Schrauber & Sammler

Magazin für die Freunde des Metallbaukastens.

Ich schraube, also bin ich. Nr. 20 Herbst 2021

In this edition

Photos good, (almost) everything good!

Next meeting of the Friends of Metal Construction Kit:

The annual meeting will take place again in
Bebra, in the Hotel Sonnenblick.

www.sonnenblick.de

The date is October 14-17, 2021.
Further information is available from Andreas Köppe at:
Thale_Schraub@web.de

A few words about this booklet.

Dear readers, dear screwdrivers and collectors, dear metal construction kit friends,

You just have the latest issue of our magazine for friends of the metal construction kit on your screen. It is the 20th edition (five years!) And it has a length of 40 pages.

And what is currently in it?

In this issue, a large model made of Trix and a model made of Eitech material come first and show that you can not only build beautiful and complex models with the market leaders Märklin and Meccano. I myself only work with Märklin and Meccano, but I am always happy when I receive contributions about other systems.

The first report is a detailed description of a large Trix model of a modern truck crane. It is a construction description that shows all the subtleties of the model and proves that you can build prototypical models with the supposedly simple Trix system.

Immediately afterwards there is another truck crane, but a strange one. The model is strange, not the model. Since the Eitech / Construction model "truck" seemed a bit too simple, the builder built a crane trailer for it. Something like that actually existed and served in Australia as a crane for aircraft repairs in the field and during times of emergency. A construction with many functions that are prototypically implemented.

The next report is a crafting tip for a simple bending device for perforated tapes. The helpful part is kept in the half-inch system, but the principle can easily be transferred to other systems.

The following article describes a Märklin Ferris wheel that is large, but not from the "Giant Ferris Wheel" rad-Kasten "and has some special features.

This time, Urs pulled a metal construction kit from his exotic drawer that he knows next to nothing about. If you can say something about it, please contact me or, even better, directly to Urs.

It is a rare case that two screwdrivers happen to be recreating a model of the same prototype. Here is a Mercedes-Benz SSK sports car from the 1930s, built once on a small scale in Meccano with a little Märklin and once on a large scale from a large number of modular systems and third-party parts. An interesting comparison.

The report on a seaplane made from Temsi parts shows a "small model for in between". It is the first Temsi model that appears here or, in this case, lands.

And now here are my usual last remarks with thanks and requests:

I would like to thank everyone who contributed a report or suggestions. Special thanks to Gert Udtke, who reliably discovered spelling mistakes and other linguistic inadequacies.

Our booklet can only continue to exist if we receive many reports on various modular systems, models, tips for handicrafts, historical facts.
So please write and photograph something and help us.

Your

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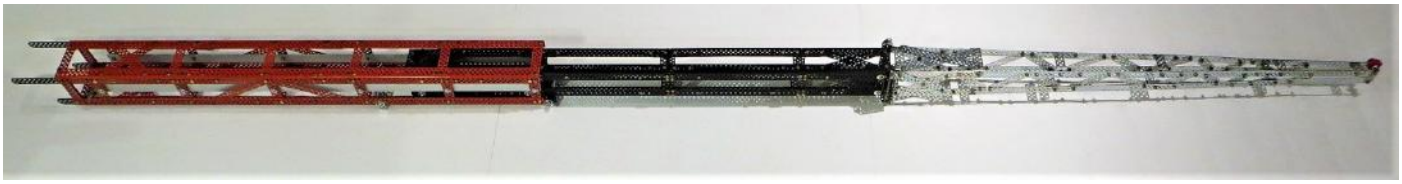
General information: This edition and all older ones have only been published as PDF documents and can be downloaded to your own computer at any time from the following Internet addresses:
www.nzmeccano.com/image-110519 or:
https://www.meccanoindex.co.uk/SundS/
The latest edition always comes first.

Truck crane - side view



Telescopic arm with boom tip

Like a real truck crane - but made from Trix

By Elmer Schaper (text and photos)

My interest has always been in the filigree telescopic cranes, which are extremely versatile with their telescopic extensions. The telescopic arm is a very big challenge for metal construction kit screwdrivers.

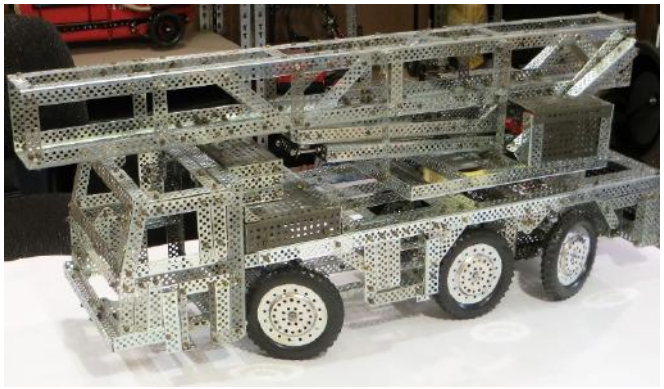
When Günther Lages presented his super Märklin telescopic crane in November 2019 (screwdriver & collector 15/2020), I was first amazed by the excellent model. This gave rise to the idea of designing a truck-mounted crane again. In 2006 I had already built a small, hand-operated truck crane, which I unfortunately had to break up into individual parts due to the lack of parts at the time.

The new project was intended to be a fully functional model with many electrically operated functions. Since they take up a lot of space, it had to be very large. Compared to the real versions of truck-mounted cranes, only a two-way telescopic arm is possible with my Trix model due to the weights and forces, but supplemented by an attachable crane tip.

I quickly found a suitable sketch of a telescopic truck crane on the Internet. Next steps: choose the tire size and use it to set the scale, Sketch the dimensions, adapt the dimensions to the corresponding components of the Trix system or allow a cut. Selected scale: approx. 1:10, based on the Trix tire size R3 (outer diameter = 114 mm).

The functions

In the first step, the construction model was created in the gray Trix look with the probable dimensions, the most important functions and their drive concepts.



The mobile crane should be able to perform the following functions electrically and partly manually:

Undercarriage
- Forward and backward travel, switchable to manual or motor operation by lever

- Steering front and rear axles, with a knob switchable on Hand- or Engine operation
- Turn the crane left and right, switchable to manual or motor operation using a lever

crane
- Lift and lower telescopic arm with motor operation
- Extend and retract two-part telescopic arm with motor operation
- Raise and lower the crane rope with the motor running

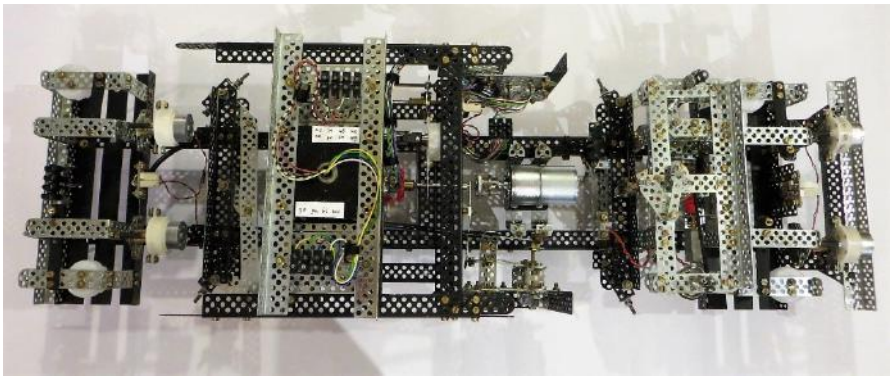
The crane and undercarriage have headlights, indicators, tail lights and alarm lights as well as a beeper.

The colors

In the second step, the individual modules of the final Trix version were created based on the construction model. The choice of colors is limited to shiny zinc, fire engine red and matt black. Many of the Trix parts installed here were extremely unsightly and with a wire brush and colored spray paint were turned into "chic" components again. The tin snips were also often used, and I had to cut many Trix elements. In addition to the standard Trix metal construction elements, foreign parts and materials are also used. Gert Udtke deserves a big thank you for his Trix nut and screw donation.

Base frame module

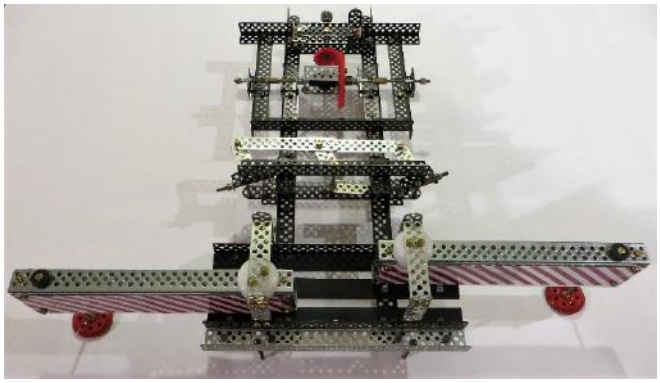
The base frame comprises the three axles, the drive train and the four extendable supports. It consists of angle profiles, the construction of which is reinforced by flat strips.



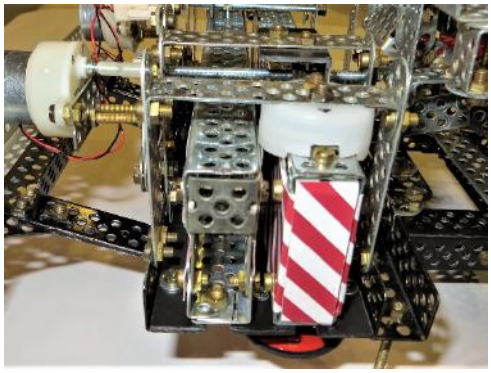
The middle axle 2 is the drive axle, axles 1 and 3 are steerable and connected below the undercarriage via a linkage. Due to the heavy weight of the model, the axle mounts require reinforcements (double flat strips) and sleeves to reduce friction.

The drive train consists of a gear motor with a clutch with manual preselection for manual or motor operation and a differential. The drive axles are bolted several times due to the high torque when starting up. In addition, a speed controller is installed in the control panel for a smooth start-up of the main drive.

The boxes for the four extendable supports are located in front of and behind the wheel arches.

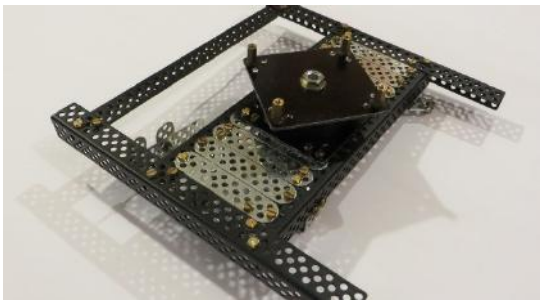


They move laterally out of the undercarriage, guided on plastic strips at the bottom, and an adapted screw bottle cap guides the support from above. Each support is equipped with a gear motor that engages directly in the punched holes of the Trix angle profile via a star washer. The support plate is connected to the end of the support via a threaded rod and can be turned down manually down to the wooden panels. The supports do not take any weight from the crane.

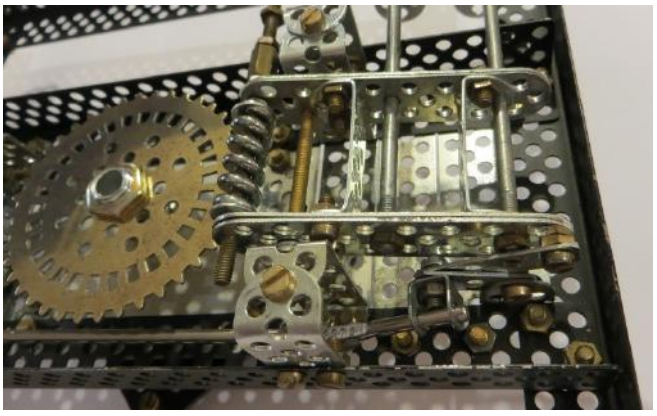


Crane warehouse

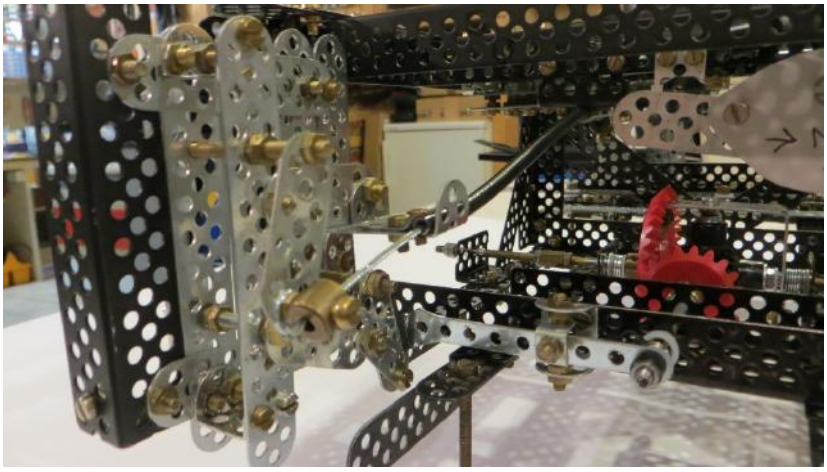
The range of parts from the Trix metal construction kit does not offer a suitable crane bearing, only an industrial warehouse can help here. A 65 mm wide and 12 mm high deep groove ball bearing forms the slewing ring for the crane. A hollow lamp sleeve, two aluminum plates, the deep groove ball bearing, spacer washers, sleeve nuts and a drilled Trix gear form the complete crane bearing.



When the manual lever is set to "Turn crane - motor operation", a gear motor with worm drive acts on the Trix gear on the crane bearing. If the manual lever is set to "Hand", the worm swivels away from the gearwheel via a tilting mechanism.

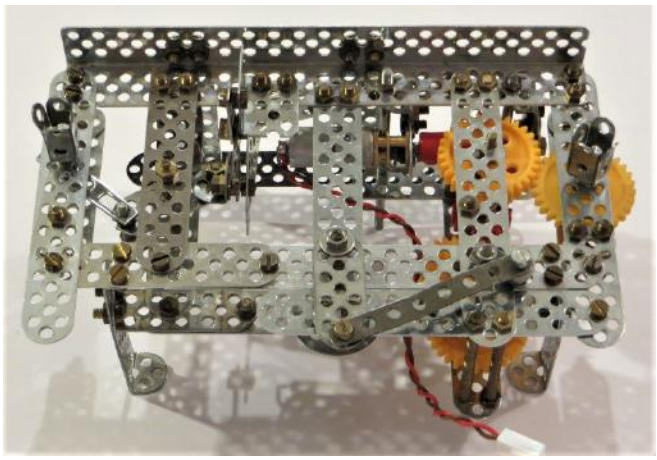


A mechanical flip-flop ensures two exact states of this lever. The lever responsible is operated via a Bowden cable and a swivel mechanism.

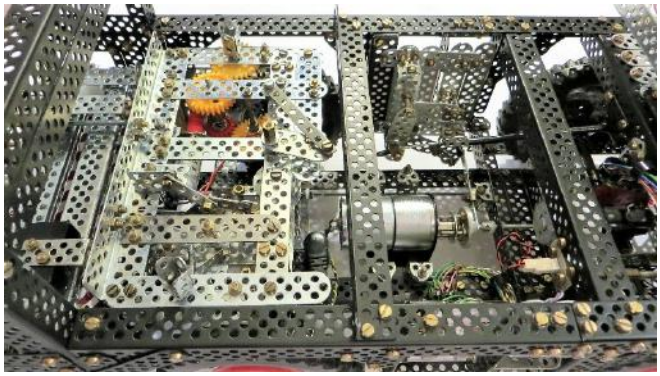


Steering module

This module takes care of the steering movement of axles 1 and 3, whereby axle 3 turns the wheels less strongly. The module is placed on the steering column via a coupling (two perforated disks, one with screws) and screwed to the base frame with four screws. The tulip-shaped openings for manual switchover between manual and motorized operation and for manual steering protrude from the top of the module.



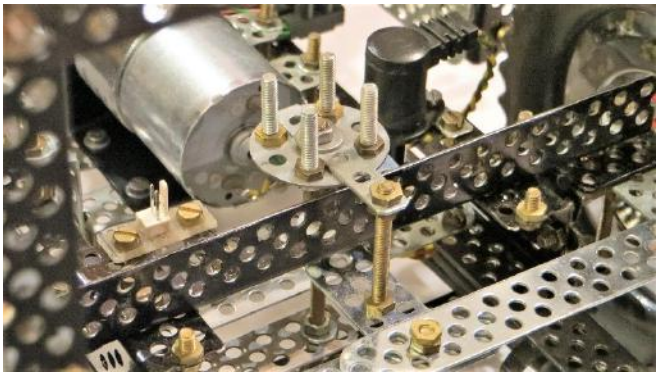
The manual switchover between manual and motor operation requires that it be clearly locked into the relevant position between manual and motor.



This causes a mechanical "flip-flop" that only allows two end points of the selector lever via a spring mechanism.

When switching to manual mode, the electric worm drive is shifted vertically and no longer engages the steering column gear.

Another special feature of the steering module is a realistic (slow) function of the steering movement in engine operation. For this purpose, I integrated a transmission made of plastic gearwheels. It is driven by a gear motor with a worm. The gear is still required to generate the high forces for the steering movement. To do this, the power transfer from the steering column to the steering levers of the wheels had to be increased.

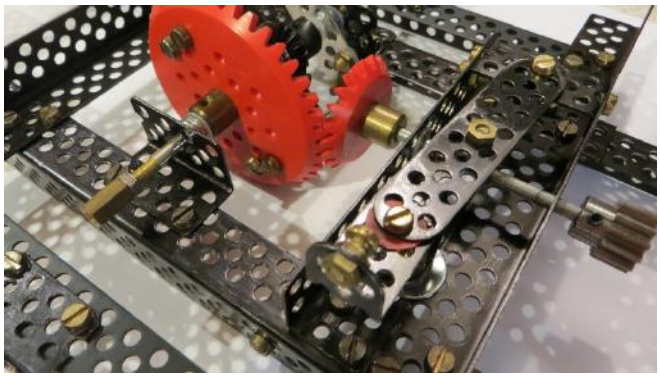


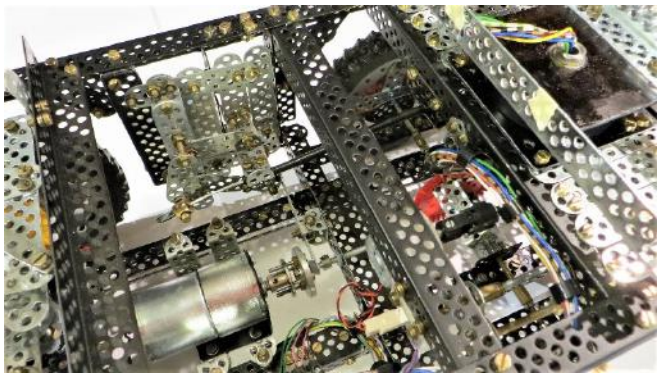
It is not possible to “override” the steering in its end positions, because the steering movement is picked up by a disc rotating by the gearbox. This avoids a "crash" without using limit switches at the end positions. In practice, it looks like the steered wheels in manual and motor mode when this function is activated continuously to and fro without hitting anywhere.

The red housing of the hydraulic unit behind the driver's cab forms the cover over the steering module and engages in guides when it is put on. The black buttons on the housing are “switch for manual / motor operation” and “handwheel for manual steering adjustment of the wheels”. When the housing is put on, both actuations engage with a square mandrel in the tulip-like openings of the steering module.

Main drive module basic carriage

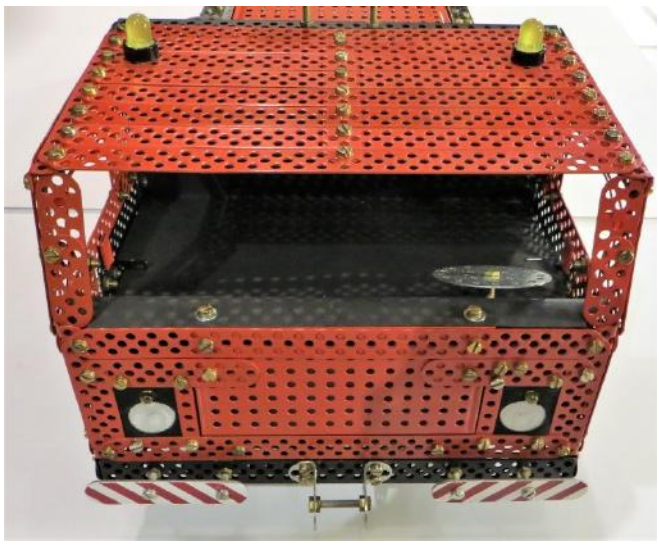
The main drive motor (12V, 7W, 100U / min) drives the bevel gear to the differential directly, provided the manual lever "Travel drive - manual or motor operation" is set to motor operation. In manual mode, a mechanism releases the spring-loaded coupling between the motor and bevel gear.



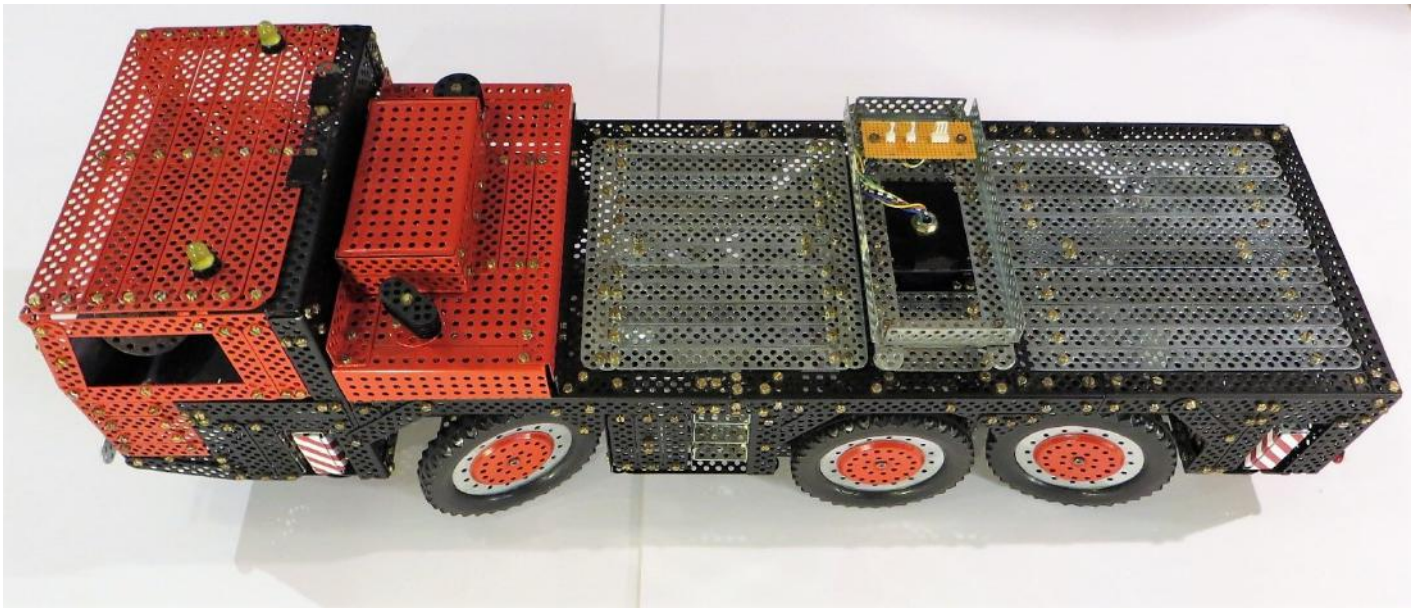


The coupling consists of two discs: one disc has holes, the other has pins in the same positions. The pinion shown in the photos had to give way to the clutch.

Driver's cab basic car and cover hydraulic unit

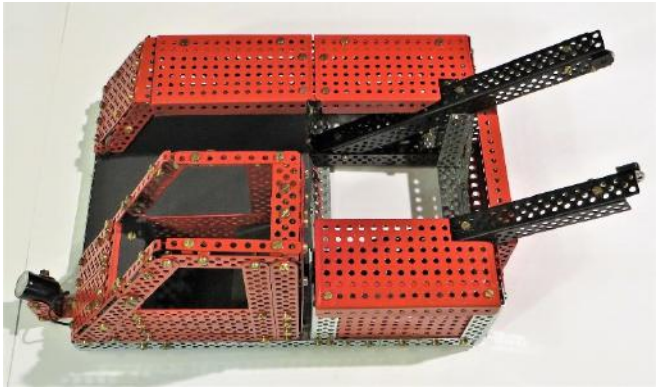


The driver's cab is attached and detachable as a whole after the electrical cable for the lights on the driver's cab has been unplugged. Details in the driver's cab have been omitted: A Trix perforated disc as a steering wheel and a cardboard cover are the entire equipment. The one-piece cover of the hydraulic unit is also inserted. When putting it on, make sure that the black hand controls correctly engage in the intended receptacles in the steering module.

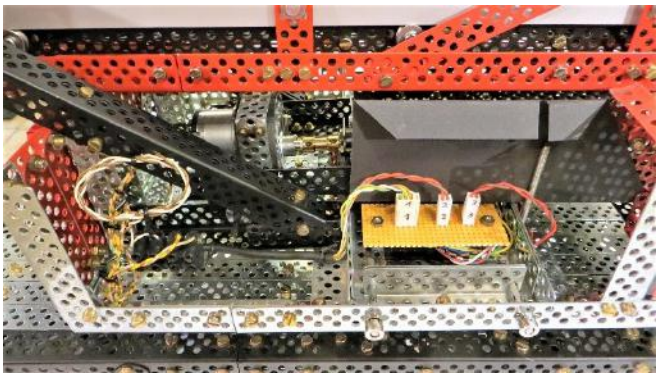


Crane housing and operator cab

The base frame of the crane is placed on the girder from the crane warehouse and is locked with two bolts on each side.



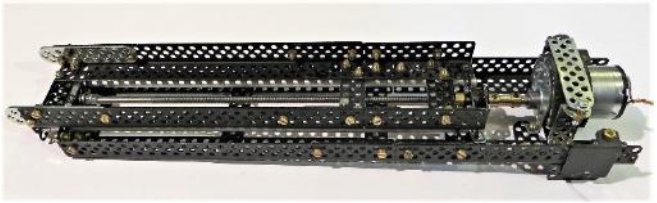
The housing contains the reinforced mounting points for the hoist and the telescopic arm, as well as the electrical connection points for the geared motors and the crane headlights.



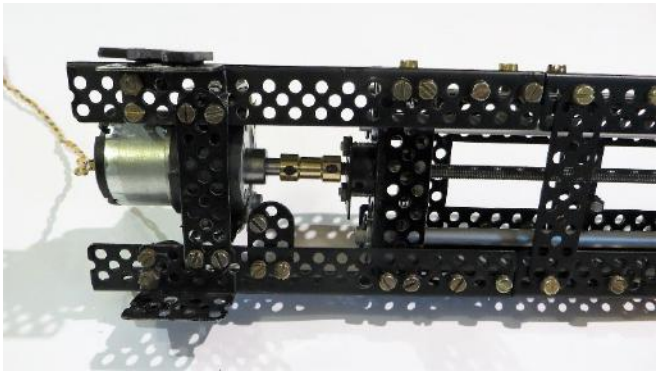
The crane operator's cab is on the base frame of the crane, and there is no detail on the inside. The crane's technical housings are clad with removable red panels.

Lifting gear for the telescopic arm

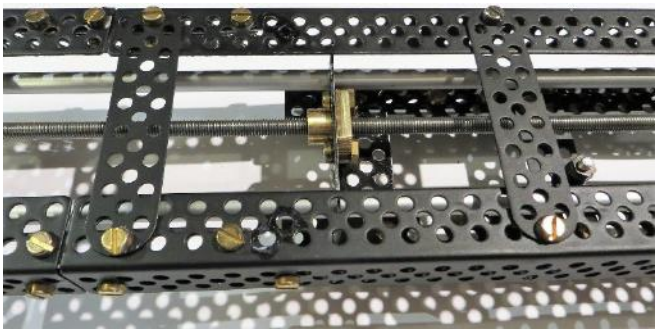
The hoist moves the telescopic arm upwards.



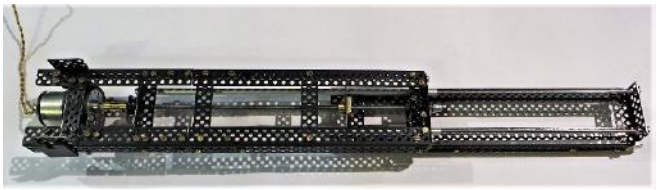
Its movement creates a variable triangle between the hoist base point, the hoist gear end point and the rear suspension point of the telescopic arm. The flatter the angle between the telescopic arm and the lifting mechanism, the higher the compressive forces that have to be applied. It is the most complex module of the model because it has to process very high linear forces. The lifting function as a longitudinal movement is generated by a radially driven VA threaded rod and a non-rotating brass flange nut.



A powerful gear motor (12V, 5W, 30 rpm) is installed in a fixed angle profile frame, which drives the threaded rod. The brass flange nut is attached to a second angle profile frame.



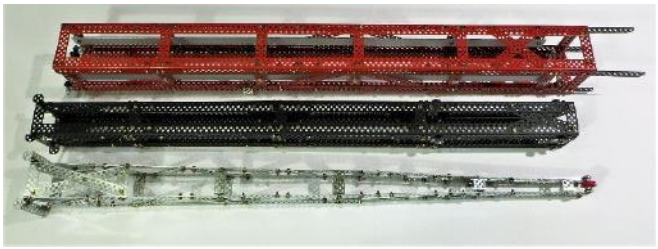
During operation of the geared motor, this moves in the longitudinal direction over the fixed angle profile frame. The longitudinal guidance of the two angle profile frames is carried out by two aluminum tubes on the fixed frame, in which VA rods slide, which in turn are attached to the movable frame.



A thrust bearing is located there to reduce friction at the upper end point of the threaded rod. Oil (15W- 40) on the threaded rod / flange nut and in the aluminum guide tubes as well as ball bearing grease in the thrust bearing ensure a low-friction function. Both angle profile frames have reinforcements to withstand the high forces.

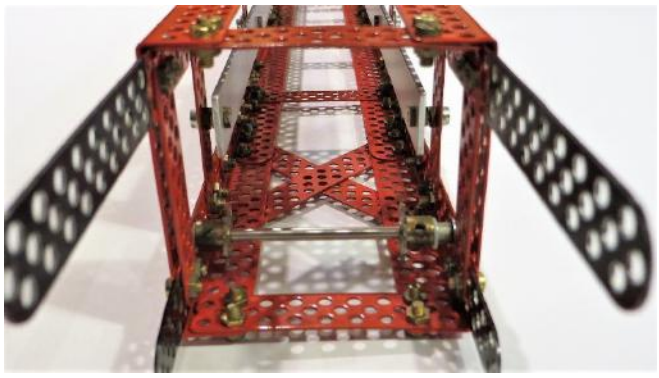
The hoist is able to lift the double-barreled telescopic arm to the end position, but without the crane tip mounted. The forces then become destructively high. The tip must therefore be mounted by hand on the telescopic arm using a socket pin.

Telescopic arms, rope guide, ballast and crane tip

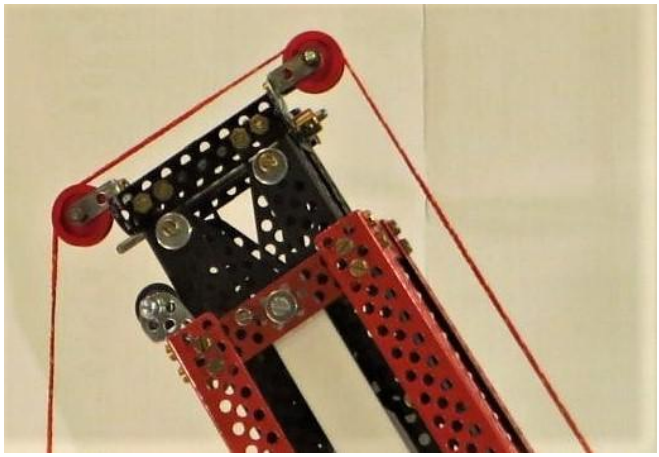


The telescopic arm consists of two trains, on top of which is the crane tip.

The inner black telescopic arm runs on a total of eight ball bearings with a V-groove on an aluminum rail 20 x 2 mm in the outer red telescopic arm.

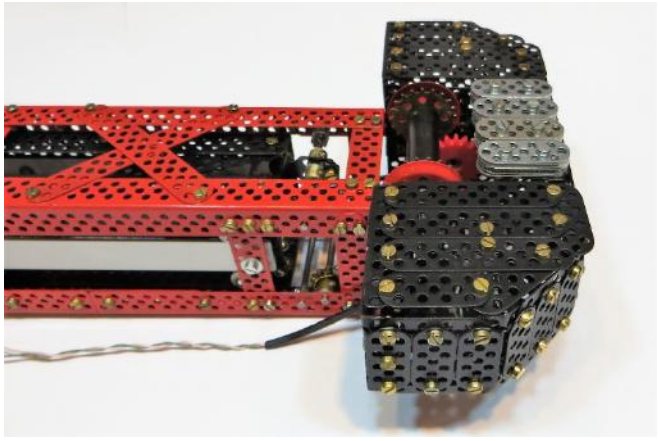


The ball bearings are screwed to the rear of the black telescopic arm with aluminum spacer plates and are precisely aligned with the aluminum rail. One pair of ball bearings each "clasps" the aluminum rail. So that the front part of the black telescopic arm (floating) does not touch down at the end point due to its own weight and the additional weight load in the red telescopic arm, guide ball bearings are attached to the front of the red telescopic arm.



So that the crane tip sits exactly aligned on the end of the black telescopic arm, the two brackets for the bolt mounting are balanced with eccentric disks.

The counterweight housing with the "counterweight" and the drive motors is located at the pivot point of the red telescopic arm.



D. for the extension
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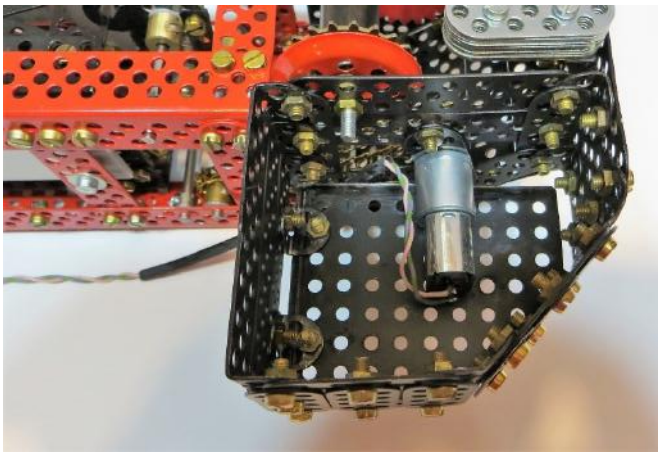
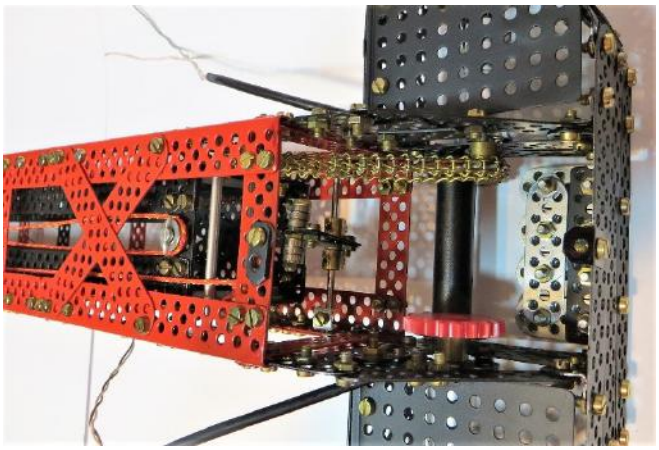
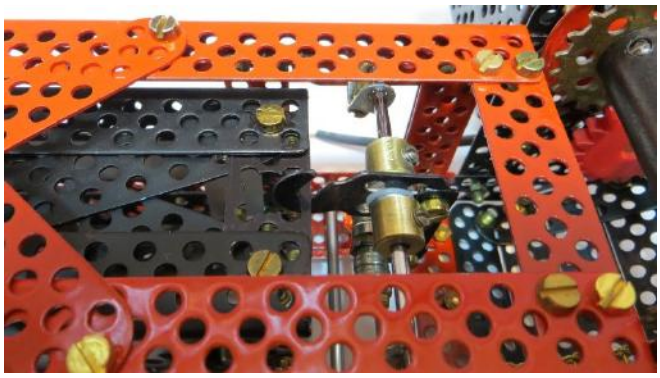


The gear motor drives a shaft with a diameter of 3.8 mm via a chain, on which the rope is wound and unwound for the longitudinal movement. Due to the lack of space between the two telescopic arms, only one rope pulley could be installed at a certain position.

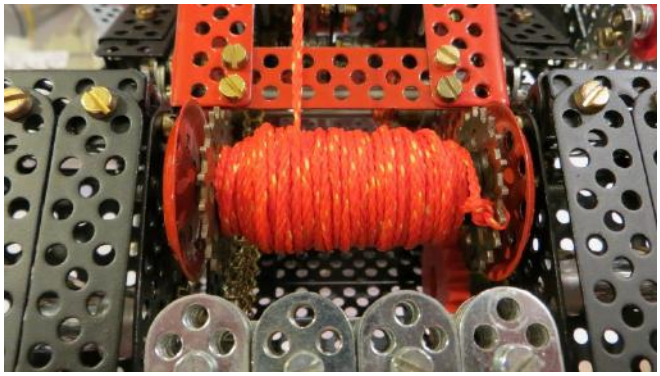


As a result, it is not possible to run a complete circulating rope. It is reduced to the extension direction (lifting) of the black telescopic arm. The lowering happens only by gravity.

A “gravity lock” was installed so that the black arm does not roll out “unbraked” when the red telescopic arm is in a horizontal position. This is a hook that holds the black telescopic arm in place until it releases the hook and releases the black telescopic arm when the telescopic arm is tilted upwards by approx. 45 ° via its "gravity weight". Only now, after a visual check, may the gear motor for extending the black telescopic arm be operated.



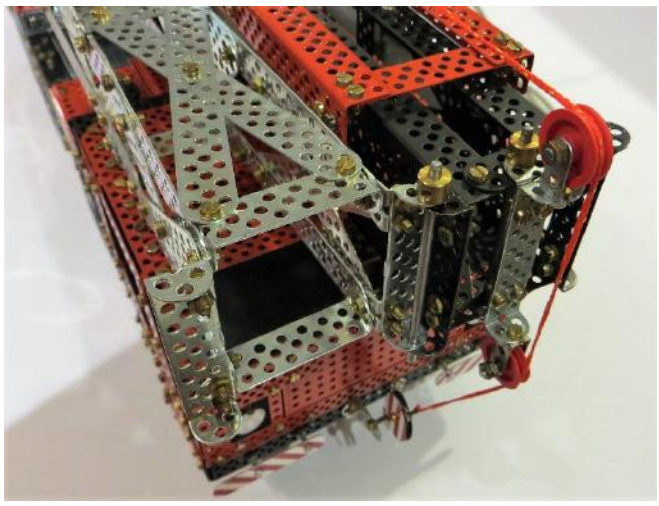
The cable spindle consists of a plastic tube on which gear wheels and cord pulleys are mounted. 6 m of red and yellow mason's cord are wound on the spindle, at the end there is the simple crane hook.



The gear motor (12V, 30 rpm) for the rope spindle is located in the right chamber of the counterweight housing. It acts directly on the rope spindle via an attached gear.

The counterweight housing is closed on all sides, but has three removable covers. The counterweight is only indicated by silver flat bands so as not to increase the total weight even more.

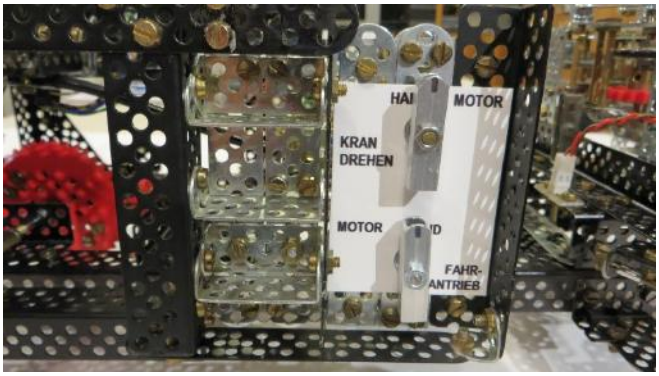
The removable crane tip can be mounted on the black telescopic arm with socket pins and is equipped with a pulley.



When the crane tip is removed, the crane rope is guided over two plastic rope pulleys via an attachable deflection part at the end of the black telescopic arm

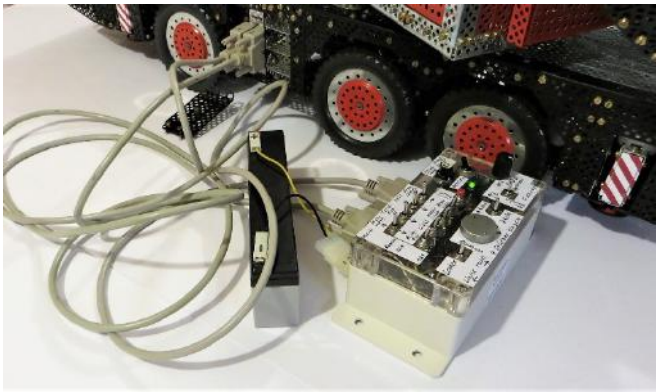
Electrics and operating concept

The operating levers for rotating the crane and the main drive from the basic carriage are located under a removable cover on the right-hand side of the undercarriage.



The electrical connections for the two cables to the control box are hidden under the cover on the left-hand side of the undercarriage.

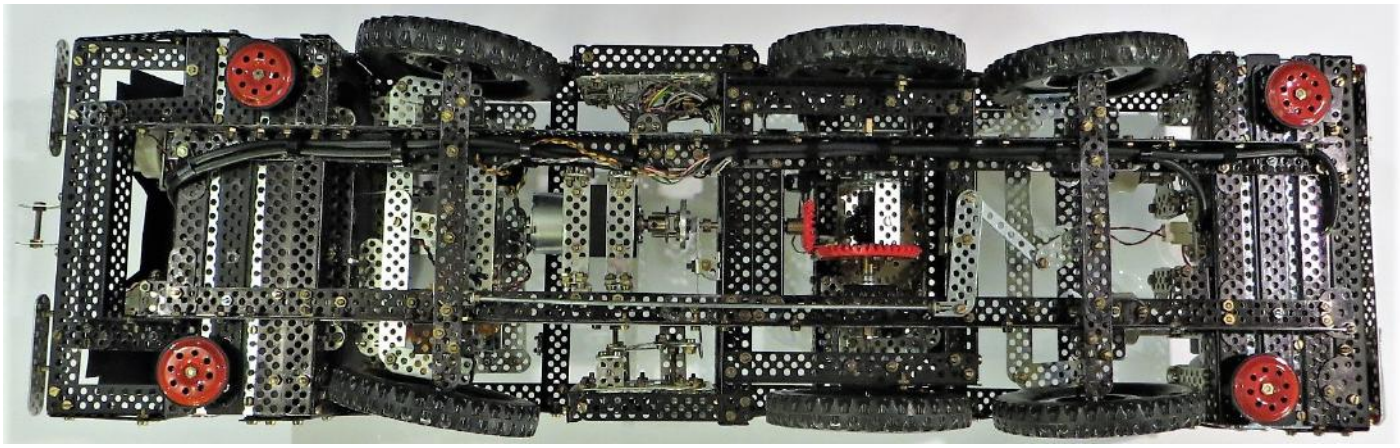
In the course of realizing the model, the electrics have grown with it. The cables and wires from the motors, lights and the beeper were brought up to the two electrical interfaces, D-SUB-15 sockets, in cable loops. The two D-SUB-15 sockets are located under a removable cover on the left-hand side of the undercarriage. There is a control box for the electrical operation of the model, which is connected by cable to the two D-SUB-15 sockets on the undercarriage.

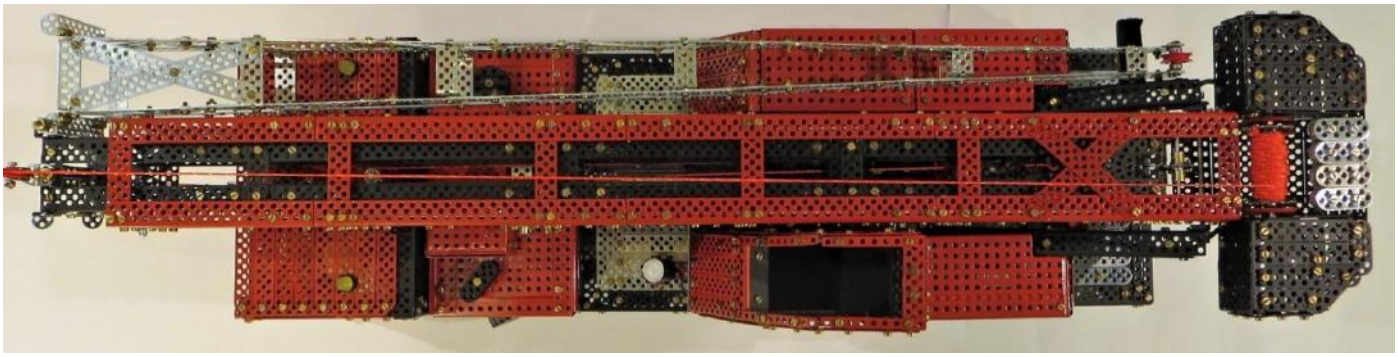


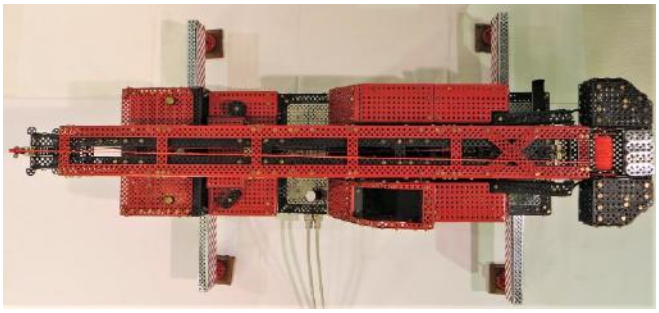
The control box is powered by either a 12 V battery or a 12 V computer power supply. The control box controls a total of ten motors, eleven lights and a beeper (horn) via switches and buttons. Critical functions are operated via buttons, there is the "crane guide rer "asked with his skill and his keen eye. The control box also houses the circuit boards for the hazard warning flashers and the flashing lamps, as well as the speed controller for the main drive motor, which can be operated via a knob. The four supports cannot be extended and retracted at the same time using the geared motors, but only one after the other using a rotary switch.

Technical specifications

Length: 925 mm, width: 220 mm, height: 345 mm, weight: felt and estimated 18th kg. Length of the extended telescopic arm with tip: 1.95 m, highest height with peak: 2.05 m

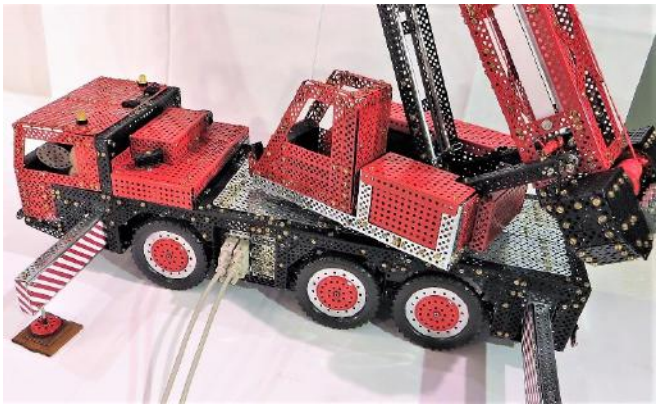


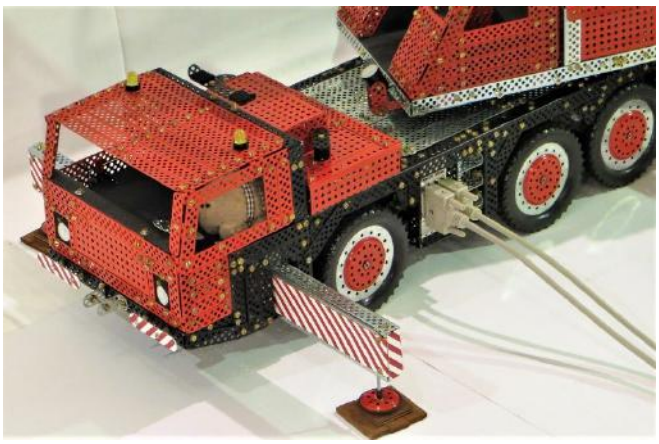




Conclusion and outlook

The model is very easy to operate, it is really fun to play with, because everything works like a real truck-mounted crane. Every now and then, some areas have to be oiled again so that everything remains in function with little friction. My photos shown here are interior shots; another series of photos and a





Video films of the crane operation are planned if outdoor recordings are possible due to weather conditions. I will then publish them in the forum.

Truck with 10 ton crane from Eitech

By Geert Vanhove

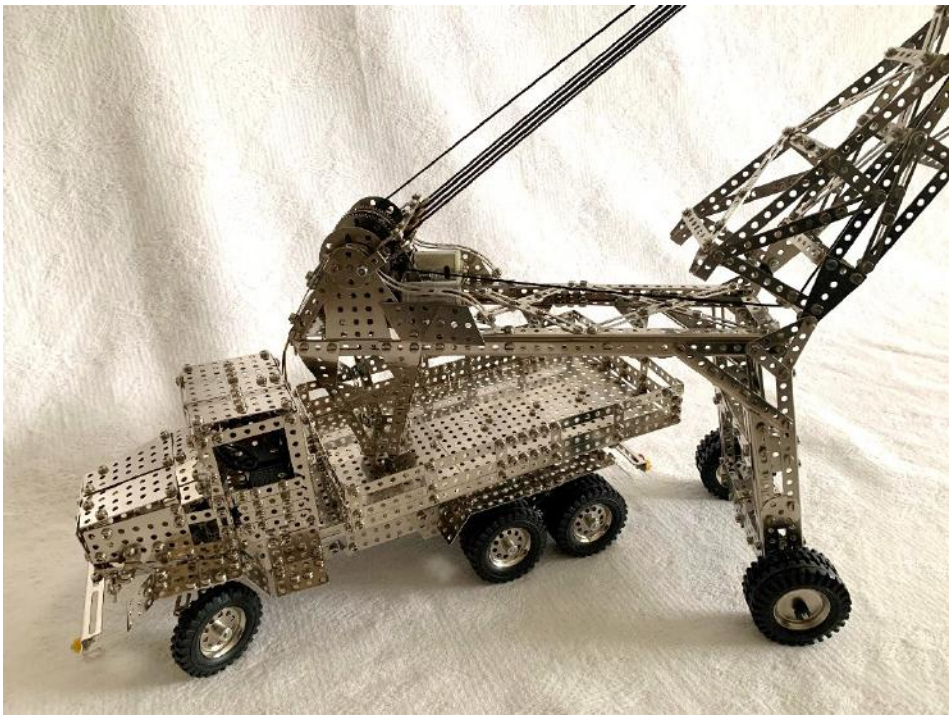
In December 2020 I assembled the Eitech C 32 truck kit from 2012: http://www.girdersandgears.com/models/eitechtruck.html

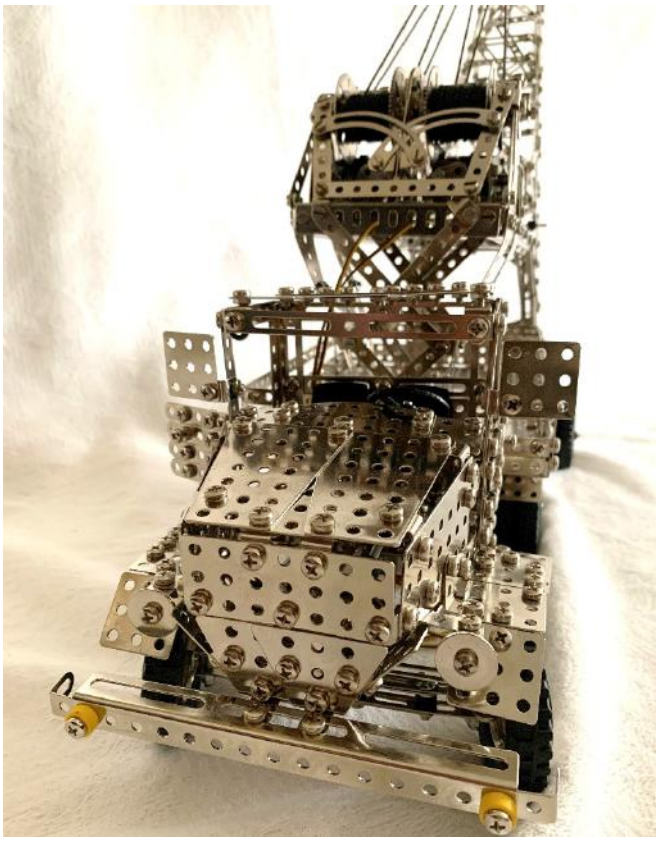
I liked this model very much. The excellent quality and careful workmanship of the parts made for a pleasant building experience. The compact plastic box was very well stocked and the construction description was very clear. As an added detail, a small crane was provided on the back of the truck. On the other hand, I wanted to add a larger and lesser-known type of crane.

I found some pictures on the internet of a 10 ton truck crane that was used to repair aircraft in the open field in Australia during World War II.

http: //www.map-leleafup.net/forums/showthread.php?p=126063

These photos inspired me enough to build a balanced crane with Eitech parts. When the boom is lowered, the entire model has grown to a total of 1.2 m in length.



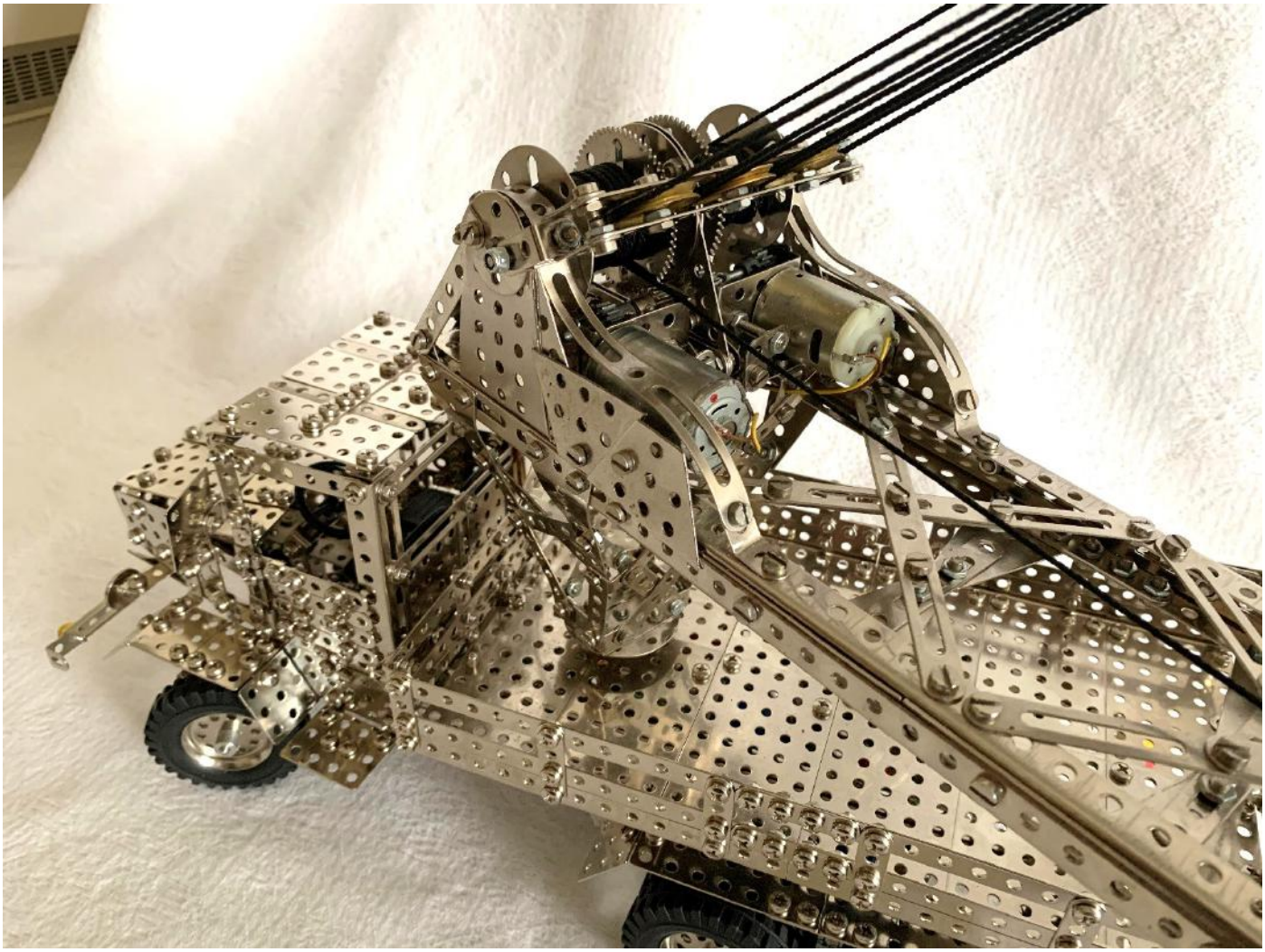


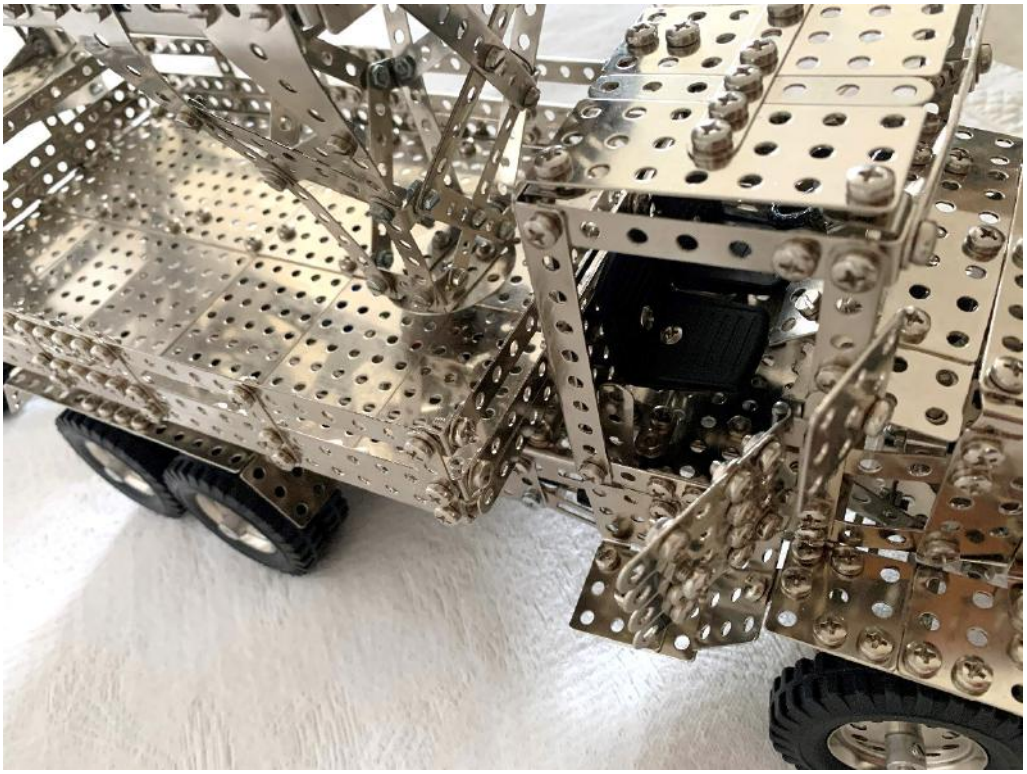
However, there was very little space left to fit a couple of electric motors and a powerful gearbox. After a few attempts, I had the idea to ask my metal construction kit friend Erik Beek how I could equip not only the crane but also the truck with a well-functioning mechanism. We hadn't seen each other for a long time because of the corona crisis, even though we live less than ten kilometers away from each other. Erik is 20 years older than I and like every other retiree have a very busy schedule. Nevertheless, he eagerly accepted the challenge, because a year without a Meccano meeting was difficult for us to endure and every construction project was a nice pastime. The main task was to stay within the entire Eitech division. After several weeks of hard work, in which Erik disassembled individual areas of the model he had brought with him, he managed to satisfy both of us, and we mastered this challenge. If there is a metal construction kit meeting again

or model exhibitions are allowed, we will visit them together to present our metal construction kit models to the public.

len to entertain.

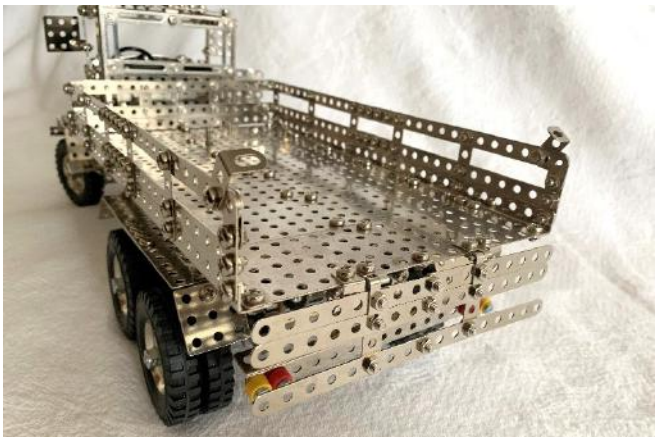
Erik also wrote this paragraph for a question: Corona time ... mostly uncomfortable? Not always: there is the hobby! And yes, for me it's Meccano and Märklin and Stokys and DUX ... and Eitech (previously Construction) and for many (75!) Years more and more different. And so my motto “Why make everything as simple as possible when it probably works when it is complicated too?” Flourished.

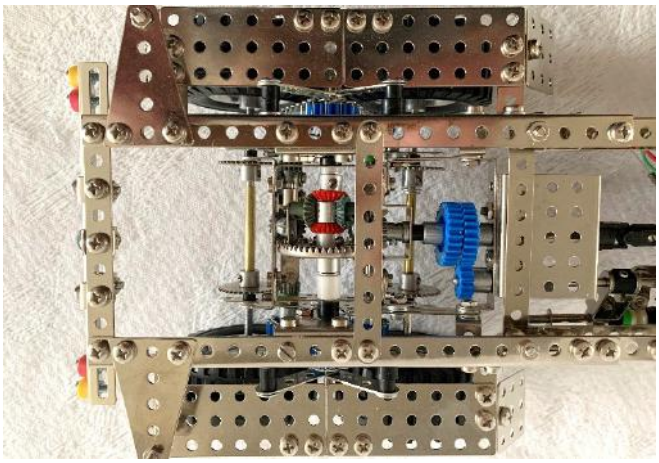


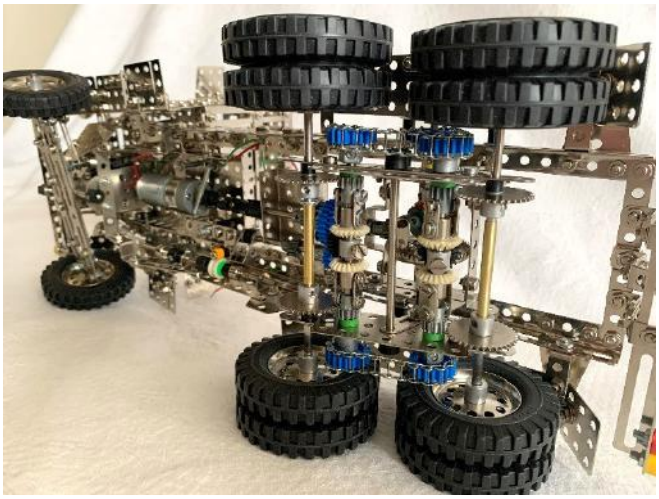


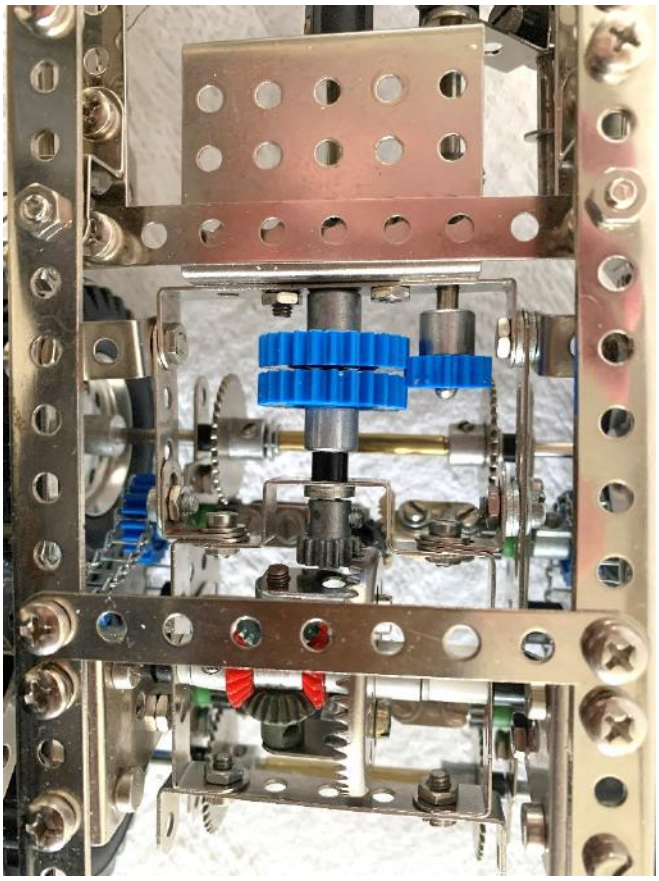
This thought appeared when a friend and seasoned Meccano man suggested to mechanically expand his Eitech model ... one Challenge! OK It is pleasant: Eitech is not only in the trade, but in itself uncompromising, clear, beautiful, polished, shiny, solid material. And all the basic parts for effective models are there. So: only Eitech parts (including older ones) and only a few, inevitable changes. These are: shortening the adjusting screws from 4 to 2mm, adapting the 2-hole strips in the differential housing, making the engine support,

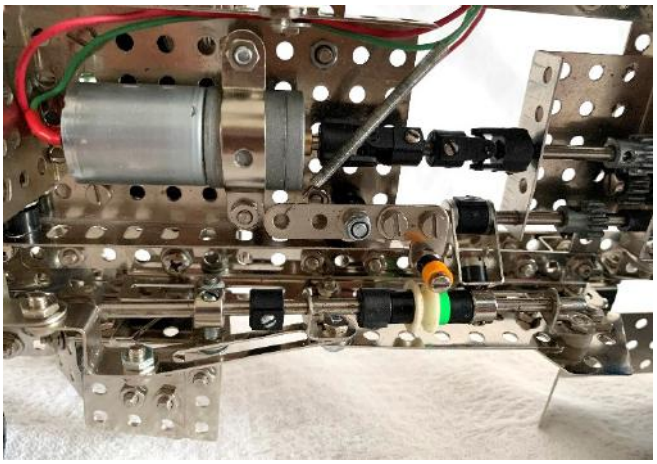
Reinforce the material hubs of the small bevel gears with aluminum rings, the outward-facing axles of the differential are stored in copper bushes or drilled aluminum rods. And a lot of washers are used here too. The new gears and chain are sturdy and very effective (but quite large for this model). Planning in advance is essential when constructing a similar model. It is essential to measure and check the available space and the desired movements beforehand! To do this, note the third differential (the three differentials are based on the same design), the drive and the steering.

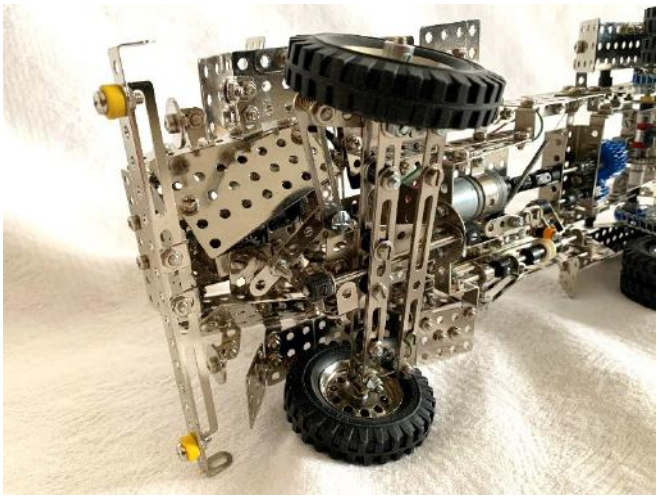


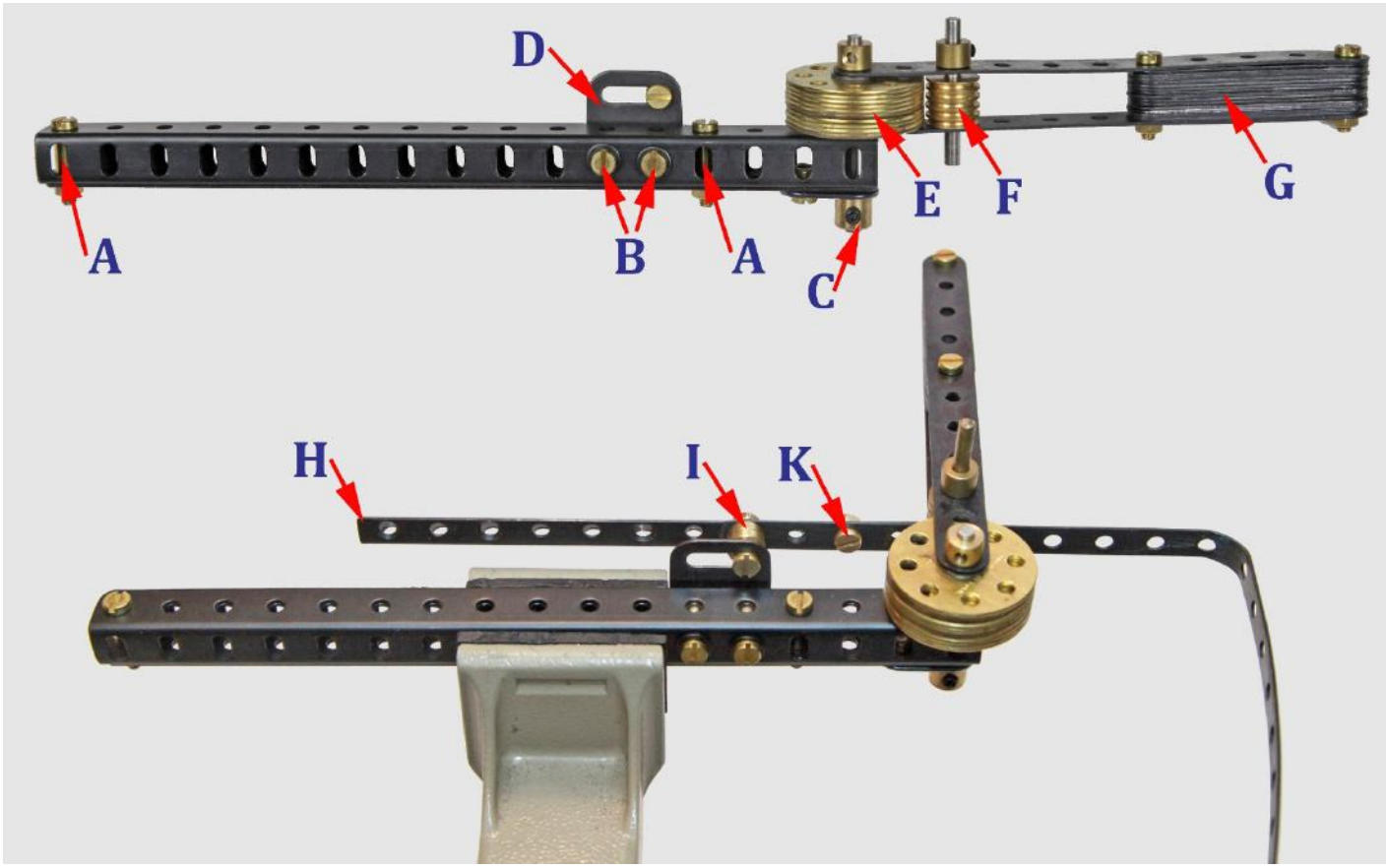












Simple bending device for tapes

By Norbert Klimmek

Some time ago I needed some curved straps for a model that were supposed to enclose a container. For this purpose I built the bending device presented here, which works according to the well-known two-roller principle (see lead picture)

Name of the parts:
A: 2 x spacer sleeves 10 mm B: 2
x spacer sleeves 13.5 mm
C: 1 x MT # 1680-12, axle holder, alternatively hole
disc wheel MC # 24
D: 1 x MT # 4242-07, angled sliding piece as a bracket
E: 10 x MC # 24a, perforated disc 8 edge holes
F: 5 x MC # 23, ½ "line roll
G: 14 x perforated tape 5 holes as a handle
H: 1 x angle bracket 11 holes as a support
I: Attachment of bracket and workpiece to the
bracket **D.** with spacers
K: Attachment of the workpiece to the angle bracket
The unmarked parts are clearly recognizable from the picture.
bar.

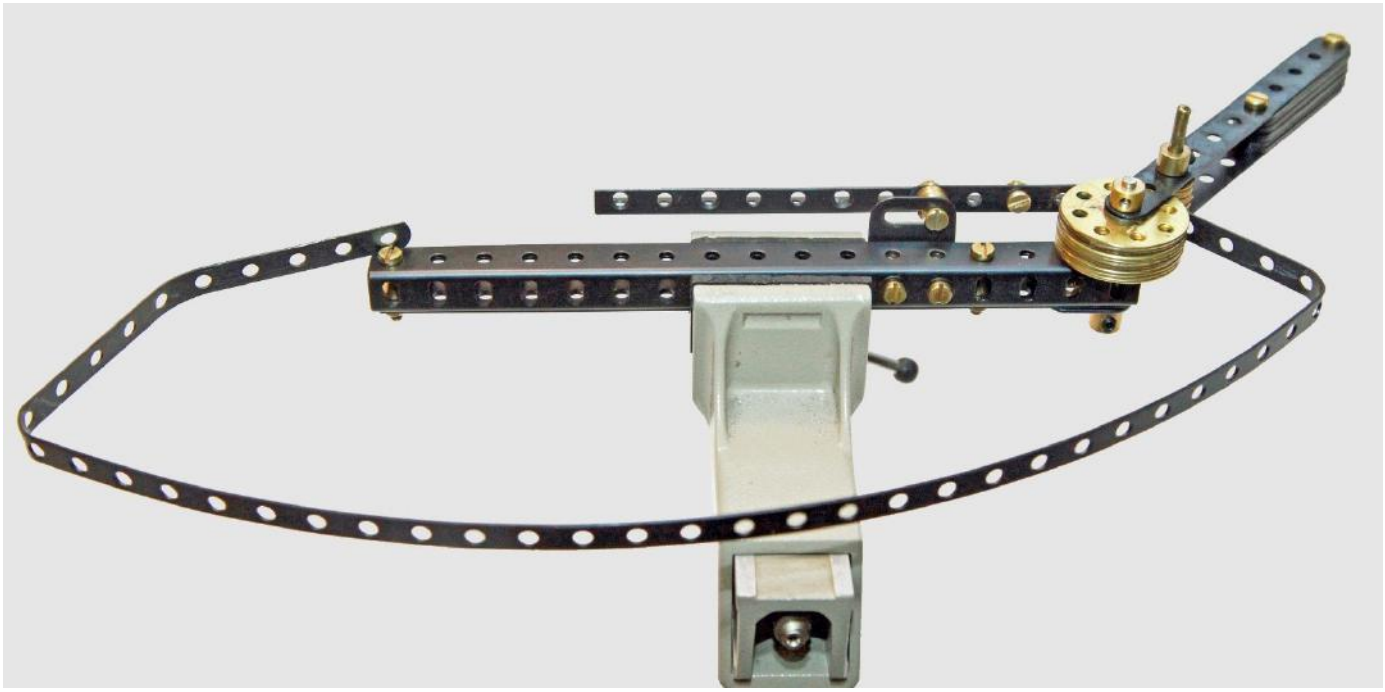
The sum of the radii of the two rolls **E.** and **F.** must be at least 1 mm smaller than their center distance so that the band to be bent fits through the remaining gap.

First, the device is fastened in a vice or on a board that is screwed to a table with a clamp.

The band to be bent is then pushed through the gap between the rollers with the (initially) straight part and attached to the bracket with spacers **D.**
screwed so that it runs parallel to the angle brackets. So that the tape does not give way when bending, it is advisable to screw in an angle bracket that ends as close as possible in front of the bending roller.

The slotted bracket enables precise positioning of the tape regardless of the predefined perforation. To do this, mark the beginning of the rounding on the perforated tape and fix it so that the marking is exactly at the point of contact with the roller.
Instead of the Metallus component # 4242-07 you can also use a 2-hole long double row tape or a 4-hole gusset plate and connect two round holes with a filed slot.

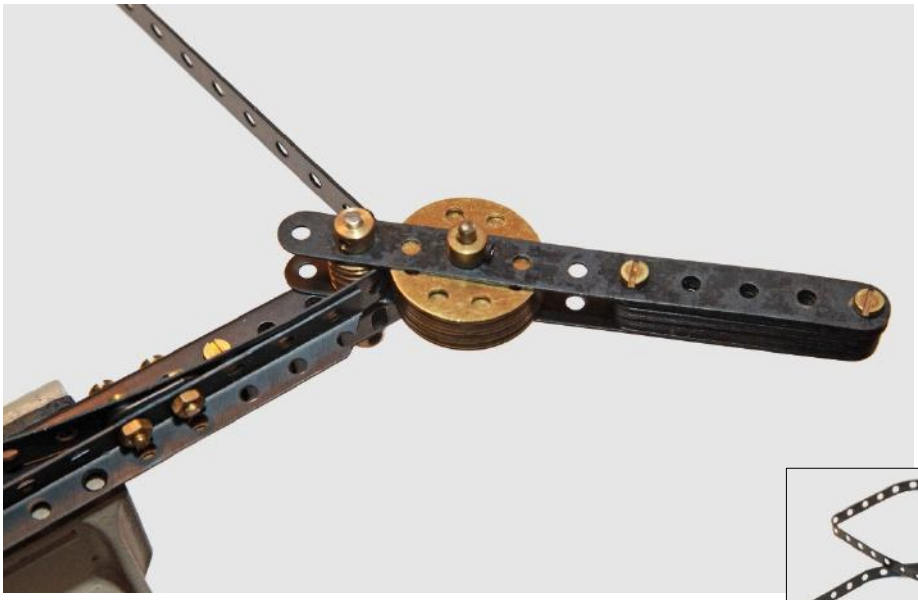
As soon as the workpiece is attached, move the lever with the second roller until the desired bending angle is reached. As can be seen, a certain sequence of bends must be followed in order to use the device as intended.



In the case of the symmetrically curved band in the picture, the long, flat arch was first approximated with the help of a 3-roller bending machine. Then the tape screwed to the center hole on the model was pressed against the contour by hand and the beginning of the first narrow curve was marked. Small deviations from the correct bending radius do not matter, because they disappear as soon as the next two bends force the tape to the contour.

As you can see, reproducibility can be easily achieved if the bending points are marked as described. In the case shown, only a straight piece of perforated tape was required to close the tire.

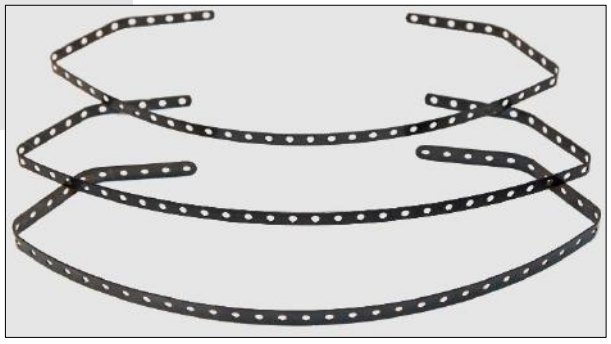
For bending, you should look for strips that are as soft as possible, e.g. from Metallus, because this means that there is little springback. In the case of harder belts, the roller radius may therefore have to be smaller than the bending radius. Small differences in radius can be corrected when screwing on.



Since the selection of suitable modular castors for other bending radii is very limited, you may have to make some yourself.

Perhaps the Märklin weight plate # 11034 can also be used with a suitable counterpart; I don't know its diameter, so I can't give you any information about the second roll.

Example of perforated strips bent in the same way:

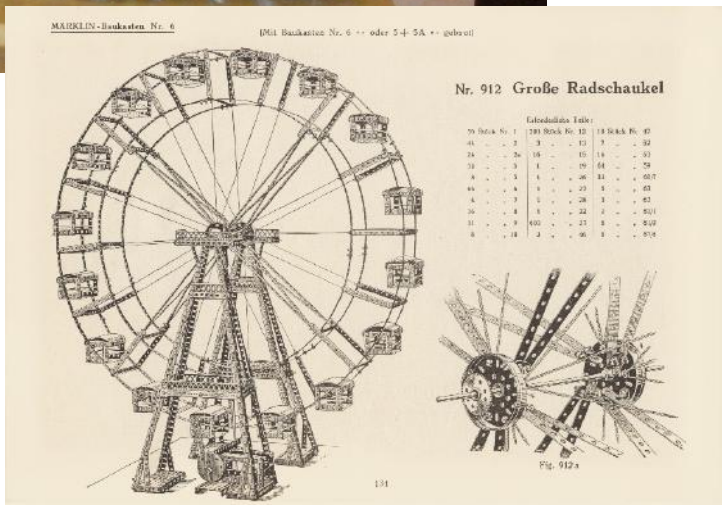


After that the tight inner bends were made with reversed roles and lastly the outer bends were made. When bending around the small roll, the straight leg is placed in front of the bracket and the supporting bracket is screwed on behind it (the picture shows the view from behind and the bend of a normal perforated strip).

Ferris wheel

By Gerhard Schmidberger

In 1999, Märklin brought the “Wiener Riesenrad” large construction kit onto the market. The idea of my model is a good ten years older. Because when my children were little, I built the Ferris wheel in the late 1980s. However, the idea is not new either. In the instruction booklet no. 71b (edition TA0438r) there is a template on page 134, which at that time was still called the large wheel swing. Why a Ferris Wheel? A mixture of static moments and moving parts comes into play here. You need a solid foundation along with stable beams and, ultimately, the bike itself.



The wheel has to be moved - a drive brings life. Furthermore, such a Ferris wheel has a nice play value for smaller children, because the toy figures and whatever else moves around in the play box

happily put on endless tours in the gondolas. The gondolas are suspended lengthways. On the one hand, the stock of rectangular panels (no. 50/11) could be used, and on the other hand, there is a very pleasant amount of space in the gondolas.

The Ferris wheel lived a marginal existence somewhat poorly covered in my Märklin cabinet and was unfortunately exposed to its greatest enemy: the dust. To distract the grandchildren from the Lego bricks, I tinkered with the Ferris wheel. I no longer liked the drive from that time. The surface of the blue cladding panels of the platform was easy to remove from the dust, but fans of perforated sheet metal know the problem: the dust sat in the holes in the green strips that hold the panels, and how persistent it was. So, unscrew, clean and rebuild everything.

When building, I have few problems using material that has already been recorded. Completely damaged components are screwed where they are not visible, for example the crossbeams under the blue plates of the pedestal. My parts also have to be afraid of the saw if it is structurally necessary. I have no qualms about drilling. It bothers me that the waves have a cross section of 4 mm, but the holes 4.3 mm,

which makes sense with the holes - otherwise there would be no game at all about adjusting constructions. But a shaft bearing is always wobbly. Shafts have a small groove and a snap ring, if it makes sense. This then looks a little more delicate than with a collar.

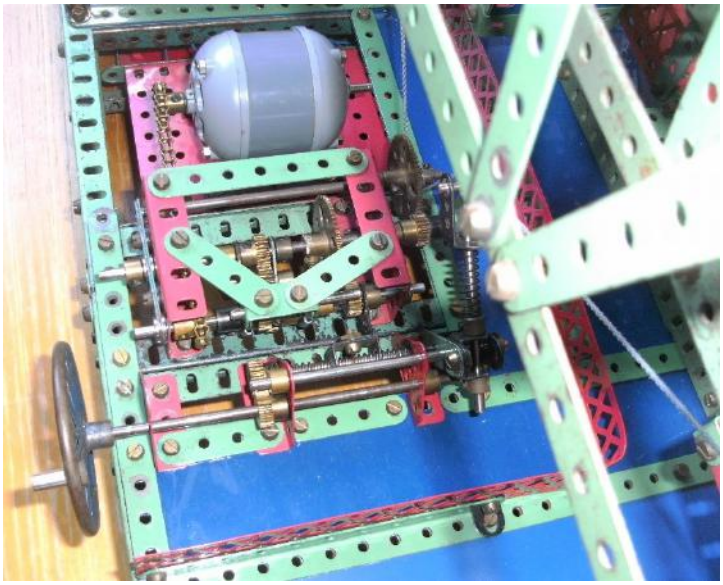
I am happy to use mini ball bearings with a "collar", i.e. with a flange, as far as possible. These have an outside diameter of 8 mm. If the bearings are screwed onto a bearing plate, the hole through the shaft must be slightly widened to 4.5 or 5 mm. Certainly a terrible idea for purists - not for me, as I have no plans to dismantle the models again in the near future.

The wheel is not visibly suspended with ball bearings. The 4 mm shaft is firmly mounted in the girders at four points and easily meets the requirements in spite of that thin material al strength. With the Spherical gladly runs that wheel Very cool- supple. the Ends of the ger are jewelry clothes. Therefore had to f for everyone carrier one per round plate (No. 67) prepa- be rated. With a simple small turntable direction that me my father leave behind has been see the hub solved. Then became the record centered who sawed. A blue panel (No. 163/11) is drawn over the plate, which is more like a wheel. Since the perforation was too long by one row, the plate had to be shortened by one row of holes with the paper cutter. It's easy.

The wheel is driven by the gray cord that Andreas Abel procured for us all back then. At this point, thank you very much, Andreas. With the

Cord can even be spliced. At the ends, the cord is twirled to about five centimeters. At the ends, some of the fine fibers, if the splice is provided, are cut off. The whole thing is then put back together with the help of an adhesive. Technically works great - the look of the merger could be better, so there is no photo of the splice. The cord must be stretched. A small clamping device is used for this. A small ball bearing with a groove is used here.

The classic, engine no.
1072. He just looks great, even if the performance isn't that great. The engine that was used first had a sting somehow. The internal gearbox was probably worn out. Fortunately, I still have brand new engine colleagues. The engine now used works satisfactorily.



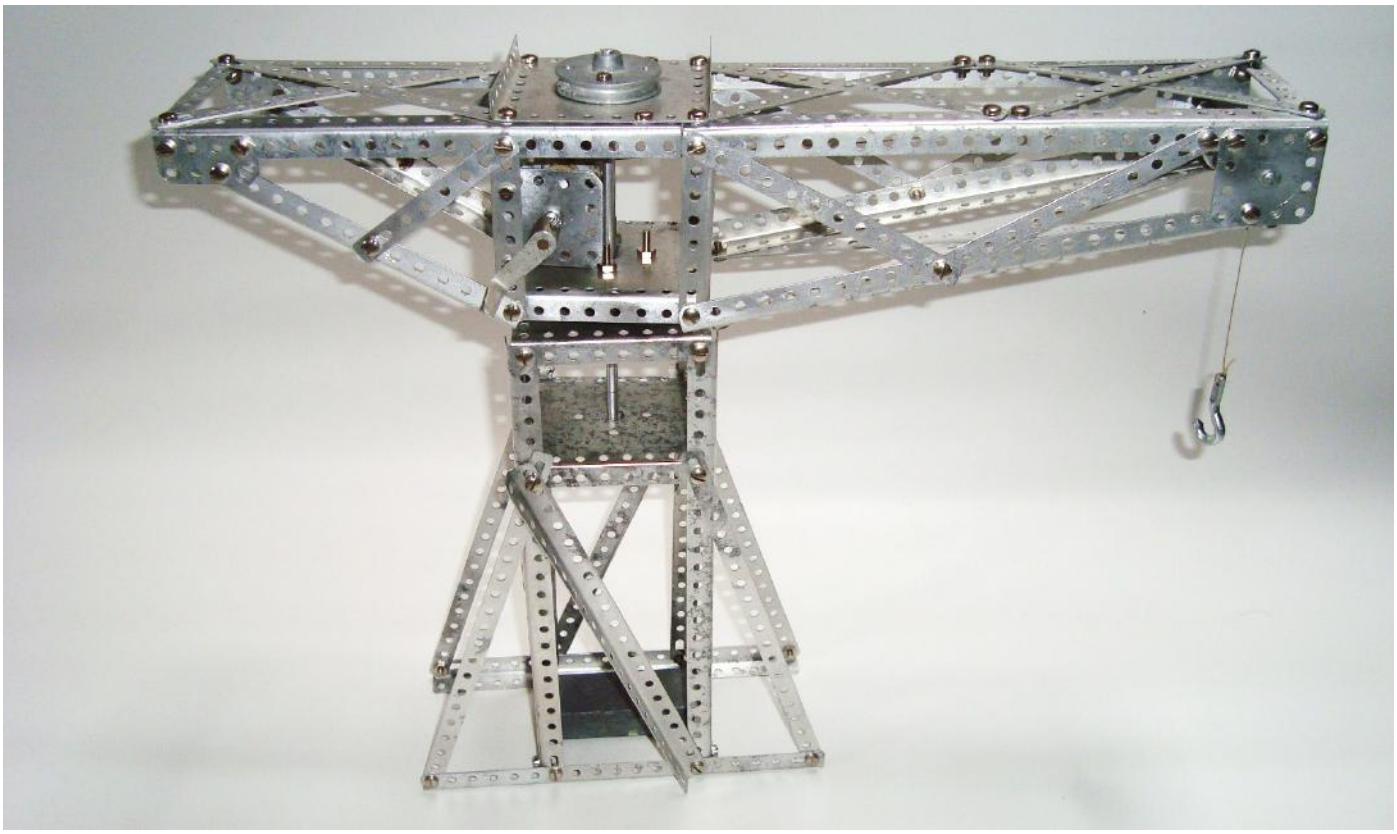
The power of the motor is transferred to a gearbox by means of a chain. The shafts of the gear unit have ball bearings and are free of play. The gearbox is controlled by a lead screw (one of my favorite parts, next to the windows, for which a suitable place could also be found). It has two speeds. Once a slow one for transporting the gondolas when boarding and a slightly faster one for the round trips. There is a rest position between the two gears. So the engine runs all the time. The transformer is concealed in the platform.

Two stairs lead to the entrance. As a property manager, the handrails on the stairs were very important to me. Because woe if the TÜV comes and the UVV (accident prevention regulations) are violated, there may be a risk of the device being shut down. Tears in the grandchildren would be programmed.

A special component should be noted. On the engine side, I installed a blue cladding panel with a 25 x 11 perforation. This plate has no elongated holes. The round holes are significantly larger than the usual blue plates and measure 5.5 mm. These records are unlikely to have appeared in stores. My guess is that these plates are the prototypes of the plastic parts that were used in the orange boxes (trucks).

I was able to bring in another special part: the 50-hole railing tape, resulting from a bulk order, organized by our ingenious screwdriver vaute - thank you at this point too.

Addendum to my publication in the screwdriver & collector 16, autumn 2020: My call for an electronic circuit to reduce the blockages of the "beet worm" unfortunately went unheard. So it continues to be intense, massive, personal Supervision required.



From Urs Flammer's exotic drawer: *metal*Construction kit

Of the metal construction kit that is being described today, neither the name of the construction kit nor the name of the manufacturer is known. The box was probably made in the immediate post-war period, i.e. between 1945 and 1950.

Of this kit, only one kit with instructions is known. The instructions consist of eight pages about A4 format on bad paper. The quality of the paper and the presentation, which gives the impression that residual aluminum stocks have been used up, suggest the manufacturing period mentioned.

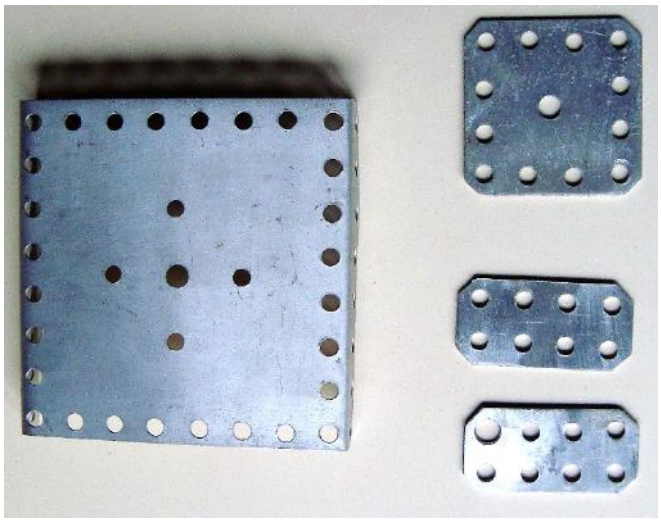
Cover image

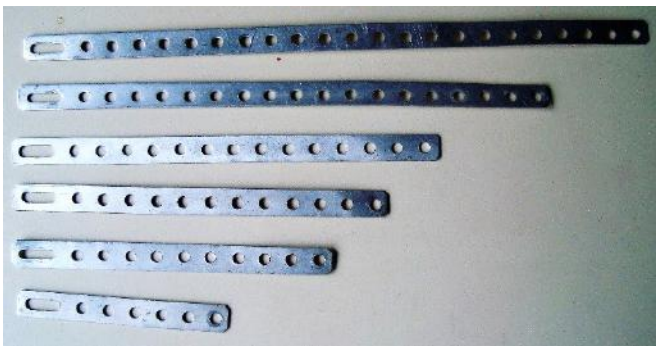
The cover image is kept simple and simple and has no reference to a manufacturer. Except for a small signet NHR (?) On the right edge:

It is not known whether it is a mark of the graphic artist, printer or manufacturer.

The contents of the box consisted of flat and angle profiles, gusset plates, U-profiles, wheels with tires, shafts, adjusting rings, pulleys, cranks, hooks, screws and nuts.

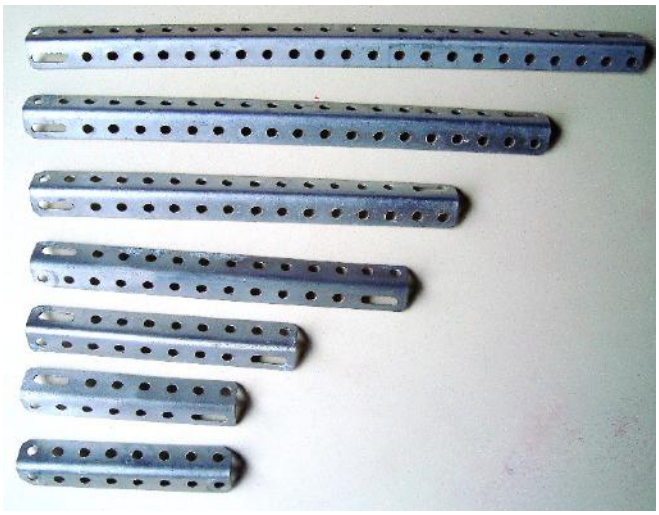
The parts were bent and cut from sheet aluminum, the wheels were cast from aluminum. The screws had an M3 thread, but the adjusting screws were provided with an M4 thread. The aluminum axles had a diameter of 5 mm. The hole spacing of the 4 mm holes in the perforated strips was 10 mm, the gusset plates had an additional central hole of 5.5 mm.





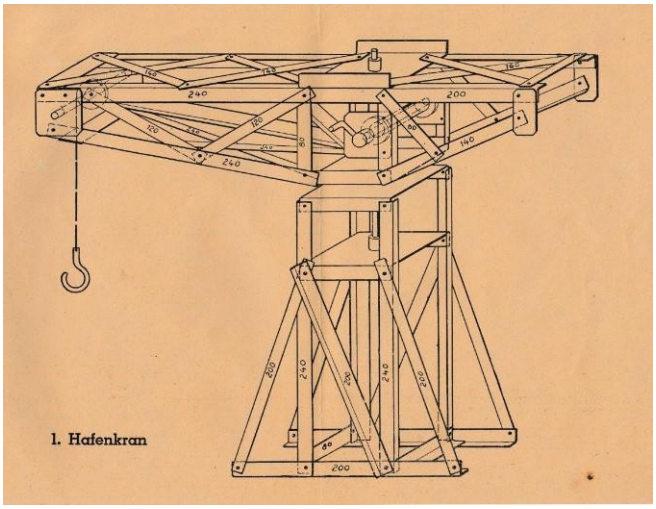
Here you can see the complete metal construction kit with its contents, as far as it is known:

The aluminum parts are roughly machined and do not seem to have been deburred. Interestingly enough at one end every distance from

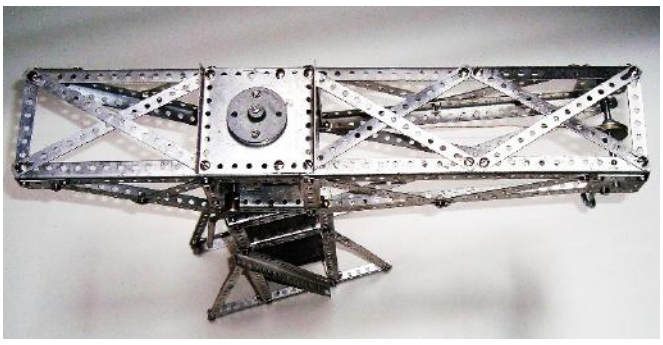


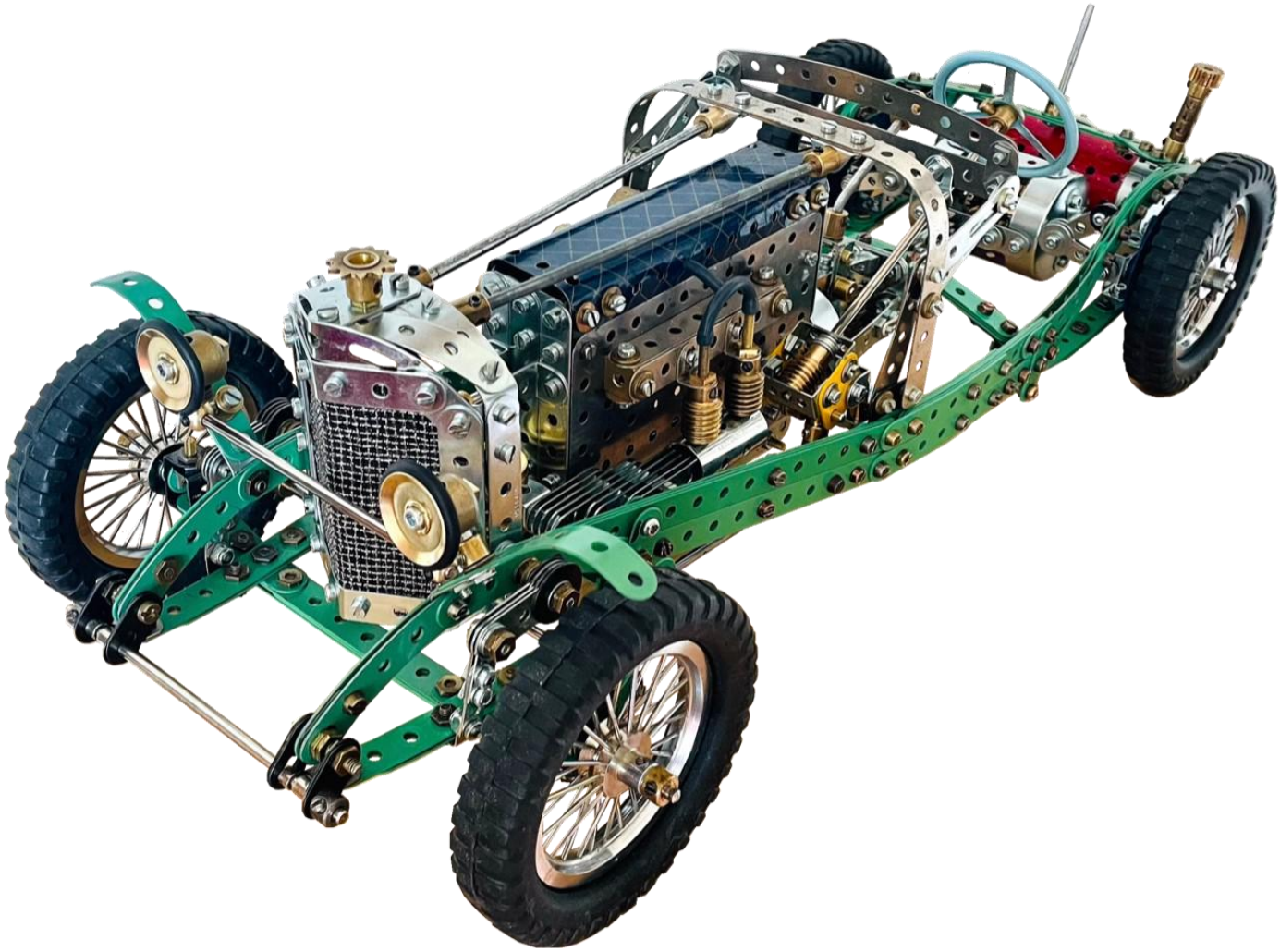
Overall, not a bad kit, but the parts, especially the diameter, seem to be poorly coordinated.

In the eight-page template booklet, six construction proposals are shown, each with a drawing, with the parts list for all models being listed on the last page.



This crane from the instructions can be seen in the lead picture and shown here again from above:





Mercedes-Benz SSK chassis

By Fabian Kaufmann

This model is the chassis of a Mercedes SSK from 1929. This car was the last racing car from Mercedes built according to conventional design principles, before the Silver Arrows were launched in 1934, of which there were no longer any “street versions”. From the outset, I focused on the bare chassis as a construction template and not on the ready-to-drive car, because you can see more of the many technical details on the chassis than on the finished car and body. There are also very nice original photos of the SSK chassis that I used as a template.

In the past, I had often built the chassis of vintage cars and always spent a lot of time on a realistic and beautifully curved shape of the frame. It mostly bothered me that with the scale of 1: 8 given by the wheels, the width of the two side members was half a width Inches (approx. 12.7 mm) was already too wide if you used the perforated strips or angle brackets as standard in the horizontal. There are also two construction templates “Motor Chassis No. 1 "or" 1a "from Meccano, which are really nice detailed solutions for for example gears, axles, brakes or steering. But here, too, the longitudinal beams of the frames are shaped in the above-mentioned 1/2 "construction as horizontal U-beams. With the engine chassis No. 1 this means, for example, that the chassis is built so wide that the front wheels can hardly be turned without dragging against the frame. In addition, with this type of construction, the lead frames in the model are never really torsion-resistant.

For this reason, I took a new approach here and, in order to reduce the width of the side members, turned the construction direction by 90 °, so to speak. That means that I can use up to five perforated tapes

I layered them edge to side and screwed them together, which corresponds to a width of only 6 mm instead of the minimum of 12.7 mm for the conventional design. Another advantage of this measure is that the inside width of the chassis is around 12 mm larger with the same outside width, because 1/4 "of free space is gained on each side of the car.

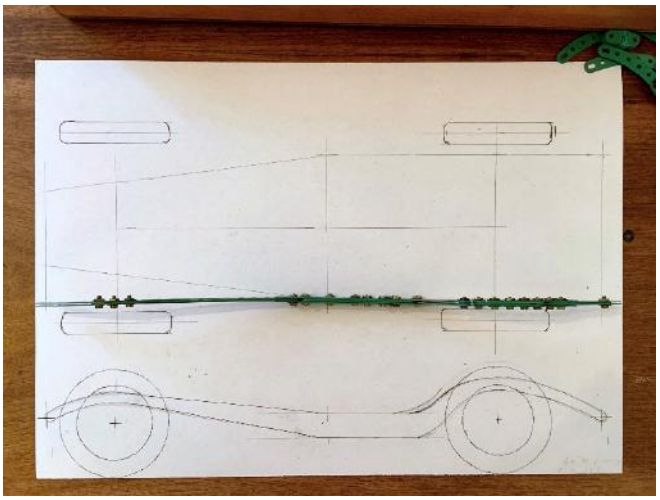
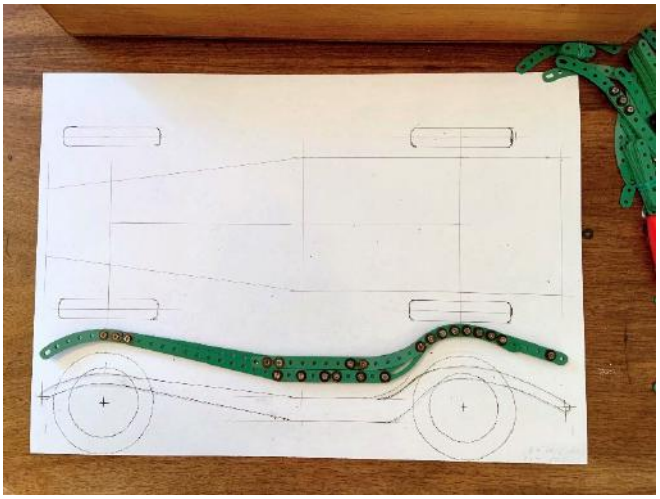


Image 1

Figure 1 shows on my first prototype how narrow the new longitudinal member will be due to the modified design. Here, however, without the taper to the front. For this gentle "kink", roughly at the height of the dashboard, I had to bend each individual flat strip into the required shape beforehand.



picture 2

The next challenge was the side profile of the side members, which should match the original as closely as possible. Here, too, the true-to-scale drawing that I made based on an old construction drawing from the Internet was very helpful. Figure 2 shows the side profile of the prototype according to the possibilities that are available with the two curved Märklin perforated strips,

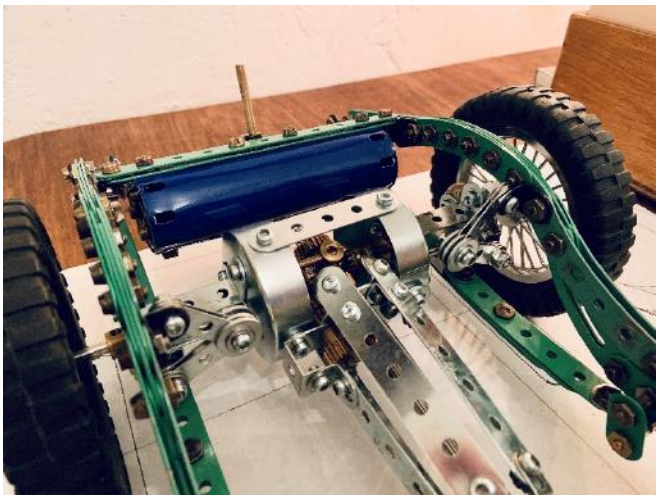
the short 5-hole and the long 7-hole tape. In this picture you can also see that the two 14 mm perforated strips meet from the center of the car to the front at the height of the front axle. Later I moved them forward parallel to get more stability. The perforated straps were screwed on as often and as tightly as possible with the long Märklin screws. In the middle of the car, the longitudinal beam is made up of five perforated strips screwed together. There are three more to the front or rear end. In my experience, this way of building the frame is actually a bit more stable in terms of torsional rigidity compared to conventional construction.

picture 3

Picture 4

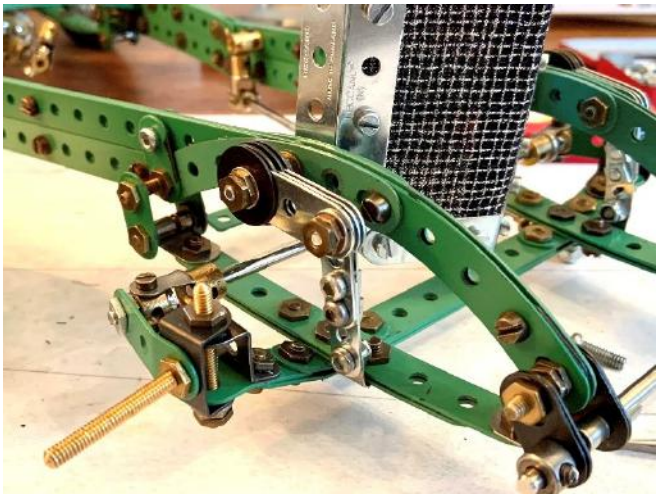
Pictures 3 and 4 show the finished frame, although changes were necessary as the construction progressed. This primarily concerned the middle and rear cross brace and various screw connections that changed places. The front cross strut consists of an 11 perforated strip bent at four points. It will later serve as a mount for the engine block. The middle cross strut consists of four gently curved 11 perforated strips, one on top of the other. In order to create space for the rear end of the gearbox, I had to modify the cross member later: The perforated strips were given a kink and were reduced to three (Fig. 18).

The next step was the installation of the axles including leaf springs. I basically took the rear axle differential with its housing from my Richard Smith tractor. It is a simple and beautiful construction and combined with the "48 Double Angle Strip 1x3x1" as lateral axle mounts, it is very stable and not too wide. Figure 5 shows the rear axle with the axle dampers installed later. I had to remove the extension for the cardan shaft towards the gearbox later because it was too long.



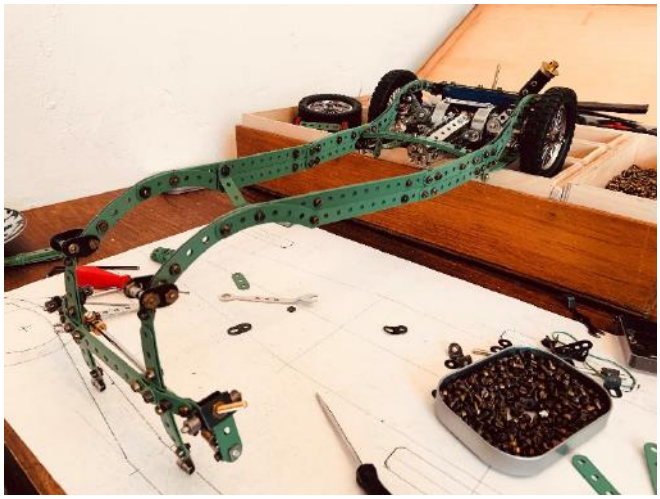
Pic 5

The front axle is a design that I had considered a long time ago when I was building a different chassis.



Pic 6

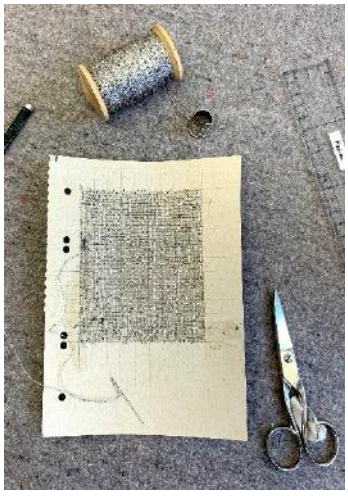
To implement the offset of the front axle towards the wheel hubs, I used the kinked 3-hole straps from the Märklin MB-Trac model. They have exactly the right angle and are very stable. The angled 3-hole hinges are also very practical for realizing the Ackermann steering geometry. Figure 6 is from a later construction phase and already shows the cooler and the damper. Figure 7 was created when assembling the front axle and frame.



Picture 7

After installing the axles, I worked intensively on the radiator grille. Like the frame, it was particularly important to me for aesthetic reasons. I therefore tried out various parts from the Meccano range in order to match the character of the Mercedes cooler, which had hardly changed over decades, as precisely as possible. The special feature of this cooler shape is its three-dimensionality. Because while other well-known manufacturers of luxury cars, such as Bugatti or Rolls Royce, also had beautiful, but flat, two-dimensional radiator shapes at the front, the Mercedes radiator of the 1930s had a vertical bend of around 50 ° in addition to the sag domed shape at the top.

Figures 8 and 9 show the career and the parts required. The part “133c Obtuse Corner Bracket 3x2”, with which the flattened corners could be well represented, was particularly helpful here.



Picture 8

Picture 9

Regarding the height of the cooler, I have to mention that I had to shorten it by one hole after the first trial installation. The two 7-hole straps on the side have been replaced by 6-hole straps. With the 1/2 inch system, you often have to weigh up whether to round up or down an amount from the template. Rounding off was the better option here, so as not to rob the car of its sporty, low shape.

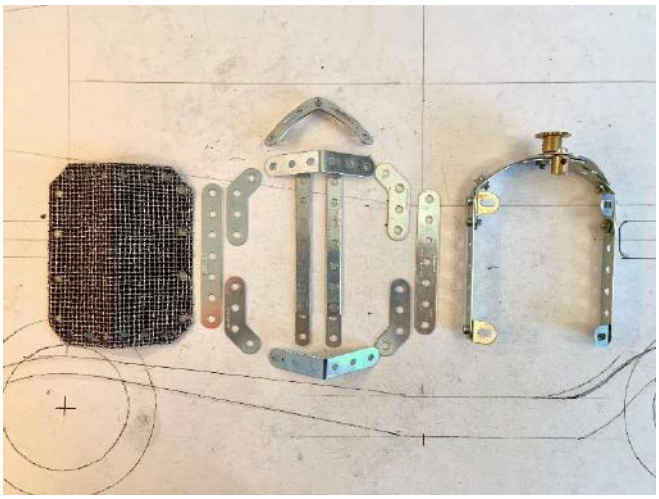
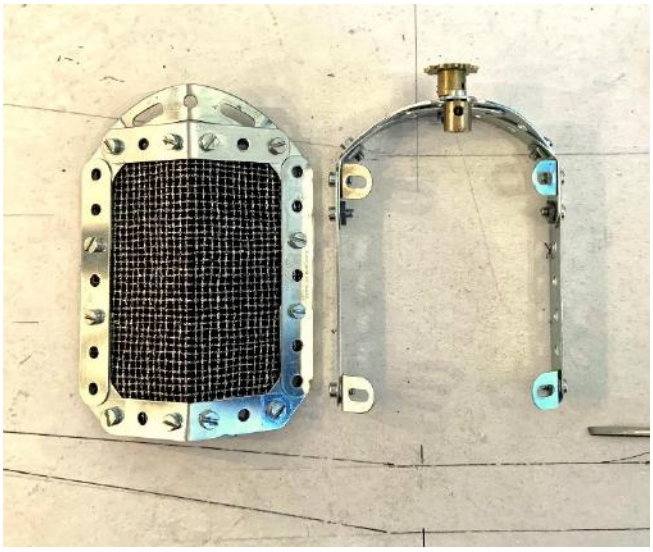


Fig 10

I made the textile front of the radiator grille myself. As you can see in picture 10, I made a canvas fabric from metal thread on a cardboard frame. About 4 threads / cm to let a little black shine through from the background. I then glued this fabric to black polyester wire mesh and cut it to size (Fig. 11).

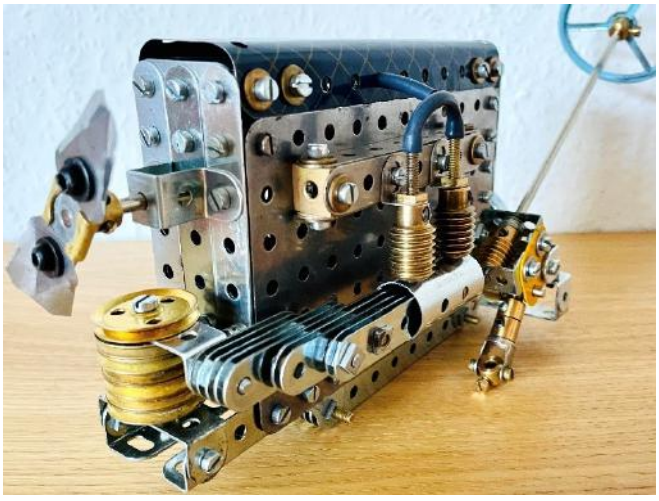


Picture 11

The shape of the cooler with the characteristic 50 ° angle in the front can be seen very well in Figure 12 from above.

Picture 12

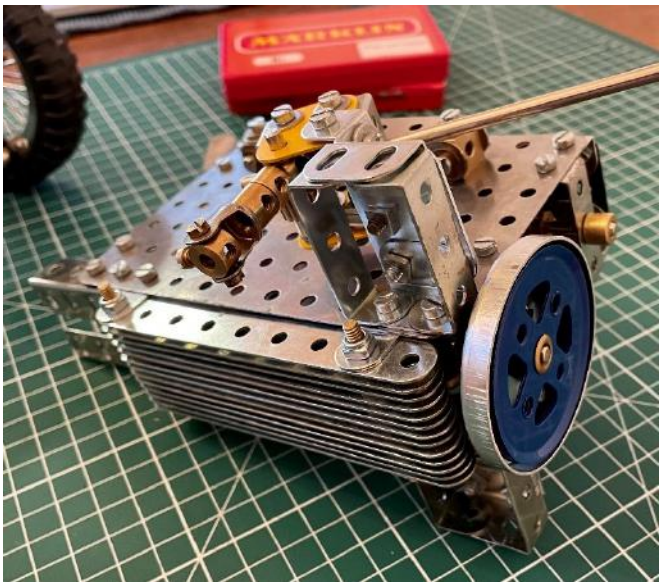
Now that the radiator was finished, I started designing the engine block. Since it would be unrealistic at this scale to make an engine with working pistons or connecting rods, I decided to focus on the gearbox and a true-to-scale design of the entire engine block. The engine of the SSK was something special. The compressor, visible on the front and on the left, and the steering gear flanged directly to the engine block make it unmistakable. I tried to reproduce these details as well as the double carburettors on the left inlet side and the exhaust manifolds on the right exhaust side.



Picture 13

Figure 13 shows the engine from the front left with the steering gear and compressor flange-mounted. The fan rotates a little faster than the input shaft of the gearbox due to a transmission in the motor housing by means of cord wheels and rubber band. To indicate the cooling fins of the oil pan on the underside of the engine, I simply used several 9-

Hole tapes standing vertically next to each other screwed onto two threaded rods. In Fig. 14 you can also see the housing for the “clutch” behind this “oil pan”, consisting of a “137 Wheel Flange 2 1/8”. This was omitted later because there was already a “162a Boiler End” on the gearbox itself. is installed.

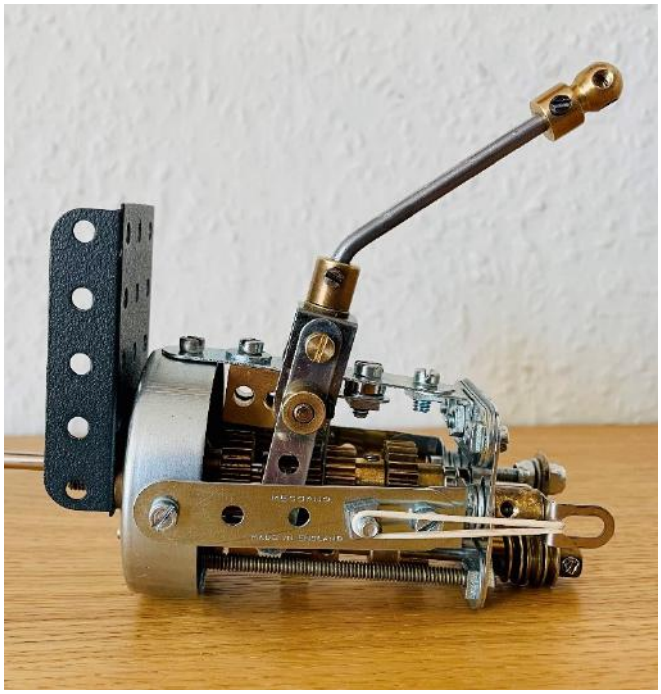


Picture 14

I also tried something new when building the gearbox. Since there wasn't enough space for a 4-speed gearbox, I took the 3-speed gearbox from Meccano Magazine from February 1933 as my starting point. That fits the time frame very well, but the only three gears do not correspond to the reality at the time, because the Mercedes SSK naturally had four gears and one reverse gear. But the model is at least from the time of the car, which I also think is nice. But I had to shorten the gearbox by 1/2 "so that it just fits into the available space between the rear axle and the engine block. However, this means that reverse gear is no longer available. This left a transmission with “symbolic” three forward gears that can be shifted and viewed while pushing the model back and forth.

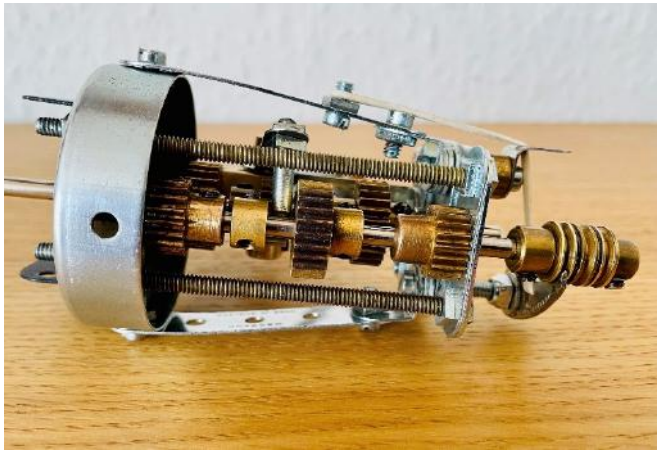
The gearbox relies on a non-standard pairing of gears with either 19 or 25 teeth, which is why it is so nice and small. The distance between the drive or output shaft and countershaft is slightly more than the usual ½ inch, in the original design in the horizontal plane, since the input output shaft and countershaft were arranged next to each other. It is hardly possible to keep the gearbox in this original one

To connect the design with other assemblies such as an engine block, as this creates a lateral offset of a few millimeters.



Picture 15

To fix this problem, I moved the countershaft from its original position next to the input output shaft downwards, i.e. under the input output shaft, so that the two shafts and thus the entire gearbox can sit in the middle. Fig. 15 shows the gear unit in side view: input output shaft above or in the middle and the countershaft below. On the left is the "coupling housing", but in which there is no coupling. The "51 Flanged Plate 5x3" in matt gray creates a stable connection to the engine block. In Figure 16 you can see the gearbox from below.

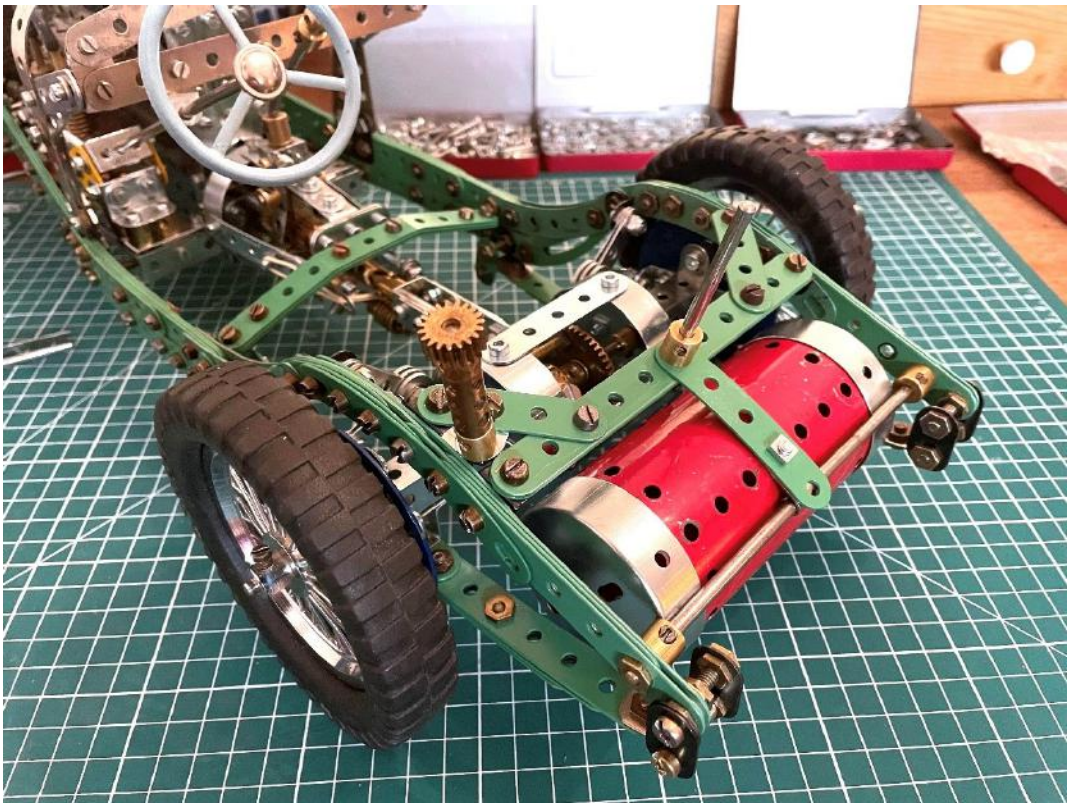


Picture 16

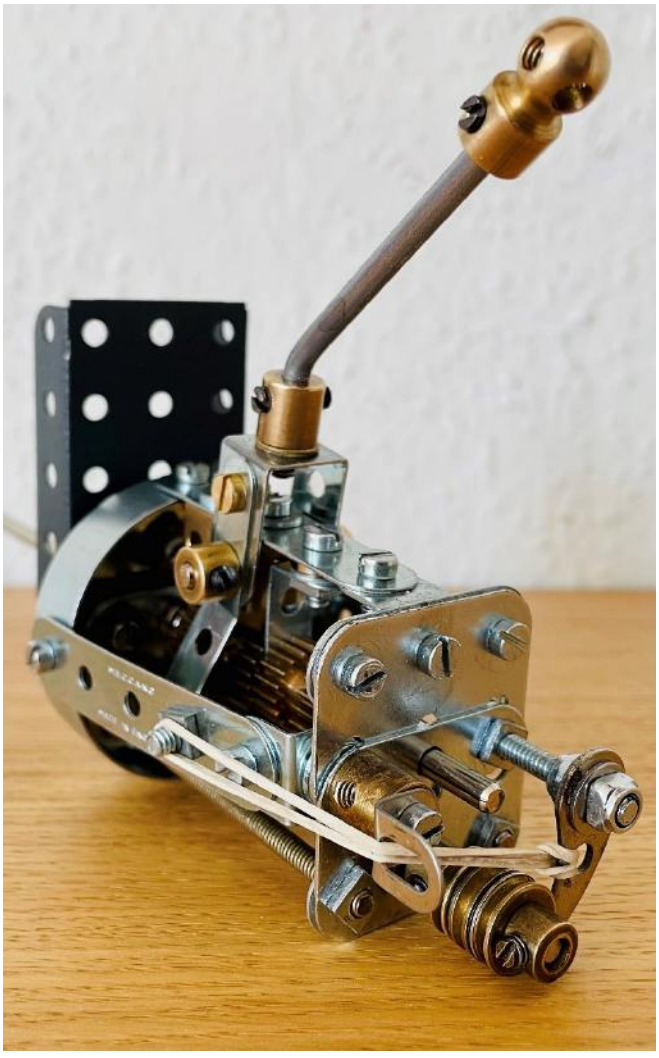
The axle pin that engages and shifts the countershaft can also be seen. The indexing for the three gears is at the end of the gearbox

under the output shaft. Three little Märklin Line rollers, which are mounted on the countershaft, move under a pawl when shifting, which in turn engages in the line rollers by means of a flexible rubber band. A proven mechanism

which is used in many Meccano transmissions comes. In Figure 17 you can see the indexing again and also the deviation from the standard Hole spacing through the Use of two "103h Flat Girder 3 Hole" and its elongated holes.



Picture 18



Picture 17

After the engine block and gearbox had been fastened in the designated place and connected to the rear axle, a tank, a bulkhead and the three exhaust pipes had to be installed. For the tank, I had tried for a long time to build a matching oval tank with 9x5 cladding panels, but was not satisfied with the result. At some point I remembered the boiler including end caps (162b boiler center and 162a boiler end), which are available from Meccano and which I had once obtained as a precaution. It actually fit perfectly, even if it's not oval. Figure 18 shows the fuel tank including the filler neck. Here you can also see the new positions of the rear and middle cross struts for stabilization tion of the side members.

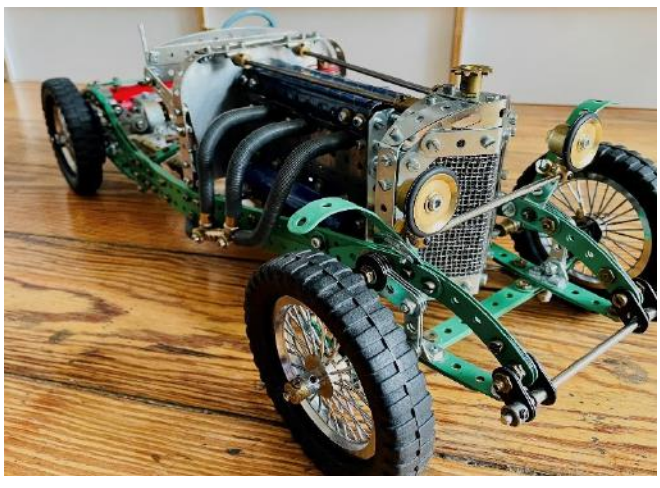


Image 19

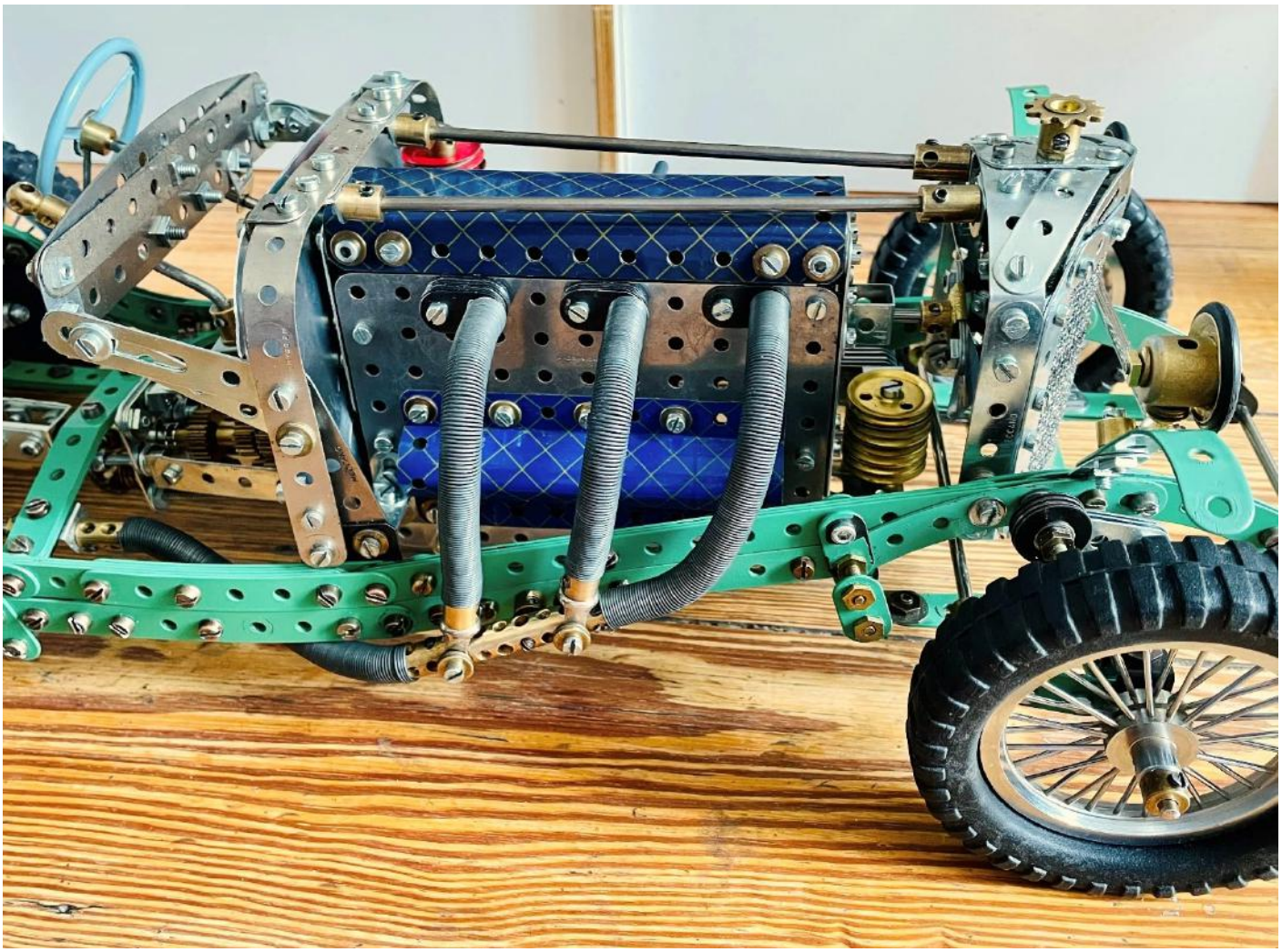


Image 20

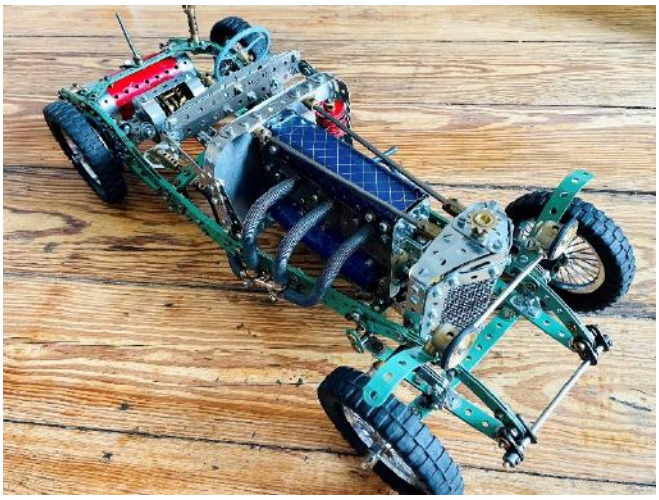
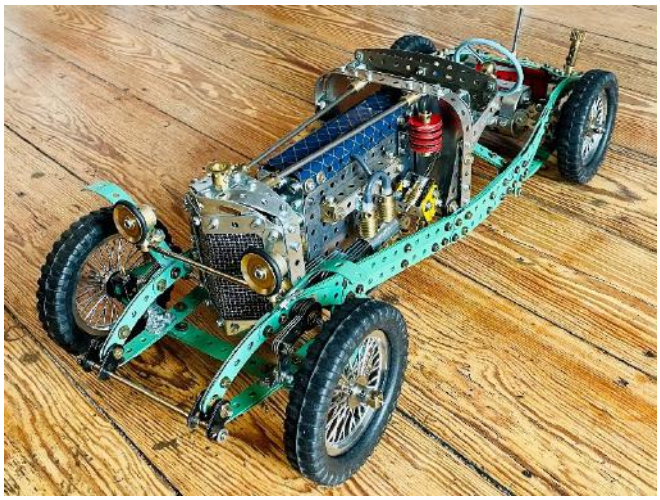


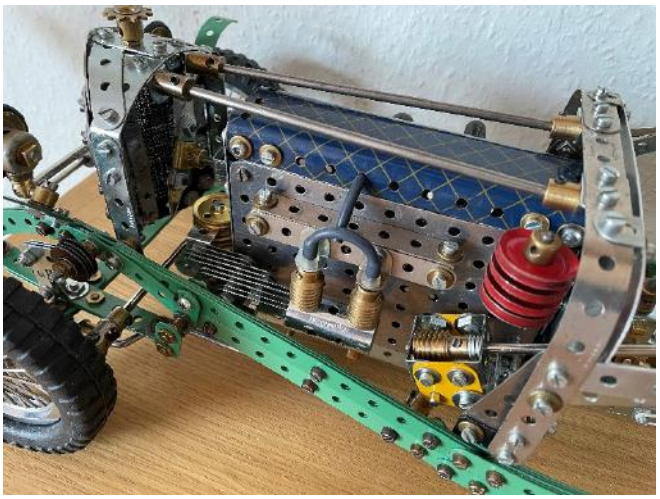
Fig. 21

The pictures 19-23 show the finished condition of the chassis: The headlights and the associated front fender brackets are installed. Likewise the exhaust pipes. They consist of spiral springs from decommissioned ironing systems from the tailoring shop in which I work, scrap, so to speak. Coincidentally, with an inside diameter of 9mm, they fit exactly over the Märklin adjusting rings. There is

In this model there are three non-metallic components: the radiator grille, the exhaust and the bulkhead between the engine and the driver. The latter consists of a sturdy sheet of aluminum that I was just able to cut to size with tin snips. It has a semicircular cutout that disappears exactly between the engine block and the gearbox. Figure 24 shows the interior of the car with the dashboard, steering wheel and gear lever.



Picture 22



Picture 23

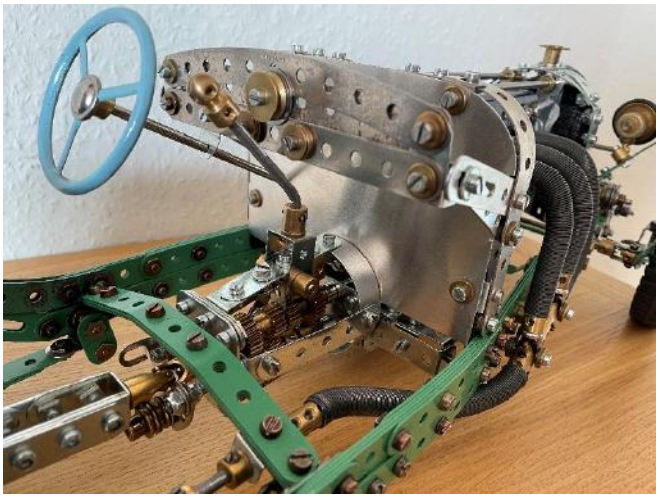


Fig. 24

The entire project also served as an attempt to reproduce a real object such as a chassis here with Meccano or Märklin components as faithfully as possible. One difficulty was to get a believable impression with the given scale of 1: 8 with the 1/2 “scale of the system. On the other hand, not only to operate “model making”, but also to install a few typical metal construction kit functions such as steering, suspension or transmission. I enjoyed it because I was able to try out a few new things here, such as changing the construction direction for the chassis or the compact circuit, in which I also rotated the shafts by 90 °.

Pictures 25 and 26 are photomontages of my model and the prototype. The two pictures of the prototype (archive no. 6787 and 12378) are included with the kind permission of the “Mercedes-Benz Classic Archive”.

In between, I have compared it every now and then to check whether the chassis are also similar.

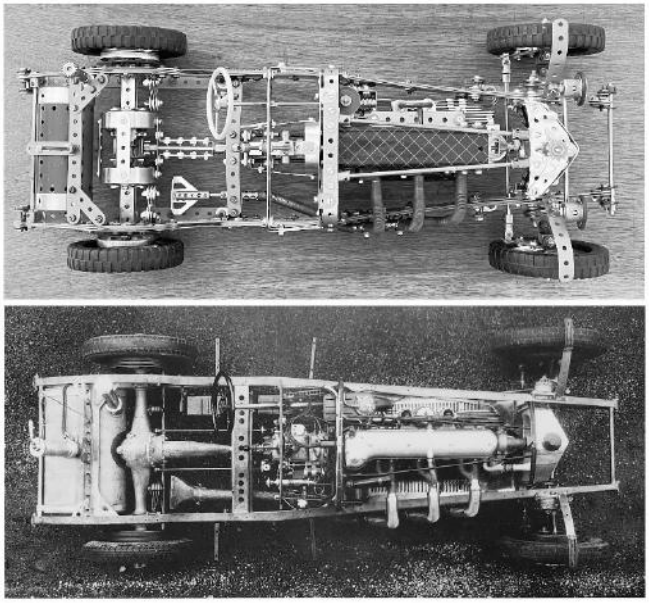


Photo 25 (Original photo Copyright: Mercedes-Benz Classic)

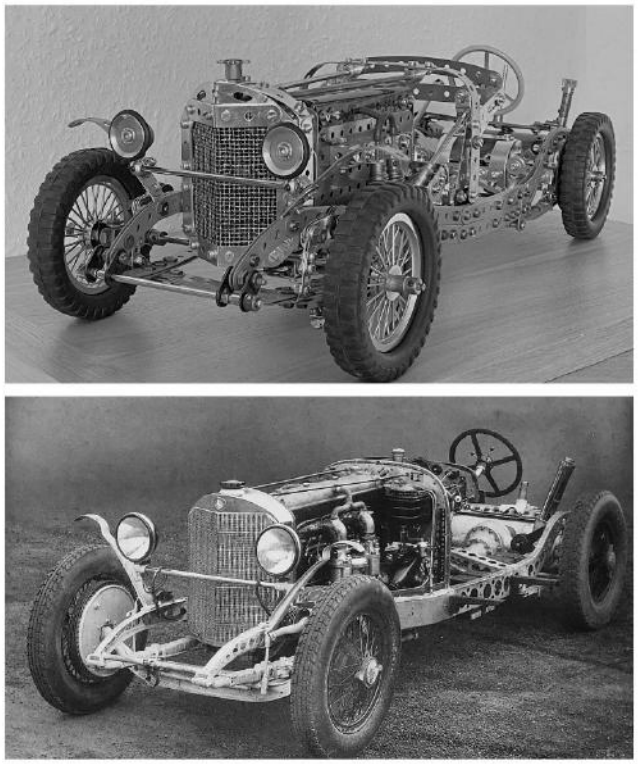
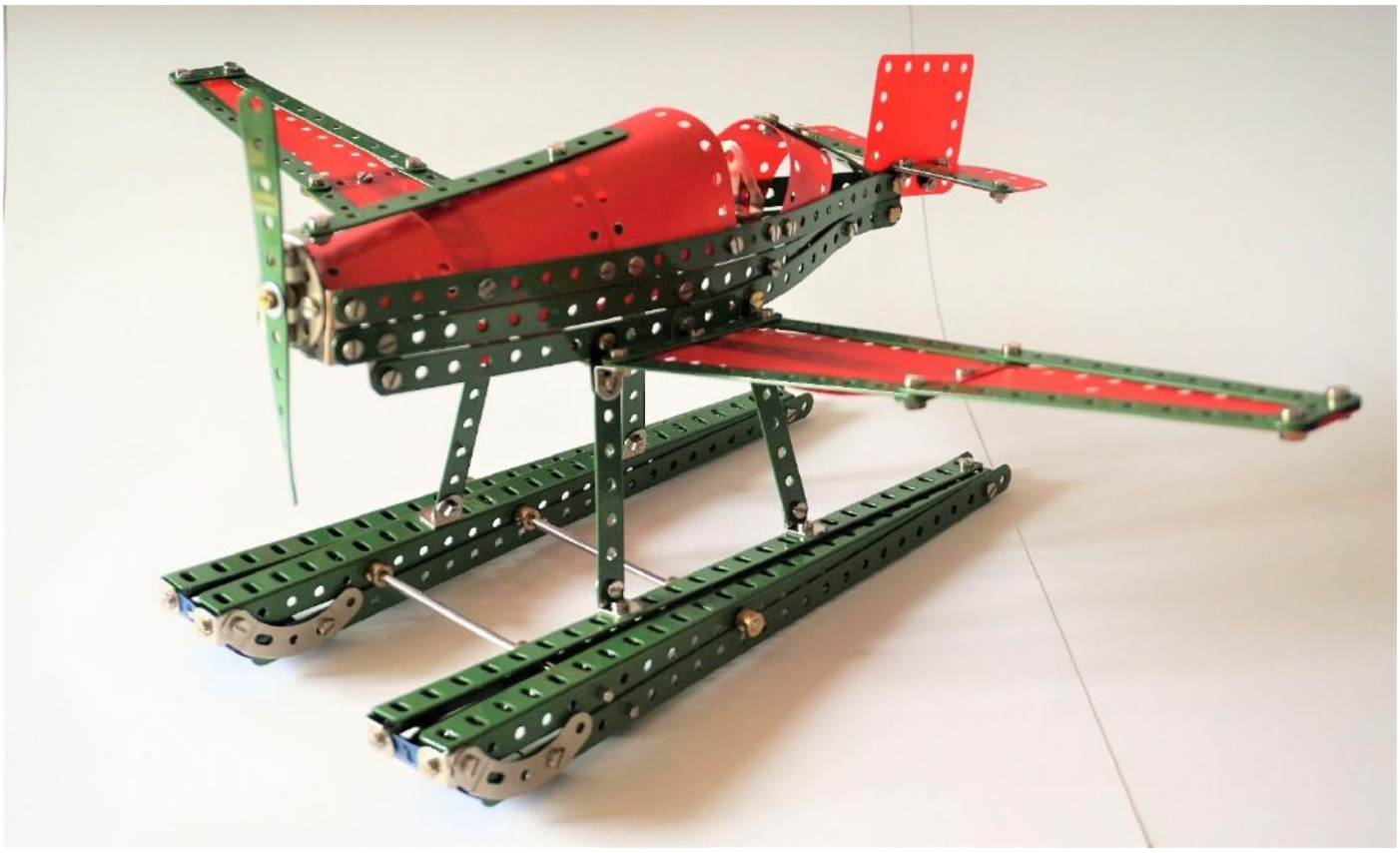


Fig. 26 (Original photo Copyright: Mercedes-Benz Classic)

Since I'm often asked about it, I'll give you the link to the spoke rims here. They are compatible with the 3.5 "pulleys from Meccano:
https://www.meccanoshop.co.uk/wire-wheel-75mm-dia-c2x20876150

Technical data of the model:
Length: 59 cm
Width: 24 cm
Height: 17 cm
Scale: 1/8
Weight: approx. 4.5 kg

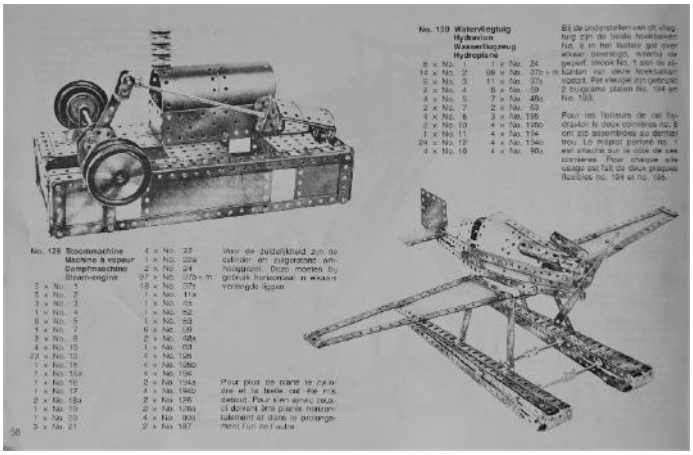


Seaplane from Temsi

From Gert Udtke

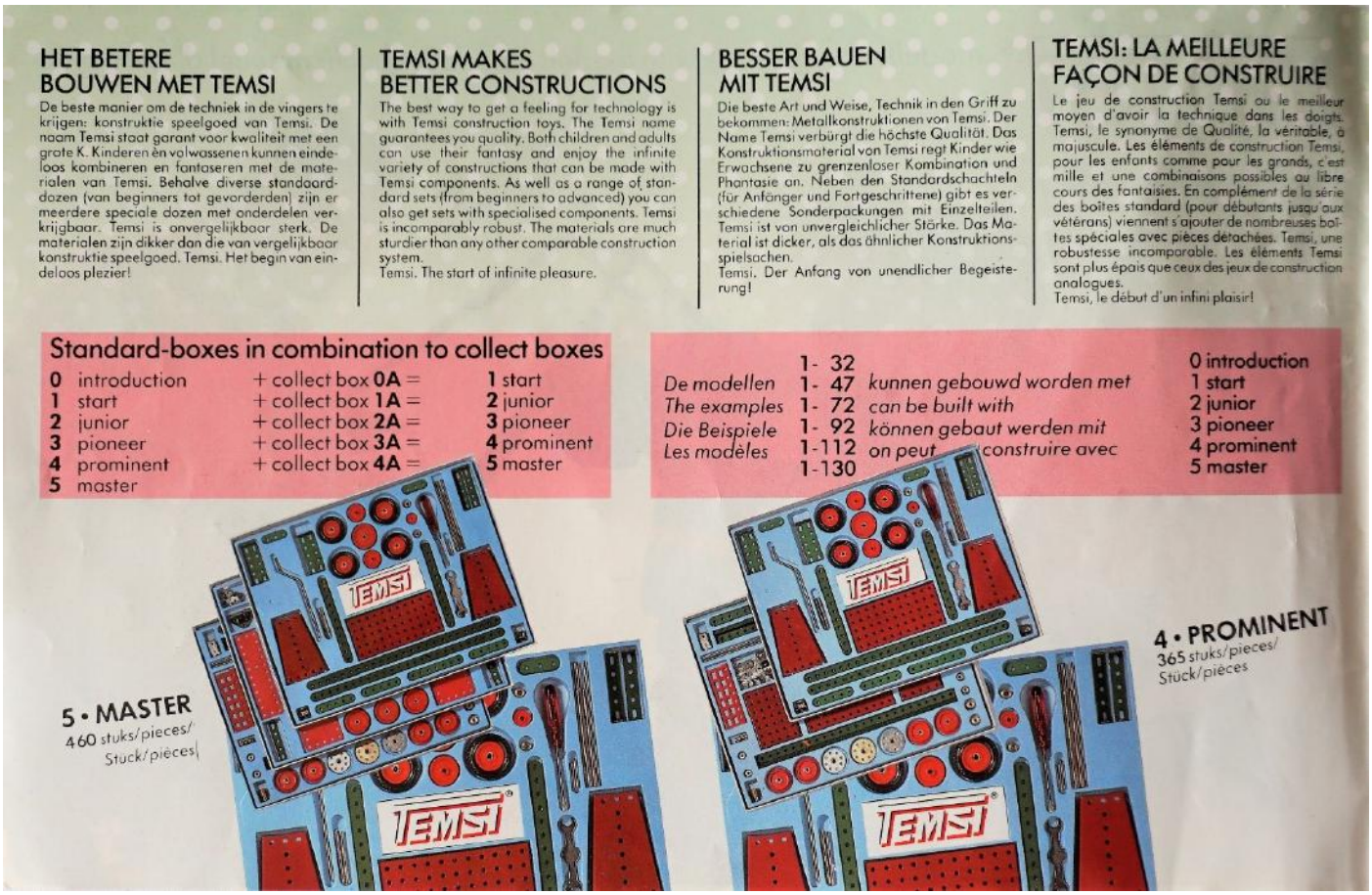
For my great-nephew Lukas, who is enthusiastic about aircraft

(10) I built a seaplane according to my wishes. After two sports pilots from Märklin, I now tried out the Dutch Temsi system from Hengelo, its largest construction kit No. 5 Master. 460 parts, including 110 screws and nuts, are sorted in a sturdy, three-layer cardboard box in plastic inserts. Temsi metal construction kits (1946 to 1997) are no longer manufactured, but Metallus still offers many individual parts “while stocks last”. www.metallus.de

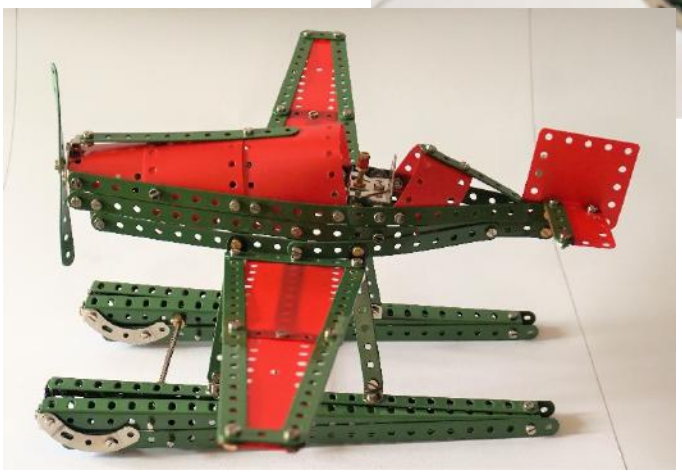


My simple seaplane was created based on template 130 in the Temsi instruction book. However, it only shows a black and white picture without details, so that the designer has to develop some things himself. I've changed some details anyway.

The material is of good quality, mostly much more massive and stable than comparable elements from Märklin or Meccano. The hole spacing follows the half-inch system - despite this, long flat strips and angle brackets in particular are only partially compatible with Märklin and the Temsi model Meccano: With long parts, the holes at the end are no longer exactly one above the other.



The main colors red and green are strong and appealing. The light red cladding panels are made of thin synthetic fabric, can be easily bent, but not kinked: then they break. The metric steel screws, especially the nuts, are a bit clumsy and thick: it gets (too) tight in corner joints.



I like the finished seaplane with its cute shape and bright colors. Let's see what the future owner has to say about it ...

Mercedes-Benz SSK / SSKL on a scale of 1: 4.45

Model of the model

From Wilfried v. Tresckow

Of the six-cylinder supercharged sports cars in the Mercedes-Benz S series, the SSK (for SuperSport-Kurz) is the sportiest, most exclusive and most fascinating version. The model, which was used for the first time just four weeks after the Type SS, underlines its pronounced sportiness, among other things by a wheelbase that has been shortened by 45 centimeters. This makes the SSK ideal for mountain races.

Fig. 1: Mercedes-Benz SSKL from 1931; Source: https://de.wikipedia.org/wiki/Mercedes-Benz_W_06

In April 1931, Rudolf Caracciola became the first non-Italian to win the legendary 1000-mile race "Mille Miglia" with the weight-reduced and even more powerful version from 1931, also known as SSKL (Super-Sport-Kurz-Leicht) from Brescia to Rome and back.

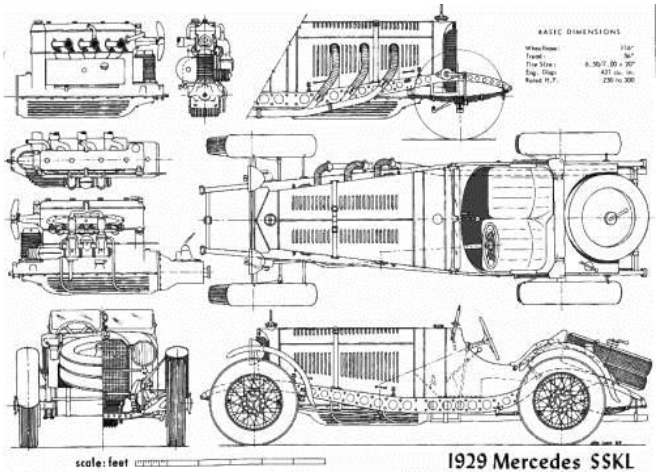


Fig. 2: Technical drawing of the prototype, source: https://www.the-blueprints.com/blueprints/cars/mercedes/845/view/mercedes-benz_ssk_l_1929/

Fig. 3: The SSK model from Burago on a scale of 1:18 (zinc injection molding and plastic, can be dismantled into individual parts) served as a template for the replica from metal construction kit parts, mainly Märklin, as well as Burgstetter, Meccano, Merkur, Metallus, Erector, Stabil, Stokys, also "aliens"; so a mixed construction.

1. Prehistory

A sports car is shown on the special brochure enclosed with the Märklin anniversary set 1075, as well as "M 805 - racing car" on page 3 in the M 385 shop window and dealer model catalog from 1932. Its body shape should probably represent the famous SSK. Hans-Peter Kuhlo built this model more than 20 years ago. It measured over a meter.

I didn't like the flat frame in the Märklin template. Because the frame lacked the elevation towards the front axle and the curved arch over the rear axle. Both can be seen very clearly in the profile picture at the bottom right in Fig. 2. Shapes like these, like the radii on the cockpit in general and the front-tapering, at the same time diagonally cut, radiator hood are not very easy to replicate with metal construction kit parts.

2. Scaling

The wheel size determines the scale to be selected. Based on the original sheet metal wheels of the aforementioned Märklin shop window / dealer model "M 805", I chose the Märklin Big Wheel # 11015 as the rim. Turned MDF tires [Aliens!] With an outer diameter of 19 cm are "raised" on it. The wheel of the template model in Fig. 3 has a diameter of 4.7 cm. So I ended up with 19: 4.7 = 4.04 as the conversion factor.

3. Templates - or: in the beginning there was a lot of paper

The fact that the template model on a scale of 1:18 could be dismantled into individual parts turned out to be advantageous. In this way, the respective surfaces or parts could be placed on the copier and "inflated" with a factor of 4.04 to a scale of 1: 4.45. Where the A4 copies only reproduced partial excerpts of the enlargement, for example with the frame, the individual “tabs” had to be glued together to represent the entire vehicle part.

The contours of the enlargements obtained in this way were laid out with correspondingly matching components like in a puzzle. A lot had to be tried out and angle beams, flat bars, arched strips of different radii had to be pushed back and forth. Until finally a stable looking and overlapping elements with congruent holes also resulted in a screwable solution. The vehicle part could then be created on the basis of this desired “stable sampling”. Again staying with the example: so also the special swing in the frame.

In the following, I will not refer to the construction and development of the model, but rather to point out details in commented images.

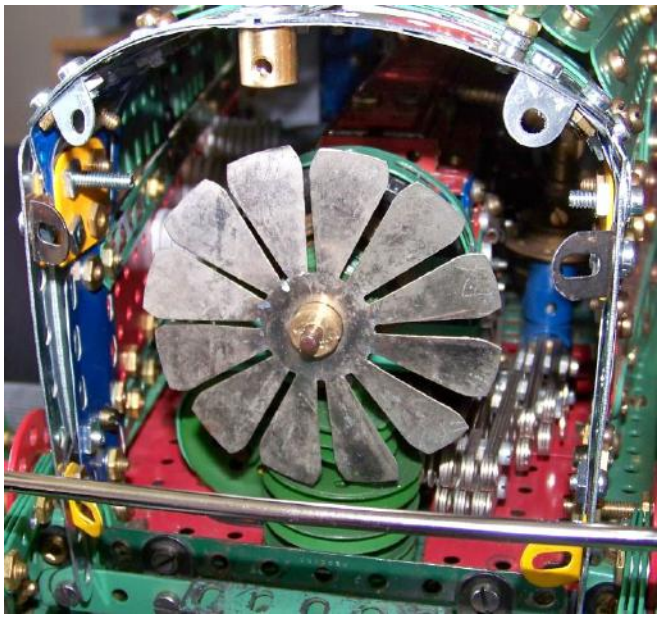


Fig. 4: Fan

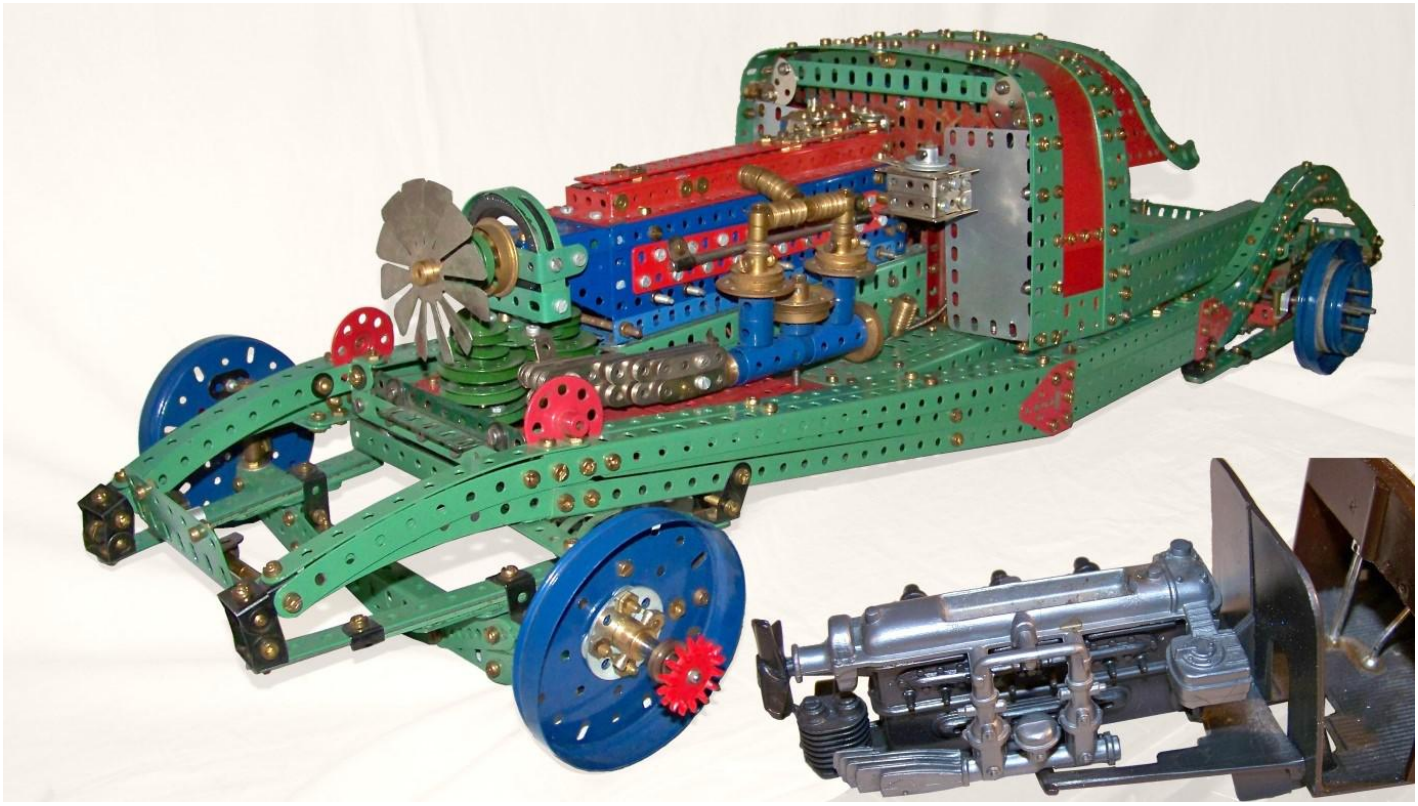


Fig. 5: The motor takes up a third of the length of the frame; it is largely built with Mercury parts in order to be able to better represent the fine details according to the template.

Fig. 6: right side of the motor

Fig. 7: Exhaust system of the plastic model car Multiple bends and three-in-one routing of the exhaust pipes could hardly be built on the desired scale with modular parts.

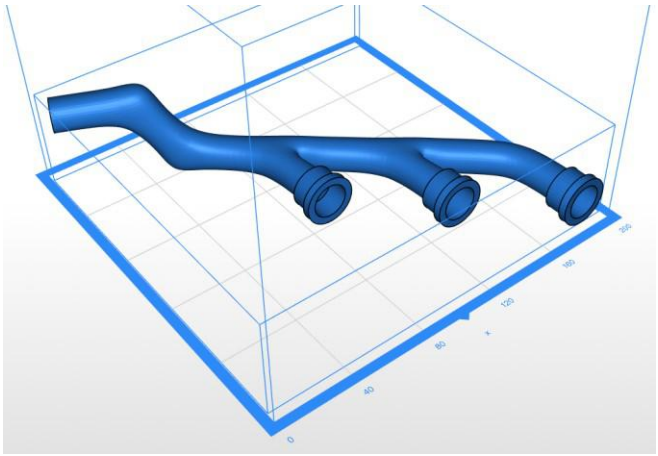


Fig. 8: This part was created using a 3-D printer.

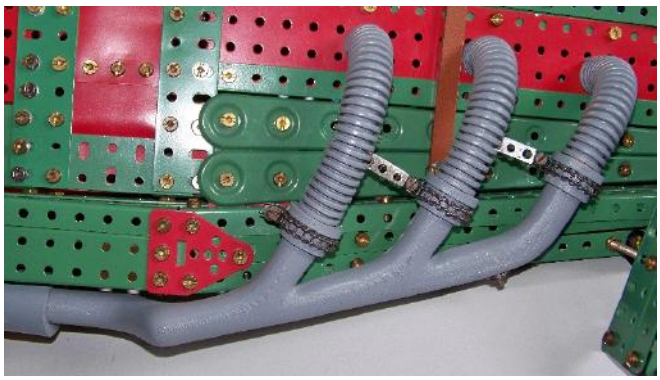


Fig. 9 (see also Fig. 3): Completely assembled exhaust system; Empty pipes for electrical lines serve as exhaust hoses. [Aliens!]

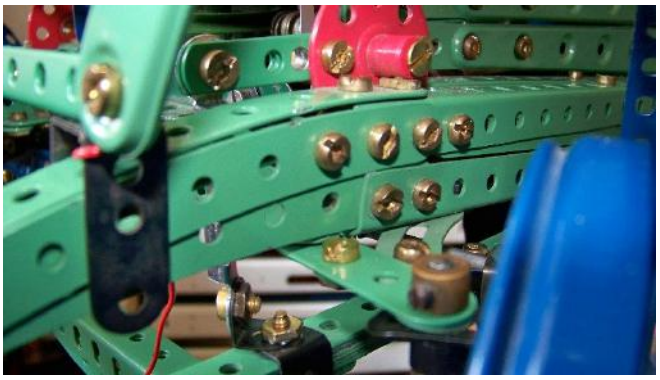


Fig. 10: The pair of perforated disc wheels still undefined on the frame (see Fig. 4) ...

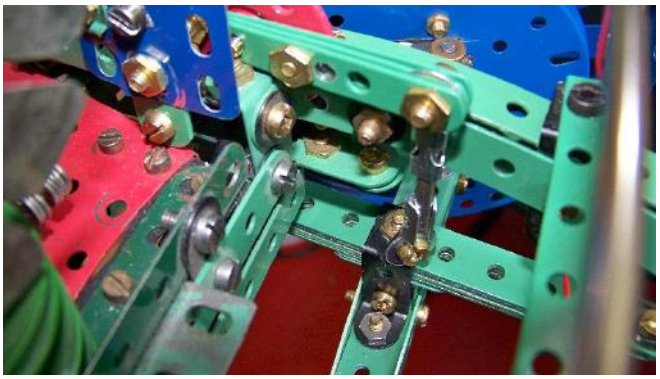


Fig. 11:... is intended to represent the housing of the former form of friction shock absorbers on the front axle. (see Fig. 2, top right)

Fig. 12: In contrast to Märklin, the Erector range had more arched tapes of different radii and lengths; This made it possible to reproduce the curved line in the body cutout almost true to the original. (below)

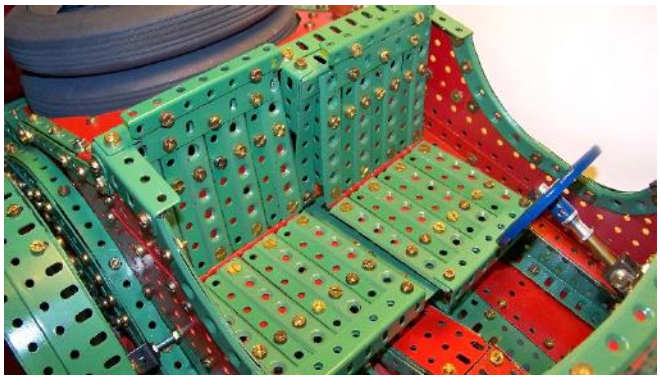


Fig. 13: Due to their bevelled edges and funnel-shaped screw holes, the Erector flat strips are particularly suitable - screwed alternately with Metallus narrow perforated strips - to represent the seat cushion structure.

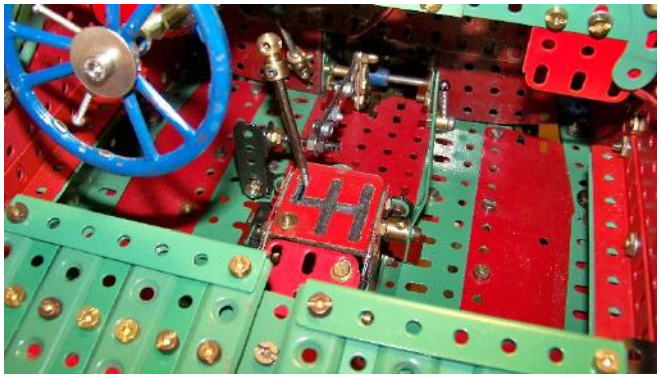
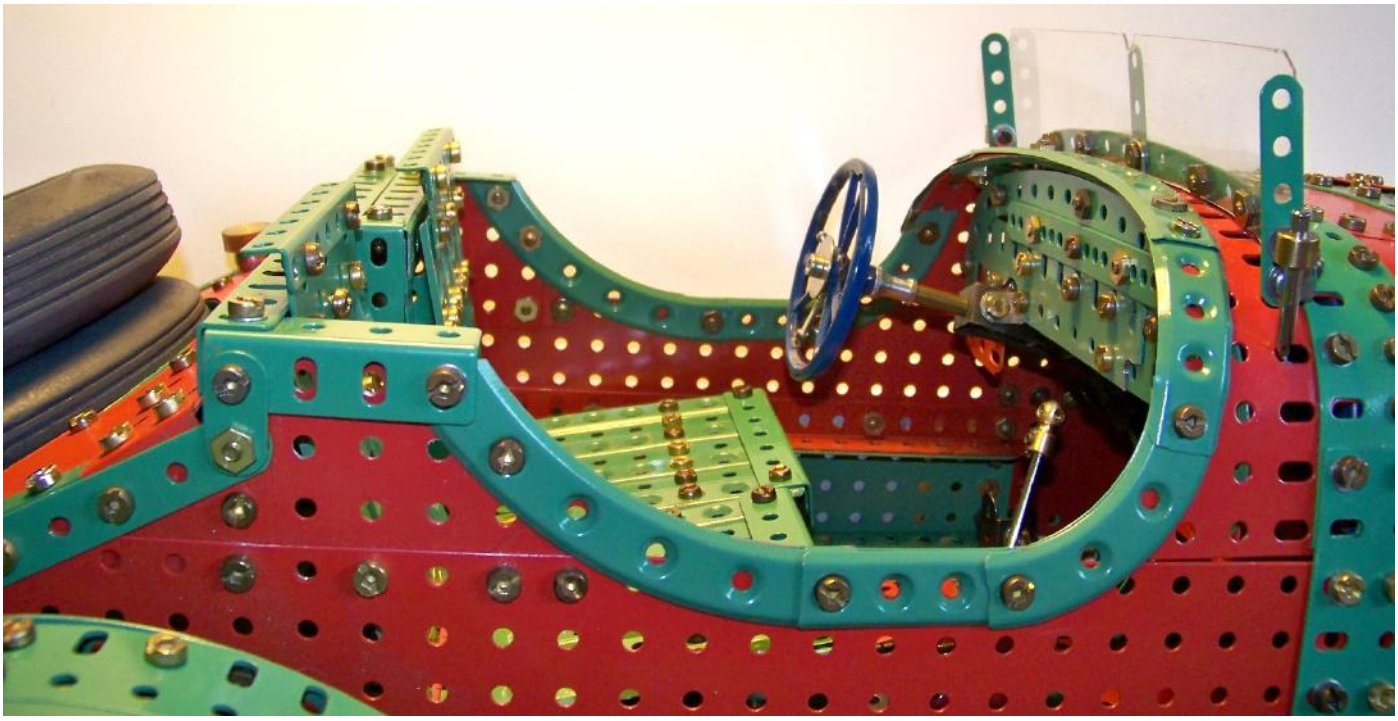


Fig. 14: View into the footwell with H-shift gate and handbrake lever that functions as an on / off switch; A super-powerful electric motor with an intermediate gear is hidden under the one made from Merkur parts Engine block.



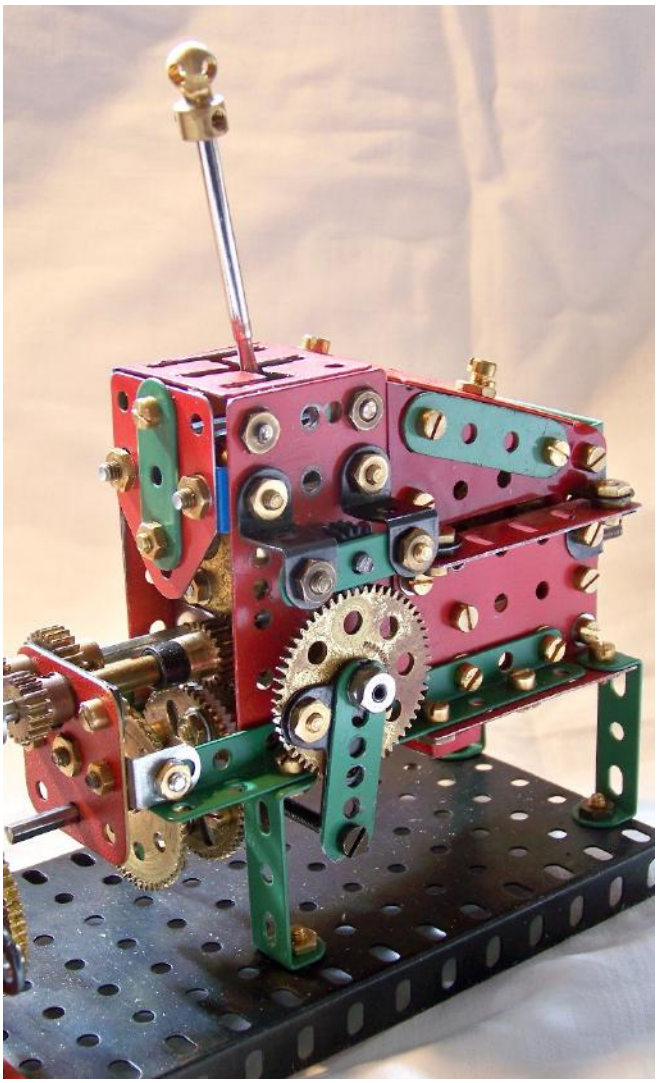
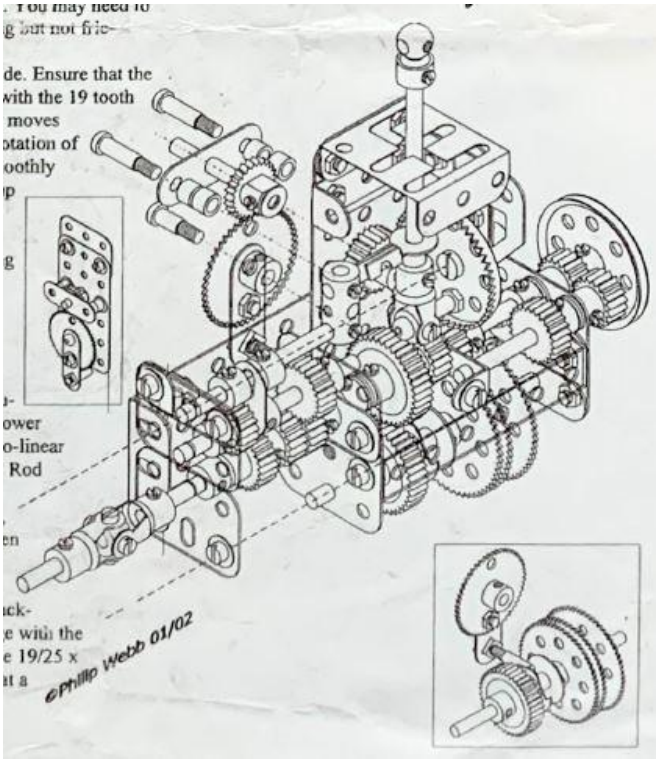
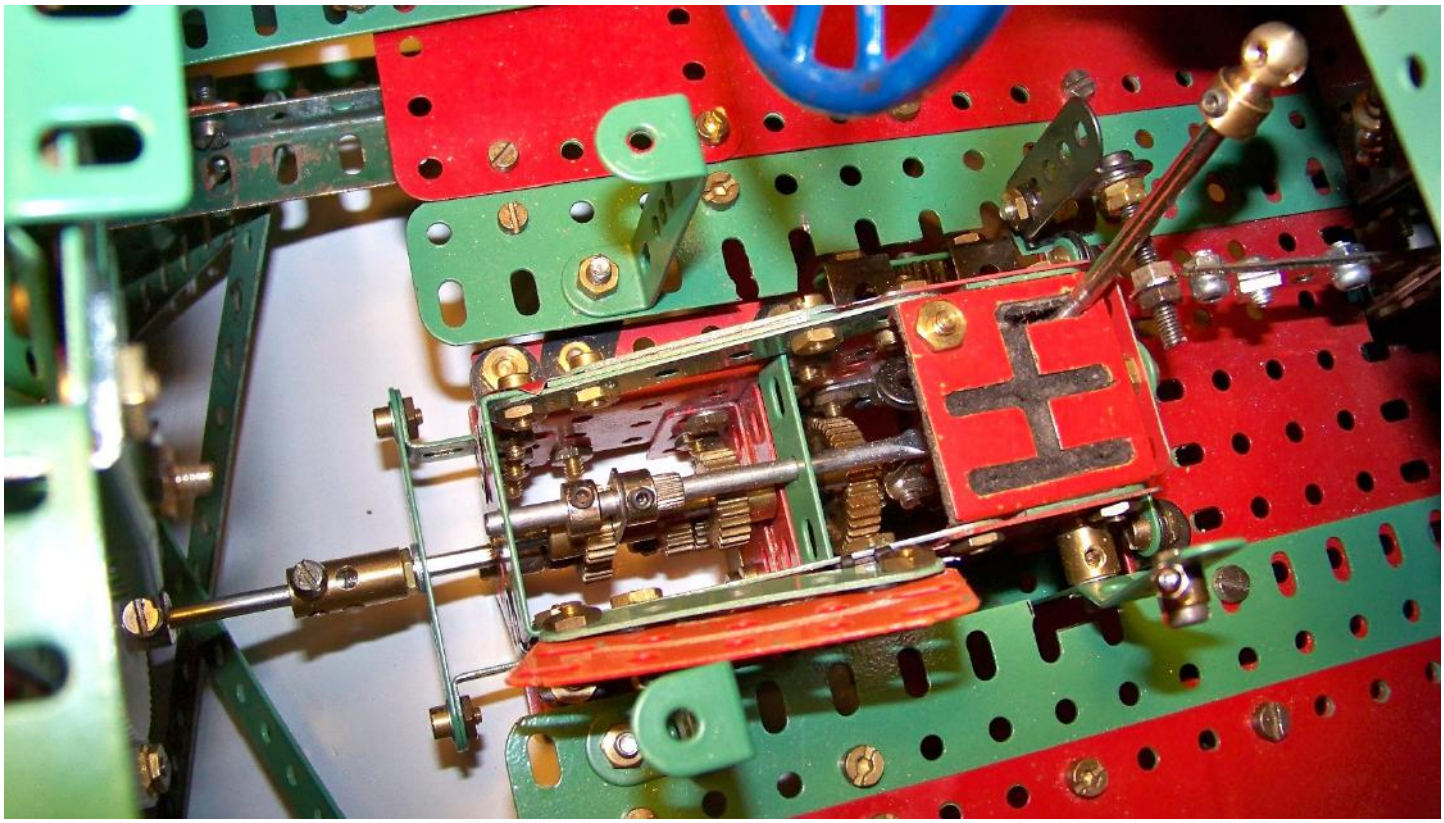


Fig. 15 - 17: The SSK model has a functioning 4 + R gear shift, based on the design by Phi-lip Webb, GB.





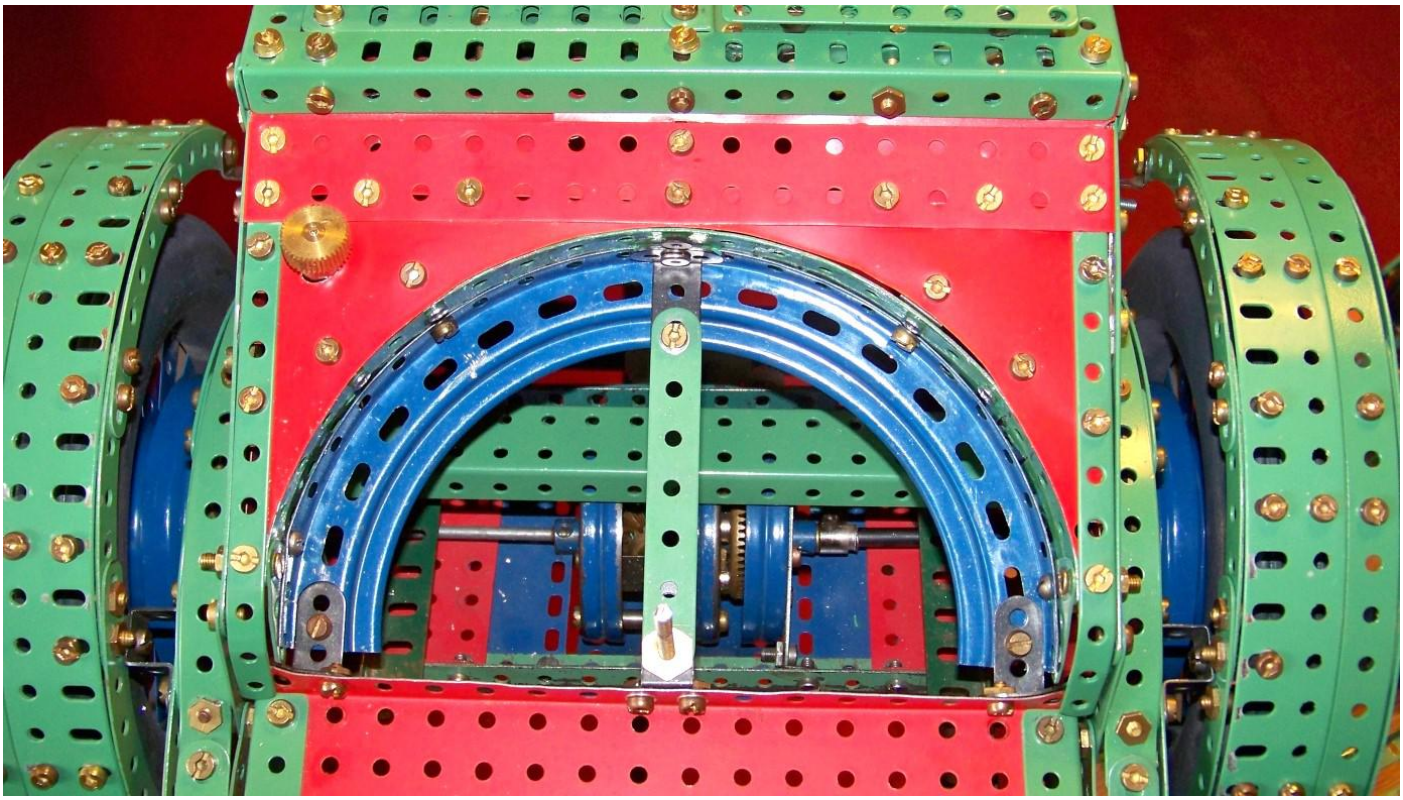


Fig. 19: Removed spare tires (see also Fig. 12 + 13) reveal the differential; the tub for accommodating the spare tires is formed by a cut-to-size Märklin Large Ring # 11095 - purists may forgive it. (above)

Fig. 20: Cooler: As in the model, the front of the cooler is set off in silver; the grille is the sawn-to-size part from a fan protection plate (sic!) [Alien!] And, to create the typical segmentation, covered with thin black insulating wire; not to be overlooked: the Mercedes star on the top of the radiator; Headlights: They consist of the two upper parts of salt / pepper controls [aliens!] And were ideal for use because of their material, parabolic shape and scale. On top of that, the purchased lamp elements fit exactly. (below)

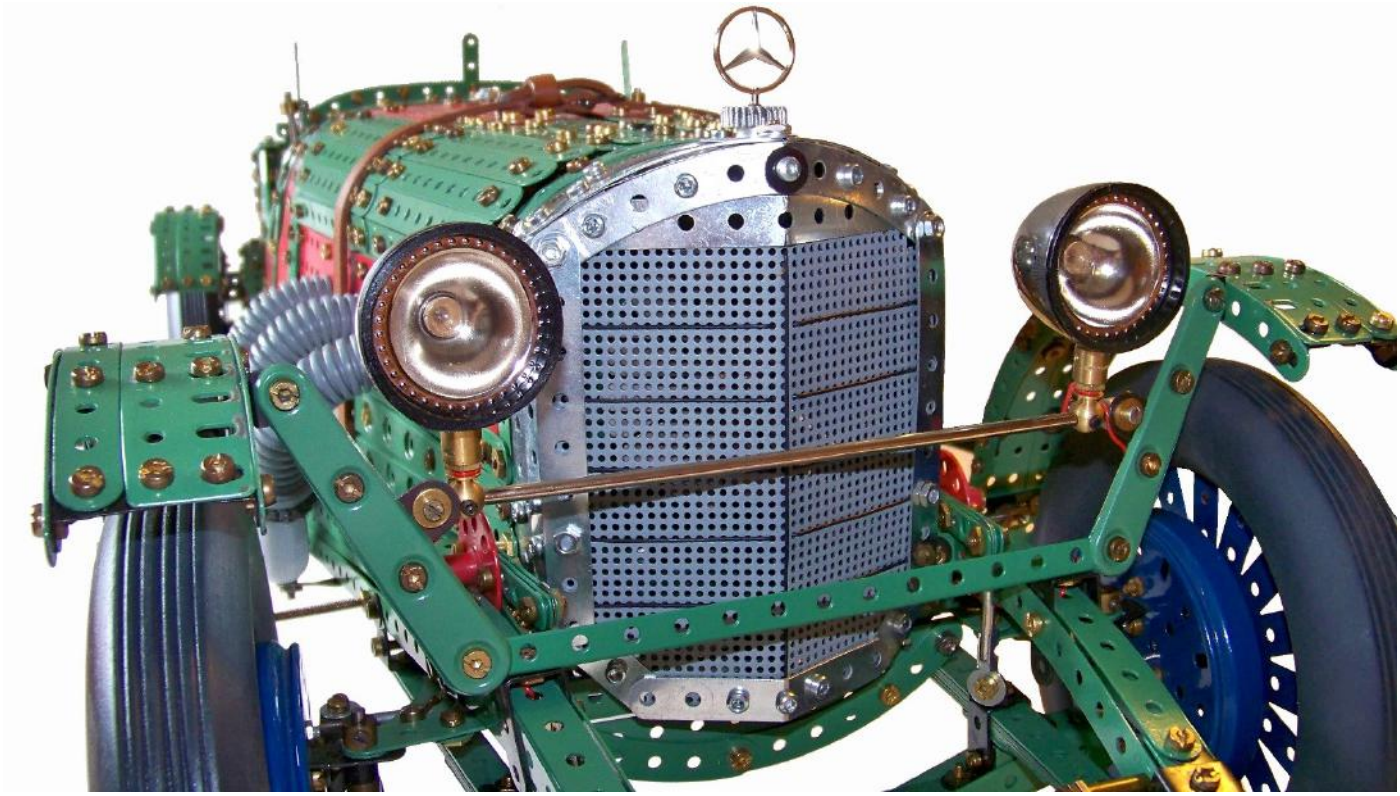
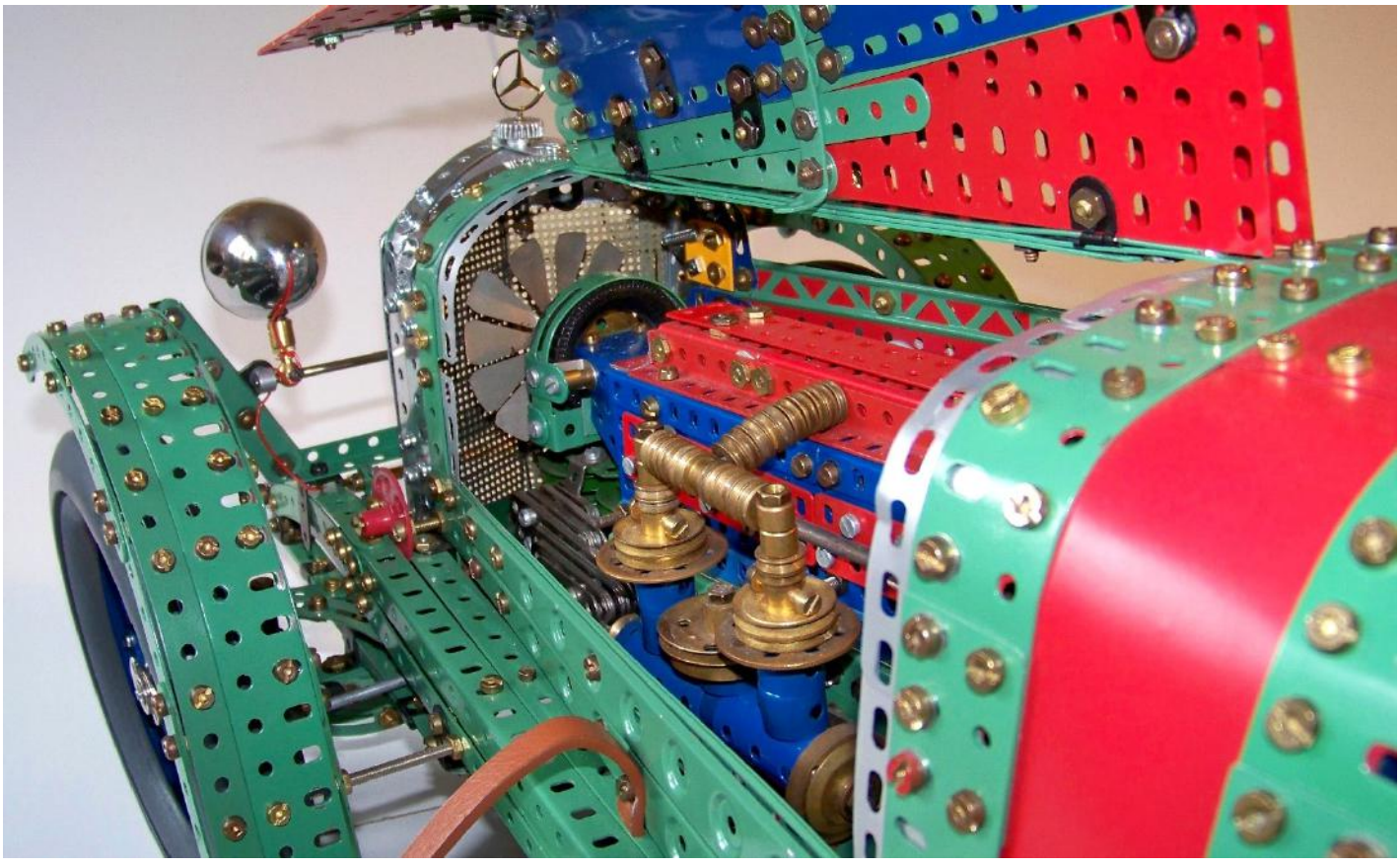


Fig. 21: At the transition from the frame to the motor housing, two Erector parts (no. Not known) are installed on both sides (see also Fig. 9 + 23); thanks to their wedge shape, they ideally compensate for the angle created by the rise of the frame towards the front axle and the horizontal lower edge of the bonnet. (above)

Fig. 22: Open engine hoods, see also Fig. 4 - 6 (below)



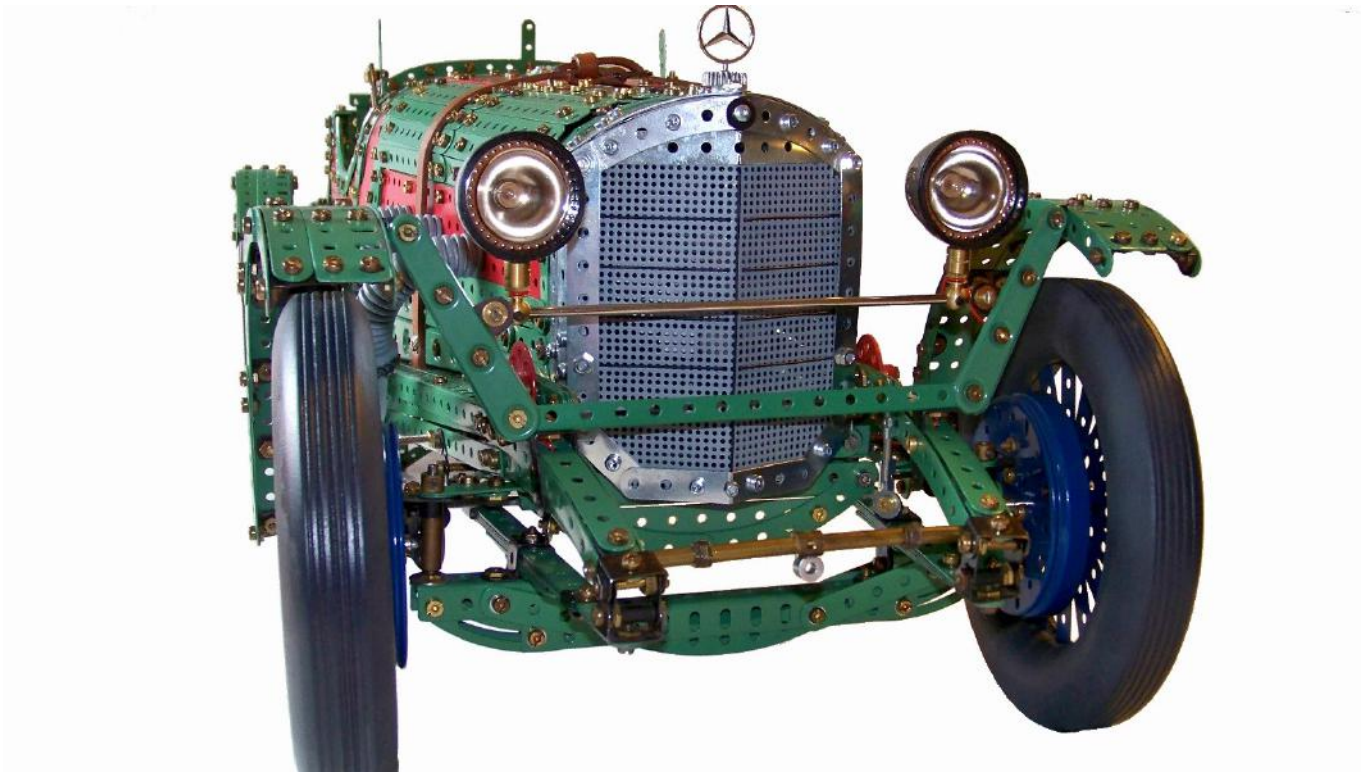


Fig. 23: It is a standing model. While the front wheels are in contact with the ground, which does not affect the steering, there is a demonstration of the manual transmission.... (above)

Fig. 24: ... the rear axle jacked up so that its wheels can rotate freely while floating slightly above the ground. (below)

Summary information about the model:
Dimensions: LxWxH: 97 cm x 36 cm x 33 cm
Weight: 18.6 kg

Construction period: February 1 to May 30, 2021, one month of which was for the manual transmission.