2 holes length) pushes sideways against the projecting screw and takes this one with it. The motion can be at the same time interrupted by the moving out of the driver (Handle extracted by turning to the right).

Sketch 33. Alteration of the motion of direction by angle lever.

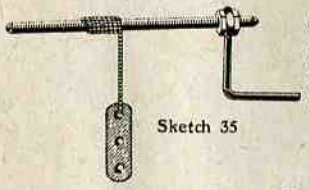


Sketch 33



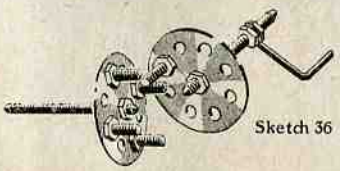
Sketch 34

Sketch 34. Power transmission by means of the reels (Used with ropecrane, block-and-pulley). By this means ocurs a simultaneous change of the motion direction).



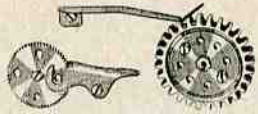
Sketch 35

Sketch 35. Power transmission by the shafts (suitable with building pulley, well pulley, anchor pulley, etc.).



Sketch 36

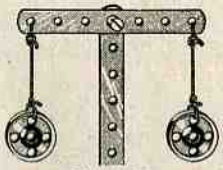
Sketch 36. Self-acting rotatory interruptor. At one entire rotation of the handle, which presses the projecting head screws against the other plate a quarter motion of same only is produced.



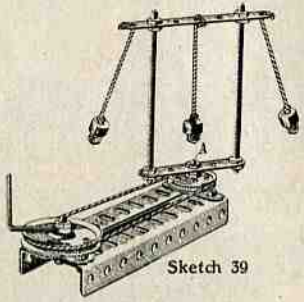
Sketch 37

Sketch 37. Hinderance of the backward motion by cog wheels or rags by means of a stop lever (Used for rammers, elevators, etc.).

Sketch 38. Egual arm lever (suitable for chemists scales, shop scales, handle-bar of a bicycle, etc.).
Unequal arm lever (used with decimal scales, tongs crowbar, etc.).

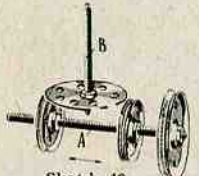


Sketch 38



Sketch 39

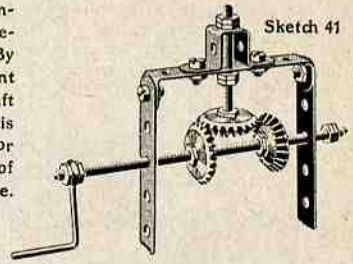
Sketch 39. Centrifugal power. On setting the pendulum frame in motion by means of the handle, the two exterior pendulum weights are slung outwards, while the middle pendulum will not alter its position (used with the centrifugal regulator of a steam-engine).



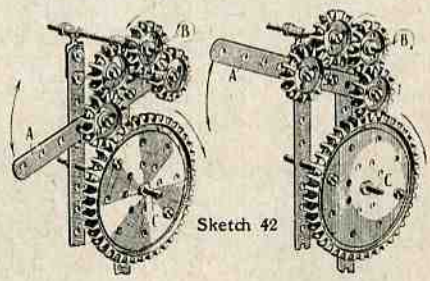
Sketch 40

Sketch 40. Motion-commutation by friction (compare sketches 30 and 31). By side ajustment of the driving shaft A it always grips one of the two wheels only under the plate-ring and produces an equal rotatory movement of the driving shaft A a right or left running motion of spindle B (suitable for friction-press).

Sketch 41. Motion-commutation by bevelled wheels. By lateral displacement of the handle-shaft the movement is produced right or left like sketch 40 of the vertical spindle.

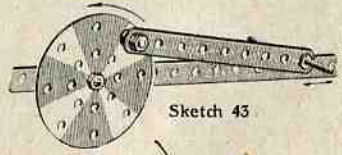


Sketch 41

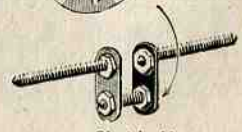


Sketch 42

Sketch 42. Commutation gear by cog wheels. According to the placement of the lever the working shaft B rotagtes to the right or the left, while the driving shaft C always maintains an equal rotatory direction.



Sketch 43



Sketch 44

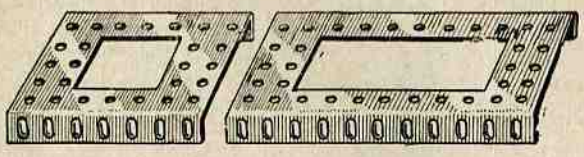
Sketches 43 and 44. Transmission of a rotatory movement by means of an excentric or hand-shaft (Sketch 43) or by means of a projektor-shaft (Sketch 44) carried out in a thrusting manner.

Sketches of single parts of „STABIL".

No. 1. Strip normal holed, 2, 3, 4, 5, 6, 7, 9, 11, 15, 25 holes in length

No. 1. [Strip double-holed 11 and 25 holes in length

No. 1a. Angle-Strip 10, 15 and 25 holes



No. 1b. Pierced plate 7×5 holes

No. 1c. Pierced plate 11×5 holes

No. 1d. Right-angle plate 7×3 holes size

No. 1e. Square plate 3×3 holes size

No. 2. Angle bracket

No. 2a. Z shaped angle

No. 2b. Double angle

No. 2c. Bearing block

No. 2d. Flat angle

No. 2e. Gusset

No. 2f. Placing hinge

No. 3. Screw-bolt 9 mm l.
„ 3b. „ „ 30 „ l.
„ 3c. „ „ 20 „ l.
„ 3e. „ „ 15 „ l.
„ 3f. „ „ 12 „ l.

No. 3a. Nut

No. 3d. Long nut

Winding bars

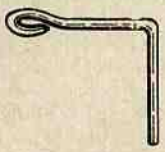
No. 4. 50 mm l.
„ 4a. 90 „ l.
„ 4b. 120 „ l.
„ 4c. 175 „ l.

No. 4d. 250 mm l.
„ 4g. 25 „ l.
„ 4i. 150 „ l.

No. 5. String-wheel 26 mm diameter

No. 5a. String-wheel 36 mm diameter

No. 5b. 2 part string-wheel 37 mm diameter



No. 6. Crank.

No. 7. Placing ring

No. 7a. Placing ring with fixing screw

No. 7b. Driver with fixing screw

No. 8. String reel

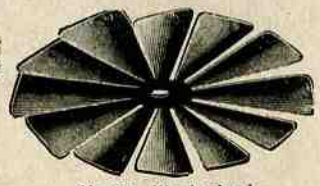
No. 9. Clipping plate

No. 10. Screw-key

No. 10a. Screw-key with nut guide

No. 11. Screw-driver
No. 11a. Screw-driver with wood handle

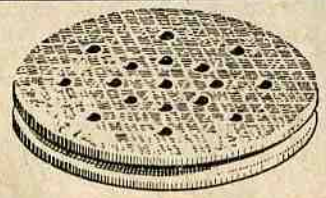
No. 12. Driving string



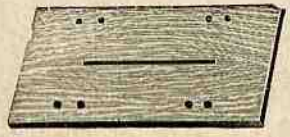
No. 13. Wind wheel

No. 14. Circular saw blade

No. 15. Holed plate of wood 45 mm diameter



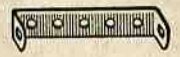
No. 15a. Holed plate of wood 75 mm diameter



No. 16. Circular saw table

No. 17. Flat layer

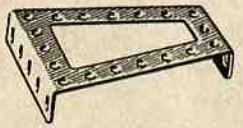
No. 17a. Flat layer raised



No. 18. Angle-band 5×1 holes

No. 18a. Angle-band 5×2 holes

Sketches of single parts of „STABIL“

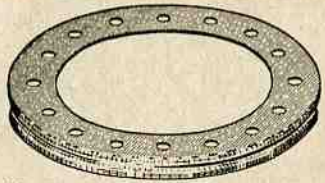


No. 19.
Trapeze plate, large

No. 19a.
Trapeze plate
small

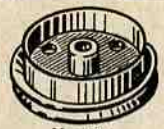
No. 20.
Rack for brass
cog wheels

No. 20a.
Rack for patent
brass cog wheels



No. 21. Rim wheel 90 mm diameter

No. 21a.
Rim wheel 65 mm diameter



No. 22.
Flanged wheel
37 mm diameter

No. 22a.
Flanged wheel
25 mm diameter

No. 23.
Plate wheel
37 mm

No. 24.
Bevelled wheel
23 mm diameter

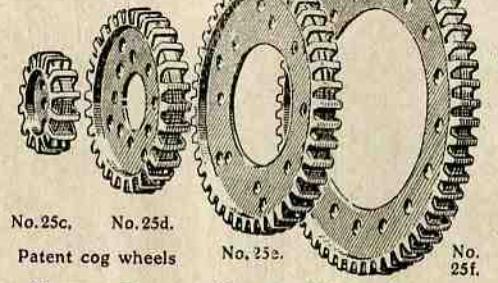
No. 24a.
Bevelled wheel
36 mm diameter

No. 24b.
Bevelled
wheel 14mm
diameter

No. 25.
Cog wheel
15 mm dia.

No. 25a.
Cog wheel
39 mm diameter

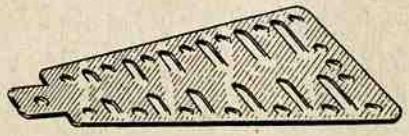
No. 25b.
Cog wheel, 63 mm diameter



No. 25c, No. 25d.
Patent cog wheels
25 mm 50 mm

No. 25e.
75 mm

No. 25f.
100 mm diameter



No. 26.
Wind-wing

No. 27a.
Ratchet

No. 29.
Toothedrim ring

No. 27.
Ratchet-spring

No. 28 and 28a.
Guiding or piston poles
145 and 200 mm

No. 29a.
Serrated plate

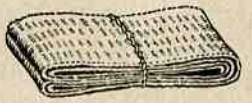
No. 30.
Dredging shovel

No. 31 and 31b
17 and 50 mm long

No. 31a. Roller with
string-channel

No. 32. Crown wheel
38 mm diameter

Nr. 32a.
Spindle-screw

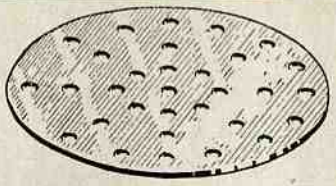


No. 33.
Driving-belt

No. 34. Spiral spring 3,7 cm l.
No. 34a. Driving spiral 20 „ „
No. 34b. „ „ 40 „ „
for transmissions.

Sketches of single parts for „STABIL".

No. 34c.
Bending shaft



No. 35. Holed plate metal 86 mm diameter

No. 35a.
Holed plate metal
38 mm diameter

No. 35b.
Same 62 mm diameter

No. 36.
Shaft coupling for
windig shaft

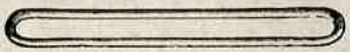
No. 36a.
Shaft coupling for
smooth shafts

No. 37.
Propulson hook

No. 38.
S hook

No. 38a.
Screw hook

No. 39.
Wood peg



No. 40 and 40a.
Wire-eye 70 and 110 mm long

No. 40b. Clip-plate
belongs to wire-eye

No. 41.
Fork-band

No. 42. Chain

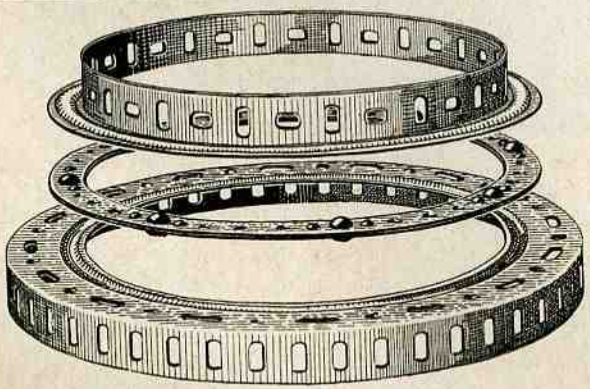
No. 42a.
Clasped eye

No. 43. Holed sheet-plate

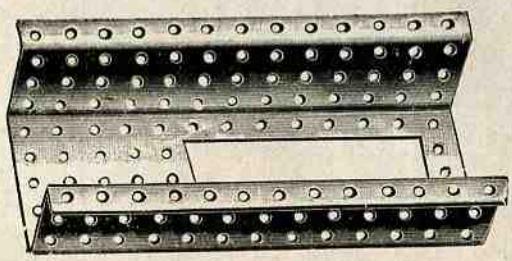
No. 44. Crank-shaft

No. 44a.
Crank shaft pin

No. 45. Three sided
axle-pin



No. 46a.—c. Spherical bearings split in three

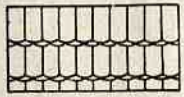


No. 47. Box for heavy motor

a)

No. 48a.
Wall-filling,
tiling

b)



No. 48b.
Tile-roof

c)

No. 48c.
Slate-roof

d)

No. 48d.
Metal plate or
cardboard roof

Sketches of further parts for „STABIL“.

No. 60.	Smooth	shafts	4	mm	diameter,	50	mm	long
„ 60a.	„	„	4	„	„	90	„	„
„ 60b.	„	„	4	„	„	120	„	„
„ 60c.	„	„	4	„	„	150	„	„
„ 60d.	„	„	4	„	„	250	„	„

Ball bearing parts for plain and winding shafts

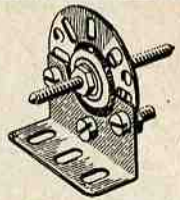
No. 63. Cone for winding shafts

No. 63a. Cone for smooth shafts

No. 64a. Ball-holder

No. 65a. Ball-bearing cup

No. 83. Bearing cup holder



Finished assembled ball bearing housing on winding shaft

Ball bearing parts for rolled shaft, 14 mm strength

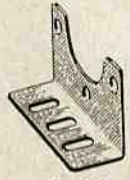
No. 61. Rolled shaft, 14 mm strength, 11 holes long

No. 63b. Cone

No. 64b. Ball-bearing cup

No. 65b. Bearing cover

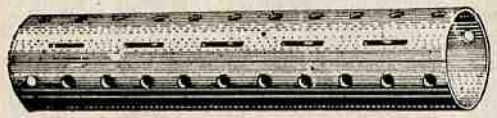
No. 66. Flange



No. 83a. Bearings cover holder

No. 67. Round pin splint 22 mm long

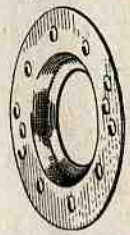
Ball bearing parts for rolled shaft, 25 mm strength



No. 62. Rolled shaft 25 mm diameter, 11 holes long
„ 62a. „ „ 25 „ „ 15 „ „

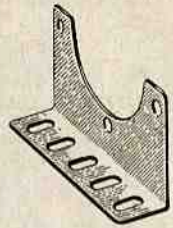
No. 63c. Cone

No. 64c. Ball bearing cup



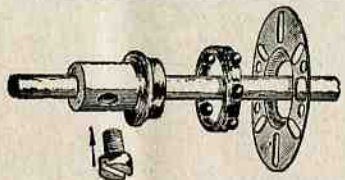
No. 65c. Bearings cover

No. 66a. Flange

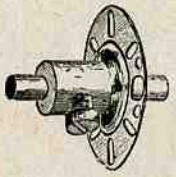


No. 83b. Bearing cover holder

No. 67a. Round pin splint 33 mm long

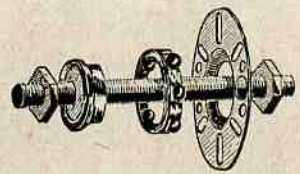


No. 63a. Cone
No. 64a. Ball-bearing cup
No. 65a. Bearing cover



An assembled ball-bearing case on smooth shaft 4 mm thick

No. 61a. Coupling muff for shafts 14 mm in strength



No. 63. Cone
No. 64a. Ball-bearing cup
No. 65a. Cover for bearings

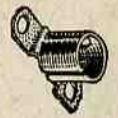
Sketches of further parts for „STABIL".

No. 68.
Hook-gusset

No. 68a.
Projecting
hook-gusset

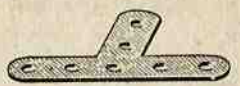
No. 69.
Claw

No. 70.
Spring-cup

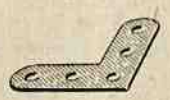


No. 70a. Spring-cup
for screwing on

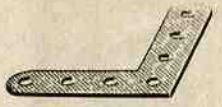
No. 71.
T piece
3 holes long



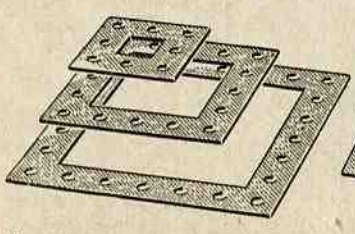
No. 71a.
T piece
5 holes long



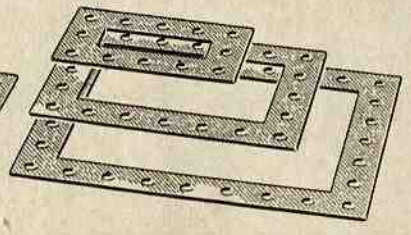
No. 72.
Flat angle 3×3 holes



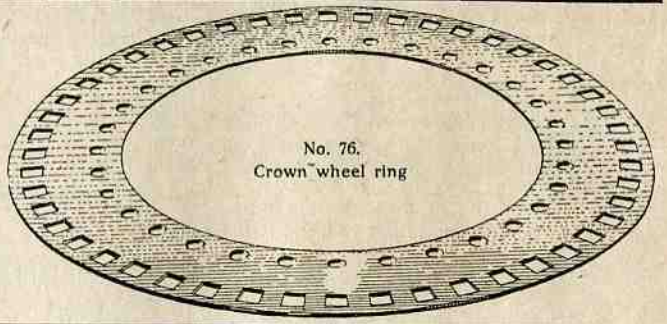
No. 72a.
Flat angle 4×4 holes



No. 73. Square frame 3×3 holes
„ 73a. „ „ 5×5 „
„ 73b. „ „ 7×7 „



No. 74. Square frame 3×5 holes
„ 74a. „ „ 5×7 „
„ 74b. „ „ 7×9 „



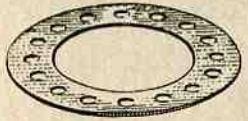
No. 76.
Crown wheel ring

No. 75. Holed band for 16 teeth
„ 75a. „ „ „ 32 „
„ 75b. „ „ „ 64 „

No. 77. Spring tooth

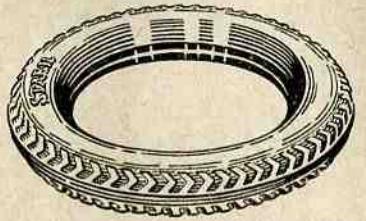
No. 78. Half arched piece

No. 79. 1/4 arched piece



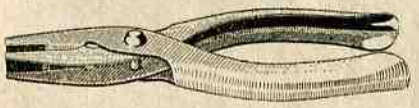
No. 80. Flat ring

No. 81. Spote with 3 holes
„ 81a. „ „ 5 „



No. 84. Auto tyre of solid rubber suitable
for wheel-rim No. 21a.

No. 85. Holed flat iron, 7 holes long



No. 82. Pliers

No. 86.
Winding pin angle

No. 87.
Flap-screw

Stabil Scholarship Competition.

Every year, a great competition takes place for models constructed from Stabil constructional boxes.

For this competition the following prizes are given:

viz:

Total Prizes £ 1250

Cash Prizes £ 500

consisting of the following:

1 first prize of £ 25 in cash

together with a **free flight** in a travelling aeroplane of the German Air Society,

2 second prizes of £ 12/10 in cash
10 third prizes of £ 10 in cash
20 fourth prizes of £ 7/10 in cash
40 fifths prizes of £ 5 in cash besides

presentation prizes worth £ 750

consisting of several thousand prizes in form of accessory boxes, working motors and single constructional boxes.

Special free aeroplane flight.

For the best model, that is for the winner of the first prize, a special premium is promised, i. e. he will be invited for the inspection of the new Stabil Building, and he will be given a flight in an aeroplane round or to Berlin.

Particulars for the Stabil Scholarship Competition:

1. Everyone who has not passed his 17th. year and has a "Stabil" constructional box can participate in the competition. The half of the prizes are reserved for competitors up to the age of 14 years.
2. Models of any box size are admitted.
3. A photo or a sketch has to be sent of the models to be entered. For larger models it is preferable to remit several illustrations. Paper size not below 20×25 cm. For the photos we recommend a size of 9×12 cm or 13×18 cm. Smaller photos reproduce the models too indistinctly, larger photos are to expensive. Write on one side only. The detailed description of the model.
4. The models themselves must not be sent.
5. Exact name, address, and age on each sheet in the top left hand corner, in Block Letters.
6. Statement as to which school attended with name of headmaster.
7. What profession has the father of the competitor.
8. Statement of what box size the model has been constructed.
9. In which shop the constructional box has been bought.
10. If a competitor sends several model-sketches within one year, all participate in the competition; only the best, however, will be considered at the distribution of prizes. These model-sketches will not be returned, but become the property of Messrs. Walther & Co., Berlin SO 36. on awarding the prizes.
11. All entries must be marked with the wording „Stabil-Wettbewerb" (Stabil-Competition) and must be sent to Walther & Co., Berlin SO 36, Harzer Strasse 60—63.
12. Acceptance for the competition from January 1st. to April 15 th.; later remittances will not be taken into consideration.
13. The Court of Arbitration for the prizes meets at the beginning of May. The cash prize winners are advised at once. The other participators get news by the end of May.
14. The decision of the Court of Arbitration for the prizes is definite and cannot be contended judicially.
15. Participators in the competition get a Stabil-Medal.

For special attention:

The bent parts at the models are not contained in the construction box, but they must be bent of even strips by the builder.
The cardboards to be used with the models are not included in the construction boxes, as the different parts can be cut out of old cardboard covers or boxes by the builder.
For the wire eyes No. 40 the bracket plates No. 40b have always been used with the models, even if they are not specially stated in the list.
Do not forget on controlling the contents of the box to count also the screws and the nuts, with which the Stabil parts are screwed together, likewise with the screws put through the blue paper mash.
Further we draw your attention to the fact that more nuts must be contained in the box, as the worm bolts need nuts also.

Description of Signs:

s. = strip No. 1
h. l. = holes long
a. w. n. = screws with nuts
a. b. = angle brackets
a. s. = angle strips

building parts, which sit tightly on the axle or shaft and revolve with these.

building parts, which sit loosely on the axle or shaft and revolve with these.

Contents Index of the Stabil Building Sets

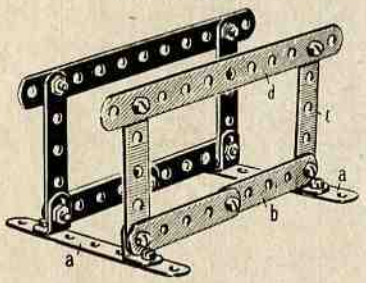
No. of the part	Name of the part	Size Nos. of the Boxes 49	49a	50	50a	51	51a	52	52a	53	53a	54	54a	55	No. of the part
	Iron strip 2 holes long	2	—	2	2	4	—	4	—	4	2	6	6	12	
	" " 3 " "	2	—	2	—	2	4	6	2	8	4	12	28	40	
	" " 4 " "	—	—	—	—	—	—	—	2	2	8	10	10	20	
	" " 5 " "	8	—	8	4	12	2	14	2	16	8	24	26	50	
	" " 6 " "	—	—	—	—	—	2	2	6	8	—	8	16	24	
1	" " 7 " "	2	—	2	4	6	4	10	8	18	4	22	22	44	1
	" " 9 " "	—	—	—	—	—	4	4	4	8	10	18	16	34	
	" " 11 " "	2	4	6	6	12	—	12	—	12	4	16	14	30	
	" " 15 " "	—	—	—	4	4	4	8	—	8	—	8	16	24	
	" " 25 " "	—	4	4	4	8	—	8	2	10	6	16	8	24	
	" " double 11 holes long	—	—	—	—	—	—	—	—	—	2	2	—	2	
	" " holed 25 " "	—	—	—	—	—	—	—	—	—	—	—	10	10	
	Angle strip 10 " "	—	—	—	—	—	2	2	—	2	—	2	4	6	
1a	" " 15 " "	—	—	—	—	—	—	—	4	4	2	6	6	12	1a
	" " 25 " "	—	—	—	4	4	4	8	—	8	4	12	8	20	
1b	Pierced plate 7×5 holes size	—	—	—	—	—	2	2	—	2	1	3	3	6	1b
1c	" " 11×5 " "	1	—	1	—	1	1	2	—	2	2	4	2	6	1c
1d	Right corner plate 7×3 " "	1	—	1	—	1	1	2	—	2	2	4	2	6	1d
1e	Square plate 3×3 " "	—	—	—	—	—	2	2	—	2	1	3	3	6	1e
2	Angle bracket	8	4	12	3	15	9	24	12	36	34	70	55	125	2
2a	Z angle	—	—	—	2	2	2	4	2	6	2	8	—	8	2a
2b	Double angle	1	—	1	3	4	—	4	—	4	—	4	4	8	2b
2c	Rack block	—	—	—	1	1	—	1	1	2	—	2	2	4	2c
2d	Level angle	2	—	2	2	4	—	4	2	6	2	8	4	12	2d
2e	Lappet	2	—	2	—	2	—	2	2	4	2	6	2	8	2e
2f	Position angle	—	—	—	—	—	—	—	4	4	4	8	4	12	2f
3	Screw	30	10	40	40	80	20	100	50	150	70	220	430	650	3
3a	Screw nut	50	16	66	49	115	35	150	65	215	90	305	495	800	3a
3b	Screw with nut 30 mm long	—	—	—	1	1	—	1	1	2	2	4	8	12	3b
3c	" " " 20 " "	—	—	—	1	1	3	4	—	4	2	6	6	12	3c
3d	Long nut	—	—	—	—	—	2	2	2	4	—	4	1	5	3d
4	Winder rod 50 mm long	2	—	2	—	2	—	2	2	4	—	4	2	6	4
4a	" " 90 " "	2	—	2	—	2	—	2	2	4	2	6	2	8	4a
4b	" " 120 " "	—	1	1	2	3	1	4	2	6	4	10	2	12	4b
4c	" " 175 " "	—	—	—	—	—	—	—	1	1	1	2	2	4	4c
4d	" " 250 " "	—	—	—	—	—	—	—	2	2	2	4	1	5	4d
4g	" " 25 " "	1	—	1	—	1	—	1	1	2	2	4	2	6	4g
4i	" " 150 " "	—	—	—	1	1	—	1	—	1	1	2	2	4	4i
5	String wheel 26 mm diameter	4	—	4	2	6	—	6	—	6	4	10	2	12	5
5a	" " 36 " "	—	1	1	—	1	—	1	1	2	—	2	—	2	5a
6	Crank	1	—	1	—	1	1	2	1	3	—	3	1	4	6
7	Position rings 10 mm diameter	2	2	4	—	4	2	6	2	8	4	12	8	20	7
7a	" " with fixing screw	—	—	—	—	—	—	—	4	4	2	6	2	8	7a
7b	Receiver " " " "	—	—	—	—	—	—	—	4	4	2	6	2	8	7b
8	Driving rollers 10 mm diameter	—	—	—	2	2	—	2	—	2	1	3	3	6	8
9	Span disk 17 mm diameter	2	—	2	—	2	—	2	2	4	4	8	—	8	9
10	Screw-key	1	—	1	—	1	—	1	—	1	—	1	1	2	10
10a	" " with guide	1	—	1	—	1	—	1	—	1	—	1	—	1	10a
11	" driver	1	—	1	—	1	—	1	—	1	—	1	1	2	11
12	Driving string	1	—	1	—	1	1	2	—	2	—	2	—	2	12
13	Wind wheels	—	—	—	—	—	—	—	1	1	—	1	—	1	13
14	Circular saw blades 54 mm diameter	—	—	—	—	—	1	1	—	1	—	1	—	1	14
15	Holed disk of wood 45 " "	—	—	—	—	—	1	1	—	1	—	1	—	1	15
15a	" " " " 75 " "	—	—	—	—	—	—	—	—	—	1	1	—	1	15a
16	Circular saw table of wood	—	—	—	—	—	1	1	—	1	—	1	—	1	16
17	Flat layer	—	—	—	2	2	2	4	2	6	2	8	2	10	17
17a	" " raised	—	—	—	2	2	2	4	2	6	2	8	2	10	17a
18	Angle band 5×1 holes	2	2	4	—	4	2	6	—	6	—	6	2	8	18
18a	" " 5×2 "	—	—	—	—	—	1	1	—	1	1	2	2	4	18a
19	Trapeze plate large	—	2	2	—	2	—	2	—	2	2	4	2	6	19
19a	" " small	—	2	2	—	2	—	2	—	2	2	4	2	6	19a
20	Rack for brass cog wheels	—	—	—	—	—	—	—	2	2	—	2	—	2	20
20a	" " patent " "	—	—	—	—	—	—	—	4	4	4	8	—	8	20a
21	Wheel circle 90 mm diameter	—	—	—	—	—	2	2	—	2	—	2	2	4	21
21a	" " 65 " "	—	2	2	2	4	—	4	—	4	—	4	—	4	21a

Contents Index of the Stabil Building Sets

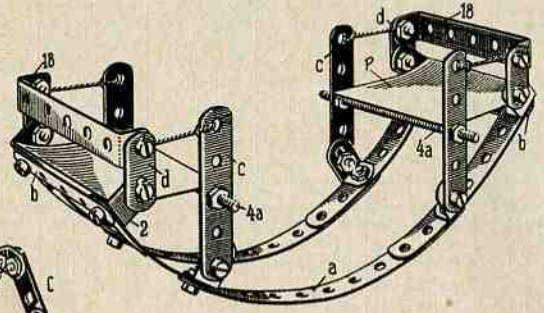
No. of the part	Name of the part	Size Nos. of the boxes the part													No. of the part
		49	49a	50	50a	51	51a	52	52a	53	53a	54	54a	55	
22	Flanged wheels 37 mm diameter	—	—	—	4	4	—	4	—	4	—	4	4	8	22
22a	„ „ 25 „ „	—	—	—	—	—	—	—	—	—	4	4	—	4	22a
23	Disk wheels 37 „ „	—	—	—	—	—	1	1	—	1	—	1	1	2	23
24	Cone wheels 23 „ „	—	—	—	—	—	2	2	—	2	—	2	—	2	24
24a	„ „ 36 „ „	—	—	—	—	—	—	—	—	—	—	—	1	1	24a
24b	Cone wheels 14 mm diameter	—	—	—	—	—	—	—	—	—	—	—	1	1	24b
25	Cog wheels 15 „ „	—	—	—	—	—	1	1	1	2	2	4	—	4	25
25a	„ „ 39 „ „	—	—	—	—	—	1	1	—	1	—	1	1	2	25a
25b	„ „ 63 „ „	—	—	—	—	—	—	—	—	—	1	1	—	1	25b
25c	Patent cog wheels 25 mm diameter	1	—	1	—	1	1	2	—	2	—	2	—	2	25c
25d	Patent cog wheels 50 mm diameter	1	—	1	—	1	—	1	—	1	—	1	—	1	25d
25e	„ „ „ 75 „ „	—	—	—	—	—	1	1	1	2	—	2	—	2	25e
25f	„ „ „ 100 „ „	—	—	—	—	—	—	—	—	—	1	1	—	1	25f
26	Wind wing	—	—	—	—	—	4	4	—	4	4	8	—	8	26
27	Ratchet spring	—	—	—	—	—	1	1	—	1	—	1	1	2	27
27a	Ratchet	—	—	—	—	—	1	1	—	1	—	1	1	2	27a
28	Piston rod 145 mm length	—	—	—	—	—	2	2	—	2	—	2	3	5	28
28a	„ „ 200 „ „	—	—	—	—	—	—	—	—	—	1	1	—	1	28a
29	Cog circle ring 68 „ diameter	—	—	—	—	—	—	—	—	—	2	2	2	4	29
29a	Cog disk 37 „ „	—	—	—	—	—	—	—	—	—	2	2	—	2	29a
30	Dredge scoop	—	—	—	—	—	2	2	10	12	—	12	—	12	30
31	Street roller 17 mm long	—	—	—	—	—	—	—	2	2	—	2	—	2	31
31a	„ „ 17 „ „ with groove	—	—	—	—	—	—	—	2	2	—	2	—	2	31a
31b	„ „ 50 „	—	—	—	—	—	—	—	2	2	—	2	—	2	31b
32	Crown wheel 38 „ diameter	—	—	—	—	—	—	—	1	1	—	1	1	2	32
32a	Screw rod 15 mm diameter	—	—	—	—	—	1	1	—	1	—	1	—	1	32a
33	Driving belt 110 cm long	—	—	—	—	—	—	—	1	1	—	1	—	1	33
34	Spiral spring 3,7 „ „	—	—	—	1	1	—	1	—	1	—	1	1	2	34
34a	Driving spiral 20 „ „	—	—	—	—	—	—	—	1	1	—	1	—	1	34a
34b	„ „ 40 „ „	—	—	—	—	—	—	—	—	—	1	1	—	1	34b
34c	Bent shaft	—	—	—	—	—	—	—	—	—	1	1	—	1	34c
35	Holed disk of metal 86 mm diameter	—	—	—	—	—	2	2	—	2	—	2	—	2	35
35a	„ „ „ „ 38 „ „	1	1	2	2	4	—	4	—	4	—	4	—	4	35a
35b	„ „ „ „ 62 „ „	—	2	2	—	2	—	2	—	2	2	4	—	4	35b
36	Shaft coupling	—	—	—	—	—	—	—	—	—	1	1	1	2	36
37	Lifting hook	—	—	—	—	—	—	—	—	—	18	18	6	24	37
38	S hook	—	—	—	1	1	—	1	—	1	1	2	3	5	38
38a	Screw hook	—	1	1	—	1	—	1	—	1	1	2	—	2	38a
39	Wood rivet 4 mm thick	—	—	—	—	—	—	—	—	—	24	24	—	24	39
40	Wire eye 70 mm long	3	—	3	—	3	1	4	—	4	4	8	8	16	40
40a	Wire eye 110 mm long	—	—	—	—	—	2	2	2	4	2	6	6	12	40a
40b	Clip plate	6	—	6	—	6	6	12	4	16	12	28	28	56	40b
41	Fork band	—	1	1	—	1	—	1	—	1	1	2	2	4	41
42	Chain 3 m long	—	—	—	—	—	—	—	—	—	1	1	1	2	42
42a	Chain links	—	—	—	—	—	—	—	—	—	6	6	6	12	42a
43	Holed metal strip 5×3 holes	—	1	1	1	2	—	2	—	2	—	2	2	4	43
43a	„ „ „ 11×3 „	—	—	—	1	1	1	2	—	2	—	2	2	4	43a
43b	„ „ „ 15×3 „	—	—	—	—	—	—	—	2	2	—	2	2	4	43b
43c	„ „ „ 25×3 „	—	—	—	—	—	—	—	—	—	2	2	2	4	43c
44	Crank shaft	—	—	—	—	—	1	1	1	2	—	2	2	4	44
44a	Crank block	—	—	—	—	—	2	2	2	4	—	4	4	8	44a
45	Axle block	—	—	—	—	—	—	—	4	4	—	4	2	6	45
46	Ball bearing divided in three	—	—	—	—	—	—	—	—	—	—	—	1	1	46
47	Case for heavy motor	—	—	—	—	—	—	—	—	—	—	—	1	1	47
60	Flat shaft 50 mm long	—	—	—	—	—	—	—	2	2	—	2	2	4	60
60a	Flat shaft 90 mm long	—	—	—	—	—	—	—	2	2	—	2	2	4	60a
60b	„ „ 120 „ „	—	—	—	—	—	—	—	2	2	2	4	2	6	60b
60c	„ „ 150 „ „	—	—	—	—	—	—	—	—	—	1	1	1	2	60c
60d	„ „ 250 „ „	—	—	—	—	—	—	—	1	1	—	1	1	2	60d
84	Tyres of rubber suitable to No. 21 a	—	—	—	—	—	—	—	—	—	—	—	4	4	84
85	Long holed iron strips 7 holes long	—	—	—	—	—	2	2	2	4	4	8	—	8	85

Models 1—128 built with Walther's „STABIL" Building Set No. 49.

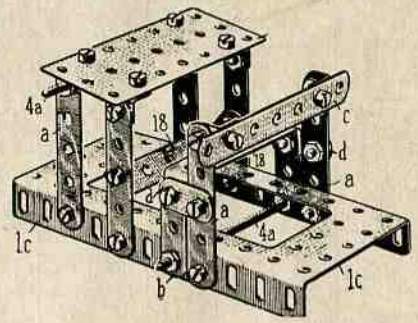
No. 1. **Bars**



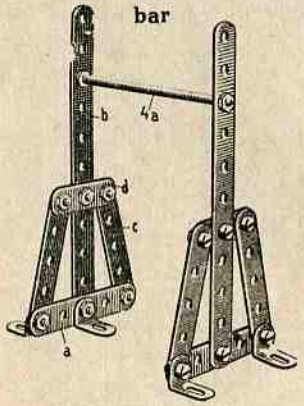
No. 2. **Sledge-swing**

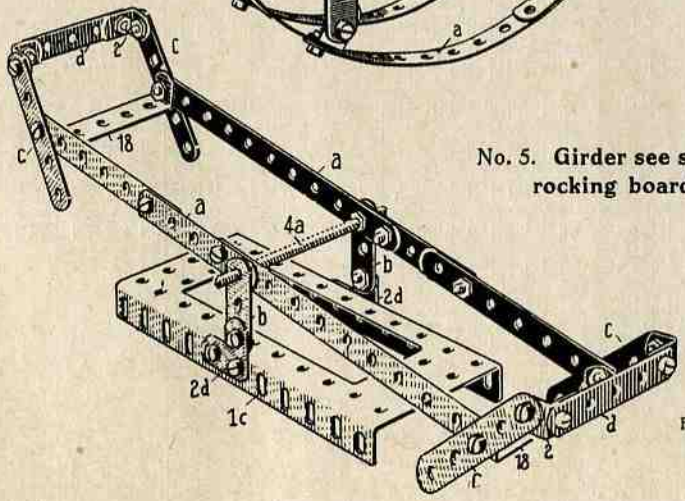


No. 3. **School-desk**



No. 4. **Horizontal bar**

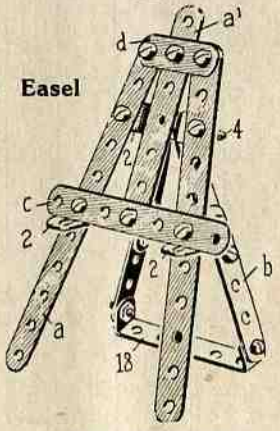




No. 5. **Girder see saw or rocking board**

Sketch 5a
Fastening of the rocking board on the shaft.

No. 6. **Easel**



Parts for the Bars:

2 Beams	a s.	7 h. l.
2 „	b „	9 „ „ (5+5)
4 uprights	c „	5 h. l.
2 rails	d „	11 „ „
14 screws with nuts		
4 angle brackets		

Parts to the Sledge Swing:

2 sledges	a s. 19 h. l. (5+11+7)
2 rails	b s. 5 h. l.
4 seat supports	c „ 5 „ „
4 leaning „	d „ 2 „ „ & 2e
2 seat planks	No. 18
2 leaning rails	„ 4a
20 screws with nuts, 8 a. b.	

Parts to the School Desk:

1 ground plate	No. 1c
1 desk plate	„ 1d
6 legs	a s. 5 h. l.
2 „	b „ 3 „ „
1 leaning rail	c „ 7 „ „
2 cross planks	d „ 2 „ „
2 stays	No. 4a
1 seat, 1 foot rest	„ 18
22 screws w. n., 6 a. b.	

Parts for the Horizontal Bar:

2 beams	a s.	5 h. l.
2 uprights	b „	11 „ „
4 braces	c „	5 „ „
2 cross planks	d „	3 „ „
1 horizontal pole	No. 4a	
12 screws with nuts		
6 angle brackets		

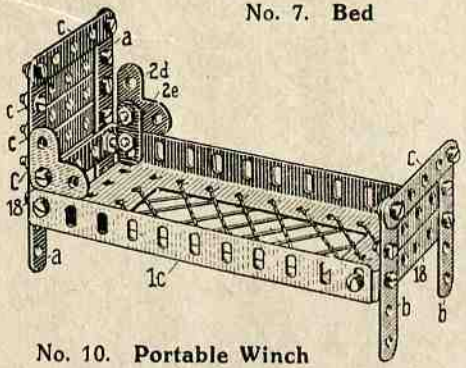
Parts of the Seesaw:

1 ground plate	No. 1c
2 swings	a s. 19 h. l. (7+5+11)
2 rest uprigths	b s. 3 h. l.
4 leaning rails	c „ 5 „ „
2 leaning tilts	d „ 5 „ „
2 sitting rails	No. 18
2 level angles	„ 2d
1 shaft	„ 4a
22 screws w. n., 4 a. b.	

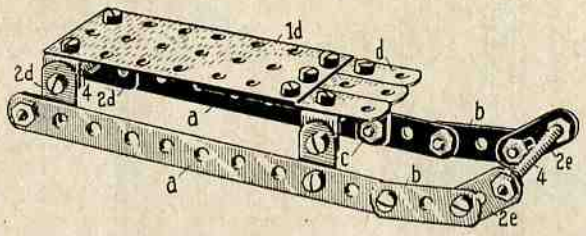
Parts of the Easel:

2 upright lasts	a s. 11 h. l.
1 tongue piece	a¹ „ 7 „ „
2 tilt pieces	b „ 8 „ „ (5+5)
2 cross rails	c, d „ 3,7 h. l.
1 foot rail	No. 18
1 hinge pole	„ 4
2 placing rings	„ 7
14 screws w. n., 4 a. b.	

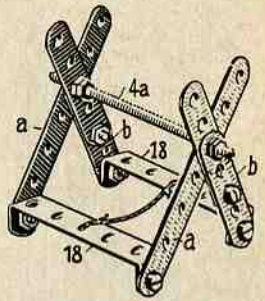
No. 7. Bed



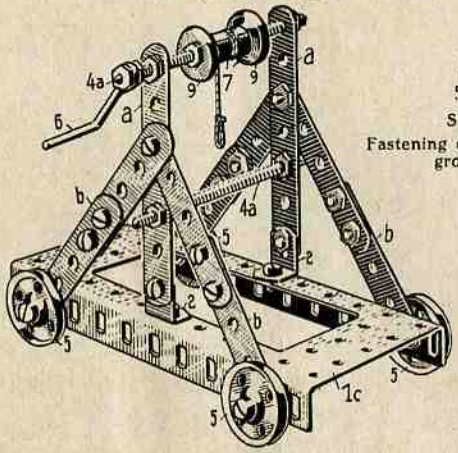
No. 8. Tobogganing Sledge



No. 9. Saw Bench

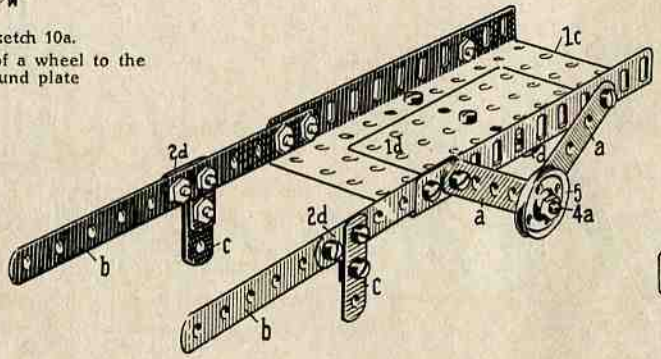


No. 10. Portable Winch

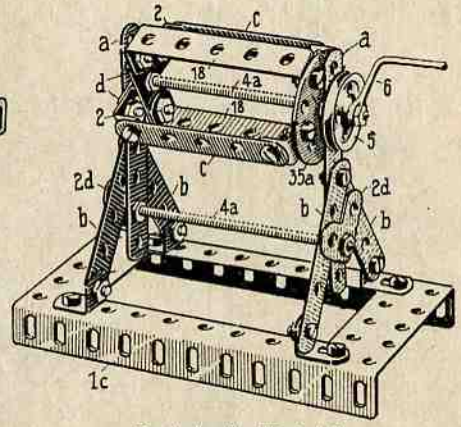


Sketch 10a.
Fastening of a wheel to the ground plate

No. 11. Two-wheel Barrow



No. 12. Washing and Scouring Drum



Parts of the Building Winch:

1 ground plate	No. 1c	1 stay	No. 4a
2 bearer-uprights	a s. 7 h. l.	4 wheels	„ 5
4 stresses	b „ 8 „ „ (5+5)	1 crank	„ 6
		1 side-cylinder	No. 9+7+7+9
1 shaft	No. 4a	18 screws w. n., 2 a. b.	

Parts of the Two-wheel barrow

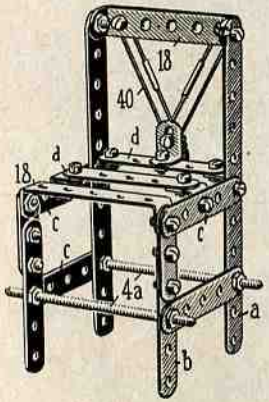
1c, 1d ground plate	c foot supports
a axle-supports	d cross carriers
b carrying poles	No. 4a axles

No. 5 wheels

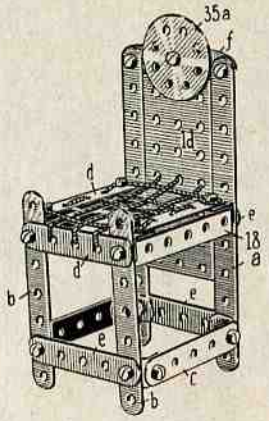
Parts to the Wash-tub:

1 ground plate	No. 1c	1 cross stay	No. 4a
2 uprights	a s. 7 h. l.	1 propulsion plate	„ 5
4 leg stays	b „ 5 „ „	1 crank	„ 6
2 staves	c „ 5 „ „	2 staves	„ 18
2 ground bars	d „ 3 „ „	1 cask bottom	„ 35a
2 transverse bands	No. 2d	22 screws with nuts	
1 shaft	„ 4a	8 angle brackets	

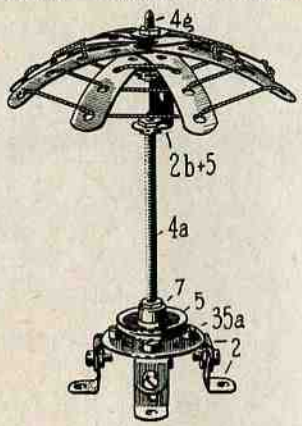
No. 13. **Armchair**



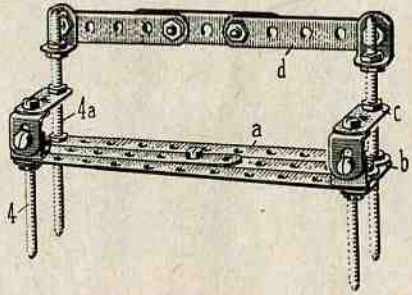
No. 14. **Armchair**



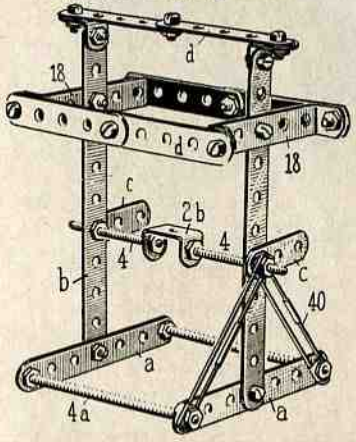
No. 15. **Garden Umbrella**



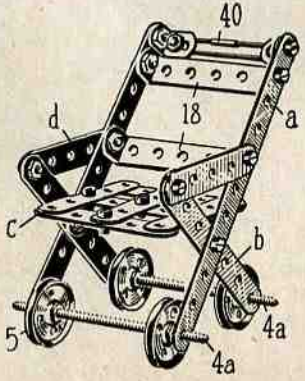
No. 16. **Garden Bench**



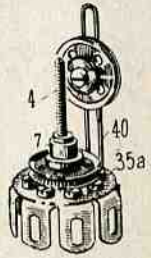
No. 17. **Drying Horse.**



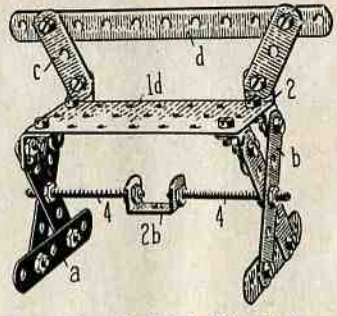
No. 18. **Rolling Stool**



No. 19. **Kitchen Lamp**



No. 20. **Bench**



Parts to the Armchair No. 13:

2	hind legs	a	s. 11	h. l.
2	front legs	b	„ 6	„ „ (5+3)
4	under stays	c	„ 5	„ „
2	seat stays	d	„ 5	„ „
1	back and seat stay		No. 18	
2	transverse fillets		„ 4a	
2	leaning-bars		„ 40	
20	screws with n., 5 a. b.			

Parts to the Armchair No. 14:

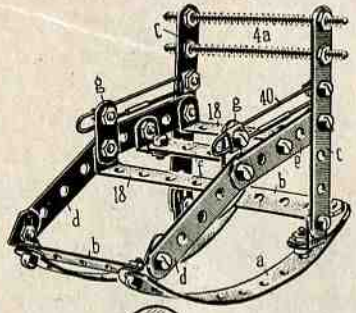
2	hind legs	a	s. 11	h. l.
2	front legs	b	„ 7	„ „
2	under stays	c	„ 5	„ „
3	seat bars	d	„ 5	„ „
3	transverse fillets	e	s. 5	h. l.
2	leaning bars	f	„ 3	„ „
1	stuffing		No. 1d	
2	under bars		„ 18	
1	centre-piece		„ 35a	
20	screws with n., 8 a. b.			

Parts to the Roller Stool:

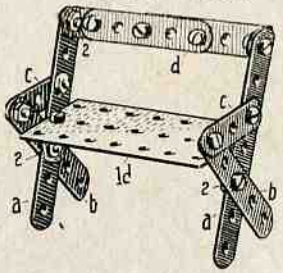
2	crossed feet	a	s. 11	h. l.
2	„ „	b	„ 7	„ „
6	seat bars	c	„ 5	„ „
2	under bars	d	„ 5	„ „
2	leaning bars		No. 18	
2	axles		„ 4a	
4	wheels		„ 5	
1	handle last		„ 40	
17	screws w. n., 4 a. b			

Models 1—128 built with Walther's „STABIL" Building Set No. 49.

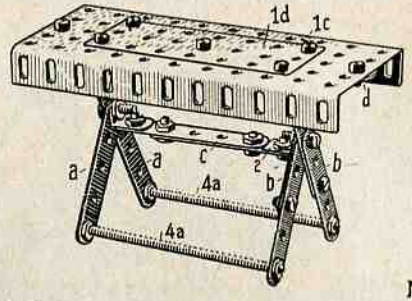
No. 21. **Rocking-chair**



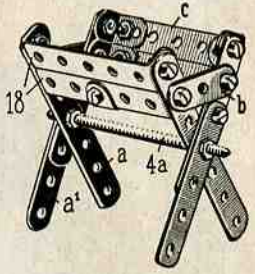
No. 22. **Bench**



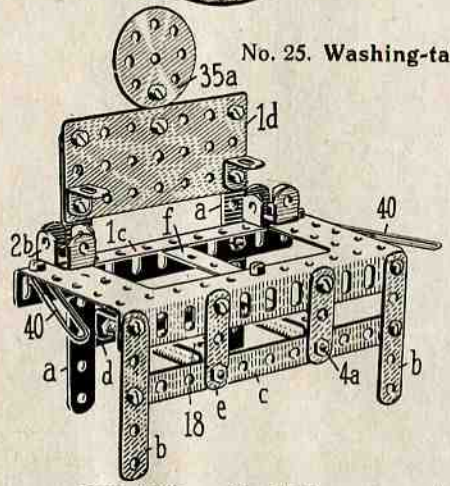
No. 23. **Table with cross-legs**



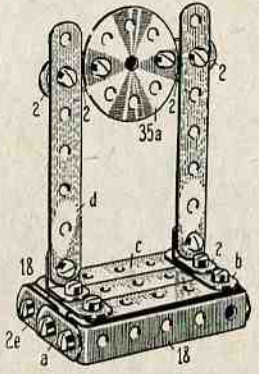
No. 24. **Manger**



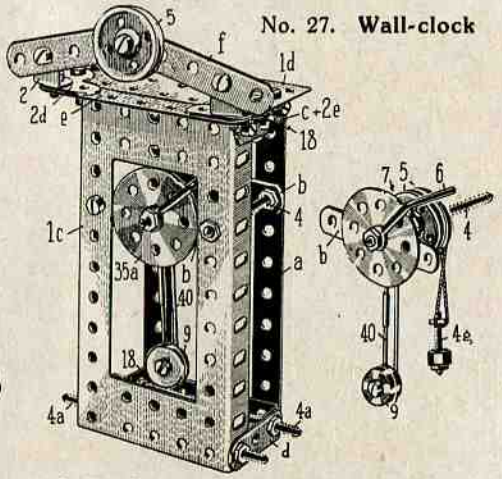
No. 25. **Washing-table**



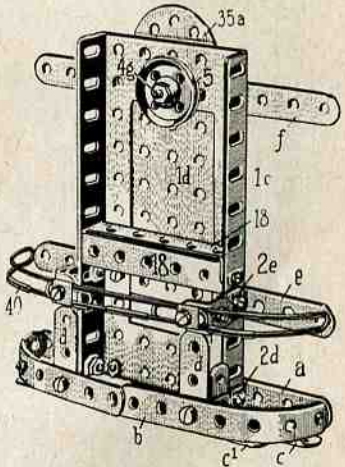
No. 26. **Mirror**



No. 27. **Wall-clock**



No. 28. **Hall-stand for clothes**



Parts to the washing-table

1 wash-table plate	No. 1c	1 soap-bowl	No. 2b
1 mirror	„ 1d	2 stays	„ 4a
2 hind legs	a s. 9 h. l. (5+5)	2 box-fillets	„ 18
2 front legs	b s. 5 h. l.	1 mirror top	No. 35a+2e
1 box fillet	c „ 11 „ „	2 towel racks	No. 40+40b
1 „ „	d „ 7 „ „	21 screws with nuts	
2 divided bars	e „ 3 „ „	8 angle brackets	
1 plate-fillet	f „ 5 „ „		

1 frontal frame	No. 1c
1 cover-plate	„ 1d
2 wall-bars	a s. 11 h. l.
2 „ „	b „ 5 „ „
2 „ „	No. 18
2 side-bars	„ 2e
2 „ „	c s. 2 h. l.
2 „ „	d „ 3 „ „

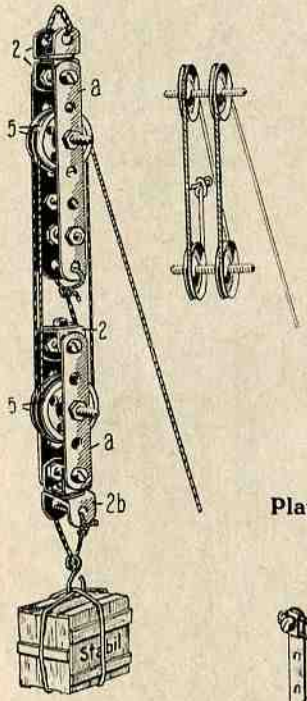
Parts to the Wall Clock:

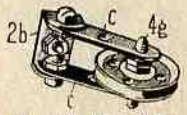
1 case bar	e s. 7 h. l.	1 crown-wheels	No. 5
2 „ „	f „ 5 „ „	2 driving-wheels	„ 5
2 level angles	No. 2d	1 hand for dial	„ 6
1 clock-handle spindle	No. 4	1 position ring	„ 7
1 weight	„ 4g+7	1 pendulum	9+9+40
2 ground anchor plates	No. 4a	1 dial	No. 35a
		21 screws with nuts	
		4 angle brackets	

Parts to the Clothes Stand No. 28:

1 wall-frame	No. 1c+1d	2 gussets	No. 2e
2 socket-bars	a s. 5 h. l.	2 flat angles	„ 2d
2 „ „	b „ 7 „ „	1 mirror	„ 5+4g
1 ground-fillet	c „ 11 „ „	1 crown-plate	„ 35a
1 „ „	c^1 „ 9 „ „ (5+5)	1 comb-box 2	„ 18
2 upright bars	d s. 3 h. l.	3 screen-bands	„ 40
2 screen-files	e „ 5 „ „	21 screws with nuts	
1 hook-bar	f „ 11 „ „	6 angle brackets	

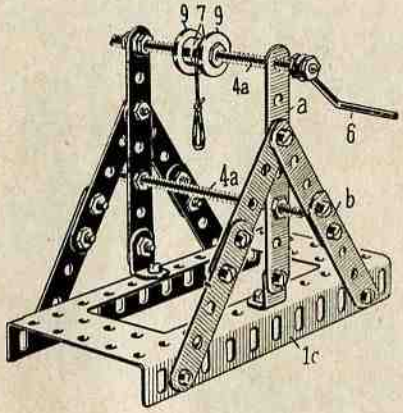
No. 29. **Pulley**



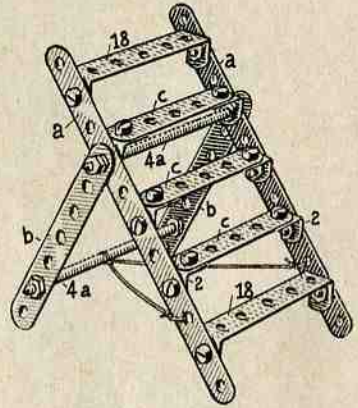


Sketch No. 33a.
Under-view of the revolving wheel-prong for the platform barrow

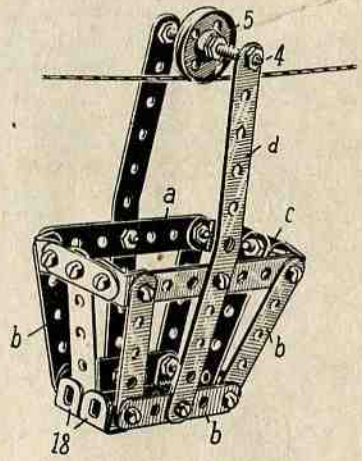
No. 30. **Fountain Winch**



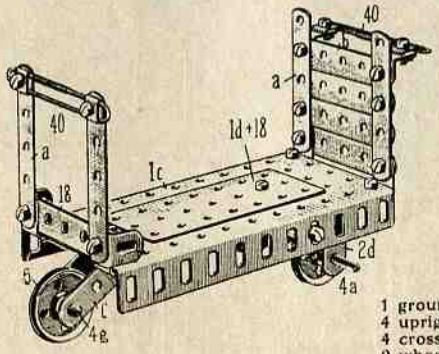
No. 31. **Step Ladder**



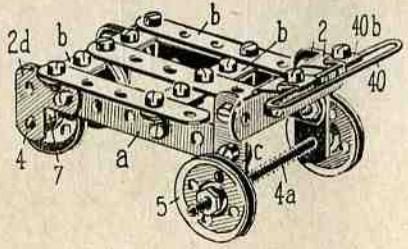
No. 32. **Mine Basket**



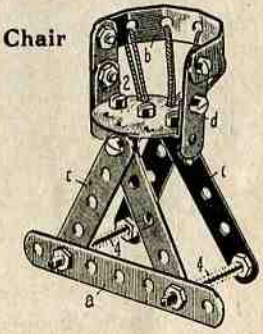
No. 33.
Plat-form and Luggage-barrow



No. 34. **Roller Barrow**



No. 35. **Writing Chair**



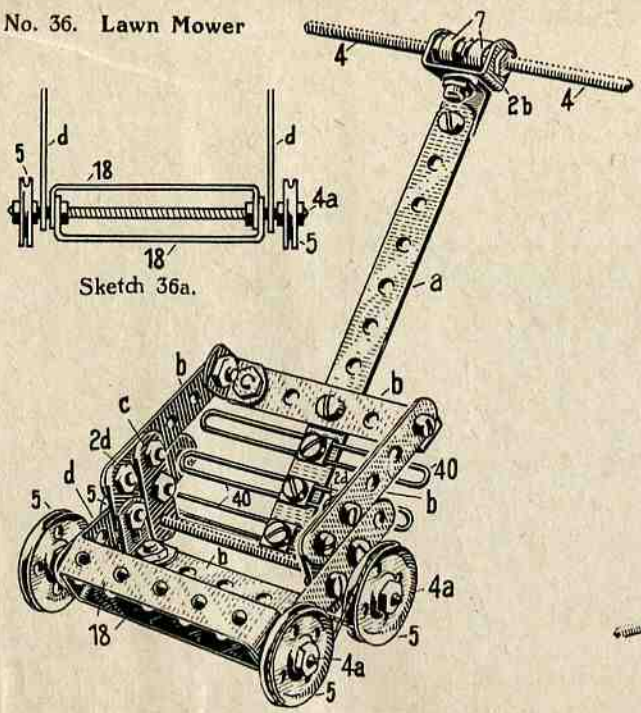
Parts for the Platform Barrow:

1 ground-plate	1c+1d	2 axle pins	No. 2d
4 uprigths	a s. 5 h. l.	2 axles	„ 4a, 4g
4 cross-stays	b „ 5 „ „	3 wheels	„ 5
2 wheel prong bands	c „ 3 „ „	2 cross-bands	„ 18
		2 handle-bars	„ 40+40b
1 wheel prong	No. 2b	22 screws w. n., 6 a. b.	

Parts for the Roller Barrow:

2 long bearers	a s. 7 h. l.	2 axles	No. 4, 4a
3 cross-bands	b „ 5 „ „	4 wheels	„ 5
3 ground-bars	b „ 5 „ „	1 handle-bar	„ 40
2 axle-pins	c „ 3 „ „	22 screws with nuts	
2 „ „	No. 2d	8 angle brackets	

No. 36. Lawn Mower



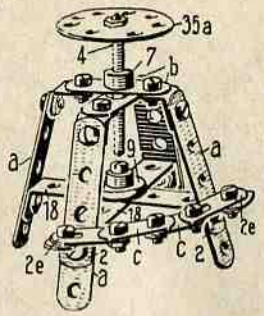
Sketch 36a.

Part for the Lawn Mower:

1 shaft-pole	a	s. 11 h. l.
4 frame-bars for the trapbox	b	„ 5 „ „
2 exle-pins	c	„ 3 „ „
2 knife-guards	d	„ 5 „ „
2 knives	No. 18	
1 handle pole grip	„ 2b, 4 a. 7	
2 level angles	„ 2d	
2 axles 4 wheels	„ 4a, 5	
3 ground pins	„ 40+40b	

20 screws w. n., 5 a. b.
Sketch 36a shows how the knives No. 18 are built in.

No. 37. Turning Stool

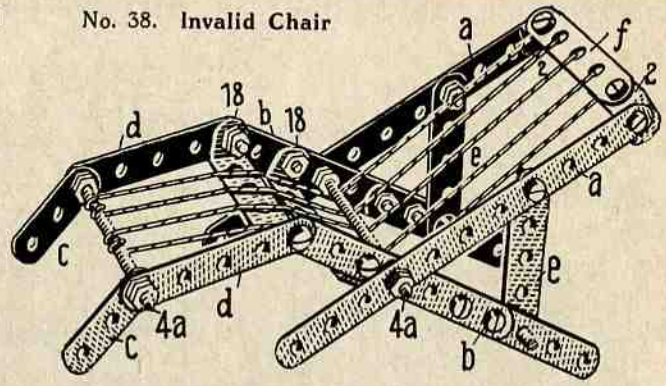


Parts for the Turning Stool:

4 legs	a	s. 5 h. l.
2 head-pins	b	„ 3 „ „
2 step-pins	c	„ 2 „ „
2 „	No. 2e	
2 leg-pins	„ 18	
1 spindle	„ 4	
3 placing rings	„ 7. 9	
1 seat	„ 35a	

18 screws with n., 6 a. b.
Bethween the two head-pins a nut is fixed on which turns the spindle or guides it

No. 38. Invalid Chair

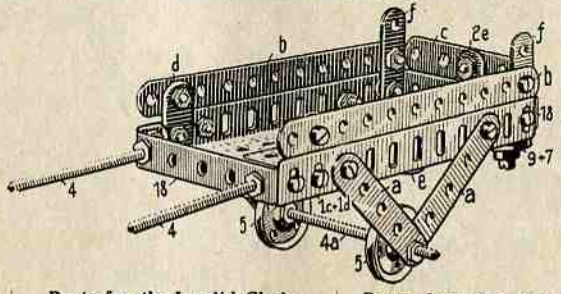


Parts for the Invalid Chair:

2 cross legs	a	s. 11 h. l.
2 „ „	b	„ 10 „ „ (7+5)
2 front legs	c	„ 3 h. l.
4 push bars	d, e	„ 5 „ „
1 head-piece	f	„ 5 „ „
2 spindles	No. 4a	
2 seat-bars	„ 18	

16 screws w. n., 2 a. b.
The tilt can be moved higher or lower and the feet extended

No. 39. Box Barrow

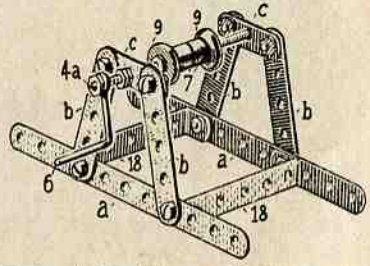


Parts fort the Box Barrow:

1 ground-plate	No. 1c, 1d	
4 axle-pins	a	s. 5 h. l.
2 box-sides	b	„ 11 „ „
1 tail-bar	c	„ 5 „ „
1 cross-pin	e	„ 5 „ „
4 uprights	d, f	„ 2,3 „ „
1 lappet	No. 2e	
2 shaft-poles	„ 4	
1 axle	„ 4a	
2 supports	„ 7, 9	
2 crown-bars	„ 18	

22 screws with nuts

No. 40. Building Winch

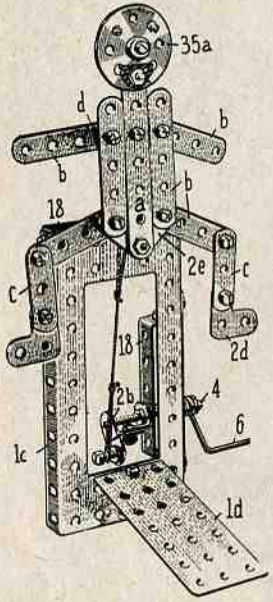


Parts for the Building Winch:

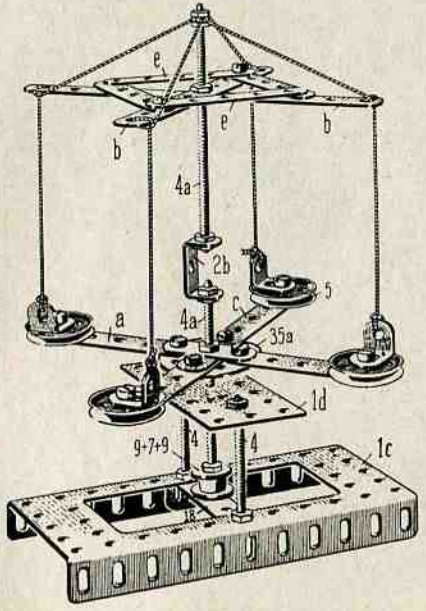
2 cross-bars	No. 18	
2 long bars	a	s. 11 h
4 trestle-legs	b	„ 5 „ „
2 cross-pins	c	„ 3 „ „
1 shaft	No. 4a	
1 crank	„ 6	
1 side-drum	„ 9+7+7+9	

8 screws with nuts

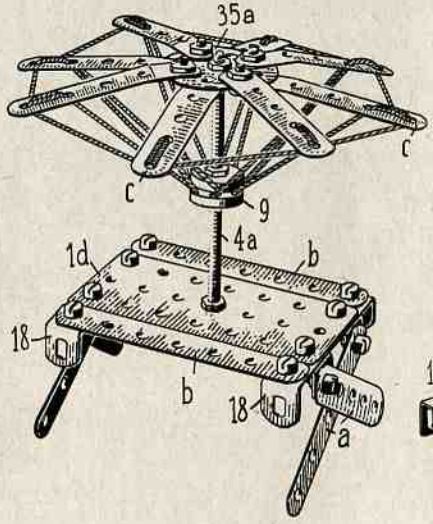
No. 41. **Jumping Jack**



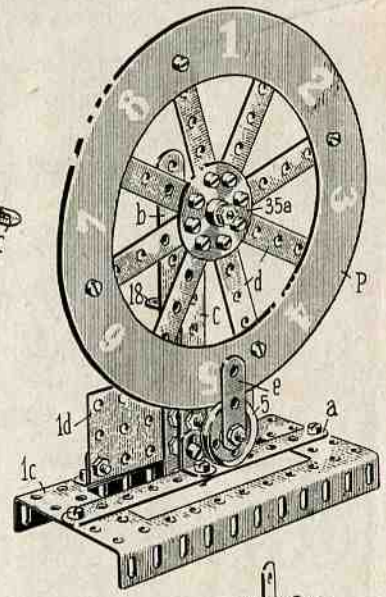
No. 42. **Round about**



No. 43. **Market Stand**



No. 44. **Lucky Wheel**



Parts for the Round about:

1 floor-plate	No.	1c
1 layer-plate	„	1d
1 cross-plate	„	18
1 cross-spoke	a s.	11 h. l. (5+3+5)
2 „ „	b „	11 „ „
1 „ „	c „	11 „ „ (7+7)
4 stays	e „	5 „ „
2 position spindles	No.	4
1 round about pillar	„	4a+2b+4a
4 seats with bars	„	5+2
1 driving plate	„	9+7+9
1 hub	„	35a
10 screws w. n., 4 a. b.		

Parts for the Market Stand:

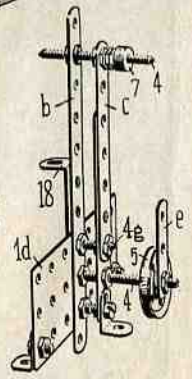
1 table-plate	No.	1d
4 cross-legs	a s.	5 h. l.
2 table-bars	b „	7 „ „
4 screen-pegs	c „	5 „ „
2 „ „	c „	11 „ „
1 screen-stick	No.	4a
2 clamping plates	„	9
2 table cross-pins	„	18
1 umbrella shade	„	35a
16 w. n., 4 a. b.		

Parts for the Lucky Wheel:

1 ground-plate	No.	1c
1 wall-plate	„	1d
1 plate pin	a s.	11 h. l.
1 position-stand	b „	11 „ „
1 „ „	c „	9 „ „ (7+7)
8 spokes	d „	5 h. l.
1 dial band	e s.	3 h. l.
1 dial hub	No.	5
3 spindles	„	4, 4g
1 stand-foot	„	18
1 wheel-hub	No.	7+35a+7
22 s. m. n., 2 a. b.		

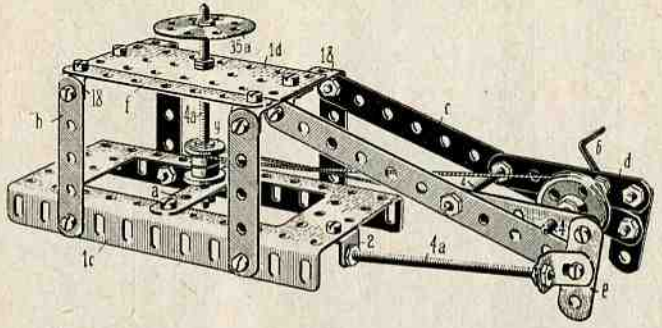
The wheel felly-dial P is made from paper-mash and does not belong to this box-contents.

Sketch 44a shows the cradle of the Lucky Wheel.

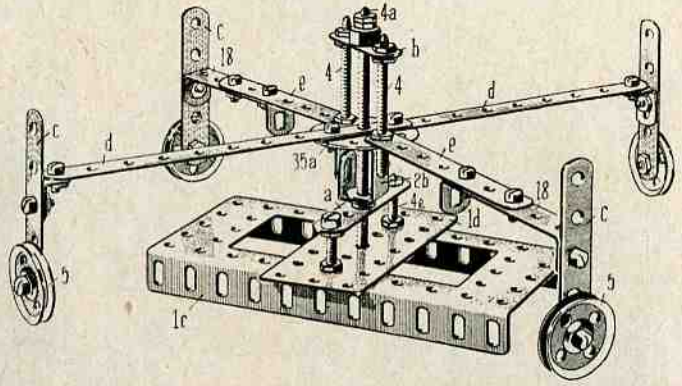


Sketch 44a

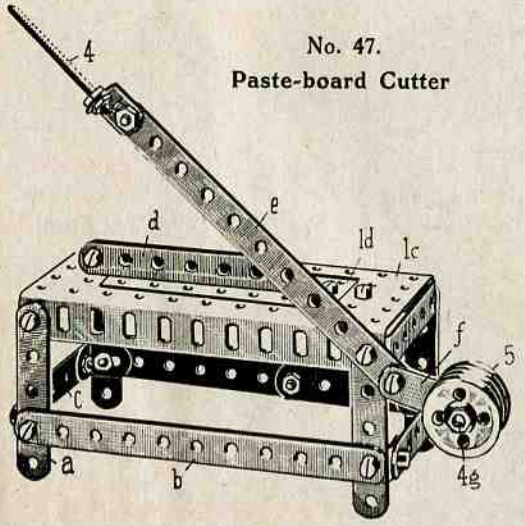
No. 45. **Feeding Machine**



No. 46. **Travelling Round-about**



No. 47.
Paste-board Cutter



Parts for the Feeding Machine No. 45:

1 ground plate	No. 1c
1 table plate	„ 1d
1 foot-rest plate	a s. 5 h. l.
4 corner uprights	b „ 5 „ „
2 front laying stresses	c s. 11 h. l.
2 front-layers	d s. 5 h. l.
2 front laid feet	e „ 3 „ „
1 plate-pin	f „ 7 „ „
1 front-shaft	No. 4
2 reed-poles	„ 4, 4a
1 feed spindle	„ 4a
1 driving plate	„ 5
1 „ „	„ 7+9
1 crank	„ 6
2 cross pegs	„ 18
1 fead head	„ 35a
18 screws w. n., 3 a. b.	

Parts of the Round-about:

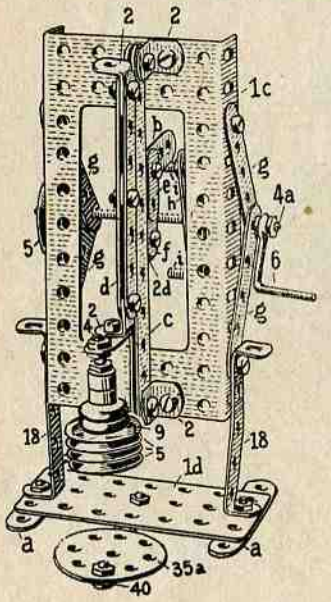
1 base-plate	No. 1c
1 position plate	„ 1d
1 cross plate	a s. 5 h. l.
1 „ „	b „ 3 „ „
4 axle plates	c „ 5 „ „
2 spokes	d „ 11 „ „
2 „	e „ 7 „ „ + No. 18
1 beam plate	„ 2b
2 position spindles	„ 4
1 rotatory spindle	„ 4a
4 wheels	„ 5
18 screws with nuts	
4 angle brackets	

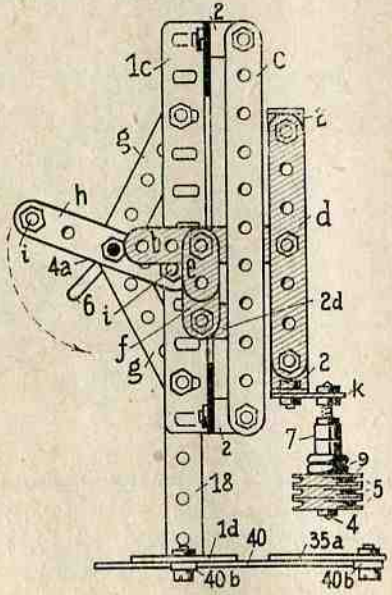
Parts to the Paste-Board Cutter:

1 table-plate	No. 1c+1d
4 table-legs	a s. 5 h. l.
1 long pin	b „ 11 „ „
1 „ „	b „ 11(5+7) h. l.
2 cross pegs	c „ 5 „ „
1 position rail	d „ 7 „ „
1 knife	e „ 11 „ „
1 handle band	f „ 3 „ „
2 lappets	No. 2e
1 stay	„ 4g
1 knife-handle	„ 4
1 opposing weight 4	„ 5
19 screws w. n., 6 a. b.	

One long pin b of 5 and 7 holed iron strips is laid on 11 holed iron strip.

No. 48. Sledge Hammer Mechanism





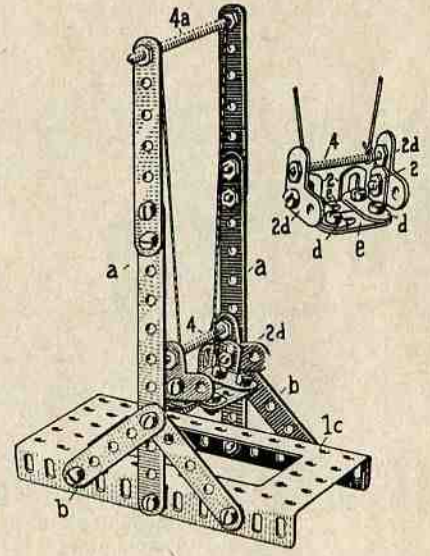
Sketch 48a

Part of the Sledge Hammer No. 48:

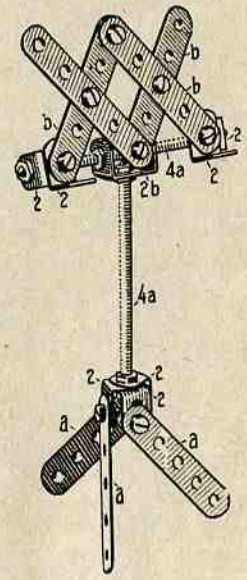
1 rack-plate	No. 1c	2 slide rails	f s. 3 h. l.	1 lever shaft	No. 4a
1 base plate	„ 1d	4 position stays	g s. 5 „ „	1 fall hammer	
2 lifting pegs	a s. 5 h. l.	1 double lever	h „ 5 „ „		3 No. 5+2 No. 7+9
1 arm band	b „ 5 „ „	2 lever arms	i No. 3	2 feet stands	No. 18
2 guid. plates	c „ 11 „ „	1 inlay band	k „ 2e	1 anvil plate	„ 35a
2 slide rails	d „ 7 „ „	1 guide arm	„ 2d	1 flat anchor	„ 40
2 „ „	e „ 2 „ „	1 hammer spindle	„ 4	18 s. w. n., 4 a. b.	

Sketch No. 48a is a perpendicular-setion. By the rotation of the shaft the arms (i) grip under arm band b and lift up the hammer-bar.

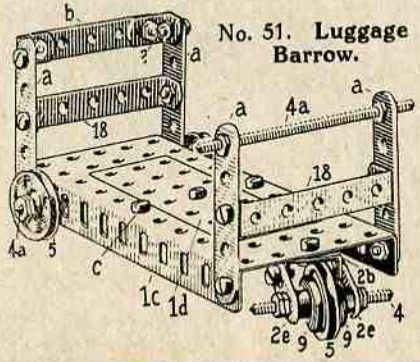
No. 49. Stationery Swing



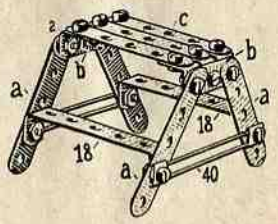
No. 50. Notes Desk



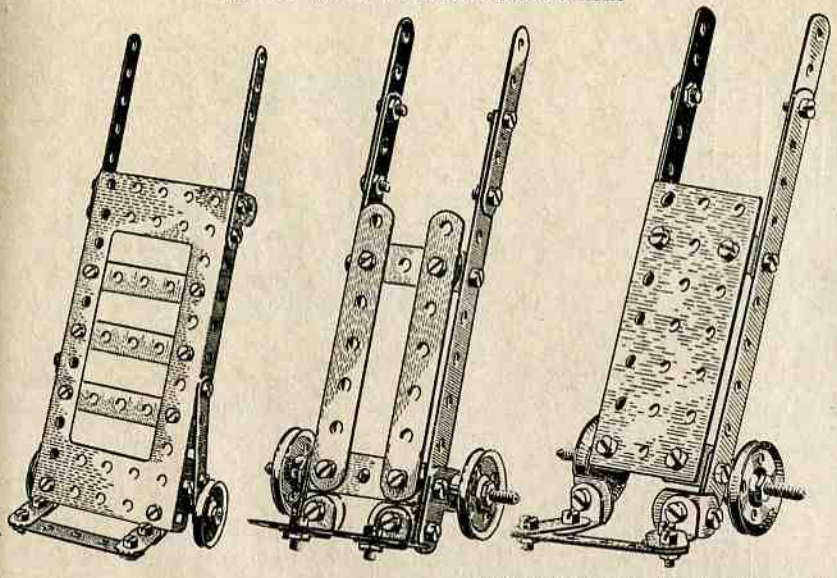
No. 51. Luggage Barrow.

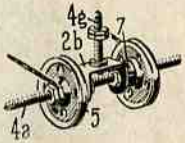


No. 52. Foot Stool



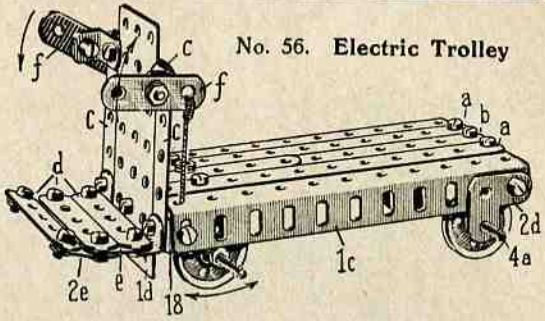
No. 53—55. 3 different Sack-trucks



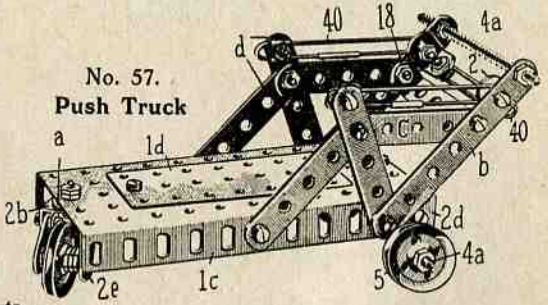


Sketch 56a.

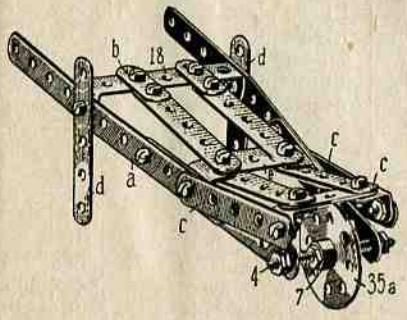
No. 56. Electric Trolley



No. 57. Push Truck



No. 58. Hand Barrow



Parts for the and Barrow No. 58:

2 bearer trees	a s. 14 h. l. (11+7)
2 body pins	b s. 6 h. l. (5+2)
4 beam pins	c s. 5 h. l.
2 foot rests	d „ 5 „ „
2 cross pegs	e „ 3 „ „
1 axle	No. 4
2 hubs	„ 7
1 cross peg	„ 18
1 wheel	„ 35a
16 screws w. nuts	
4 angle brackets	

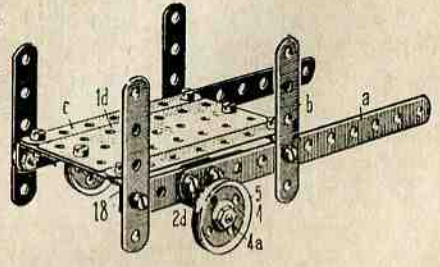
parts of theElectricTrolley:

1 car plate	No. 1c
1 front wall plate	„ 1d
2 cover deck ribs	a s. 11 h. l.
1 same (5+7)	b „ 11 „ „
3 front wall stays	c „ 5 „ „
3 step boards	d „ 5 „ „
2 step board holders	e s. 2 h. l. + No. 2e
2 steering leevers	f s 3 h. l.
1 axle block	No. 2b
2 „ „	„ 2d
2 axles	„ 4a
1 spindle	„ 4g
4 wheels	„ 5
2 place rings	„ 7
2 head heavers	„ 18
22 screws w. n., 4 a. b.	

Parts of the Push Barrow:

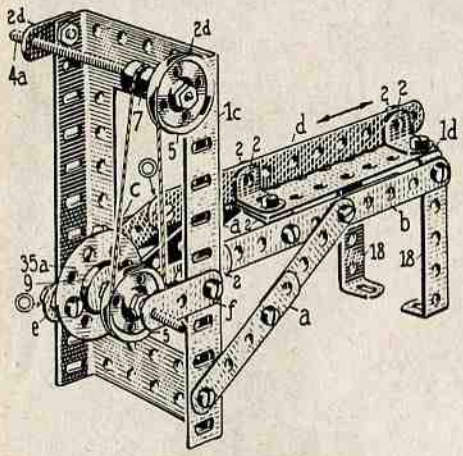
1 ground plate	No. 1c+1d
1 length peg	a s. 11 h. l.
2 rails	b „ 7 „ „
2 leaning plates	c s. 5 h. l.
4 rest plates	d „ 5 „ „
1 wheel fork	No. 2b+2 No. 2e
2 axle bolts	No. 2d
2 axles	„ 4a, 4g
1 grip pole	„ 4a
1 cros pins	„ 18
3 wheels	„ 5
2 long pins	No. 40+40b
16 screws w. nuts	
2 angle brackets	

No. 59. Barrow

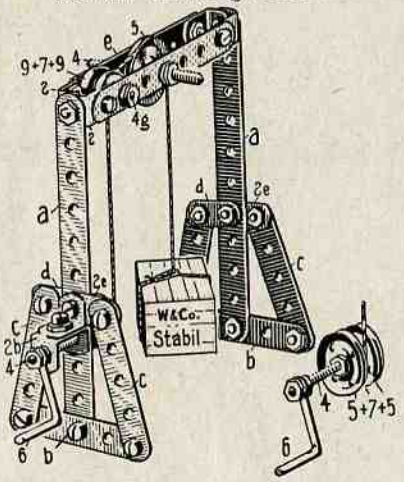


Sketch 56a shows the front axle 4a which by 2 steering levers f is steered. Both levers f are connected by string with the front axle.

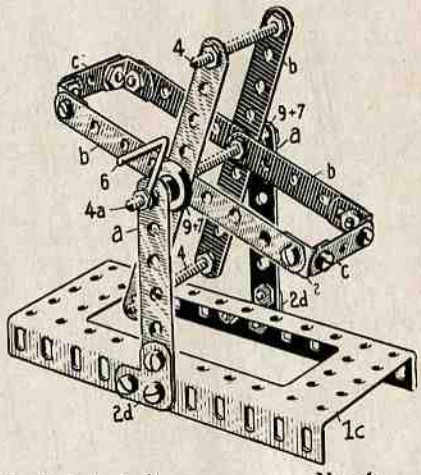
No. 60. **Metal Saw**



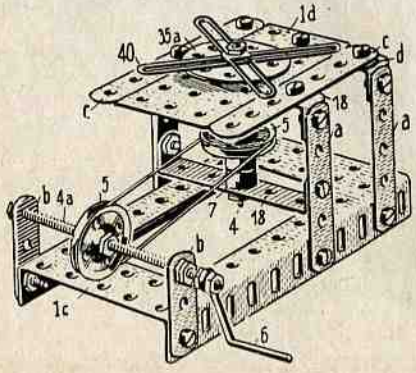
No. 61. **Heaving Block.**



No. 62. **Windlass**



No. 63. **Cleaving Machine**



Parts to the Metal Saw:

1 base plate	No.	1c
1 table plate	„	1d
2 bent legs	„	18
2 support stays	a s.	8 (5+5) h. l.
1 frame side	b „	13 (11+5) „ „
1 „ „	c „	10 (7+7) „ „
1 saw blade	d „	11 „ „
1 Excentric lever	e s.	5 „ „
1 laying plate	f „	3 „ „
2 laying stays	No.	2d
2 shafts	„	4, 4a
3 driving plates	„	5, 5, 7+7
1 wheel hub	„	9
1 crank wheel	„	35a
21 screws w. n.,		6 a. b.

Parts of the Heaving Block:

2 stands	a s.	11 h. l.
2 peg plates	b „	5 „ „
4 foot stays	c s.	5 h. l.
2 cross bands	d „	2 „ „
2 cross beams	e „	7 „ „
1 shaft stay	No.	2b
2 cross bands	„	2e
2 shafts	„	4
1 shaft	„	4g
1 guide roller	„	5
1 „ „	„	9+7+9
1 crank	„	6
1 rope winder	„	5+7+5
19 screws with nuts,		5 a. b.

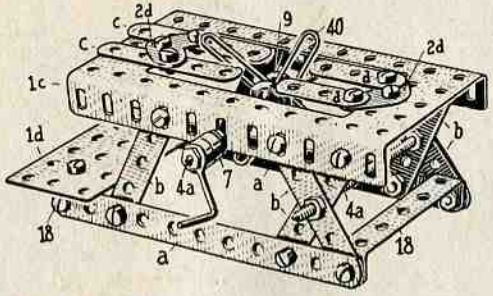
Parts for the Windlass:

1 ground plate	No.	1c
2 stands	a s.	7 h. l.
8 spokes	b „	5 „ „
2 cross bands	c „	3 „ „
2 flat angles	No.	2d
2 cross pegs	„	4
1 shaft	No.	4a
1 crank	„	6
2 wheel hubs	„	9+7
14 s. w. n.		4 a. b.

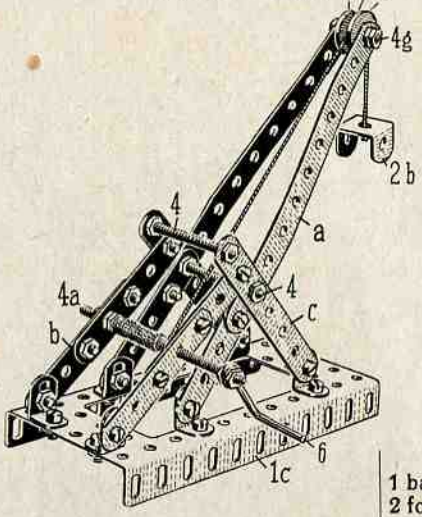
Ports of the Cleaver Machine:

1 base plate	No.	1c
1 table plate	„	1d
4 beam feet	a s.	5 h. l.
2 upright shanks	b „	3 „ „
2 table lasts	c „	7 „ „
1 cross plate	d „	5 „ „
1 stationery shaft	No.	4
1 driving shaft	„	4a
2 driving plates	„	5
2 position rings	„	7+9
2 cross layers	„	18
1 knife plate	„	35a
2 cutting knives	„	40+40b
17 screws w. n.		2 a. b.

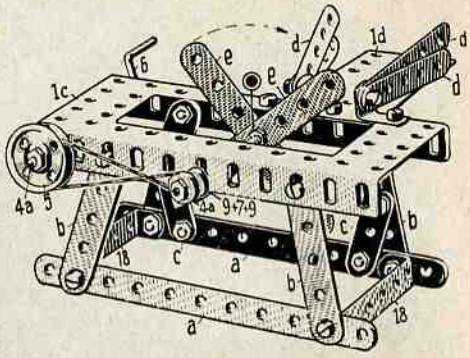
No. 64. **Tenon Cutting Machine**



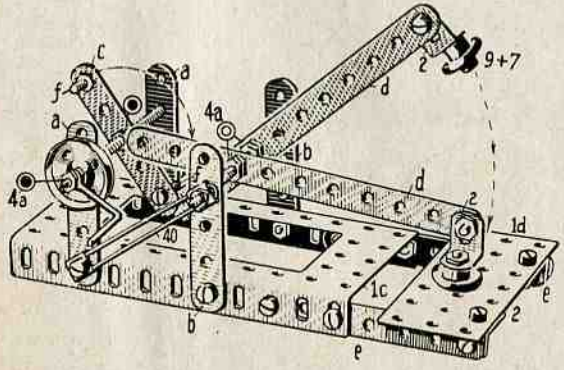
No. 65. **Crane**



No. 66. **Mincing Machine**



No. 67. **Hammer Mechanism.**



Parts for te Tenon Cutter:

1 table plate	No.	1c
1 bearing plate	„	1d
2 side plates	a s.	11 h. l.
6 beam feet	b „	5 „ „
2 table stays	c „	5 „ „
2 „ „	d „	3 „ „
2 angle stays	No.	2d
2 cross stays	„	18
1 shaft, 1 support bolt	„	4a
1 crank	„	6
1 driving roller 2	„	7
2 knife knobs	„	9
2 slicing knives	„	40
22 screws with nuts		

Parts of the Crane:

1 base plate	No.	1c
2 forward arms	a s.	14 h. l. (11+5)
2 span bands	b s.	7 h. l. (5+5)
2 suppert stays	c s.	7 h. l.
1 crank shaft	No.	4a
2 stay bolts	„	4
1 roller spindle	„	4g
1 guide reel	„	9+7+9
1 crank	„	6
20 screws w. n.,		6 a. b.

Support bands b are placed on 5+5 holed iron strip.

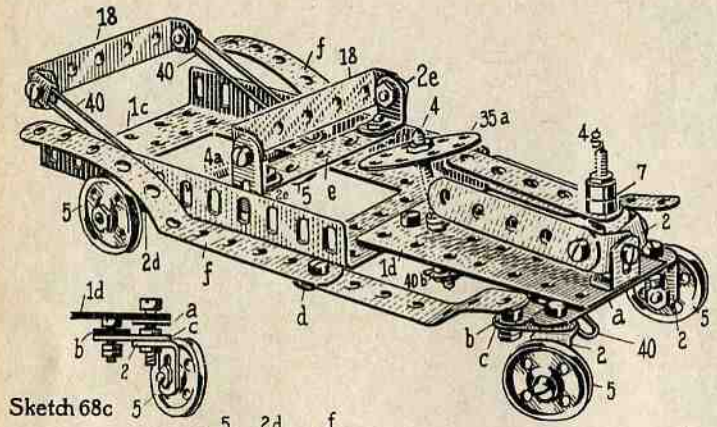
Parts for the Mincing Machine:

1 Table plate	No.	1c
1 inlaid table	„	1d
2 cross plates	„	18
2 ground plates	a s.	11 h. l.
4 rest stays	b „	5 „ „
2 rest props	c s.	3 h. l.
4 box sides	d „	5 „ „
2 cross knives	e „	7 „ „
2 shafts	No.	4a
2 driving slines	„	5, 9+7+9
1 crank	„	6
17 screws w. n.,		2 a. b.

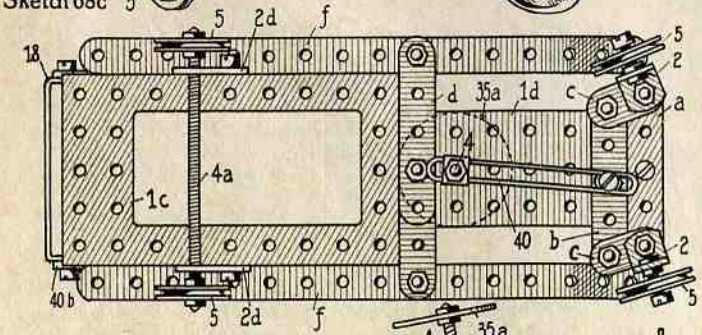
Parts to the Hammer Mechanism:

1 ground plate	No.	1c
1 anvil „	„	1d
4 position shanks	a, b s.	5 h. l.
1 pressure lever	c „	5 „ „
2 hammer lever	d „	11 „ „
2 fasteners	e „	5 „ „
2 shafts	No.	4a
1 driving wheel	„	5
2 hammer rams	„	7+9
2 props	„	40+40b
18 screws w. n.,		4 a. b.

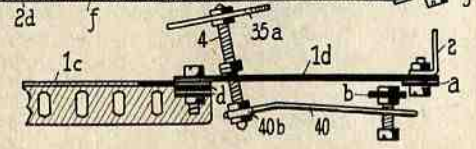
No. 68. **Running Motorcar**



Sketch 68c

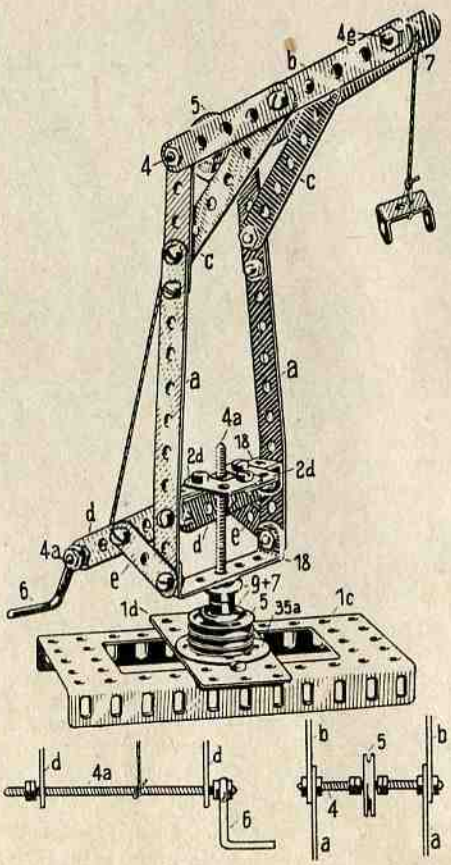


Sketch 68a



Sketch 68b

No. 69. **Pillar Rotatory Crane**



Sketch 69a

Sketch 69b

Parts for the Running Motorcar:

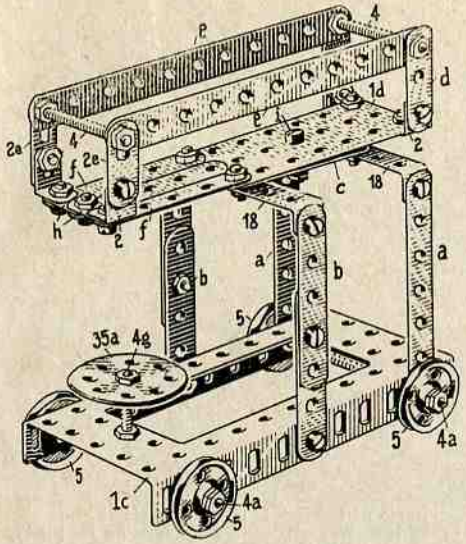
2 body plates		No. 1c, 1d
1 axle tube	a s.	5 h. l.
1 steering iron	b „	5 „ „
2 steering levers	c „	2 „ „
1 botton bearer	d „	7 (5+5) „ „
1 seat fillet	e „	5 „ „
2 mud wings	f „	17(11+7) „ „
3 hood fillets	g „	5 „ „
2 side layers		No. 2e
2 axle layers		„ 2d
2 „ „		„ 2
1 steering spindle		„ 4
1 back axle		„ 4a
4 wheels		„ 5
1 cooling vessel	2	„ 7
2 back layers		„ 18
1 steering wheel		„ 35a
2 side rests		„ 40
1 steering lever		„ 40
22 screws w. n.		8 a. b.

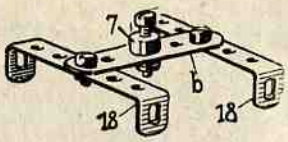
Sketch 68a shows the under part of the wagon in order to show the assembling and the effect produced by the steering lever No. 40. Sketch 68b a piece of the length section through the wagon-body. Sketch 68c represents how the front wheel is operated. The steering levers c are movably screwed down to the steering iron b.

Parts to the Pillar Crane:

1 ground Plate		No. 1c, 1d
2 crane uprights	a s.	14 (11+5) h. l.
2 projecting arms	b „	9 (5+5) „ „
2 stress props	c „	7 „ „
2 shaft props	d „	5 „ „
2 flat angles		No. 2d
2 guiding roller spindles		„ 4, 4g
1 pillar pivot		„ 4a
1 crank shaft		„ 4a
2 guide rollers		„ 5, 7
1 pillar foot		No. 9+7+5+35a
2 cross bars		No. 18
17 screws with nuts		

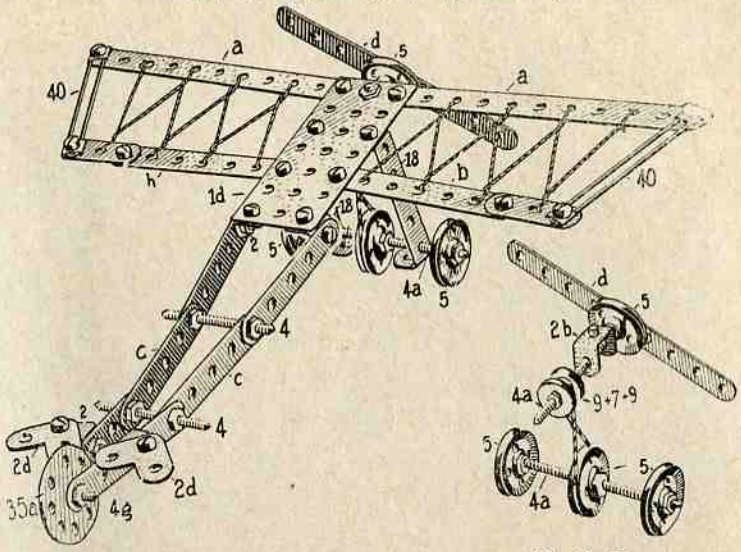
No. 70. Overhead Building Wagon





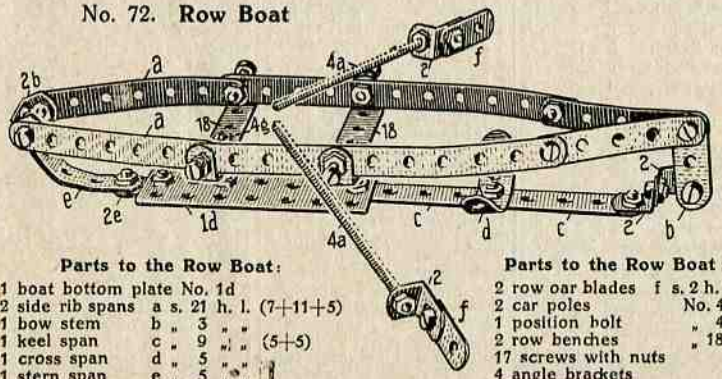
Sketch 70a
shows the binding of the under parts with the i turning ram of the upper part.

No. 71. Aeroplane (single decker)



Sketch 71a

No. 72. Row Boat



Parts to the Row Boat:

1	boat bottom plate	No.	1d
2	side rib spans	a s. 21	h. l. (7+11+5)
1	bow stem	b „ 3	„ „
1	keel span	c „ 9	„ „ (5+5)
1	cross span	d „ 5	„ „
1	stern span	e „ 5	„ „

Parts to the Row Boat:

2	row oar blades	f s. 2	h. l.
2	car poles	No.	4a
1	position bolt	„	4g
2	row benches	„	18
17	screws with nuts		
4	angle brackets		

Parts of the Overhead Building Wagon:

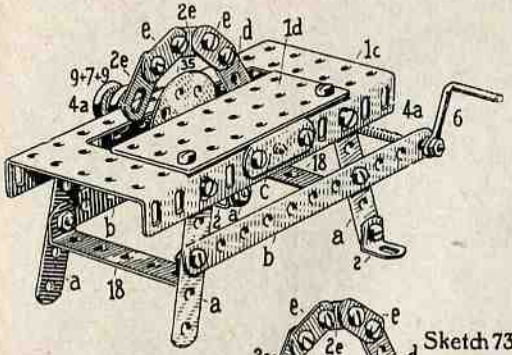
2	ground plates	No.	1c, 1d
2	uprights	a s. 7	h. l.
2	„	b „ 7	„ „ (5+5)
1	layer carrier	c „ 5	„ „
2	rail shanks	d „ 3	„ „
2	„ beams	e „ 11	„ „
3	body fillets	f „ 5	„ „
2	cross bands	h „ 2	„ „
2	rail shanks	No.	2e
2	rail poles	„	4
2	axles	„	4a
1	crank spindle	„	4g
4	wheels	„	5
2	cross carriers	„	18
1	turning block	„	7
1	crank wheel	„	35a
22	screws with nuts		
4	angle brackets		

Parts for the Aeroplane:

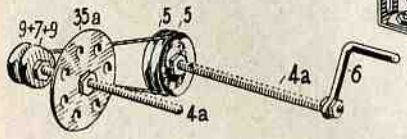
1	trunk plate	No.	1d
2	bearers flat beams	a s. 11	h. l.
		b „ 9	„ „ (7+3)
2	long ribs	c „ 13	„ „ (3×5)
1	propeller	d „ 5+5	h. l.
1	shaft block	No.	2b
2	steering wings	„	2d
2	screw bolts	„	4
2	driving shafts	„	4a
1	axle	No.	4g
3	wheels	„	5
1	propeller hub	„	5
1	propelling shaft	„	9+7+9
2	flying stress irons	„	18
1	wheel	„	35a
2	cross beams	„	40
4	clip plates	„	40b
21	screws with nuts		
4	angle brackets		

Sketch 71a shows how the propeller shaft is connected

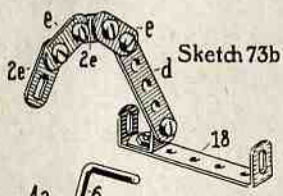
No. 73. Circular Saw



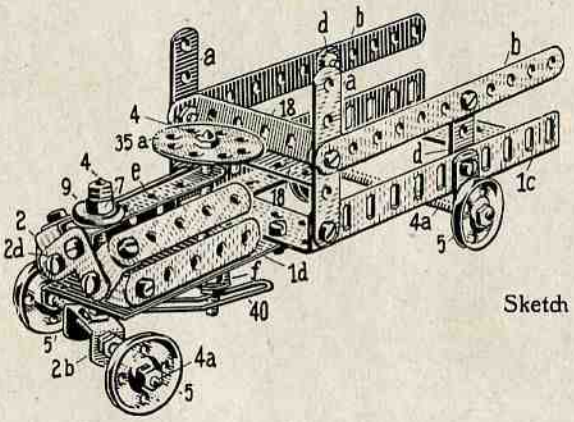
Sketch 73a



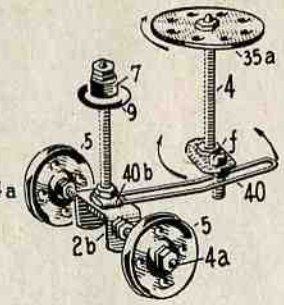
Sketch 73b



No. 74. Freightage Wagon

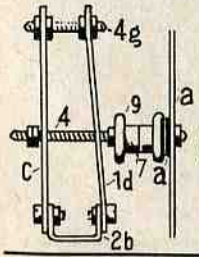


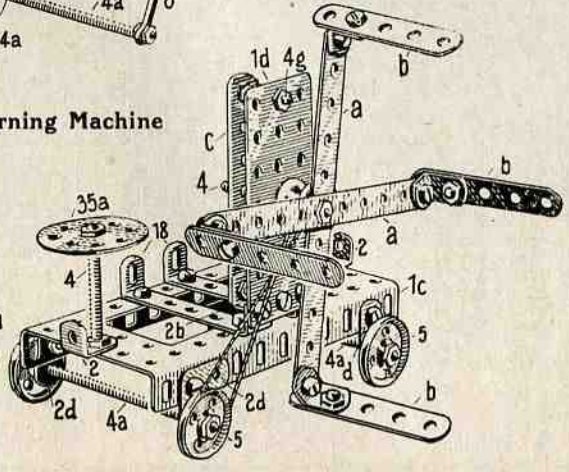
Sketch 74a



No. 75. Hay Turning Machine

Sketch 75a





Parts to the Circular Saw:

1 Saw bench	No.	1c+1d
4 rest legs	a s.	5 h. l.
2 long bearers	b „	11 „ „
2 block bands	c „	3 „ „
1 protection peg	d „	5 „ „
2 „ „	e „	2 „ „
2 „ „	Nr.	2e
2 cross bolts	„	18
2 shafts	„	4a
2 driving blocks	„	5
1 crank	„	6
1 driving disc	„	9+7+9
1 saw blade	„	35a

22 screws w. n., 3 a. b.

Sketch 73a shows the driving of the connecting gear of the saw shaft.

Sketch 73b the operation of the protecting fitting.

Parts of the Freightage Wagon:

2 body plates	No.	1c, 1d
2 rails	a s.	5 h. l.
2 long trees	b „	11 „ „
2 axle blocks	c „	2 „ „
2 rails	d „	3 „ „
5 hood bands	e „	5 „ „
1 lever band	f No.	2e
1 axle block	„	2b
1 fore wall	„	2d
1 turning spindle	„	4
1 steering spindle	„	4
2 axles	„	4a
4 wheels	„	5
1 radiator cover	„	9+7
1 seat & leaning bars	2 No.	18
1 crank wheel	No.	35a
1 steering lever	„	40+40b

20 screws w. n., 7 a. b.

Sketch No. 74a shows the steering mechanism. The 40 must be screwed tightly with the clamp plate No. 40b on the axle block 2b.

Parts to the Hay Turning Machine:

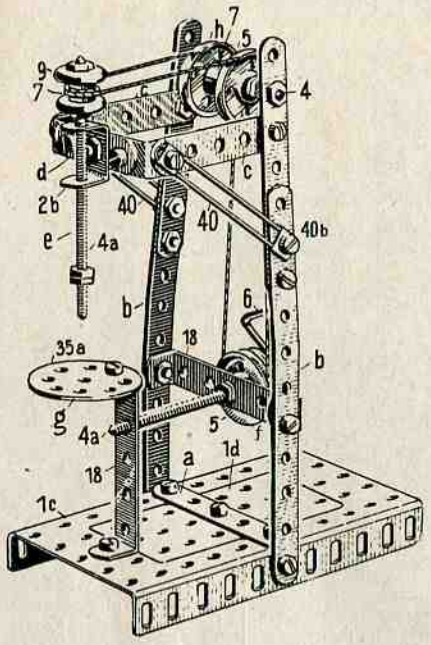
1 ground plate	No.	1c
1 layer plate	„	1d
2 cross spokes	a s.	11 h. l.
4 moving arms	b „	5 „ „
1 rest block	c „	7 „ „
2 axle „	d „	2 „ „
2 „ „	No.	2d
1 rest foot	„	2b
2 cross pins	„	18
1 moving shaft	„	4
1 seat spindle	„	4
2 axles	„	4a
1 rest bolt	„	4g
4 wheels	„	5
1 driving wheel	2× No.	7+9
1 seat	No.	35a

22 screws with nuts

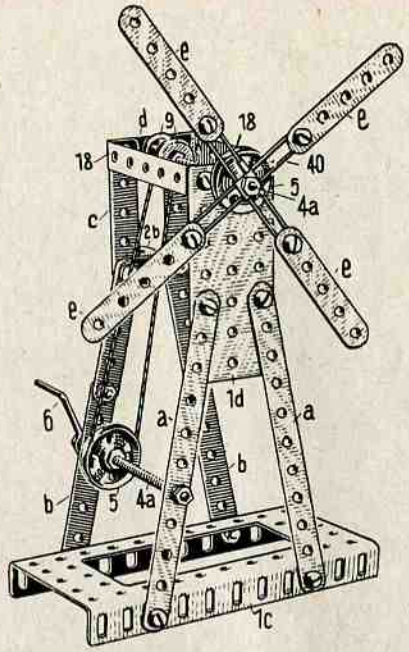
6 angle brackets

Sketch No. 75a shows the connection of the stand plate 1d with the stand block c and the placement of the moving shaft No. 4.

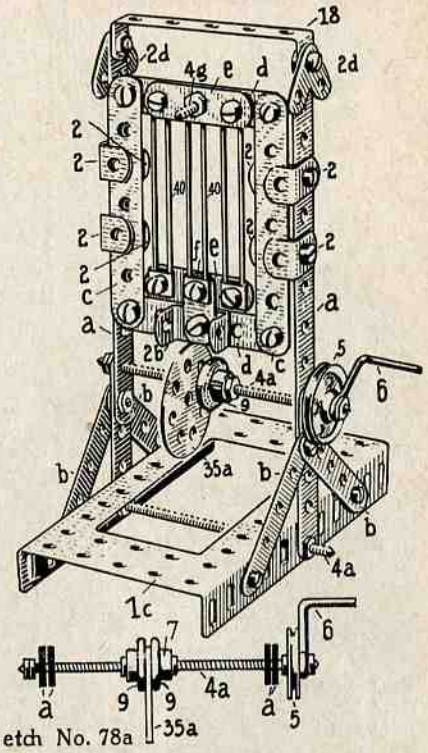
No. 76. **Stationare borer**



No. 77. **Windmill**



No. 78. **Running Saw Frame**



Sketch No. 78a

Parts to the Borer:

1 ground plate	No. 1c+1d
1 cross band	a s. 5 h. l.
2 uprights	b „ 15 „ „ (7+11)
2 projections	c „ 5 „ „
1 cross beam	d „ 3 „ „
1 spindle	No. 2b
1 roller spindle	„ 4
1 driving shaft	„ 4a
1 boring spindle	„ 4a
2 guide rollers	„ 5
2 driving wheel plates	„ 5
1 spindle plate	No. 9+7+9
1 shaft layer	No. 18
1 table foot	„ 18
1 boring table	„ 35a
2 stress stays	„ 40
22 screws w n., 2 a. b.	

Parts to the Windmill:

1 ground plate	No. 1c
1 wall plate	„ 1d
2 rest props	a s. 11 h. l.
2 „ „	b „ 11 „ „ (7+5)
2 wall props	c s. 5 h. l.
2 cross bands	d „ 3 „ „
4 wind wings	e „ 5 „ „
1 platform	No. 2b
2 shafts	„ 4a
1 wheel hub	„ 5
1 driving plate	„ 5
1 crank	„ 6
1 driving plate	„ 9+7+9
2 frame bands	„ 18
2 wind poles	„ 40+40b
19 screws with nuts	

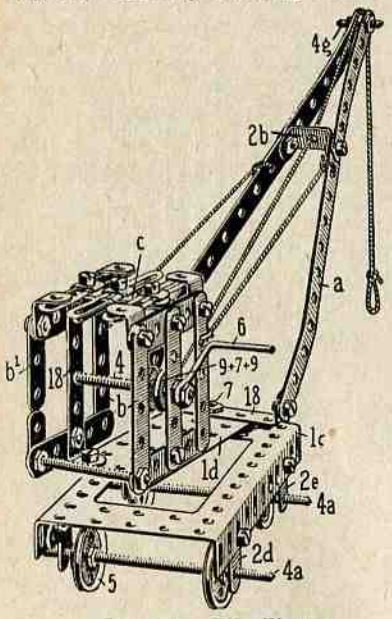
Parts to the Saw Frame:

1 ground plate	No. 1c
2 frame supports	a s. 14 h. l. (11+5 l.)
4 foot stay	b s. 5 h. l.
2 frame jambs	c „ 7 „ „
2 „ „	d „ 5 „ „
2 saw angle bands	e „ 3 „ „
1 „ „ „	f „ 2 „ „
1 frame lock	No. 2b
2 rest buttons	„ 2d
1 anchor bolt	„ 4a
1 frame shaft	No. 4a
1 rest nut	„ 4g
1 driving plate wheel	„ 5
4 clipping wheels	„ 7, 9
1 cross frame	„ 18
1 excentric wheel	„ 35a
6 saw blades	3 „ 40
22 screws w. n., 8 a. b.	

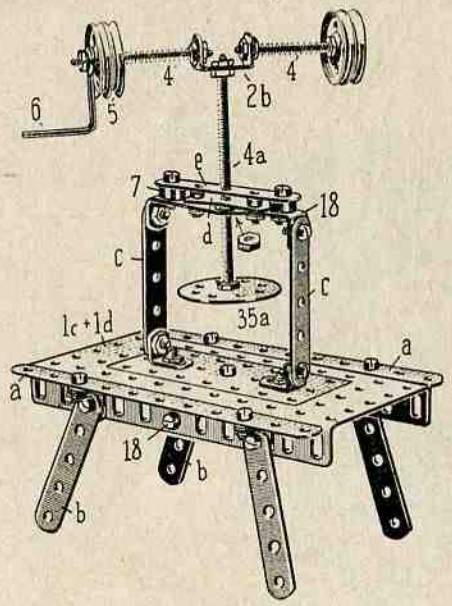
Division frame serves to sever planks, boards and strong slabs.

The frame is guided between 4×2 angle brackets and is elevated by the eccentric plate wheel and, in consequence falls down under its own weight.

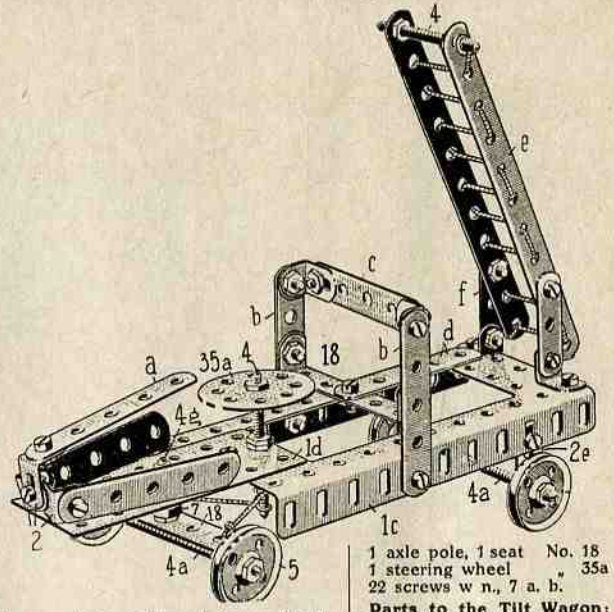
No. 79. Railway Turning Crane



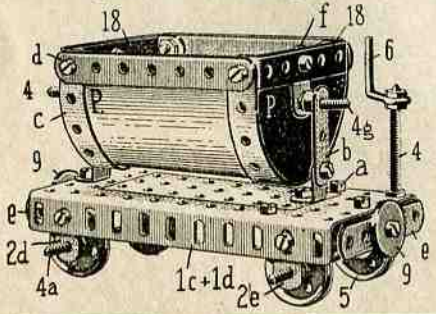
No. 80. Coining Press



No. 81. Fire Escape Auto



No. 82. Tilt Wagon



Part to the Crane:

1 Travveling Plate	No.	1c
1 body plate	„	1d
2 projecting arms	a s. 17 h. l.	(11+7)
2 fasteners	b s. 5 h. l.	
2 frames	b „ 5 „ „	
4 rest shanks	b „ 5 „ „	
1 rest shank	b1 „ 5 „ „	(3+2)
1 roof bearer	c „ 3 „ „	
1 cross band	No.	2b
4 axle blocks	„	2d,2e
1 layer shank	„	18
1 body fastener	„	18
1 crank shaft	„	4
1 cross spindle	„	4
2 axles	„	4a
1 turning bolt	„	4g
4 wheels	No.	5
1 crank	„	6
1 turning block	„	7
1 rope roller	„	9+7+9
3 deck fillets	„	40+40b

22 screws w. n., 6 a. b.

Parts to the Coining Press:

1 table plate	No.	1c+1d+18
2 table fillets	a s. 11 h. l.	
4 rest legs	b „ 5 „ „	
2 pillars	c „ 5 „ „	
1 spindle block band	d s. 3 h. l.	
1 „ „ „	e „ 5 „ „	
1 „ „ „	No.	18
1 lever loc	„	2b
2 swinging arms	„	4
1 press spindle	„	4a
2 swinging weights	„	5
1 lever handle	„	6
2 position rings	No.	7
1 press stamp	„	35a

21 screws w. n., 6 a. b.

Parts for the Fire Escape Auto:

1 body plate	No.	1c+1d
3 hood bands	a s. 5 h. l.	
2 rest stays	b „ 5 „ „	
1 back stay	c „ 5 „ „	
1 seat fillet	d „ 5 „ „	
2 ladder beams	e „ 11 „ „	
2 ladder stays	f „ 3 „ „	
2 axle blocks	No.	2e
1 steering spindle	„	4
1 peg nut	„	4
2 axles	„	4a
1 turning bolt	„	4g
4 wheels	„	5
2 position rings	„	7
1 axle pole, 1 seat	No.	18
1 steering wheel	„	35a

22 screws w n., 7 a. b.

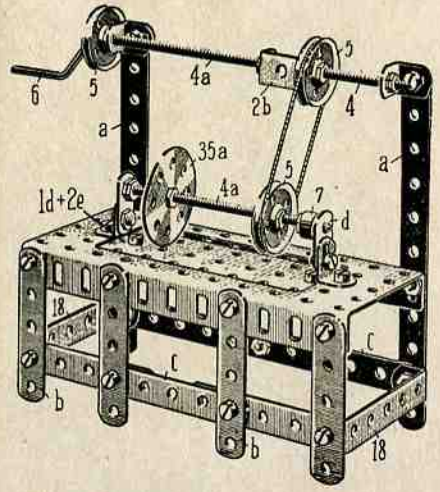
Parts to the Tilt Wagon:

1 travelling plate	No.	1c, 1d
1 cross band	a s. 5 h. l.	
2 uprights	b „ 3 „ „	
2 tray bands	c „ 11 „ „	
2 „ „	d „ 7 „ „	
2 „ „	No.	18
2 front wall carriers	e s. 5 „ „	
2 hinge slides	f „ 2 „ „	
4 axle blocks	No.	2d, 2e
1 brake spindle	„	4
2 tilting axles	„	4, 4g
2 wheel axles	„	4a
4 wheels	„	5
2 position rings	„	7
2 buffer blocks	„	9

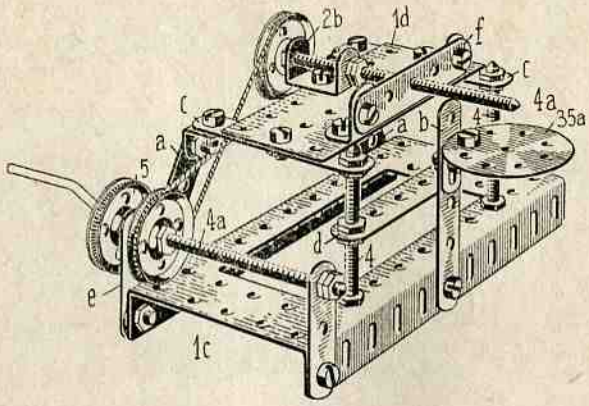
19 screws with nuts, 4 a. b.

The trough walls P are finished out of mill-boards and do not belong to the box No. 49.

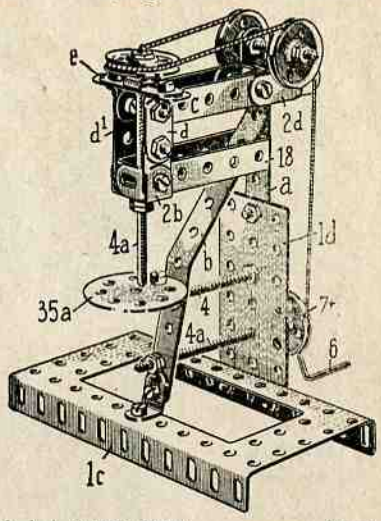
No. 83. Trundle Shears



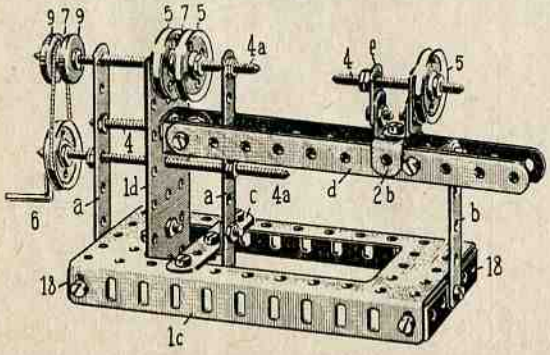
No. 84. Long Hole Borer Machine



No. 85. Upright Borer Machine



No. 86. Revolving Bench



Parts to the Trundle Shears:

1 table plate	No. 1c+1d
2 table plate lappets	„ 2e
2 upright shafts	a s. 11 h. l.
4 rest feet	b „ 5 „ „
2 long pegs	c „ 11 „ „ (7+7), (3×5 h.)
2 rest layers	d s. 2 h. l.
1 shaft coupling	No. 2b
1 driving shaft	„ 4+4a
1 clipping shaft	„ 4a
3 driving plates	„ 5
2 position rings	„ 7
2 cross stays	„ 18
1 roller clipper	„ 35a
20 screws w. n., 4 a. b.	

Parts to the Long Hole Borer:

1 ground plate	No. 1c
1 table plate	„ 1d
2 rest feet	a s. 5 h. l.
1 boring table foot	b „ 5 „ „
2 cross bands	c „ 5 „ „
1 long peg	d „ 7 „ „
2 block rods	e „ 3 „ „
1 spindle block	f s. 5 h. l.
1 „ „	No. 2b
2 table legs „	„ 4
1 shaft, 1 bore spindle	„ 4a
3 driving plates	„ 5
1 crank	„ 6
1 bore table	„ 35a
17 screws w. n., 5 a. b.	

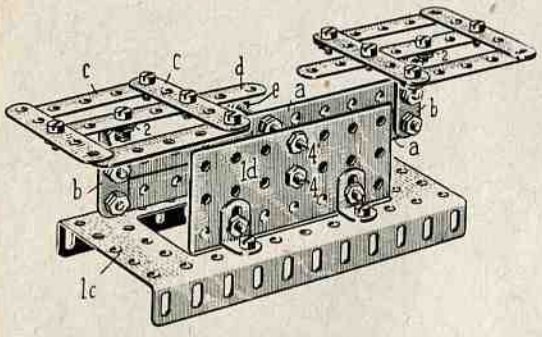
Parts to the Stationery Borer:

1 ground plate	No. 1c
1 upright plate	„ 1d
1 upright	a s. 11 h. l.
1 upright prop	b „ 11 „ „
2 projecting arms	c „ 7 „ „
2 „ „	No. 18
2 spindle box bands	d s. 3 h. l. (2+2)
1 „ „ „	d1 „ 3 „ „
1 spindle layer	e „ 3 „ „
2 shaft blocks	No. 2d
1 spindle layer	„ 2e
1 boring spindle	„ 4a
1 driving shaft	„ 4a
1 rest nut	„ 4
1 revolving shaft	„ 4
4 rope rollers	No. 5
1 crank	„ 6
2 position rings	„ 7
1 boring table	„ 35a
17 screws w. n., 6 a. b.	

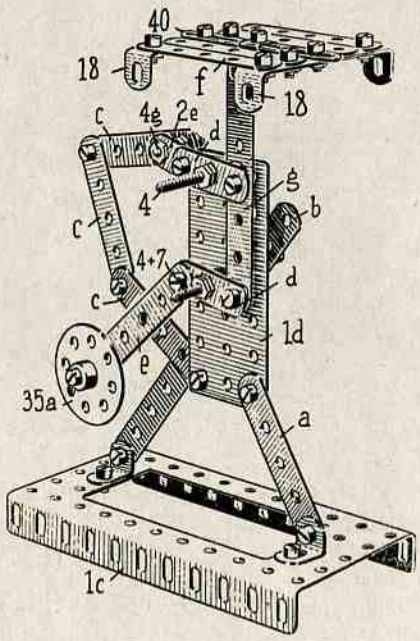
Parts to the Revolving Bench:

1 ground plate	No. 1c
1 upright plate	„ 1d
2 spindle beams	a s. 7 h. l.
1 upright	b „ 5 „ „
1 cross band	c „ 5 „ „
2 side pieces	d „ 11 „ „
2 ride stave supports	e „ 2 „ „
1 ride stave slider	No. 2b
1 ride stave spindle	„ 4
1 ride stave rope wheel	„ 5
1 rest nut	„ 4
1 front shaft	„ 4a
1 driving shaft	„ 4a
1 driving-roller	„ 9+7+9
3 rollers	„ 5
1 crank	„ 6
2 cross bars	„ 18
21 screws w. n., 6 a. b.	

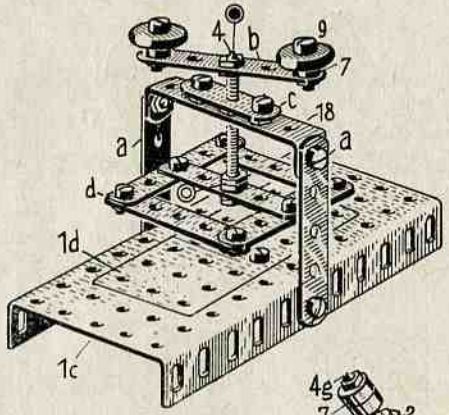
No. 87. **Table Balance**



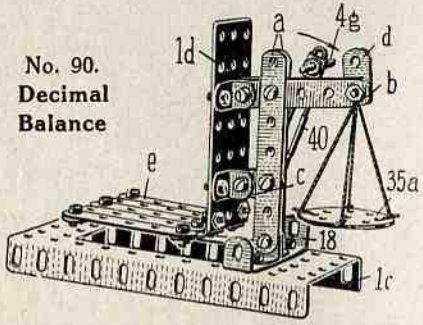
No. 88. **Letter Scale**



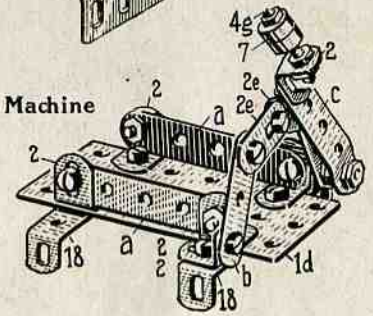
No. 89. **Packet Press**



No. 90. **Decimal Balance**



No. 91. **Bread Cutting Machine**



Parts to the Table Balance:

1 ground plate	No. 1c
1 upright plate	„ 1d
2 beam ends	a s. 11 h. l.
2 shell supports	b „ 3 „ „
8 shell fillets	c „ 5 „ „
2 tongue pieces	d „ 7 „ „
1 pivot layer	e „ 3 „ „ (2+2)
2 plugs	No. 4
22 screws with nuts	
5 angle brackets	

Parts to the Letter Balance:

1 ground plate	No. 1c
1 upright plate	„ 1d
1 foot	a s. 5 h. l.
1 „	b „ 11 „ „
1 scale frame	c „ 5 „ „
2 levers	d „ 3 „ „
1 „	e „ 7 „ „
4 shell fillets	f „ 5 „ „
1 shell prop	g „ 7 „ „
2 shell props	No. 18
1 „ „	„ 40
1 lever weight	„ 35a+7
1 lappet	„ 2e
2 position nuts	„ 4
1 „ „	„ 4g
21 screws with nuts	
3 angle brackets	

Parts to the Decimal Balance:

1 body plate	No. 1c
1 upright plate	„ 1d
1 cross bearer	„ 18
2 uprights	a s. 7 h. l.
1 beam end	b „ 5 „ „
1 rocking band	c „ 2 „ „
1 tongue piece	d „ 2 „ „
7 balance scale fillets	e „ 5 „ „
1 weight scale	No. 35a
1 regulator lever	„ 4g+40
22 screws with nuts	
4 angle brackets	

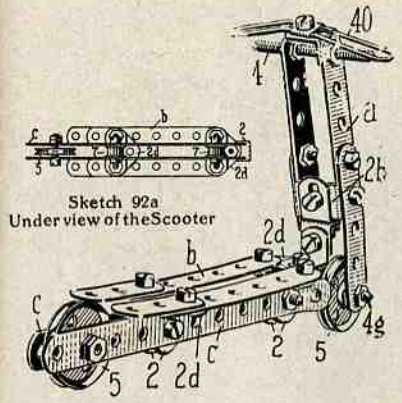
Parts to the Pack press:

1 ground plate	No. 1c+1d	1 spindle block	No. 18
2 uprights	a s. 5 h. l.	1 cross band (under 1d)	No. 18
1 press lever	b „ 5 „ „	1 spindle	No. 4
1 spindle block	c „ 3 „ „	2 pommels	„ 7+9
5 plate layers	d „ 5 „ „	14 screws with nuts	

The spindle is guided into one of the screw nuts which is clipped fast between No. 18 and c.

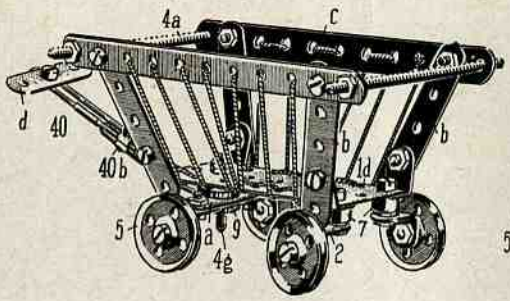
By moving round the press lever b, the press plate d rises and falls itself. The spindle must be screwed down with the press plate in a movable manner.

No. 92. Scooter

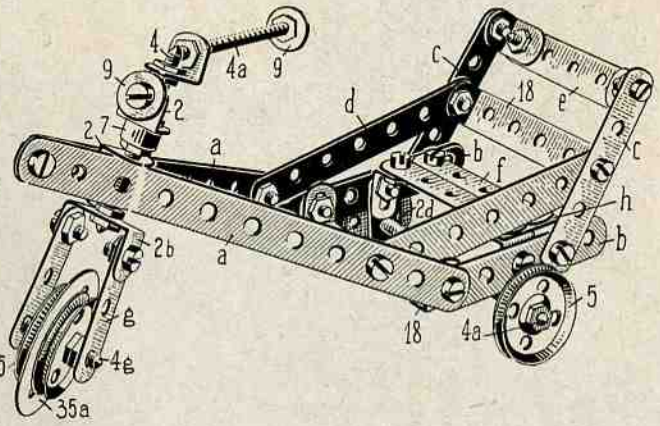


Sketch 92a
Under view of the Scooter

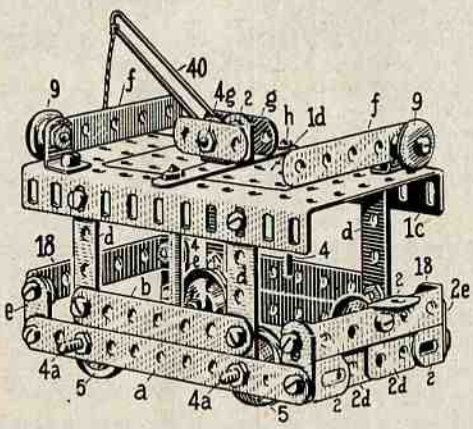
No. 93. Hand Cart



No. 94. Three-wheeler



No. 95. Tramway Car



Parts to the Scooter:

1 steering fork	a	2 s. 8 h. l.	(5+5)
2 foot boards	b	s. 8 h. l.	(7+3)
2 driving stop bearers	c	s. 11 h. l.	
1 steering tongue holder		No.	2b
2 cross bands		„	2d
1 position bolts		„	4
1 axle		„	4g
2 wheels		„	5
1 steering pole		„	40
16 screws with nuts			
8 angle brackets			

Parts to the Cart:

1 cart bottom plate		No.	1d
1 axle bit	a	s. 3 h. l.	
4 rack pins	b	s. 5 h. l.	
2 rack trees	c	„ 11 „ „	
1 handle grip	d	„ 3 „ „	
2 pole shafts		No.	4a
1 steering spike		„	4g
4 wheels		„	5
2 position rings		„	7
2 clip plates		„	9
1 shaft pole		„	40+40b
15 screws with nuts			
8 angle brackets			

Parts to the Three-wheeler:

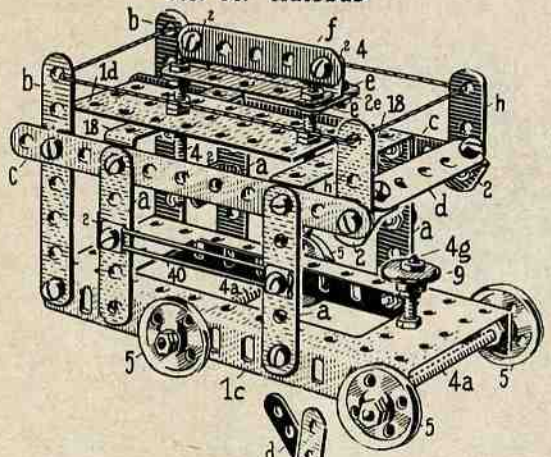
Motor Cycle:

2 frame strips	a	s. 11 h. l.	
2 „ „	b	„ 5 „ „	
2 back-pieces	c	„ 5 „ „	
2 side leaning stays	d	„ 7 „ „	
1 back leaning stay	e	s. 5 h. l.	
2 seat bars	f	„ 5 „ „	
2 fork bands	g	„ 3 „ „	
2 seat pins	h	„ 2 „ „	
1 fork head		No.	2b
2 rear axle blocks		„	2d
2 axles		„	4a, 4g
1 fork spindle		„	4
1 steering pole		„	4a
2 rear wheels		„	5
1 front wheel		„	5+35a +5
1 lamp, 1 steering grip		„	9
2 cross frames		„	18
22 screws with nuts			
7 angle brackets			

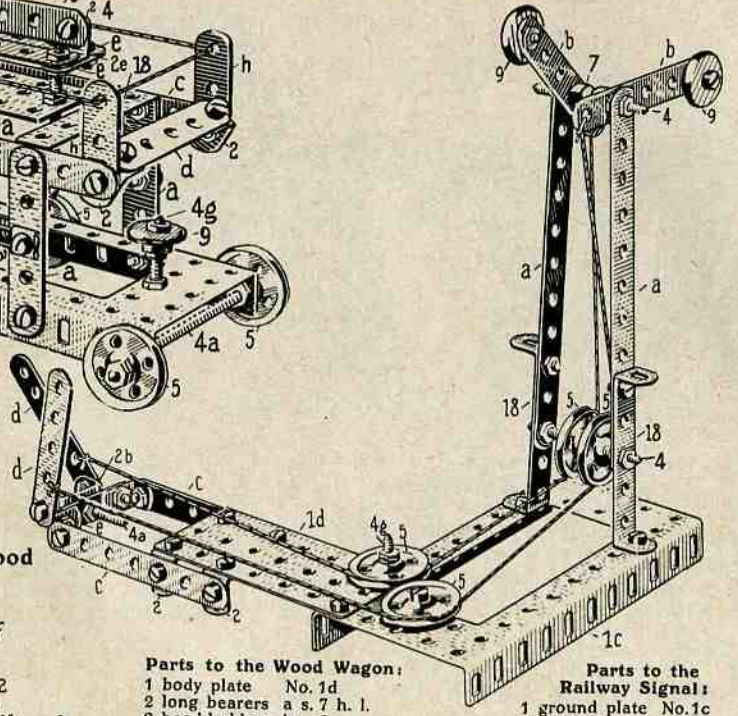
Parts to the Tramway Car:

1 car roof		No.	1c+1d
2 long bearer	a	s. 11 h. l.	
2 breast bands	b	„ 7 „ „	
4 uprights	d	„ 5 „ „	
2 strips	e	„ 2 „ „	
2 shield strips	f	„ 5 „ „	
2 contact bands	g	„ 3 „ „	
1 steel stop strip	h	„ 5 „ „	
1 buffer strip		2 No.	2d
2 fore-bolts		„	2e
2 beams		„	4
2 axles		„	4a
1 contact spindle		„	4g
4 wheels		„	5
2 lanterns		„	9
2 cross breast pieces		„	18
1 steering pole		„	40
20 screws with nuts			
7 angle brackets			

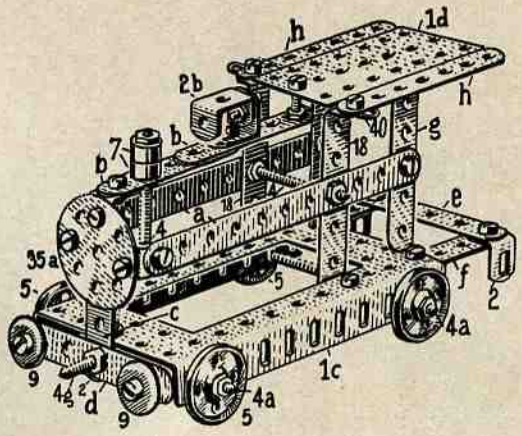
No. 96. **Autobus**



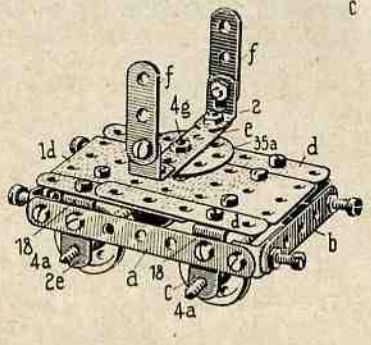
No. 97. **Railway Signal**



No. 98. **Locomotive**



No. 99.
Wagon for Logs of Wood



Parts to the Wood Wagon:

1 body plate	No. 1d	
2 long bearers	a	s. 7 h. l.
2 head holders	b	„ 5 „ „
2 axle blocks	c	„ 2 „ „
2 axle blocks	No. 2e	
2 body bearers	d	„ 7 (5+5) h. l.
1 steering strip	e	„ 5 „ „
2 uprights	f	„ 3 „ „
1 turning bolt	No. 4g	
2 axles	„ 4a	
4 wheels	„ 5	
2 cross bearers	„ 18	
1 turning treadle	„ 35a	
22 screws with nuts		
6 angle brackets		

Parts to the Railway Signal:

1 ground plate	No. 1c	
1 body plate	„ 1d	
2 uprights	a	s. 11 h. l. + No. 18
2 signal arms	b	s. 5 h. l.
2 hold-fasts	c	„ 7 „ „
2 position levers	d	„ 5 „ „
1 cross fastener	e	„ 3 „ „
1 lever block	No. 2b	
4 spindles	„ 4, 4a, 4g	
4 guide rollers	„ 5	
2 position rings	„ 7	
2 signal plates	„ 9	
22 screws with nuts		
6 angle brackets		

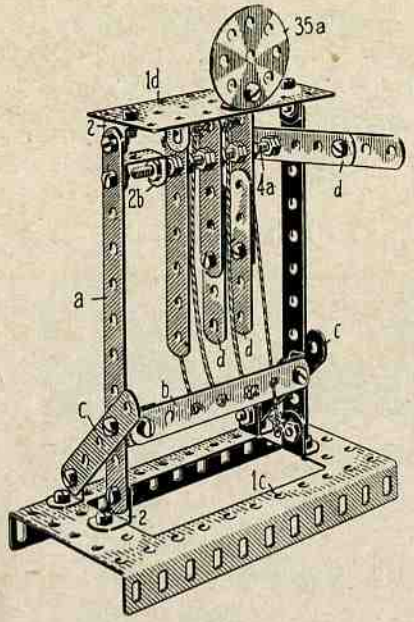
Parts to the Autobus:

1 ground plate	No. 1c		2 cross pins	No. 2e
1 wagon roof	„ 1d		2 bench feet	„ 4
4 uprights	a	s. 5 h. l.	2 axles	„ 4a
2 rear uprights	b	„ 7 „ „	1 crank spindle	„ 4g
2 long bearers	c	„ 11 „ „	4 wheels	„ 5
1 front fillet	d	„ 5 „ „	1 crank wheel	„ 9+7
2 benches	e	„ 5 „ „	2 cross beares	„ 18
1 bench	f	„ 5 „ „	2 breast fillets	„ 40
2 rail slides	h	„ 3 „ „	22 screws w. n., 4 a. b.	

Parts to the Locomotive:

1 body plate	No. 1c		2 uprights	No. 18
1 roof plate	„ 1d		1 cross pin	„ 40
2 boiler strips	a	s. 11 h. l.	1 vapour dome	„ 2b+2
1 boiler side strip	b	„ 8 „ „ (5+5)	3 position bolts	„ 4, 4g
1 front band	c	„ 3 h. l.	2 axles	„ 4a
1 head fastener	d	„ 5 „ „	4 wheels	„ 5
3 body plates	e, f	„ 5 „ „	1 chimney	„ 7+7
2 uprights	g	„ 5 „ „	2 buffers	„ 9
2 roof fillets	h	„ 7 „ „	22 screws w. n., 8 a. b.	

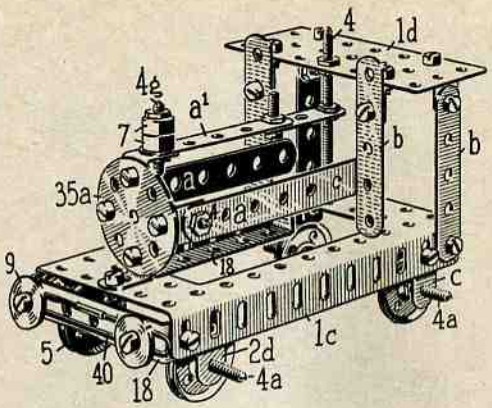
No. 100. Direction Indicator



Parts to the Direction Indicator:

1	ground plate	No.	1c
1	deck plate	„	1d
2	uprights a	s.	11 h. l.
1	cross pin b	„	7 „ „
2	stays c	„	5 „ „
1	letter tablet d	„	7 „ „
3	„ „ „		7 „ „ (5+5)
1	spindle block	No.	2b
1	spindle	„	4a
1	angle band (under 1d)	„	18
1	clock	„	35a
22	s. w. n., 8 a. b.		

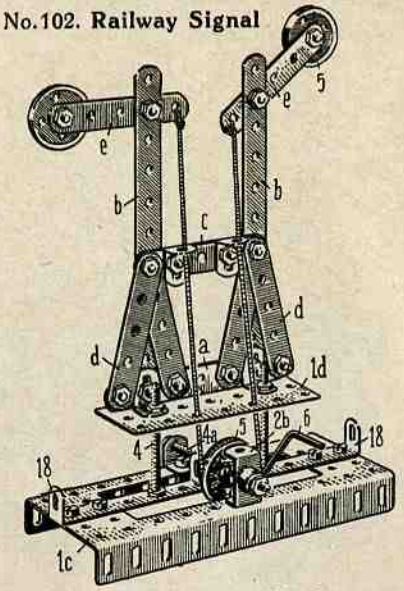
No. 101. Locomotive



Parts to the Locomotive:

1	body frame	No.	1c
1	top plate	„	1d
2	boiler strips a	s.	7 h. l.
1	„ „ a1	„	7 „ „ (5+3)
4	uprights b	„	5 „ „
2	axle blocks c	„	2 „ „
2	„ „	No.	2d
2	spindles	„	4
2	axles	„	4a
4	wheels	„	5
1	chimney	„	4g
	+2	„	7
2	buffers	„	9
1	front carrier	„	18+40
1	boiler carrier	„	18
22	s. w. n., 7 a. b.		

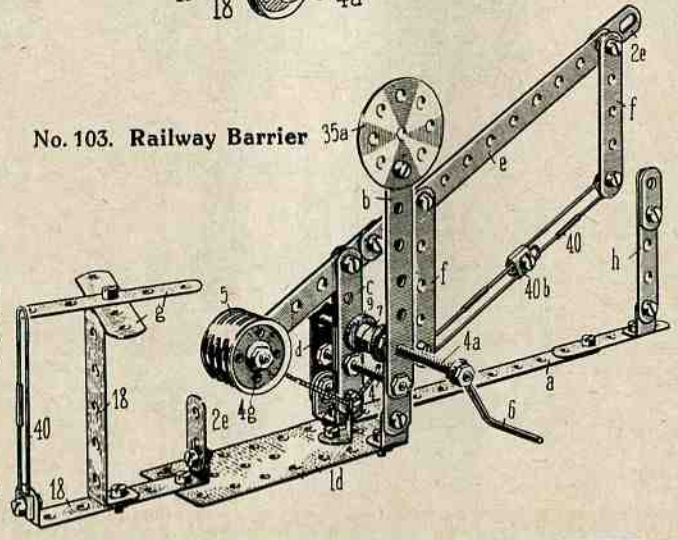
No. 102. Railway Signal



Parts to the Railway Signal:

1	ground plate	No.	1c
1	position plate	„	1d
2	long holders	„	18
1	„ „ a	s.	7 h. l.
2	uprights b	„	11 „ „
1	cross band c	„	5 „ „
4	foot stays d	„	5 „ „
2	signal arms e	„	5 „ „
1	foot block	No.	2b
2	stand spindles	„	4
1	crank spindle	„	4a
2	signal plates	„	5
1	signal wheel	„	5
1	crank	„	6
19	s. w. n., 5 a. b.		

No. 103. Railway Barrier

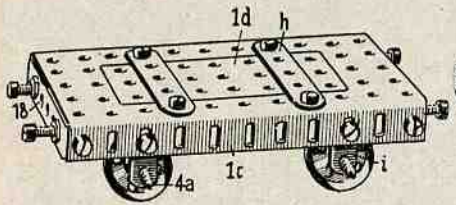


Parts to the Railway Barrier:

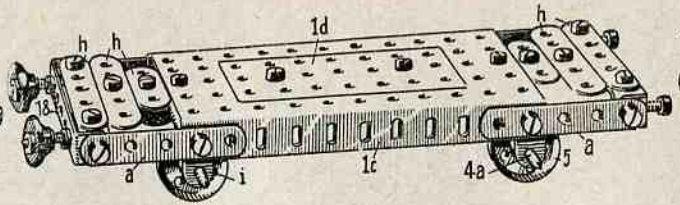
1	ground plate	No.	1d
1	floor bridge a	s.	14 h. l. (11+5)
1	signal upright b	s.	8 h. l. (7+3)
1	block c	s.	5+2+5
1	„ d	„	3 h. l.
1	spear pole e	„	17 „ „ (11+7)
2	attachment strips f	s.	5 h. l.
2	cross turning spokes g	s.	5 h. l.
1	post h	s.	5+2 h. l.
2	lappets	No.	2e
1	position spindle	„	4
1	crank shaft	„	4a
1	bolt	„	4g
4	counterweights	„	5
1	rope drum	No.	9+7+9
1	ground pin	No.	18
1	cross turning upright	„	18
1	signal plate	No.	35a
3	spear pins	„	40+40b
21	s. w. n., 4 a. b.		

Models 1—128 built with Walther's „STABIL" Building Set No. 49.

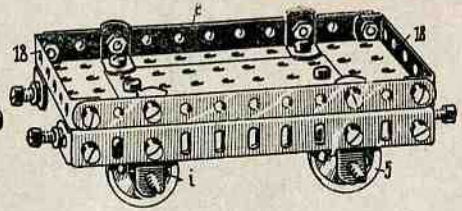
No. 104. **Flat Wagon**



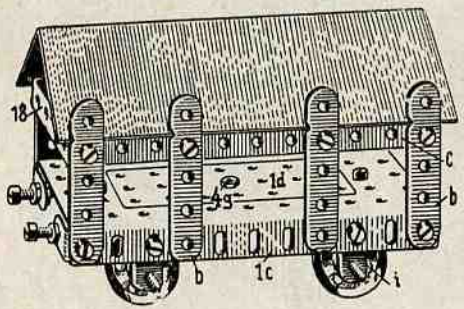
No. 105. **Flat Wagon**



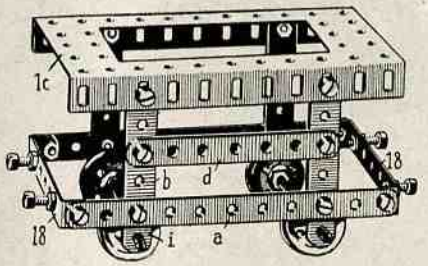
No. 106. **Sand Truch**



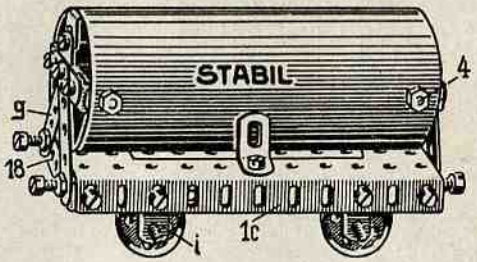
No. 107. **Chalk Wagon**



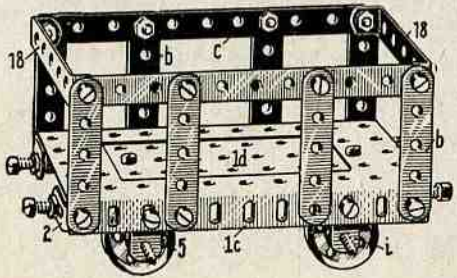
No. 108. **Cattle Truch**



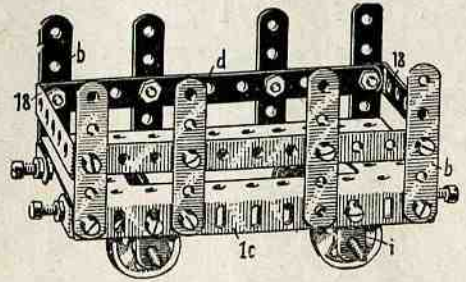
No. 109. **Oil Tank**



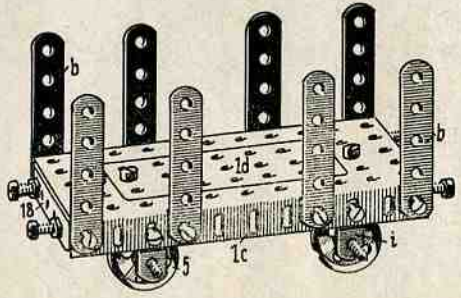
No. 110. **Open Goods Wagon**



No. 111. **Hay & Straw Wagon**



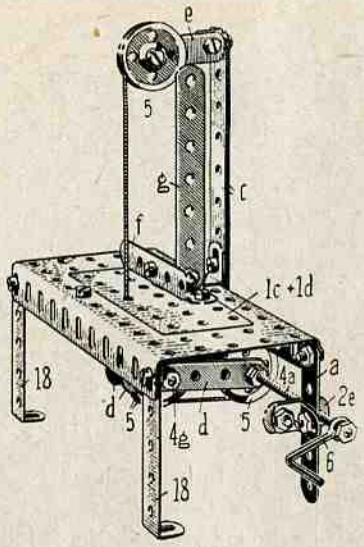
No. 112. **Wagon for Boards and Planks**

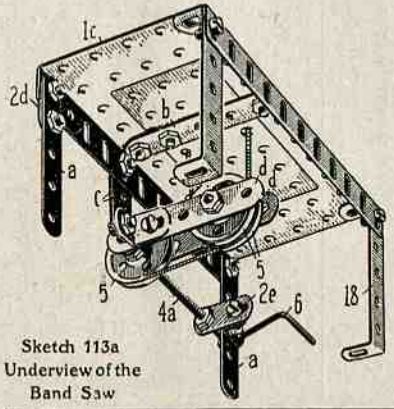


Technical expression of the parts for the various wagons:

a = Axle block carrier, b = Uprights, c = Rim wall carriers, d = Long trees, e = Box sides, f = Head fastener, g = Bearing prop, h = Cross band, i = axle bearing, k = under cross band, No. 1c =) Wagon bottom No. 1d =), No. 4a = Axles, No. 5 = Wheels, No. 18 = Head Fastener

No. 113. Band Saw



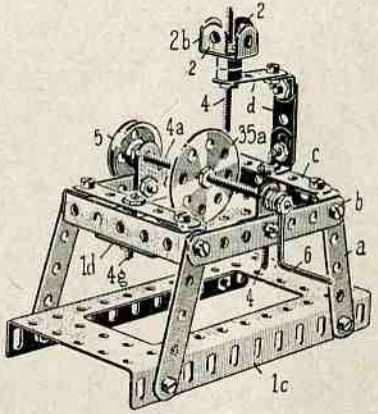


Sketch 113a
Underview of the
Band Saw

Parts to the Band Saw:

1 table plate			No.	1c+1d
2 legs			„	18
2 „	a	s.	5	h. l.
1 flat pin	b	„	5	„ „
1 double upright	c 2	„	11	„ „
2 layer bands	d	„	5	„ „
1 „ „	e	„	3	„ „
1 axle block fillet	f	„	5	„ „
1 protection fillet	g	„	7	„ „
2 stiffening support angles			No.	2d
1 shaft block			„	2e
1 driving shaft			„	4a
1 roller shaft			„	4g
4 driving and saw rollers			„	5
1 crank			„	6
19 s. w. n., 5 a. b.				

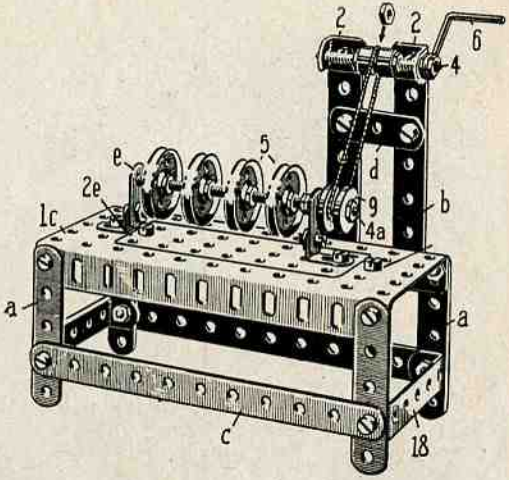
No. 114. Knife Grinder



Parts to the Knife Stone Grinder:

1 ground plate			No.	1c
1 box body			„	1d
4 rest feet	a	s.	5	h. l.
2 box pins	b	„	7	„ „
2 „ „	c	„	5	„ „
2 „ „		No.	18	
1 pin	d 2	s.	3	h. l.
1 water pot		No.	2b+2+2	
2 shaft blocks		„	2d	
2 bolts		„	4, 4g	
1 drop eye		„	4	
1 shaft		„	4a	
1 driving wheel		„	5	
1 crank		„	6	
1 grindstone		„	35a	
17 s. w. n., 8 a. b.				

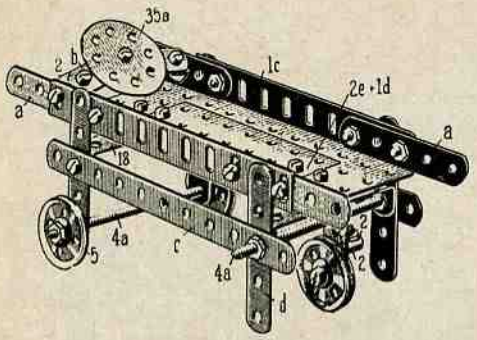
No. 115. Pasteboard Notching Machine

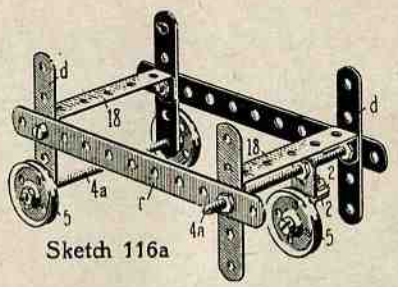


Parts to the Pasteboard Notching Machine:

1 table plate			No.	1c+1d
4 table feet	a	s.	5	h. l.
2 uprights	b	„	7	„ „
4 foot pegs	c	„	11	„ „
1 pin	d	„	3	„ „
2 axle blocks	e	„	2	„ „
2 lappets (between 1c and 1d)		No.	2e	
2 shafts		„	4, 4a	
4 cutting knives		„	5	
1 crank		„	6	
1 driving plate	2	„	7+3a	
1 „ „		„	9+3a+9	
2 pins		„	18	
16 screws with nuts				
4 angle brackets				

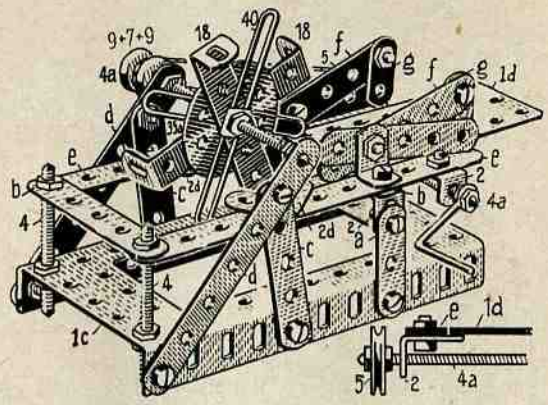
No. 116. Invalid Stretcher with wagon





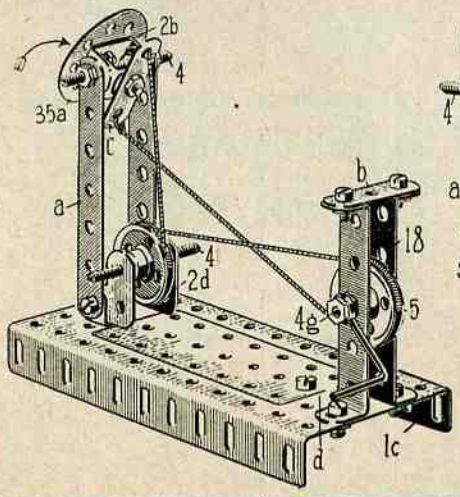
Sketch 116a

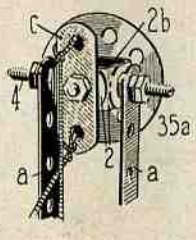
No. 117. Flax Combing Machine



Sketch 117a

No. 118. Railway Advance Signal





Sketch 118a

Parts to the Invalid Stretcher:

1 ground plate	No. 1c+1d
4 handle grips	a s. 5 h. l.
2 stay bands	b „ 3 „ „
2 lappets	No. 2e
1 head rest	„ 35a
Wagon of above sketch (116a)	
2 long trees	c s. 11 h. l.
4 uprights	d „ 5 „ „
1 axle	No. 4a
1 bolt	„ 4a
3 wheels	„ 5
2 cross pins	„ 18
20 screws with nuts	
4 angle brackets	

Sketsch 116a shows the wagon without the carrying chair placed on it.

Parts to the Fax Combing Machine:

1 ground plate	No. 1c
1 table plate	„ 1d
2 block shafts	„ 4
2 „ „	a s. 3 h. l.
2 „ „	c „ 5 „ „
2 table fillets	e „ 11 „ „
2 cross pins	b „ 5 „ „
2 rest props	d „ 7 „ „
4 box fillets	f „ 5 „ „
2 front fillets	g „ 2 „ „
2 table fillets	No. 2d
2 shafts	„ 4a
1 driving wheel	„ 5
1 „ „	„ 9+7+9
4 beaters	„ 18, 40
1 beater wheel	„ 35a
21 s. w. n., 6 a. b.	

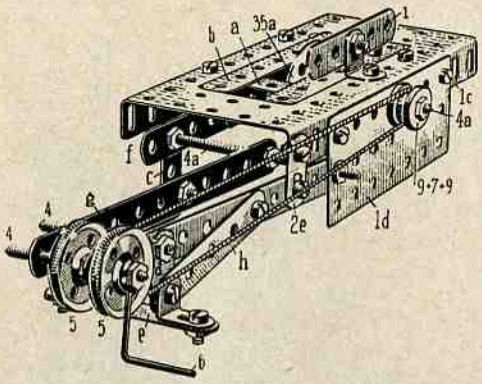
Sketch 117a shows the driving shaft

Parts to the Advance Signal:

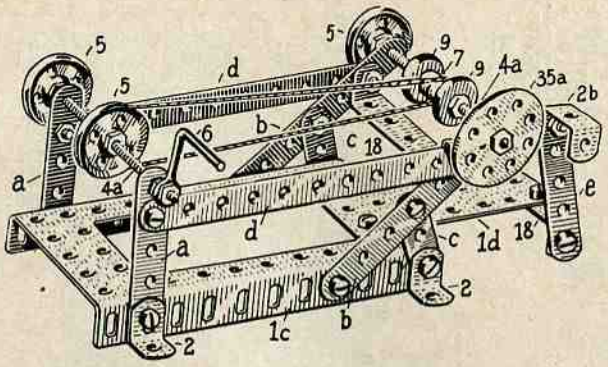
1 ground plate	No. 1c+1d
2 side uprights	a s. 7 h. l.
1 deck band	b „ 3 „ „
1 lever arm	c „ 3 „ „
2 lappet bands	d „ 2 „ „
(under 1c—1d)	
1 signal turning block	No. 2b
1 spindle block	„ 2d
2 shafts	„ 4
1 spindle	„ 4g
2 string wheels	„ 5
1 crank	„ 6
2 position rings	„ 7
2 side uprights	„ 18
1 signal plate	„ 35a
12 screws with nuts	
4 angle brackets	

Sketch 118a shows signal plate in uprigth position.

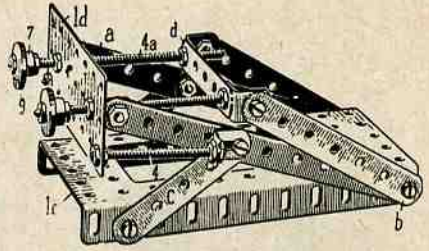
No. 119. **Circular Saw**



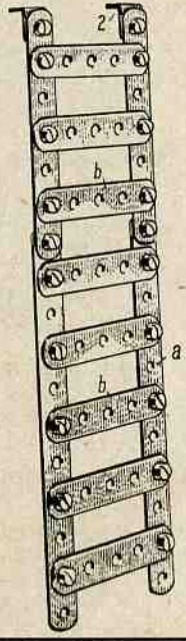
No. 120. **Knife Machine (Sharpener)**



No. 121. **Buffer Stand**



No. 122. **Ladder**



Parts to the Circular Saw:

1 saw table	No.	1c	
1 stand plate	„	1d	
4 table fillets	a, b	s. 5, 7	h. l.
2 table feet	c	„ 3	„ „
2 rest feet	d	„ 2	„ „
1 rest fastener	e	„ 5	„ „
1 table holdfast	f	„ 9	„ „ (5+5)
2 layer pins	g	„ 11	„ „
2 stays	h	„ 5	„ „
1 clapper fillet	i	„ 5	„ „
1 lappet	No.	2e	
1 fore shaft	„	4	
1 saw shaft	„	4a	
2 extended spindles	„	4, 4a	
2 string wheels	„	5	
1 crank	„	6	
1 belt roller	„	9+7+9	
1 circular saw blade	„	35a	

22 s. w. n., 3 a. b.

Parts to the Sharpener:

1 ground plate	No.	1c	
1 body plate	„	1d	
2 uprights	a	s. 5	h. l.
2 „	b	„ 7	„ „
2 props	c	„ 3	„ „
2 frame bands	d	„ 11	„ „
1 table foot	e	„ 5	„ „
1 sharpening table	Nr.	2b	
2 shafts	„	4a	
1 driving wheel	„	5	
1 grindstone	„	5	
1 belt pulley	„	5	
1 „ „	„	9+7+9	
1 crank	„	6	
2 cross pins	„	18	
1 grinder	„	35a	

19 s. w. n., 4 a. b.

Parts to the Buffer Stand:

1 ground plate	No.	1c	
1 buffer plate	„	1d	
2 stress stays	a	s. 11	h. l.
2 „ „	b	„ 7	„ „
2 block stays	c	„ 5	„ „
1 impact trap	d	„ 5	„ „
2 rest spindles	No.	4	
2 buffer spindles	„	4a	
2 buffers	„	9	
2 buffer-pushers	„	7	

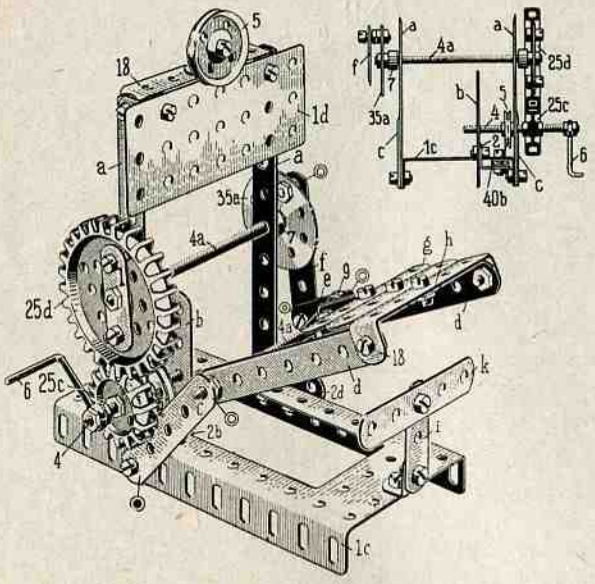
10 s. w. n., 6 a. b.

Parts to the Ladder:

a = ladder trees b = rungs
2 = hooks

Models 1—128 built with Walther's „STABIL" Building Set No. 49.

No. 123. Printing Machine



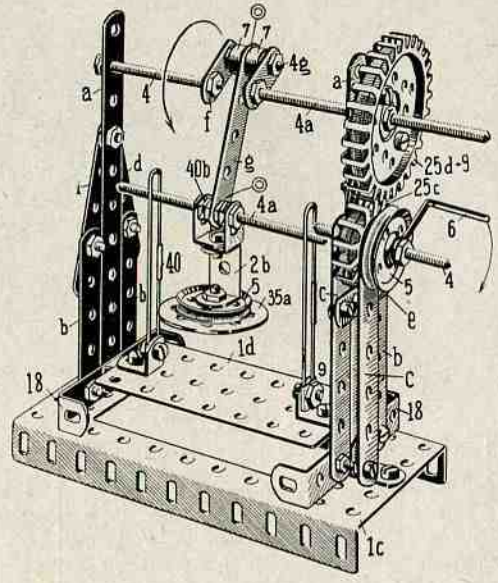
Sketch 123a

Parts to the Printing Machine:

1 ground plate	No. 1c	1 driving shaft	No. 4
1 press print plate	„ 1d	2 shafts	„ 4a
2 block uprights	a s. 11 h. l.	1 driving plate	„ 5
2 „ „	b „ 5 „ „	1 colour plate	„ 5
2 block stays	c „ 5 „ „	1 crank	„ 6
2 press levers	d „ 7 „ „	4 position rings	No. 7, 9
1 lever arm	f „ 5 „ „	2 cross bands	„ 18
1 „ „	e No. 2e	2 cog wheels	No. 25c, 25d
2 press plate bands	g s. 5 h. l.	1 crank plate	No. 35a
2 lappet pins	h „ 2 „ „	22 screws with nuts	
1 block foot	i „ 3 „ „	2 angle crackets	
1 block pin	k „ 5 „ „		
1 cog spoke	l „ 3 „ „		
1 foot to block stay	c No. 2b		

Sketch 123a
rear view of the printing machine shows the placement of the driving shafts.

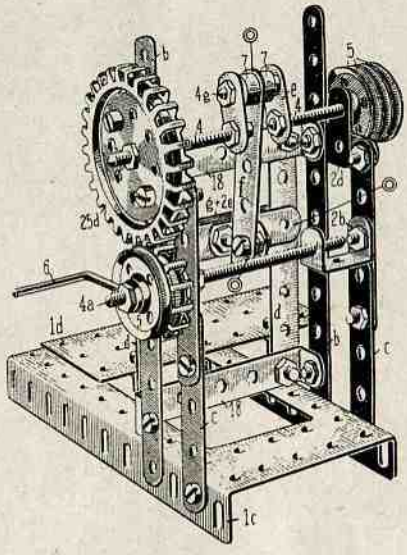
No. 124. Eccentric Press



Parts to the Eccentric Press:

1 ground plate	No. 1c	1 front shaft	No. 4
1 stand plate	„ 1d	1 gliding spindle	„ 4a
2 middle uprights	a s. 11 h. l.	1 driving plate	„ 5
3 side uprights	b „ 5 „ „	1 stamp	No. 5+35a
2 block uprights	c „ 7 „ „	3 position rings	„ 7, 9
2 stays	d „ 5 „ „	2 feet holders	„ 18
1 cross band	e „ 3 „ „	2 cog wheels	„ 25c, 25d
2 crank arms	f „ 2 „ „	2 guiding splints	„ 40
1 press lever	g „ 5 „ „	22 screws with nuts	
1 projecting shaft	No. 4+4g+4a		

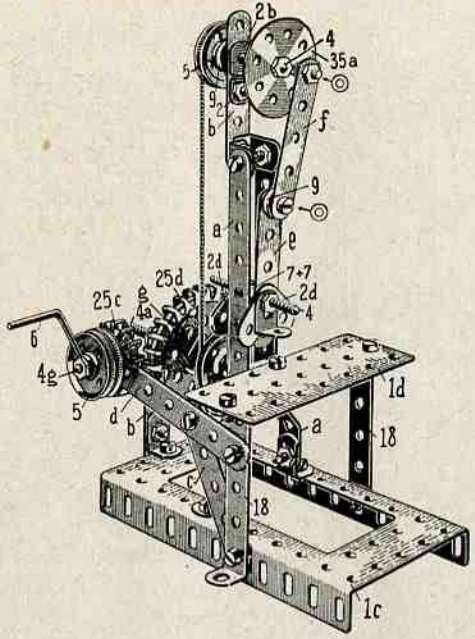
No. 125. Machine for Tin Cutting



Parts to the Tin Cutting Machine:

1 ground plate	No. 1c	1 rest block	No. 2b
1 table plate	„ 1d	1 projecting shaft	„ 4 +4g+4
2 corner uprights	b s. 11 h. l.		
2 „ „	c „ 8 „ „ (5+5)	1 driving shaft	No. 4a
		4 driving plates	„ 5
2 glide rails	d „ 7 „ „	1 crank	„ 6
2 crank levers	e „ 2 „ „	4 position rings	„ 7, 9
1 crank arm	f „ 5 „ „	2 cross rails	„ 18
2 cutters	g „ 5 „ „	2 cog wheels	„ 25c, 25d
2 guiding pegs	No. 2e	21 screws and nuts	
2 screwed rests	„ 2d	3 angle brackets	

No. 126. Stamp



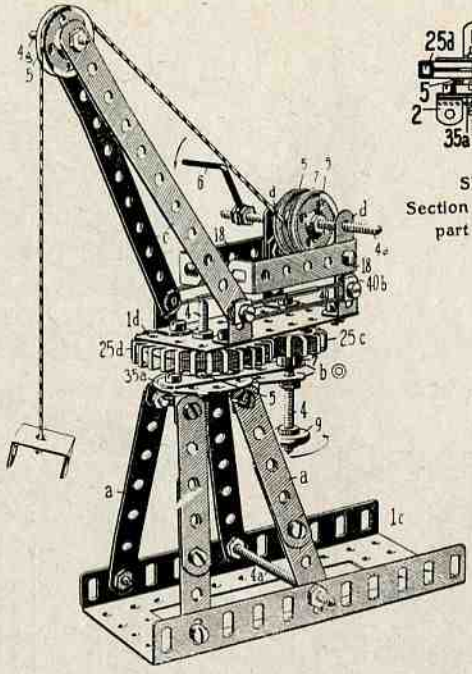
Parts to the Stamp:

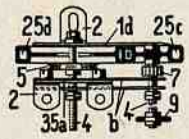
1 ground plate	No.	1c
1 stamp table	„	1d
2 upright sides	a s.	11 h. l.
2 upright blocks	b „	5 „ „
1 stay pin	c „	5 „ „
1 position stay	d „	7 „ „
1 slider stay	e „	5 „ „
1 lever	f „	5 „ „
1 cog spoke	g „	3 „ „
1 upright layer	No.	2b
2 slide blades	„	2d
1 slide spindle	No.	4
1 shaft	„	4
2 cog shafts	„	4g, 4a
4 string wheels	„	5
1 crank	„	6
2 hubs	„	9
2 table legs	„	18
2 cog wheels	„	25, 25d
1 wheel	„	35a

19 screws with nuts

8 angle brackets

No. 127. Crane





Sketch 127a
Section of the turning part of the crane

Parts to the Crane:

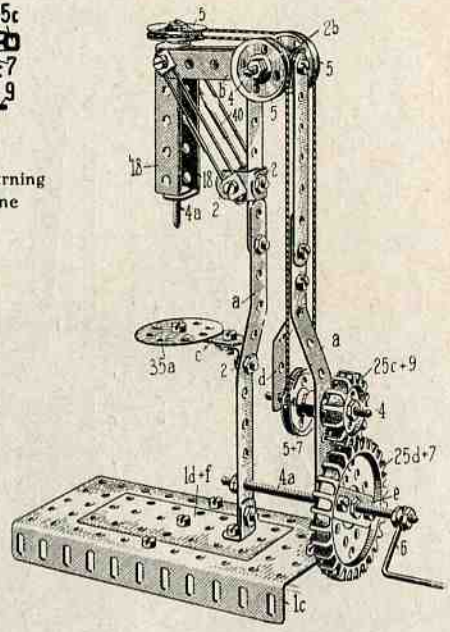
1 ground plate	No.	1c
1 position plate	„	1d
2 upright feet	a s.	7 h. l.
2 „ „	a „	7 „ „ (5+5)
2 spindle layers	b „	5 „ „
2 projecting arms	c „	11 „ „
2 block shanks	d „	3 „ „
2 turning spindles	No.	4
1 raising pole	„	4a
1 shaft	„	4a
1 projecting spindle	„	4g
1 turning wheel and 1 rope wheel	„	5
1 rope drum	No.	5+7+5
1 crank	„	6
1 wheel hub	„	7
1 spindle wheel	„	9
2 rail beams	„	18
2 cog wheels	„	25c, 25d
1 upright deck plate	„	35a
2 rail pins	„	40

20 screws with nuts

8 angle brackets

Wheel No. 5 is placed under cog wheel No. 25d

No. 128. Boring Machine



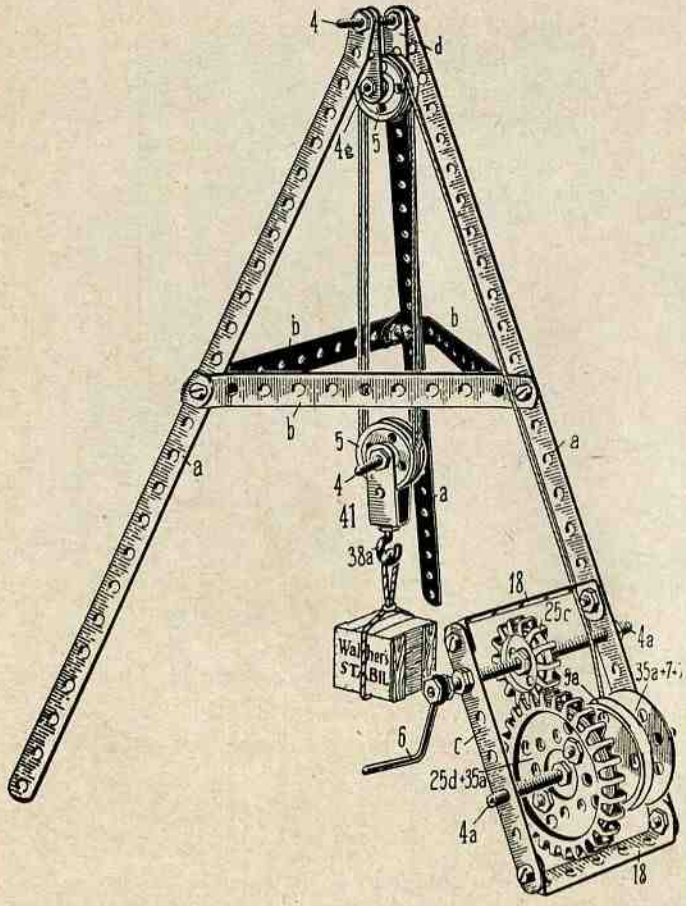
Parts to the Boring Machine:

1 ground plate	No.	1c+1d
2 uprights	a s.	16 h. l. (11+7)
2 projecting bands	b s.	5 h. l.
1 table holder	c „	3 „ „
1 suspending stay	d „	5 „ „
1 spoke	e „	3 „ „
1 cross pin	f „	5 „ „ (under 1c, 1d)
1 upright crown	No.	2b
2 shafts	„	4
1 driving shaft	No.	4a
1 boring spindle	„	4a
4 guide rollers	„	5
1 crank	„	6
4 position rings	„	7, 9
2 hanging stays	„	18
2 cog wheels	„	25c, 25d
1 boring table	„	35a
2 support beams	„	40

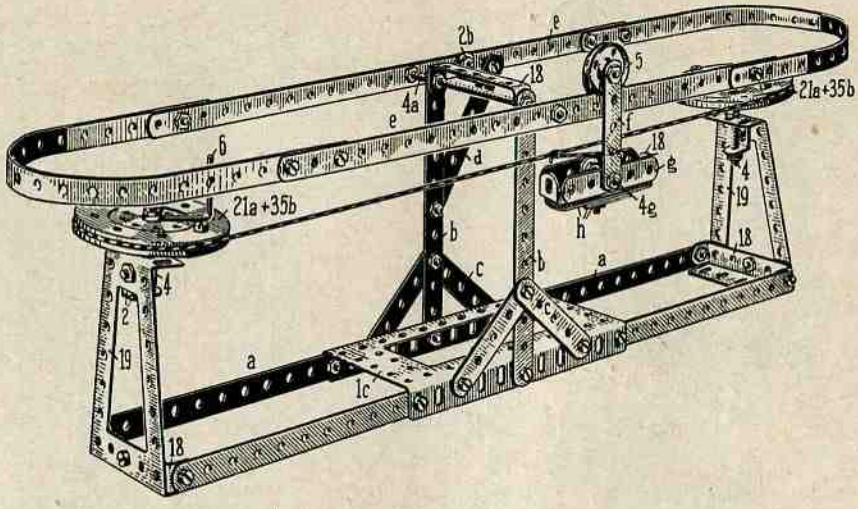
20 screws with nuts

5 angle brackets

No. 201. Three Leg Jack



No. 202. Suspension Railway



Parts to the Three leg Jack:

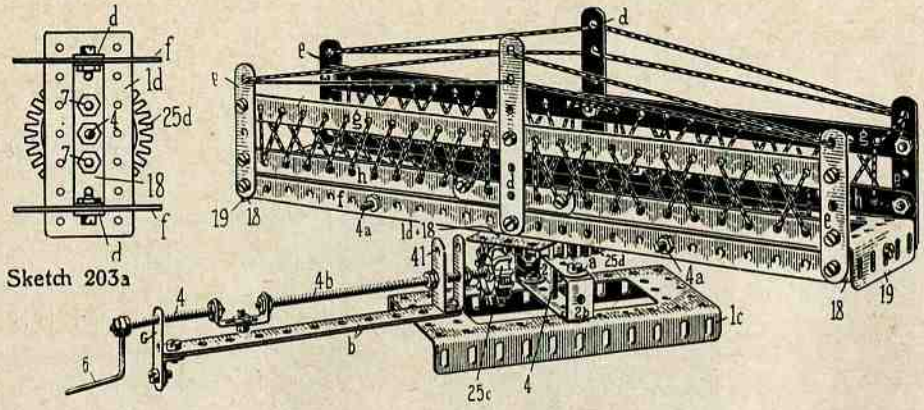
3 jack shanks	a	s. 25 h. l.
3 cross beams	b	„ 11 „ „
1 block beam	c	„ 7 „ „
2 hanging layers	d	„ 3 „ „
1 fastener, 1 frame		No. 18
1 raising pole		„ 4
2 tackle spindles		„ 4, 4g
2 cog wheel shafts		„ 4a
4 rope rollers		„ 5
1 crank		„ 6
1 side drum		„ 5a+7+7+35a
2 cog wheels		No. 25c, 25d+35a
1 screw hook		„ 38a
1 fork band		„ 41
11 screws with nuts		
2 angle brackets		

Parts to the Suspension Railway:

1 ground plate		No. 1c	1 cross pin	No. 2b
2 position stays		„ 19	2 position spindles	„ 4
4 long fasteners	a	s. 11 h. l.	1 driving pole	„ 4a
2 uprights	b	„ 11 „ „	1 cross bolt	„ 4g
4 feet stays	c	„ 5 „ „	1 running wheel	„ 5
1 support stay	d	„ 7 „ „	1 crank	„ 6
1 running rail	e	„ 88 „ „ (4×25)	2 cross holders, 1 wagon floor, 1 cross frame	„ 18
1 hanging shank	f	„ 5 „ „	2 rope wheels	No. 21a+35b
2 wagon sides	g	„ 5 „ „	35 screws with nuts	
1 carriage floor	h	„ 5+3+3 h. l.	4 angle brackets	

Above both rope wheels lies a circular string to which is roped the travelling wagon.

No. 203. Turning Bridge.



Sketch 203a

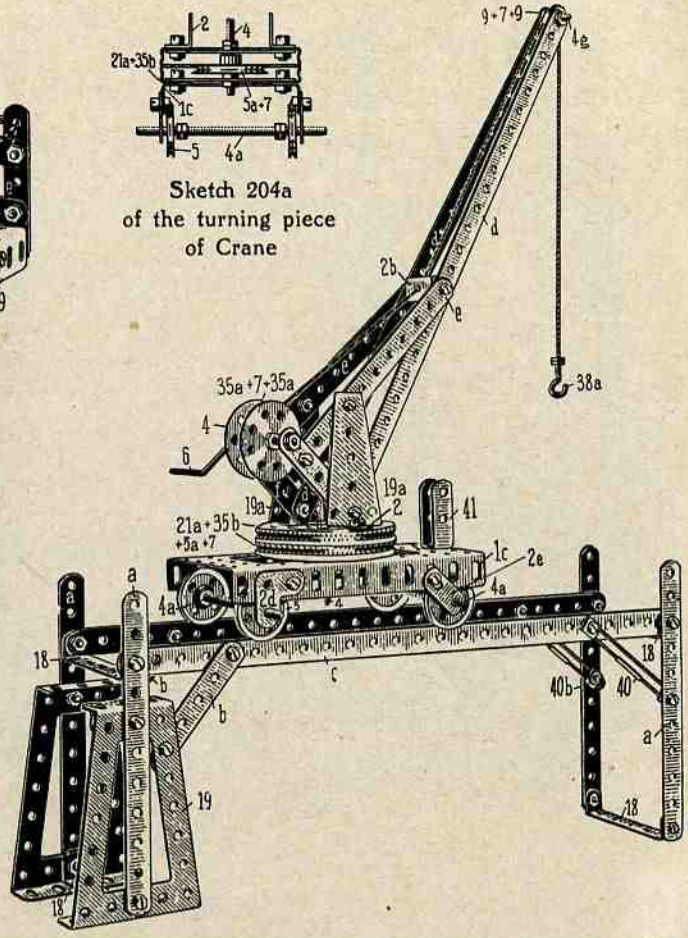
Parts to the Turning Bridge:

1 floor plate — No. 1d+2
1 ground plate — No. 19
2 pivot stays — „ 1c
2 block fasteners — a s. 5 h. l.
1 block shank — b „ 11 „ „
2 middle shanks — c „ 3 „ „
4 corner shanks — d „ 7 „ „
2 under girders — e „ 5 „ „
2 top girders — f „ 25 „ „
2 rail beams — g „ 25 „ „
1 position pin — h „ 25 „ „ (11+5+11)
1 position layer — No. 2b
1 bridge pivot — „ 2+2
2 span poles — „ 4
1 shaft — „ 4a
1 crank — „ 4+4b
2 position rings — „ 6
3 cross pins — „ 7
2 cog wheels — „ 18
1 position block — „ 25c, 25d
34 screws with nuts — „ 41
7 angle brackets

Sketch 203a shows the view of floor plate 1d and its connection with the girders f of one side and to the cog wheel 25d and the bridge pivot 4 on the other side.

No. 204. Travelling Crane

Sketch 204a
of the turning piece
of Crane

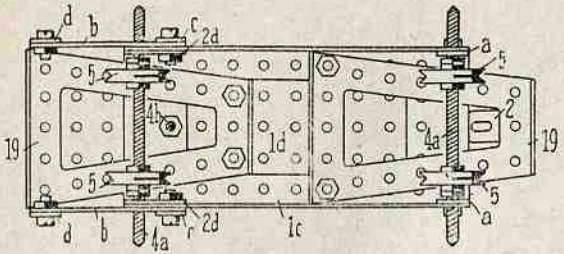


Parts to the Travelling Crane:

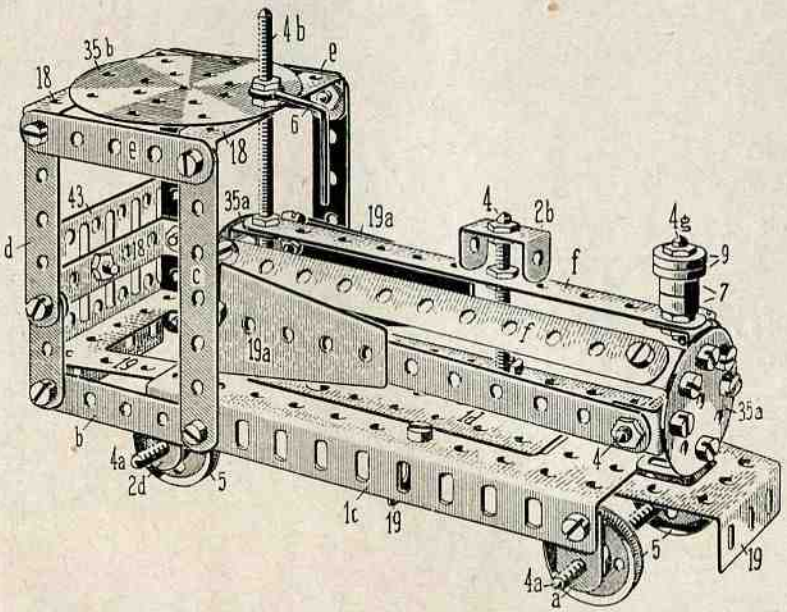
1 wagon floor — No. 1c
4 stool plates — „ 19, 19a
4 cross fasteners — „ 18
4 cradle shanks — a s. 11 h. l.
2 head bands — b „ 5 „ „
2 bearer rails — c „ 25 „ „
2 projecting arms — d „ 25 „ „
2 span bands — e „ 11 „ „
2 position stays — f „ 5 „ „
1 cross pin — No. 2b
4 axle position supports — „ 2d, 2e
1 crank shaft — „ 4
1 turning disk pin — „ 4
2 axles — „ 4a
1 roller spindle — „ 4g
4 wheels — „ 5
1 crank — „ 6
1 guide roller — „ 9+7+9
1 rope roller — „ 35a+7+35a
1 turning disk — 2× „ 21a+35b
2 head bands — „ 40
1 screw hock — „ 38a
1 rest block — „ 41

32 screws and nuts
2 angle brackets

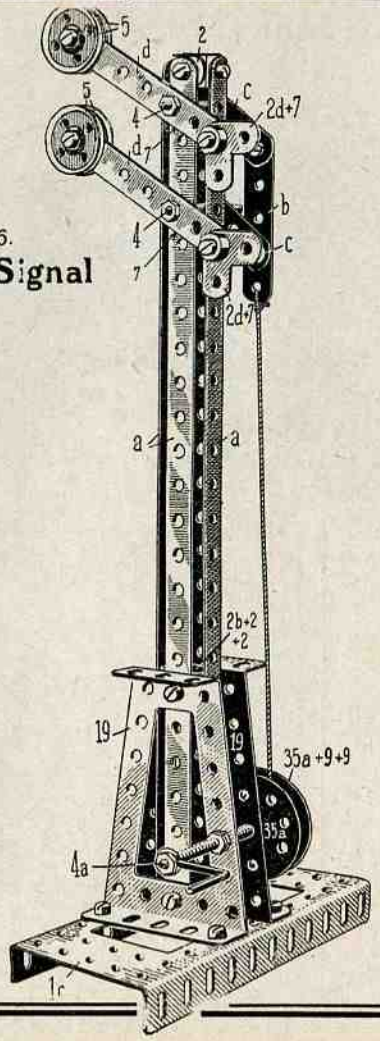
No. 205. Locomotive



Sketch 205a



No 206. Railway Signal



Parts to the Locomotive:

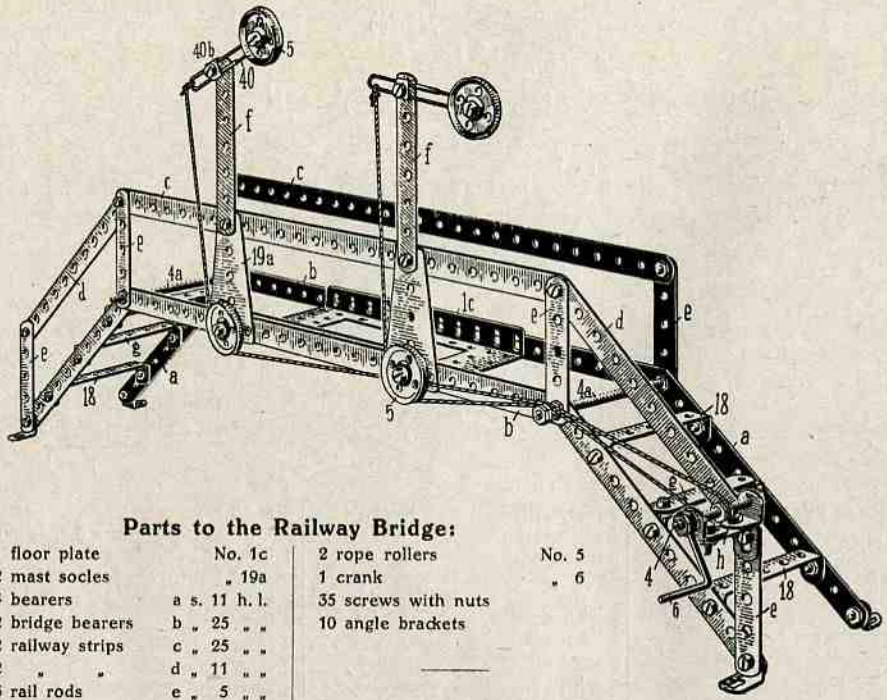
1 floor plate		No. 1c+1d
2 „ „		„ 19
2 boiler walls		„ 19a
2 axle blocks	a s.	2 h. l.
2 floor fasteners	b „	5 „ „
2 uprights	c „	7 „ „
2 „	d „	7 „ „ (3+5)
2 long frames	e „	5 „ „
5 boiler walls	f „	11 „ „
1 steam dome	No.	2b+4
2 axle blocks	„	2d
1 span pole	„	4
2 axles	„	4a
1 span pole	„	4b
4 wheels	„	5
1 guider	„	6
1 chimney	„	4g+7+7+9+9
1 cross lock	„	18
2 cross frames	„	18
2 boiler front plates	„	35a
1 guiding roof plate	„	35b
1 upright wall	„	43
35 screws with nuts		
12 angle brackets		

Sketch 205a shows the under part of the boiler chassis.

Parts to the Railway Signal:

1 floor plate		No. 1c
2 side plates		„ 19
4 mast sides	a s.	25 h. l.
1 pulling band	b „	5 „ „
2 lever arms	c „	3 „ „
2 signal arms	d „	7 „ „+2d
1 cross pin		No. 2b
2 lever spindles		„ 4
1 shaft		„ 4a
4 signal discs		„ 5
1 crank		„ 6
2 position rings		„ 7
1 drum	2	„ 35a+9
20 screws with nuts		
6 angle brackets		

No. 207. Raised Railway Bridge with Signals



Parts to the Railway Bridge:

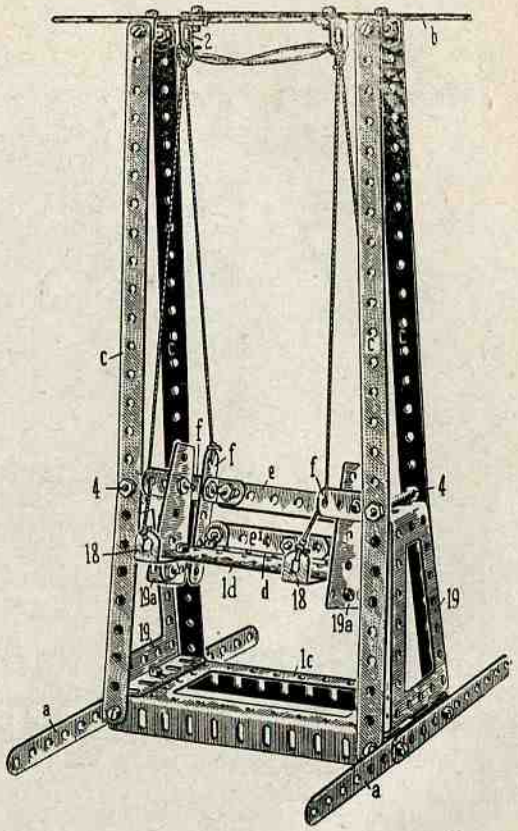
1 floor plate	No. 1c		2 rope rollers	No. 5	
2 mast socles	„ 19a		1 crank	„ 6	
4 bearers	a s. 11 h. l.		35 screws with nuts		
2 bridge bearers	b „ 25 „ „		10 angle brackets		
2 railway strips	c „ 25 „ „				
2 „ „	d „ 11 „ „				
6 rail rods	e „ 5 „ „				
2 signal masts	f „ 7 „ „				
2 ladder steps	g „ 5 „ „				
1 position band	h „ 2 „ „				
4 ladder steps	No. 18				
2 signal arms	„ 40				
1 shaft	„ 4				
2 crosspoles	„ 4a				
signal discs	„ 5				

Parts to the Swing:

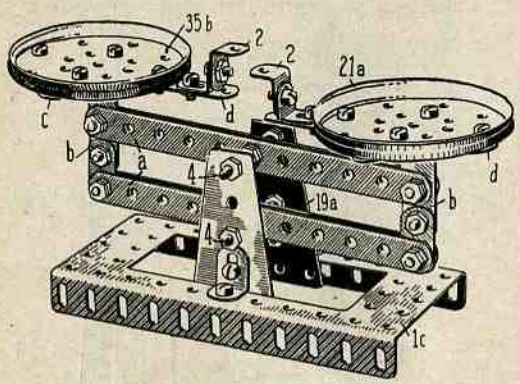
1 ground plate	No. 1c				
1 seat plate	„ 1d				
2 rest plates	„ 19				
2 side supports	„ 19a				
2 long strips	a s. 17 h. l. (11+11)	1 cross frame	b s. 16 h. l. (11+11)	1 leaning fillet	e s. 7 h. l.
		1 „ „	e¹ „ 7 „ „ (5+5)		
		4 upright bars	c s. 25 h. l.	4 side fillets	f s. 5 h. l.
		1 seat fillet	d „ 7 „ „	1 double angle	No. 2b

2 span spindles	No. 4
2 seat pins	„ 18
33 screws with nuts	
12 angle brackets	

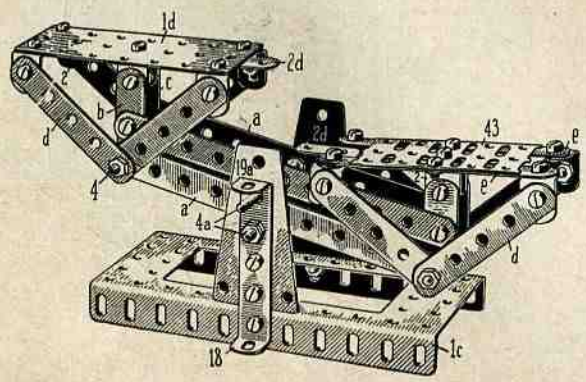
No. 208. Swing



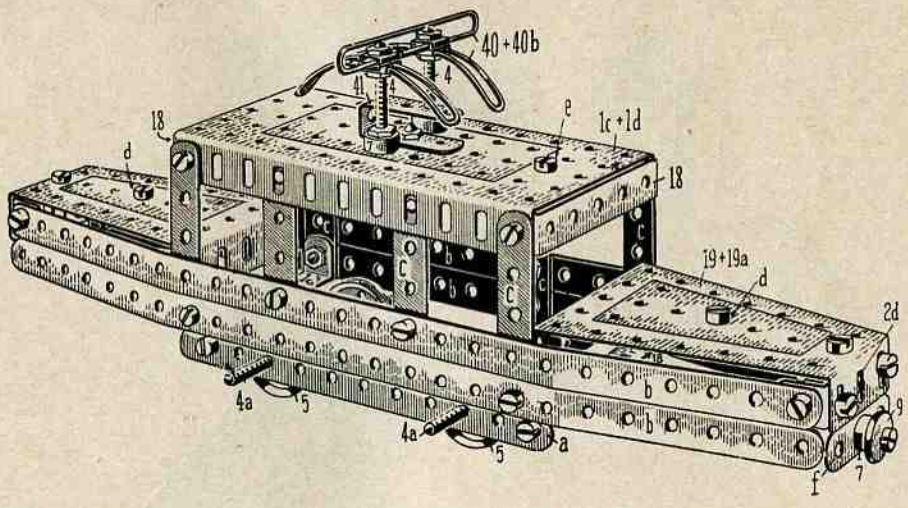
No. 209. Scoop Scale



No. 210. Balance Scale



No. 211. Electric Running Wagon



Parts to the Scoop Scale:

1 base plate	No. 1c
2 rest uprights	„ 19a
2 scale lids	„ 21a+35b
4 scale bars	a s. 11 h. l.
2 lid supports	b „ 4 „ „ (3+2)
2 span bands	c „ 5 „ „
2 spindles	No. 4
2 tongues	d s. 7 h. l.
24 screws with nuts	
11 angle brackets	

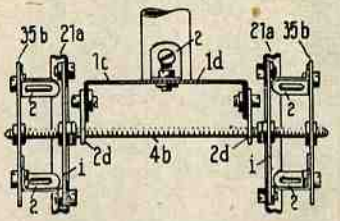
Parts to the Balance Scale:

1 base plate	No. 1c
2 scales	„ 1d, 43
2 rest uprights	No. 18+19a
4 scale bars	a s. 11 h. l.
2 lid stays	b „ 3 „ „
2 „ „	c „ 2 „ „ +No. 2e
8 lid beams	d „ 5 h. l.
2 lid fillets	e „ 7 „ „
2 tongues	No. 2d
4 spindles	„ 4, 4a
34 screws with nuts	
12 angle brackets	

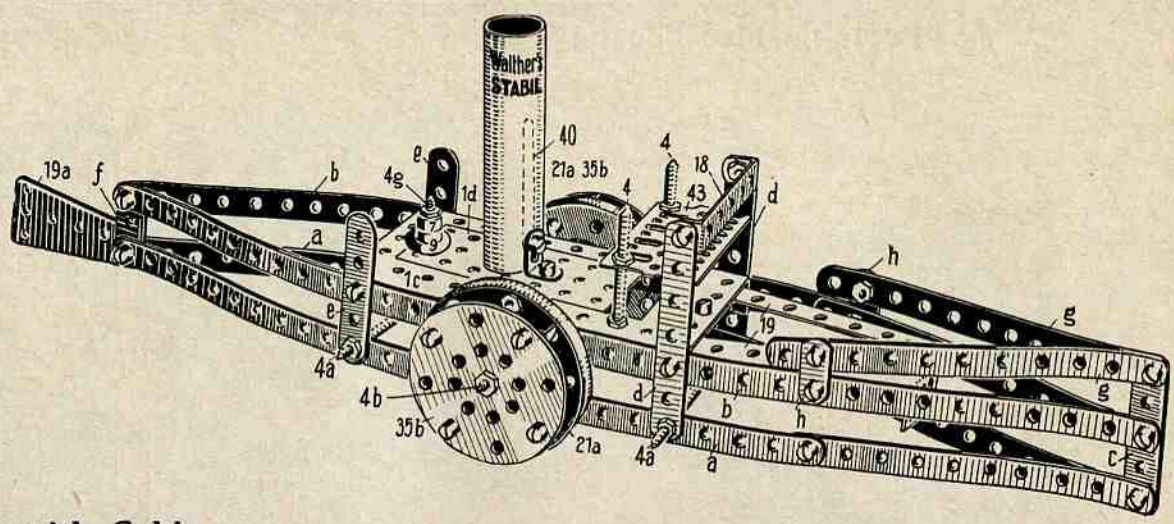
Parts to the Running Wagon:

1 wagon roof	No. 1c+1d
2 deck plates	„ 19+19a
2 axle block carriers	a s. 11 h. l.
4 wall bands	b „ 25 „ „
8 uprights	c „ 5 „ „
2 fasteners (to 19+19a)	d s. 7 h. l.
1 fastener (to 1c+1d)	e „ 11 „ „
2 button joists	f „ 3 „ „
2 button pins	No. 2d
2 propelling poles	„ 4
2 axles	„ 4a
4 wheels	„ 5
2 insulation sockets	„ 7
2 buffers	„ 7+9
2 floor pins	„ 18
2 cross frames	„ 18
3 propelling hoops	„ 40
1 resistance box	„ 41
35 screws with nuts	
8 angle brackets	

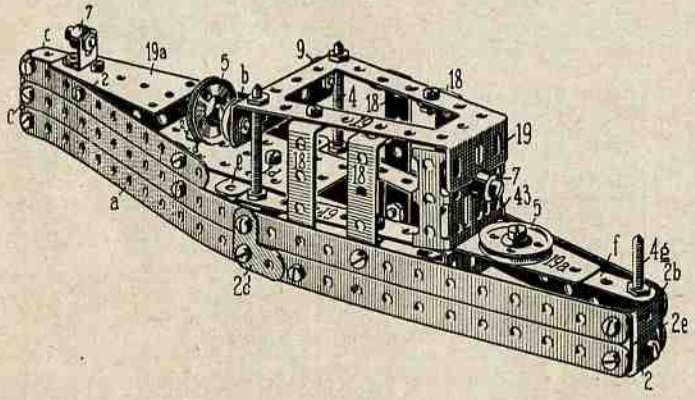
No. 212. Paddle Boat



Sketch 212a.



No. 213. Motor Boat with Cabin



Parts to the Paddle Boat:

2 body spans	a	s. 34	h. l. (25+11)
2 deck spans	b	„ 34	„ „ (25+11)
1 stem	c	„ 5	„ „
2 side uprights	d	„ 7	„ „
2 „ „	e	„ 5	„ „
2 stern posts	f	„ 3	„ „
2 gallery spans	g	„ 11	„ „
2 side spans	h	„ 2	„ „
2 wheel spokes	i	„ 5	„ „
1 chief deck			No. 1c+1d
2 shaft blocks			„ 2d
1 chief shaft			„ 4b
2 span bolts			„ 4a
2 rail poles			„ 4
1 hatchway spindle			„ 4g
1 hatchway roof			„ 7+7+9
1 breast rail			„ 18
1 fore deck			„ 19
1 steering rudder			„ 19a
2 paddle wheels			„ 21a+35b
1 chimney holder			„ 40
1 commanders bridge			„ 43

34 screws with nuts, 9 angle brackets

Parts to the Motor Boat:

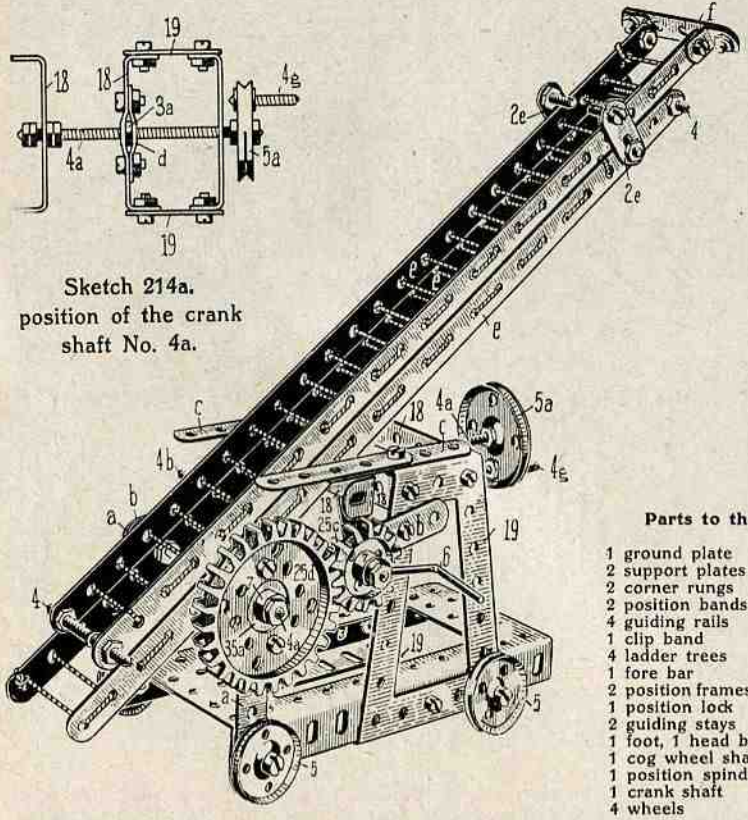
4 long spans	a	s. 25	h. l.
2 „ „	b	„ 11	„ „
1 fore stem	c	„ 3	„ „
2 wall ribs	d	„ 2	„ „
2 deck planks	e, f	„ 5	„ „
1 after deck rib	2	No. 2	
1 „ „ „		„ 2b	
2 wall ribs		„ 2d	
2 deck joists		„ 4	
1 flag pole		„ 4g	
1 steering wheel		„ 5	
1 benzine tank		„ 5	
2 search lights		„ 7	
2 position lights		„ 9	
4 deck supports		„ 18	
1 under deck		„ 1d+19+19a	
1 top deck		„ 19	
1 promenade deck		„ 19a	
1 cabin wall		„ 43	

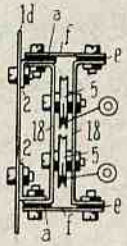
35 screws with nuts
8 angle brackets

Sketch 212a is a section of the boat in order to show the construction of the paddle wheels

No. 214. Portable Fire Escape

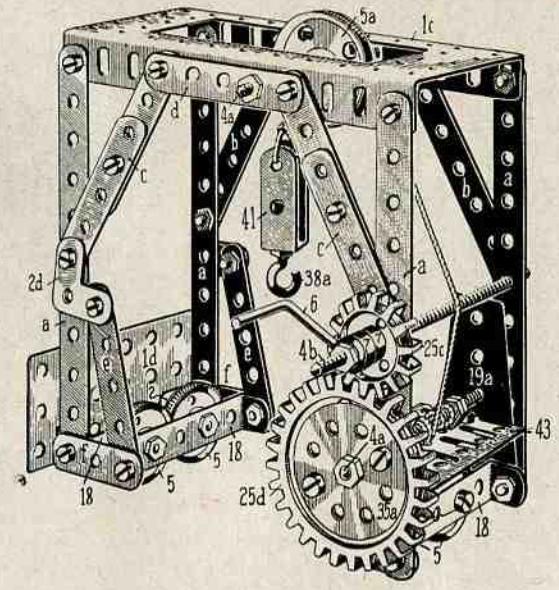
Sketch 214a.
position of the crank shaft No. 4a.





Sketch 215a.
Construction of the axle block

No. 215. Portable Lever Stand



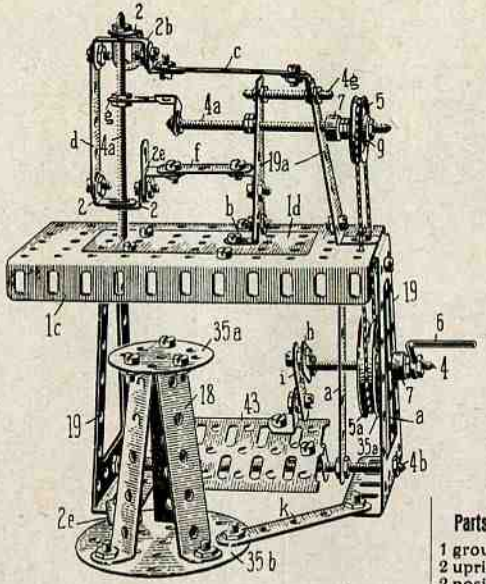
Parts to the Fire Escape:

1 ground plate	No. 1c
2 support plates	„ 19
2 corner rungs	a s. 5 h. l.
2 position bands	b „ 7 „ „
4 guiding rails	c „ 5 „ „
1 clip band	d „ 3 „ „
4 ladder trees	e „ 25 „ „
1 fore bar	f „ 5 „ „
2 position frames	No. 18
1 position lock	„ 18
2 guiding stays	„ 2e
1 foot, 1 head bar	„ 4
1 cog wheel shaft	„ 4a
1 position spindle	„ 4a
1 crank shaft	„ 4b
4 wheels	„ 5
1 crank wheel	No. 5a
2 cranks	„ 6, 4g
4 position rings (as hubs)	„ 7
1 coog wheel	„ 25c
1 „ „	„ 25d+35a
26 screws with nuts	
2 angle brackets	
4 screws serve as axle heads.	

Parts to the Lever Stand:

1 deck plate	No. 1c
1 wall plate	„ 1d
2 position stays	„ 19a
1 ground plate	„ 43
4 corner rails	a s. 11 h. l.
2 head bands	b „ 7 „ „
2 „ „	c „ 7 „ „ (5+5)
2 position bands	d s. 5 h. l.
2 feet supports	e „ 5 „ „
2 cross bands	f „ 3 „ „
4 axle block bands	No. 18
2 flat angles	„ 2d
1 roller shaft	„ 4a
2 cog shafts	„ 4a, 4b
4 wheels	„ 5
1 rope roller	„ 5a
1 crank	„ 6
4 position rings	„ 7
2 hold fasts	„ 9
2 cog wheels	„ 25c, 25d
1 hub disc	„ 35a
1 screw hook	„ 38a
1 hanging pulley	„ 41
34 screws with nuts	
4 angle brackets	

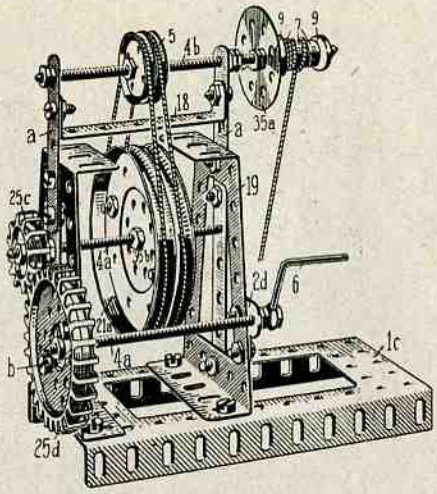
No. 216. Sewing Machine



Parts to the Sewing Machine:

1	table plate	No. 1c+1d	1	lappet	No. 2e
2	rest feet	„ 19	1	driving shaft	„ 4
2	position plates	„ 19a	1	position bolt	„ 4g
1	treadle	„ 43	1	lever shaft	„ 4a
2	supports	a s. 7 h. l.	1	needle	„ 4a
1	cross pin	b „ 5 „ „ (under 1c)	1	span pole	„ 4b
			1	reel wheel	„ 5
1	guard arm	c s. 5 h. l.	1	driving wheel	„ 5a +35a
2	guide strips	d, e „ 5 „ „ and No. 2e	1	crank	No. 6
			2	position rings	„ 7
1	projecting arm	f s. 3 h. l.	1	holt fast disk	„ 9
1	thread guide	g „ 2 „ „	3	stool legs	„ 18
2	lever arms	h, i „ 2, 3 „ „	1	foot stool	„ 35a
1	flat band	k „ 5 „ „	1	stool socle	„ 35b
1	guiding arm	No. 2b	35	screws with nuts	
1	„ „ „	2+2	12	angle brackets	

No. 217. Yarn Winder



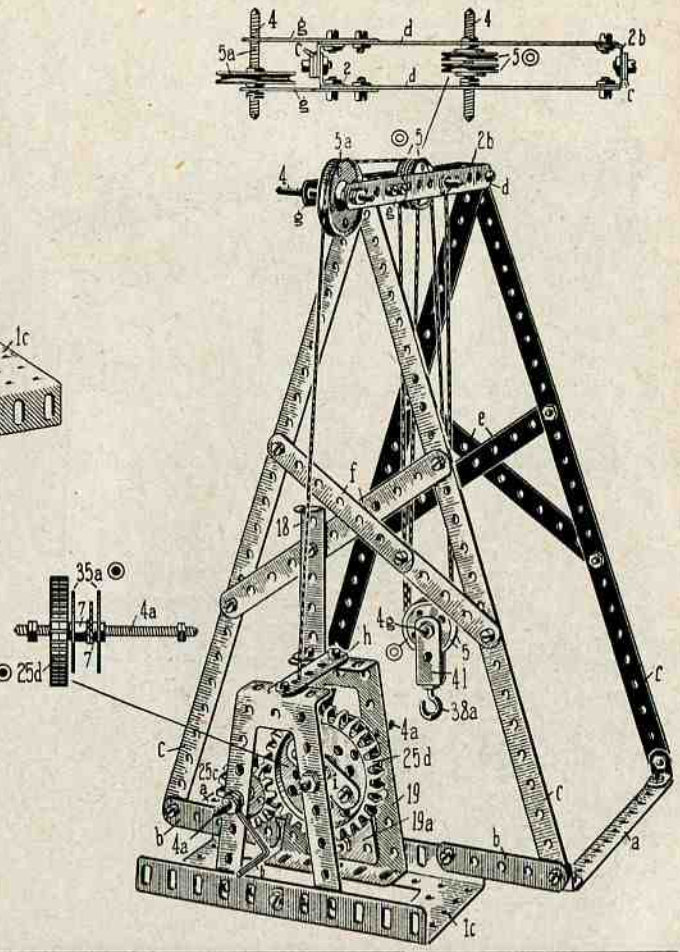
Parts to the Yarn Winder:

1	ground plate	Nr. 1c
2	upright plates	„ 19
2	position strips	a s. 10 h. l. (7+5)
1	cog wheel spoke	b „ 3
2	shaft blocks	No. 2d
2	cogwheel joists	„ 4a
1	spindle shaft	„ 4b
1	crank	„ 6
1	winder	„ 9+7 +7+9
1	position ring	No. 7 at 25d
1	cross pin	No. 18
1	swinging wheel	„ 21 a+ 35b+21a
2	cog wheels	No. 25c, 25d
1	spindle disk	No. 35a
18	screws with nuts	

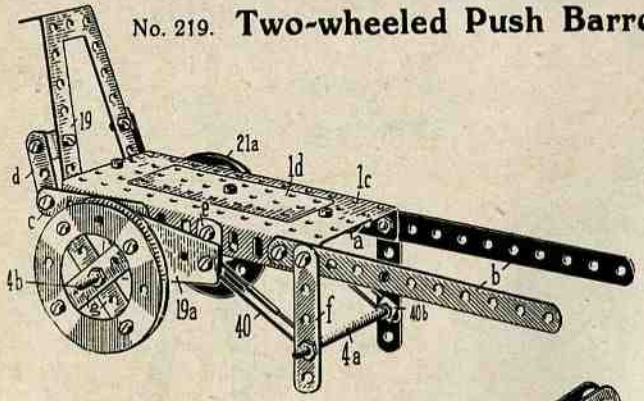
Parts to the Pulley:

1	ground plate	No. 1c
2	rack plates	„ 19
1	rack plates	No. 19a
2	hold fasts	a s. 11 h. l.
2	„ „	b „ 5 „ „
4	corner supports	c „ 25 „ „
2	frames	d „ 11 „ „
2	cross stays	e „ 11 „ „
2	„ „	f „ 11 „ „ (5+7)
2	projectors	g s. 5 h. l.
1	cross frame	h „ 5 „ „
1	spoke	i „ 3 „ „
1	double angle	No. 2b
3	roller spindles	„ 4, 4, 4g
2	cog wheel shafts	„ 4a
4	rope rollers	„ 5
1	„ „	„ 5a
1	rope drum	2 „ 7+35a
1	binding strip	No. 18
2	cog wheels	„ 25c, 25d
1	screw hook	„ 38a
1	fork band	„ 41
34	screws with nuts	
4	angle brackets	

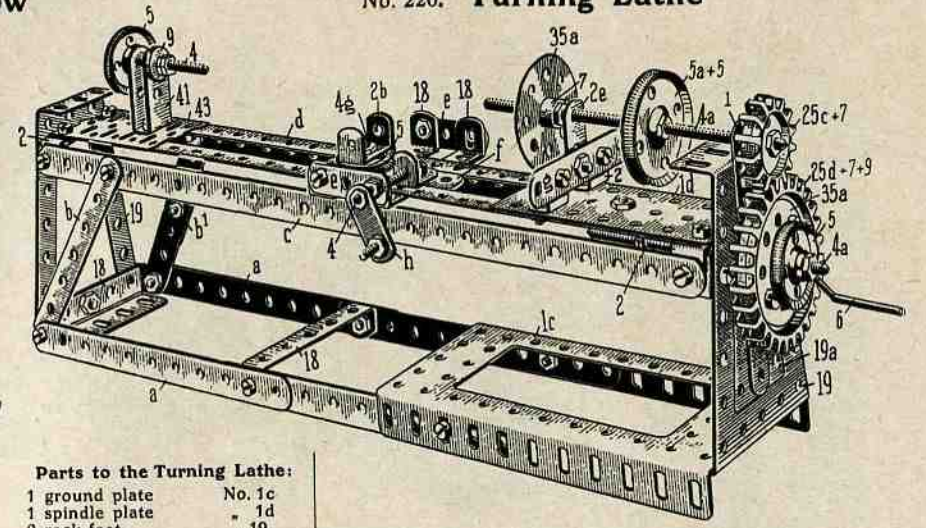
No. 218. Pulley



No. 219. Two-wheeled Push Barrow



No. 220. Turning Lathe



Parts to the Turning Lathe:

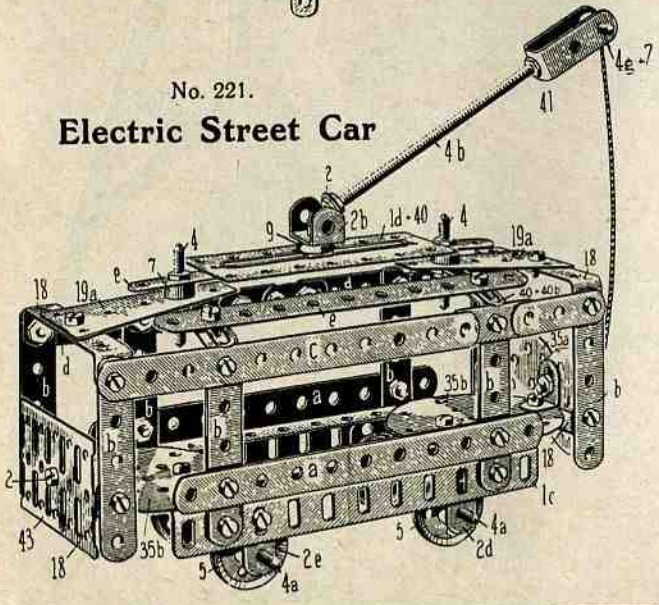
1 ground plate	No. 1c
1 spindle plate	„ 1d
2 rack feet	„ 19
1 filling plate	„ 19a
2 long bars	a s. 19 h. l. (11+11)
1 foot stay	b s. 7 h. l.
1 „ „	b¹ „ 7 „ „ (5+5)
2 walls	c „ 25 h. l.
2 bed layers	d „ 25 „ „
2 support layers	e „ 3 „ „
1 guiding bar	f „ 5 „ „ (to the support 5)
1 rack block layer	g s. 5 h. l.
1 crank arm	h „ 2 „ „
1 rack upright	i „ 7 „ „
1 support claw	No. 2b+5
1 position support	„ 2e
2 position spindles	„ 4
1 turing spindle	„ 4a
1 riding spindle	„ 4g
1 driving shaft	„ 4a
1 crank wheel	„ 5
2 driving discs	„ 5
1 „ „	„ 5a
1 crank	„ 6
3 position rings	No. 7
2 holding disks	„ 9
2 gliders	„ 18
2 cross fasteners	„ 18
2 cog wheels	„ 25c, 25d+35a
1 plate disc	No. 35a
1 spindle block	„ 41
1 rack block	„ 43
35 screws with nuts	
9 angle brackets	

Parts to the Street Car:

1 wagon floor	No. 1c
2 ground plates	„ 35b
1 roof plate	„ 1d
2 „ „	„ 19a
2 breast bands	a s. 11 h. l.
8 uprights	b „ 5 „ „
2 long frames	c, d „ 15 „ „
	c = (11+3+3)
	d = (7+2+2+7)
3 roof beams	e s. 11 h. l.
1 guide foot	No. 2b
4 axle blocks	„ 2d, 2e
2 roof spindles	„ 4
2 axles	„ 4a
1 guiding pole	„ 4b
1 roller spindle	„ 4g
4 wheels	„ 5
3 position rings	„ 7
1 turning disc	„ 9
2 head bars	„ 18
2 cross frames	„ 18
1 front wall	2 „ 35a
1 „ „	„ 43
2 deck ribs	„ 40
1 deck lamp	„ 38a
1 deck strip	„ 40
1 roller block	„ 41
35 screws with nuts	
6 angle brackets	

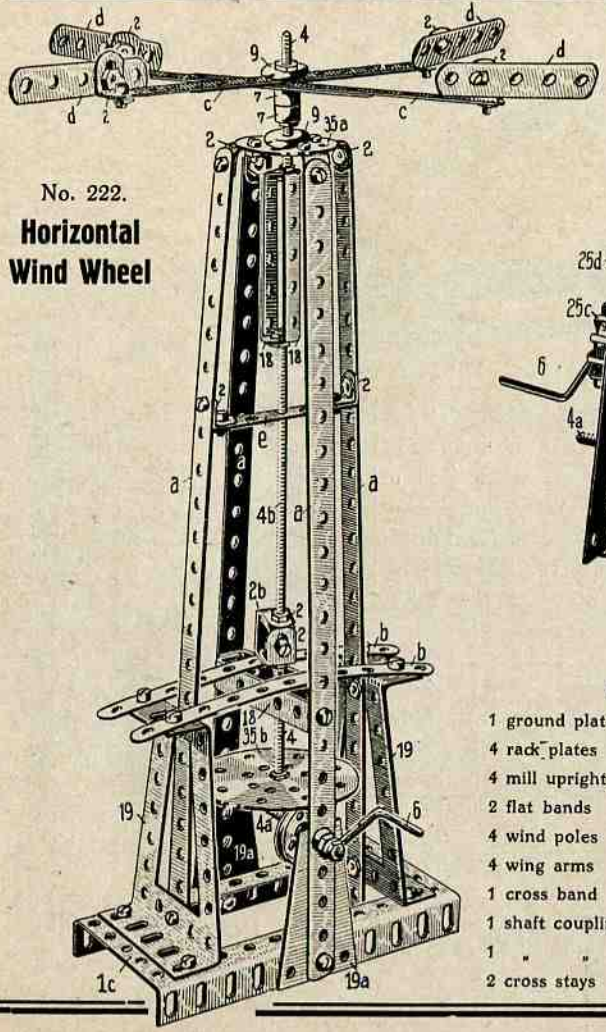
The deck lamp 38a is screwed on firmly to the guiding foot 2b.

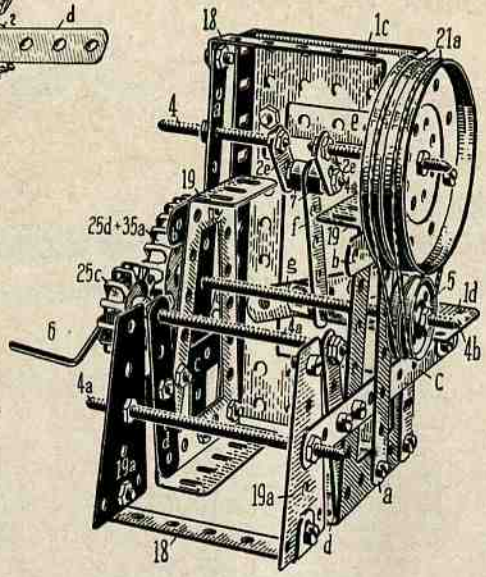
No. 221. Electric Street Car



No. 222.

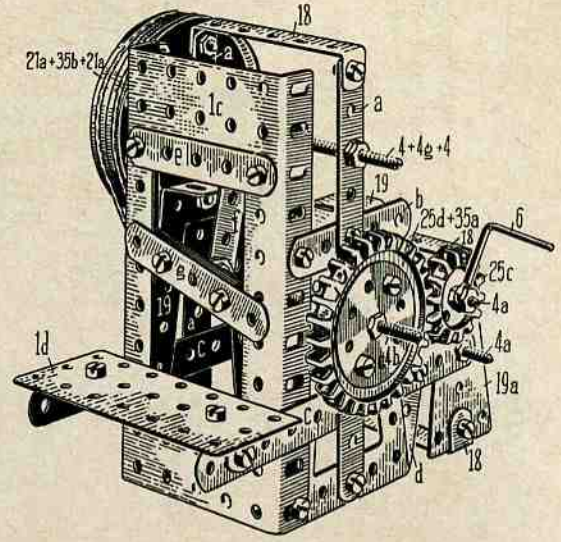
Horizontal Wind Wheel





Sketch 223a

No. 223. **Tin Cutter**



Parts to the Wind Wheel:

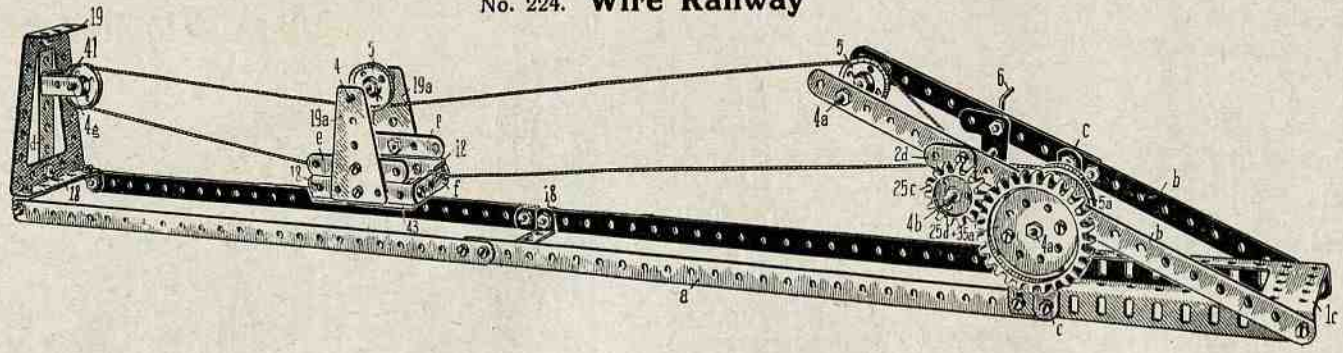
1 ground plate	No. 1c	1 position shaft	No. 4+4b+4
4 rack plates	„ 19, 19a	1 mill shaft	„ 4a
4 mill uprights	a s. 25 h. l.	1 friction wheel	„ 5a
2 flat bands	b „ 11 „ „	1 „ disc	„ 35b
4 wind poles	c „ 11 „ „	1 crank	„ 6
4 wing arms	d „ 5 „ „	1 shaft block	„ 9
1 cross band	e „ 5 „ „	1 wheel hub	„ 7+7+9
1 shaft coupling	No. 2b+2+2	1 deck plate	„ 35a
1 „ „	„ 18+18	32 screws with nuts	
2 cross stays	„ 18	12 angle brackets	

Parts to the Tin Cutter:

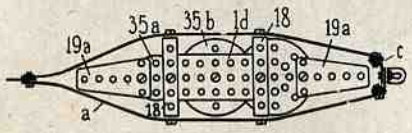
1 upright plate	No. 1c	2 transmission rollers	No. 5
1 table plate	„ 1d	1 crank	„ 6
4 position racks	„ 19, 19a	2 wheel hubs 2 position rings	No. 7
1 rack beam	„ 18	1 fly wheel	No. 21a+35b+21a
2 cross frames	„ 18	2 cog wheels	No. 25c+25d+35a
2 rack shanks	a s. 11 h. l.	30 screws with nuts, 3 a. b.	
2 „ „	b „ 5 „ „		
2 projecting bands	c „ 11 „ „		
2 rack frames	d „ 5 „ „		
1 cross pin	e „ 5 „ „		
1 lever arm	f „ 5 „ „		
1 knife g 2 s. each	3+5 „ „		
1 crank lever	No. 2e		
1 crank shaft	„ 4, 4g, 4		
1 span pole	„ 4a		
2 cog wheel shafts	„ 4a, 4b		

Sketch 223a shows the rear view of the tin cutter. In order to examine the inside of the constructed model better, the angle band No. 18, which binds both the trapeze-plates No. 19 on the upper end, has been taken away.

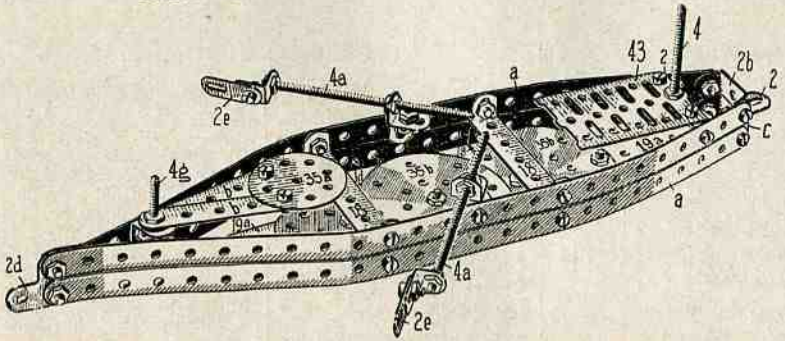
No. 224. Wire Railway



No. 225. Row Boat



Sketch 225a



Parts to the Row Boat:

4 side spans	a	s. 25 h. l.
2 deck spans	b	„ 5 „ „
2 stern ribs	c	„ 2 „ „
1 boat floor		No. 1 d+
(sketch 225 a)		2×(19 a+35 b)+35 a
1 stern rib		No. 2+2
1 „ „		„ 2 b
1 fore stem		„ 2 d
2 rowing blades		„ 2 e
2 flag poles		„ 4, 4 g
2 sculling poles		„ 4 a
2 cross pins		„ 18
2 benches		„ 18
1 deck plate		„ 35 a
1 „ „		„ 43

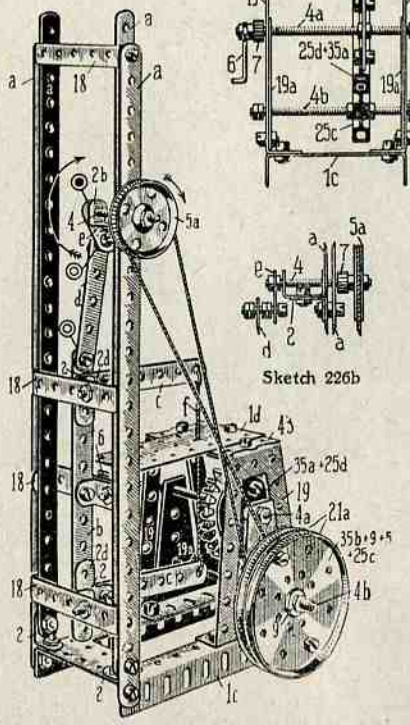
33 screws with nuts
12 angle brackets
Sketch 225a shows the boat floor seen from under.

Parts to the Wire Railway:

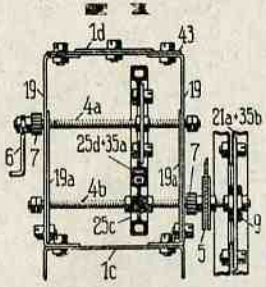
1 ground plate		No. 1 c
1 trestle plate		„ 19
2 hanging bands		„ 19 a
1 travelling basket floor		„ 43
2 rails poles	a	s. 48 h. l. (25+25)
2 rack tilted beams	b	„ 20 h. l. (11+11)
2 trestle beams	c	„ 5 h. l.
1 „ „	d	„ 7 „ „
4 basket sides	e, f	s. 5, 3 „ „
2 „ „		No. 18
2 cross joists		„ 18
2 shaft blocks		„ 2 d
1 travelling basket spindle		No. 4
2 cog wheel shafts		No. 4 a, 4 b
1 transmission shaft		„ 4 a
1 roller spindle		„ 4 g
4 string rollers		„ 5, 5 a
2 position rings		„ 7
2 cog wheels		No. 25 c, 25 d+35 a
1 roller rack		No. 41

33 screws with nuts
2 angle brackets

No. 226. Cut Fret Saw



Sketch 226a



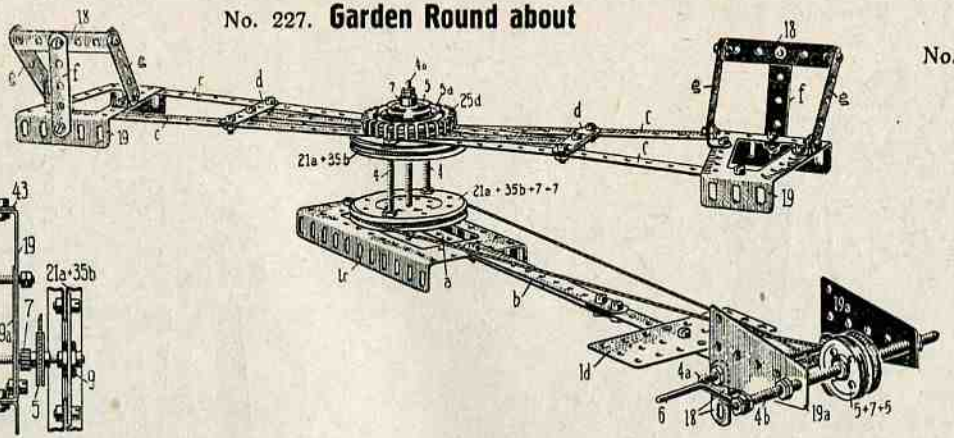
Sketch 226b

Parts to the Saw:

1	ground plate	No. 1c
1	table plate	„ 1d
2	rack sides	„ 19
2	rack rests	„ 19a
1	rack deck	„ 43
4	guiding poles	a s. 25 h. l.
1	saw frame pin	b „ 11 „ „
2	projecting arms	c „ 7 „ „
2	lever arms	d, e s. 5, 2 h. l.
1	cross frame	No. 18
1	shaft rack rest	„ 2b
3	glides	„ 18
2	flat angles	„ 2d
1	crank shaft	„ 4
2	cog wheel shafts	„ 4a, 4b
2	driving wheels	„ 5, 5a
1	crank	„ 6
5	position rings	„ 7, 9
1	fly wheel	„ 21a+35b
2	cog wheels	„ 25c, 25d
1	hub disk	„ 35a

At the place of the saw blades a delicate fret-work saw is spanned in instead of twine f so that small cutting out work can be done.

No. 227. Garden Round about



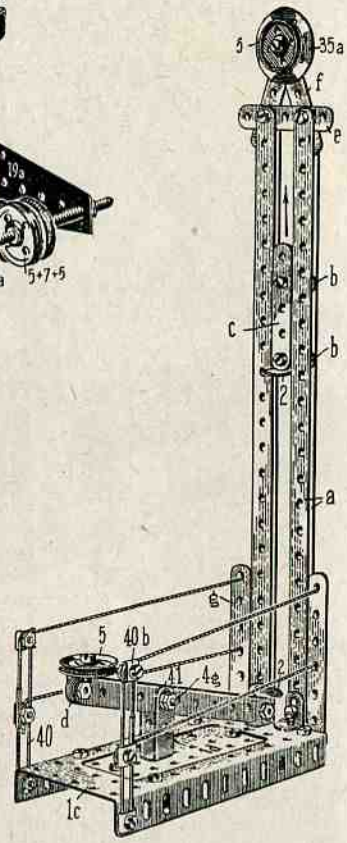
Sketch 226a shows the back part of the saw and the position of driving shaft.

Sketch 226b shows the position of the crank shaft.

Parts of the Garden Round about:

1	ground plate	No. 1c
1	floor plate	„ 1d
1	cross rack	a s. 11 h. l.
2	long pins	b „ 20 „ „ (11+11)
4	projecting beams	c s. 25 h. l.
2	cross pins	d „ 5 „ „
2	back joists	f „ 5 „ „
4	side stays	g „ 5 „ „
2	span poles	No. 4
1	span pole	„ 4a
1	upright shaft	„ 4a
1	driving shaft	„ 4b
1	driving disc	„ 5+7+5
1	crown disc	„ 5+5a +25d
1	upright rack (under 25d)	No. 7+7
2	cross beams	„ 18
2	lean backs	„ 18
2	seat plates	„ 19
2	rack plates	„ 19a
2	turning discs	„ 21a+35b

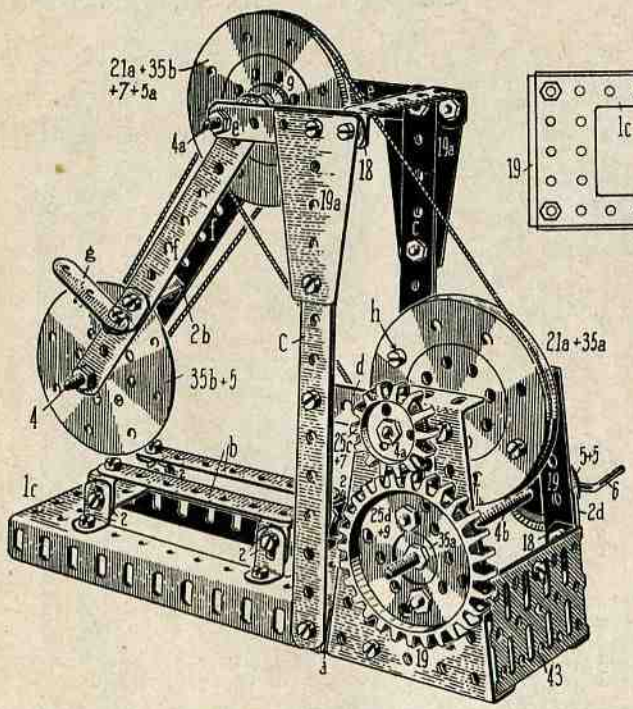
No. 228. Dynamometer

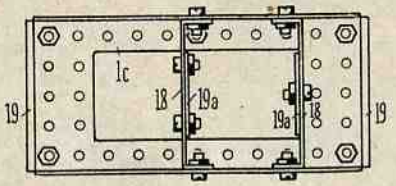


Parts to the Dynamometer:

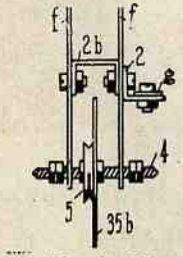
1	ground plate	No. 1c+1d
4	guide beams	a s. 25 h. s.
2	gliders	b „ 3 „ „
1	stroke rammer	c 4 „ 5 „ „
1	stroke lever	d 4 „ 11 „ „
1	cross band	e „ 5 „ „
2	cross disc bands	f s. 5 h. l.
2	rail beams	g „ 7 „ „
1	lever bolt	No. 4g
1	stroke head	„ 5
1	crown disc	„ 5+35a
1	lever beam	„ 41
2	rails shanks	„ 40+40b
2	cross pins (under 1c, 1d)	„ 18

No. 229. Pendulum Saw



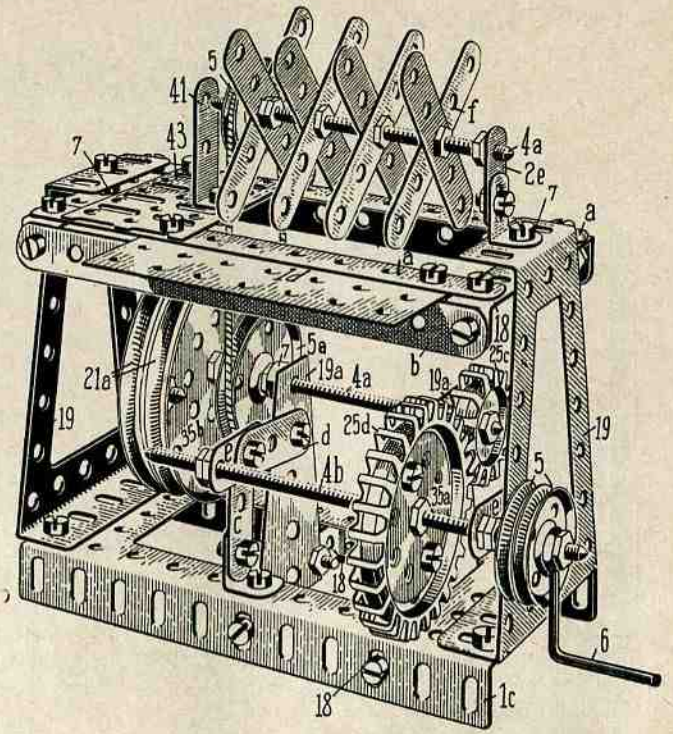


Sketch 230a



Sketch 229a

No. 230. Willow



Parts to the Pendulum Saw:

1 ground plate		No.	1c
2 rack rest plates		„	19
2 upright heads		„	19a
2 lappet bands	a	s.	5 h. l.
2 table fillets	b	„	7 „ „
2 frame uprights	c	„	14 „ „ (11+11)
2 racket bands	d	s.	5 h. l.
2 projector beams	e	„	5 „ „
2 pendulum arms	f	„	11 „ „
1 pendulum handle	g	s.	3 h. l.
1 spoke	h	„	5 „ l.
1 cross pin		No.	2b
2 shaft blocks		„	2d
1 saw shaft		„	4
2 shafts		„	4a
1 driving shaft		„	4b
3 driving discs		„	5
1 „ „		„	5a
1 crank		„	6
2 wheel hubs		„	7+9
1 cross bolt		No.	18
1 cross frame		„	18
1 string roller		„	21a+35a
1 string roller		„	21a+35b
2 cog wheels		„	25c, 25d
1 hub disc (to 25d)		„	35a
1 saw blade		„	35b
1 rack plate		„	43
33 screws and nuts			
8 angle brackets			

A driving disc No. 5 lies behind the saw blade 35b (sketch 229a), while the driving disk No. 5a is to be found behind the upper string roller 21a+35b.

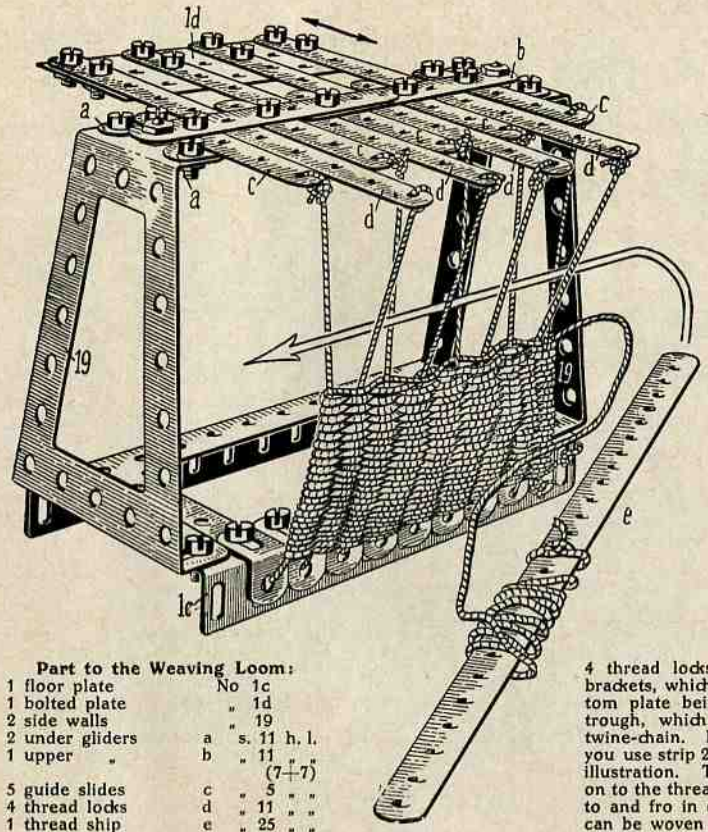
Parts to the Willow:

1 ground plate		No.	1c
1 laid in table		„	1d
2 rack sides		„	19
2 rack rests		„	19a
1 rack rest		No.	41
1 deck plate		„	43
2 table fillets	a	s.	11 h. l.
2 table clamps	b	„	11 „ „
1 rack foot	c	„	3 „ „
1 cross band	d	„	3 „ „
2 cross fillets	e	„	2 „ „
8 cutters	f	„	5 „ „
1 position pin		No.	2e
1 knife shaft		„	4a
2 cog wheels		„	4a, 4b
2 driving wheels		„	5
2 transmission rollers		No.	5, 5a
1 crank		„	6
4 position rings		„	7
2 cross beams		„	18
2 table cross clamps		„	18
1 fly wheel		„	21a+35b+21a
2 cog wheels		No.	25c, 25d
1 hub discs		„	35a

33 s. w. n., 2 a. b.

Sketch 230a shows the ground plate seen from under

No. 231. Carpet Weaving loom



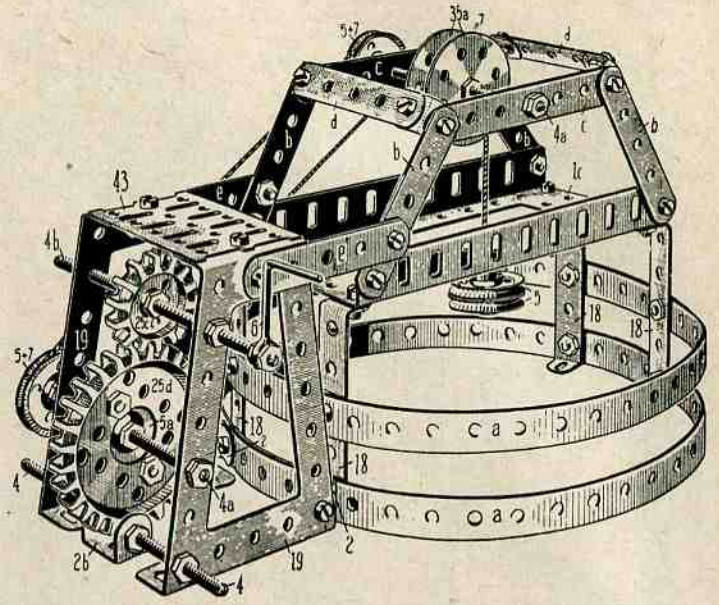
Part to the Weaving Loom:

1 floor plate	No	1c
1 bolted plate	„	1d
2 side walls	„	19
2 under gliders	a	s. 11 h. l.
1 upper „	b	„ 11 „ „ (7+7)
5 guide slides	c	„ 5 „ „
4 thread locks	d	„ 11 „ „
1 thread ship	e	„ 25 „ „
34 screws with nuts		
9 angle brackets		

From the outer holes of the 5 guiding slides c as well as from the 4 thread locks d there are angle brackets, which are fastened on bottom plate being 9 threads to pull trough, which form the socalled twine-chain. For the thread spool you use strip 25 holes in length. See illustration. The threads fastened on to the thread lock and are rotated to and fro in order that the thread can be woven in properly.

With this self erected loom one can weave all sorts of runners and mats, coloured bast or strong twine is most adaptable for use.

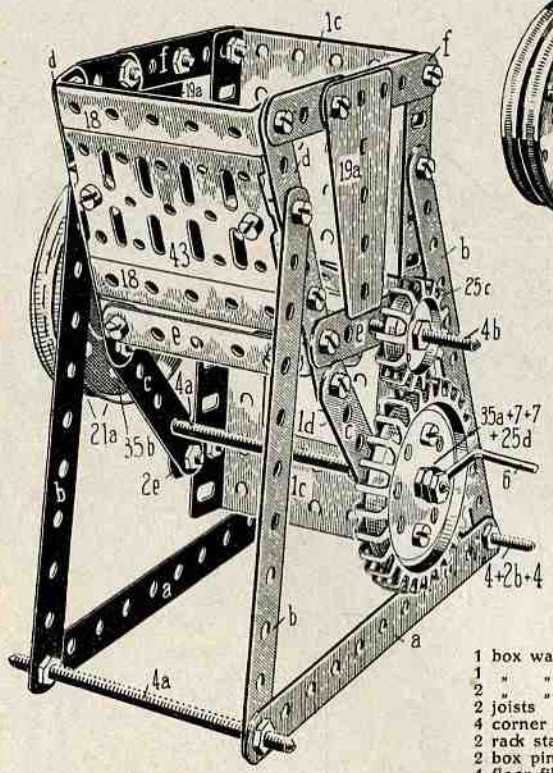
No. 232. Well Winch

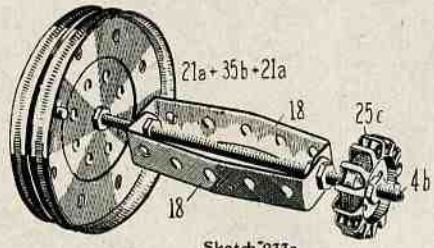


Parts to the Well Winch:

1 cask foundation	No.	1c
4 case shanks	„	18
2 rack frames	„	19
1 deck plate	„	43
2 well rims	a	s. 40 h. l. (25+25)
4 tilt beams	b	„ 5 „ „
2 long frames	c	s. 7 h. l.
2 cross frames	d	„ 5 „ „
2 cross bolts	e	„ 5 „ „
1 cross anchor	No.	4+2b+4
2 cog wheel shafts	„	4a, 4b
1 rope drum shaft	„	4a
2 rope rollers	„	5
1 pail	„	5+5
1 crank	„	6
2 position rings	„	7
1 rope drum	No.	35a+7+7+35a
2 cog wheels	„	25c, 25d+5a
34 screws with nuts		
6 angle brackets		

No. 233. Vegetable Cutter

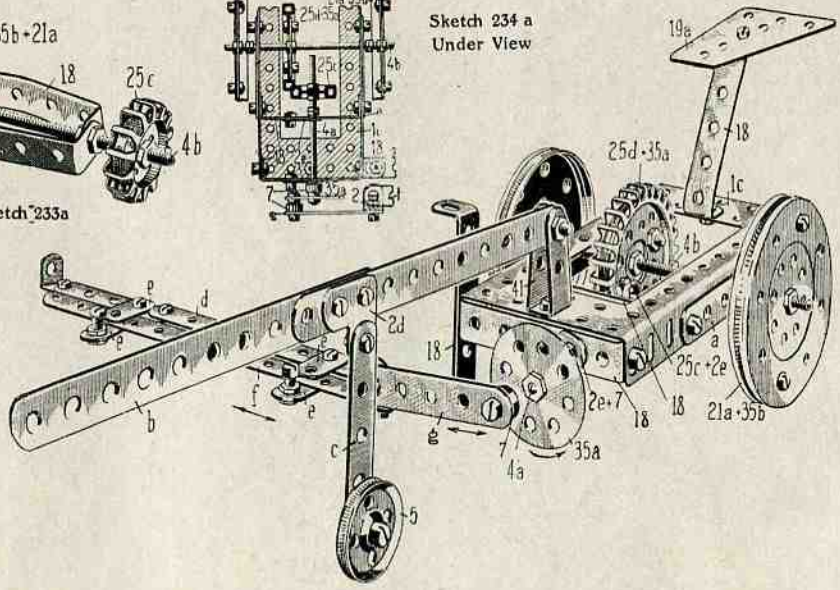




Sketch 233a

No. 234. Mowing Machine

Sketch 234 a
Under View



Parts to the Vegetable Cutter:

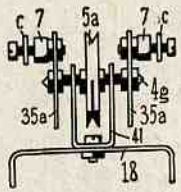
1 box wall	No.	1c, 1d
1 „ „	„	18+43+18
2 „ „	„	19a
2 joists	a s.	11 h. l.
4 corner beams	b „	11 „ „
2 rack stays	c „	5 „ „
2 box pins	d „	7 „ „
4 floor fillets	e „	5 „ „
2 box frames	f „	„ „ „ (5+3)
2 vegetable knives	No.	18
2 lappet bands	„	2e
1 span pole	„	4a
1 „ „	„	4+2b+4
2 cog wheels	„	4a, 4b
1 crank	No.	6
2 position rings	„	7
1 fly wheel 2	„	21a+35b
2 cog wheels	„	25c, 25d+35a
29 screws with nuts		
4 angle brackets		

Sketch No. 233a shows the fly wheel No. 4b with the two vegetable knives No. 18.

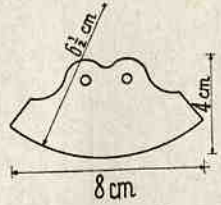
Parts to the Moving Machine:

1 travelling frame	No.	1c
2 axle blocks	a s.	5 h. l.
1 shaft	b „	19 „ „ (11+11)
1 shaft joist	c „	5 h. l.
1 knife rack	d „	15 „ „ (11+5)
4 guiding beams	e „	2 a. 3 h. l.
1 knife	f „	13 „ „ (7+7)
1 crank lever	g „	5 „ „
1 flat angle	No.	2d
2 crank shaft blocks	„	2e
1 crank shaft	No.	4a
1 axle	„	4b
1 support wheel	„	5
2 cross pins (under 1c)	„	18
1 rack pin (for d)	„	18
1 seat support	„	18
1 seat	„	19a
2 wheels	„	21a+35b
2 cog wheels	„	25c, 25d
1 cog wheel hub (to 25d)	„	35a
1 shaft fork	„	41
32 screws with nuts		
2 angle brackets		

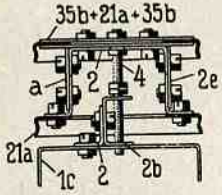
No. 235. Meat Mincing Machine



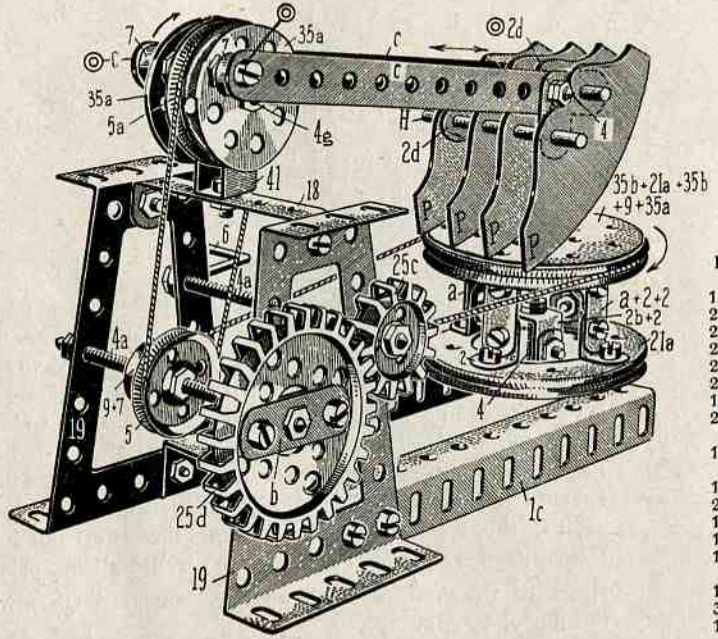
Sketch 235a



Sketch 235b



Sketch 235c



Parts Meat Mincing Machine:

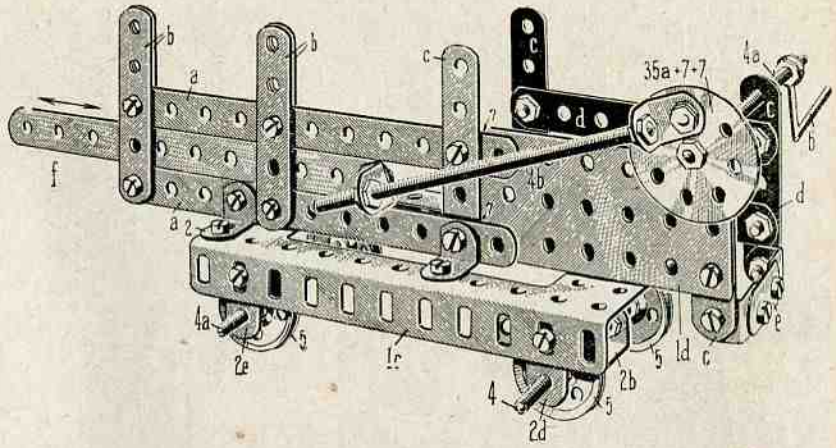
1 ground plate	No. 1c
2 rack rests	„ 19
2 mincing table feet	a s. 2 h. l.
2 „	a No. 2e
2 cog wheel spokes	b s. 3 h. l.
2 crank arms	c „ 11 „ „
1 mincing table block	No. 2b+2
2 mincing knives holder	No. 2d
1 mincing knives spindle	No. 4
1 mincing table spindle	No. 4
2 cog wheel shafts	No. 4a
1 rope drum spindle	„ 4g
1 rope reel	„ 5
1 „ drum	„ 5a +2×35a
1 crank	„ 6
3 position rings	„ 7
1 string wheel	„ 7+9
1 rack fastener	No. 18
1 mincing table socket	„ 21a
1 mincing table	„ 35b +21a+35b
2 cog wheels	No. 25c, 25d
1 fork band	„ 41
35 screws with nuts	
9 angle brackets	

Sketch 235a shows the rope drum in a geometric view and the fastening of both crank arms c to it.

Sketch 235b shows the measurement of the 4 mincing knives P. These together with 2 wood schemes H do not belong to the contents of the boxes.

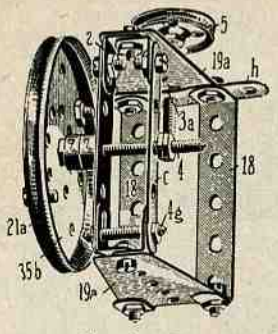
Sketch 235c is a section through the turning table mincer.

No. 236. Tree Trunk Saw

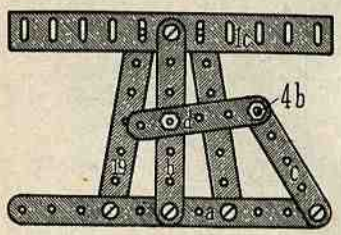


Parts to the Tree Trunk Saw:

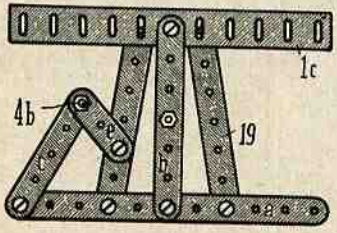
1 ground plate	No. 1c
1 stand plate	„ 1d
2 glide block bars	a s. 11 h. l.
4 guide bars	b „ 5 „ „
4 rack and middle fillets	c s. 5 h. l.
2 rack bands	d „ 7 „ „
1 cross band	e „ 2 „ „
1 saw blade	f „ 11 „ „
4 axle blocks	No. 2d, 2e
1 crank shaft	„ 4a
1 axle	„ 4a
1 „	„ 4+2b+4
1 connecting rod	„ 4b
4 wheels	„ 5
1 crank	„ 6
1 wheel hub	7+7
2 position rings	7
1 crank wheel	35a
28 screws with nuts	
7 angle brackets	



Sketch 237a

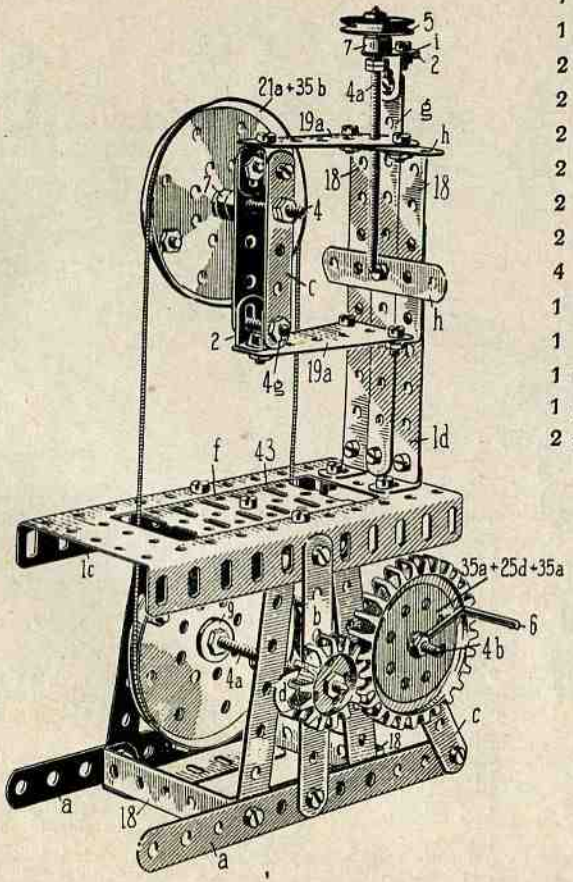


Sketch 237c
shows the front view of the table rest



Sketch 237b
shows the backview of the table rest

No. 237. Band Saw



Parts to the Band Saw:

1 table plate	No. 1c+43			1 spindle rack	i s. 2 h. l.
1 upright plate	„ 1d			2 roller spindles	No. 4a, 4
2 slide bars	„ 18			1 position spindle	„ 4a
2 cross bars	„ 18			1 driving shaft	„ 4b
2 table rests	„ 19			1 cross bolt	„ 4g
2 projecting plates	„ 19a			1 driving disc	„ 5
2 long bars	a s. 11 h. l.			1 position wheel	„ 5+7
2 rack fillets	b „ 7 „ „			1 crank	„ 6
4 „ „	c „ 5 „ „			2 wheel hubs	„ 7+9
1 rack support	d „ 5 „ „			2 band saw rollers	„ 21a +35b
1 „ „	e „ 3 „ „			1 cog wheel	„ 25c
1 table cross pin	f „ 5 „ „			1 „ „	„ 25d +35a
1 guide bar	g „ 11 „ „			33 screws with nuts	
2 same cross	h „ 5 „ „			7 angle brackets.	

Sketch 237a

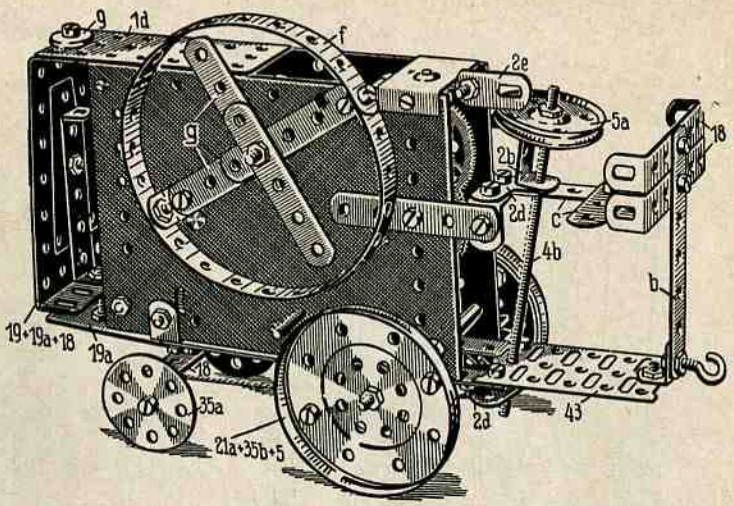
shows the upwards and downwards adjustable upper part of the saw. This whole part glides on the guide bar g and is hold loose to the cross bar h, which is fixed to g. By turning the position wheel 5 the position spindle 4a screws itself into the worm of the screw nut 3a, which is strongly fastened between h and 19a and stored there. As the position spindle cannot move itself underneath, because the position wheel 5 with position ring 7 pushes against the spindle rack i, therefore the screw nut 3a raises itself and by this means the whole gliding part. Herewith the moving saw is rigidly tensioned (here in the model by a string).

No. 238. Iron Horse

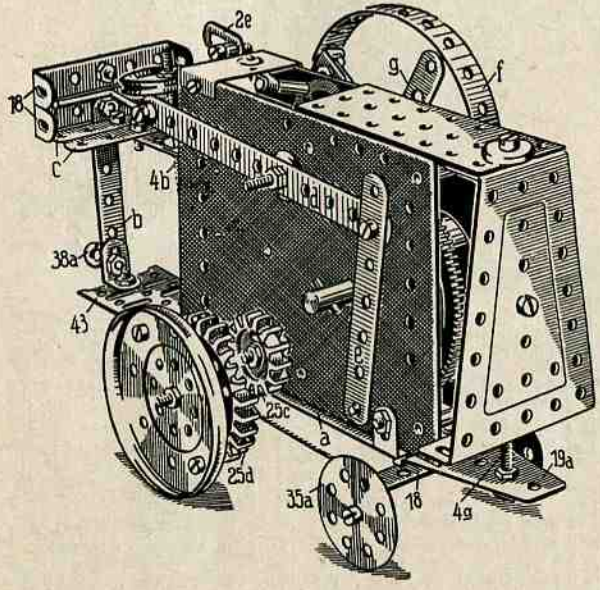
1 deck plate	No. 1d	1 fly wheel circle	f „ 25 „ „
1 ground plate	„ 19a	2 spokes	g „ 7 „ „ (5+5)
1 „ „	„ 43	2 axle blocks	h „ 2 „ „
1 front wall	„ 19+19a+18	1 cog wheel spoke	i „ 3 „ „
2 floow bearers	a s. 11 h. l.	1 steering wheel	No. 2d
1 seat board	b „ 7 „ „	1 switch lever	„ 2e
3 set fillets	c „ 5 „ „	1 back axle	„ 4a
1 switch lever	d „ 11 „ „	1 steering spindle	„ 4b
1 lever	e „ 7 „ „		

Parts to the Iron Horse:

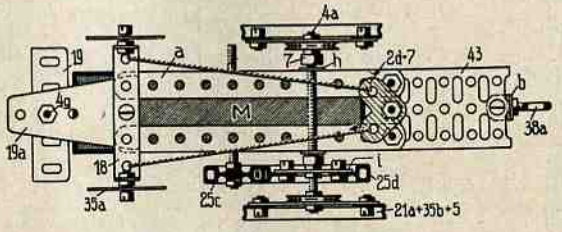
1 position bolt	No. 4g
1 steering wheel	„ 5a
2 seat stays	„ 18
1 axle pole	„ 18
2 back wheels	„ 21a +35b+5
2 front wheels	No. 35a
2 cog wheels	„ 25c, 25d
1 coupling hook	„ 38a



Sketch 238. Back View



Sketch 238a. Front View



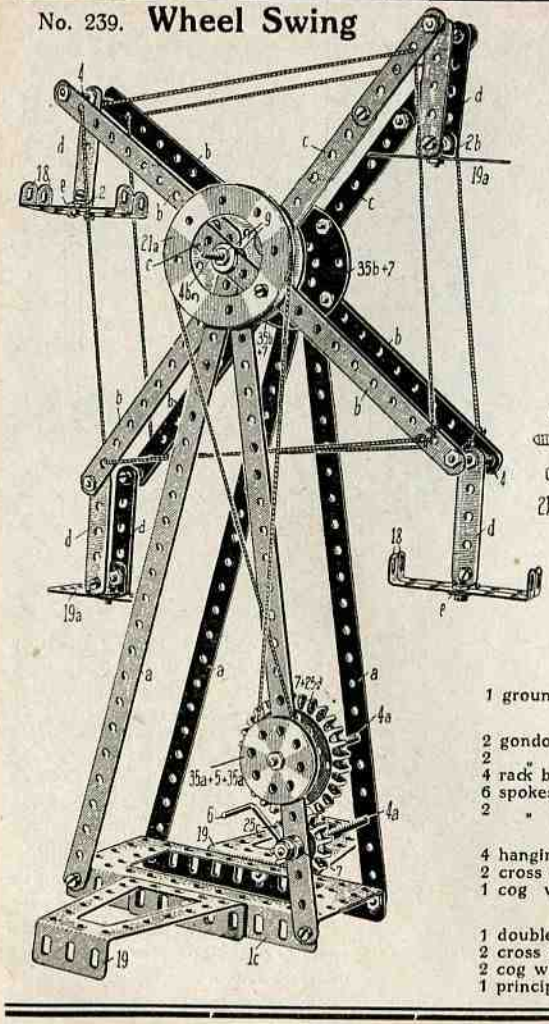
Sketch 238b. Under View

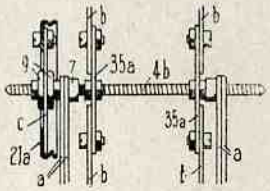
On the right of the seat the lever is found, Stabil crank No. 6 is united by levers d and e with the switch lever of the Stabil motor, and it is feasible to cause the movement to run backwards and forwards from the seat of the motor. How the steering bar results according to left and right motion is seen by the underview of Sketch 238b.

The in and out switching of the motor results by means of the switch lever 2e.

The motor does not belong to the contents of the box. For details of the motor see No. 2 side of cover.

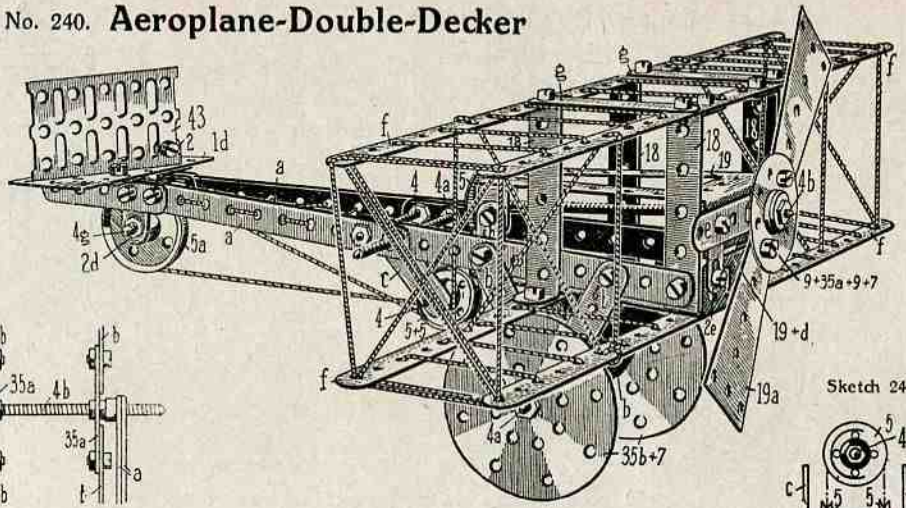
No. 239. Wheel Swing

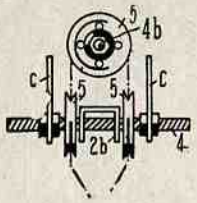




Sketch 239a

No. 240. Aeroplane-Double-Decker





Sketch 240a

Parts to the Wheel Swing:

1	ground plate	No. 19+1c+19
2	gondolar floors	No. 18
2	„ „	„ 19a
4	rack bars	a s. 25 h. l.
6	spokes	b „ 11 „ „
2	„	c „ 11 „ „ (7+5)
4	hanging bars	d s. 5 h. l.
2	cross pins	e „ 2 „ „
1	cog wheel spoke	f s. 3 h. l.
1	double angle	No. 2b
2	cross spindles	„ 4
2	cog wheel shafts	„ 4a
1	principal shaft	„ 4b
1	transmission disc	No. 35a+5+35a
1	crank	No. 6
3	wheel hubs, 1 positon ring	No. 7
1	wheel hub 2	„ 9
1	transmission wheel	„ 21a
2	cog wheels	„ 25c, 25d
2	wheel discs	„ 35b
35	screws with nuts	
5	angle brackets	

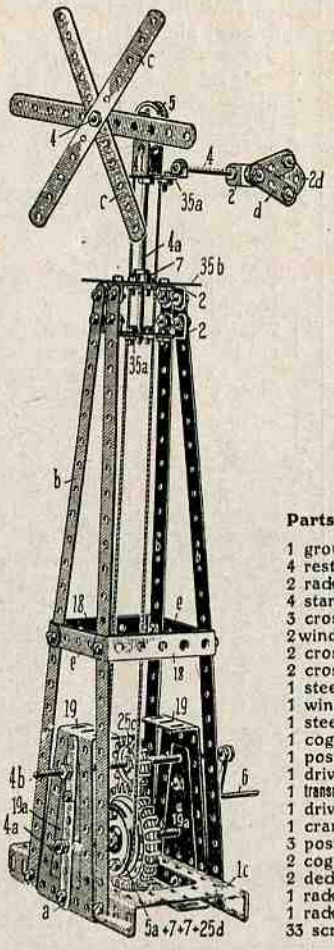
Sketch 239a shows the construction of the wheel shaft No. 4b.

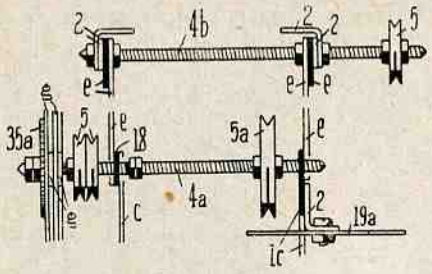
Parts to the Double Decker:

2	body plates	No. 19
2	long ribs	a s. 23 h. l. (11+11+5)
4	frame supports	b s. 5 h. l.
2	rack bands	c „ 3 „ „
1	body pin	d „ 7 „ „
1	layer	e „ 7 „ „
4	flat beams	f „ 25 „ „
2	stretchers	g „ 5 „ „
2	body pins	h „ 2 „ „
2	„ „	No. 2e
1	span block	„ 2b
2	axle blocks	„ 2d
1	shaft	„ 4
2	position bolts	„ 4, 4a
1	front axle	„ 4a
1	back axle	„ 4g
1	shaft	„ 4b
3	wheels	No. 5
1	swing wheel	„ 5a
2	position rings	„ 7
1	propeller hub	No. 9+35a+9+7
4	bearer stay	No. 18
1	propeller	„ 19a
2	running wheels	„ 35b
1	high steerer	„ 1d
1	side steerer	„ 43
34	screws with nuts	
4	angle brackets	

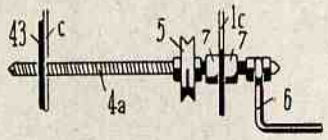
Sketch 240a shows the string lacing over the 3 wheels No. 5 to the tow-wheel 5a. If one puts into operation the model on the table, the propeller 19a turns itself in consequence of this string transmission by self-propulsion.

No. 241. Wind Wheel

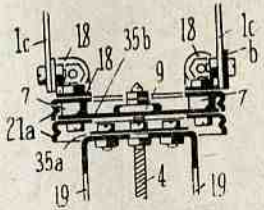




Sketch 242a



Sketch 242b



Sketch 242c

Parts to the Wind Wheel:

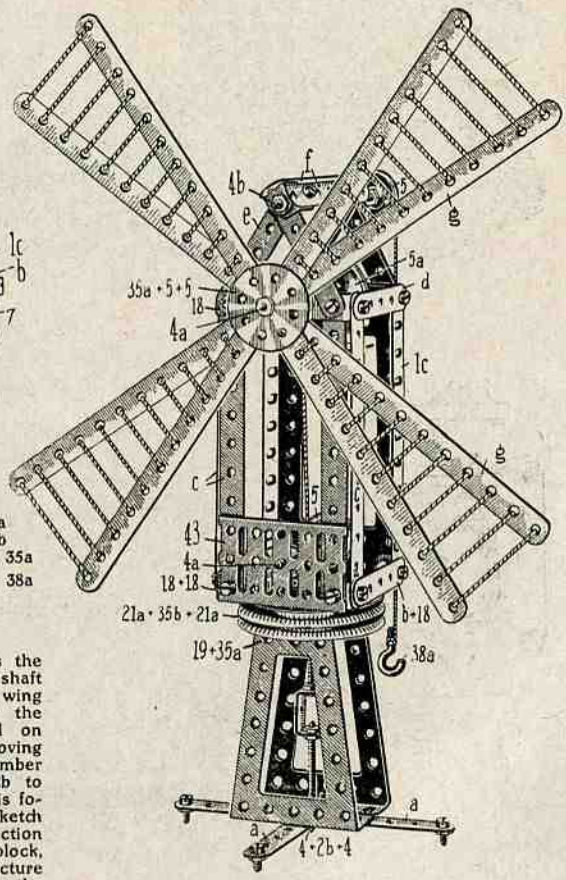
1 ground plate	No.	1c	
4 rest plates	„	19, 19a	
2 rack fillets	a s.	7	h. l.
4 stand bars	b „	25	„ „
3 cross wings	c „	11	„ „
2 wind steer bands	d „	3	„ „
2 cross bands	e „	5	„ „
2 cross bands	No.	18	
1 steering blade	„	2d	
1 wing shaft	„	4	
1 steering spindle	„	4	
1 cog wheel shaft	„	4a	
1 position shaft	„	4a	
1 driving shaft	„	4b	
1 transmission wheel	„	5	
1 driving wheel	„	5a	
1 crank	„	6	
3 position rings	„	7	
2 cog wheels	„	25c, 25d	
2 deck plates	„	35a, 35b	
1 rack plate	„	35a	
1 rack rest	„	41	
33 screws with nuts, 8 a. b.			

Parts to the Wind Mill:

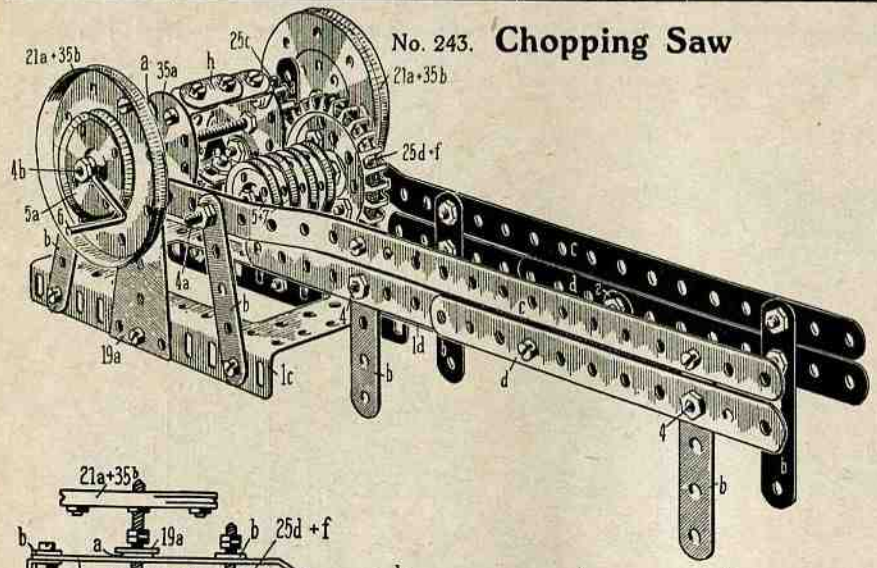
2 wall plates	No.	1c, 43	
1 mill block	2 „	19	
1 plate	„	19a	
2 cross joists	a s.	11	h. l.
1 wall joist	b „	5	„ „
4 corner stays	c „	11	„ „
2 wall frames	d „	5	„ „
4 spars	e „	5	„ „
2 roof fasteners	f „	7	„ „
4 cross wing rods	g „	25	„ „
1 mill block shaft	No.	4 + 2b + 4	
1 wing shaft	„	4a	
1 grind shaft	„	4a	
1 lift shaft	„	4b	
1 wind ring hub	„	5 + 5 + 35a	
3 rope rollers	„	5, 5a	
1 crank, 5 posit rings	„	6, 7, 9	
4 grind chamber bars	„	18	
1 turning block	2 No.	21a + 35b	
1 turning block plate	No.	35a	
1 screw hook	„	38a	
32 screws with nuts			
7 angle brackets			

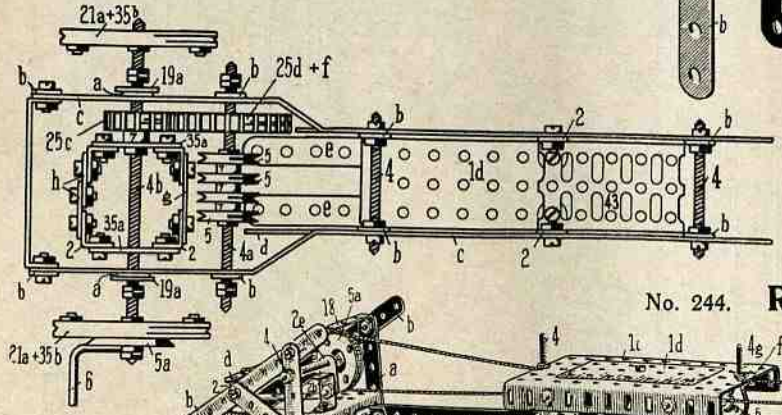
Sketch 242a shows the fastening of the driving shaft 4b and of the under wing shaft 4a. This with the latter, tightly screwed on rope roller 5a by a moving string with the grind chamber shaft 4a. Sketch 242b to which the grindstone is found in a windmill. Sketch 242c is an upright section through the turning block, and shows the superstructure of the mill floor on the mill rest.

No. 242. Stationary Wind Mill



No. 243. Chopping Saw





Parts to the Chopping Saw:

1	ground plate	No. 1c
1	box floor	„ 1d+43
2	rack rests	„ 19a
2	rack fillets	a s. 7 h. l.
8	rest feet	b „ 5 „ „
2	long frames	c „ 25 „ „
2	„ „	d „ 18 „ „ and 16 h. (11+11)
2	floor fillets	e s. 11 h. l.
1	cog wheel	
	spoke	f „ 3 „ „
1	knife	g „ 3 „ „
1	„	h „ 3 „ „ (2+2)
2	position spindles	No. 4
1	swing wheel shaft	„ 4b
1	front thrust shaft	„ 4a
1	front thrust cylinder	4 Nr. 5+3 No. 7
1	driving disc	No. 5a
1	crank	„ 6
1	cross pin	„ 18
2	swing wheels	„ 21a+35b
2	cog wheels	„ 25c, 25d
2	knife discs	„ 35a
35	screws w. n. 6 a. b.	

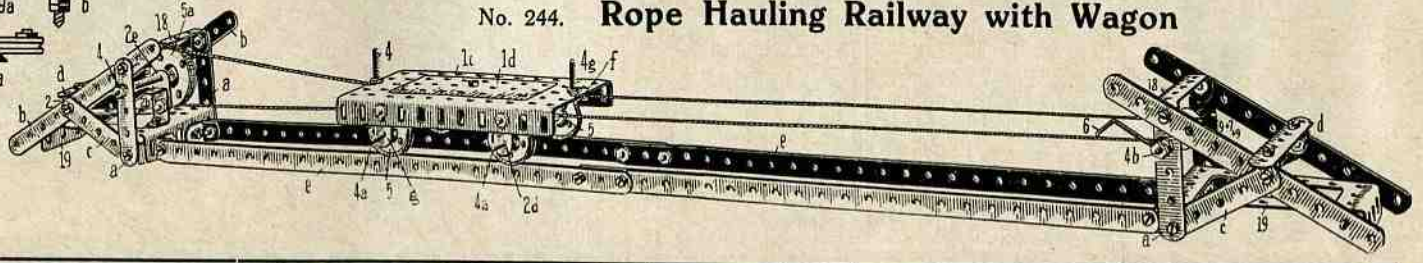
Parts to the Rope Hauling Railway:

2	ground plates	No. 19
2	cross locks	„ 18
1	rack rest	„ 2b+2e
4	block fillets	a s. 5 h. l.
4	block stays	b „ 11 „ „
4	support stays	c „ 5 „ „
2	cross locks	d „ 7 „ „
2	rail poles	e „ 47 „ „ (25+25)
1	transmission shaft	No. 4
1	driving shaft	„ 4b
1	rope disk	„ 5a
1	rope roller	„ 9+7+9
1	crank	„ 6

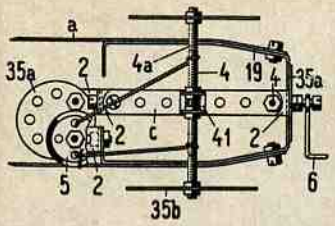
Parts to the Wagon:

1	floor plate	No. 1c+1d
1	lappet band	f s. 11 h. l.
2	axle blocks	g „ 2 „ „
2	axle blocks	No. 2d
2	anchor splints	„ 4, 4g
2	axles	„ 4a
4	wheels	„ 5
35	screws with nuts	
8	angle brackets	

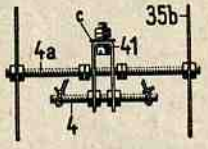
No. 244. Rope Hauling Railway with Wagon



Sketch 243a
GroundSection
of the
Chopping Saw.

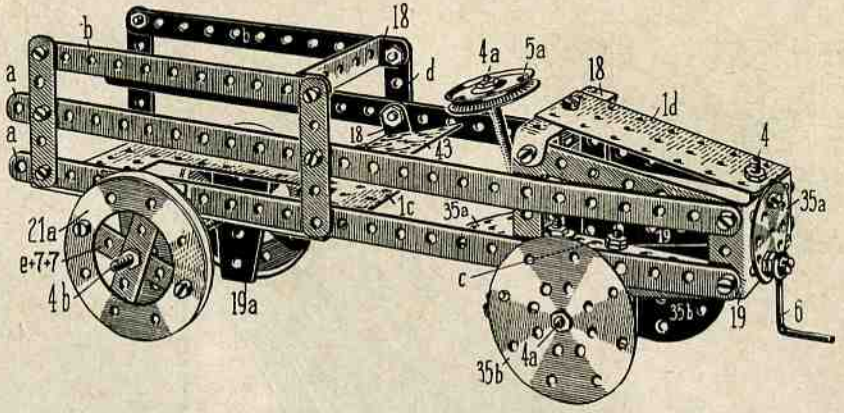


Sketch 245a
shows the steering apparatus
of the under-side

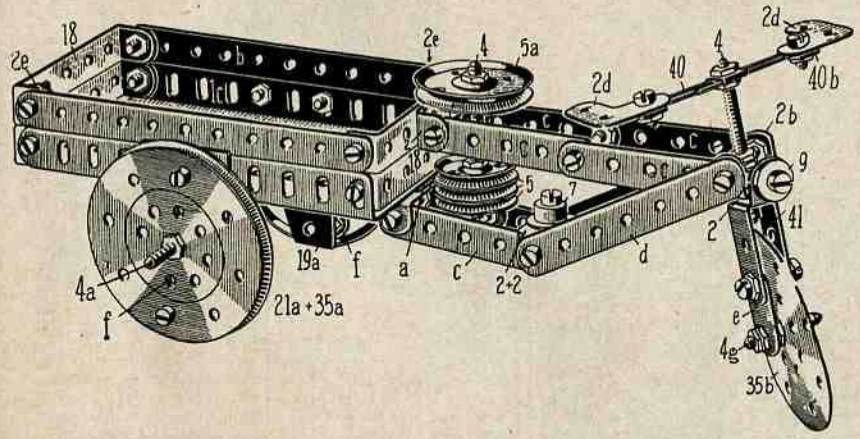


Sketch 245b
shows the front wheel axle

No. 245. Motor Lorry



No. 246. Three-wheeled Luggage-Carrier.



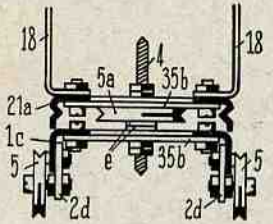
Parts to the Luggage-Carrier:

1 box floor	No.	1c,	1d
1 floor pin (under 1d)	a s.	11	h. l.
2 box sides	b „	11	„ „
6 frame pins	c „	5	„ „
2 „ „	d „	7	„ „
2 fork rests	e „	2	„ „
2 wheel spokes	f „	5	„ „
1 spindle block	No.	2b	
2 handle grips	„	2d	
2 box lappets	„	2e	
1 seat, 1 steering spindle	„	4	
1 rear axle	„	4a	
1 front axle	„	4g	
1 motor case	3 „	5	
1 saddle	„	5a	
1 foot brake	„	7	
2 wheel hubs	„	7	
1 lamp	„	9	
4 box sides	„	18	
2 axle blocks	„	19a	
2 back wheels	„	21a—35a	
1 front wheel	„	35b	
1 steering pole	„	40	
1 wheel fork	„	41	
35 screws w. n.			
8 angle brackets			

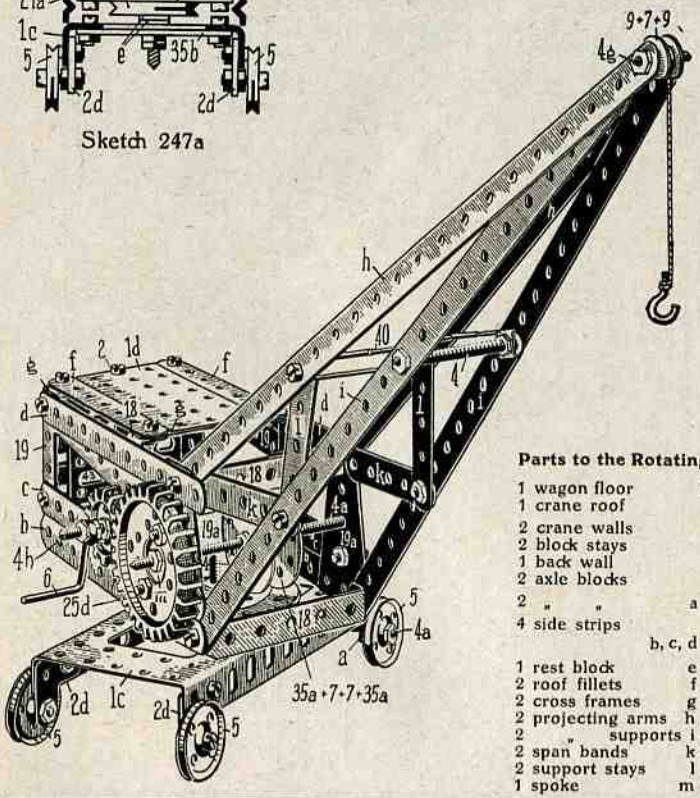
Parts to the Motor Lorry:

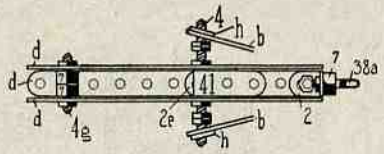
1 wagon floor	No.	1c	
1 bonnet	„	1d	
4 frame bands	a s.	25	h. l.
2 „ „	b „	11	„ „
1 long fillet	c „	7	„ „
4 supports	d „	5	„ „
4 spokes	e „	5	„ „
1 cooler bolt	No.	4	
1 steering fillet	„	4	
1 steering spindle	„	4a	
1 fore 1 back axle	„	4a a. 4b	
1 steering wheel	„	5	
1 crank wheel	„	5a	
1 crank	„	6	
2 wheel hubs	„	7	
2 cross pins 1 back board	„	18	
2 hood sides	„	19	
2 axle rest plates	„	19a	
2 rear wheels	„	21a	
2 front wheels	„	35b	
1 steering spindle block	„	35a	
1 hood front wall	„	35a	
1 steering treadle	„	41	
1 seat	„	43	

No. 247. Rotating Crane



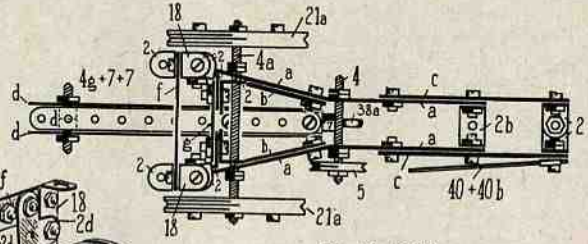
Sketch 247a



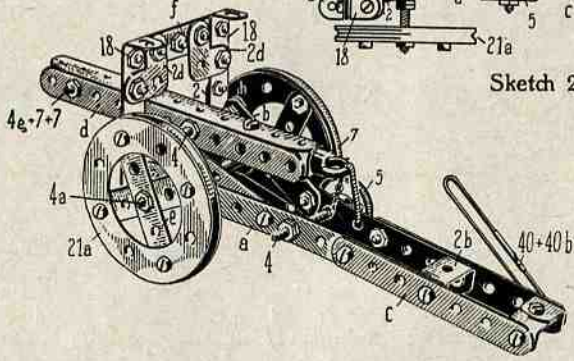


Sketch 248a

No. 248. Field Gun



Sketch 248b



Parts to the Rotating Crane:

1 wagon floor	No.	1c
1 crane roof	„	1d
2 crane walls	„	19
2 block stays	„	19a
1 back wall	„	43
2 axle blocks	„	2d
2 „ „	a	s. 2 h. l.
4 side strips	b, c, d	„ 11 „ „
1 rest block	e	„ 3 „ „
2 roof fillets	f	„ 7 „ „
2 cross frames	g	„ 5 „ „
2 projecting arms	h	„ 25 „ „
2 „ supports	i	„ 25 „ „
2 span bands	k	„ 5 „ „
2 support stays	l	„ 5 „ „
1 spoke	m	„ 3 „ „
1 span pin, 1 turning tongue	No.	4
1 axle	No.	4a
1 drum, 1 roller shaft	„	4a, 4g
1 crank shaft	„	4b
4 wheels	„	5
1 turning disc block	„	5a+35b
1 crank	„	6
1 rope guide roller	„	9+7+9
2 rungs	„	18
2 cross fasteners and frames	„	18
1 turning disc	„	21a+35b
1 rope drum	No.	35a+7+7+35a
2 span bands	No.	40

32 s. w. n., 3 a. b.

Sketch 247a shows an upright section through the wagon floor and shows the construction of the turning block.

Parts to the Field Gun:

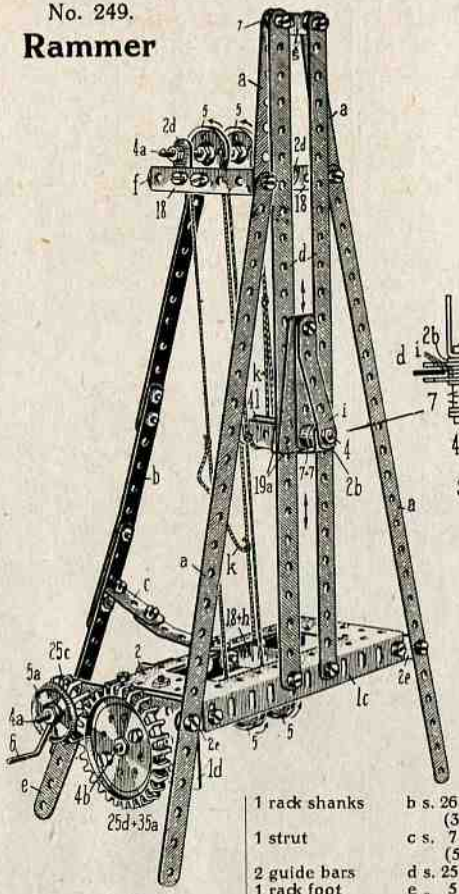
2 gun carriage frames	a s.	11 h. l.
2 gun carriage frames	b „	5 „ „
2 direction frames	c „	7 „ „
4 gun tube sides	d „	11 „ „
4 cross spokes	e „	5 „ „
2 gun frame bands	f „	5 „ „
1 gun carriage head piece	g „	3 „ „
2 carriage supports	h „	2 „ „
1 cross pin	No.	2b
2 gun frame pieces	„	2d
2 „ „ „	„	18
1 tube rest spindle	„	4
1 direction spindle	„	4
1 axle	„	4a
1 position bolt	No.	4g
1 direction wheel	„	5
1 trigger	„	7+38a
2 wheels	„	21a
1 direction lever	„	40
1 projectile chamber	„	41+2e
34 screws with nuts		
9 angle brackets		

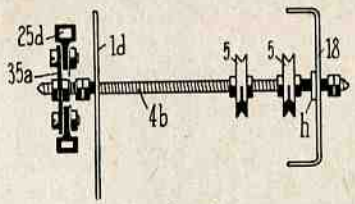
Sketch No. 248a shows the construction of the shooting tubes seen from above. The fourth side of the shooting tube d is united with a screw from above to the barrel chamber 41.

Sketch 248b is a geometric under-view of the whole of the barrel. It shows the building in of the wheel axle.

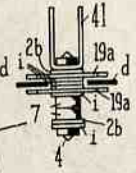
No. 249.

Rammer

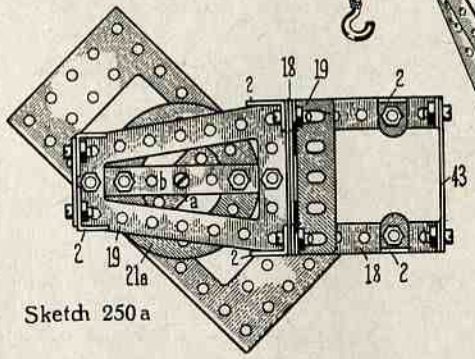




Sketch 249a



Sketch 249b



Sketch 250a

Parts to the Rammer:

1 floor plate	No.	1c
1 rack plate	„	1d
2 rack shanks	a s.	31 h. l. (25+7)
1 rack shanks	b s.	26 h. l. (3x11)
1 strut	c s.	7 h. l. (5+3)
2 guide bars	d s.	25 h. l.
1 rack foot	e „	5 „ „
1 cross frame	f „	5 „ „
1 top frame	g „	3 „ „
1 hanging layer	h „	2 „ „
1 rammer	i 5 s.	5 h. l.

+4+7+7+19a+19a+41

1 rammer head	No.	2b
2 rack rests	„	2d
2 lappet bands	„	2e
2 shafts	„	4a
1 shaft	„	4b
4 string wheels	„	5
1 driving wheel	„	5a
1 crank	„	6
2 position rings	„	7
1 cross pins	„	18
2 deep frames	„	18
2 cog wheels	No.	25c, 25d+35a

33 screws with nuts, 4 a. b.

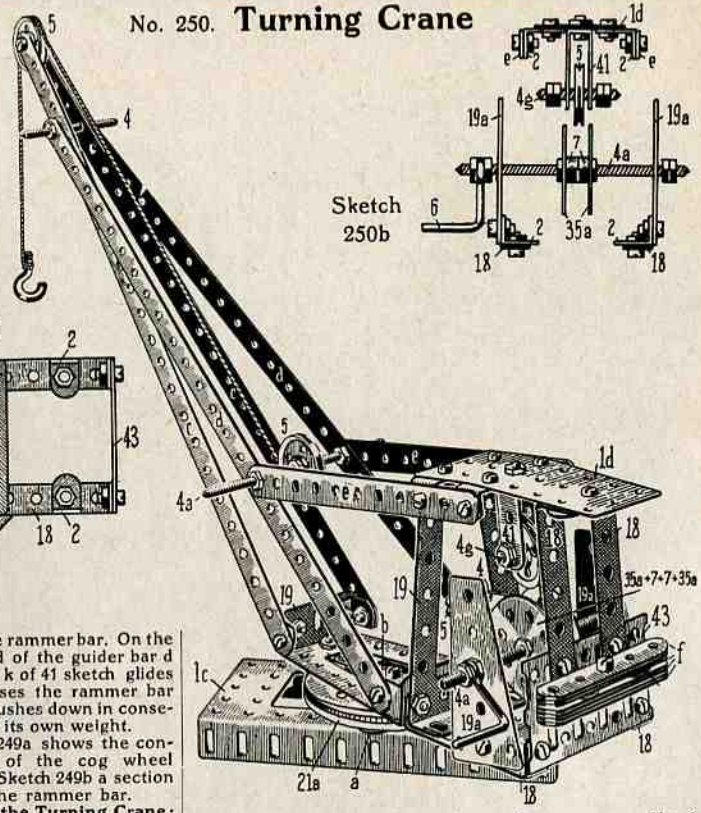
Over the 4 string wheels No. 5 are spanned 2 uniform running strings which are united to two corresponding places through string course k with each other. By the turning of the crank 6 the loop k seizes the underside of the rammer threader 41 and lifts up the rammer bar. On the upper end of the guider bar d the loop k of 41 sketch glides and releases the rammer bar and this rushes down in consequence of its own weight.

Sketch 249a shows the construction of the cog wheel shaft 4b. Sketch 249b a section through the rammer bar.

Parts to the Turning Crane:

1 ground plate, 1 deck plate	No.	1c, 1d
1 rest, 1 socket plate	„	19
2 uprights	„	19a
1 turning disc	„	21a
1 back wall plate	„	43
1 turning pivot bearing	a s.	5 h. l.
1 socket layer	b „	7 „ „
2 projecting arms	c „	25 „ „
4 span bands	d, e s.	25, 11 h. l.

No. 250. **Turning Crane**



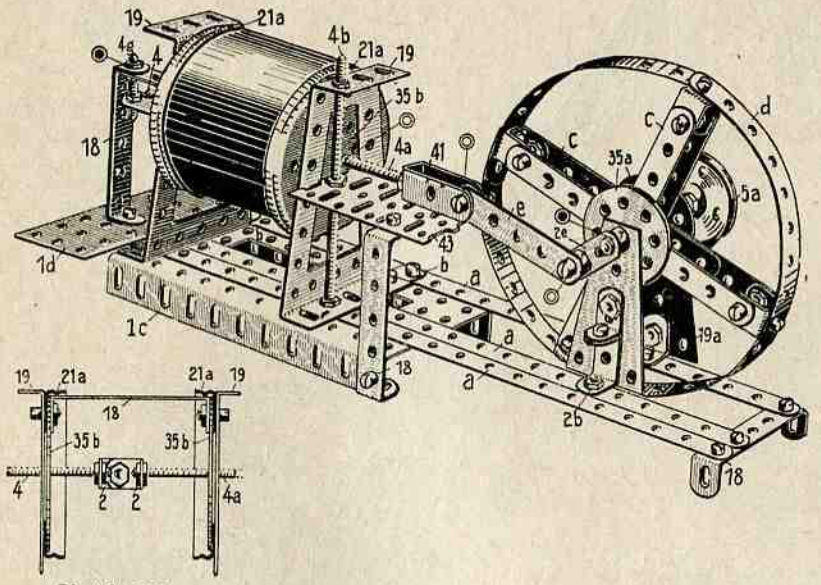
Sketch 250b

1 compensating weight	f 7 s.	5 h. l.
1 cross band	g s.	3 h. l.
2 projecting bands	No.	18
2 hanging shanks	„	18
1 span band spindle	„	4
1 position spindle	„	4
2 roller shafts	„	4a
1 „ „	„	4g
1 crank wheel	„	5
3 rope guide rollers	„	5
1 crank	No.	6
1 rope roller a 2	No.	7 and 35a
1 wheel fork	No.	41

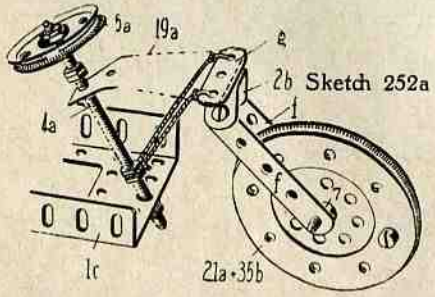
35 screws w. n., 8 a. b.

Sketch 250a is a view of the turning disc. Sketch 250b is a vertical section through the case and shows the construction of the crank shaft and of the guide roller.

No. 251. Steam Engine



Sketch 251a



Sketch 252a

Parts to the Steam Engine:

1 oundation plate		No. 1c
1 floor plate		„ 1d
3 socket bands	a	s. 25 h. l.
2 cross bands	b	„ 3 „ „
3 cross spokes	c	„ 9 „ „ (5+5)
1 „ „	c	„ 9 „ „ (7+5)
1 wheel circle	d	„ 32 „ „ (25+11)
1 connecting rod	e	„ 5 „ „
1 rest bock stay		No. 2b
1 crank lever		„ 2e
1 piston		„ 4+4a
1 crank shaft		„ 4a
1 anchor bolt		„ 4b
1 spindle		„ 4g
1 driving wheel		„ 5a
2 rest fillets		„ 18
1 strut band		„ 18
1 socket foot		„ 18
4 rest blocks		„ 19, 19a
2 cylinder covers		„ 21a+35b
2 wheel hubs		„ 35a
1 cross head		„ 41
1 cross head layer		„ 43
35 screws with nuts		
12 angle brackets		

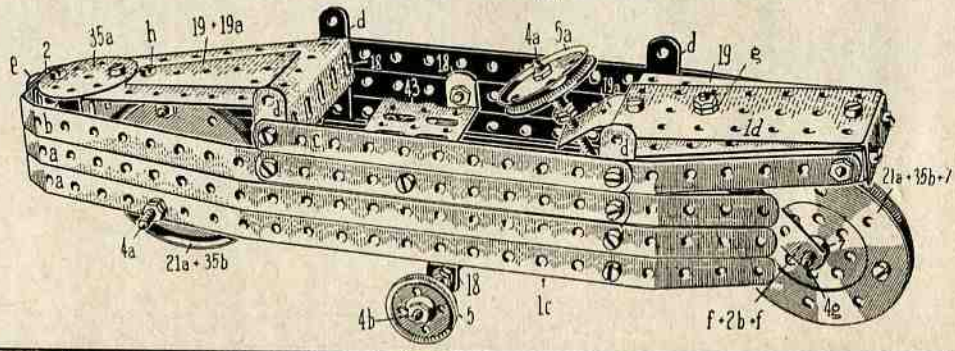
Sketch 251a shows an upright section through the cylinder. The piston rod 4+4a is coupled with 2 angle brackets, the strut band No. 18 holds apart above the cylinder covers. The cylinder body is fisnished in paper-mash, an does not belong to the contents of the box.

Parts to the Single Track Motor:

1 wagon floor plate		No. 1c
2 bonnet covers		„ 1d and 35a
2 bonnet plates		„ 19+19a
4 box bands		a s. 25 h. l.
2 box bands		b „ 25 „ „ (11+11+5)
2 box bands		c s. 17 h. l. (11+7)
4 uprights		d s. 5 h. l.
1 binding pin		e „ 3 „ „
2 wheel fork bands		f „ 5 „ „
1 steering lever		g „ 3 „ „
1 lappet band		h „ 2 „ „
1 steering treadle		No. 2b
1 cross spindle		„ 4
1 back, 1 middle axle		„ 4a, 4b
1 front axle		„ 4g
1 steering spindle		„ 4a
2 middle sheels		„ 5
1 crank wheel		„ 5a
1 back, 1 front wheel		„ 21a +35b
2 wheel hubs	4×	„ 7
1 axle block, 1 seat pin		„ 18
1 cross pin		„ 18
1 seat plate		„ 43
35 screws with nuts		
3 angle brackets		

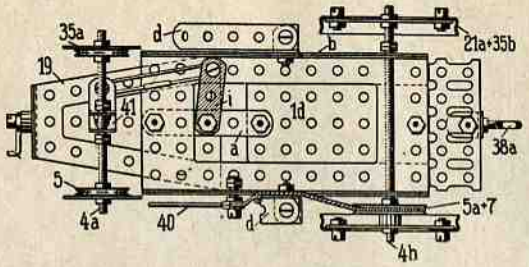
Sketch 252a shows the building of the steering mechanism.

No. 252. Single Track Motor

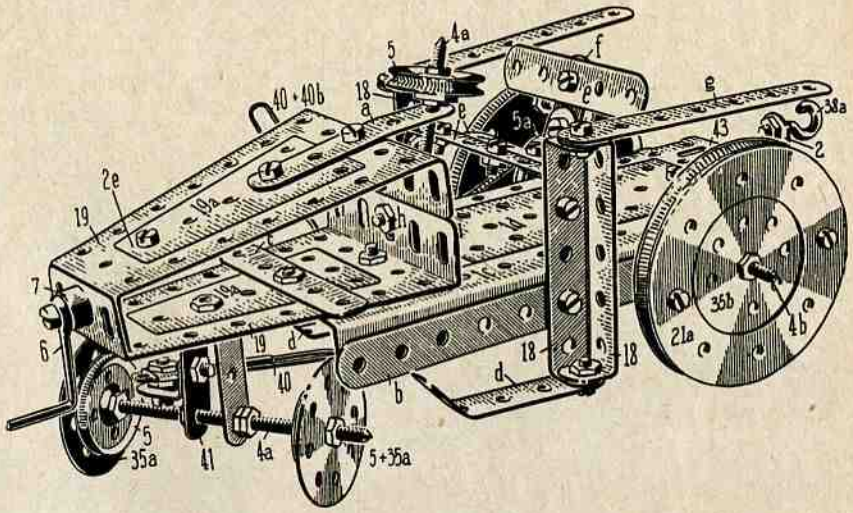


Sketch 253a.

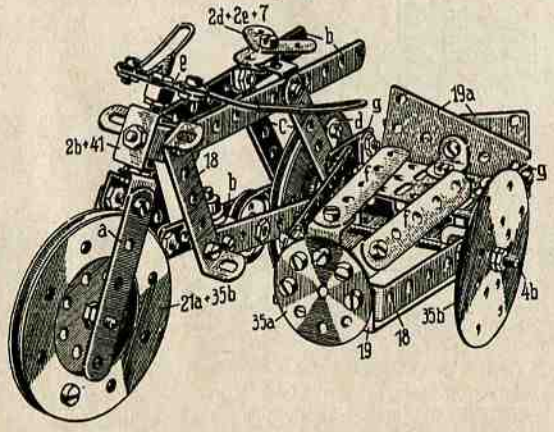
Underpart of the tractor shows the disposition of the wheel axles and the steering mechanism of the front axle.



No. 253. Tractor



No. 254. Motor Cycle with Side Car



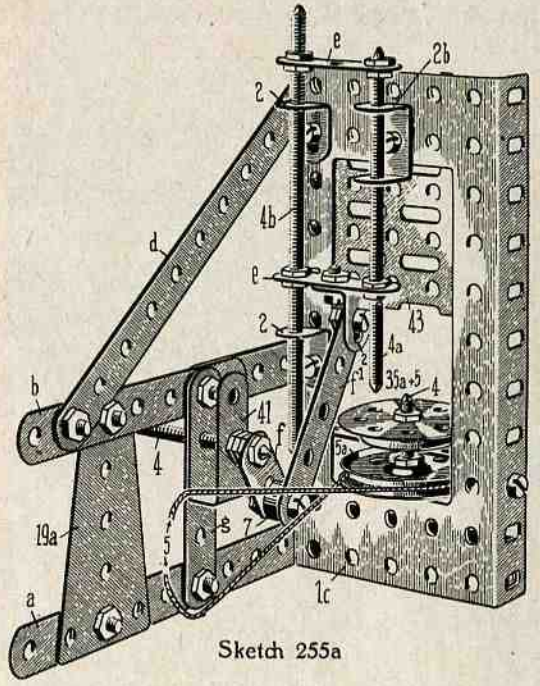
Parts to the Tractor:

1 floor plate	No. 1c +1d+43	1 seat, 1 back pin	f s. 2, 3 h. l.	1 brake wheel	No. 5a
1 bonnet base	„ 19+19a	2 mud wings	g „ 7 „ „	2 front wheels	„ 5+35a
1 bonnet cover	„ 19+19a	1 lappet to No. 19	h „ 2 „ „	2 back wheels	„ 21a+35b
2 spindle layers	a s. 5 h. l.	1 steering lever	i „ 3 „ „	1 crank with block	„ 6, 7
2 axle block bands	b „ 11 „ „	1 lappet	No. 2e	4 uprights	„ 18
1 cross pin	c „ 5 „ „	1 steering spindle	„ 4a	1 screw hook	„ 38a
2 foot steps	d „ 5 „ „	1 front axle	„ 4a	1 steering lever	„ 40+40b
3 seat and back stays	e „ 5 „ „	1 back axle	„ 4b	1 brake lever	„ 40+40b
		1 steering wheel	„ 5	1 axle pole	„ 41

Parts to the Motor Cycle:

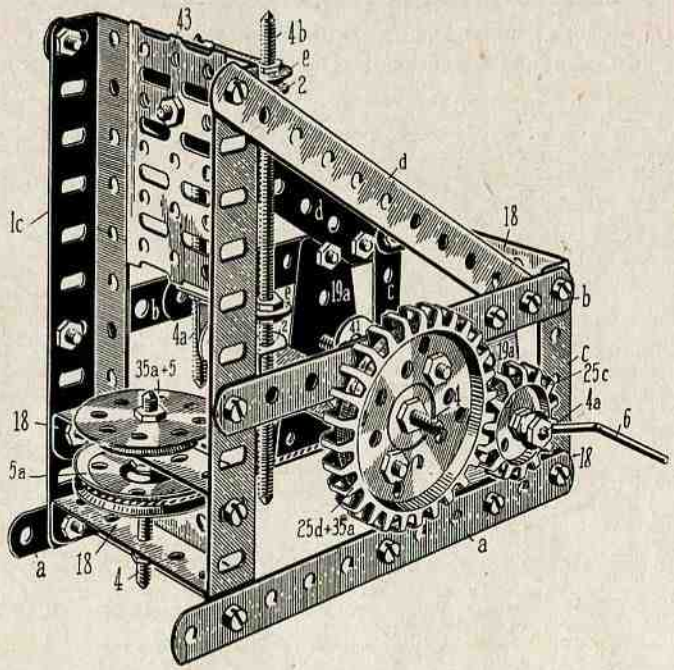
2 fork sides	a s. 5 h. l.	1 saddle	No. 2d+2e+7	3 fork deck fillets	f s. 5 h. l.
4 frame parts	b „ 11 „ „	1 back wheel axle	„ 4	2 arm backs	g „ 3 „ „
2 „ „	c „ 7 „ „	1 front „ „	„ 4g	1 axle	No. 4b
1 spoke	d „ 5 „ „	1 steering spindle	„ 4	2 side fillets	„ 18
2 steering arms	e „ 2 „ „ +No. 40	2 frame parts	„ 18	1 floor plate	„ 19
		1 front wheel	„ 21a+35b	1 back wall	2 „ 19a
1 fork head	No. 2b+41	1 back „	„ 21a+35a+5a	1 fore wall	„ 35a
				1 wheel	„ 35b
				1 seat	„ 43

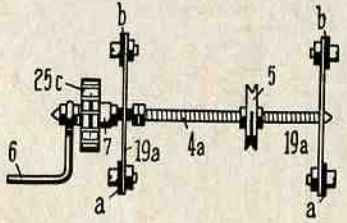
Parts to the Side Car:



Sketch 255a

No. 255. Metal Die



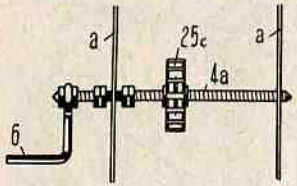


Sketch 255b

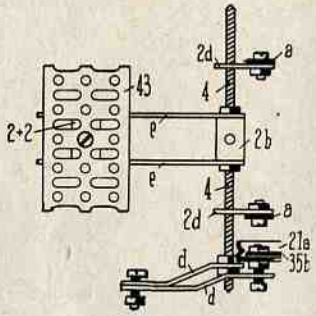
Parts to the Metal Die:

1 upright plate	No. 1c+43	
2 rack block plates	„ 19a	
2 long stays a	s. 11 h. l.	
2 long frames b	„ 10 „ „ (7+5)	
2 corner shanks c	„ 5 „ „	
2 support stays d	„ 11 „ „	
2 cross pins e	„ 3 „ „	
2 crank levers f, f1	„ 5 „ „ and 2e	
1 rack stay g	„ 5 „ „	
1 spindle guide	No. 2b	
1 die table shaft	„ 4	
2 cog wheel shafts	„ 4, 4a	
1 die spindle	„ 4a	
1 guide pole	„ 4b	
2 transmission wheels	„ 5, 5a	
1 turning table	„ 5+35a	
1 crank	„ 6	
2 position rings	„ 7	
1 cross fasteners	No. 18	
1 cross frame	„ 18	
2 rack bands	„ 18	
2 cog wheels	No. 25c, 25d+35a	
1 rack fork	No. 41	
35 screws with nuts		
3 angle brackets		

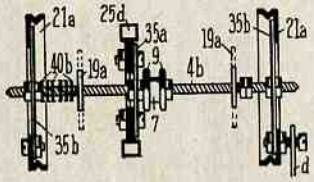
Sketch 255a shows the inside construction of the die. The levers f and f1 move the die-spindle up and down. At the same time the die table turns itself spontaneously round one point further. The turning is brought about by a string which runs through a string wheel No. 5 The latter is tightly screwed on the middle of the crank shaft No. 4a. (Sketch 255b)



Sketch 256a

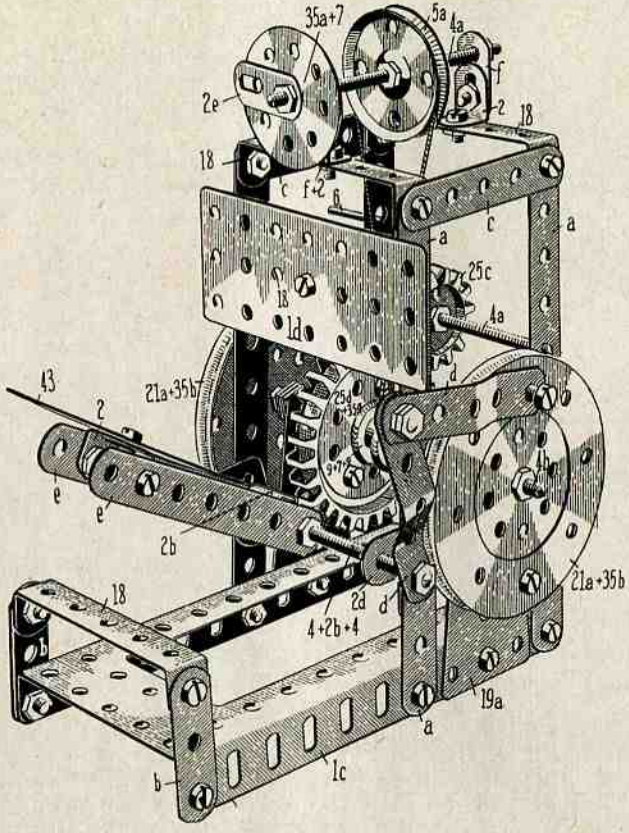


Sketch 256b



Sketch 256c

No. 256. Placard Printing Press



Parts to the Placard Printing Press:

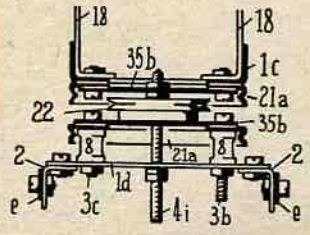
1 ground plate	No.	1c
1 setting plate	„	1d
2 rack blocks	„	19a
4 corner uprights	a s.	11 h. l.
2 rack feet	b „	3 „ „
2 long pins	c „	5 „ „
2 crank arms	d „	5 „ „
2 press levers	e „	7 „ „
2 shaft blocks	f „	2 „ „
1 coupling	No.	2b
1 pointer	„	2e
1 balance shaft	„	4+4
1 counter, 1 crank shaft	„	4a
1 driving shaft	„	4b
1 transmission wheel	„	5a
1 crank	„	6
1 position ring	„	7
1 string roller	„	9+7+9
4 cross bands	„	18
2 swing wheels 2×	„	21a+35b
2 cog wheels	„	35c, 25d+35a
1 counter disc	„	35a
6 feeds	„	40b
1 printing plate	„	43
35 screws with nuts		
5 angle brackets		

Sketch 256a shows the fastening of the cog wheel 25c on the crank shaft 4a.

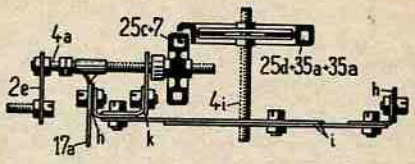
Sketch 256b shows the construction of the balance shaft No. 4+2b+4 and the printing plate 43, seen from above.

Sketch 256c is a ground cut of the driving wheel 4b. The operated string roller 9+7+9 is united with the transmission wheel 5a by a running string and sets in motion, in this manner, the pointer 2e of the number disc 35a.

No. 301. Derrick



Sketch 301a



Sketch 301b

Sketch 301c

Parts to the Crane:

4	side shanks	a	25 h. l.
4	beams	b	11 „ „
4	cross stays	c	25 „ „
4	„ „	d	15 „ „
4	frames	e	7 „ „
4	head stays	g	5 „ „
2	cross pins	h	3 „ „
1	cross layer	i	9 „ „ (7+7)
1	block	k	2 h. l.
2	long frames	l	11 „ „
2	projecting arms	m	25 „ „
2	„ span bands	n	27 „ „ (25+5)
4	struts	o	5 „ „
1	projecting plate	No.	1c
1	deck plate	„	1d
2	block sides	„	19
2	corner posts	„	19a
2	shaft block shanks	„	18
2	cross frames	„	18
1	cross pin	„	2b
1	crank arm	„	2e
1	roller pivot	„	4
1	crank shaft	„	4a
1	position bolt	„	4a
2	„ „	„	4b
1	position shaft	„	4i
1	winding up shaft	„	4b+6
1	roller pivot	„	4g
2	string guide rollers	„	5
1	turning disk hub	„	22
2	„ „ sockets	„	8
1	winding up roller	„	9+7+9
1	crank shaft block	„	17a
2	turning discs	„	21a+35b
1	cog wheel	„	25c
1	„ „	„	25d+35a+35a
1	screw hook	„	38a
2	span pins	„	40
1	drawing up pulley	„	41

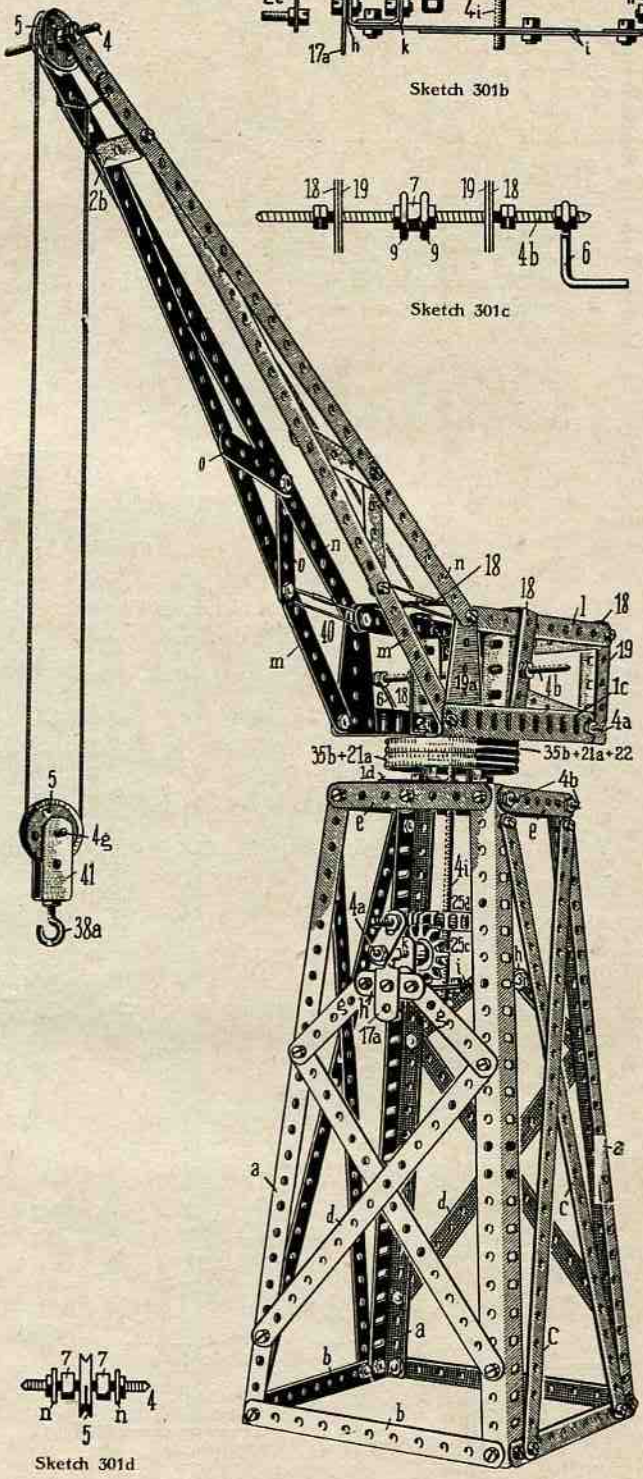
The under turning disc 21a+35b is tightly screwed down to the disk plate of the crane. In order that the upper turning disc does not tilt and can turn itself securely a flanged wheel No. 22 is set between both disks (Sketch 301a.)

On the upper disc the projecting foot (plate No. 1c) is fastened.

On Sketch 301b is seen the construction of the under crank shaft 4a. The cog wheel 25c screwed tightly to it grips into the cog wheel 25d and produces a slow swinging motion of the whole upper parts of the crane.

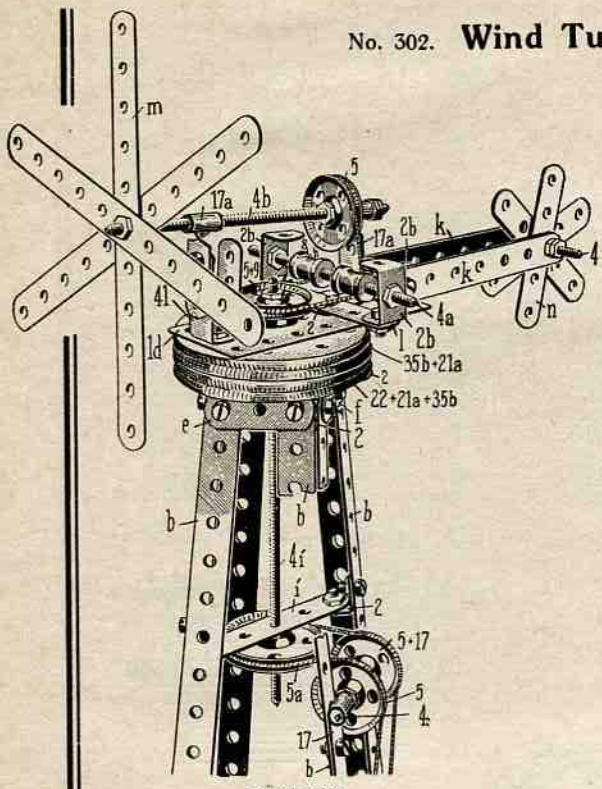
Sketch 301c shows the up-winding roller with shaft 4b and its position, which is not visible in the illustration.

Sketch 301d shows the fastening of the upper rope guide roller 5.

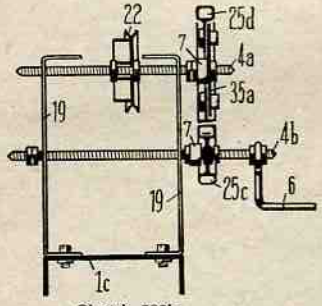


Sketch 301d

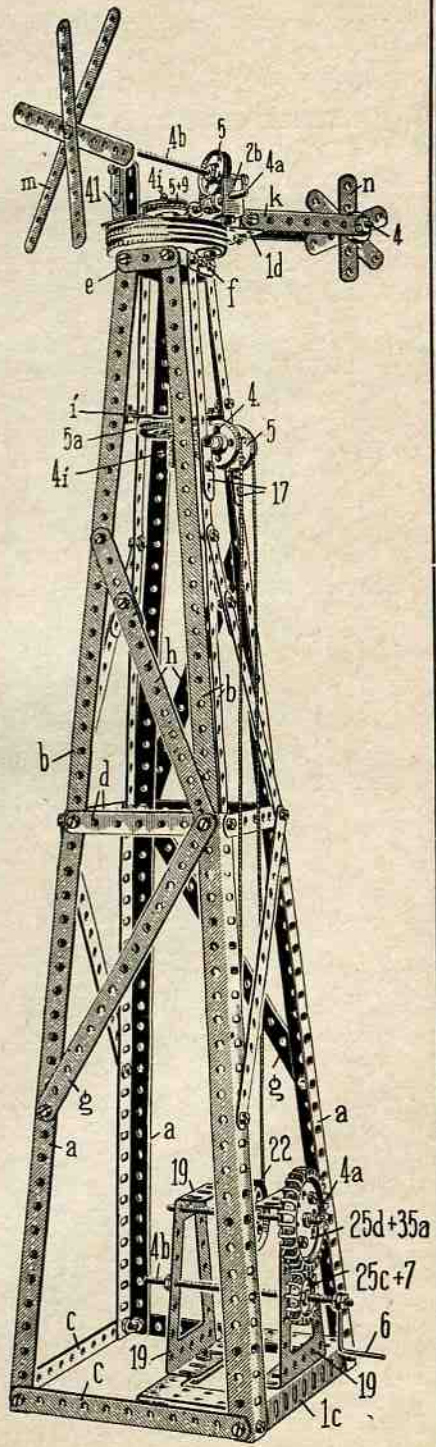
No. 302. Wind Turbine



Sketch 302a



Sketch 302b

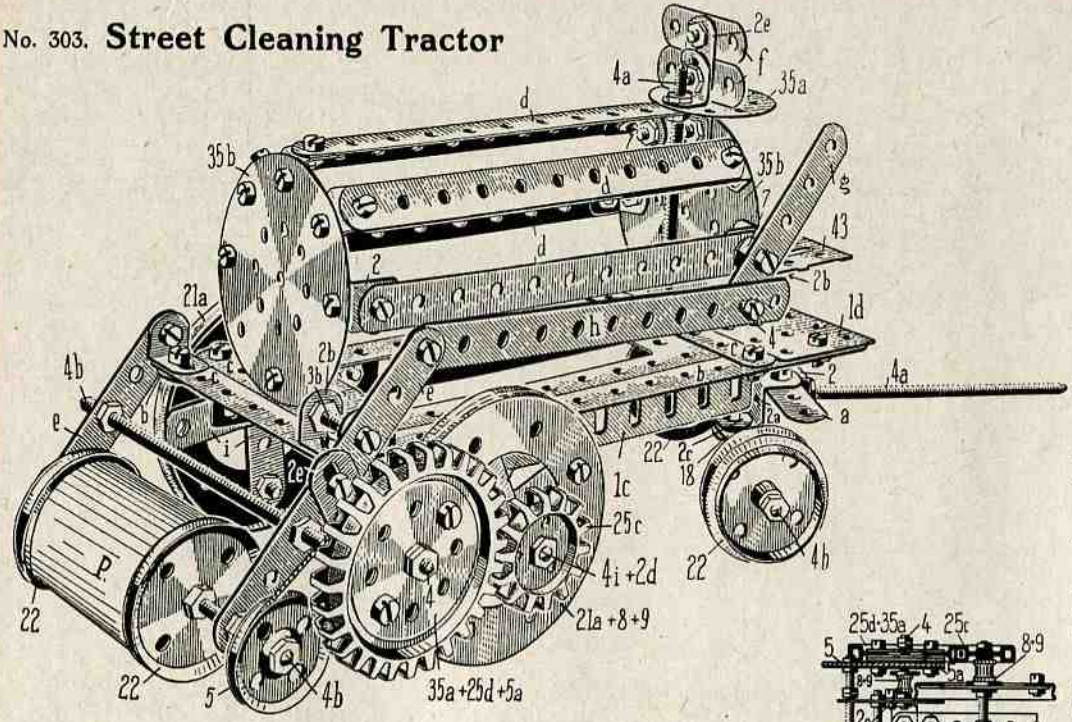


Parts to the Turbine:

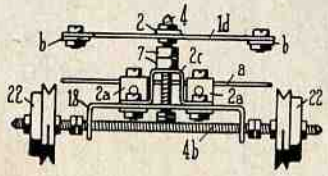
1 ground plate	No.	1c	1 guide spindle	No.	4a
1 tower deck plate	„	1d	2 transmission shafts	„	4a, 4
2 block rests	„	19	1 driving shaft	„	4b
4 corner shanks (underparts)	a	s. 25 h. l.	1 mill shaft	„	4b
8 corner shanks (upper parts)	b	s. 25 h. l.	1 position shaft	„	4i
3 fasteners	c	s. 11 h. l.	2 string wheel guiders	„	5
4 cross bands	d	„ 7 „ „	2 „ „	„	5
2 head frames	e	„ 3 „ „	1 „ „	„	5a
2 „ „ (2+2)	f	„ 3 „ „	1 crank	„	6
4 wind supports	g	„ 15 „ „	2 string guide rollers	„	8
4 „ „ (11+5)	h	„ 14 „ „	1 wheel hub to 5	„	9
1 diagonal block	i	„ 5 „ „	2 spindle blocks	„	17
2 projecting carriers	k	s. 7 h. l.	2 shaft blocks	„	17a
1 block fastener	l	„ 5 „ „	1 fixed deck disc	„	21a +35b+22
3 cross wings (to wind wheel)	m	s. 11 h. l.	1 turning disc	No.	21a+35b
3 cross wings (to position wheel)	n	s. 5 h. l.	1 string wheel	„	22
3 layer blocks	No.	2b	1 cog wheel	„	25c+7
1 position wheel shaft	„	4	1 „ „	„	25d +35a+7
			1 rest block	„	41
			55 screws with nuts		
			9 angle brackets		

Sketch 302a shows the position of the wind wheel. Sketch 302b is an upright section through that of the under block.

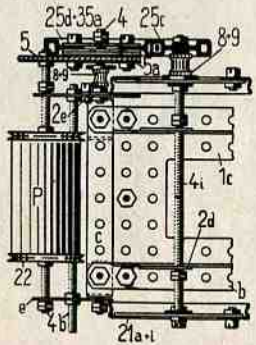
No. 303. Street Cleaning Tractor



Sketch 303b



Sketch 303a



Parts to the Cleaner:

1 tractor under part	No. 1c+1d	1 cog wheel shaft	No. 4
1 balance pole	a s. 7 h. l.	1 seat joist	„ 4a
2 long bearers	b „ 15 „ „	1 shaft	„ 4a+2
3 cross bearers	c „ 7 „ „	1 front axle	„ 4b
5 boiler girdles	d „ 11 „ „	1 cylinder shaft	„ 4b
2 cylinder bearers	e „ 5, 7 „ „	1 position bolt	„ 4b
2 rest fillets	f „ 3 „ „	1 back axle	„ 4i
1 position lever	g „ 5 „ „	2 string wheels	„ 5, 5a
1 „ „	h „ 11 „ „	1 wheel hub	„ 8+9
4 cross spokes	i „ 5 „ „	1 axle rod	„ 18
2 balance pole holders	No. 2a	2 wheel disks	„ 21a
1 foot board seat	„ 2b	2 front wheels	„ 22
1 position lever block	No 2b+3b	2 cylinder wheels	„ 22
1 axle pole guide	„ 2c+7+7	1 driver seat	„ 35a
2 axle blocks	No. 2d	2 boiler front walls	„ 35b
1 cog wheel shaft holder	No. 2e	1 foot board	„ 43
1 rest stay	„ 2e	2 cog wheels	No. 25c, 25d+3×35a
1 steering spindle	„ 4	58 screws with nuts	
		14 angle brackets	

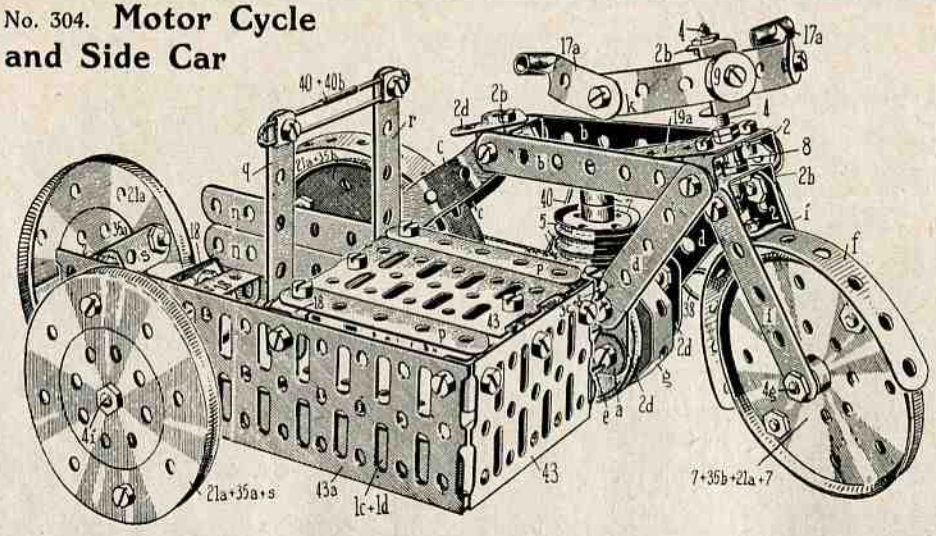
The covering P of the cylinder is finished in paper-mash and does not belong to the contents of the box.

The fastening of the cog wheel 25d is seen in Sketch 303a, while Sketch 303b illustrates the construction of the manner of direction of the axle pole with the two front wheels.

The turning cylinder P turns itself round in an opposite direction as the tractor travels. Its driving is produced by a running string which is tightly laid on the wheels 5 and 5a. As the string wheel 5a is united with the cog wheel 25d through 2 screws and this again is held in the cogs of the cog wheel 25c, the turning cylinder revolves by itself, when the wagon travels.

When the driver pulls up the position lever g is raised the revolving cylinder from the street floor and at the same time the cog wheel 25d is somewhat distant from the cog wheel 25d is somewhat distant from the cog wheel 25c, and by this means the revolving of the cylinder P ceases.

No. 304. Motor Cycle and Side Car



Parts to the Motor Cycle:

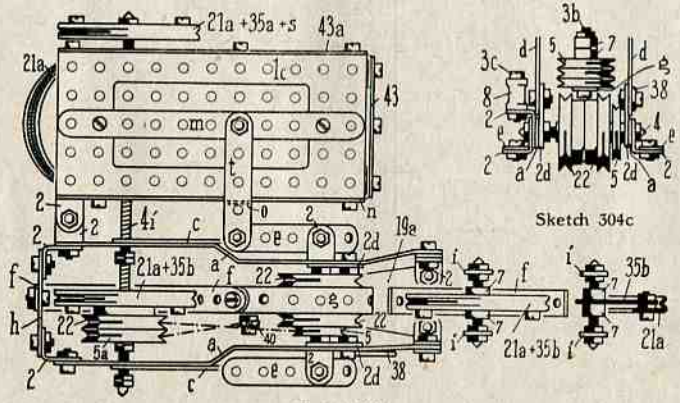
2	long frames pieces	a	s. 11	h. l.
2	upper frames pieces	b	„ 7	„ „
2	stay bands	c	„ 7	„ „
2	stay bands	d	„ 5	„ „
2	foot board bands	e	„ 5	„ „
2	mud wings	f	„ 11	„ „
1	motor frame	g	„ 11	„ „
1	cross pin	h	„ 3	„ „
2	wheel fork pins	i	„ 5	„ „
1	steering pole	k	„ 7	„ „
1	wheel fork button		No. 2+2b	
1	steering spindle lock		„ 2b	
1	frame cross pin		„ 2b	
1	saddle		„ 2d	
2	motor blocks		„ 2d	
1	driving shaft		„ 4	
1	steering spindle		„ 4	
1	front axle		„ 4g	
1	back „		„ 4i	
1	motor		„ 3b	
			+7+7+3×5+22+22+5	
2	transmission wheels		No. 5a+22	
2	front wheels hubs		„ 7	
1	oil tank		„ 8+3c	
2	steering pole grips		„ 17a	
1	bonnet deck		No. 19a	
2	wheels		„ 21a+35b	
1	brake spring		„ 34+38	
1	brake lever		„ 40+40b	

Parts to the Side Car:

1	wagon floor		No 1c+1d	
1	floor pin	m	s. 11	h. l.
2	wall bands	n	„ 11	„ „
1	wall pin	o	„ 3	„ „
2	hood bands	p	„ 5	„ „
1	wind disc frame	q	„ 5	„ „
1	wind disc frame	r	„ 7	„ „
2	wheel spokes	s	„ 5	„ „
1	binding pin	t	„ 5	„ „
2	hood cross pins		No. 18	
2	seat pins		„ 18	
2	wheels		„ 21a+35a	
1	hood plate		„ 43	
1	front wall		„ 43	
1	exterior wall		„ 43a	

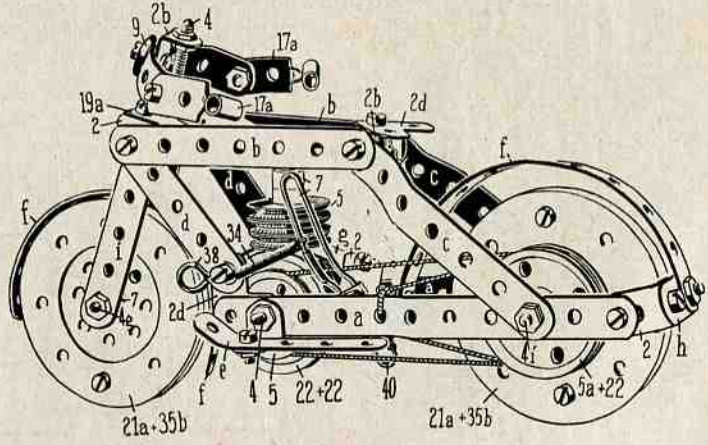
60 s. w. n., 15 a. b.

Sketch 304a Under View
Sketch 304b Back View
Sketch 304c Construction of the Motor.



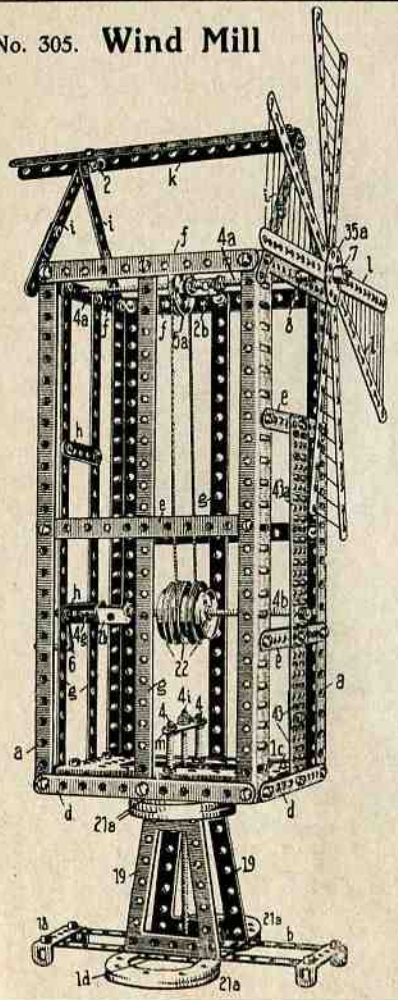
Sketch 304a

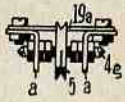
Sketch 304c



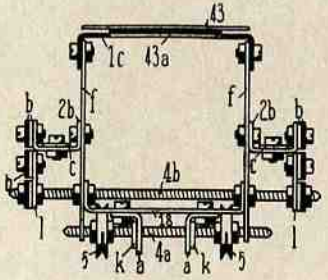
Sketch 304b

No. 305. Wind Mill

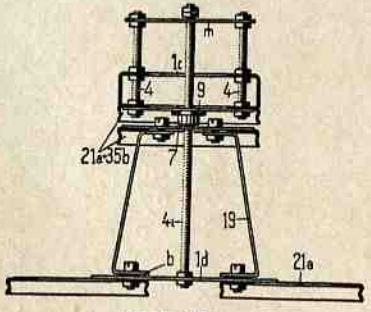




Sketch 306a

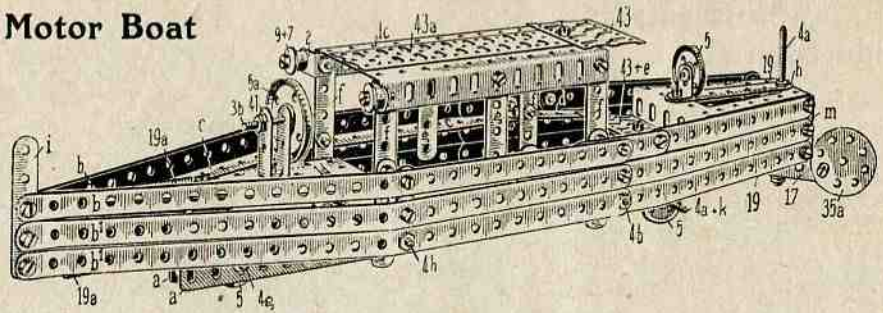


Sketch 306b



Sketch 305a

No. 306. Motor Boat



Parts to the Wind Mill:

4	corners shanks	a	s. 25 h. l.
2	ground fasteners	b	„ 15 „ „
4	wall fasteners	d	„ 11 „ „
4	wall bolts	e	„ 11 „ „
4	wall frames	f	„ 11 „ „
4	wall fillets	g	„ 25 „ „
2	wall bolts	h	„ 5 „ „
4	gable spars (7+5)	i	„ 10 „ „
2	roof ridges	k	„ 15 „ „
4	wind rods	l	„ 25 „ „
1	block band	m	„ 5 „ „
1	mill floor	No.	1c
2	frame spindles	„	4
1	mill shaft	„	4a+2b+4a
1	grinding shaft	„	4b+2b+4g
1	house tree	„	4i
1	driving disc	„	5a
1	wheel hub	„	7+35a+7+8
1	house tree bearing	„	7+9
1	driving disc	3 „	22
2	cross stays	„	18
1	mill block	2 „	19
1	deck disc	„	21a+35b
1	turning disc	„	21a+35b
1	wall filling	„	43a+43+43

Sketch 305a is a perpendicular cross section through the mill block in order to show how the mill superstructure turns.

Parts to the Motor Boat:

1	cabin roof	No. 1c+43+43a
1	ship floor plate	„ 19
1	„ „ „	„ 19a
1	front deck	„ 1d+19a
1	rear deck	„ 19+43
2	keel ribs	a a. s. 25 h. l.
2	board spans	b s. 37 (25+5+11) h. l.
4	side spans	b¹ „ 37 (25+15) „ „
4	deck planks	c s. 11 „ „
2	„ „	d „ 5 „ „
1	cross rib	e „ 7 „ „
4	cabin corner shanks	f „ 7 „ „
2	„ middle „	g „ 5 „ „
1	rear deck plank	h „ 7 „ „
1	front stem	i „ 5 „ „
2	axle block bands	k „ 5 „ „
4	lappet bands	l „ 2 „ „
2	„ „	m „ 3 „ „
4	cross pins	No. 2b
1	steering wheel shaft	„ 3b
1	„ rudder „	„ 4a
2	axles	„ 4a, 4g
2	span poles	„ 4b
3	wheels	„ 5
2	steering wheels	„ 5, 5a
2	lanterns	„ 9+7
2	cross ribs	„ 18
1	steering rudder	„ 35a+17
1	steering rudder block	„ 41

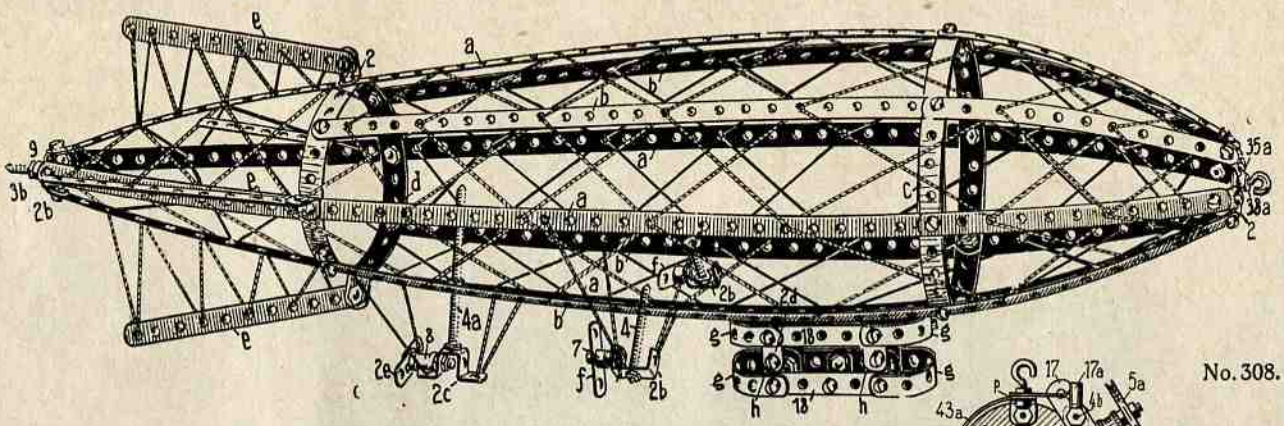
Sketch 306a. Cross section through the fore part of the keel ribs a.

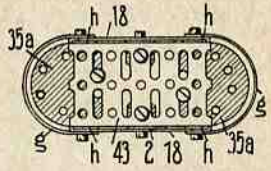
Cross pins (double angle 2b) bind the board spans b with cabin shanks f. Span poles (worm rods 4b) hold fast the side spans, cabin shanks f and cross ribs (angle band No. 18) to the keel ribs a (angle strip 25 holes) (Sketch 306b).

The lappet bands l (2 holes) bind the undermost and middle side spans under, with span pole 4b by means of screws and nuts (Sketch 306b).

The lappet bands m hold together behind the side spans.

No. 307. Air Ship





Sketch 307a shows the construction of the floor of the gondola.

Parts to the Airship:

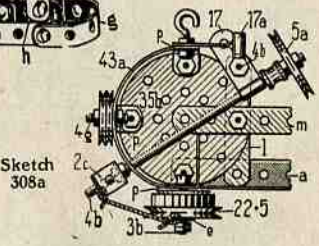
4	long ribs	a	s. 49 h. l.	1	stern bolt	No.	3b
4	„ „	b	„ 35 „ „ (11+25+15)	3	span spindles	2 „	4 and 4a
1	ring rib	c	„ 32 „ „ (11+25)	3	motors	2 „	7 and 7 and 8
1	„ „	d	„ 24 „ „ (8×5)				
4	steering ribs	e	„ 11 „ „ (2×7+4×5)	1	stern disc	„	9
2	driving wings	f	„ 3 „ „	2	gondola sides	2 „	18
4	gondola arcs	g	„ 7 „ „	1	front disc	„	35a
4	hanging bands	h	„ 3 „ „ (4 No. 2d and 4×2)	1	gondola floor	2 „	35a and 43
2	stem locks		No. 2b	1	tow hook	„	38a
3	shaft blocks		„ 2b, 2b and 2c		Sketch 307a. Floor of the gondola.		

Parts to the Motor Sleigh:

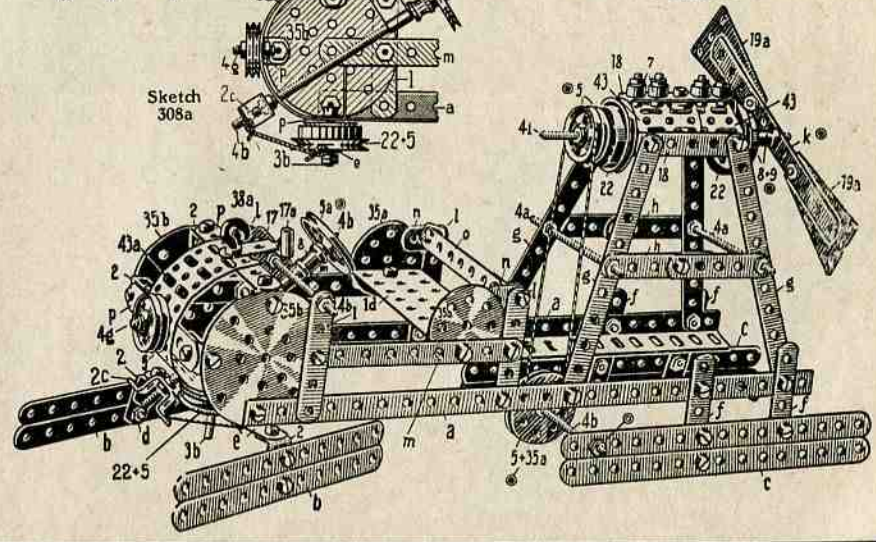
2	long trees	a	s. 25 h. l.	3	cross bands	p	s. 7 h. l.
4	front runners	b	s. 11 h. l.	1	seat plate	No.	1d
4	rear „	c	„ 15 „ „	1	steering bolt	„	3b
2	cross bands	d	„ 2 „ „	2	upright bolts	„	4a
1	guide shank	e	„ 7 „ „	1 „ „		„	4b
4	pegs	f	„ 5 „ „	1	steering spindle	„	4b
4	„	g	„ 11 „ „	1	axle	„	4b
2	gondola locks	h	„ 8 „ „ (5+5)	1	propeller shaft	„	4i
1	propeller floor	k	„ 11 „ „	1	lantern holder	„	4g
4	upright stays	l	„ 5 „ „	3	driving discs	„	5
2	seat bolts	m	„ 11 „ „	1	steering wheel	No.	5a+8
2	side rests	n	„ 2 „ „	4	igniting plugs	No.	7
1	back rest	o	„ 7 „ „	1	turning bearing	„	9
				1	propeller hub	No.	8+9
				1	steering spindle bearing	No.	17
				1	hooter	„	17a
				3	bonnet bands	„	18
				2	propeller wings	„	19a
				2	cylinder covers	„	22
				2	guide discs	„	35b
				2	seat sides	„	35a
				1	ceiling hook	„	38a
				2	bonnet ceilings	„	43
				1	front wall	„	43a

Sketch 308a is a cross section through the front of the sleigh

No. 308. Motor Sleigh with 4 cylinders



Sketch 308a



No. 309.

Racing Motorcar

Parts to the Racing Motorcar:

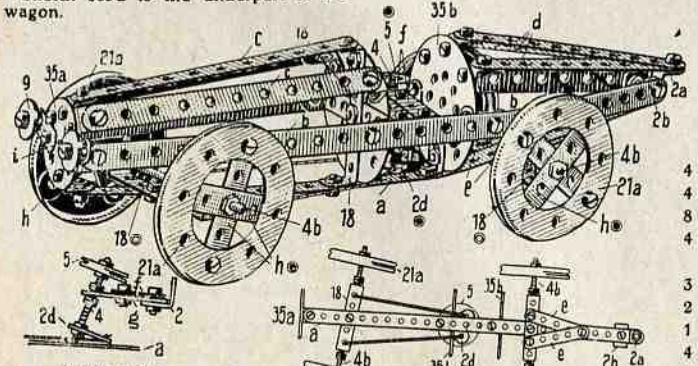
1 long tree	a	s. 25 h. l.
2 side bearers	b	„ 25 „ „
3 hood bands	c	„ 11 „ „
2 deck bands	d	„ 11 „ „
2 stay bands	e	„ 5 „ „
2 seat bands	f	„ 5 „ „
1 spindle block	g	„ 3 „ „
8 spokes	h	„ 5 „ „
2 lantern carriers	i	„ 2 „ „
1 cross lock		No. 2a
1 cross peg		„ 2b
1 steering lever		„ 2d
1 „ spindle		„ 4
2 axles		„ 4b
1 steering wheel		„ 5
2 lanterns		„ 9
2 span pins		„ 18
2 axle poles		„ 18
4 wheels		„ 21a
2 cross walls		„ 35b
1 front wall		„ 35a

60 screws with nuts, 12 a. b.

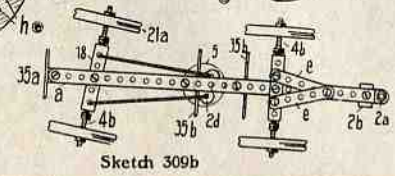
The rear cross wall 35b is screwed to No. 2b to the bearers b.

Sketch 309a shows the construction of the steering mechanism.

Sketch 309b is the underpart of the wagon.

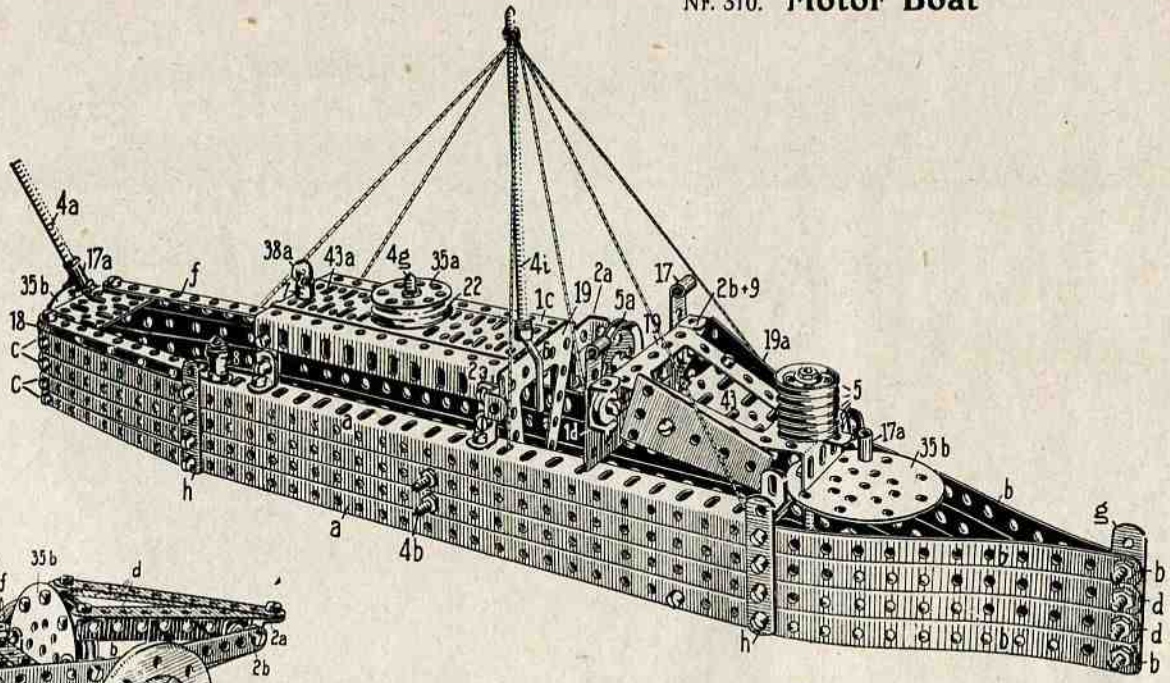


Sketch 309a



Sketch 309b

Nr. 310. **Motor Boat**

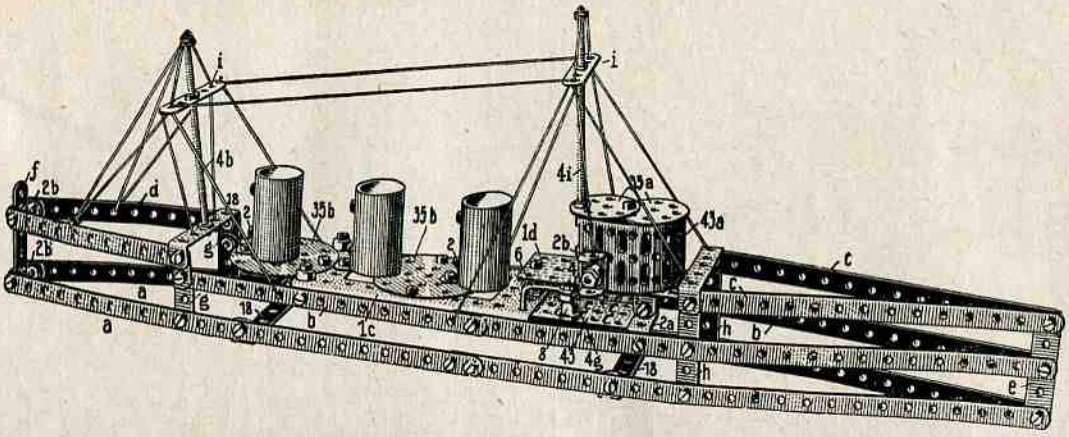


4 side spans	a	a. s. 25 h. l.
4 „ „	b	„ 15 „ „
8 „ „	c	„ 11 „ „
4 „ „	d	„ 36 „ „ (25+25)
3 cross spants	e	„ 7 h. l.
2 deck spans	f	„ 11 „ „
1 front stem	g	„ 5 „ „
4 binding spans	h	„ 5 „ „
1 motor back wall		No. 1d
2 sail holders		„ 2a

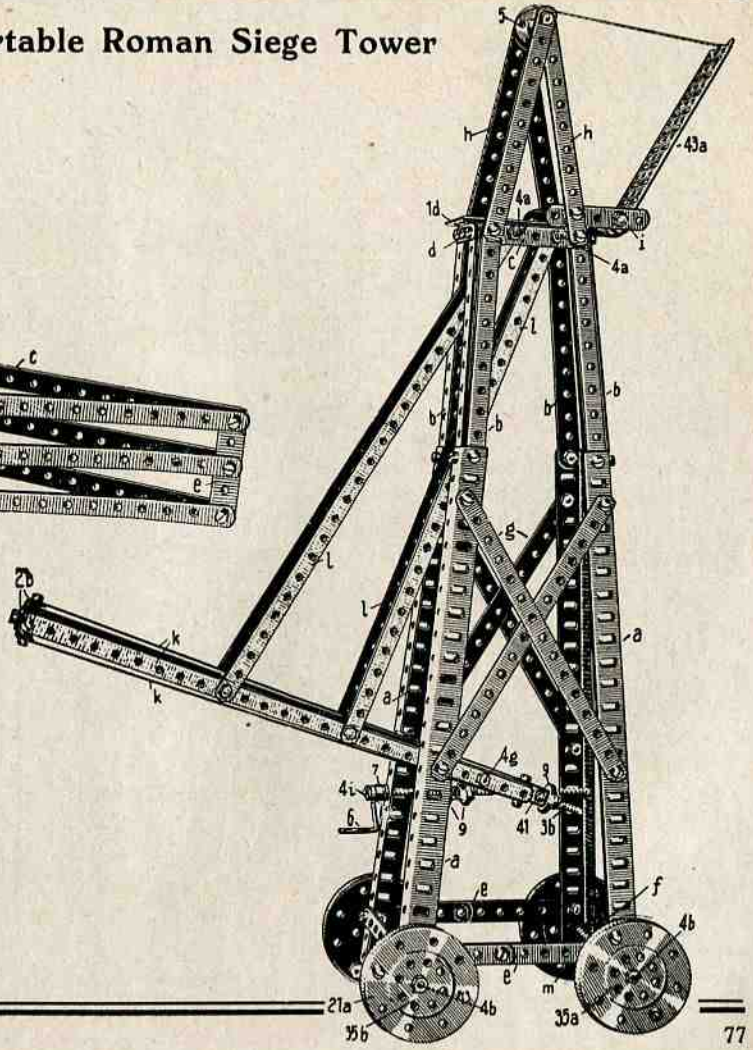
Parts to the Motor Boat:

2 poles	No.	4+8
1 flag staff	„	4a
2 cross poles	„	4b
1 ventilator	„	4g+35a+22
1 mast	„	4i+7
1 vapor funnel	„	4a+6 No. 5
1 steering wheel	„	5a
1 ventilator tube	„	6
3 position rings	„	7
2 position lights	„	9+2b
2 lantern poles	„	17
1 siren (whistle)	No.	17a
1 flag pole holder	„	17a
4 stern cross spans	„	18
1 cabin cross wall	„	19
1 hood cover	„	19+43
2 „ sides	„	19a
1 ventilator	„	22+35a
1 cabin deck	„	1c+43a
1 stern floor	„	35b
1 front deck	„	35b
60 screws w. n., 18 a. b.		

No. 311. **Steam Ship**



No. 312. **Portable Roman Siege Tower**

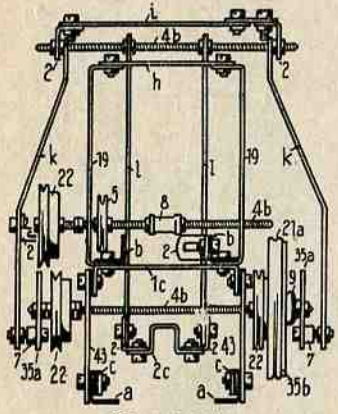


Parts to the Steam Ship:

2	long spans	a s. 48 h. l. (25+25)
2	long spans	b s. 38 h. l. (25+15)
2	deck spans	c s. 15 h. l.
2	stern spans	d „ 11 „ „
1	front stem	e „ 5 „ „
1	stern stem	f „ 5 „ „
2	side spans	g „ 4 „ „ (3+2)
2	side spans	h s. 5 h. l.
2	rope runners	l „ 5 „ „
2	cross bands	No. 2a
2	stern ribs	„ 2b
1	position bolt	„ 4
2	masts	„ 4b, 4i
1	pole spindle	„ 4g
1	life boat	„ 6
4	keel and deck cross spans	„ 18
1	promenade deck	No. 1c +2×35b+43
1	cabin deck	No. 1d
1	cabin roof	2 „ 35a
1	cabin wall	„ 43a
57	screws with nuts	
5	angle brackets	
3	cardboard chimneys do not belong to the contents of the box.	

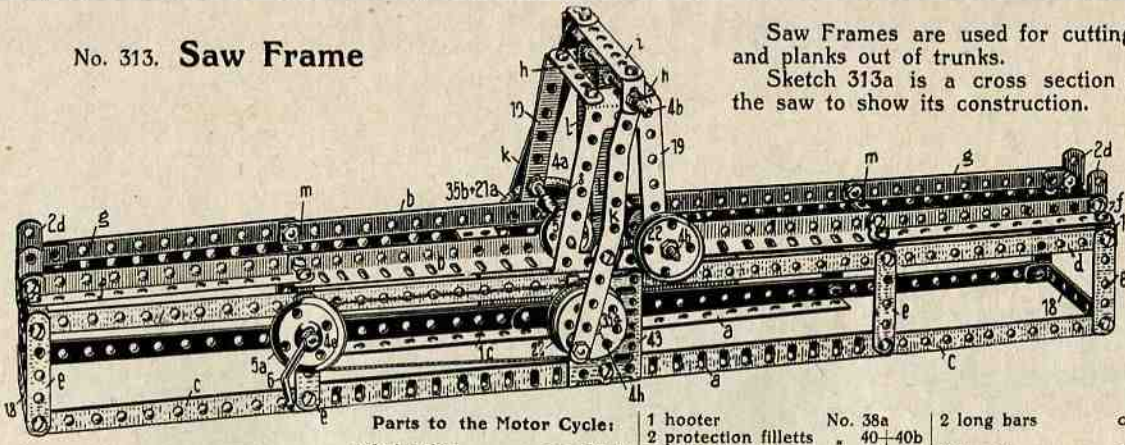
Parts to the Siege Tower:

4	corner shanks	a a. s 25 h. l.
8	„ „	b s. 11 h. l.
2	long frames	c „ 5 „ „
2	cross frames	d „ 3 „ „
2	long rails	e „ 11 „ „ (7+5)
2	cross rails	f s. 7 h. l.
4	cross bands	g s. 15 h. l.
4	rest stays	h „ 11 „ „
2	bridge arms	i „ 5 „ „
1	wall rammer	k s. 4×25 h. l.
4	hanging stays	l s. 25 h. l.
2	spokes	m „ 5 „ „
4	hub blocks	n „ 2 „ „
1	fall bridge	No. 1d
2	cross pins	„ 2b
1	ram-punch	„ 3b
1	guide roller spindle	„ 4
2	anchor bolts	„ 4a
2	axles	„ 4b
1	cross bolt	„ 4g
1	rope guide roller	„ 5
1	crank	„ 6
1	position ring	„ 7
1	rope roller	„ 9
2	wheels	No. 21a+35a
2	„	„ 21a+35b
1	punch shoe	„ 41
1	fall pin	„ 43a
58	screws with nuts	
2	angle brackets	



Sketch 313a

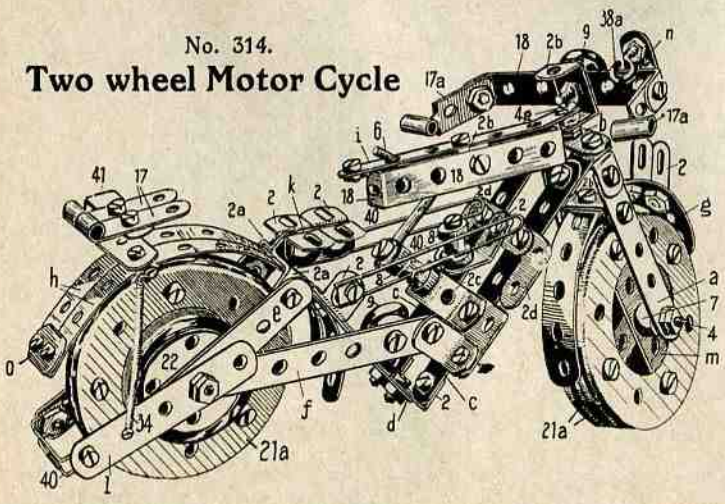
No. 313. Saw Frame



Saw Frames are used for cutting timber and planks out of trunks.

Sketch 313a is a cross section through the saw to show its construction.

No. 314. Two wheel Motor Cycle



Parts to the Motor Cycle:

2	fork sides	a s. 5 h. l.
2	cross bands	b „ 3 „ „
2	frame parts each	c, d, e, f 7, 5, 5, 7 h. l.
1	mud guard	g s. 11 h. l.
2	„ „	h „ 11 „ „
1	tank cover	i „ 7 „ „
1	binding piece	k „ 2 „ „
2	rest stays	l „ 5 „ „
2	cross spokes	m „ 5 „ „
1	hooter container	n „ 2 „ „
1	cross band	o „ 2 „ „
2	frame heads	No. 2a
1	turning block, 1 cross pin	„ 2b
1	motor case	„ 2c
4	foot stays	„ 2d
2	axles	„ 4
1	steering spindle	„ 4g
1	starter	„ 6
3	wheel hubs	„ 7
1	cylinder	„ 8
1	pulley	„ 9
1	lantern	„ 9
1	driver seat	2 „ 17
2	handle bars	„ 17a
1	steering rod	„ 18
2	tank sides	„ 18
4	wheel discs	„ 21a
1	driving disc	„ 22
1	spiral	„ 34
2	wheel discs for hind wheels	„ 35b
1	hooter	No. 38a
2	protection filletts	„ 40+40b
1	cross pin of the foot rest	„ 40+40b

60 s. w. n., 13 a. b.

The driver's seat constitutes 4 angle brackets No. 2, which are screwed on the connecting piece k and the frame heads 2a to the frame sides e. The pillon seat consists of 2 strips No. 17, which to the fork band No. 41, which is fastened on to the mud guard, are put into place.

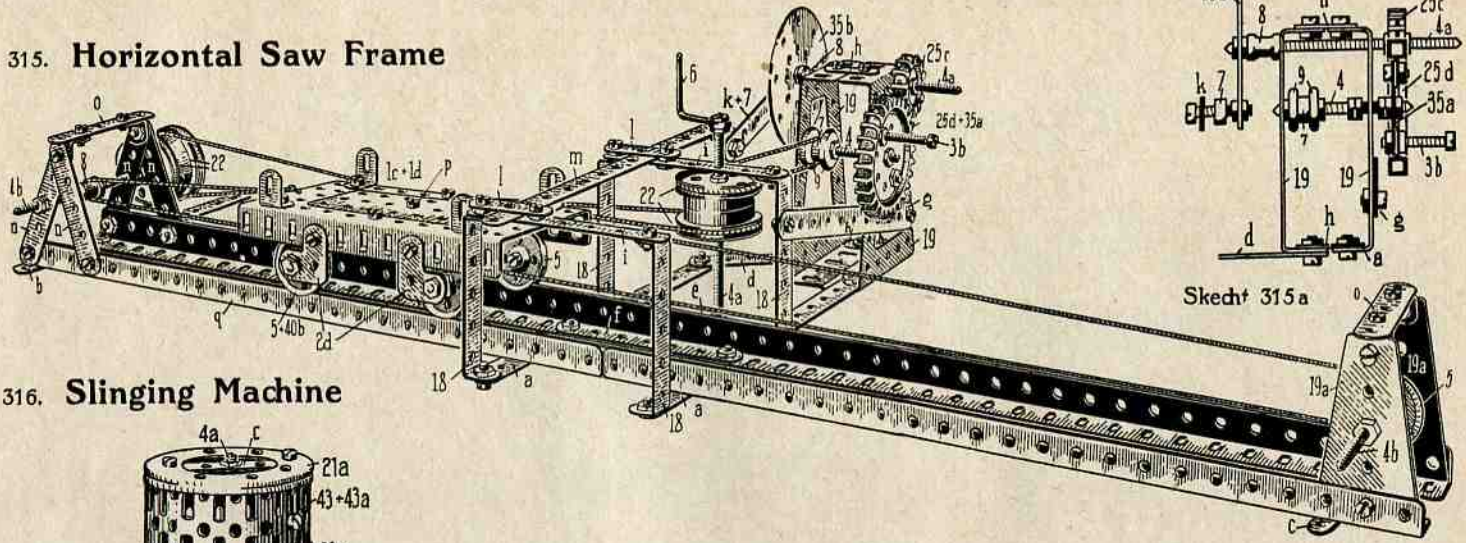
The fork sides a are fitted to the turning block and cross pin = 2 double angles in the first and the second holes from the top to the front wheel fork. The frame parts e which are connected to the top with the Z angles 2a, constitute the hindwheel fork. The 2 cross bands b connect at the top and in the third hole from above the frame parts c with each other.

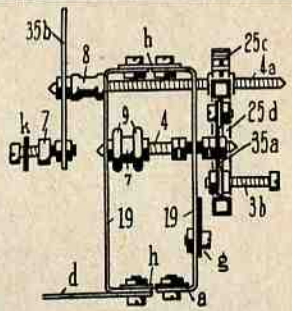
The driving is made from the pulley No. 9 in the right hand frame part to the pulley No. 22 mounted on the hindwheel.

Parts to the Saw Frame:

2	long bars	a a. s. 25 h l.
2	long frames	b „ 25 „ „
2	long bars	c s. 45 h. l. (25+25)
2	long frames	d s. 45 h. l. (25+25)
8	foundation stays	e s. 5 h. l.
4	long frames	f „ 11 „ „
4	rail bars	g „ 11 „ „
2	cross bands	h „ 5 „ „
1	cross band	i „ 8 „ „ (7+2)
2	push poles	k „ 11 „ „
2	frame sides	l „ 11 „ „
2	cross bands	m „ 5 „ „
1	saw blade bender	No. 2c
1	„ „ „	„ 2e
4	release pins	„ 2d
1	driving shaft	„ 4a
2	cylinder shafts	„ 4a, 4b
1	frame shaft	„ 4b
1	frame bolt	„ 4b
2	working discs	„ 5
1	driving disc	„ 5a
4	position rings	„ 7
2	wheel hubs	„ 8
2	working shafts	„ 9
2	cross pins	„ 18
2	cross frames	„ 18
2	frame sides	„ 19
3	driving discs	„ 22
1	fly wheel	No. 21a+35b
2	crank discs	„ 35a
2	wall plates	„ 43
52	screws with nuts	
12	angle brackets	

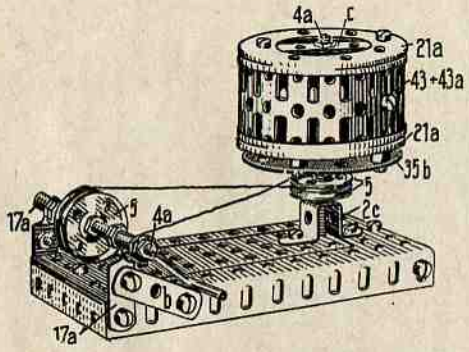
No. 315. Horizontal Saw Frame





Skecht 315a

No. 316. Slinging Machine



Parts to the Slinging Machine:

1 ground plate	No. 1c+1d	4 driving discs	No. 5
1 long band	a s. 11 h. l.	1 turning block	„ 9
2 layer stays	b „ 3 „ „	2 shaft blocks	„ 17a
1 cross block	c „ 5 „ „	2 cross bands	„ 18
1 rack block	No. 2c	2 boiler floors	„ 21a
1 driving shaft	„ 4a	1 „ „	„ 35b
1 position shaft	„ 4a	1 boiler wall	„ 43+43a
1 crank shaft	„ 6	20 screws with nuts	

2 cross bars	a s. 15 h. l.
2 „ „	b, c „ 11,5 „ „
1 floor strut	d „ 7 „ „ (5+5)
1 floor rail	e „ 7 h. l.
2 rail lappets	f „ 7 „ „
1 block strut	g „ 11 „ „
2 block cross lappets	h „ 2 „ „
2 cross layers	l „ 7 „ „
1 connecting rod	k „ 7 „ „
2 guide bars	l „ 3 „ „
1 saw blade	m „ 15 „ „
4 block fillets	n „ 5 „ „
2 block struts	o „ 5 „ „

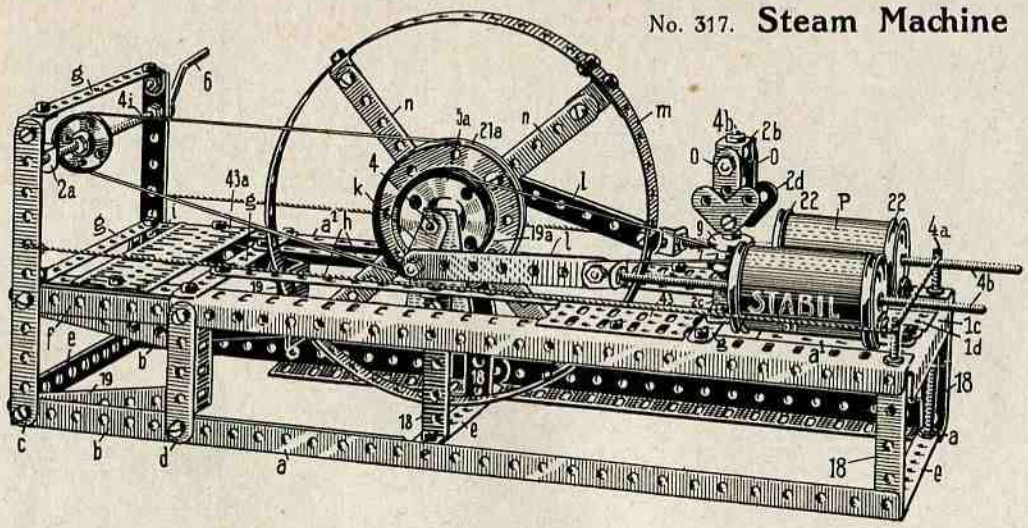
Parts to the Saw Frame:

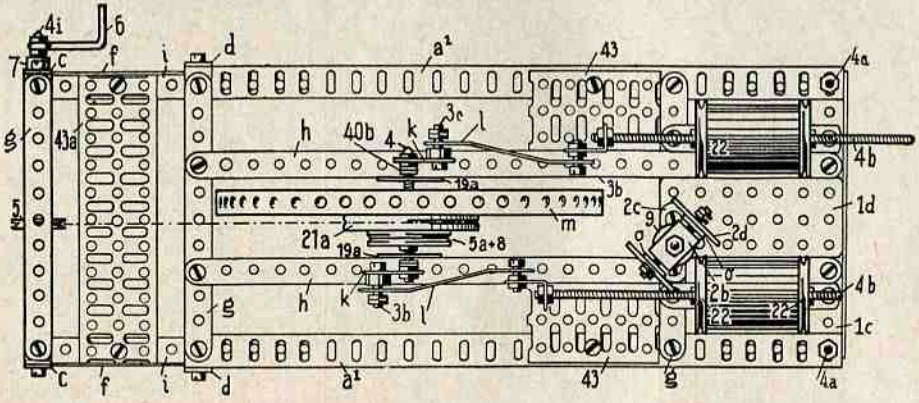
1 cross band to the wagon floor 1d	p s. 5 h. l.
2 track rails	q 4 a. s. 50 h. l. (25+25)
1 wagon floor	No. 1c+1d
4 axle blocks	„ 2d
1 crank grip	„ 3b
2 cog wheel joists	„ 4 a. 4a
1 rest shaft	„ 4a
2 transmission shafts	„ 4b
4 wagon wheels	„ 5
1 rope roller	„ 5
1 crank wheel	„ 6
1 transmission wheel	„ 9+7+9

1 crank wheel hub	No. 7
1 rope roller, 4 hub	„ 8
4 rest fillets	„ 18
4 „ plates	„ 19, 19a
4 rope wheels	„ 22
2 cog wheels	„ 25c, 25d +35a
1 eccentric disc	„ 35b
52 screws with nuts	
9 angle brackets	

Sketch 315a represents a vertica section through the mechanism part

No. 317. Steam Machine





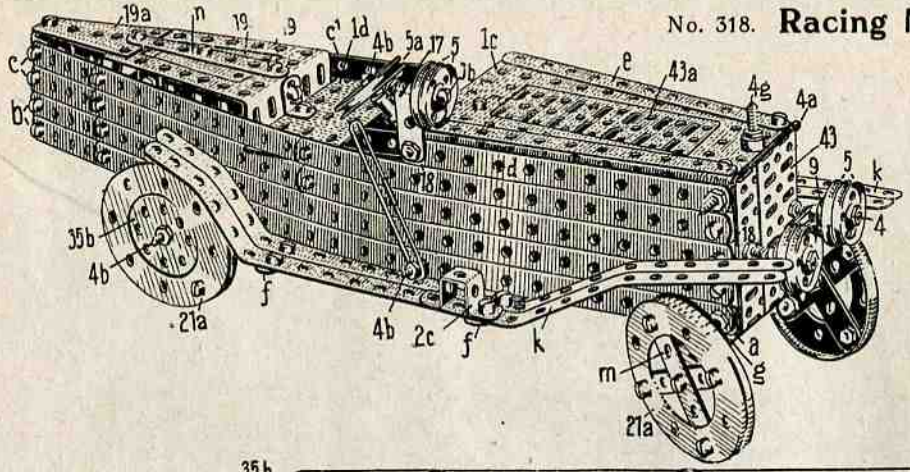
Sketch 317a

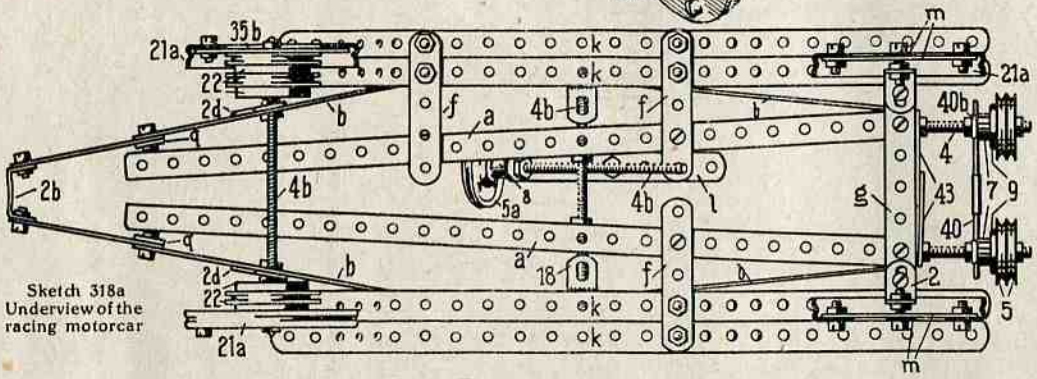
Parts to the Steam Machine

1	foundation plate	No.	1c+1d
2	„ bars and frames	a a. s.	25 h. l.
		a^1 „ „	25 „ „
2	„ joists	b s.	15 „ „
3	cross joists	e „	11 „ „
2	long frames	f „	15 „ „
2	corner fillets	c „	11 „ „
2	long bearers	i „	11 „ „
2	foundation fillets	d „	5 „ „
4	cross bearers	g „	11 „ „
2	crank levers	k „	2 „ „
2	connecting rods	l „	7 „ „
1	wheel felly (wheel circle 25+25)	m „	44 „ „
4	wheel spokes	n „	7 „ „
2	long bearers	h „	25 „ „
2	regulator levers	o „	3 „ „
1	stand rest	No.	2a
1	„ „	„	2c
1	regulator head	„	2b
2	„ weights	„	2d
2	crank pegs	„	3b, 3c
1	fly wheel shaft	„	4
1	regulator shaft	„	4b
2	piston rods	„	4b
1	connecting gear shaft	„	4i
1	string disc	„	5
1	driving disc to regulator	„	9+7+9
1	driving wheel	„	5a
2	stand uprights	„	18
2	foundation stays	„	18
2	stand blocks	„	19a
1	driving disc	„	21a
4	cylinder covers	„	22
3	ground plates	„	43 a. 43a

Sketch 317a is a top view of the machine. The cylinder covers are made out of paper mash also the 2 dredge shovels No. 30 can be applied to the machine. Paper mash and dredges do not belong to the contents of the box No. 51

No. 318. Racing Motorcar



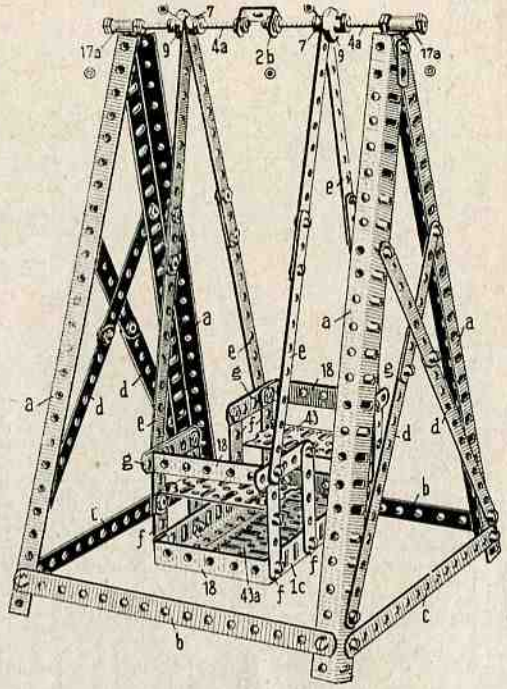


Sketch 318a
Underview of the racing motorcar

Parts to the Racing Motorcar:

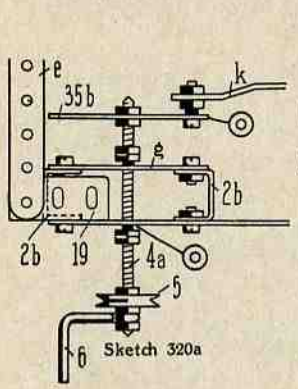
2	long trees	a	a. s. 25	h. l.
4	box sides	b	„ 29	„ „
			(25+5)	
2	„ „	c	„ 29	„ „
			(15+11+7)	
2	„ „	c^1	„ 15	„ „
4	„ „	d	„ 11	„ „
2	deck fillets	e	„ 11	„ „
3	foot board holders	f	s. 5	h. l.
1	axle pole	g	„ 7	„ „
4	mud guards	k	„ 25	„ „
1	crank bearer	l	„ 7	„ „
4	spokes	m	„ 5	„ „
1	deck fillet	n	„ 7	„ „
2	positions pins	q	„ 4	„ „
			(3+2)	
1	seat plate	No.	1d	
1	bonnet deck	„	1c+43a	
4	rear wall bends	„	2b	
1	accumulator pole	„	2c	
2	lantern spindles	„	4	
3	cross bolts	„	4a, 4b	
1	rear axle	„	4b	
1	steering spindle	„	4b	
1	cooler joist	„	4g	
2	lanterns	No.	5+5+9	
1	bonnet deck	„	1c+43a	
1	search light	„	5+5+17	
1	steering wheel	„	5a+8	
4	position pins	„	18	
1	luggage box	„	19+19a	
2	rear wheels	„	21a+35b +22+22	
2	front wheels	„	21a	
1	hood shaft 2×	„	43	

Nr. 319. Stationery Swing

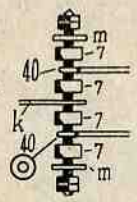


Parts to the Stationery Swing:

4	uprights	a	a. s 25	h. l.
2	spans	b	s. 15	„ „
2	„	c	„ 15	„ „
4	cross bands	d	„ 17	„ „
			(11+7)	
4	hanging fillets	e	„ 19	„ „
			(11+11)	
8	gondola fillets	f	„ 5	„ „
4	„ side backs	g	„ 5	„ „
1	gondola floor	No.	1c+43a	
1	shaft	No.	4a+2b+4a	
4	position rings	No.	7	
2	fixed discs	„	9	
2	shaft blocks	„	17a	
2	gondola fasteners	„	18	
2	back rests	„	18	
2	gondola seats	„	43	

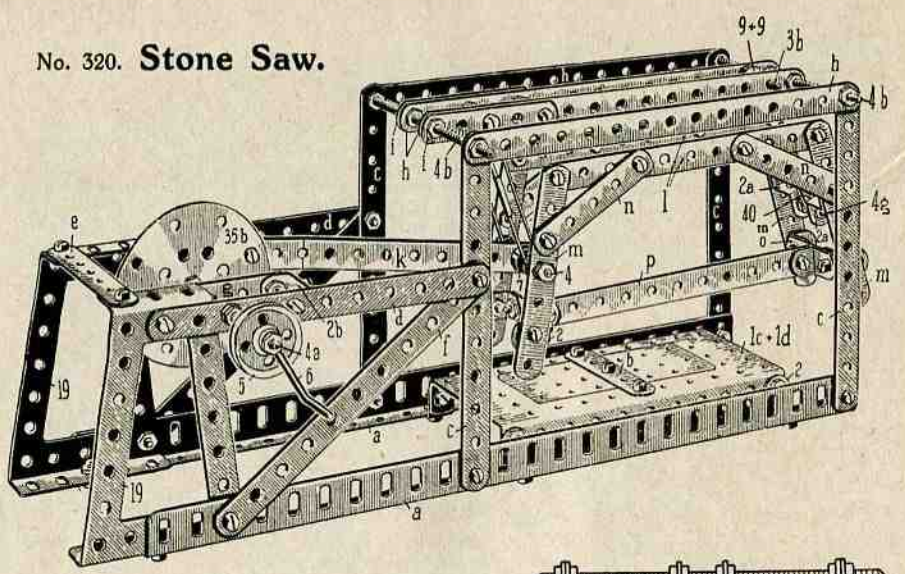


Sketch 320a



Sketch 320b

No. 320. Stone Saw.



Parts to the Stone Saw:

1 ground plate		No. 1c, 1d
2 stand blocks		„ 19
2 long beams	a	a. s. 25 h. l.
1 lappet band	b	„ 5 „ „
4 corner fillets	c	„ 11 „ „
2 long frames	d	„ 11 „ „
1 cross frame	e	„ 7 „ „
2 struts	f	„ 11 „ „
1 rest band	g	„ 5 „ „
4 long trames	h	„ 15 „ „
2 guide bands	i	„ 5 „ „
1 connecting rod	k	„ 11 „ „
2 saw fillets	l	„ 11 „ „
4 hanging arms	m	„ 7 „ „
4 head bands	n	s. 5 h. l.
2 saw angles	o	„ 3 „ „
1 saw blade	p	„ 11 „ „
2 Z shaped angles	No. 2a	
2 stand pins	„ 2b	
3 pendulum spindles	„ 3b, 4, 4g	
1 driving shaft	„ 4a	
2 span poles	„ 4b	
1 driving disc	„ 5	
1 crank	„ 6	
4 position rings	„ 7, 9	
1 crank wheel	„ 35b	
3 hanging pendulums	„ 40+40b	
50 screws with nuts		
8 angle brackets		

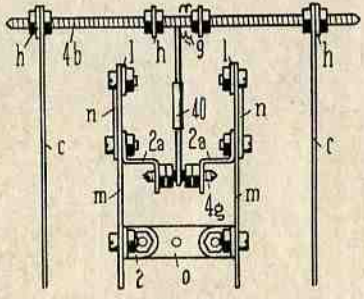
Sketch 320a shows the construction of the driving shaft 4a to which crank wheel 35b is loosely fastened so that one end of connecting rod k revolves loosely, while it is loosely connected with the other end of the saw frames (Sketch 320b).

Sketch 320c is the right side view of the saw.

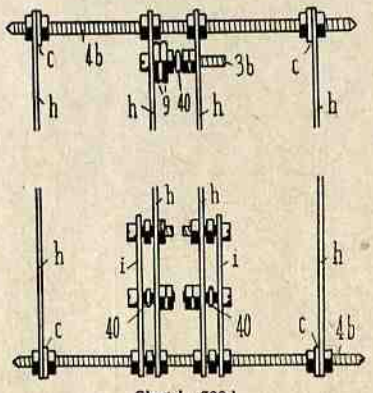
Sketch 320d is a view of the right hand part of the saw.

The saw frame, consisting of l — m — n — o — p hangs freely swinging to 3 wire eyes-hanging spindle 40 and is pushed in and out by the connecting rod k.

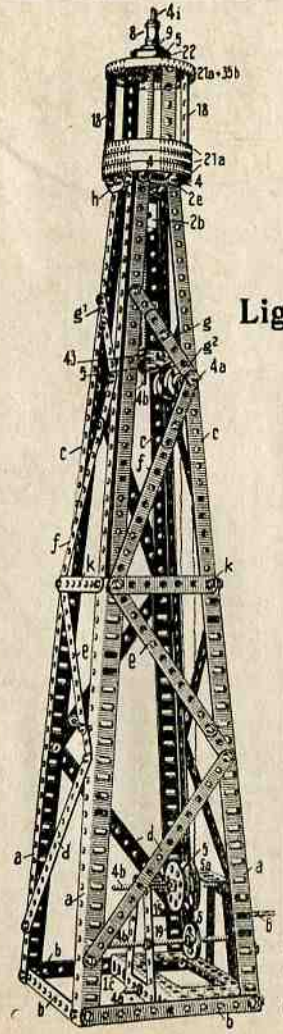
Stone saws serve the purpose for cutting up precious stones with a small loss of material. As saw blades mostly wear out by use, wood cutting saws are needed. Grity sand of a sharp nature is strewn in the notches of the stone saw, so that the sand is rolled in and out of the saw blade and the saw notches deepened. It must be constantly watered because great heat arises by the rubbing.

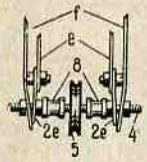


Sketch 320c



Sketch 320d

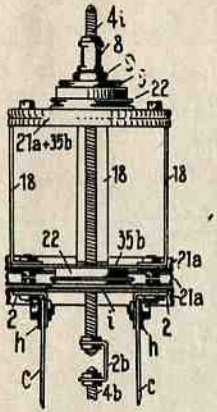




Sketch 322b
Crane Top

No. 321

Light House



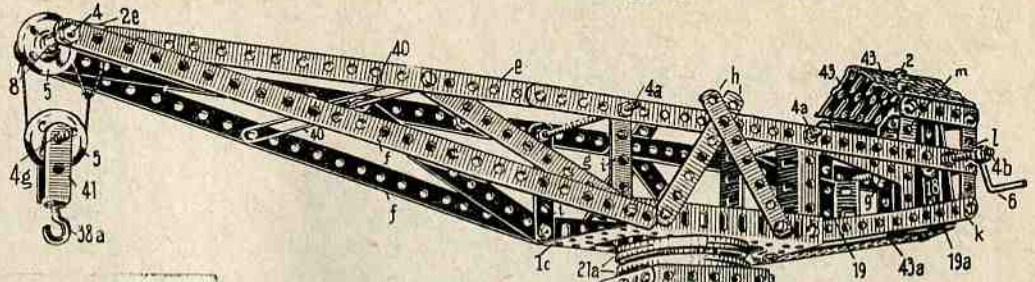
Sketch 321a

Parts to the Light House:

4 corner stays	a	a. s.	25 h. l.
4 beams	b	„	11 „ „
8 side stays	c	„	25 „ „
4 wind supports	d	„	15 „ „
4 wind supports	e	s.	13 h. l. (11+5)
4 „ „	f	„	14 h. l (11+5)
2 „ „	g	„	7 h. l.
1 „ „	g^1	„	7 „ „ (5+3)
1 „ „	g^2	„	7 h. l. (5+5)
2 frames	h	„	3 h. l (2+2)
1 „	i	„	5 h. l.
4 cross bands	k	„	7 „ „
1 ground plate			Nr. 1c
1 coupling			„ 2b
2 frames			„ 2e
2 cross bolts			„ 4
1 floor anchor			„ 4a
1 transmission shaft			„ 4a
2 driving shafts			„ 4b
1 position shaft			No. 4i+2b+4b
5 string discs			„ 5
1 „ „			„ 5+5a+35a
1 lantern hood			„ 8+9+22
1 lantern	4	„	18+2 (No. 21a+35b)
2 stand rests			No. 19
1 platform with turner	2		No. 21a+22
1 floor plate			No. 43

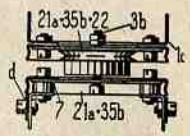
Sketch 322b. Section through the head of the light house. The lantern is revolvable. On the lower position shaft 4b a rope disc is set to work below the storing parts.

No. 322. **Swinging Crane**



Parts to the Crane:

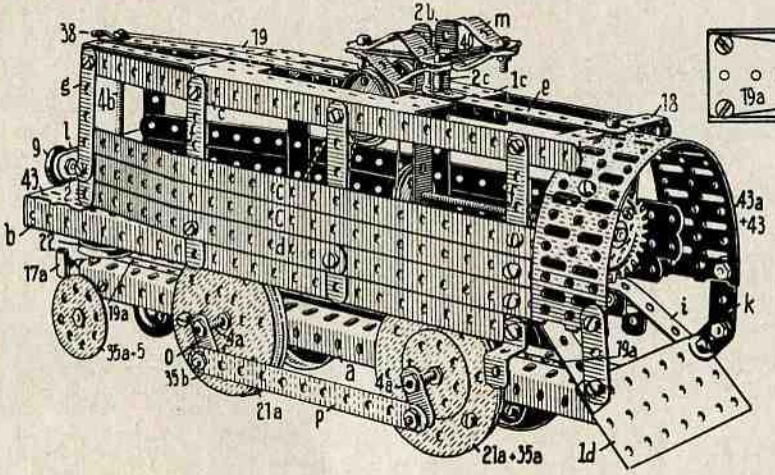
4 corner struts	a	a. s.	25 h. l.
4 fasteners	b	„	11 „ „
4 cross bands	c	„	15 „ „
4 „ „	c^1	„	15 „ „ (11+5)
2 frames	d	„	5 h. l.
2 topy girdles	e	„	43 „ „ (25+25+2e)
2 supports	f	s.	25 h. l.
2 „	g	„	11 „ „
4 „	h	„	7 „ „
2 projecting fillets	i	„	5 „ „
2 support stays	k	„	11 „ „
2 box fillets	l	„	5 „ „
2 „ „	m	„	3 „ „
1 projecting plate			No. 1c
1 turning disk nut			„ 3b
1 roller spindle			„ 4
2 span poles			„ 4a
1 wind shaft			„ 4b
2 cross bolts			„ 4b
1 roller spindle			„ 4g
2 string rollers			„ 5
1 crank			„ 6
2 position rollers			„ 8
1 rope drum			No. 9+7+9
2 projecting sides			No. 19
1 back wall			„ 19a
2 frames			„ 18
1 turning disc with string part	2		No. 21a+35b+22
1 load hook			No. 38a
1 roller pulley			„ 41
2 roof plates			„ 43
1 floor plate			„ 43a

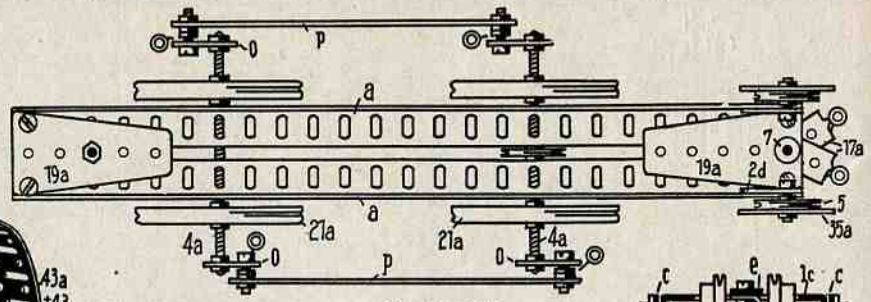


Sketch 322a

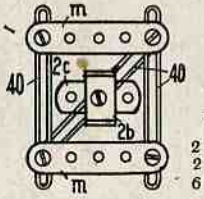
Sketch 322a shows how the projecting arm is built on the turning disc.

No. 323. Electric Driven Snow Plough.

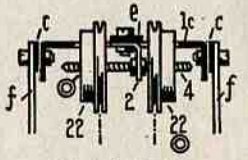




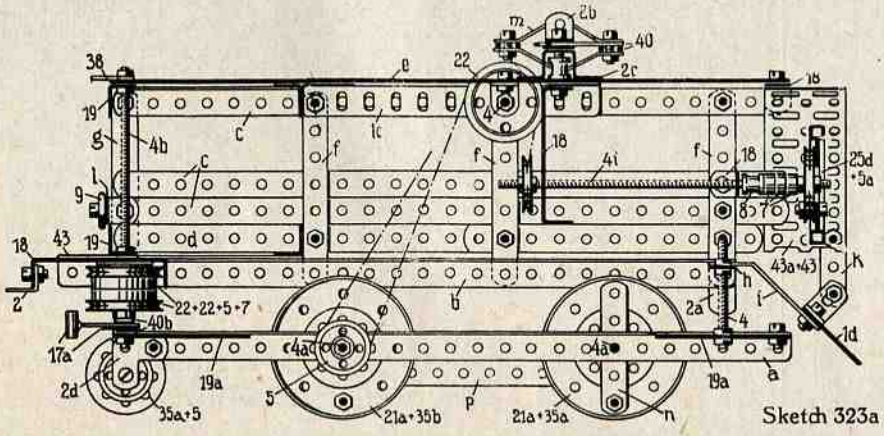
Sketch 323b



Sketch 323c



Sketch 323d



Sketch 323a

Parts to the Snow Plough:

2	long bearer	a	a. s.	25	h. l.
2	floor bearers	b	„	25	„ „
6	frame shanks to side walls	c	„	25	„ „
2	same (15+11)	d	„	24	„ „
1	roof frame	e	„	25	„ „
6	uprights	f	„	7	„ „
2	uprights (5+2e)	g	„	6	„ „
1	cross pin	h	„	5	„ „
2	shovel props	i	„	5	„ „
2	hanging bands	k	„	3	„ „
1	cross band	l	„	5	„ „
4	bent strips	m	„	5	„ „
2	spokes	n	„	5	„ „
4	crank levers	o	„	2	„ „
2	connecting rods	p	„	11	„ „
1	wagon roof		No.	1c+19	
2	projecting bands		„	2a	
1	guide angle		„	2b	
1	rest block		„	2c	
2	front axle blocks		„	2d	
1	roller spindle		„	4	
1	position bolt		„	4	
2	axles		„	4a	
1	binding pole		„	4b	
1	shovel wheel shaft		„	4i	
2	driving wheels		„	5	
2	fore wheels		„	5+35a	
2	drive wheels		„	21a+35b	
1	shovel wheel		„	5a+25d	
2	drive wheels		No.	21a+35a	
1	wind wheel hub		„	8+3×7	
2	lanterns		„	9	
2	cleaners		„	17a	
1	head bar		„	18	
2	shaft blocks		„	18	
2	floor plates		„	19a	
2	guide rollers		„	22	
1	round block		„	22+7+22	
1	shovel protector		„	43a+43	
3	cross pins		„	40+40b	

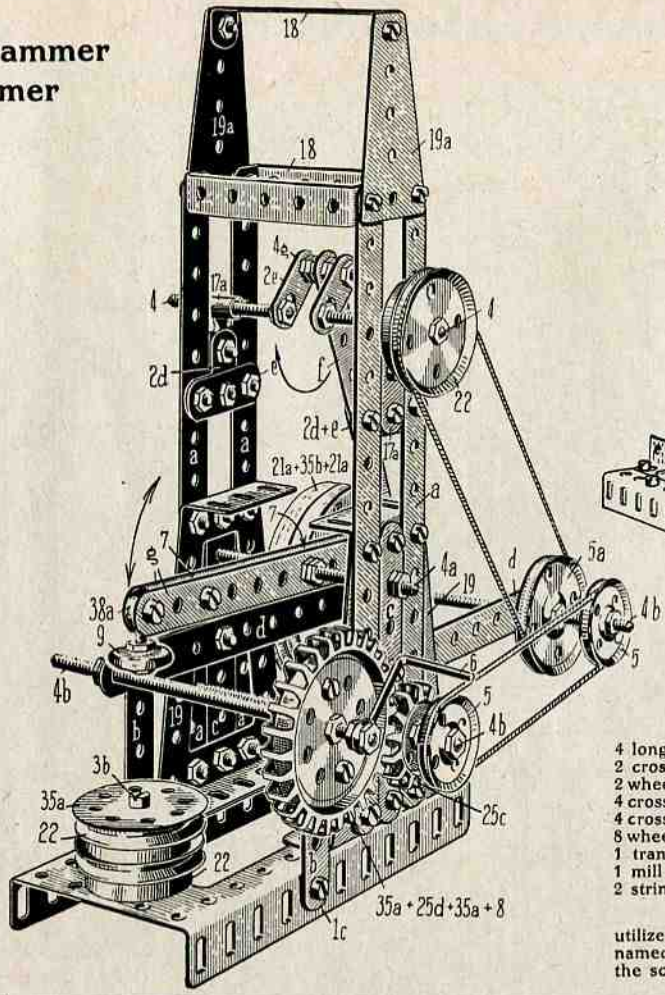
Sketch 323a is a long-section quite through the middle of the machine while Sketch 323b shows the underframe with the position of the wheels In Sketch 323c is seen, how the bent strips m and the pins 40 of the current receiver are built in, while Sketch 323d shows how the guide rollers No. 22 are built and placed in position.

In place of the swing wheel 25d our wind wheel No. 13 is adaptable to this model. which do not belong to the contents of box 51.

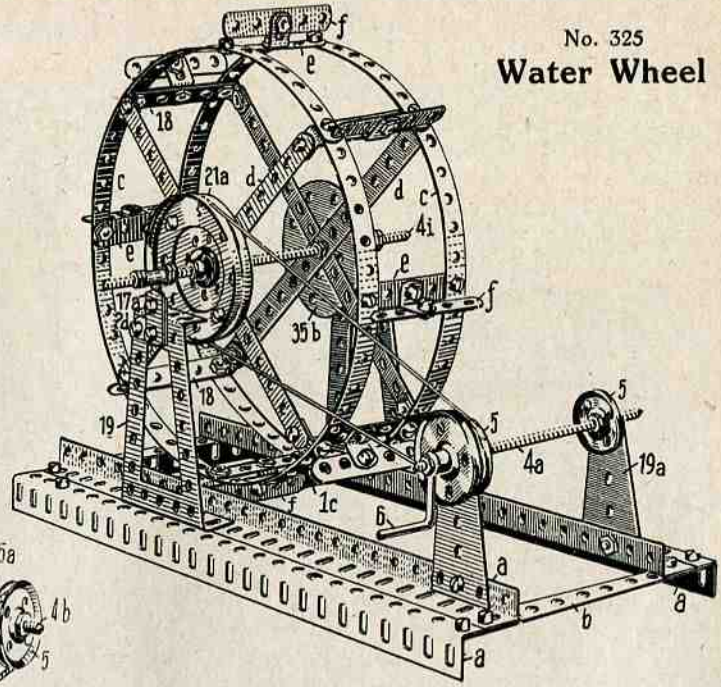
No. 324. Spring Hammer or Tail Hammer

Parts to the Tail Hammer:

1	ground plate	No. 1c
2	rear frame sides	„ 19
2	frame head sides	„ 19a
4	racked fillets	a s. 15 h. l.
2	„ „	b „ 5 „ „
2	block fillets	c „ 7 „ „
2	„ bands	d „ 11 „ „
2	cross rails	e „ 3 „ „
1	lever arm	f „ 9 „ „ (5+5)
2	hammer arms	g „ 11 „ „
2	rack stays	No. 2d
2	crank shaft arms	„ 2e
1	projecting shaft	„ 4+4g+4
1	lever block shaft	„ 4a
2	cog wheel shafts	„ 4b
1	driving shaft	„ 4b
2	transmission wheels	„ 5
1	„ „	„ 5a
1	crank	„ 6
2	position rings	„ 7
1	string roller	„ 8
1	transmission wheel	„ 22
1	fly wheel	No. 21a+35b+21a
1	hammer rammer	No. 9+38a
2	crank shaft blocks	„ 17a
3	block cross bars	„ 18
1	anvil	No. 3b+35a+22+22
2	cog wheels	No. 25c, 25d
2	cog wheel hubs (for 25d)	„ 35a
42	screws with nuts	



No. 325 Water Wheel



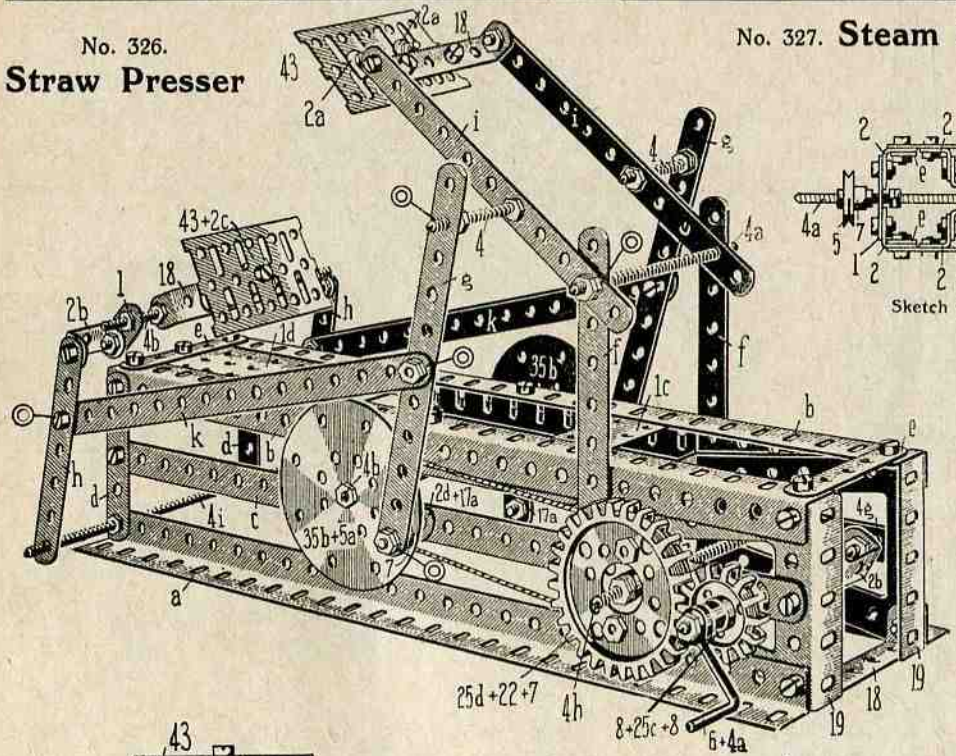
Parts to the Water Wheel:

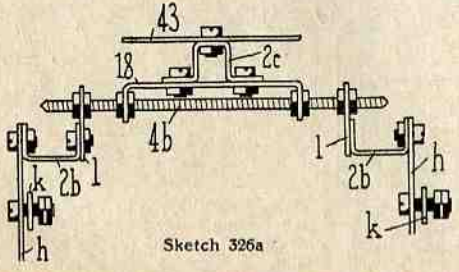
4	long bars	a a. s. 25 h. l.	
2	cross bars	b s. 11 „ „	
2	wheel circles	c „ 48 „ „	(25+25)
4	cross spokes	d „ 15 „ „	
4	cross bands	e „ 5 „ „	
8	wheel scoops	f „ 5 „ „	
1	transmission shaft		No. 4a
1	mill shaft		„ 4i
2	string discs		„ 5
1	string discs		No. 5a
2	wheel hubs		„ 9
2	projecting layers		„ 17a
4	cross bands		„ 18
2	rack rests		„ 19
2	„ „		„ 19a
1	driving disc		„ 21a
2	wheel turners		„ 35b
60	screws with nuts, 8 angle brackets		

One constructs water wheels according to the power of the water utilized. There are upper, middle and under-slung water wheels, which are named according to whether the water operates over, in the middle or under the scoops.

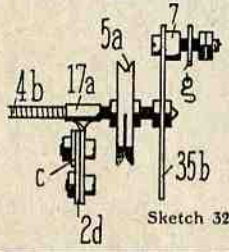
No. 326.

Straw Presser



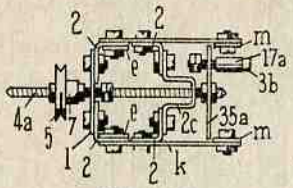


Sketch 326a



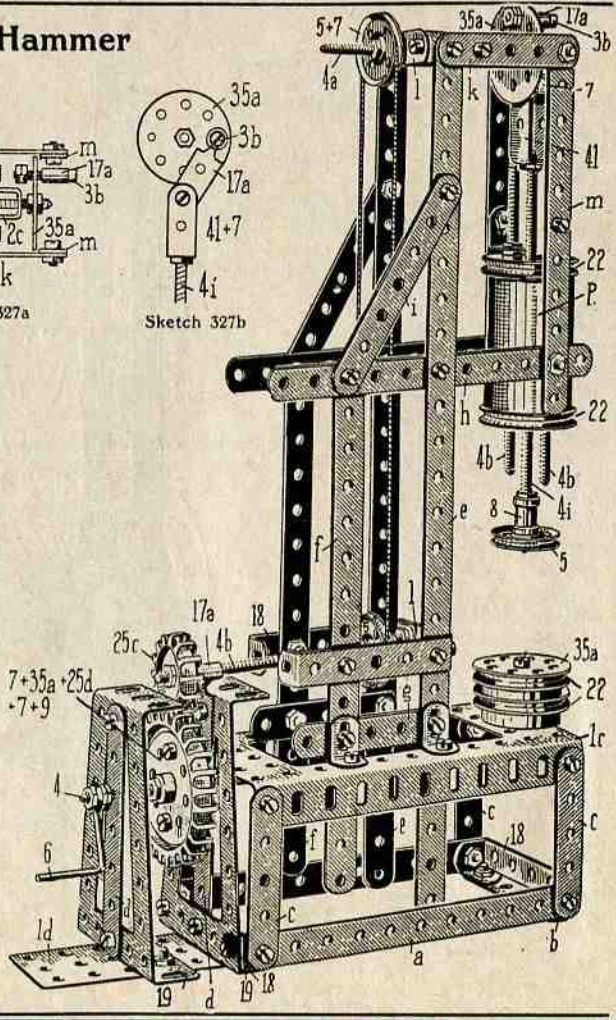
Sketch 326b

No. 327. **Steam Hammer**

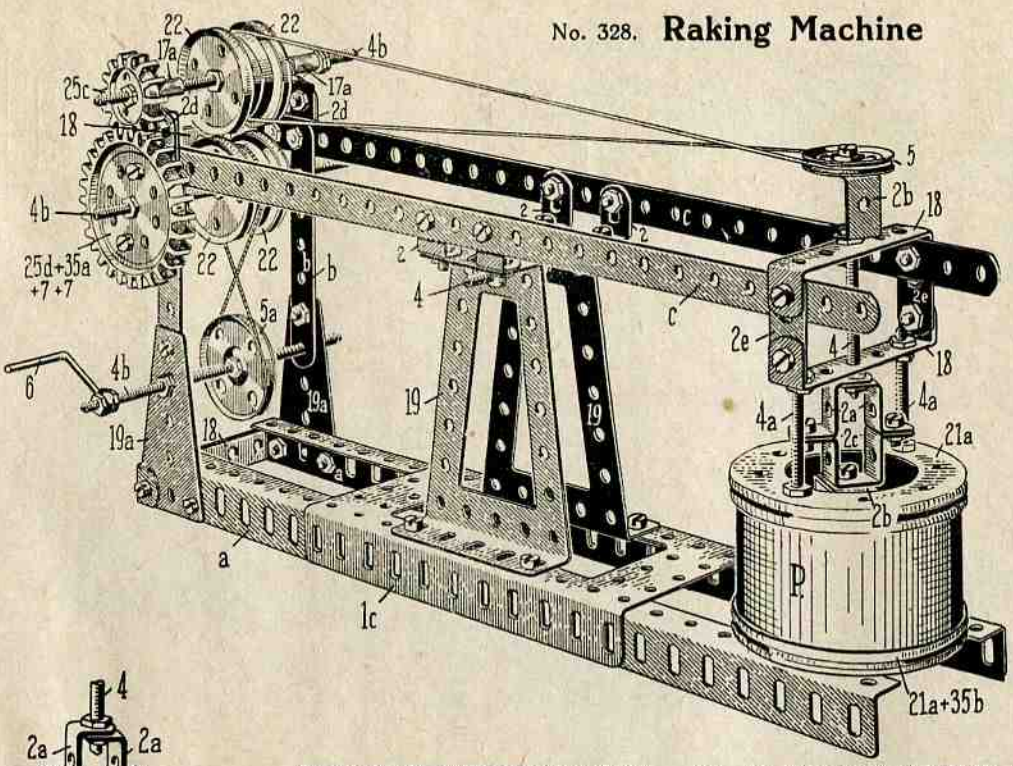


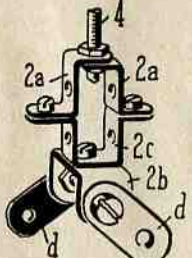
Sketch 327a

Sketch 327b



No. 328. Raking Machine





Sketch 328a

Parts to the Straw Presser:

2	long bars	a	a. s.	25	h.	l.
2	table frames	b	„ „	25	„	„
1	table plate			No.	1c	
1	„ „			„	1d	
2	rack blocks			„	19	
1	cross bar			„	18	
2	rim frames	c	s.	25	h.	l.
2	corner fillets	d	„	5	„	„
2	cross rims	e	„	5	„	„
2	spindle block fillets	f	„	11	„	„
2	crank fillets	g	„	11	„	„
2	tilt levers	h	s.	7	h.	l.
2	press levers	i	„	11	„	„
2	span levers	k	„	15	„	„
2	lever heads	l	„	2	„	„
2	„ „			No.	2b	
2	rack stays			„	2d	
2	lever spindles			„	4	
3	„ „			No.	4a, 4b, 4i	
1	driving shaft			No.	4a+2b+4g	
1	transmission shaft			No.	4b	
1	crank shaft			„	4b	
1	crank			„	6	
3	position rings			„	7	
2	cog wheel hubs			No.	8	
2	string wheels			„	5a, 22	
2	crank shaft blocks			„	17a	
1	press plate foot			No.	18+2×2a	
1	press plate foot			„	18+2c	
2	cog wheels			„	25c, 25d	
2	crank wheels			„	35b	
2	press plates			„	43	
47	screws with nuts					

Straw Presses serve the purpose in order to bind straw and to form square bales. With the cog wheel 25d a string wheel 22 is screwed. From this wheel 22 a driving string runs to a string wheel 5a, which is fixed behind the crank wheel 35b (Sketch 326b) and consequently sets by means of crank shaft and crank wheels 35b the levers in motion altogether.

One pays attention to screw down the marked connection places ⊙ with each other in a movable position so that all levers can play correctly.

The screwed press plate on the press levers i exercises pressure from above, which fixed on the tilt lever h exerts a sideral pressure (Sketch 326a).

Parts to the Steam Hammer:

1	table plate			No.	1c	
1	ground plate			„	1d	
2	front blocks			„	19	
2	beams	a	s.	11	h.	l.
1	„	b	„	5	„	„
4	table feet	c	„	5	„	„
2	shaft blocks	d	„	7	„	„
2	uprights	e	„	25	„	„
2	„	f	„	15	„	„
2	cross bands	g	„	5	„	„
2	projecting arms	h	„	11	„	„
2	supports	i	„	7	„	„
2	cross bands	k	„	5	„	„
2	crank shaft blocks	l	„	3	„	„
2	hanging bearers	m	„	11	„	„
1	anvil			No.	4+22+22	
1	front shaft			„	4	
1	crank shaft			„	4a	
1	transmission shaft			„	4b	
2	cylinder bolts			„	4b	
1	piston pole			„	4i	
1	hammer head			„	5+8	
2	string wheels			„	5	
1	crank			„	6	
4	position rings			„	7, 9	
1	shaft block			„	17a	
1	connecting rod			No.	17a+7+41	
2	protection box bands			No.	18	
2	cylinder covers			„	22	
2	cog wheels			No.	25c, 25d +35a	
1	crank disc			„	35a+3b	
58	screws w. n., 14 a. b.					

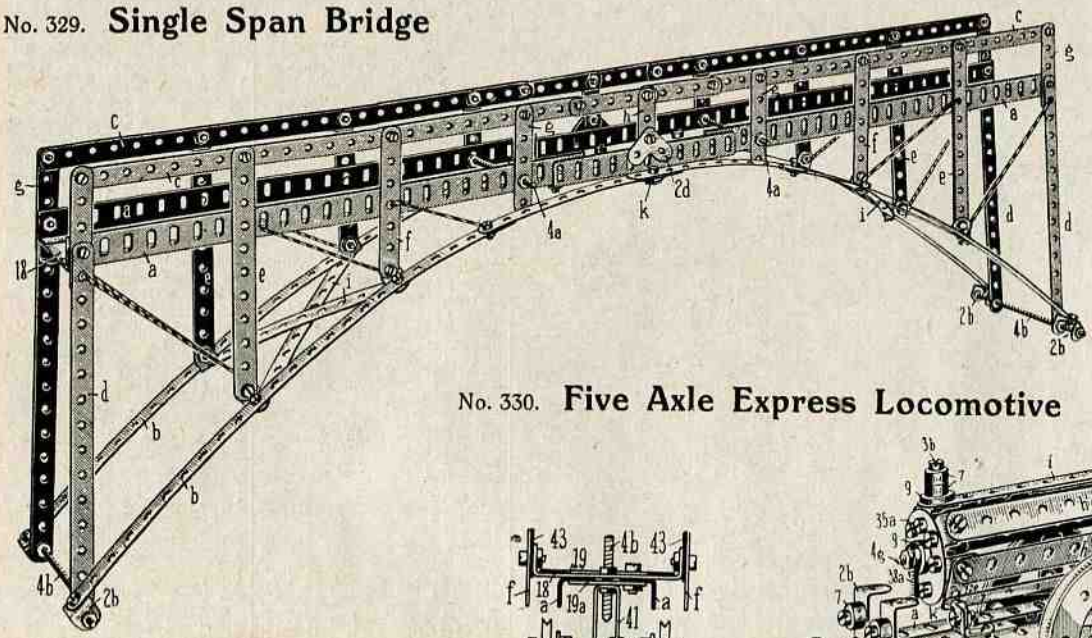
The cylinder cover P is made of paper mash and does not belong to the box. Sketch 327a. View on the upper crank shaft 4a with the screwed on crank disc 35a. Sketch 327b. Side View of these crank discs and the connecting rod 41+7+17a.

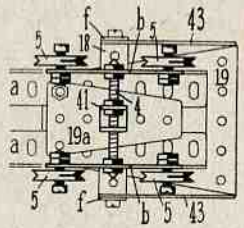
Parts to the Raking Machine:

1	floor plate			No.	1c	
2	rack sides			„	19	
2	rack feet			„	19a	
1	cross beam			„	18	
2	shaft blocks			„	18	
2	floor beams	a	a. s.	25	h.	l.
2	rest fillets	b	s.	7	h.	l.
2	long frames	c	„	25	„	„
2	rake ladles	d	„	2	„	„
1	shaft head			No.	2b	
1	rake head 2×			No.	2a+2c+2b	
2	rack stays			No.	2d	
2	frame pins			„	2e	
1	rake shaft			„	4	
3	position spindles			No.	4, 4a	
3	transmission shafts			„	4b	
2	string wheels			„	5, 5a	
1	crank			„	6	
2	cog wheel hubs			„	7	
2	shaft blocks			„	17a	
1	upper vat hoop			„	21a	
1	vat floor			No.	21a+35b	
2	belt discs 2×			„	22	
2	cog wheels			No	25c, 25d+35a	
33	screws with nuts, 4 a. b.					

Sketch 328a shows the rake head with the rake ladles. The vat cover is made out of paper mash and does not belong to the contents of the box. The spindles 4a hold vat rim and vat floor together at the same time so that the whole vat screws on to the beams.

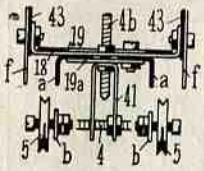
No. 329. Single Span Bridge



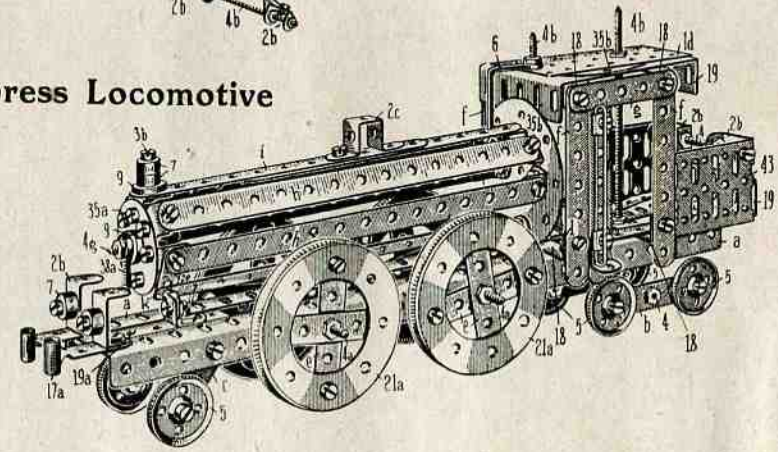


Sketch 330a

No. 330. Five Axle Express Locomotive



Sketch 330b



Parts to the Bridge:

2	upper girders	a	a. s. 57 h. l. (25+1c+25)	2	rail stays	h	s. 3 h. l.
2	arch girders	b	s. 65 h. l. (25+11+11+25)	4	girder stays	i	„ 11 „ „
2	rail beams	c	s. 57 h. l. (25+5+5+25)	1	middle pin	k	„ 7 „ „
4	side pillars	d	s. 15 h. l.	4	pillar sockets		No. 2b
4	middle stays	e	„ 11 „ „	2	bridge shields		„ 2d
4	„ „	f	„ 7 „ „	2	span spindles		„ 4a
8	rail stays	g	„ 5 „ „	2	anchor „		„ 4b
				2	side pins		„ 18
				60	screws with nuts		
				8	angle brackets		

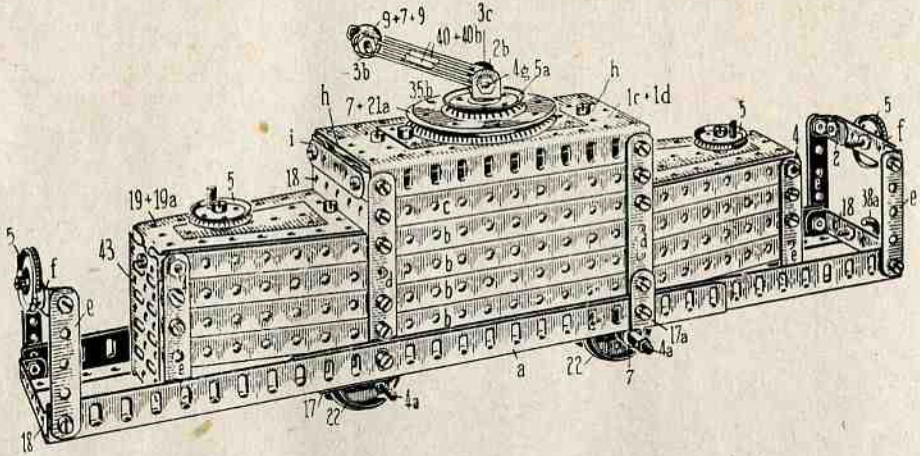
Parts to the Locomotive:

2	floor bearers	a	a. s. 25 h. l.	8	cross spokes	e	s. 5 h. l.
1	floor plate in cabin		No. 19	6	wall fillets	f	„ 7 „ „
2	floor plate in front and in the rear		No. 19a	2	„ frames	g	„ 5 „ „
1	roof plate to the cabin		No. 19+35b+1d	4	boiler sides	h	„ 15 „ „
2	cross bearers		No. 18	1	„ „	i	„ 15 „ „ (11+11)
2	deck „		„ 18	2	„ „	k	„ 11 h. l.
2	axle block bearers	b	s. 5 h. l.	2	lappets	l	„ 2 „ „
2	„ „ „	c	„ 3 „ „	2	lanterns		No. 2b+7
				1	rail beam		„ 2b+4+2b
				1	engine dome		„ 2c
				2	boiler side lappets		No. 2e
				1	chimney		No. 3b+7+7+9
				1	turning spindle		No. 4
				2	driving axles		„ 4a
				2	stays		„ 4b
				6	running wheels		„ 5
				1	whistle		„ 6
				1	smoke chamber		„ 9 +4g+38a
				2	buffers		No. 17a
				4	wheel circles		„ 21a
				2	boiler fore walls		No. 35a, 35b
				2	hand grips		„ 40+40b
				1	turning frame block		No. 41
				2	side walls		„ 43
				60	s. w. n., 14 a. b.		

Sketch 330a is an under view of the rear part of the under part construction, and allows the construction of the turning parts of the mechanism to be learnt, in which the 4 hind wheels are placed.

Sketch 330b is a perpendicular cross section through the rear part of the underneath mechanism.

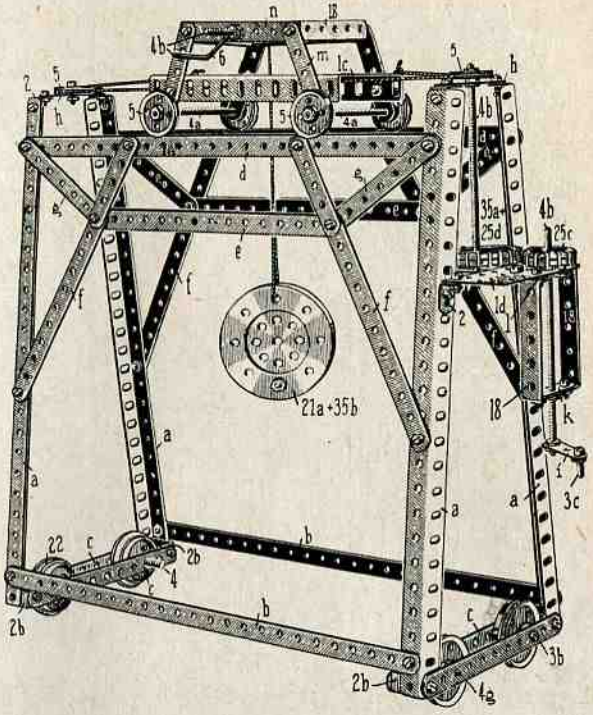
No. 331. Electric Quarry Locomotive



Parts to the Quarry Locomotive:

1 top deck plate	No. 1c+1d	2 axles	No. 4a
2 „ „ „	„ 19+19a	1 cross spindle	„ 4g
2 long bearers	a a. s. 33 h. l. (25+25)	2 flat wheels	„ 5
		2 lanterns	„ 5
8 wall bands	b s. 25 h. l.	1 swinging hood	No. 5a+35b+21a
2 „ „	c „ 11 „ „	3 position rings	No. 7
4 uprights	d „ 7 „ „	1 guide roller	„ 9+7+9
8 „	e „ 5 „ „	4 axle blocks	„ 17+17a
2 cross pins	f „ 5 „ „	2 front bands	„ 18
2 lappet bands	g „ 7 „ „	2 head beams	„ 18
	under No. 19+19a	4 wheels	„ 22
1 „ „	h „ 11 h. l.	1 screw hook	„ 38a
	under No. 1c+1d	2 guide rods	„ 40+40b
2 front bands	i „ 5 h. l.	2 front wheel plates	„ 43
1 swinging foot	No. 2b		
1 guide pin	„ 3b	57 screws with nuts	
1 swinging pin	„ 3c		
2 cross spindles	„ 4	12 angle brackets	

No. 332. Bridge Crane



Parts to the Bridge Crane:

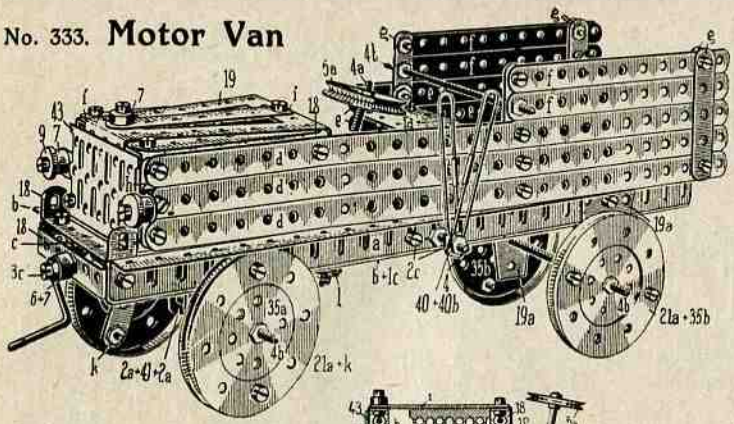
4 side shanks	a a. s. 25 h. l.	4 double angles	No. 2b
2 long beams	b s. 25 h. l.	4 wheel axles	„ 3b, 4, 4g, 4
4 cross „	c „ 11 „ „	2 transmission shafts	„ 4b
2 running discs	d „ 25 „ „	2 string wheels	„ 5
2 under girders	e „ 15 „ „	2 shaft stays	„ 18
4 supports	f „ 15 „ „ (11+5)	4 wheels	„ 22
		2 cog wheels	No. 25c, 25d+35a
4 span pins	g „ 7 „ „	2 cross pins	No. 18
2 cross pins	h „ 5 „ „	1 working disc	„ 21a+35b
1 crank arm	i „ 3 „ „	60 screws w. n., 4 a. b.	
1 shaft guider	k „ 3 „ „		
1 „ „	l „ 5 „ „ + No. 1d		

Parts to the Running Cage:

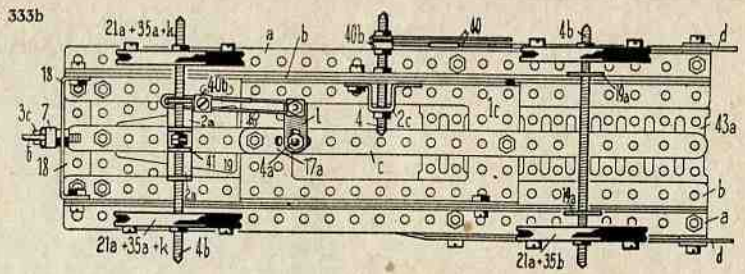
1 floor plate	No. 1c
4 fillets	m s. 5 h. l.
2 rack bands	n „ 7 „ „
2 axles	No. 4a
1 crank shaft	„ 4b+6
4 running wheels	„ 5

By turning crank i the cage moves, by turning crank 6 the working block is raised.

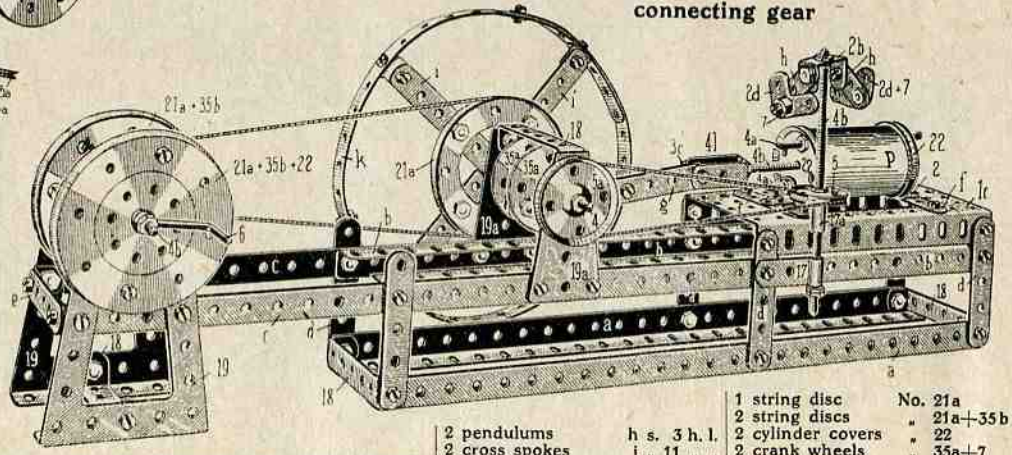
No. 333. Motor Van

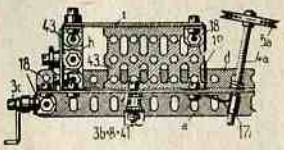


Sketch 333b

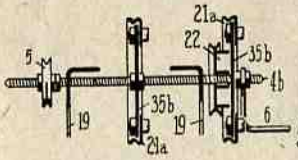


No. 334. Horizontal Steam Machine with connecting gear

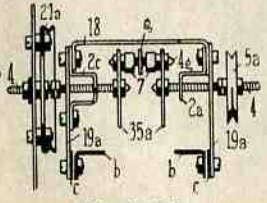




Sketch 333a



Sketch 334a



Sketch 334b

Parts to the Motor Van:

1 floor plate	No.	1c
1 seat plate	„	1d
1 hood	„	19+19
2 axle block plates	„	19a
2 long trees	a	a. s. 25 h. l.
2 floor bearers	b	a. s. 25 h. l.
1 floor bearer	c	s. 25 h. l.
4 side stays	d	„ 25 „ „
2 „ „	(11+3)e	„ 13 „ „
4 „ „	f	„ 11 „ „
6 uprights	g	„ 5 „ „
2 uprights (2+2)	h	s. 3 h. l.
3 hood bands	i	„ 7 „ „
2 fore wheel spindl.	k	s. 5 h. l.
1 steering lever arm	l	No. 2e
1 axle pole	No.	2a+41+2a
1 brake spindle block	No.	2c+4
1 steering spindle	No.	4a
2 axles	„	4b
1 seat beam	„	4b
1 steering wheel	„	5a
1 tap crank	No.	3c+6+7
2 lanterns	No.	7+9
1 steering spindle block	No.	17a
3 cross pins	No.	18
2 front wheels	„	21a +35a
2 rear wheels	„	21a +35b
2 brake levers	„	40 +40b
1 steering fork	„	40
2 hood walls	„	43
1 wagon floor	„	43a

Sketch 333a cross section through the forepart.

Parts to the Steam Machine:

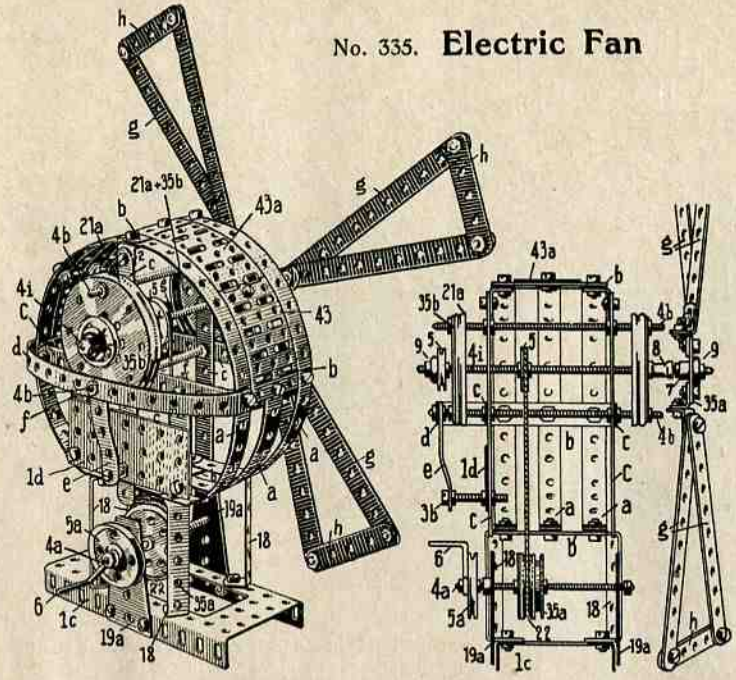
1 floor plate	No.	1c
4 cross frames	„	18
4 rack blocks	„	19, 19a
2 beams	a	a. s. 25 h. l.
2 frames	b	„ „ 25 „ „
2 „	c	s. 25 h. l.
6 supports	d	„ 5 „ „
1 cross bar	e	„ 5 „ „
2 cylinder blocks	f	„ 5 „ „
1 connecting rod	g	s. 8 h. l. (5+5)
2 pendulums	h	s. 3 h. l.
2 cross spokes	i	„ 11 „ „
1 felly circle	k	s. 36 h. l. (25+25)
2 crank shaft blocks	No.	2a, 2c
1 regulator head	„	2b
2 „ weights	„	2d+7
1 crank shaft	„	4+4g+4
2 cylinder spindles	„	4a
1 front shaft	„	4b
1 piston rod	„	4b
1 regulator spindle	„	4b
3 string wheels	„	5, 5, 5a
1 crank	„	6
2 spindle blocks	„	17, 17a
1 string disc	No.	21a
2 string discs	„	21a+35b
2 cylinder covers	„	22
2 crank wheels	„	35a+7
1 cross head	„	41

The cylinder cover P. is made out of paper mash and does not belong to the box-contents.

Sketch 334a is an vertical cross section through the upper part of the connecting gear.

Sketch 334b is a vertical cross section through the projecting fly wheel shaft 4+4g+4.

No. 335. Electric Fan



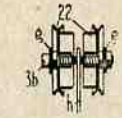
Sketch 335a

Parts to the Electric Fan:

1 ground plate	No. 1c	1 position bolt	No. 3b
4 case feet	„ 18	1 driving shaft	„ 4a
2 rest blocks	„ 19a	1 wind shaft	„ 4i
1 wall plate	„ 1d	2 anchor bolts	„ 4b
3 arched case ribs a s. 36 h. l. (25+15)		2 driving discs	„ 5
1 stay band e s. 5 h. l.		1 driving disc No. 35a+22+35a	
2 wall fillets f „ 5 „ „		1 crank No. 6	
4 cross bands b „ 5 „ „		3 position rings	„ 7, 8
4 cross pins c „ 11 „ „		1 hub	„ 9
1 protector band d „ 15 „ „		1 wing hub	„ 9+35a
8 wind rods g „ 11 „ „		2 case sides	„ 21a+35b
4 cross spans h „ 5 „ „		58 screws and nuts, 11 a. b.	

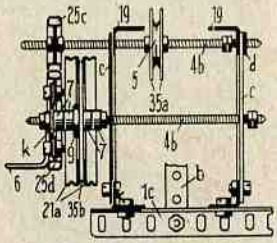
Sketch 335a is a cross section through the whole machine.

No. 336. Upright Boring Machine

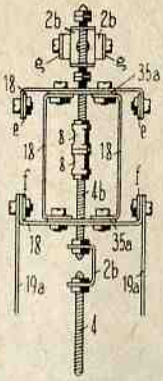


Sketch 336a. Cross section through the compensating weight 22

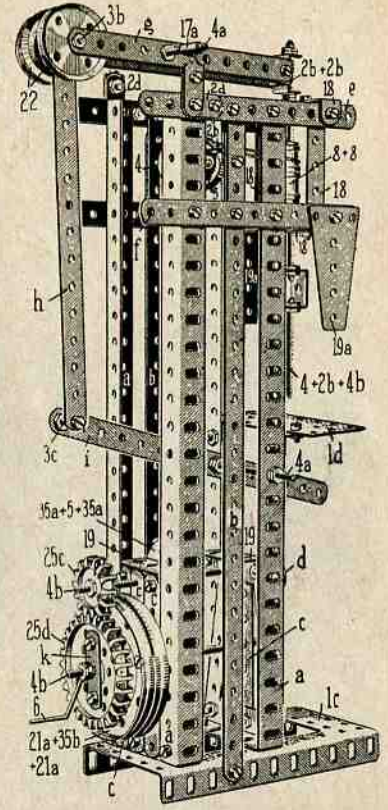
Sketch 336b. Construction of the guide roller spindle 4+2b



Sketch 336d. Perpendicular section through cog wheel front mechanism. From the string wheel 35a+5+35a of the upper cog wheel shaft 4b a running string leads over both string wheels 5 (Sketch 336b) to the upper string roller 8 of the bore spindle (Sketch) 336c) and brings these to the revolution. Through the rising and sinking of the position levers i rises and falls the bore spindle.



Sketch 336c
Sight view with sight of the bore spindle

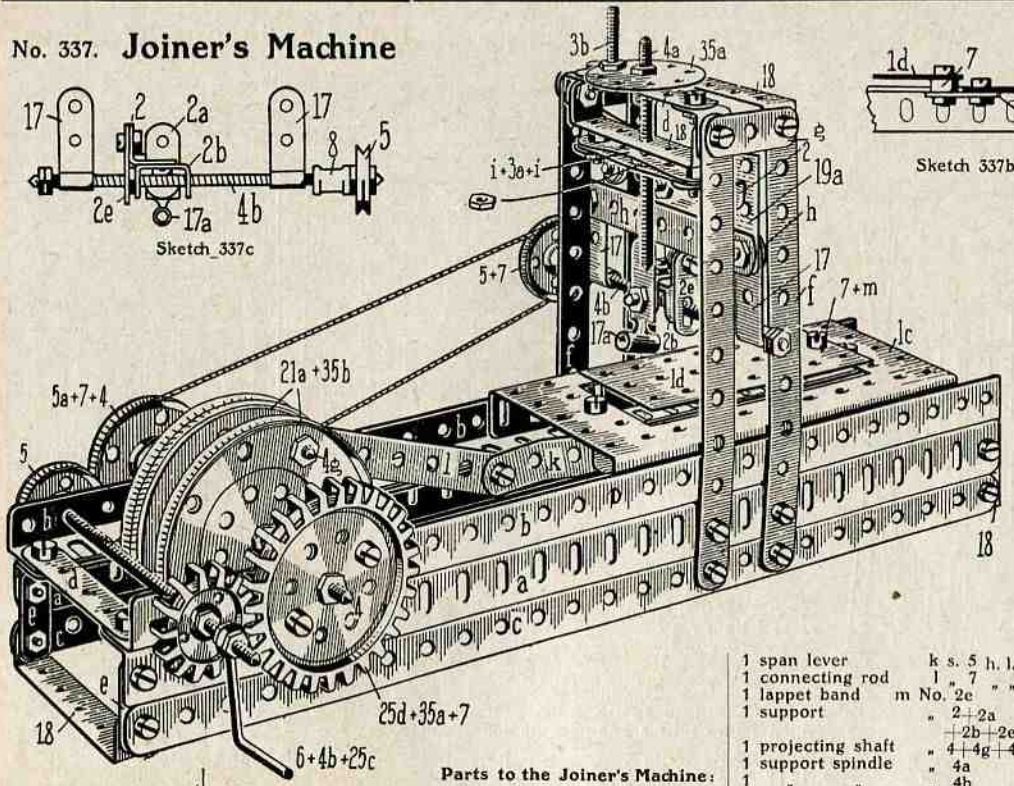


Parts to the Boring Machine:

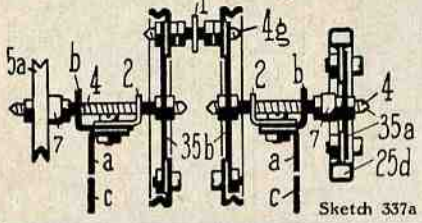
1 ground plate	No. 1c	2 span a. press levers h, i s. 15 h. l.	
1 boretable	„ 1d	1 wheel spoke k „ 3 „ „	
1 spindle block frame 4×	„ 18	1 cross pin	No. 2b
2 rack blocks	„ 19	1 cross head	No. 2b+2b
2 protector plates	„ 19a	2 block holders	No. 2d
4 cross fillets a a. s. 25 h. l.		1 compensation weight spindle	„ 3b
2 middle „ b s. 26 „ „ (25+5)		1 crank steerer	„ 3c
4 shaft block fillets c s. 7 h. l.		1 borer	„ 4
1 cross block d „ 5 „ „		1 fixed guide spindle	No. 4+2b
4 upper and middle frames e, f „ 11 „ „		2 lever spindles	No. 4a
2 tilt lever arms g „ 11 „ „		1 driving shaft	„ 4b
		1 transmission shaft	„ 4b
1 bore spindel	No. 4b	1 driving disc 2×	No. 21a+35b
2 string wheels	„ 5	1 compensation weight	2× No. 22
1 same	No. 35a+5+35a	2 cog wheels	„ 25c, 25d
1 crank	No. 6	2 rack discs	„ 35a
2 string wheels	„ 8	50 screws with nuts, 2 a. b.	
2 spindle blocks	„ 17a		

No. 337. Joiner's Machine

Sketch 337c



Sketch 337b



Sketch 337a

Parts to the Joiner's Machine:

1	gliding slide	No.	1c+1d
1	support frame plate	2× No.	19a
2	rack frames	a a. s. 25	h. l.
2	guiding beams	b s. 25	h. l.
2	long beams	c „ 25	„ „
3	cross pins	d „ 5	„ „
4	cross fillets	e „ 2	„ „
4	block uprights	f „ 11	„ „
2	upright fasteners	g „ 3	„ „
2	support frame bands	h „ 7	„ „
2	guiding bands	i „ 5	„ „
1	span lever	k s. 5	h. l.
1	connecting rod	l „ 7	„ „
1	lappet band	m No.	2e
1	support	„	2+2a +2b+2e
1	projecting shaft	„	4+4g+4
1	support spindle	„	4a
1	„ „	„	4b
1	driving shaft	„	4b
1	position wheel	„	5
1	fly wheel	„	5
1	„ „	„	5a
1	crank	„	6
2	position rings	„	7
2	support spindle blocks	„	17
1	tool casing	„	17a
2	cross beams	„	18
2	„ frames	„	18
2	crank wheels	„	21a+35b
1	cog wheel	„	25c
1	cog wheel	No.	25d+35a+7
1	spindle position wheel	No.	35a+3b
47	screws with nuts		
6	angle brackets		

To the construction of this joiner's machine little is necessary to remark upon. The sections and the designs explain quite distinctly the make of the machine.

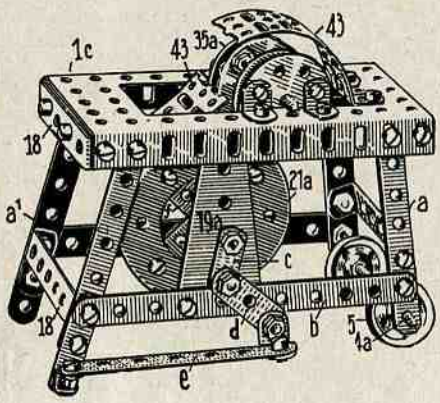
Sketch 337a cross section behind the crank shaft 4+4 shows position of same and fastening of the connecting rod, crank wheels, etc.

Sketch 337b shows how the span plate 1d is fixed on to the joiner's table 1c.

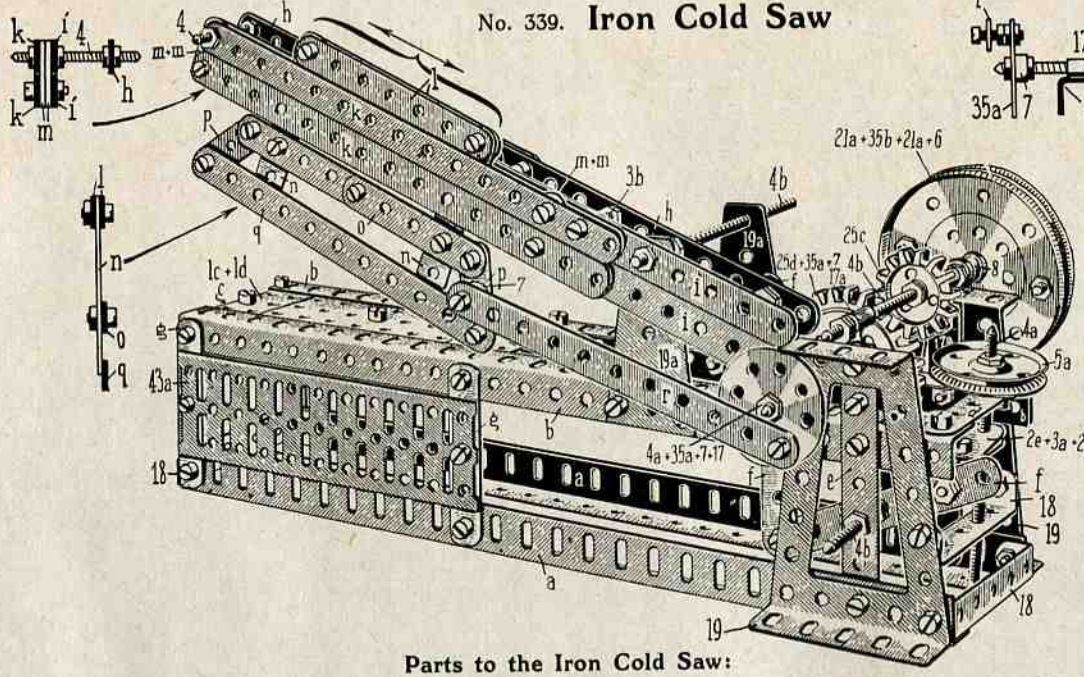
Sketch 337c shows how the support is made.

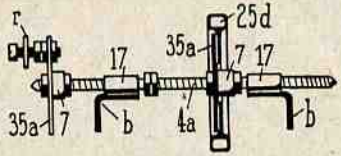
The operation of this machine is as follows: On the guide slide 1c+1d the working piece is stretched. In the feeder 17a come the joiners steel under which the guide slider itself moves in and out. In the middle of the support spindle 4a one places the work tool high or deep. The side displacement of the support happens automatically through the string transmission of wheel 5a on to the crank shaft 4+4g+4 after wheel 5 on to the support spindle 4b.

No. 338. Forge

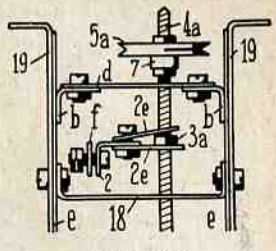


No. 339. Iron Cold Saw





Sketch 339a



Sketch 339b

Parts to the Iron Cold Saw:

2	long beams	a	a. s. 25 h. l.	2	guide bars	i	s. 20 h. l. (11+15)
2	long frames	b	„ 25 „ „	2	deck bars	k	„ 15 h. l.
1	table plate	No.	1c+1d	2	glide bars	l	„ 7 „ „
2	cross bars	„	18	4	cross pins	m	„ 2 „ „
2	rack blocks	„	19	2	saw arms	n	„ 5 „ „
2	frame blocks	„	19a	1	saw ring	o	„ 9 „ „ (5+5)
1	shaft layer	„	18	2	saw angles	p	„ 3 h. l.
1	longpin (to 1c+1d)	c	s. 11 h. l.	1	saw blade	q	„ 11 „ „
1	shaft layer	d	„ 5 „ „	1	crank rod	r	„ 11 „ „
2	racket fillets	e	„ 7 „ „	1	spindle feeder	No.	2e+3a+2e
2	lever bands	f	„ 7 „ „	2	position bolts	No.	3b, 4
3	table feet	g	„ 5 „ „	1	crank shaft	„	4a
1	tilt frame bar	h	„ 20 „ „ (11+11)	1	high posit. spindle	„	4a
				1	driving shaft	„	4b

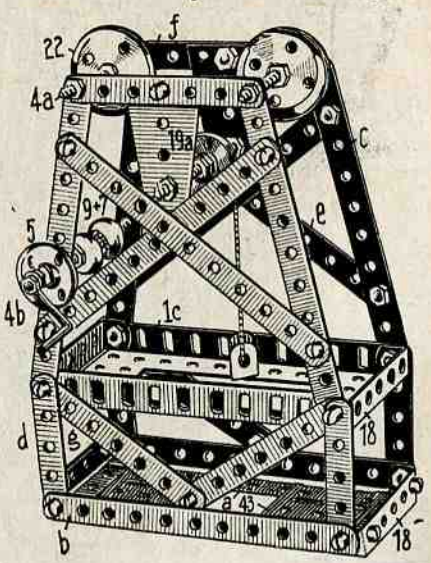
2	tilt shafts	No. 4b
1	position wheel	„ 5a
1	crank	„ 6
1	position ring	„ 7
1	fly wheel hub	„ 8
2	shaft blocks	„ 17
2	„ „	„ 17a
1	fly wheel or driving wheel respectively	No. 21a+35b+21a
1	cog wheel	No. 25c
1	„ „	„ 25d+35a+7
1	crank wheel	„ 35a+7
1	wall filling	„ 43a
55	screws with nuts	
1	angle bracket	

Sketch 339a shows the mechanism of crank shaft 4a.

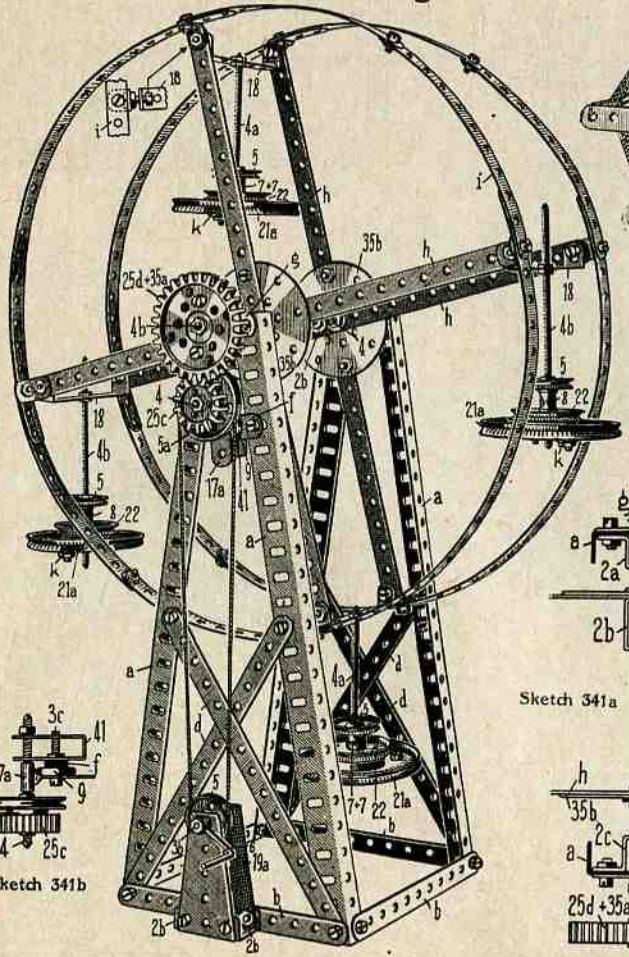
In the side view Sketch 339b the high position spindle 4a goes through the spindle guide 2e+3a+2e. By turning of the position wheel 5a the loosely fastened lever band f to 2e pulls itself upwards. This lever band f is in the middle hole on the tilt shaft 4b placed in a movable position and loosely connected at its end with the last fore hole of the tilt frame rail h.

In consequence of this lever transmission the lowering or bending of the saw can be switched on according to desire and during the proceeding can be gradually lowered.

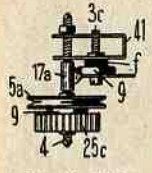
No. 340. Heaver for Suspension Railway



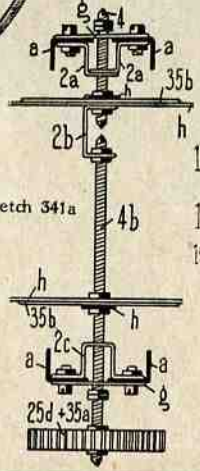
No. 341. Wheel Swing



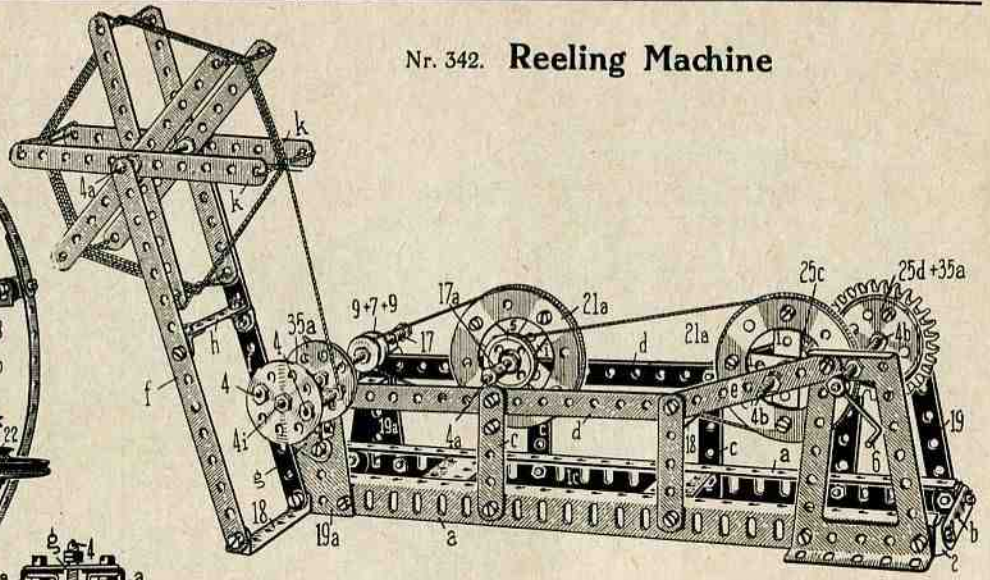
Sketch 341b



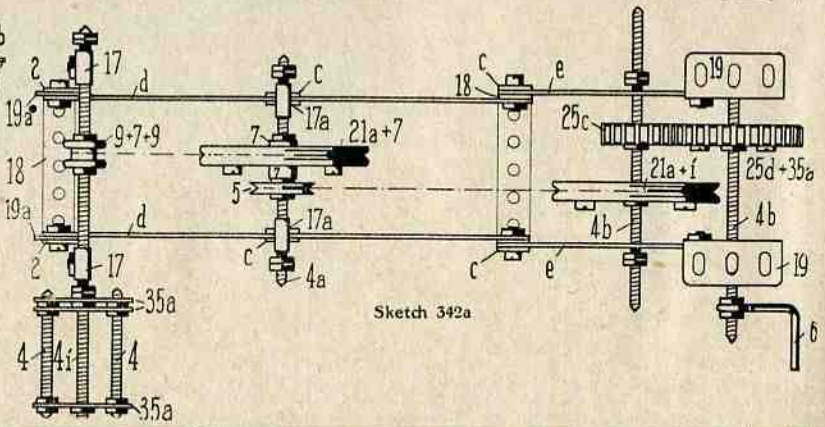
Sketch 341a



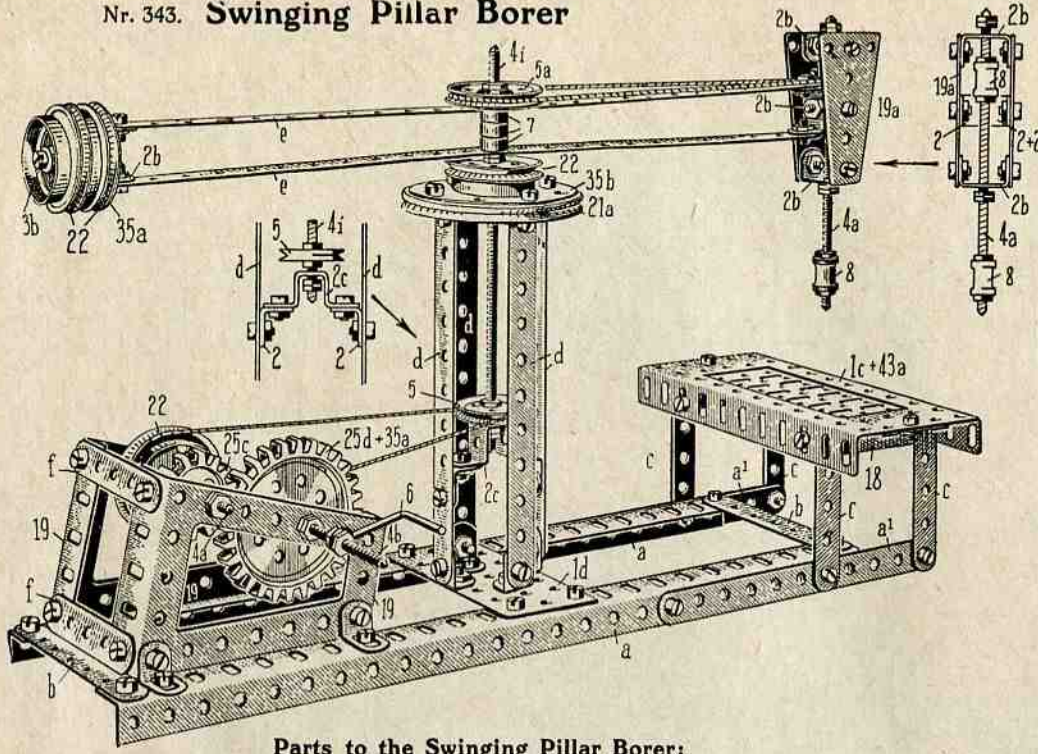
Nr. 342. Reeling Machine



Sketch 342a



Nr. 343. Swinging Pillar Borer



Parts to the Swinging Pillar Borer:

2 long beams	a a. s. 25 h. l.	1 bore table plate	No. 1c+43a	1 crank	No. 6
2 „ „	a¹ „ 11 „ „	1 upright foot plate	„ 1d	3 position rings	„ 7
2 cross beams	b „ 7 „ „	2 bore spindle blocks	„ 2b	1 driving roller	„ 8
4 table feet	c „ 5 „ „	2 span pins	„ 2b	1 bore feeder	„ 8
4 upright sides	d „ 15 „ „	1 shaft block	„ 2c	2 table holdfasts	„ 18
2 swinging arms	e „ 25 „ „	1 bore spindle	„ 4a	1 upright head	No. 21a+35b+22
2 rest fillets	f „ 5 „ „	2 placement shafts	„ 4a, 4b	1 compensation weight	2×No. 22+35a
2 front blocks	No. 19	1 upright shaft	„ 4i	2 cog wheels	No. 25c, 25d+35a
2 spindle block plates	„ 19a	3 driving shafts	„ 5, 5a, 22	60 s. w. n., 15 a. b.	

Parts to the Wheel Swing:

4 corner fillets	a a. s. 25 h. l.	2 driving discs	No. 5, 5a
4 beams	b „ 11 „ „	1 crank	„ 6
4 cross stays	d „ 15 „ „	1 shaft block (to 4)	„ 17a+9
1 block fastener	f „ 2 „ „	4 loose cross pins	„ 18
2 cross frames	g „ 3 „ „	2 rack block places	„ 19a
4 cross spokes	h „ 25 „ „	1 cog wheel	„ 25c
2 wheel circles (2×25+4×11)	i „ 80 „ „	1 „ „	No. 25d+35a
4 gondola spokes	k „ 5 „ „	2 hub slides	No. 35b
2 rack block feet	No. 2b	1 shaft block (to 4)	„ 41
1 shaft block for scoop shaft	„ 2c	2 gondolas consisting of	No. 4b+5+7+7+22+21a
1 same put together out of 2 pieces	„ 2a	2 gondolas consisting of	No. 4a+5+8+22+21a
1 driving shaft	„ 3b	60 s. w. n., 8 a. b.	
1 front shaft	„ 4		
1 scoop shaft	No. 4b+2b+4		

Sketch 341a. Mechanism of the large wheel shaft.

Sketch 341b. Position of the shaft 4 with the cog wheel 25c.

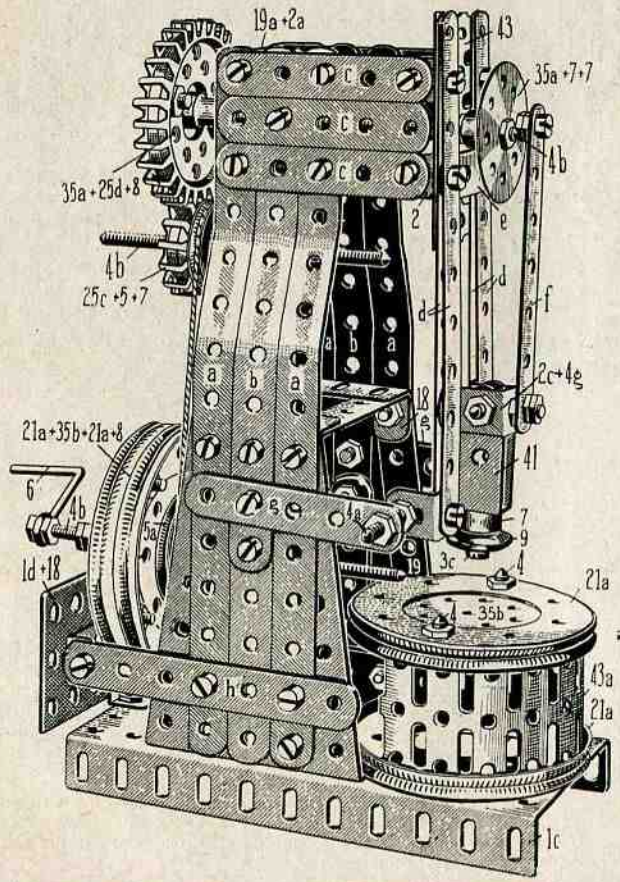
Parts to the Reeling Machine:

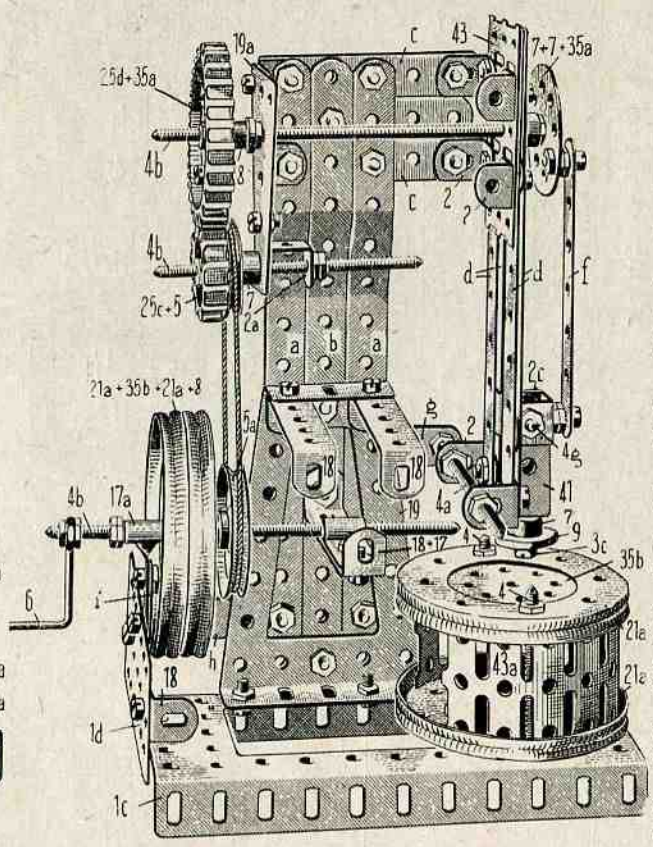
1 floor plate	No. 1c	1 transmission shaft	No. 4a
2 rack block plates	„ 19	2 „ „	„ 4b
2 corner frame plates	„ 19a	1 roller shaft	„ 4i
2 floor beams	a a. s. 25 h. l.	1 string wheel	„ 5
1 front shaft	b „ 5 „ „	1 crank	„ 6
4 rest fillets	c „ 5 „ „	1 position ring	„ 7
2 long frames	d „ 15 „ „	1 string wheel	No. 9+7+9
2 slanting frames	e „ 7 „ „	2 „ „	„ 21a
2 reeling uprights	f „ 15 „ „	4 shaft blocks	„ 17, 17a
1 span band	g „ 3 „ „	2 floor bars	„ 18
1 cross piece	h „ 5 „ „	2 cross frames	„ 18
4 wheel circle spokes	i „ 5 „ „	1 cog wheel	„ 25c
6 reeling spokes	k „ 11 „ „	1 „ „	„ 25d+35a
2 roller pegs	No. 4	3 spool discs	„ 35a
1 reeler shaft	„ 4a	46 screws with nuts	
		8 angle brackets	

Such machines serve the purpose of winding up spun threads from the reeler to the rollers.

Sketch 341a is a geometric view, which shows the construction of all shafts.

No. 344. Stamp Machine





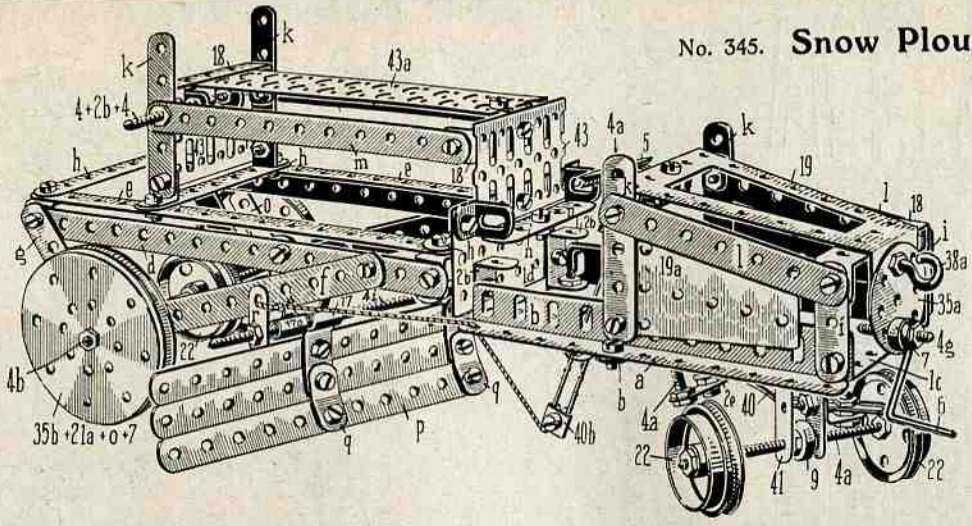
Sketch 344a

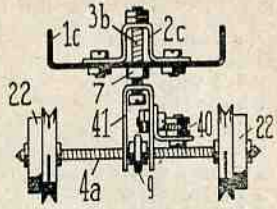
Parts to the Stamp Machine:

1 ground plate		No. 1c
1 back wall		„ 1d+18
1 stamping table		„ 21a+35b +43a+21a
4 rest fillets	a	s. 15 h. l.
2 „ „	b	„ 15 „ „ (7+11)
6 head girdles	c	„ 5 h. l.
4 guide bars	d	„ 11 „ „
1 feeder girder	e	„ 3 „ „
1 die stamp lever	f	„ 7 „ „
2 middle bands	g	„ 5 „ „
2 foot „	h	„ 7 „ „
1 shaft block	i	„ 3 „ „
1 stamp guider		No. 2c+4g
3 position bolts		„ 4, 4, 4a
1 driving shaft with crank		„ 4b+6
2 cog wheel shafts		„ 4b
2 string wheels		„ 5, 5a
1 die stamp		„ 3c+9 +7+41
2 blocks for the driving shaft		„ 17, 17a
3 stiffened bands		„ 18
2 top head girders		„ 19a +2a, 43
1 fly wheel	2×	„ 21a+35b
1 cog wheel		„ 25c
1 „ „		„ 25d+35a
1 crank wheel		„ 35a +7+7
60 screws with nuts		
10 angle brackets		

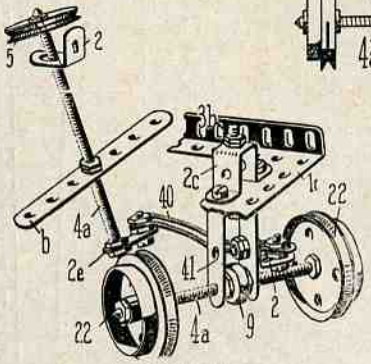
Sketch 344a shows the inside mechanism of the stamp machine from which a side wall has been removed.

No. 345. Snow Plough Motorcar



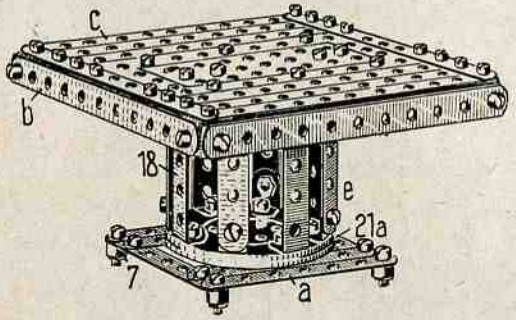


Sketch 345b



Sketch 345a

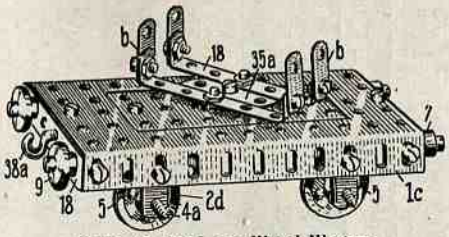
No. 346. Pillar Table



Parts to the Pillar Table:

a = foot plate b = side pieces c = table plate
21a×2+4×18+4×e = table pillar (e = s. 5 h. l.)

No. 347. Long Wood Wagon



Parts to the Long Wood Wagon:

1 long tree	a s. 11 h. l.	2 head beams	
4 uprights	b „ 2 „ „	2 turning treadle blocks	No. 18
1 floor plate	No. 1c+1d	1 turning treadle plate	No. 35a
2 axles	„ 4a	22 screws with nuts	
4 wheels	„ 5		
4 buffers	„ 7, 9		

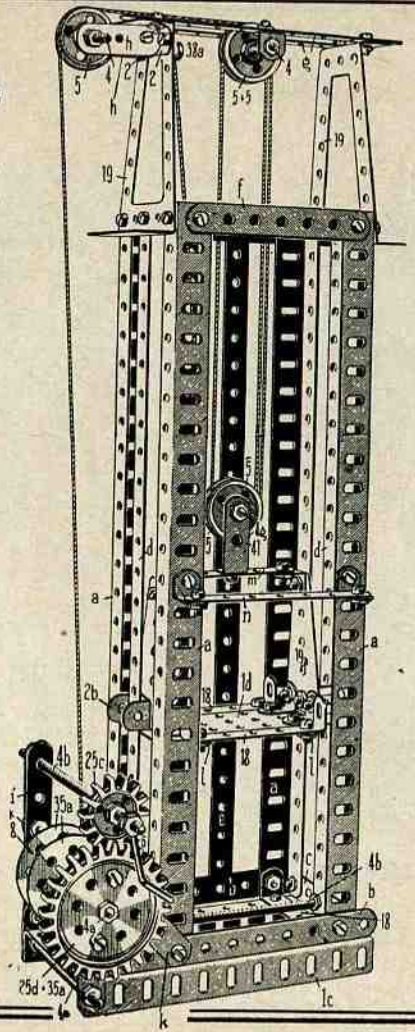
Parts to the Snow Plough:

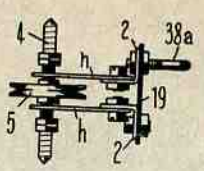
1 front wagon floor	No. 1c	1 fore axle	No. 4a
1 front wall	„ 1d	1 back axle	„ 4b
2 foot boards	a s. 11 h. l.	1 crank worm peg	„ 4g
1 floor cross pin	b „ 7 „ „	1 plough share spindle	„ 4i
2 floor bearers	d „ 15 „ „	1 steering wheel	„ 5
2 „ frames	e „ 15 „ „	1 crank	„ 6+7
2 axle block stays	f „ 11 „ „	2 spindle blocks	„ 17a
2 „ „ „	g „ 5 „ „	4 cross bands	„ 18
3 floor cross pins	h „ 7 „ „	1 hood deck	„ 19
2 uprights	i „ 3 „ „	2 hood walls	„ 19a
4 „	k „ 5 „ „	2 rear wheels	No. 35b+21a+7
2 hood bars	l „ 7 „ „	2 front wheels	No. 22
2 long bars	m „ 11 „ „	1 string wheel	„ 22
1 driver seat	n „ 5 „ „	1 hood front wall	„ 35a+38a
2 hind wheel spokes	o „ 5 „ „	1 steering lever	„ 40+40b
3 snow removers	p „ 11 „ „	1 position lever	„ 40+40b
2 cross pins	q „ 2 „ „ + No. 17	1 axle pole	„ 41
1 lever arm	r „ 2 „ „	2 boiler front walls	„ 43
2 double angles	No. 2b	1 box deck	„ 43a
1 steering rest	„ 2c+3b	60 screws with nuts, 15 angle brack.	
2 span poles	„ 4+2b+4	Sketch 345a Steering apparatus.	
1 steering spindle	„ 4a	Sketch 345b Balance log with front wheels.	

No. 348. Passenger Lift

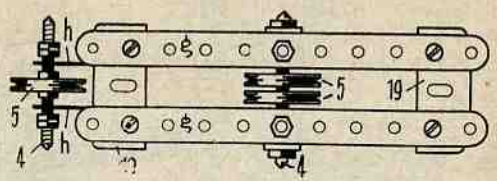
Parts to the Lift:

1	ground plate	No. 1c
1	lift floor	„ 1d+2×18
2	lift walls	„ 19a
2	rest blocks	„ 19
4	side fillets	a a. s. 25 h. l.
2	long rails	b „ 11 „ „
2	cross rails	c „ 5 „ „
2	guide fillets	d „ 25 „ „
2	wall fillets	e „ 25 „ „
2	long frames	f „ 7 „ „
2	roof bearers	g „ 11 „ „
2	projecting bearers	h „ 3 „ „
2	front fillets	i „ 7 „ „
2	front stays	k „ 5 „ „
2	floor pins (under lift floor)	l „ 5 „ „
1	deck pin (on lift)	m „ 5 „ „
1	pedestal bearer	n „ 7 „ „
2	glide blocks	No. 2b
2	roller spindles	„ 4
1	roller spindle	„ 4g
2	span poles	„ 4a, 4b
2	crank shafts	„ 4a, 4b
5	string wheels	„ 5
1	crank	„ 6
1	position ring	„ 7
1	holdfast disc	„ 9
2	frames	„ 18
1	cog wheel	„ 25c
1	„ „	„ 25d+35a
1	rope roller	„ 35a+8+35a
1	screw hook	„ 38a
1	roller pulley	„ 41
60	screws with nuts	
10	angle brackets	

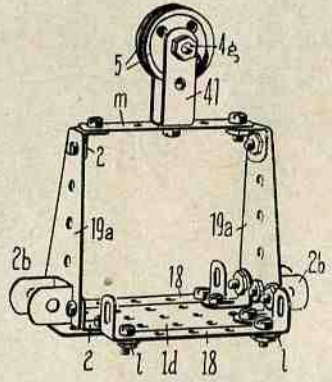




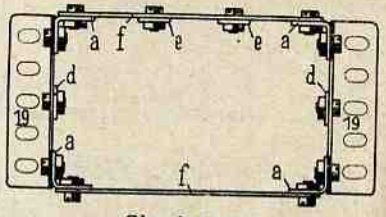
Sketch 348a



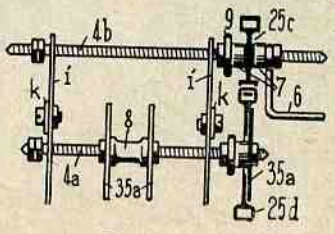
Sketch 348b



Sketch 348c



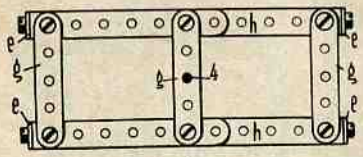
Sketch 348d



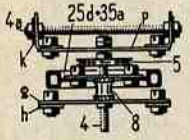
Sketch 348e

No. 348a Ground section of the projecting part
No. 348b View of the upper construction
No. 348c Perspective view of the lift basket
No. 348d Ground section of upper frame f
No. 348e Vertical section through the cog wheels of front.

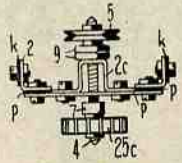
No. 349. Overhead Running Building Car



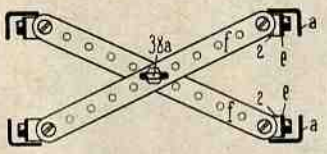
Sketch 349a



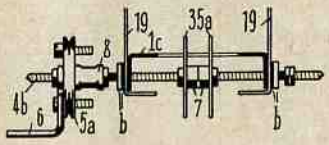
Sketch 349b



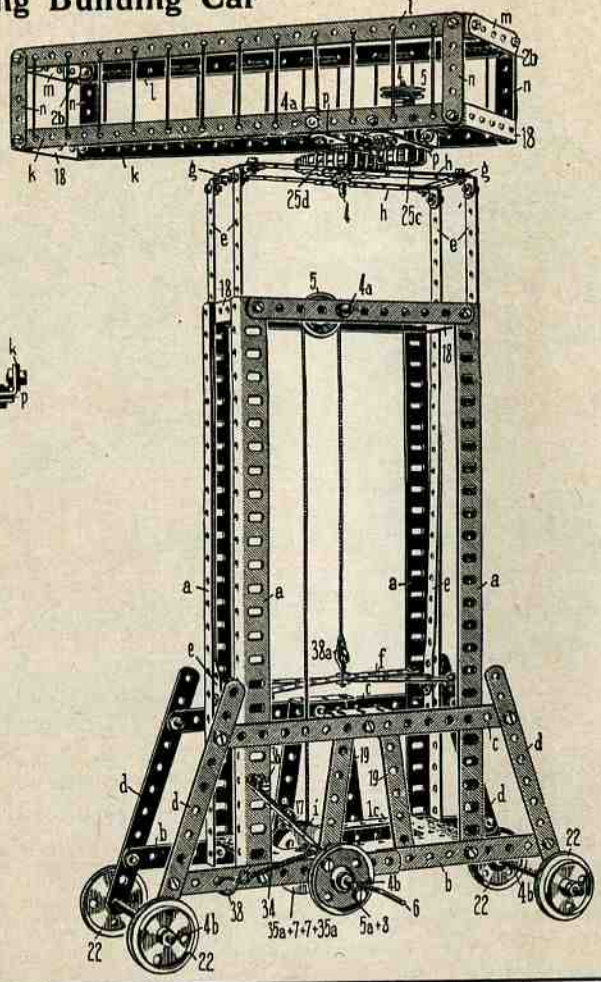
Sketch 349c



Sketch 349d



Sketch 349e



Parts to the overhead Running Building Car:

1 floor plate	No. 1c		1 crank shaft	„ 4b	
2 frame stays	„ 19		2 running wheel axles	„ 4b	
4 corner fillets	a	a. s. 25 h. l.	1 transmission shaft	„ 4a	
2 rails	b	s. 19 „ „ (11+11)	1 turning wheel	„ 5	
2 frames	c	s. 15 h. l.	1 string roller	„ 5	
4 uprights	d	„ 11 „ „	1 crank wheel	No. 5a+6	
4 glide bars	e	„ 25 „ „	3 position rings	No. 7	
2 cross fillets	f	„ 11 „ „	2 wheel hubs	„ 8	
3 frames	g	„ 5 „ „	2 holdfast discs	„ 9	
2 deck pins	h	„ 11 „ „ (7+7)	1 spear lever block	„ 17	
1 spear lever	i	„ 5 h. l.	2 cross bars	„ 18	
2 projecting bars	k	„ 25 „ „	2 glide rails guiding frames	„ 18	
2 „ frames	l	„ 25 „ „	4 running wheels	„ 22	
2 „ cross frames	m	„ 5 „ „	2 cog wheels	No. 25c, 25d+35a	
4 fillets	n	„ 5 „ „	1 spiral spring	No. 34	
2 axle blocks	p	„ 5 „ „	1 rope drum	No. 35a+7+7+35a	
1 crank block	No. 2c		1 spear spring anchor	No. 38	
1 brake lever spindle	„ 3b		1 screw hook	„ 38a	
2 projecting spindles	No. 4				

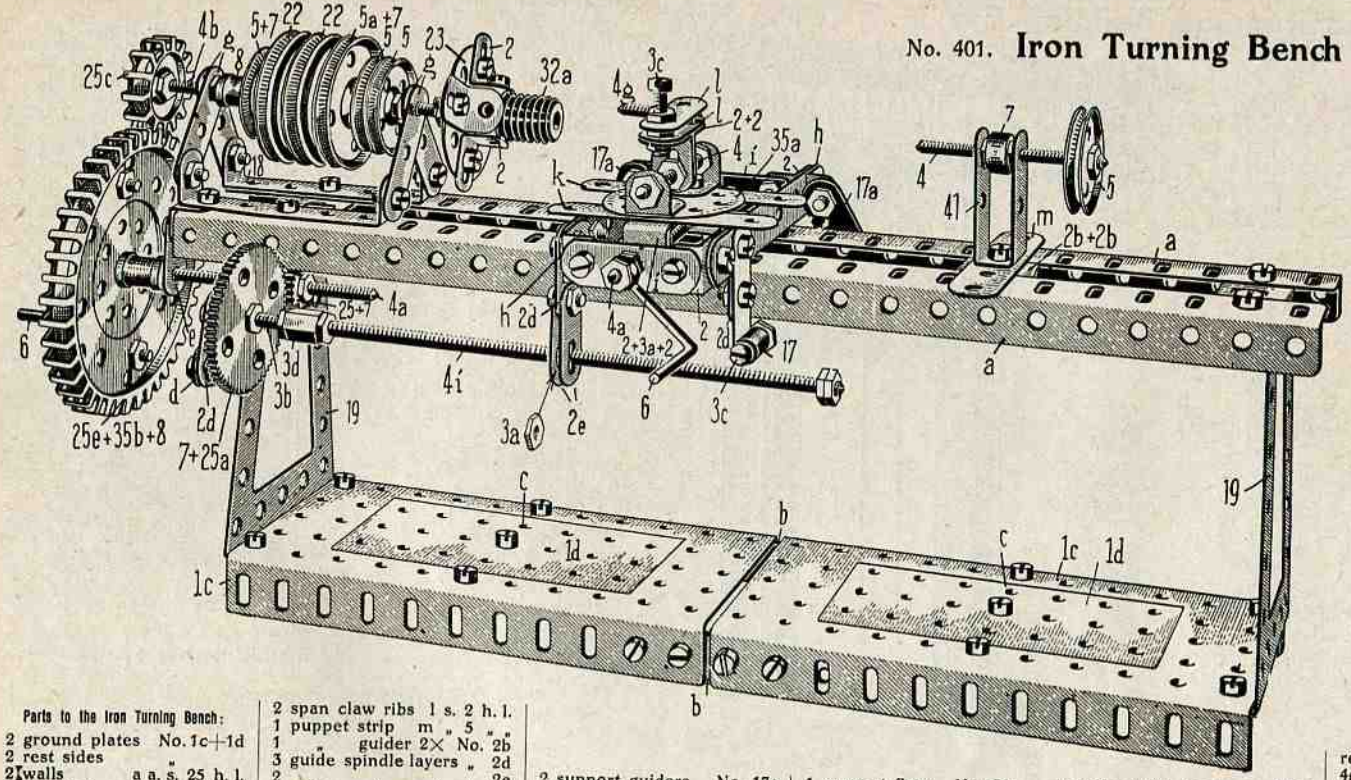
Sketch 349a. Ground section of the top part of the deck rails h.

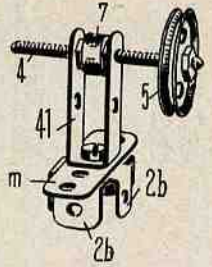
Sketch 349b. Vertical section through which the cog wheel 25d is tightly screwed on to the middle frame g.

Sketch 349c. Vertical section through the cog wheel 25c, which is tightly screwed on to the axle 4. By the turning of the swing wheels 5 cog wheel 25c claps the cog wheel 25d and by that means the platform swings.

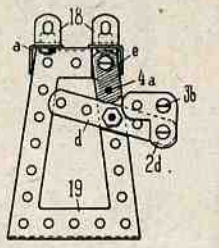
Sketch 349d. Ground section of the cross bars to the end of which are screwed the 4 glide rails e, which lean loosely against the angle strip a and, glide then, as the upper part raises and sinks. The lifting is done through the crank shaft 4b (Sketch 349e) to the crank of which wheel two screws are placed of 15 millimeters length. Against these 2 screws the loose outlying spear lever i pushes, which hinders an undesirable rear-motion and there fore a sinking if the upper parts.

No. 401. Iron Turning Bench





Sketch 401a



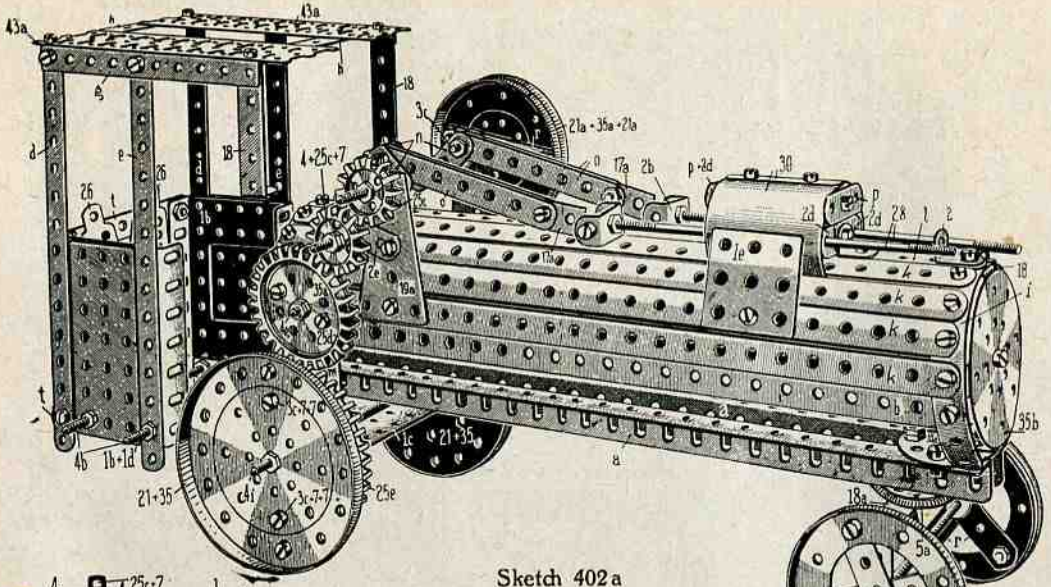
Sketch 401b shows the position of the guide spindles No. 3b+4i.

Parts to the Iron Turning Bench:

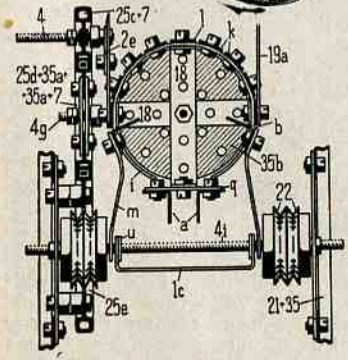
2	ground plates	No.	1c+1d
2	rest sides	„	
2	walls	a a. s.	25 h. l.
2	spindle box blocks	No.	18
2	lappet bands	b s.	5 h. l.
2	cross pins	c „	5 „ „ (to 1c, 1d)
1	layer support	d s.	5 h. l.
1	hanging strip	e „	2 „ „
1	turning spindle		
4	blocks	g „	3 „ „
2	support frames	h „	7 „ „
2	„ „	i „	3 „ „
2	glide rails	k „	5 „ „
2	span claw ribs	l s.	2 h. l.
1	puppet strip	m „	5 „ „
1	„ guider	2× No.	2b
3	guide spindle layers	„	2d
2	„ „ „	„	2e
1	puppet spindle	„	4
1	support work spindle	„	4
1	driving cog wheel shaft	„	4a
1	support spindle	„	4a
1	graduated shaft	„	4b
1	turning rod	„	4g
1	guide spindle	No.	3b+4i
1	spindle coupling	No.	3d
2	cranks	„	6
1	support guider	„	17
2	support guiders	No.	17a
1	position wheel (puppet)	„	5
3	string wheels	No.	5
1	„ „	as graduated discs „	5a
5	position rings	„	7
1	string roller	„	8
2	flange wheels	„	22
2	cog wheels	No.	25, 25a
1	„ „	„	25c
1	„ „	„	25e
1	„ „ hub	„	8+35b
1	support floor	No.	35a
1	bore feeder	„	23+32a
1	puppet block	„	41
52	screws with nuts		
17	angle brackets		

Sketch 401a shows the puppet block with the two double angles 2b, which are not recognisable in the illustration shown. The lower double angle lies crosswise under both cheeks a, which are between them above. Both these double angles with m produce together the gliding position of the puppets so that these cause a discontinuance of any removal from the bore feeder 32a.

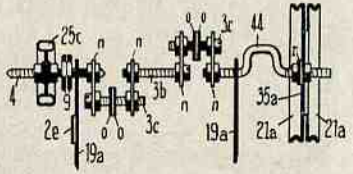
Between bore feeder 32a and puppet spindle 4 is stretched the revolving metal piece and moves in quick revolution. The turning steel 4g of the support is then carefully brought near to the metal piece and which removes any uneven obstacles. As the support box is guided in one of the guide spindles 4i, the whole support screws itself automatically sideways slowly. This brings about, by this means, of the turning steel an equal revolving of the whole working part once of the enlistet storage parts.

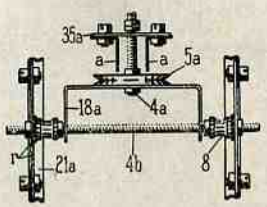


Sketch 402a



Sketch 402b





Sketch 402c

No. 402. Traction Engine

Parts to the Traction Engine:

1	floor plate	No. 1c
2	wall plates	„ 1b+1d
2	„ „	„ 26
2	roof plates	„ 43a
2	cylinder plates	„ 1e
2	rack blocks	„ 19a
2	floor bearers a	a. s. 25 h. l.
2	boiler „ b	„ „ 25 „ „
2	frames g	„ „ 10 „ „
2	corner fillets d	„ 15 „ „
2	wall „ e	„ 15 „ „
2	frames h	„ 7 „ „
8	boiler girders k	„ 25 „ „
2	„ hoops i	„ 15 „ „
1	„ girders l	„ 25 „ „ (15+15)
4	„ stays m	„ 5 h. l.
4	crank arms n	„ 2 „ „
2	connecting poles o	„ 7+7 „ „
2	cylinder covers p	„ 3 „ „
4	„ „	No. 2d
1	lappet (on a) q	s. 3 h. l.
5	wheel spokes r	„ 5 „ „
2	joist bands t	„ 7 „ „
2	axle blocks u	„ 5 „ „
2	cross links	No. 2b +3+17a
1	cog wheel block	No. 2e
1	spindle	„ 4a
1	crank shaft	„ 4+3c +3b+3c+44
2	cog wheel shafts	No. 4, 4g
2	wheel axles	„ 4b, 4i
2	span poles	„ 4b
1	turning disc	„ 5a
4	boiler bands	„ 18
2	corner fillets	„ 18
1	axle pole	No. 18a
2	rear wheels	„ 21+35
2	front „	„ 21a
1	fly wheel	„ 21a +35a+21a
2	cog wheels	No. 25c
1	„ „	„ 35a +25d+35a+7
1	„ „	No. 25e
2	piston rods	„ 28
2	cylinder walls	„ 30
1	rack plate	„ 35a
2	boiler walls	„ 35b

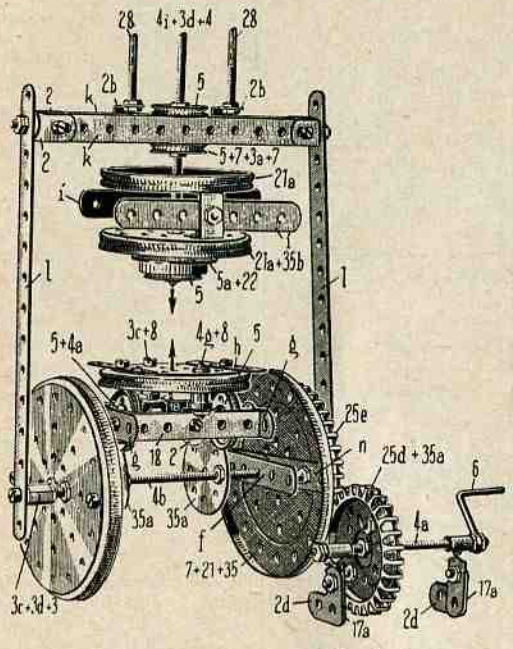
Sketch 402a. Section through the outstanding fly wheel shaft, which brings both the connecting spindles to the revolution. The two crank arm pairs n form an angle of 90 degrees in opposition.

Sketch 402b is a section of the traction engine. The sketch shows the building of the rear axle, the cog wheels and the fixing of the rear boiler wall by means of the two boiler bands No. 18. In the same way the fore boiler wall is also fixed.

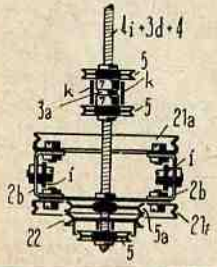
Sketch 402c shows the position and fixing of the front axle.

For the chimney one can screw tightly a paper mash or cotton reel to the angle No. 2 before the cabin.

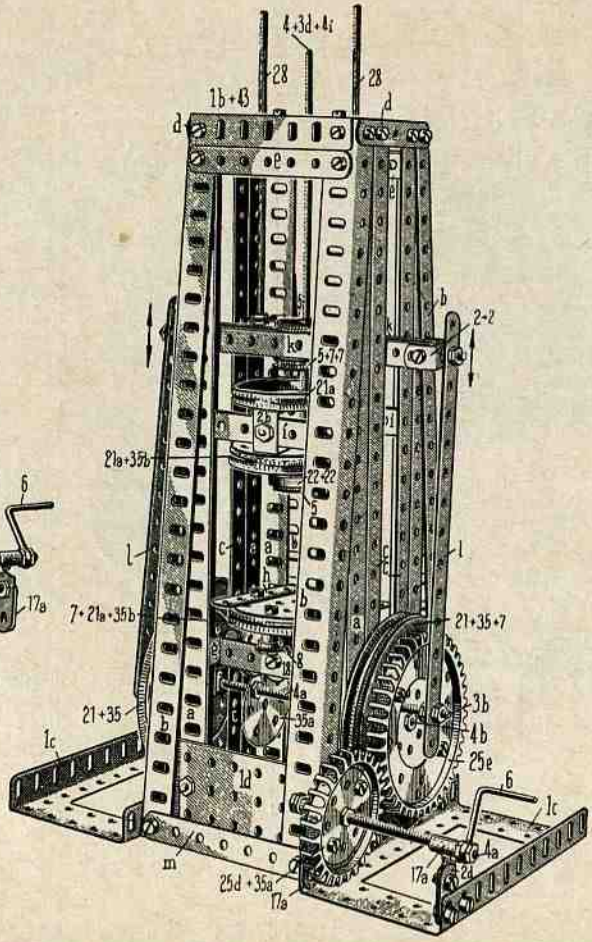
No. 403. Hauling Press



Sketch 403a



Sketch 403b

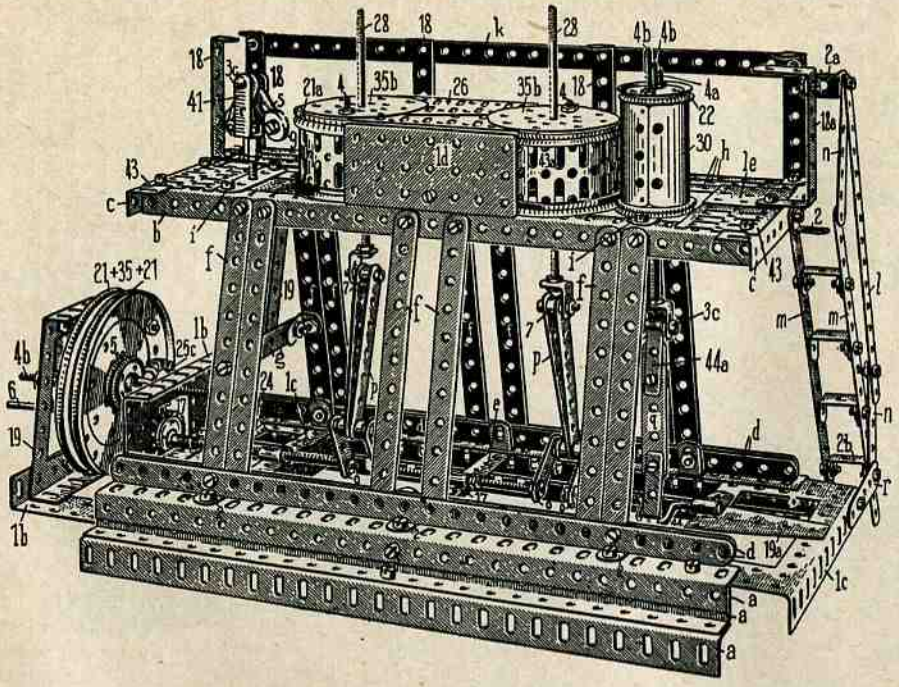


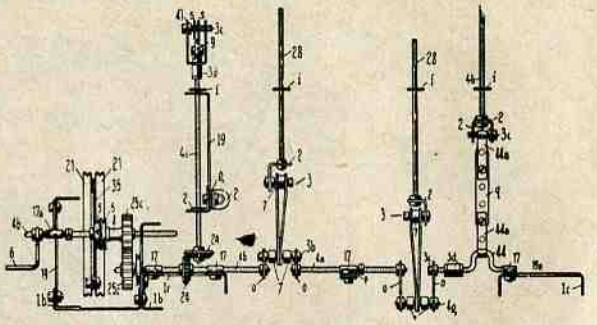
Parts to the Hauling Press:

2	ground plates	No	1c
2	foot plates	„	1d
1	deck plate	„	1b+43
4	frame fillets	a a. s.	25 h. l.
4	support „	b „ „	25 „ „
4	guide „	c „	25 „ „
2	cross frames	d „	5 „ „
2	head „	e „	7 „ „
2	rack bands	f „	5 „ „
4	lash bands	g, h „	5 „ „
2	„ „	i „	7 „ „
2	„ „	k „	11 „ „
2	crank arms	l „	15 „ „
2	joists	m „	7 „ „
2	coupling pins		No. 2b
2	rack stays		„ 2d
1	crank pivot		„ 3b
1	„ „		„ 3c +3d+3
1	driving shaft		No. 4a
1	fly wheel shaft		„ 4b
1	under press table spindle		No. 4a
1	upper press table spindle		No. 4i+3d+4
2	hold fast cheeks		No. 5+7
1	crank		„ 6
2	fly wheel hubs		„ 7
2	flat blocks		„ 17a
2	press table cross pins		„ 18
2	fly wheels		„ 21+25
1	under press table		„ 21a +35b+2×8+3c+4g
1	upper press table		2× No. 21a+35b
1	press shape		„ 5a+22+5
2	guide spindles		„ 28
1	cog wheel		„ 25d+35a
1	„ „		„ 25e
2	crank wheels		„ 35a
78	screws with nuts, 12 a. b.		

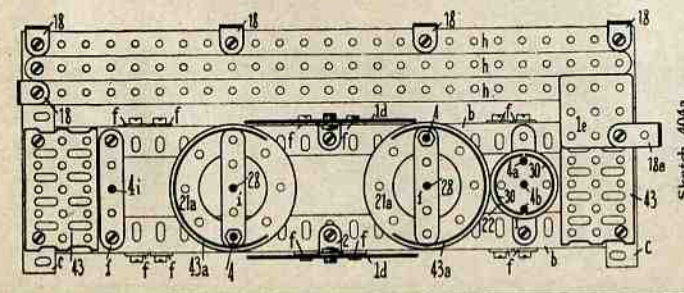
Sketch 403a shows both the round press tables represented in perspective. By every revolution of the fly wheel shaft 4b the under press table is pressed upward in consequence of the eccentric screwing of both the crank wheels, while at the same time the upper press table is, accordingly pulled under, because the under ends of both crank arms 1 are screwed on the movable eccentric fly wheels and not on the fly wheel shaft 4b (that is above the middle points). Both press tables press against each other in the direction of the arrow and lift themselves off back again from each other according to a half revolution of the fly wheels.

No. 404. Diesel Motor





Sketch 404b



Sketch 404a

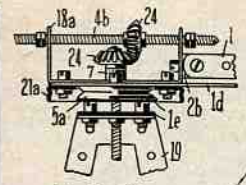
Parts to the Diesel Motor:

1	ground plate		No. 1b
1	rack plate		„ 1b
2	floor plates		„ 1c
1	floor plate		„ 1e
2	cylinder wall plates		„ 1d
2	rack rests		„ 19
1	floor plate		„ 19a
6	long joists	a	a. s. 25 h. l.
2	long bearers	b	„ 25 „ „
2	cross bearers	c	„ 10 „ „
4	double joists	d	s 25 h. l.
1	rack bearer	e	„ 11 „ „ (7+7)
12	corner and wall fillets	f	s. 11 h. l
1	cross bearer	g	„ 7 „ „
3	floor planks	h	„ 25 „ „
4	cross bands	i	„ 5 „ „
1	rail beam	k	„ 25 „ „
1	„ „	l	„ 15 „ „
2	step sides	m	„ 15 „ „
2	rail posts	n	„ 5, 6, „
4	crank arms	o	„ 3 „ „
4	connecting poles	p	„ 7 „ „
1	„ pole	q	„ 5 „ „
1	span band	r	„ 5 „ „
2	regulator arms	s	„ 3 „ „
1	step pin		No. 2a
4	step rungs		„ 2b
1	crank spindle		„ 3b
1	„ „		„ 4g
2	cylinder bolts		„ 4
1	crank shaft		No. 4b+4a+3c +3d+44
1	fly wheel shaft		Nr. 4b
1	position shaft		„ 4i
2	cylinder spindles		„ 4a, 4b
1	piston rod		„ 4b
2	piston rods		No. 28
1	crank		„ 6
1	fly wheel hub	2	„ 5+8
2	regulator weights		„ 9
4	flat layers		„ 17
1	flat layer		„ 17a
5	rail posts		„ 18
1	rail post		„ 18a
1	fly wheel	2	„ 21+35
2	cylinder covers		„ 21a+35b
2	„ floors		„ 21a
2	„ covers		„ 22
2	cone wheels		„ 24
2	cog wheels		„ 25c
2	cylinder decks		„ 26
2	cylinder walls		„ 30
2	floor plates		„ 43
2	cylinder walls		„ 43a
1	regulator upright		„ 41
2	connecting pole blocks		No. 44a

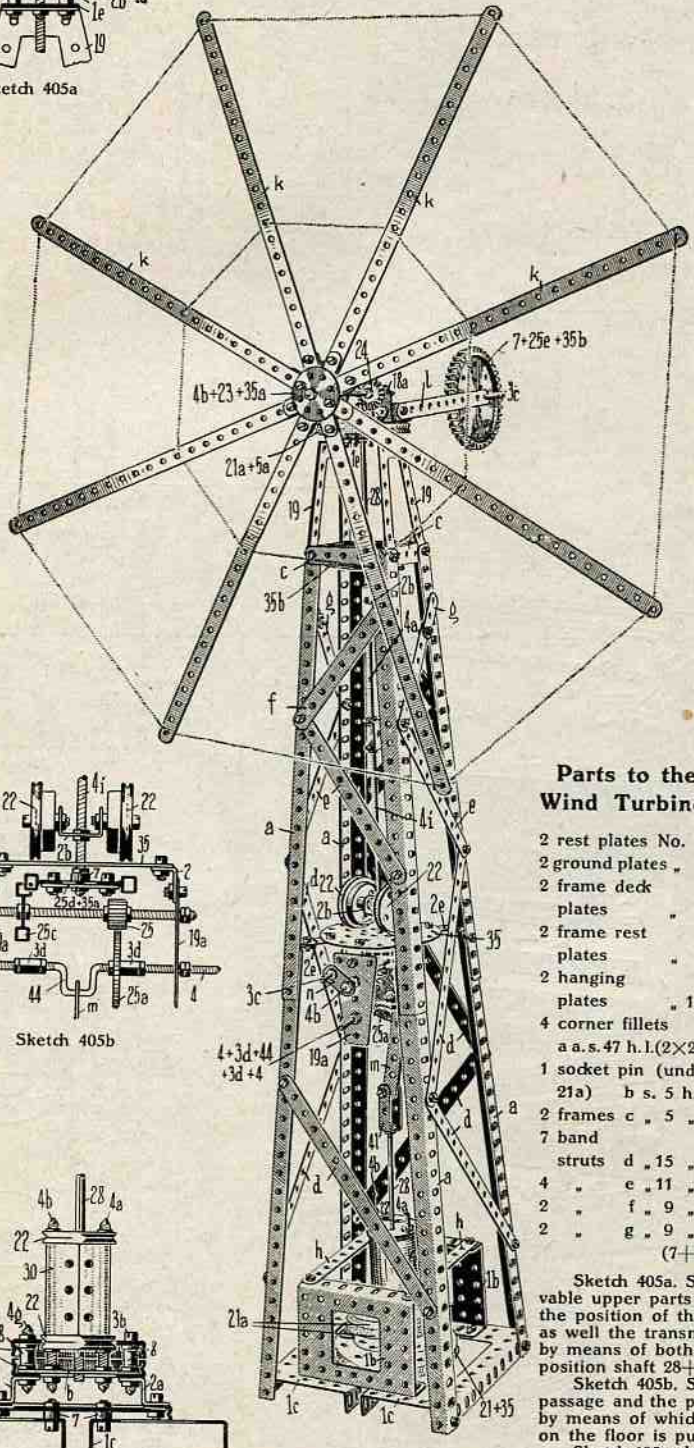
Sketch 404a Ground section of cylinders.

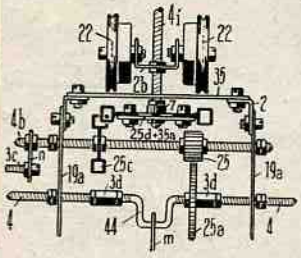
Sketch 404b Construction of the projecting shafts.

No. 405. Wind Turbine

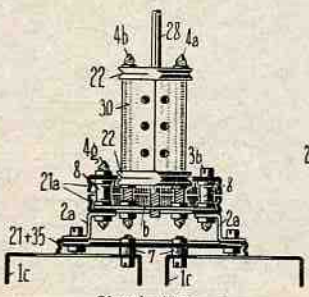


Sketch 405a





Sketch 405b



Sketch 405c

Parts to the Wind Turbine:

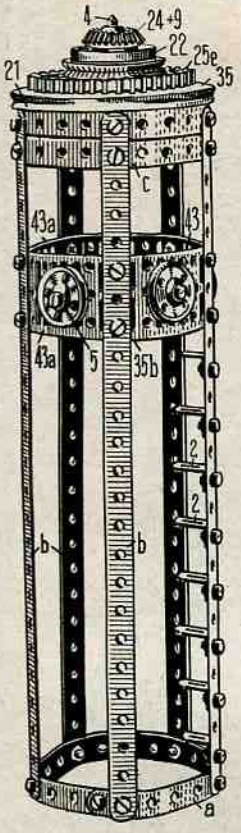
2	rest plates	No.	1b
2	ground plates	„	1c
2	frame deck plates	„	1e
2	frame rest plates	„	19
2	hanging plates	„	19a
4	corner fillets	a a. s. 47 h. l. (2×25)	
1	socket pin (under 21a)	b s. 5 h. l.	
2	frames	c „ 5 „ „	
7	band struts	d „ 15 „ „	
4	„	e „ 11 „ „	
2	„	f „ 9 „ „	
2	„	g „ 9 „ „ (7+3)	
2	rest cross bands	h s. 9 h. l.	
8	wind wheel spokes	k „ 25 „ „	
2	projecting bearers	l „ 11 „ „	
1	lever arm	m „ 6 „ „	
1	crank arm	n „ 2 „ „	
2	socket feet	No. 2a	
1	projecting cross pin	„ 2b	
2	shaft couplings	No. 2b	
1	mill stone block	No. 2b	
2	lappet bands	„ 2e	
2	socket screws	No. 3b a. 4g	
1	position wheel shaft	No. 3c	
1	crank	„ 3c	
2	mill stone shafts	„ 3c	
1	crank shaft	„ 4+3d+44+3d+4	
2	cylinder spindles	No. 4a a. 4b	
1	cog wheel shaft	No. 4b	
1	wind wheel shaft	No. 4b	
1	position shaft	No. 4i+4a+28	
1	position wheel hub	2× No. 7	
4	position rings	„ 7	
2	„ „ „	„ 8	
1	mill shaft block	No. 18a	
1	cylinder socket	No. 21+35+2×21a	
1	turning disc (above)	No. 21a+5a	
2	cylinder covers	No. 22	
2	mill stones	„ 22	
1	wind wheel hub	No. 23+35a	
2	cone wheels	No. 24	
4	cog wheels	„ 25, 25a, 25c, (25d+35a)	
1	wind position wheel	No. 25e+35b	
1	piston rod	No. 28	
1	cylinder wall	2× „ 30	
1	collar space	„ 35	
1	frame deck plate	„ 35b	
1	fork band	„ 41	
80	screws with nuts		
4	angle brackets		

Sketch 405a. Section through the movable upper parts of the frame. It shows the position of the great wheel shaft 4b as well the transmission of its revolving by means of both cone wheels 24 on the position shaft 28+4a+4i.

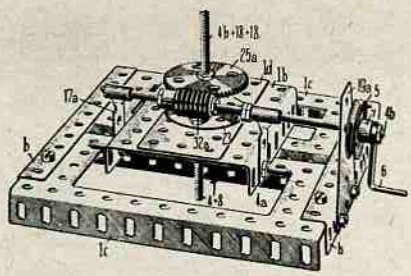
Sketch 405b. Section through the mill passage and the projection shaft 4+44+4 by means of which help, the pump work on the floor is put in action.

Sketch 405c shows this pump work in section.

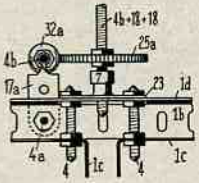
No. 406. Traffic Tower



Sketch 407a



Sketch 407b



Sketch 407c

Parts to the Traffic Tower:

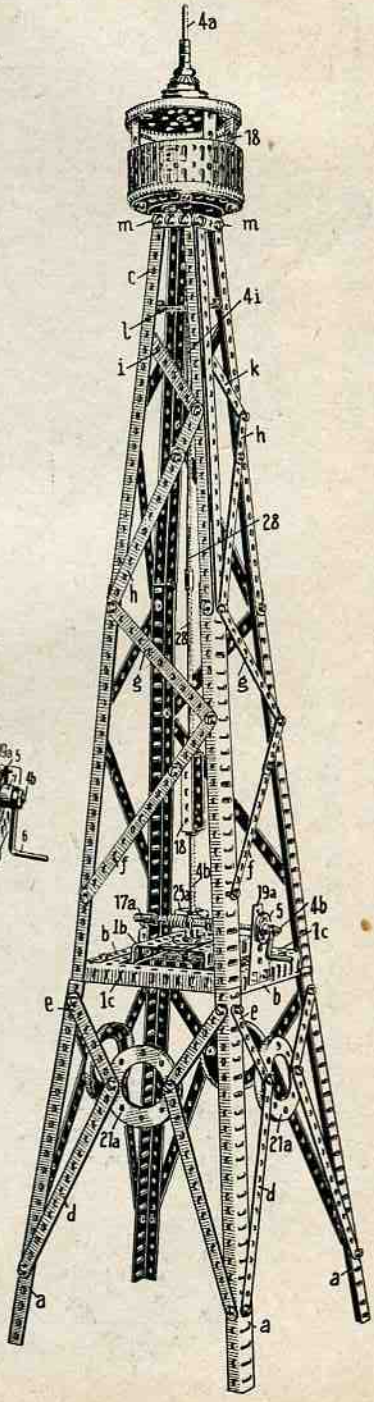
1 joist (20 h. l.)	s. 25 h. l.
5 corner fillets	„ 25 „ „
2 frames (5×5)	„ 20 „ „
5 traffic indicators	No. 5
1 roof	No. 21+35 +25e+22+9+24+4
1 between floor	No 35b
1 rail	„ 43+2×43a
46 s. w. n., 11 a. b.	

Parts to the Light House:

4 corner fillets a	a. s. 49 h. l.
2 bearers b	„ „ 10 „ „
8 corner fillets c	„ 25 „ „
32 suppert bands d e f g h i k	s. 15 7 15 11 14 7 6 „ „
1 shaft block l	s. 5 h. l.
4 frames m	„ 3 „ „
2 position bolts	No. 4
1 tower spike	„ 4a
1 position spindle	„ 4a
1 driving shaft	„ 4b
1 position shaft	No. 4b+18+ 18+28+3d+28+3d+4i
1 driving disc	No. 5
1 crank	„ 6
2 position rings	„ 7
1 hood roof	No. 3×7+9+24+9 +22+35a+25d+35b+35a +35a+5a+25e+35+21
1 cog wheel	No. 9
2 shaft blocks	„ 17a
4 lantern fillets	„ 18
1 rest block	„ 19a
4 wheel bands	„ 21a
1 lantern floor	„ 21+35+7
1 rest disc	„ 23
1 cog wheel	„ 25a
1 screw	„ 32a
1 deck plate	„ 35b
1 gallery rail 2	„ 43a
80 s. w. n., 6 a. b.	

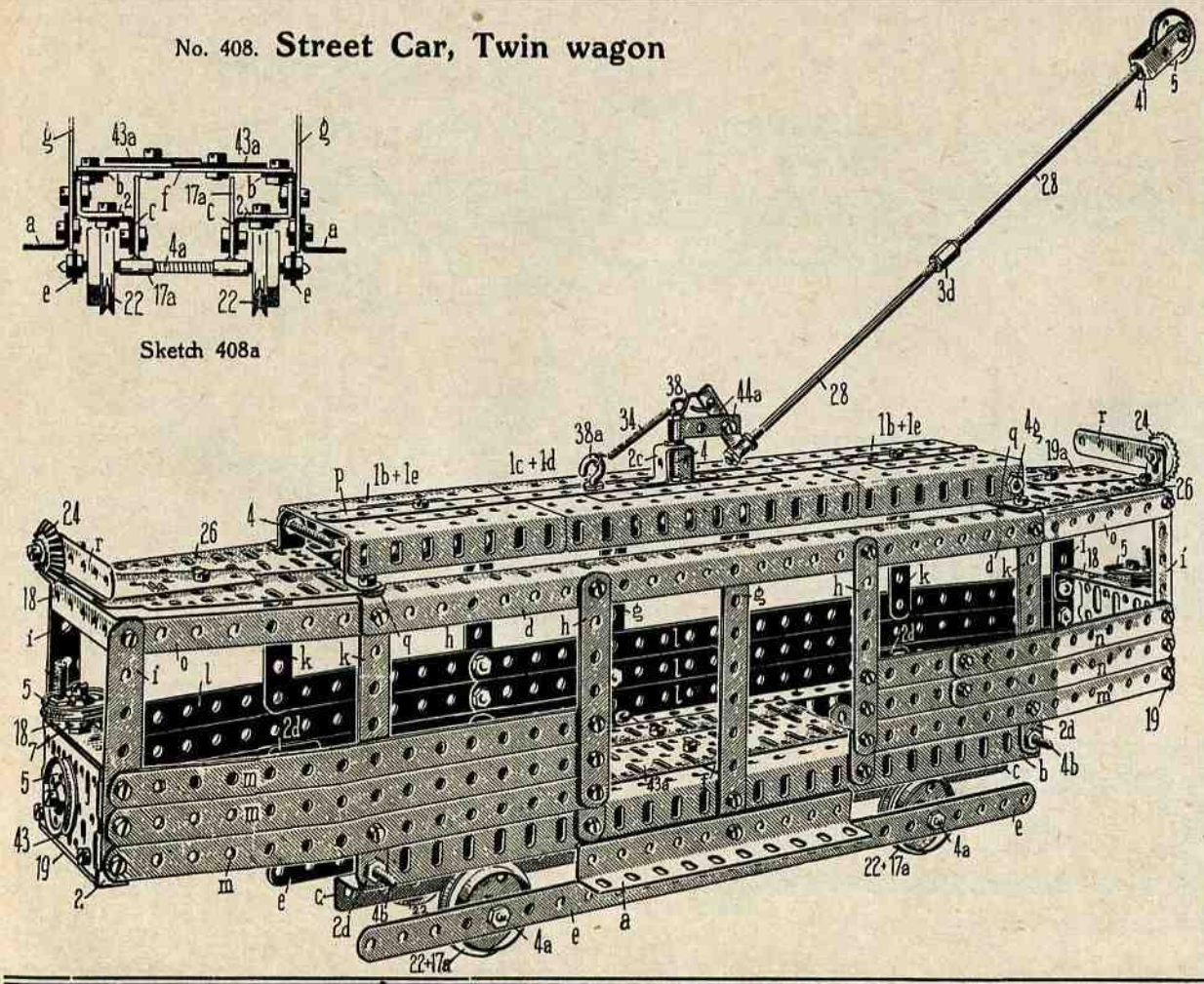
Sketch 407a. Head of the light tower.
„ 407b. Construction of the between floor.
„ 407c. Section through between floor.

No. 407. Light House



No. 408. Street Car, Twin wagon

Sketch 408a



Parts to the Tram Car:

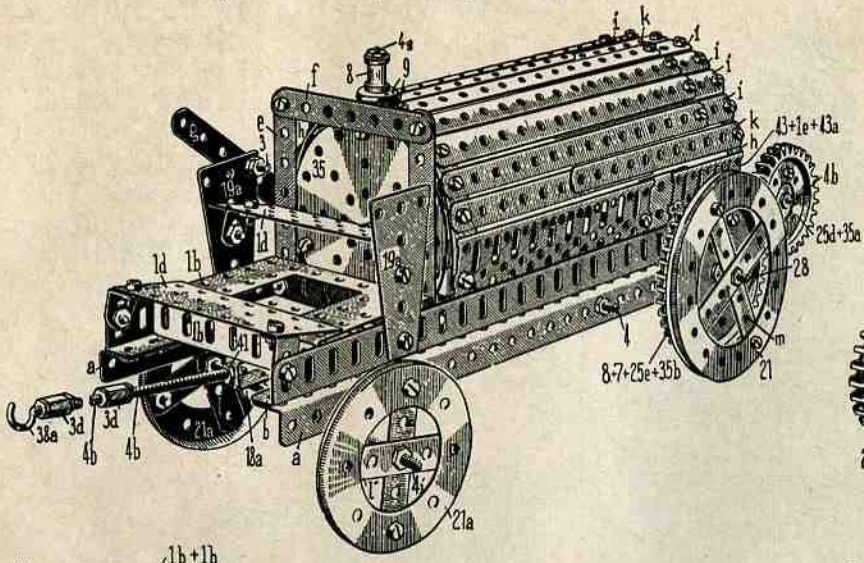
2	roof plates	No.	1b+1e
1	" "	"	1c+1d
4	" "	"	26
2	" "	"	19a
2	floor plates	"	19
2	" "	"	43a
2	step boards	a a. s.	10 h. l.
2	floor bearers	b " "	25 " "
2	axle block bearers (inside)	c a. s.	25 h. l.
2	long frames	d " "	25 " "
2	axle block bearers (outside)	e s.	25 " "
1	floor cross bearer	f "	7 " " (5+5)
2	uprights	g "	9 h. l.
4	" (7+2)	h "	8 " "
4	corner uprights	i "	7 " "
4	window bars	k "	5 " "
3	wall (25+15)	l "	39 " "
4	covering (25+15)	m "	15 " "
2	bars (11+5)	n "	15 " "
4	long frames	o "	11 " "
2	deck bearers	p "	25 " "
2	roof cross ribs	q "	7 " "
2	direction shields	r "	5 " "
2	head frames	No.	18
2	breast pins	"	18
1	spindle block	"	2c
4	lappet bands	"	2d
1	roof spindle	"	4
2	axles	"	4a
2	span poles	"	4b
1	current receiver roller	"	5
2	crank wheels	"	5+7
2	lanterns	"	5
4	axle blocks	"	17a
4	flange wheels	"	22
2	position lights	"	24
1	contact pole	No.	28+3d+28
1	spiral span spring	No.	34
1	S hook	"	38
1	screw hook	"	38a
1	piston fork	"	41
2	front walls	"	43
1	contact pole block 2×	"	44a

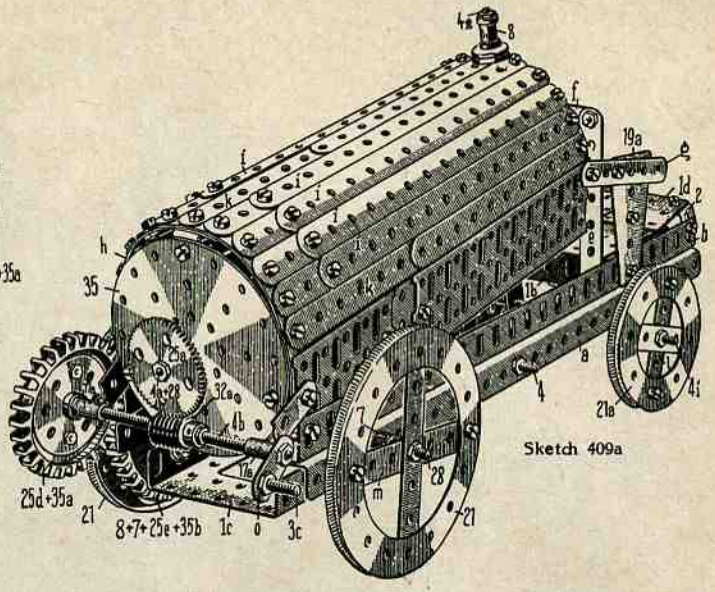
This wagon is a tram car of the Leipzig Tram Car Co. and built for them.

The manner of construction is so clearly represented that a description is not necessary.

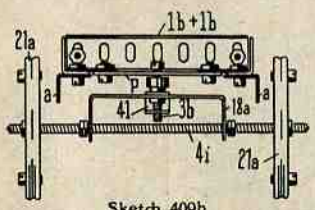
The Sketch 408a shows a middle cross section through the wagon floor in order to show the position of the various parts not visible in the illustration as well as the placement of the axles.

No. 409. Asphalt Preparing Wagon



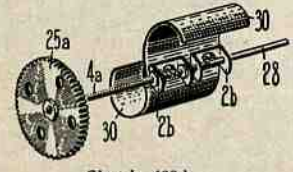


Sketch 409a



Sketch 409b

Sketch 409c



Sketch 409d

Parts to the Asphalt Preparing Wagon:

2	front wagon floor parts	No.	1b
1	back „ „ „	„	1c
1	foot-, 1 seat plate	„	1d
2	seat supports	„	19a
2	boiler girdles	No.	1e+43+43a
2	long bearers	a	a. s. 25 h. l.
2	floor „	b	„ „ 25 „ „
2	back uprights	e	„ 7 „ „
1	cross fillet	f	„ 7 „ „
1	tilt lever	g	„ 6 „ „
2	boiler round pins	h	„ 15 „ „ (9+7)
8	boiler girdles	i	„ 17 h. l. (15+5)
3	„ „	k	„ 17 „ „ (11+11)
4	wheel spokes	l	„ 5 „ „
4	„ „	m	„ 7 „ „
1	crank arm	o	„ 2 „ „
1	floor bearer	p	„ 5 „ „
2	shaft couplings	No.	2b
1	axle pole nail	„	3b
1	chimney spindle	„	4g
2	span spindles	„	4
1	cog wheel shaft	„	4b
1	front axle	„	4i
1	back axle	„	28
1	shaft for stirring	No.	4a+28
1	shaft No. 2× (4b+3d)+38a+41		
1	chimney	No.	9+9+8
2	shaft blocks	No.	17a
1	axle pole	„	18a
2	back wheels	„	21
2	front wheels	„	21a
1	cog wheel	„	25a
1	„ „	No.	25d+35a
1	„ „	„	25e+35b
1	worm	No.	32a
2	string shovels	„	30
2	boiler walls	„	35

The boiler round pins h are not visible on the illustrated bent bands, on which the boiler wall girdles are fixed at both ends.

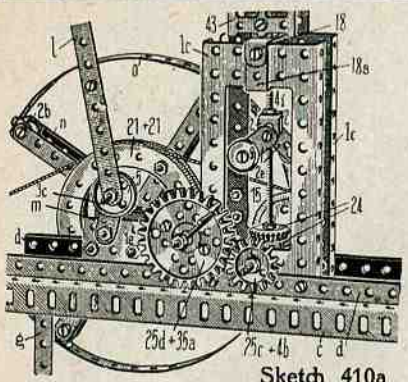
Sketch 409a shows how the boiler is raised in front.

Sketch 409b. Balance pole with lock fore wheels seen from the front

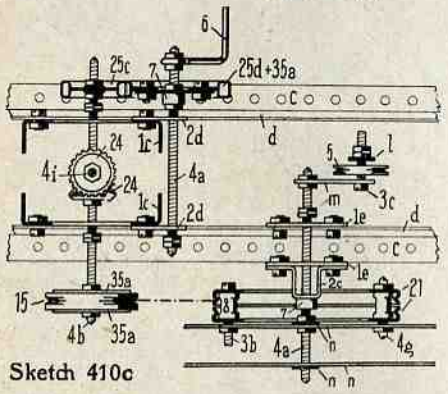
Sketch 409c is a cross section through the wagon floor 1c and shows its connection with both the long bearers a and is on the left side of the sketch 409c the fixing in the middle, and on the right side the fixing is shown on the end of the wagon.

Sketch 409d represents the stirring shaft, which is found inside of the boiler. It receives its driving from the worm 32a on cog wheel shaft 4b.

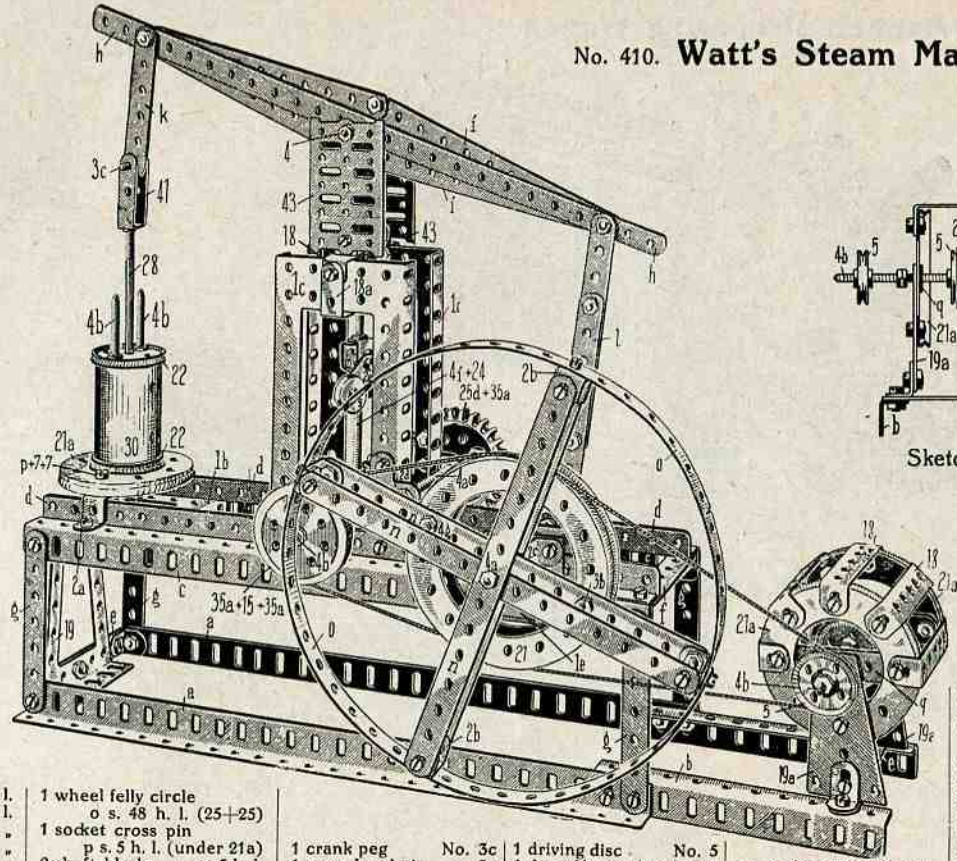
No. 410. Watt's Steam Machine

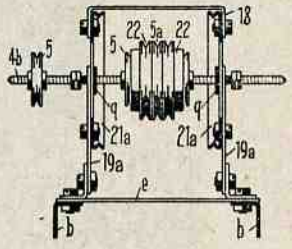


Sketch 410a



Sketch 410c





Sketch 410b

Parts to same:

1 frame floor	No. 1b	2 long bearers	d a. s. 25 h. l.
2 upright plates	„ 1c	2 cross beams	e s. 7 h. l.
1 foundamental front plate	„ 19	1 flat frame	f „ 7 „ „
2 rack plates	„ 1e	4 side fillets	g „ 7 „ „
2 „ „	„ 43	1 balancing pin	h „ 25 „ „
2 „ blocks	„ 19a	4 balancing arms	i „ 11 „ „
2 foundation beams	a a. s. 25 h. l.	1 connecting pole	k „ 6 „ „
2 „ „	b „ „ 10 „ „	1 crank pole	(11+11) l „ 14 „ „
2 „ frames	c „ „ 25 „ „	1 crank arm	m „ 3 „ „
		4 fly wheel spokes	n s. 15 h. l.

1 wheel felly circle	o s. 48 h. l. (25+25)
1 socket cross pin	p s. 5 h. l. (under 21a)
2 shaft blocks	q s. 5 h. l.
2 socket supports	No. 2a
4 spoke locks	„ 2b
1 shaft block	„ 2c
2 shaft blocks	„ 2d
2 regulator arms	„ 2e
2 positition spindles	„ 3b +4g

1 crank peg	No. 3c
2 cross head pin	„ 3c
1 balance spindle	„ 4
1 fly wheel shaft	„ 4a
2 cog wheels	No. 4a, 4b
1 drum shaft	No. 4b
2 cylinder spindles	„ 4b
1 regulator shaft	„ 4i
1 crank steering disc	„ 5

1 driving disc	No. 5
1 drum	No. 2x5+5a+2x22
1 crank	No. 6
1 fly- cog wheel hub	„ 7
4 position rings	„ 7
2 position rings	„ 8
2 regulator weights	„ 9
1 string disc	No. 15+2x35a
2 cross pins (shaft 4 i)	18+18a

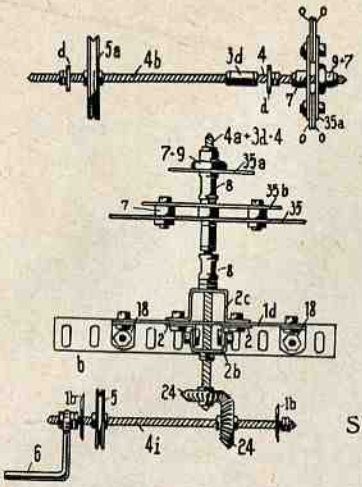
5 cylinder girdles	No. 18
2 string wheels	„ 21
2 cylinder floors	„ 21a
1 „ socket	„ 21a
2 „ covers	„ 22
2 „ jackets	„ 30
2 cone wheels	„ 24
1 cog wheel	„ 25c
1 cog wheel	No. 25d+35a
1 piston rod	No. 28
1 cross head	No. 41

Two position rings are screwed between cross bearings 18, 18a and upright plates 1c.

Sketch 410a part of back view.

Sketch 410b Vertical section through the cylinder (right)

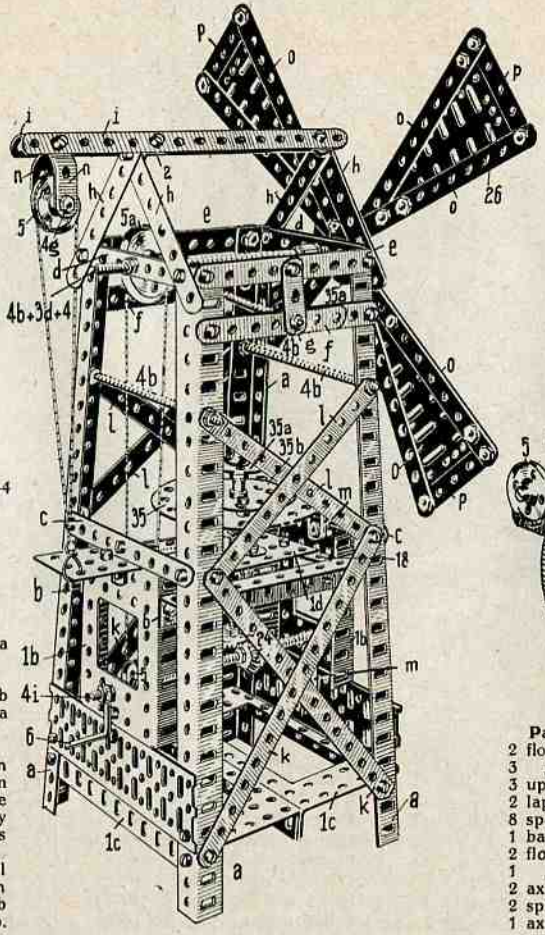
Sketch 410c. Horizontal section of table elevation.



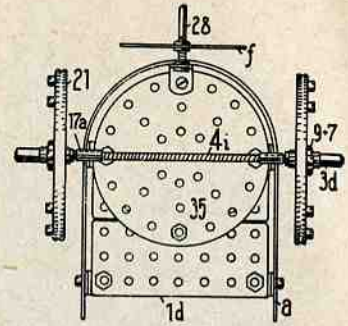
Sketch 411b

Sketch 411a

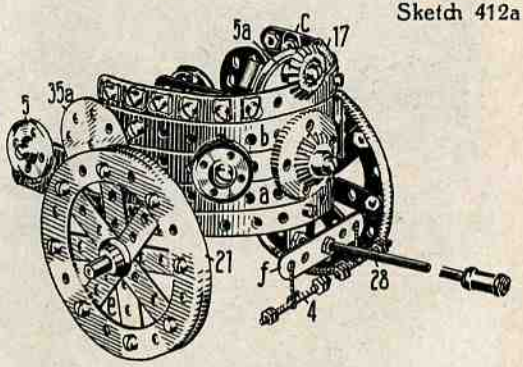
No. 411. Windmill



No. 412. Old Roman Chariot



Sketch 412a



Parts to the Wind Mill:

2	cross fillets	a	a. s. 25	h. l.
4	under spans	b	„ „ 10	„ „
2	cross bars	c	„ 9	„ „
2	long frames	d	„ 7	„ „
2	cross „	e	„ 9	„ „
2	cross bars	f	„ 9	„ „ (7+5)
2	hanging fillets	g	„ 3	h. l.
4	gable spars	h	„ 7	„ „
2	front frames	i	„ 15	„ „
4	cross bands	k	„ 15	„ „
4	„ „	l	„ 11	„ „
4	lappet bands	m	„ 2	„ „
2	hanging fillets	n	„ 3	„ „
8	wing frames	o	„ 11	„ „
4	„ „	p	„ 5	„ „
1	rest block	No. 2b		+2+2
1	„ „	„ 2c		
2	wall plates	„ 1b		
2	floor plates	„ 1c		
1	„ „	„ 1d		
1	pedestal plate	„ 1e		
1	position grind gangway shaft	No. 4a		
1	mill shaft	No. 4b+3d+4		
1	driving shaft	No. 4i		
1	lift shaft	„ 4g		
1	„ roller	„ 5		
2	driving discs	„ 5, 5a		
1	crank	„ 6		
6	position rings	„ 7		
2	mill stone hubs	„ 8		
1	„ „ „	„ 9		
1	wing hub	„ 9+35a		
2	beams	„ 18		
2	cone wheels	„ 24		
1	grinding passage	„ 35+35b +35a		
2	wall plates	„ 43a		

80 screws w. n., 8 a. b.

Sketch 411a is a cross section through the driving mechanism with the grinding gangway. The under rest block (No. 2b) is fastly screwed with 2 angle brackets to the floor plate 1d.

Sketch 411b shows the mill shaft 4+4b coupled with 3d. On this shaft is fixed the wing hub 9+35a with the wing frame o p.

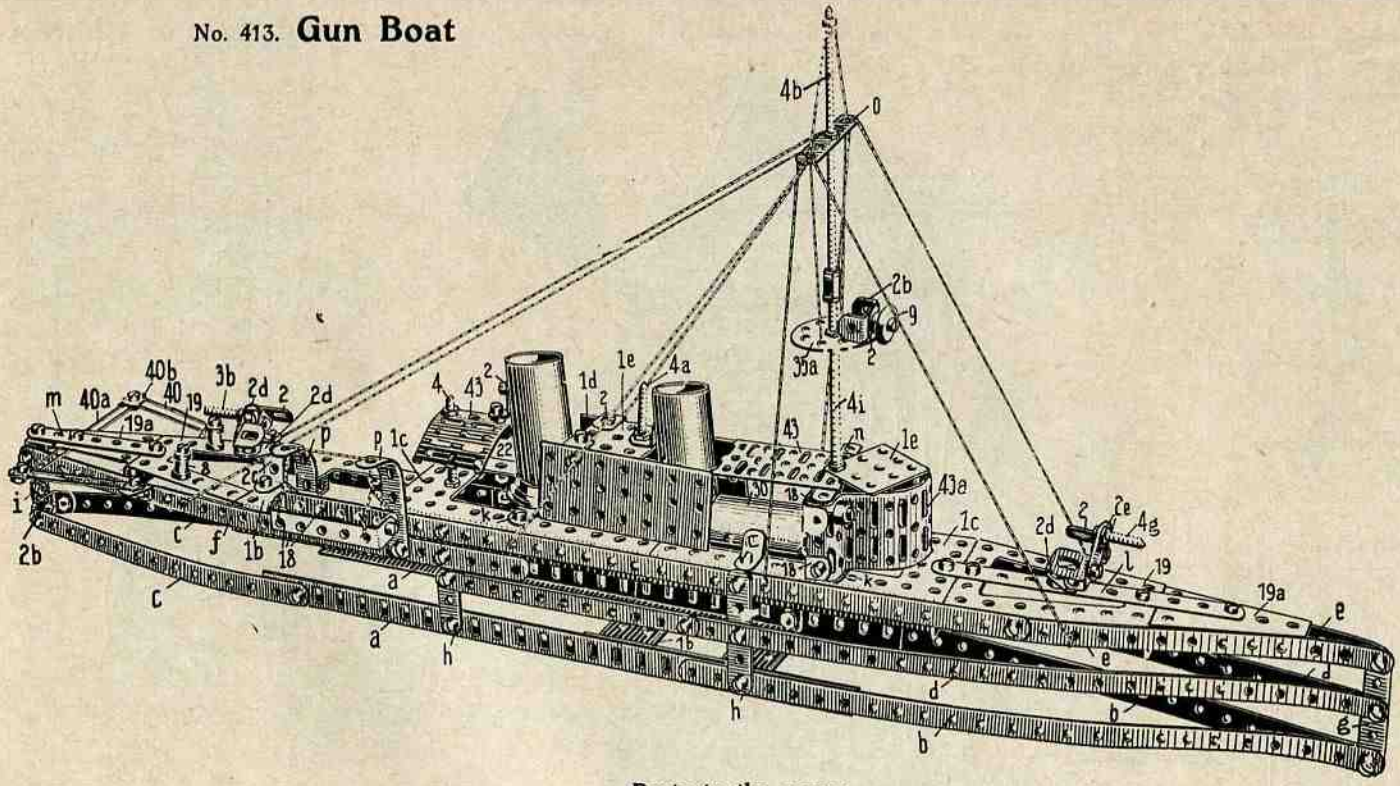
Parts to the Chariot:

2	floor bands	a s. 25	h. l.
3	„ „	b „ 15	„ „
3	uprights	c „ 5	„ „
2	lappet bands	d „ 2	„ „
8	spokes	e „ 7	„ „
1	balance pole	f „ 5	„ „
2	floor plates	No. 1d	
1	„ „	„ 35	
2	axle boxes	„ 3d	
2	splinter bars	„ 4	
1	axle	„ 4i	
4	ornamental discs	No. 5	
2	„ „ „	„ 5a,25a	
2	„ „ „	„ 24	
2	„ „ „	„ 35a	
2	wheel hubs	„ 9	
2	axle blocks	„ 17a	
2	wheel circles	„ 21	
1	shaft pole	„ 28	
10	ornamental plates	„ 40b	

46 s. w. n., 6 a. b.

Sketch 412a is an under view of the Chariot.

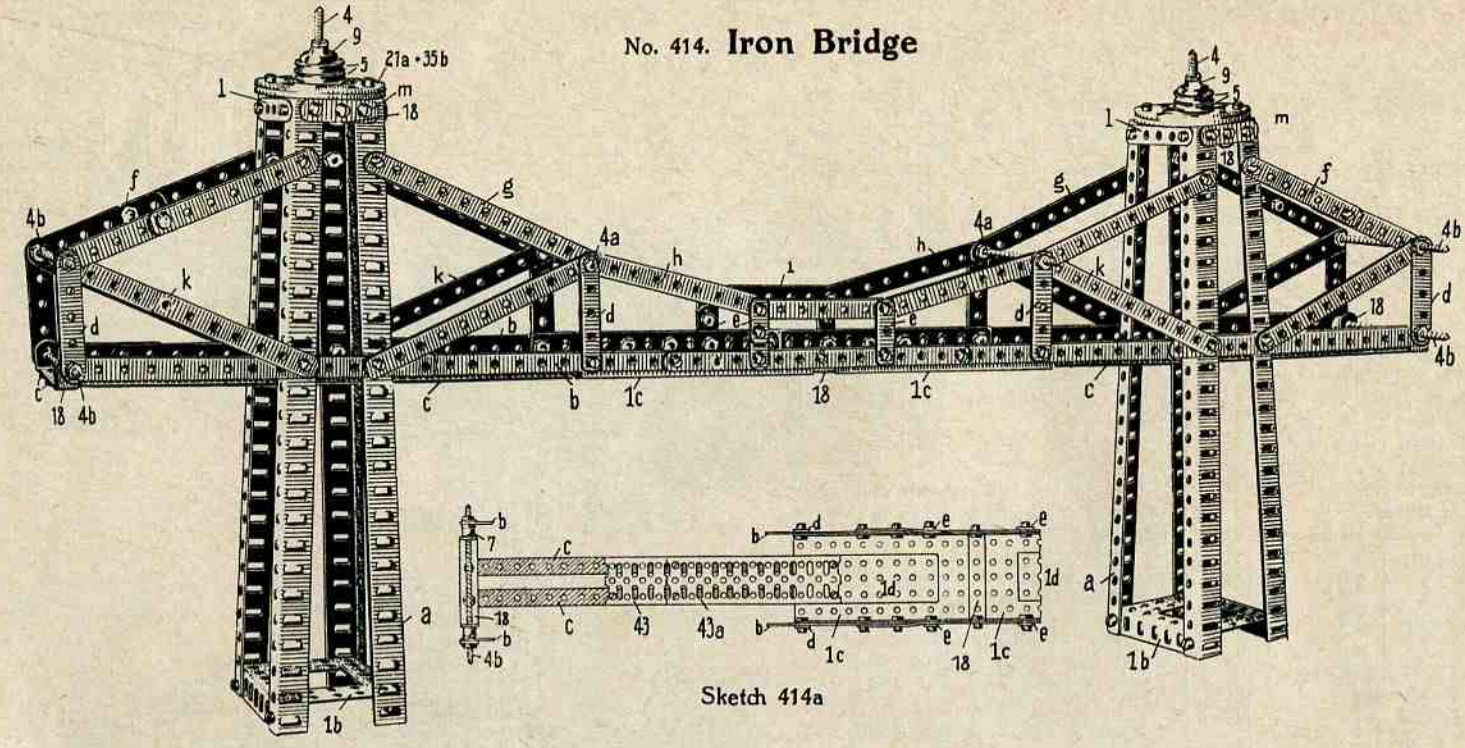
No. 413. Gun Boat



Parts to the same:

2 floor spans	a a. s. 25 h. l.	4 side spans	h s. 5 h. l.	1 ship floor No. 1b		2 promenade deck stays No. 4, 4a	3 screwed on guards No. 40+40a
2 long spans	b „ 25 „ „	1 after deck span	i „ 4 „ „ (3+3)	1 fore deck „ 1c+1c+19+19a		1 mast No. 4b+3d+4i	1 wall armour plate „ 43a
2 „ „	c „ 15 „ „	2 deck beams	k „ 5 „ „	1 aft deck „ 1b+19+19a		2 poles „ 8	80 s. w. n.
2 „ „	d „ 35 „ „ (11+25)	1 „ „	l „ 11 „ „	1 promenade deck „ 1e+43+43		2 cross bands „ 18	11 angle brackets
2 deck spans	e „ 37 „ „ (25+15)	1 „ „	m „ 7 „ „	1 upper tower armour plate No. 1e		1 life boat 2× „ 18	
2 „ „	f „ 25 „ „	2 „ „	n „ 5 „ „	1 stern binder No. 2b		2 funnel sockets „ 22	Both the funnels are finished in paper mash and do not belong to the box.
1 front stem	g „ 5 „ „	1 cordage cleat	o „ 5 „ „	1 search light „ 2b+2+9		1 air superstructure „ 30	
		2 davits	p „ 6 „ „	1 bow gun „ 2d+2e+2e+4g		1 foretop „ 35a	
				1 stern gun „ 2d+2d+3b			

No. 414. Iron Bridge



Sketch 414a

Parts to the same:

2	pillar sockets	No. 1b	2	hanging fillets	e s. 3 h. l.	4	frames	l s. 5 h. l.	2	tower cupolas	No. 9+5+7 +5+21a+35b
	corner fillets of the bridge pillars	a a. s. 25 h. l.	2	„ „	e „ 3 „ „ (2+2)	4	„	m „ 3 „ „			
	under girders	b „ 65 „ „ (15+25+25+15)	4	span bands	f „ 11 h. l. (7+7)	2	road plates	No. 1c+1d	3	cross bearers	No. 18
4	road bearers	c s. 25 h. l.	4	upper girders	g „ 11 h. l.	2	„ „	„ 43+43a	2	cupola bearers	„ 18
8	hanging fillets	d „ 5 „ „	4	„ „	h „ 9 „ „	2	tower summits	„ 4	80	screws with nuts	
			2	„ „	i „ 7 „ „	2	span poles	„ 4a			
			8	struts	k „ 11 „ „	4	„ „	„ 4b			
						4	position rings	„ 7			

Sketch 414a represents one half view of the Bridge street.

No. 415.

Private Motorcar

Parts to the Private Motorcar:

4	long bearers	a	a. s. 25 h. l.	
2	„ „	a¹	„ „ 10 „ „	
1	cross bearer	b	s. 7 h. l.	
2	uprights	c	„ 5 „ „	
4	foot board fasteners	d	„ 7 „ „	
2	binding pieces	e	„ 2 „ „	
1	bonnet bearer (under 1c+1d)	f	„ 11 „ „	
2	foot boards	h	„ 15 „ „	
2	„ „	i	„ 25 „ „	
1	shock catcher	k	„ 15 „ „	
8	frame parts to the carriage	upright l	„ 11 „ „	
6		horizontal m	„ 25 „ „	
2		„ o	„ 7 „ „	
4		„ p	„ 5 „ „	
4	door frame pieces	upr. q	„ 9 „ „	
6	„ „ „	horiz. r	„ 5 „ „	
1	steering lever	s	„ 3 „ „	
2	wheel spokes	t	„ 5 „ „	
2	steering pillar blocks	u	„ 2 „ „	
1	floor plate		No. 1c	
1	deck „		„ 1c+1d	
2	side ribs		„ 19	
2	front walls		„ 43	
2	side „		„ 43a	
1	front a. back wall each for the carriage		„ 1b	
1	driver seat		„ 1d	
2	door fillings		„ 1e	
2	muffs on front axle		„ 2b	
2	lantern holders		„ 3c	
2	long nuts to the back wheels		„ 3d	
2	push rods holders		„ 4	
2	cross bolts to motor casing		„ 4a	
1	cross bolts of long bearer		„ 4b	
1	steering pillar		„ 4b	

to the motor casing

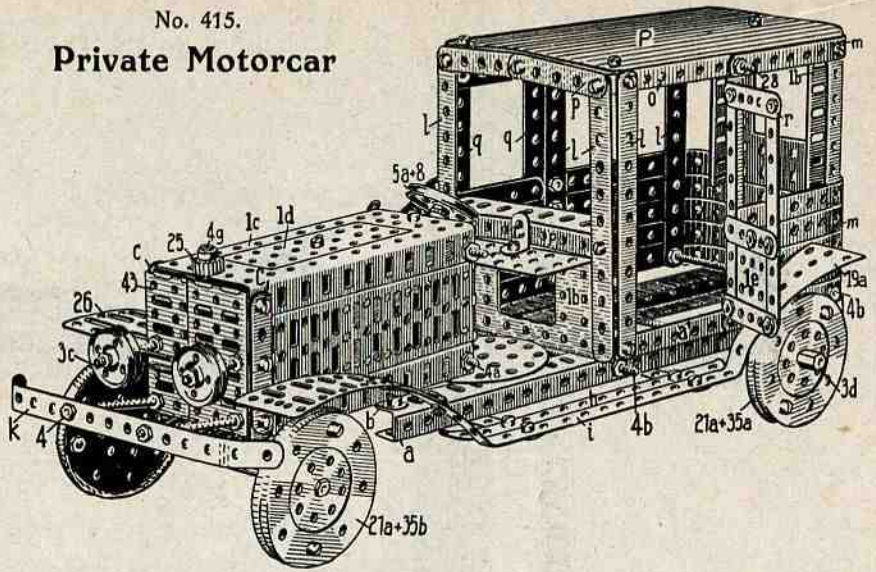
1	back axle	No. 4l	
2	lanterns	2	„ 5
1	steering wheel		„ 5a+8
2	axle blocks (back axle)		„ 17a
1	axle pole		„ 18a
2	fore wheels		„ 21a+35b
2	rear „		„ 21a+35a
2	mud wings (back)		„ 19a
2	„ „ (front)		„ 26
1	cooler filling stay		„ 25+4g
1	position spindle		„ 28
1	floor plate		„ 35
2	roof plates		„ 35a
1	cross band for lantern		„ 40+40b
1	hand brake		„ 40+40b
1	switch lever		„ 40+40b

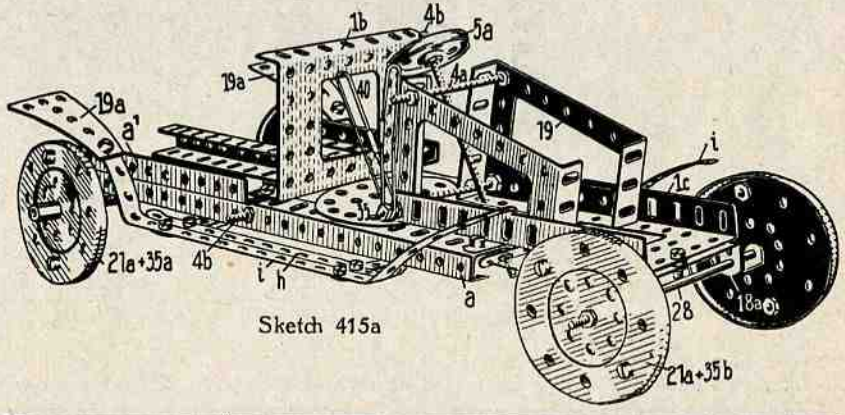
Sketch 415a is the chassis without the carriage and motor bonnet.

Sketch 415b shows from underneath the bottom part of the carriage of the text page No. 113.

The two side ribs No. 19 in sketch 415a visible, have the sole purpose that one when in need can screw the bonnet deck 1c, 1d of the cross bolts 4a on to the under carriage frame.

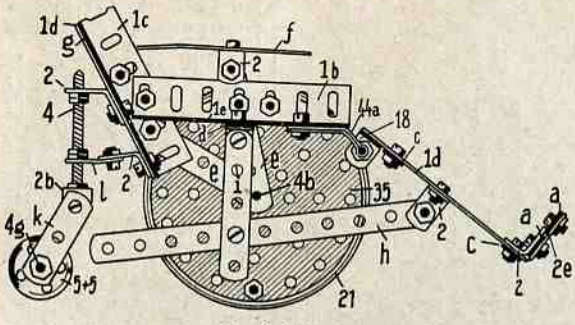
For door coverings one needs very weak binding wire or weak string. If one already had a Stabil box No. 53 one can use the position angle 2f as a door covering. The roof covering employed is of paper mash, which does not belong to the contents of the box.



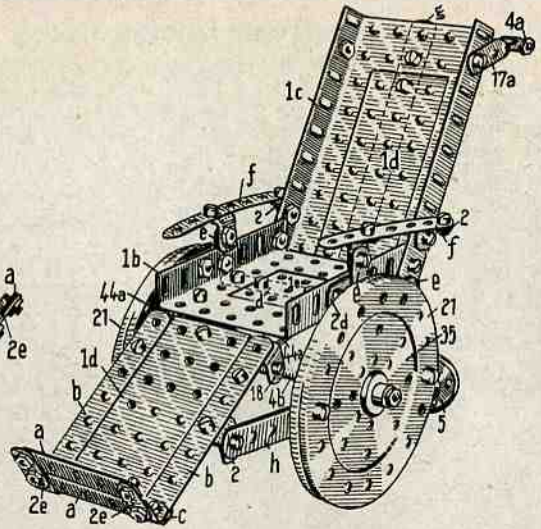


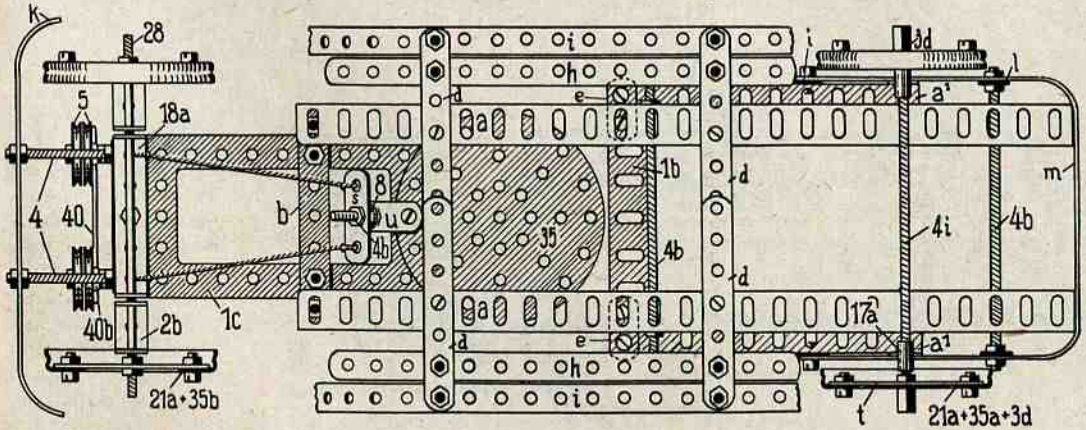
Sketch 415a

No. 416. Invalid Chair



Sketch 416a





Sketch 415b

Parts to the Invalid Chair:

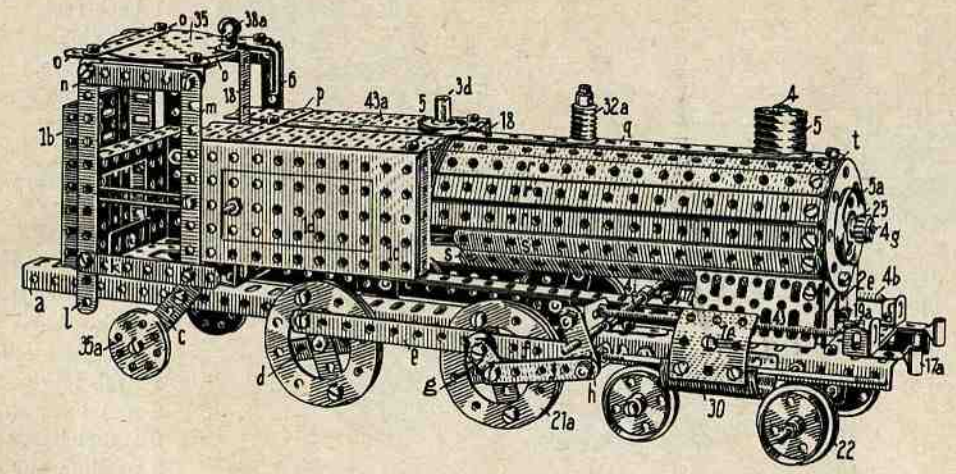
1	seat plate	No. 1b+1e
1	back rest	„ 1c+1d
1	leg stay	„ 1d
2	feet stays	a s. 5 h. l.
2	side pins	b „ 7 „ „
2	cross pins	c „ 5 „ „
1	„ „ with seat	d „ 5 „ „
4	sloping bars	e „ 5 „ „
2	arm rests	f „ 7 „ „
1	lappet band	g „ 11 „ „
1	position lever	h „ 11 „ „
1	pendulum lever	i „ 5 „ „
2	fork sides	k „ 3 „ „
1	spindle block	l „ 2 „ „
1	back fork	No. 2b
2	arm back stays	„ 2d
2	lappet bands	„ 2e
2	position angles	„ 44a
1	„ spindle	„ 4
1	handle pole	„ 4a
1	axle	„ 4b
1	back axle	„ 4g
2	fork rollers	„ 5
2	wheel hubs	„ 9+7
2	wheels	„ 21+35
2	handle eyclets	„ 17a
40	screws with nuts	
13	angle brackets	

A description of the chair is not necessary, as the mechanism is clearly shown in illustration and sketch. Sketch 416a is a cross section through the lower part of the chair.

No. 417. Express Locomotive

Parts to same:

2	long bearers	a a. s. 38 h. l. (25+25)
4	axle blocks	b s. 3 h. l.
2	„ „	c „ 5 „ „
8	spokes	d „ 5 „ „
2	crank poles	e „ 9 „ „
2	connecting rods	f „ 5 „ „
2	steering levers	f „ 5 „ „
2	„ „	g „ 2 „ „
2	„ „	h „ 3 „ „
2	fasteners	k „ 7 „ „
2	corner fillets	l „ 11 „ „
2	„ „	m „ 9 „ „
2	frames	n „ 6 „ „
4	deck fillets	o „ 7 „ „
1	„ „	p „ 7 „ „
1	boiler plate	q „ 25 „ „ (15+15)
8	„ „	r „ 25 h. l.
4	„ „	s „ 15 „ „
2	wall plates	No. 1b
2	fire chamber walls	„ 1c+1d
2	cylinder coverings	„ 1e
2	stuffing boxes	„ 2b
4	axle blocks	„ 2d
2	lappets	„ 2e
3	position bolts	„ 4, 4g
2	driving axles	„ 4a



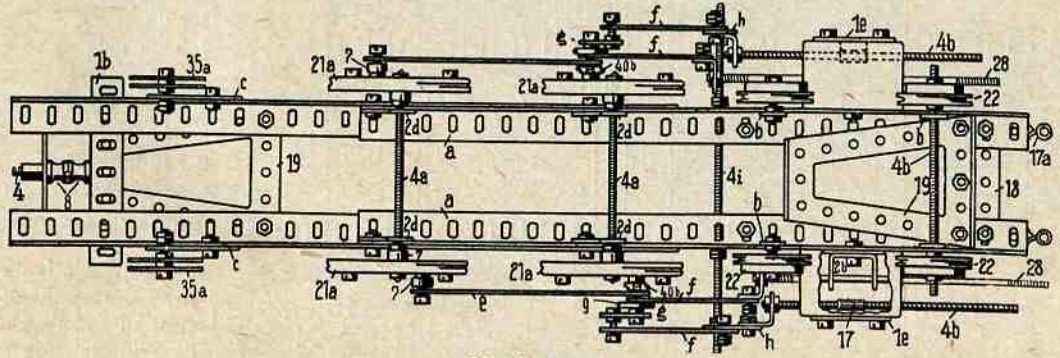
Parts to same:

2	disc poles	No. 4b
1	cross pole	„ 4b
1	lever spindle	„ 4i
1	funnel	5 „ 5
1	steam dome	No. 3d+5
1	cleaning door	No. 5a
1	tube guide	„ 6
2	lever spindle blocks	„ 17
2	cleaning eyes	„ 17a
1	cross bearer	„ 18
1	window frame	„ 18
2	chamber pins	„ 18
2	floor plates	„ 19
2	front plates	„ 19a
4	driving wheels	„ 21a
4	running „	„ 22
1	smoke chamber lock	„ 25
1	back wall	„ 26
2	piston rods	„ 28
2	steam cylinders	„ 30
1	shut off steam tube	„ 32a
2	running wheels 2 altogether	„ 35a
2	boiler front wheels	„ 35b
1	roof plate	„ 35
1	steam whistle	„ 38a
2	stay plates	„ 43
2	deck plates	„ 43a

In order to facitate the construction, please study the Sketch 417a (under view of the locomotive.

The long bearers a are composed of 2 angle strips of the length of 25 holes. The piston rods No. 28 are fitted into 2 stuffing boxes, which are screwed inside on to the long bearers a.

The spindle 4i is fitted into the 2 flat bearings 17 which are screwed above on the long bearers.



Sketch 417a

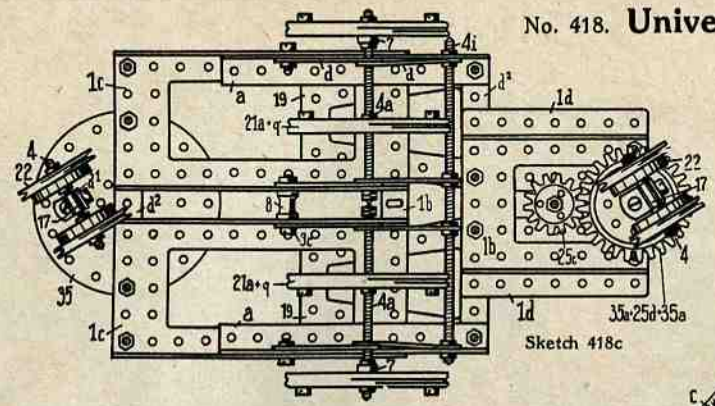
The lever and dial plate rods are fixed to lever spindle right and left sides, so as they are not screwed down to the driving wheels 21a. Here it is necessary to look at the sketch, which clearly shows how the connecting rod f and the steering lever f are arranged to steering lever h.

A further description is not necessary.

No. 418. Universal Swing Crane

Parts to the Swing Crane:

4	floor plates	No. 1c, 1d
1	„ „	„ 1b
3	„ „	„ 19, 35
1	arm	„ 1b
2	front plates	„ 1e
2	box sides	„ 43
1	seat plate	„ 43a
2	floor bearers	a a. s. 10 h. l.
2	projecting strips	b „ „ 33 „ „ (25+25)
2	„ „	c „ „ 45 h. l. (25+25)
8	axle block bearers	d s. 5 h. l.
1	„ „ „	d^1 „ 5 „ „
2	cross bearers	d^2 „ 11 „ „
2	rail beams	e „ 11 „ „
2	rest fillets	f „ 15 „ „
2	rest supports	g „ 18 „ „ (15+5)
2	span bands	h „ 7 h. l.
2	„ „	i „ 15 „ „
2	under cross bands	k „ 11 „ „
2	„ „	l „ 7 „ „
2	upper cross bands	m „ 15 „ „
2	„ „	n „ 11 „ „
2	span bands	o „ 7 „ „
4	support stays	o^1 „ 9 „ „
2	„ „	o^2 „ 7 „ „
1	rack band	p „ 6 „ „
2	spokes	q „ 5 „ „
2	crank levers	r „ 2 „ „
2	spindle blocks	No. 2a
2	crank grips	„ 3c
2	axles	„ 4
2	middle axles	„ 4a
1	roller spindle	„ 4b
1	steering spindle	„ 4b
2	crank spindles	„ 4b+9
1	span pole	„ 4i
4	roller, 1 steering wheel	„ 5, 5a
2	wheel hubs	„ 7
2	axle blocks	„ 17
1	steering spindle block	„ 17a
2	corner uprights	„ 18
4	wheels	„ 21a
4	„	„ 22
2	cog wheels	„ 25c, 25d
1	cross pole	„ 28
1	hook	„ 38a



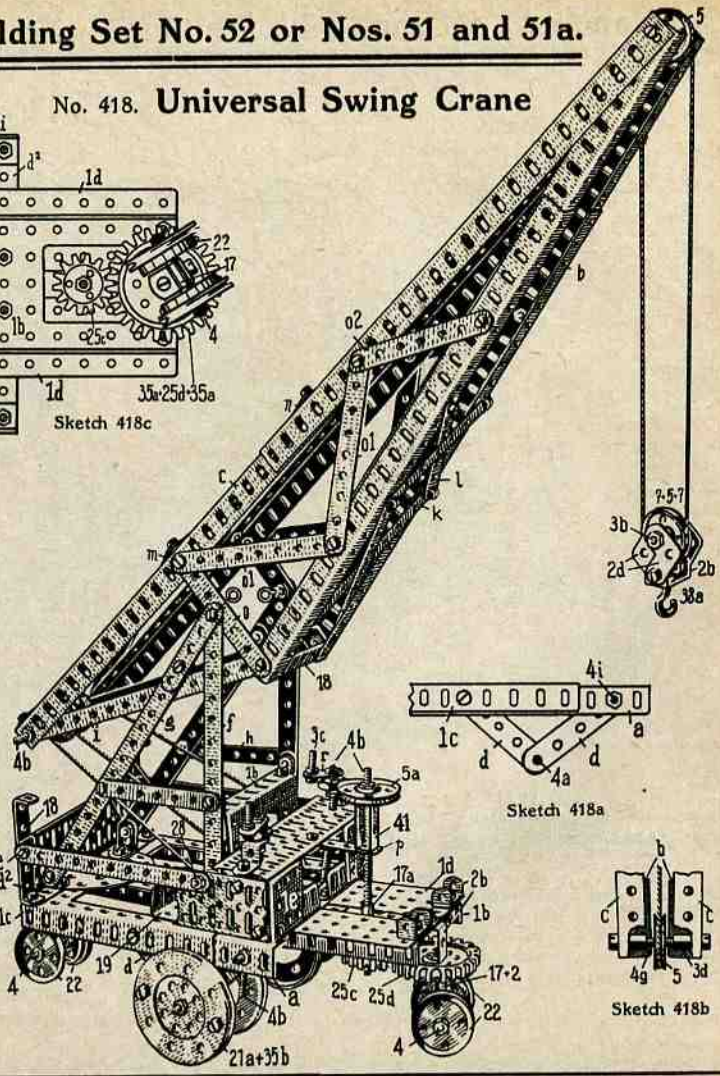
Sketch 418c

This Universal Crane is an original masterpiece of a new sort of crane constructed by a 14 years old boy. This crane can revolve itself on its own axle, raises the load swings it right or left, forward or behind, and suspends the goods according to the desired height.

On the right crank spindle No. 4b is fixed to one end of the crank rope runs then from there over the guide roller 5, which is to be found on the roller spindle No. 4b under the projecting part, to the upper part of the imposed guide roller 5 of the projecting part in order then to embrace guide roller No. 5 and then raising with the other end in the upper fifth hole, to be fastened on to this projecting fillet.

The balance rope is attached to the left crank spindle No. 4b and is brought to the roller spindle 4b. By turning crank r, 3c one can raise the load and lower it, etc. position of the upper arms can be high or low.

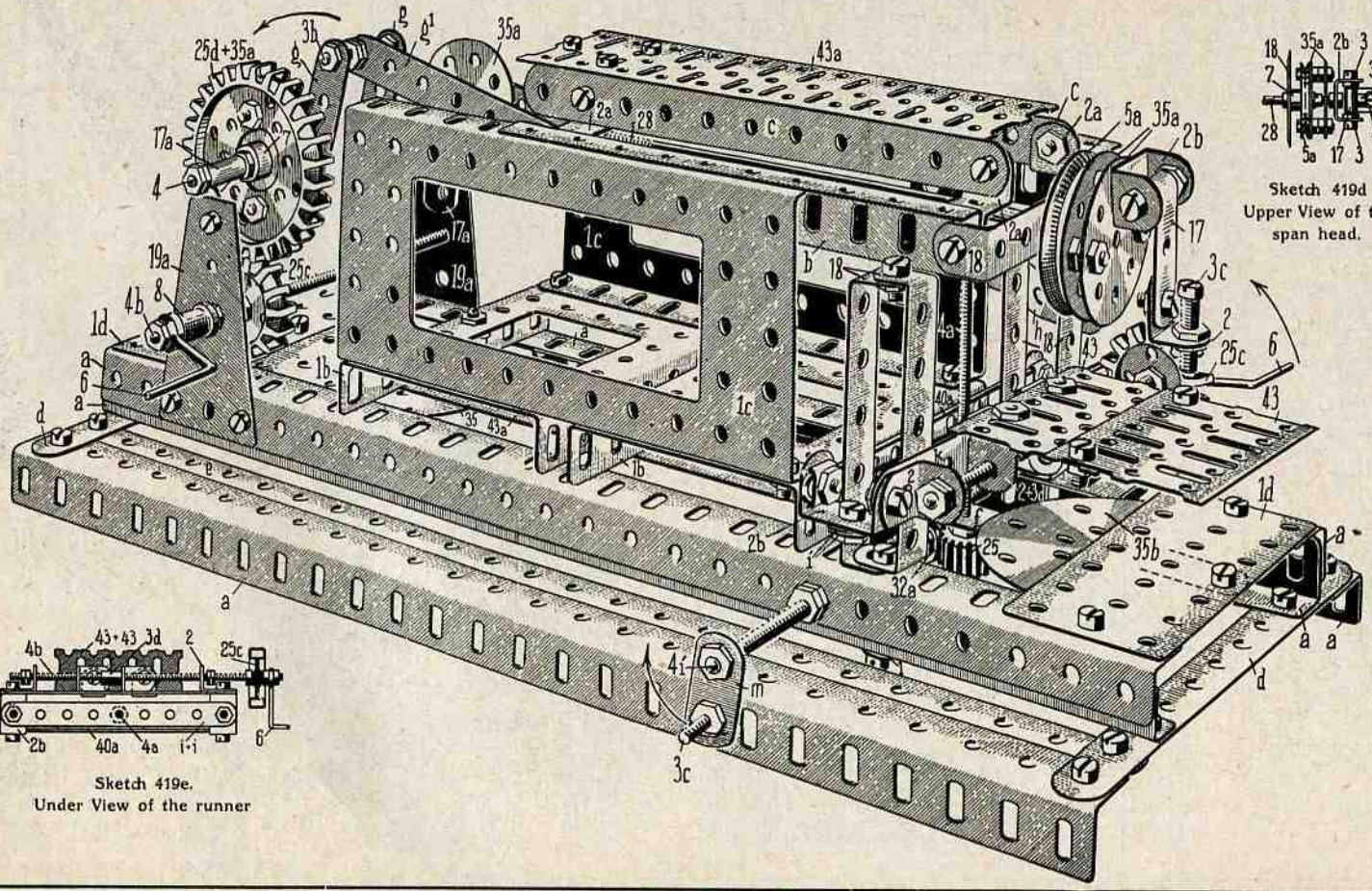
Sketch 418a shows how the axle block bearer d is used. Sketch 418c is the under view of the crane wagon. Cog wheel 25d engages with cog wheel 25c, which is fixed under the steering spindle 4b. Sketch 418b shows the fixing of the guide roller to the top of the crane.

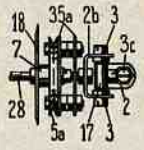


Sketch 418a

Sketch 418b

No. 419. Iron Plane

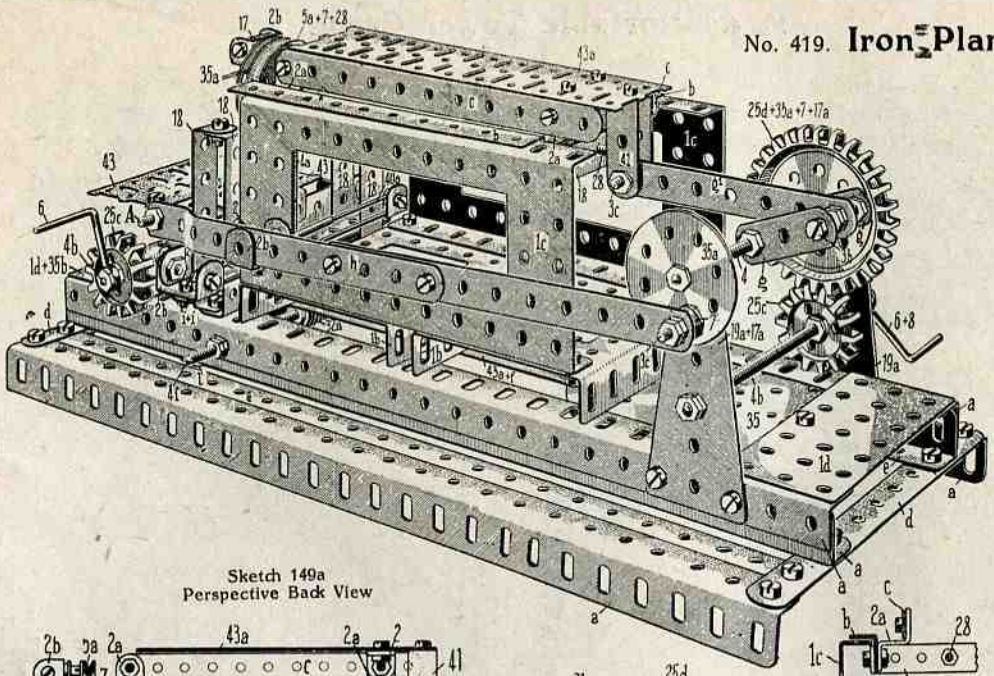




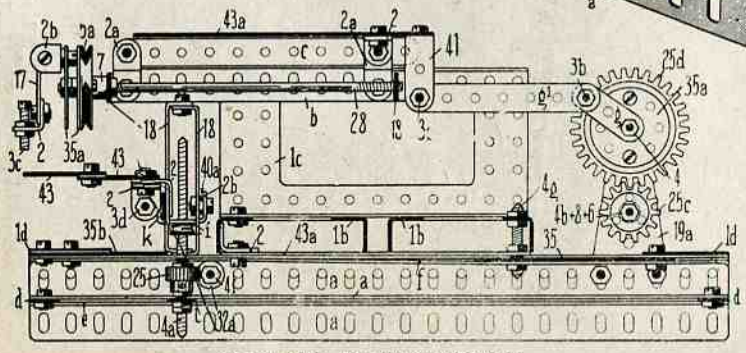
Sketch 419d
Upper View of the span head.

Sketch 419e.
Under View of the runner

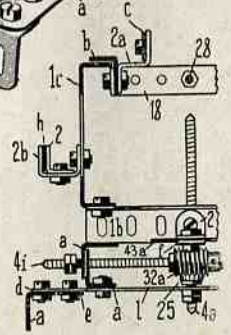
No. 419. Iron Plane



Sketch 149a
Perspective Back View



Sketch 419b. Longitudinal Section



Sketch 419c. Part of the cross section through the crank shaft 4i.

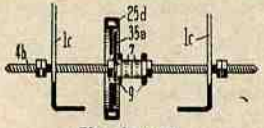
Parts to the Iron Plane:

2	floor plates	No.	1b
2	„ „	„	1d
2	„ „	„	35, 35b
1	„ „	„	43a
2	block side plates	„	1c
2	rack blocks	„	19a
2	span table plates	„	43
1	runner deck plate	„	43a
6	ground and floor joists	a	a. s. 25 h. l.
2	guide rails of runners	b	„ „ 10 „ „
2	runners pins	c	„ 11 „ „
2	cross bearers	d	„ 11 „ „
2	floor planks	e	„ 25 „ „
1	long pin	f	„ 25 „ „
2	crank arms	g	„ 3 „ „
1	lever arm	g1	„ 7 „ „
1	„ „	h	„ 18 „ „ (11+11)
2	floor carriers for support	i	„ 9 h. l.
1	glide rail for support	k	„ 9 „ „
1	spindle block for spindle 4a	l	„ 7 „ „
1	crank arm	m	„ 2 „ „
4	Z angles		No. 2a
2	support ribs		„ 2b
1	glide block (for lever h)		No. 2b+2
4	nut bolts		„ 3c
1	spindle guide		„ 3d
1	crank shaft		No. 4+3b+4
1	driving shaft		No. 4b
1	position spindle perpendicular		„ 4a
2	position spindles horizontal		No. 4b, 4i
2	cranks		„ 6
1	span head		No. 7+35a+5a +35a+2b+17
3	position rings		No. 7
1	spindle		„ 4g
1	crank hub		„ 8
2	crank shaft blocks		„ 17a
2	runner cross pins		„ 18
4	guiding rails		„ 18
1	cog wheel		„ 25
2	„ „		„ 25c
1	„ „		No. 25d+35a
1	span pole		No. 28
1	worm		„ 32a
1	crank wheel		„ 35a
1	slide rail (to support)		„ 40a
1	fork band		„ 41
80	screws with nuts, 12 a. b.		

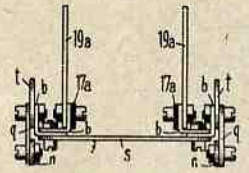
Between the two floor beares i (s. 9 h. l.) of the support is a screw nut set in the middle, into which grips the perpendicular position spindle 4a (Sketch 419b).

The lever band h is brought to the crank disc 35a (Sketch 419a), which is loosely turnable, and glides in the double angle 2b in and outwards. On Sketch 419c one sees that a simple angle is placed against this double angle in order to get a better gliding movement. On the free end of the lever band h is found a projecting threader A (Sketch 419a), which pushes against the cog wheel 25c by the working of lever band h and every time this is done in order to revolve a little further. By this, the support is changed somewhat sideways, and the plane steel 3c planes a new span on the span head.

No. 420. Portable Tower Crane

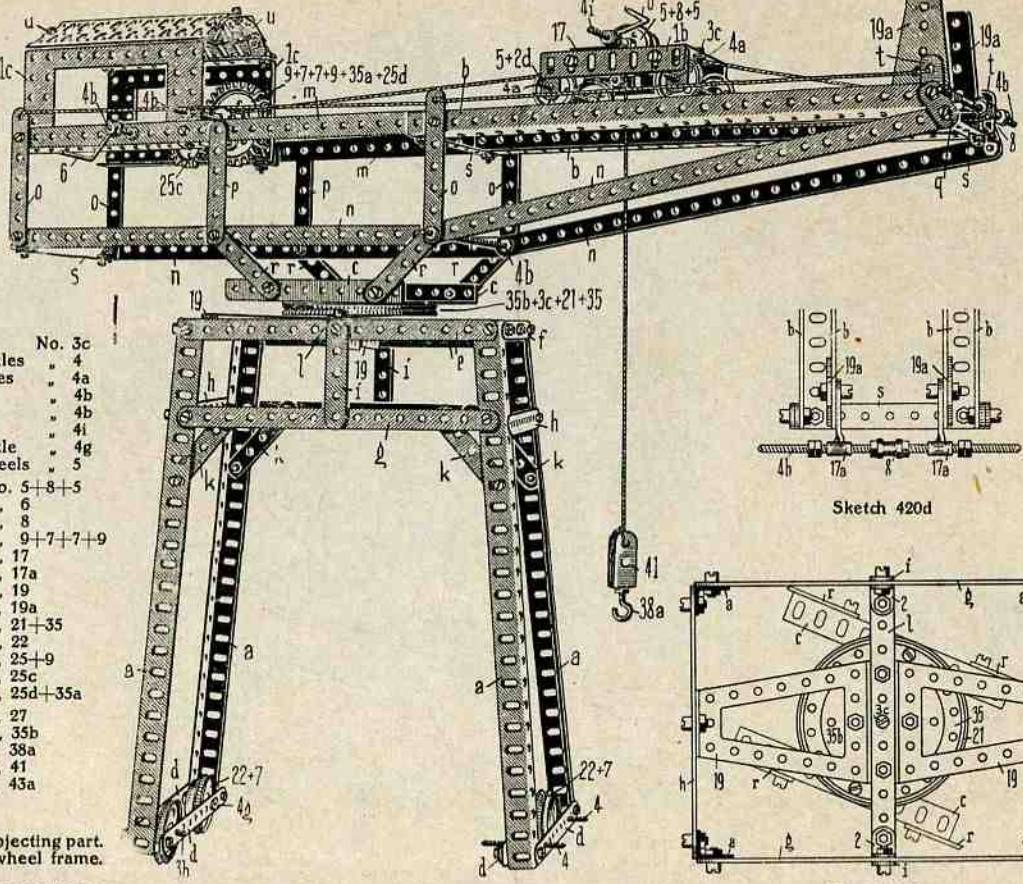


Sketch 420a

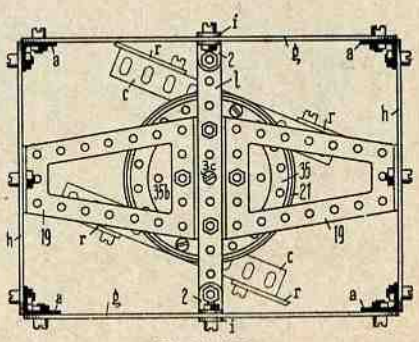


Sketch 420b

Sketch 420c



Sketch 420d



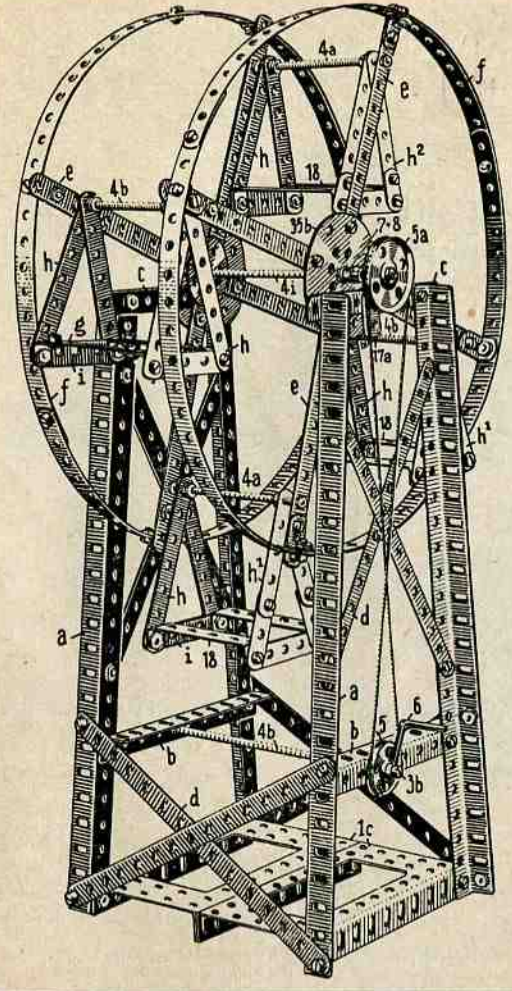
Sketch 420e

Parts to the same:

4	corner stays	a	a. s. 25 h. l.
4	projecting bearers	b	a. s. 4×25 „ „
1	„ foot	c	„ „ 2×10 „ „
2	tower feet	d	„ 2×11 „ „
2	long frames	e	s. 15 „ „
2	cross frames	f	„ 11 „ „
2	bands	g	„ 15 „ „
2	cross bands	h	„ 11 „ „
2	fillets	l	„ 5 „ „
4	stays	k	„ 5 „ „
1	turning disc carrier	l	„ 11 „ „
2	upper girders	m	„ 25 „ „
2	under girders	n	„ 50 „ „ (25+25)
4	projecting fillets	o	„ 7 h. l.
2	„ „	p	„ 6 „ „
2	„ „	q	„ 2 „ „
4	foot fillets	r	„ 5 „ „
3	cross bands	s	„ 7 „ „
2	rail fillets	t	„ 2 „ „
2	spars	u	„ 5 „ „
1	running cage cover	No.	1b
2	casing walls	„	1c
4	foot struts	„	2b
4	axle blocks to the running cage	„	2d
1	running wheel axle	„	3b
1	turning disc nut	„	3c
2	rope anchors	No.	3c
2	running wheel axles	„	4
2	running cage axles	„	4a
3	shafts	„	4b
1	position bolt	„	4b
1	crank shaft	„	4i
1	running wheel axle	„	4g
4	running cage wheels	„	5
1	rope drum	No.	5+8+5
2	cranks	„	6
1	rope roller	„	8
1	rope drum	„	9+7+7+9
2	shaft blocks	„	17
2	„ „	„	17a
2	cover plates	„	19
2	buffer walls	„	19a
1	turning disc	„	21+35
4	running wheels	„	22
1	cog wheel	„	25+9
1	„ „	„	25c
1	„ „	„	25d+35a
1	ratched spring	„	27
1	turning disc block	„	35b
1	screw hook	„	38a
1	fork band	„	41
2	roof plates	„	43a

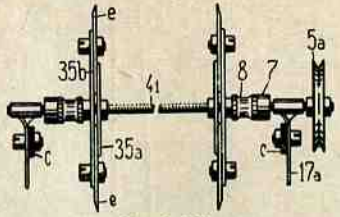
80 s. w. n, 10 a. b.

Sketch 420a. Cog wheel shaft 4 b in the wind shelter.
Sketch 420b. Section through the buffer block 19a of the projecting part.
Sketch 420c. Ground section of the left under running wheel frame.
Sketch 420d. View of the right projecting end.
Sketch 420e. Under view if the turning part half up the crane frame.



No. 421.

Wheel Swing



Sketch 421a

Sketch 421b

Parts to the Wheel Swing:

2 ground plates		No. 1c
4 corner fillets		a a. s. 25 h. l.
2 cross bearers		b „ „ 10 „ „
2 „ frames		c „ 9 „ „
8 bands		d „ 15 „ „
8 wheel spokes		e „ 11 „ „
2 wheel circles		f „ 68 „ „ (3×25)
2 gondola benches		g „ 5 h. l.
6 „ „		No. 18
10 hanging band	(5+3)	h s. 7 h. l.
4 hanging band	(5+3)	h^1 „ 7 „ „
2 hanging band	(6+2)	h^2 „ 7 „ „

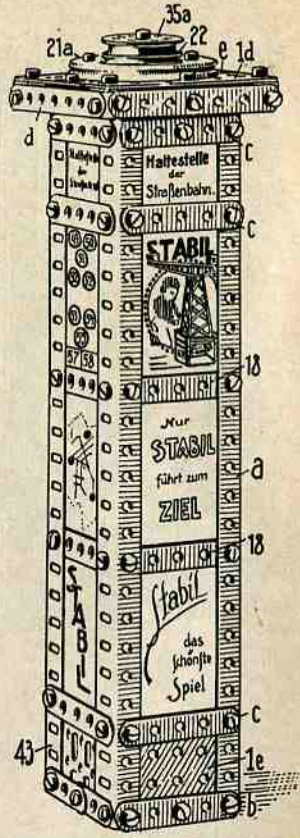
8 strut pins	1 s. 5 h. l.
2 gondola spindles	No. 4b
2 „ „ „	„ 4a
1 driving shaft	„ 4b+3b+3d
1 swing wheel shaft	„ 4i
1 driving disc	„ 5
1 „ „	„ 5a
1 crank	„ 6
2 shaft blocks	„ 17a
2 wheel hubs	„ 35a+35b

Sketch 421a. Construction of the wheel shaft 4i.

Sketch 421b. Construction of the crank shaft 4b+3b+3d.

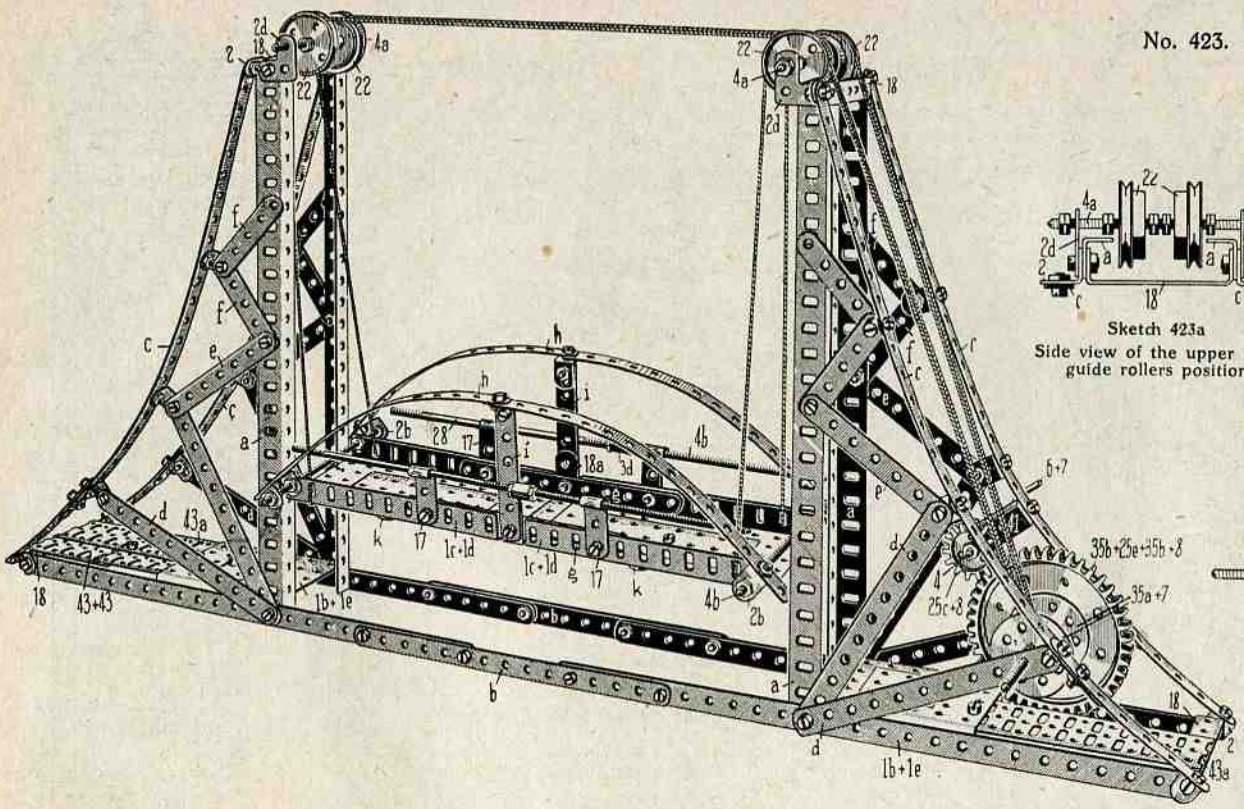
No. 422.

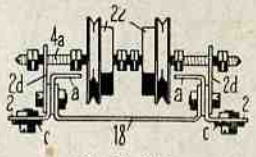
Advertising Pillar



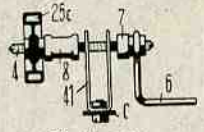
Such pillars have been placed by the Tram Car Authorities on nearly all the halting places, in order to show by signs the direction and travelling times of the trams and the lines. The larger part of the advertisement spaces is rented by advertisers.

No. 423. Span Bridge

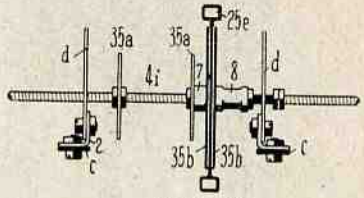




Sketch 423a
Side view of the upper rope guide rollers position



Sketch 423b
Construction of the crank shaft 4

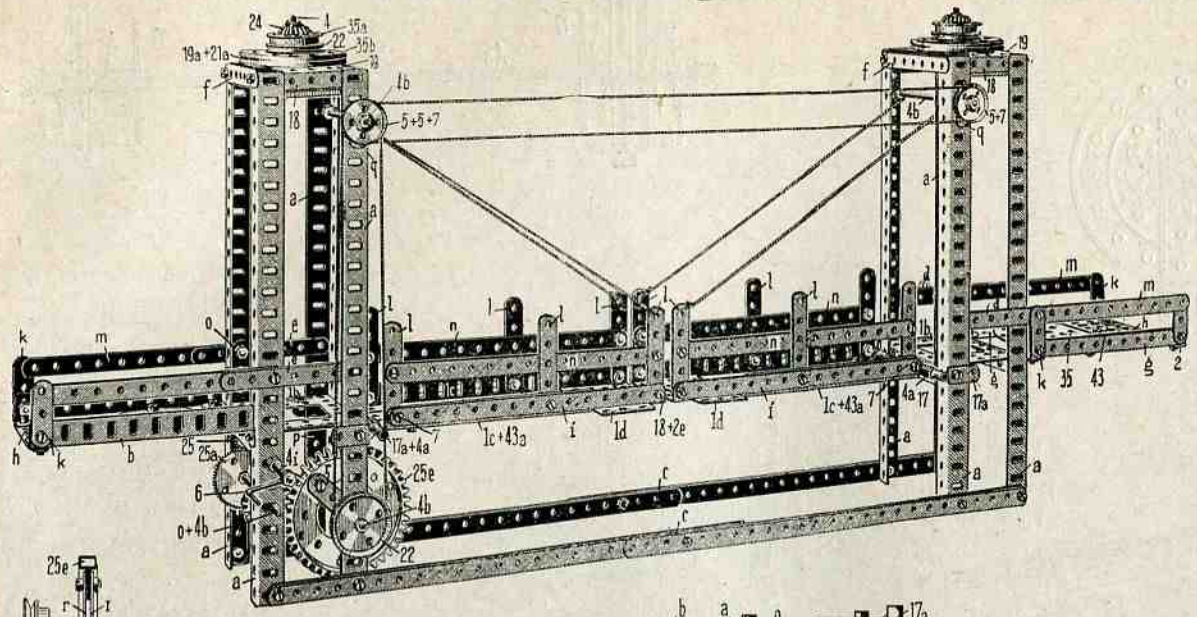


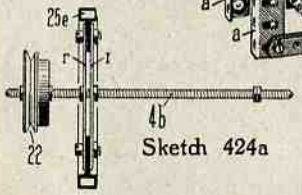
Sketch 423c
Section trough the transmission shaft 4i, which carries the large cog wheel 25e.

Parts to same:

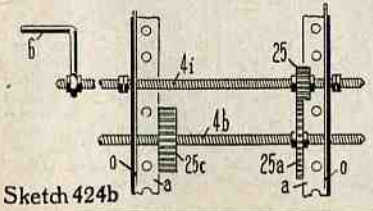
2 pillars	No. 1b+1e
2 sockets	„ 43
2 plates	„ 43a
2 road plates	„ 1c+1d
4 pillar corner fillets	a s. 25 h. l.
2 long joists	b s. 54 „ „ (25+15+25)
4 span bands (7+25)	c s. 29 h. l.
8 joists	d „ 11 „ „
4 „	e „ 7 „ „
8 „	f „ 5 „ „
2 girder bands	g „ 11 „ „
2 „ arches (15+15)	h „ 29 „ „
2 middle fillets	i „ 6 „ „
2 cross pins (under 1c+1d)	k s. 5 h. l.
4 span spindle blocks	No. 2b
4 spindle blocks	„ 2d
1 driving shaft	„ 4
2 roller spindles	„ 4a
2 span spindle	„ 4b
2 rail bearers	„ 4b +3d+28
1 drum shaft	No. 4i
1 crank	„ 6
2 position rings	„ 7
2 cog wheel hubs	„ 8
4 rail uprights	„ 17
2 cross joists	„ 18
2 pillar frames	„ 18
1 bridge cross carrier	„ 18a
4 rope rollers	„ 22
1 cog wheels	No. 25c
2 rail beams	„ 28
1 cog wheel	„ 35b +25e+35b
2 drum discs	No. 35a
1 shaft block	„ 41
80 screws with nuts	
20 angle brackets	

No. 424. Suspension Bridge

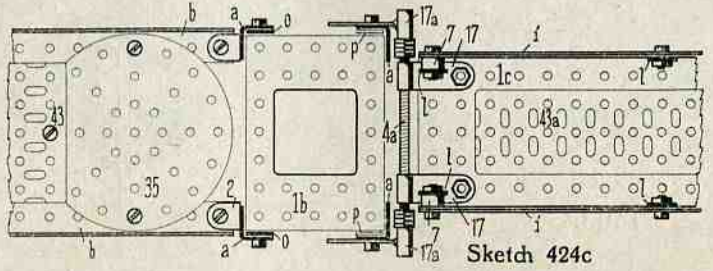




Sketch 424a



Sketch 424b



Sketch 424c

Sketch 424a. Shaft 4b with great cog wheel 25e.
Sketch 424b. Side view of both cog wheel shafts 4i and 4b in left tower.
Sketch 424c. Ground section of the left part of the road. It shows the position of the bascule shaft 4a.

Parts to same:

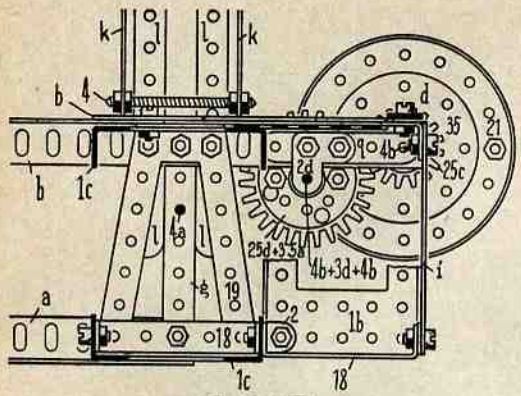
2	pillar road plates	No. 1b
2	road plates (bascules)	„ 1c
4	„ „ „	„ 1d+43a
4	projecting road plates	„ 35+43
8	cross fillets of the pillars	a a. s. 25 h. l.
2	projecting bearers	b „ „ 10 „ „
2	long joists (8x25)	c s. 43 h. „
2	pillar beams	d „ 6 „ „
2	„ „	e „ 7 „ „
4	„ frames	f „ 7 „ „
4	projecting bearers	g „ 11 „ „
2	projecting bands (cross)	h „ 7 „ l
4	road side bearers	i „ 15 „ „
6	rail fillets	k „ 3 „ „
12	„ „	l „ 5 „ „
4	projecting rail bearers	m „ 11 „ „
4	bridge side rail bearers	n „ 15 „ „
2	rack bands	o „ 11 „ „
2	„ „	p „ 7 „ „
2	shaft blocks	q „ 2 „ „
2	cog wheel spokes	r „ 5 „ „
1	side bridge tongue	No. 2e
2	crown spindles	„ 4
2	bascule shafts	„ 4a
2	cog wheel shafts	„ 4b
1	driving shaft	„ 4i
4	rope wheels	„ 5, 22
1	crank	„ 6
4	bascule position rings	„ 7
4	„ blocks	„ 17
4	„ shaft blocks	„ 17a
4	pillar long frames	„ 18
2	„ crowns	„ 19+19a +21a+22+35a+24
4	cog wheels	No. 25, 25a, 25c, 25e
80	screws with nuts	
6	angle brackets	

Every long joist c consists of 4 strip of 25 holes.

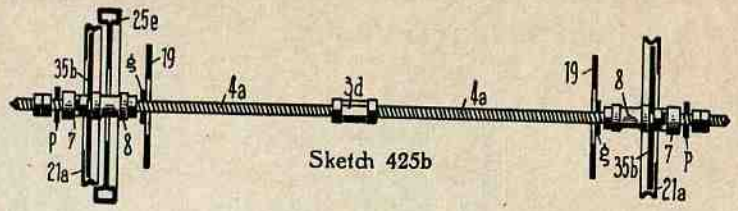
Rack bands o (strip of 11 holes) are brought to the outer rack bands p (strip of 7 holes) to the inner corner fillets of the left pillars so that the shafts find a good position in round holes.

In order to find place for the exterior rail fillets l of the bascule, between the inside corner fillets of the pillars a position ring 7 is inserted between the plate edges from 1c and the four rail fillets l in question.

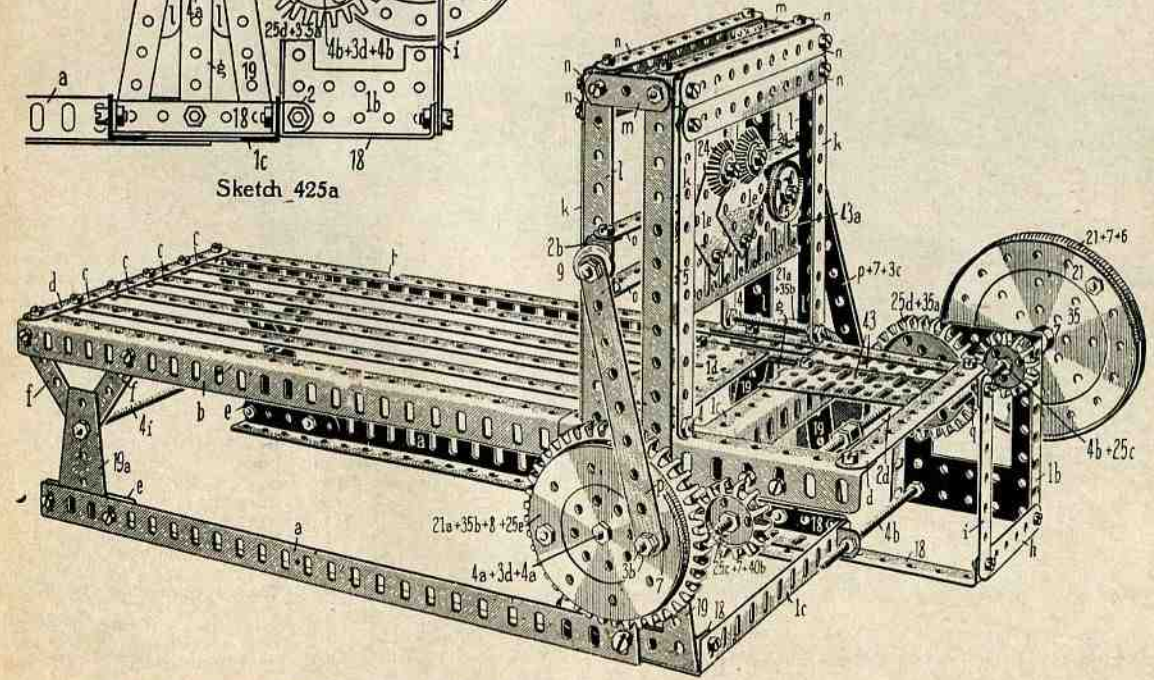
No. 425. Mill Board Cutter.



Sketch 425a



Sketch 425b



Parts to the Board Cutter:

1 rack block	No.	1b	
1 floor and 1 table plate	„	1c	
4 blocks	No.	19 and 19a	
2 beams	a a. s.	25 h. l.	
2 table frames	b „ „	33 „ „ (25+10)	
4 table fillings	c s.	25 h. l.	
2 cross pins	d „	11 „ „	
2 lappets	e „	5 „ „	
4 supports	f „	5 „ „	
2 rack fillets	g „	7 „ „	
1 projecting joist	h „	6 „ „	
1 projecting fillet	i „	7 „ „	
4 fillets	k „	11 „ „	
4 guide rails	l „	15 „ „	
2 bolts	m „	3 „ „	
6 cross frames	n „	11 „ „	
2 glide rails	o „	15 „ „	
2 connecting rods	p „	9 „ „	
1 racket lappet	q „	5 „ „	
1 table plate	No.	1d	
1 knife lock	2x „	1e	
2 glide rail blocks	„	2b	
2 crank pins	„	3b, 3c	
2 bolts	No.	4	
1 crank shaft	„	4a+3d+4a	
1 crank shaft	„	4b	
1 connecting gear shaft	No.	4b+3d+4b	
2 position spindles	No.	4b, 4i	
2 lock wheels	„	5	
1 crank	„	6	
2 position rings	„	7	
2 fastener discs	„	9	
3 joists	„	18	
1 driving disc	No.	7+21+35+21+7	
1 fly wheel	No.	21a+35b+8+25e	
1 fly wheel	No.	21a+35b+8	
2 cone wheels to lock	No.	24	
1 cog wheel	„	25c+7+40b	
1 „ „	„	25c	
1 „ „	„	25d+35a	
2 table plates	„	43	
1 knife	„	43a	

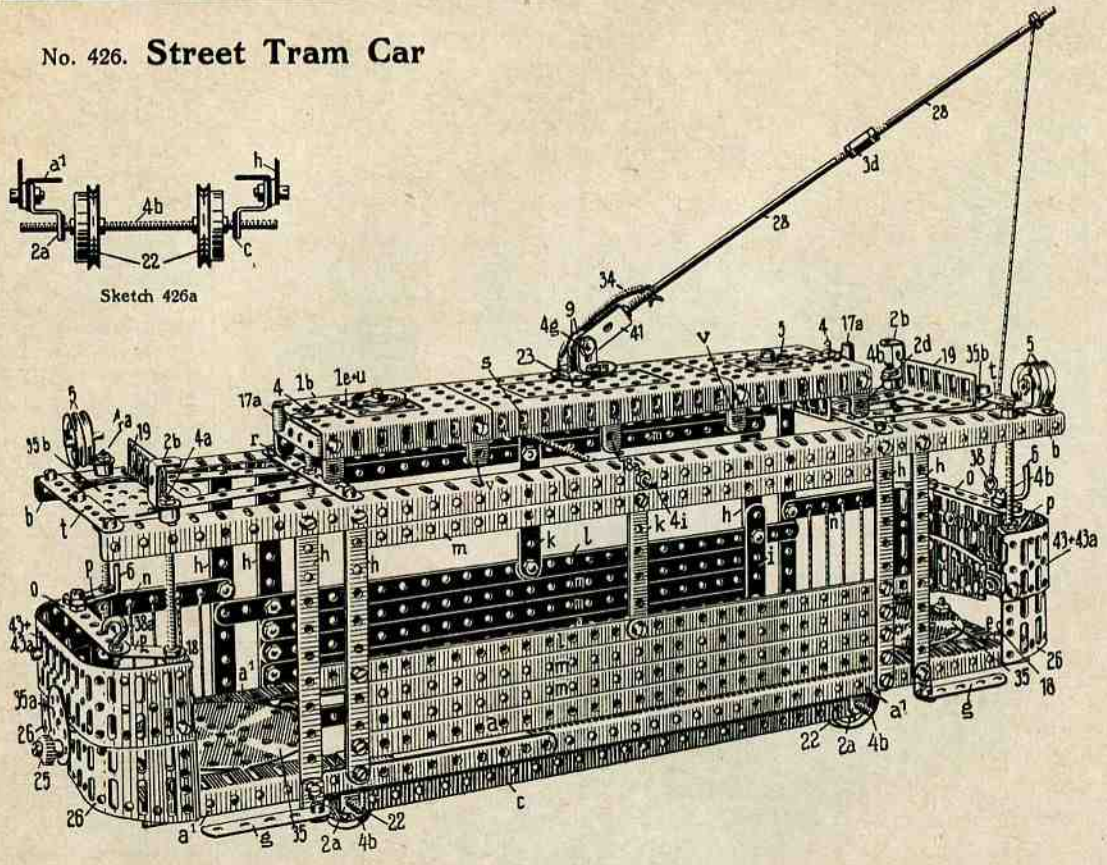
70 screws with nuts
10 angle brackets

Sketch 425a. Long section through the right hand part of the table.

Sketch 425b. Section through the crank shaft 4a+3d+4a, to which both fly wheels 21a+35b as well as the large cog wheel 25e are tightly screwed on.

No. 426. Street Tram Car

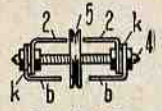
Sketch 426a



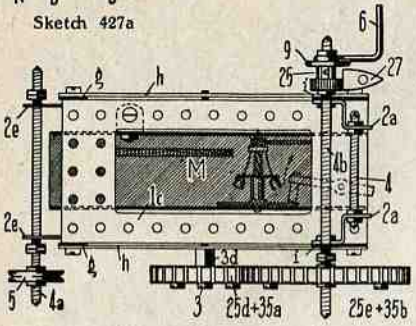
This car was sent in as drawing and photo by two boys nearly at the same time. Little is necessary to remark, as all is quite clear on the illustration. Sketch 426a is a cross section through the wagon floor, in order to show how the angles and strips are set together and the wheels placed.

Parts to same:

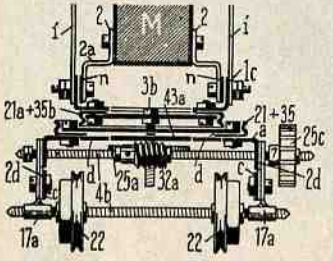
2	long bearers	a	a. s. 25	h. l.
2	„ „	a1	„ „ 25+10+s. 11	h. l.
2	„ frames	b	„ „ 43	h. l. (25+25)
2	axle block bearers	c	s. 25	„ „
3	floor bearers	e	„ 9	„ „
4	step boards	g	„ 5	„ „
8	uprights	h	„ 11	„ „
2	„	i	„ 5	„ „
2	middle uprights	k	„ 7	„ „
2	breast bands	l	„ 29	„ „ (15+15)
6	wall bands	m	„ 25	„ „
2	protecting fillets	n	„ 6	„ „
2	breast bands	o	„ 7	„ „
4	„ „	p	„ 3	„ „
2	cross bearers	r	„ 9	„ „ (5+5)
2	lappet bands	s	„ 15	„ „
2	cross frames	t	„ 9	„ „ (5+5)
2	lappet bands	u	„ 15	„ „
4	divided pins	v	„ 2	„ „
1	roof	No. 1b+1e+1c+1d+1b+1e		
4	axle blocks	No. 2a		
2	shield number holders	„ 2b		
4	corner bands	„ 2d		
2	position bolts	„ 4		
4	roof supports	„ 4a, 4b		
2	axles	„ 4b		
1	cross bolt	„ 4g		
1	contact pole	„ 28+3d+28		
2	lanterns	2 „ 5		
2	escape bascules	„ 5		
2	cranks	„ 6		
2	position discs	„ 9		
1	turning block of the contact pole	„ 23		
1	divided pin	„ 18a		
2	shield eyes	„ 17a		
2	cross frames	„ 18		
4	uprights	„ 18		
2	roof plates	„ 19+35b		
4	wheels	„ 22		
1	buffer	„ 25		
4	front wall parts	„ 26		
2	„ „ „	„ 43+43a		
1	spiral span spring	„ 34		
2	signals	„ 35a		
1	contact fork	„ 41		



Sketch 427a



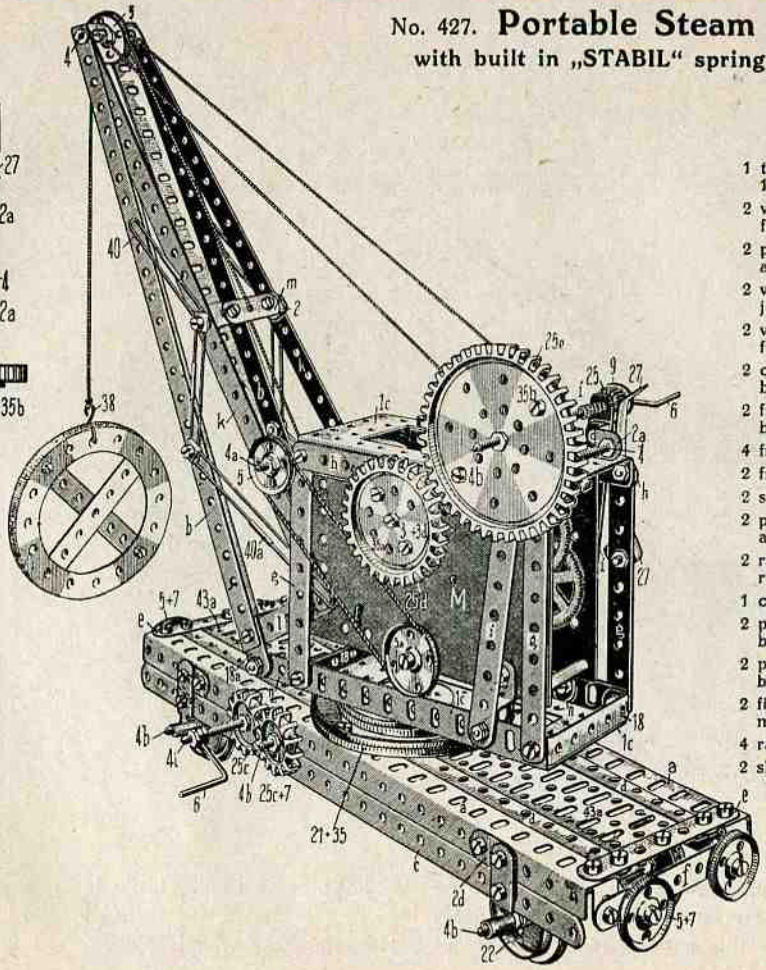
Sketch 427b



Sketch 427c

No. 427. Portable Steam Crane

with built in „STABIL" spring motor



Parts to same:

1	turning position plate, 1 cover plate	No.	1c
2	wagon frames	a a. s.	25 h. l.
2	projecting arms	b „ „	25 „ „
2	wagon joists	c „	25 „ „
2	wagon fillings	d „	25 „ „
2	cross bands	e „	7 „ „
2	front bands	f „	7 „ „
4	fillets	g „	9 „ „
2	frames	h „	11 „ „
2	shaft blocks	i „	11 „ „
2	projecting arms	k „	25 „ „
2	railing rods	l „	5 „ „
1	cross band	m „	3 „ „
2	projecting blocks	n „	11 „ „
2	position spindle blocks		No. 2a
2	fixing angles on motor		„ 2a
4	rack bands		„ 2d
2	shaft blocks		„ 2e

The spring motor built in does not belong to the contents of the box.

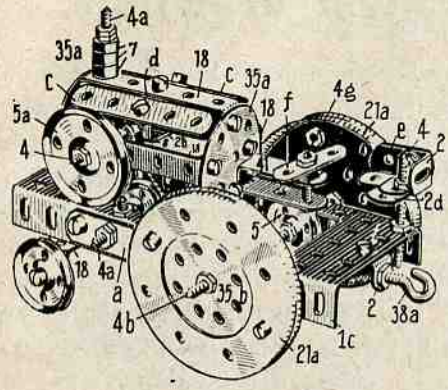
1	turning frame axle	No. 3b
1	transmission shaft	No. 3+3d
1	span spindle	No. 4
1	roller spindle	„ 4
1	rope shaft	„ 4a
1	crank shaft	„ 4b
1	transmission shaft	„ 4b
2	running wheel axles	„ 4b
1	crank shaft	„ 4i
2	rope rollers	„ 5
4	buffers	No. 5+7
1	driving wheel	No. 5a+3d
2	cranks	No. 6
4	running wheel blocks	„ 17a
2	joists	„ 18
1	projecting strut	„ 18a
1	turning frame	No. 21 +35+21a+35b
4	running wheels	No. 22
1	cog wheel	„ 25a
2	„ „	„ 25c
1	„ „	No. 25d+35a
1	„ „ „	25e+35b
1	ratched spring	No. 27
1	worm	„ 32a
1	load hook	„ 38
4	span bands	No. 40+40b
2	„ „ „	40a+40b
2	wagon ceilings	No. 43a

Sketch 427a. Construction of the upper guide roller spindle.

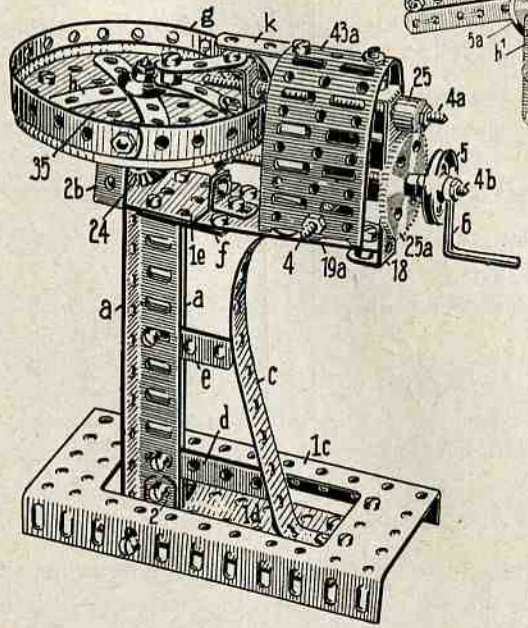
Sketch 427b. Roof top view.

Sketch 427c. Section trough the worm shaft 4b.

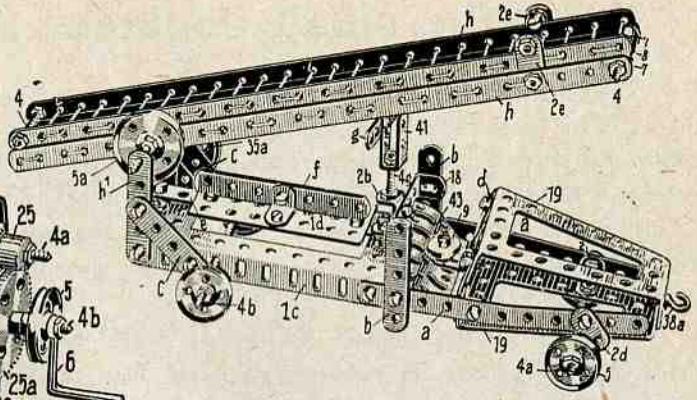
No. 428. **Iron Horse**



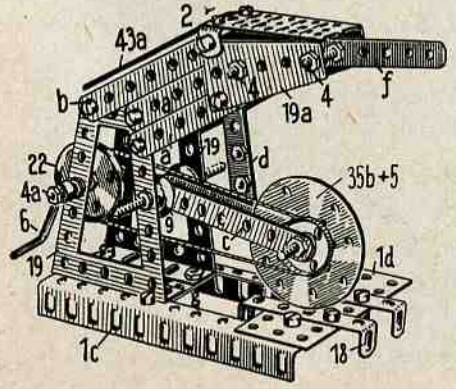
No. 429.
Butter Machine



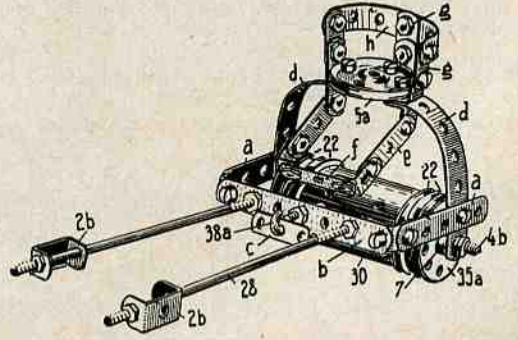
No. 430. **Motorcar with fire escape**



No. 431. **Metal Saw**



No. 432. **Land Roller**



Objects for boys

As a spur for intelligent boys the above 5 models can be given them without help in sketches, so that they can build them correctly themselves or even better them if possible.

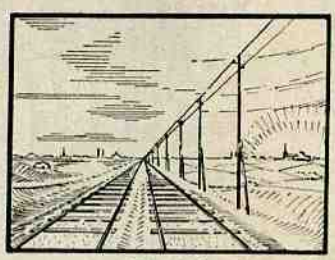
What the small engineer must know of technical drawings.

Before any machine, crane, bridge or similar things are built, the plan of an engineer must be first made. The engineer plans the construction in technic first in large outlines, he makes a few hasty sketches until he has found an adaptable form. Then he goes into details, studies them minutely, thinks and calculates the power, the material of the sections for construction and plan plans the best adaptable form.

In order that the architect can execute exactly he produces drawings of the building, in which measurements, form and material are indicated. These technical drawings seem very strange to the laity, nothing but lines crossing each other. He cannot make out what these lines can represent.

The layman sees the object in perspective like the objective of a camera.

We cannot see with our eyes parallel even lines. For smaller distances we are easily mistaken as to their measure. But when the parallel lines extend very far, then we can see them meet in a point. Let us make an experiment: We stand in the middle of a straight road and look in its direction, or the same on a railway line. Then it appears to us as if those lines or roads meet on the horizon, although we know very well that the width of road or line is the same as on the point we are standing. Telegraph poles of the same length seem to take different lengths in the distance (see Sketch 1.)



Sketch 1

In a technical drawing therefore all lines and poles of equal length are of the same measurements. This sort of drawings we call geometric drawing.

The building parts used in the architectural and machine lines are called according to their cross section:

strip iron | angle iron | angle iron | T iron | double T iron | U iron | Z shaped iron | cover iron | quadrant iron | torus iron | torus iron | rail

There are still round bar iron, four-edged, six-edged, eight-edged irons, and other forms of iron, which are used less generally but for special purposes only.

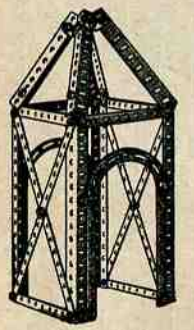
The difference between geometric and perspective designs is seen in Sketch No. 2. As machine part we have chosen a screw nut. The upper part shows the screw nut in perspective, the under part the same thing as a geometric drawing. Only in the geometric drawing can it be seen that the six rims are of the same length and the borage circular round.

Sketch 2

By these geometric drawings it is clearly shown: Ground plan, elevation, side-elevation, back-view, top-view and the section.

In drawing such ground, side or elevation sections we will try with an example:

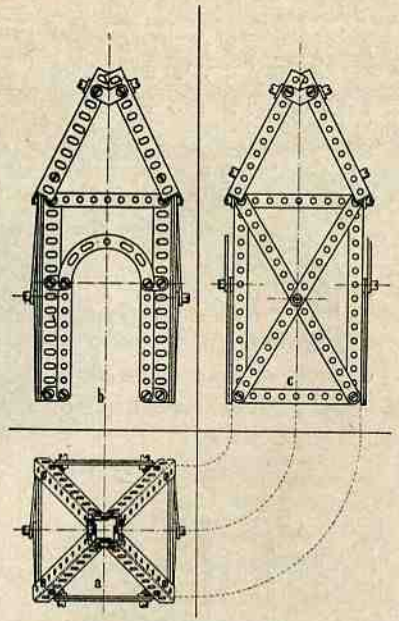
We are building a tower, which we draw in sketch 3. We put it on a white sheet of paper and look from above with one eye, thereby having parallel lines of the tower.



Sketch 3

The points where these lines fall on the paper we draw and connect these points accordingly together, then this gives us the ground plan of the tower (See a in sketch 4).

We put behind the tower a sheet of paper and look at it horizontally from the front, draw again these parallel lines, adjust the points, and draw the connection lines, and then we have the top view of (See b in sketch 4).



Sketch 4
a = Ground plan b = View
c = Side View

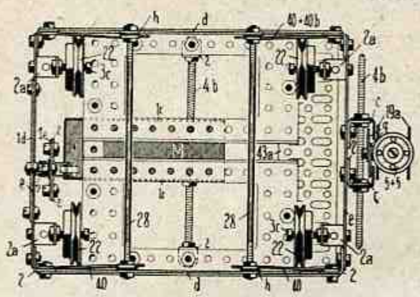
We do the same from the side and get the side elevation or side view (See c in sketch 4). In these three drawings is shown how every machine is erected.

It would not be possible to make drawings of large cranes, machines or houses in their actual dimensions, but in drawing these we quote the exact measurements for each line. For example: In a drawing which is quoted 1—20 scale is abbreviated into S 1:20. This indicates that all the lines in the drawing are actually 20 times larger so that one inch on the drawing means 20 inches in reality.

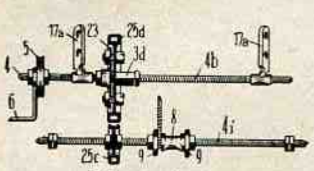
The general views of these sketches are always in perspective after photographs of models, whereas, the explanatory drawings, which are done to explain certain parts, mostly are done in geometric designs.

No. 433. Steam Rammer

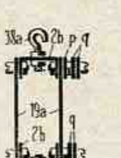
with built in „Stabil“ motor



Sketch 433a. Under View.



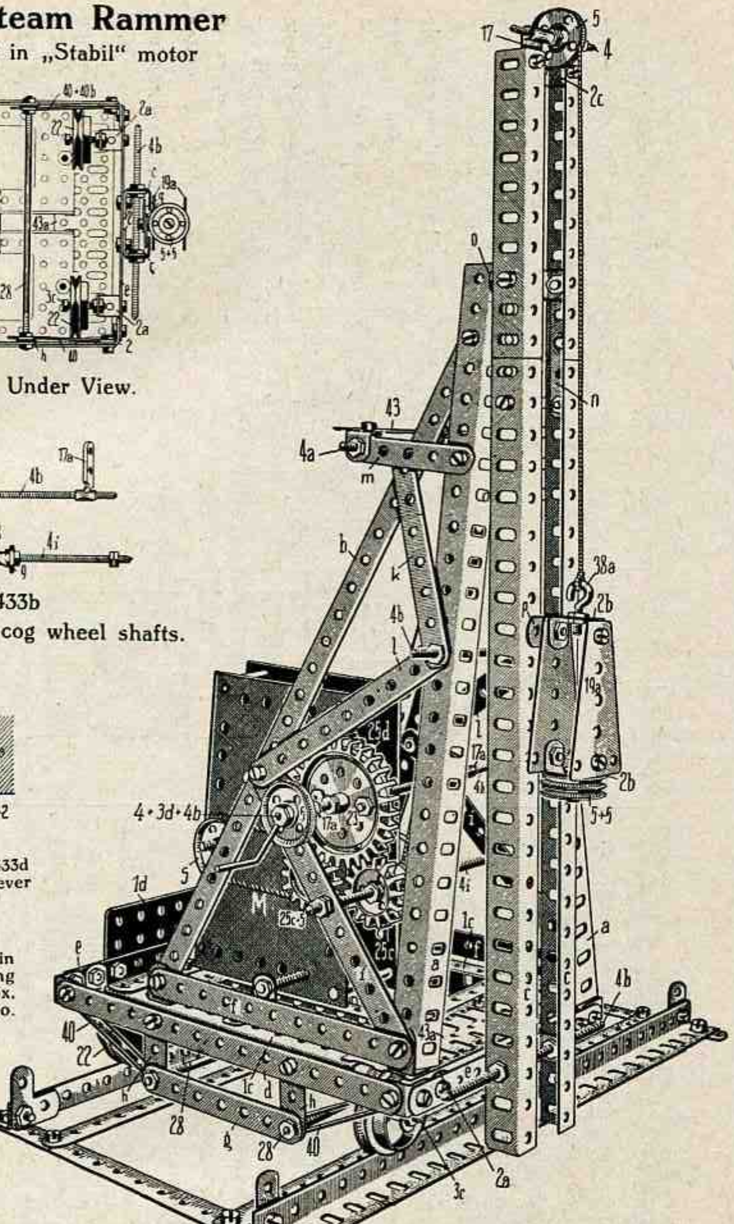
Sketch 433b
Construction of the cog wheel shafts.



Sketch 433c Rammer block

Sketch 433d Switch lever

The spring motor built in this model does not belong to the contents of this box. Further information see No. 2 of cover.



Parts to the Steam Rammer:

2 floor plates	No. 1c
1 " "	" 43a
1 pedestal plate	" 43
2 corner fillets	a a. s. 25 h. l.
2 blocks struts	b " " 25 " "
2 guide rails	c " " 25 " " (25+10)
2 floor frames	d " 15 h. l.
2 " "	e " 11 " "
2 feet joists	f " 11 " "
2 span pins	g " 7 " "
4 rod pins	h " 3 " "
2 support struts	i " 11 " "
2 " "	k " 7 " "
2 span bands	l " 9 " "

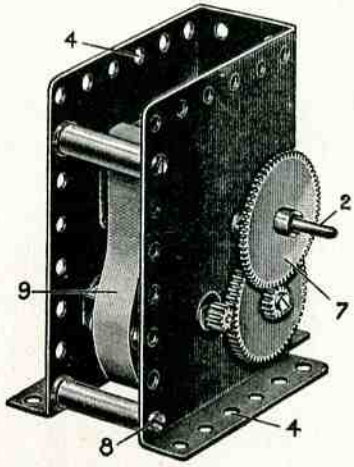
2 pedestal bearers	m s. 5 h. l.
2 lappets (to c)	n " 5 " "
1 cross band (over near a)	o " 3 " "
1 glide rail (over ram block)	p " 3 " "
2 slide rails	q " 3 " " (2+2)
1 lever	r " 7 " "
4 axle blocks	No. 2a
2 rammer block pins	" 2b
1 guiding pin (over by c)	" 2c
4 running wheel axles	" 3c
1 roller spindle	" 4
1 driving shaft	" 4+3d+4b
1 span pole	" 4a

3 span pole	No. 4b
1 winder shaft	" 4i
1 crank wheel	" 5
1 rope roller	" 5
1 rammer block head 2	" 5
1 crank	" 6
1 rope drum	" 8+2×9
2 rope roller blocks	" 17
2 crank shaft blocks	" 17a
2 rammer block sides	" 19a
4 wheels	" 22
1 disc wheel	" 23
2 cog wheels	" 25c
1 " "	" 25d
2 span poles	" 28
1 screw hook	" 38a
4 span anchors	" 40+40b

Walther's Electric „STABIL" Motors

For Use with all „STABIL" Construction Boxes

The Electric „STABIL" Motor is permenent in its working and reliable. It performs its work in great measure according to its technical build and its technical endowment. This motor is strong enough to set in motion the largest of the models found in this illustrated book.



It is also to be used as a child's toy for a 20 volt tension feeble current motor and can be used with a suitable transformer for working an alternate current of 110 and 220 voltage, when attached to such. In every motor a detailed description and directions for use are enclosed.

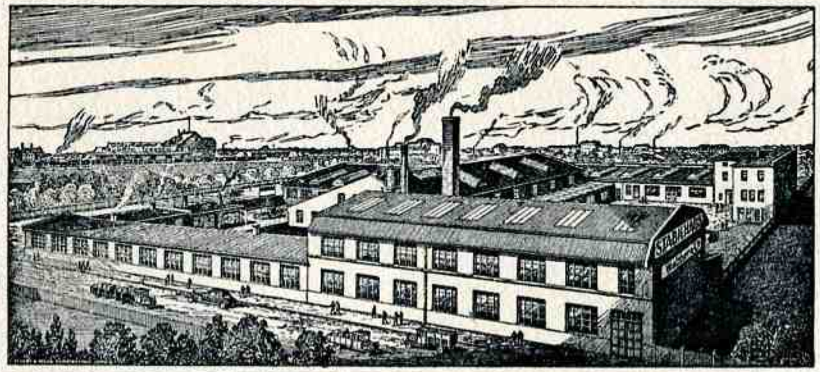
„STABIL" Attachment Motor Transformer

This Motor Transformer serves as a connection apparatus for the above mentioned Weak-current Motor „STABIL" for alternate or rotary current working.

We only export Transformers of 110 or 220 volts.

Should the weak current motor be connected to a continuous-current connector, a continuous current transformer is used as an addition apparatus. We do not manufacture this transformer in series, because the Electric Works are nearly all supplied with alternate or rotary currents, and the works that still produce continuous current transpose same to alternate or rotary currents. If especially ordered we deliver also continuous current transformers.

4
German Patents
2
U. S. A.
Patents
9
D. R. G.-M.



3
English Patents
2
French
Patents
9
D. R. G.-M.

Jou can build with **STABIL**

No. 49	with instruction book 49—52	. . . . the models No.	**1—128**
„ 50	„ „ „ 49—52	. . . . „ „ „	**1—256**
„ 51	„ „ „ 49—52	. . . . „ „ „	**1—349**
„ 52	„ „ „ 49—52	. . . . „ „ „	**1—433**
„ 53	„ books 49—52 and 53—55	. . . . „ „ „	**1—526**
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„ 55	„ „ 49—52 „ 53—55	. . . . „ „ „	**1—715**

Stabil products can be had in all first class toy and optical businesses as well as teaching equipment establishments. Addresses of dealers on application.

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1931. S. B.

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