club

NEWS MAGAZINE FOR MEMBERS
OF THE FISCHERTECHNIK-CLUB

december 1971

Foreword

To give you some encouragement we have published in this edition of the magazine, under the title "Ideas for fischertechnik models from Europe and overseas", some short reports from various club-members who not only sent us photos of the models they thought up but who also told us something of themselves, their backgrounds and their daily lives.

You would no doubt like to know what your fellow club-members in other parts of the world are building and designing with their fischertechnik sets, how they spend their time in India, Australia, Africa, America and elsewhere in Europe and the kind of environment they live in. What do you think? Wouldn't it make your club magazine more interesting and lively? We think so, and we therefore invite you and all your fellow-members to take part in our great new competition, entitled: "Reports from fischertechnik modellers all over the world."

The best models and reports will appear in the magazine, beginning with the next number, which will probably be published in January 72 — and on top of that there will be interesting prizes. You will find full details under the heading "News from the fischertechnik Club" on page 12.

Artur Fischer

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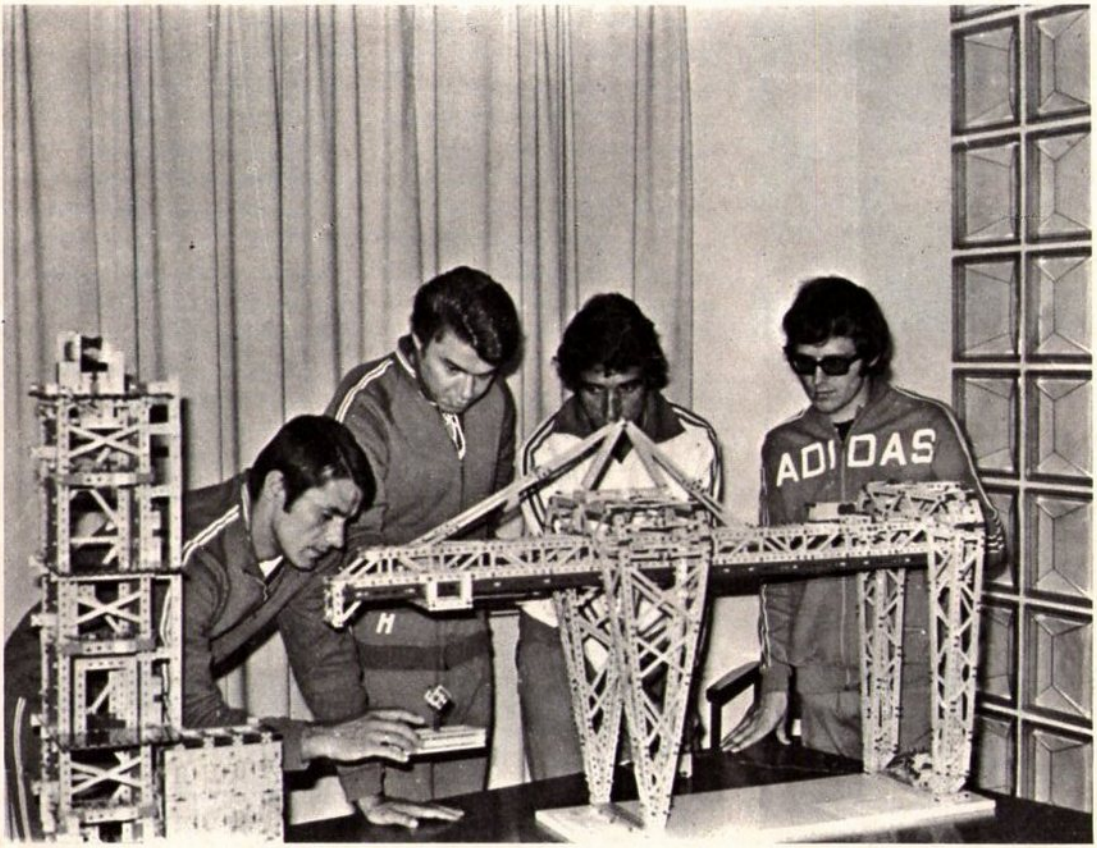


Actually we intended to use this space for a report on the visit by the winner of the puzzle in the July edition, but shortage of time made this impossible and we shall have to keep it for the next issue. Full details of the puzzle and solution are given in "News from the fischertechnik Club". Instead, we bring you news of another visit: on July 26th we welcomed as our guests the star players of the French football team Olympique from Marseilles. Josip Skoblar, Roger Magnusson, Bernard Bosquier and Gilbert Gress came along to show us that their technical skill was not restricted to soccer only. The fresh, clear air of the Black Forest obviously suited the players, for they recorded various notable wins, including a 3 – 2 victory over VfB Stuttgart.

New from fischertechnik

Kit **ft 032** contains the fischertechnik key-bolts which have proved so successful in providing a quick and simple means of connecting the various static structural components without the use of nuts and bolts. The pack also includes the key-bolt tool which facilitates assemply.

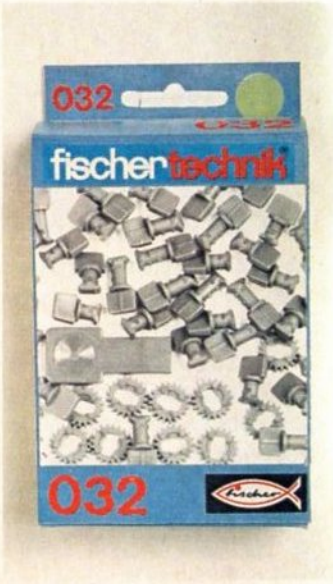
Contents: 60 key bolts
10 long key bolts
10 washer
1 key-bolt tool.

The **ft 033** pack contains hinges, which enable articulated joints to be made between girders and struts, and hinged joint bars which likewise provide pivotable connections for stays. The angle bars enable struts to be fitted at right angles to the girders, while the plain bars make it possible for the struts to be connected either straight or diagonally. The 45° junction plates can be mounted on angle girders thus enabling struts to be fit-

Today we should like to introduce supplementary statics packs which were referred to in our last issue. All individual components from our statics range are now obtainable in these sets, denominated 031 – 038.

Kit **ft 031** consists entirely of angle girders, which can be used for vertical or horizontal construction and thus economise in base plates; they are particularly suitable for towers, bridges and cranes. The pack contains the following items:

4 angle girders 120
2 angle girders 60
4 angle girders 30
2 angle girders 15
2 angle girders 15 NN.



ted, also at an angle of 45°. The corner junction plates are intended as right-angled units for connecting structural parts, while the cross junction plates enable four struts to be fitted. A large number of combinations are made possible by fitting a cross junction plate to an angle girder. A propeller, for example, or a windmill sail can be constructed in this way. All the above-mentioned parts are individually illustrated on pages 54 to 59 of our statics instruction book. The ft 033 set contains:

6 hinges
4 hinged joint bars
4 angle bars
4 bars 15
4 bars 21.3
2 junction plates (45°)
2 corner junction plates
2 cross junction plates.

The **ft 034** pack contains two red 180 mm plates. These two panels are admirably suited for making roadways on bridges, road surfaces or floors for vehicles.

The **ft 035** and **ft 036** packs contain many struts of various lengths for connecting angle girders. The I-struts enable straight connections to be made (and are therefore marked with a straight line), whereas the X-struts are for crosswise connections, but at less than 45° (and therefore marked with an X).

ft 035 contains:

4 I-struts 30
4 I-struts 45
4 I-struts 60
6 I-struts 75

4 I-struts 90
2 I-struts 120
ft 036 contains:
6 X-struts 42.4
6 X-struts 63.6
6 X-struts 84.8
6 X-struts 106
4 X-struts 127.2

The following fact is also interesting. If two I-struts of equal length are placed at right angles to one another and the triangle completed by the addition of an X-strut as the hypotenuse, then it is a simple matter to prove the theorem of Pythagoras using these fischertechnik units. The equation $a^2 + b^2 = c^2$ has, for example, to be worked out for the I-struts (= 45 mm) and the X-struts (63.63 mm), i. e. $45 \times 45 + 45 \times 45 =$
63.63×63.63
$20.25 + 20.25 = 405$.

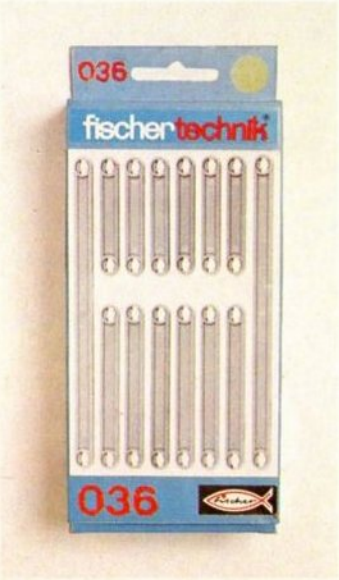
If you have not yet done this theorem at school, either your teacher or your father, we are sure, will be pleased to explain it to you.

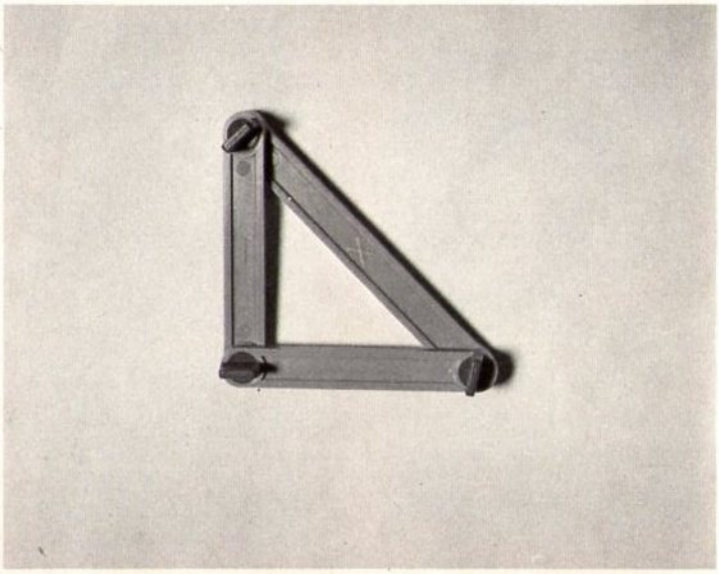
This calculation can be made using all lengths of fischertechnik I-struts as the catheti, or short sides of the triangle, and X-struts as the hypotenuse.

The flat and curved (30° and/or 60°) pieces contained in the ft 037 set fit easily into the flat girders. With a flat piece you thus get an angle girder 120 or with the curved pieces arcs of varying degrees of curvature, for example, turn-tables for merry-go-rounds, clocks, etc.

Contents: 3 flat girders 120
3 flat pieces 120
3 curved pieces 30°
3 curved pieces 60°

The two red rails in **ft 038** can

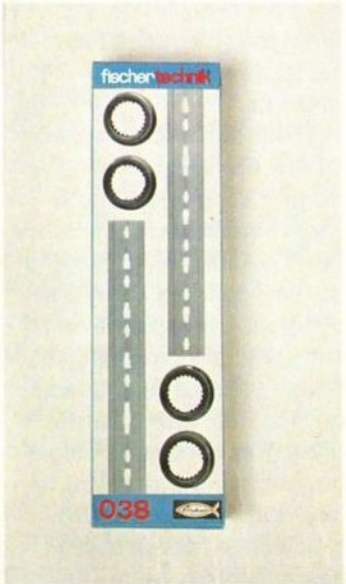




be used either straight or curved or for enclosing models. The wheel flanges are fitted with hubs and run true to gauge both on the rails and on the angle girders and blocks. They can be used for wheels on cars, cranes or crane trolleys.

Contents: 4 double rails
4 wheel flanges.

The front page of our large basic fischertechnik brochure shows a model incorporating these rails.



A topical subject:

At dawn on a cold, foggy February day in the year 1946 Artur Fischer, still

wearing his threadbare German Air Force uniform, clambered over the barbed wire surrounding a P. O. W. camp in Leoben, Styria.
Up till then his career had scarcely differed in any respect from that of a hundred thousand others — born in 1919 in Tumlingen, a small village in the Freudenstadt district of the Black Forest; attended the local primary school; served his apprenticeship as a craftsman, was soldier and ended up as a prisoner of war.
He obtained his first employment in Freudenstadt with Dr. Edgar Roessger B. Sc. (Eng.) now a professor at the Technical University of Berlin and head of the Institute of Flying Control and Navigation. At that time Roessger was opening an electrical supply shop in Freudenstadt and Fischer joined him. It was a difficult period, during which improvisation was the rule. Roessger and Fischer made lamps out of wrought iron and wood, repaired defective equipment and traded technical know-how for bacon, potatoes and flour.
By the end of 1947 Fischer was making electric firelighters in a small workshop. These consisted of coils of bare wire embedded in fireclay, and were intended to replace non-existent matches.
Up till then the rent had been DM 15. For reasons of economy Fischer moved to a room where the rent was only DM 10. And then, at the end of 1948, sparked off by an everyday event, came an extraordinary development. In that year a daughter was born to the Fischers and a photographer from a neighbouring town was asked to take a picture of the baby.
He came, he saw, but not nearly enough, for it was far

too dark i the house. The photographer showed Artur Fischer a brochure containing a flashlight appliance which had once been on the market. Fischer saw what had to be done, had an idea and made a flashlight.
He sold his first appliance via a photography shop in Frankfurt. The breakthrough to big business came in 1950, when he displayed his flashlight appliance at the "Fotokina" exhibition in Cologne. A world-famous German photographic company invited him to enter into negotiations with them. Artur Fischer appeared — no doubt to the great amusement of the gentlemen concerned — in his only presentable attire, namely kneelength leather shorts and a white shirt.
A real bit of tomfoolery brought him his first large order. When he was asked if he could supply the company with their annual requirement of some 100,000 flashlight appliances, he replied, without further consideration, that he could. Up till then, incidentally, his yearly production had been 10,000 at the most. In high excitement he returned home and immediately cancelled all holidays and time-off. Every penny he earned from his flashlights was re-invested in machinery. His parents provided him with the bare necessities of food and drink — and the contract was fulfilled. The flashlight appliances are still manufactured in Tumlingen to this day.

In 1958 Artur Fischer was already employing 200 people, when he was offered the chance of taking over the manufacture of a British plastic dowel. After a great deal of time and money had been spent on the venture, however, it became plain that the British product was unlikely to be successful. And since this version proved incapable of realization, Artur Fischer tried a Swabian one. The result was a grey nylon plug.

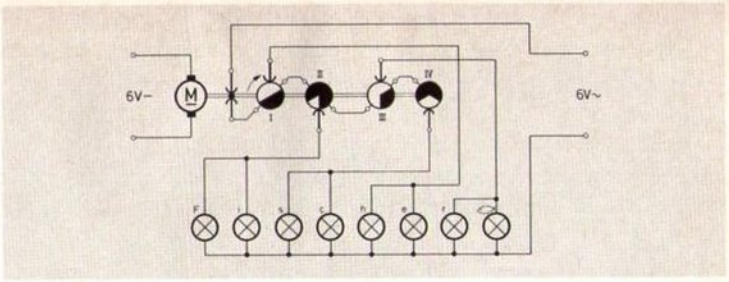
The Fischer works became the largest producers of nylon plugs in the Federal Republic of Germany and the biggest purchasers of nylon granulate from the Badische Anilin- und Soda-Fabrik Company in the whole world.
Typical both of Artur Fischer's mentality and of the speed of his reactions is the story of how his third line of business came about. Every Christmas he was annoyed by the vast quantities of diaries, ball-point pens, lighters and similar uninspiring presents which he received and had in turn to give. He thereupon conceived the idea of making an interlocking device for children which would be a toy at the same time. He wanted to produce something for the children of his business associates, and initially he had no thought of exploiting it commercially. The result of his endeavours was a nylon building block which could be connected to the next block on all its six sides. Within twelve months this one block had become a whole set — the start of the fischertechnik kits.
Today's position: out of this gadget has grown a whole range of kits covering electromechanics, electronics and statics to be used either as toys, as instructional material or for leisure-time activities.
Now, twenty years after the 1950 "Fotokina" exhibition, the Fischer company has four works in Germany, manufacturing plant in Italy, Spain and Brazil, new factories in France and Holland and its own marketing companies in Great Britain, the USA and Belgium.
The company employs more than 1,000 people in Germany and its products are exported to over 100 countries.
More than 2,000 patent specifications, all made out in the name of Artur Fischer, protect the products manufactured in the tiny Black Forest village of Tumlingen, near Freudenstadt.
It goes without saying that Artur Fischer is an exceedingly busy man; his working day often lasts well into the night. But there is no doubt that the fischertechnik range is his favourite "child" — and Artur Fischer rejoices each time a club member writes in, for each letter is a small token of the close ties which link the fischertechnik works and their many friends, both old and young, throughout the world.

News from the fischertechnik Club

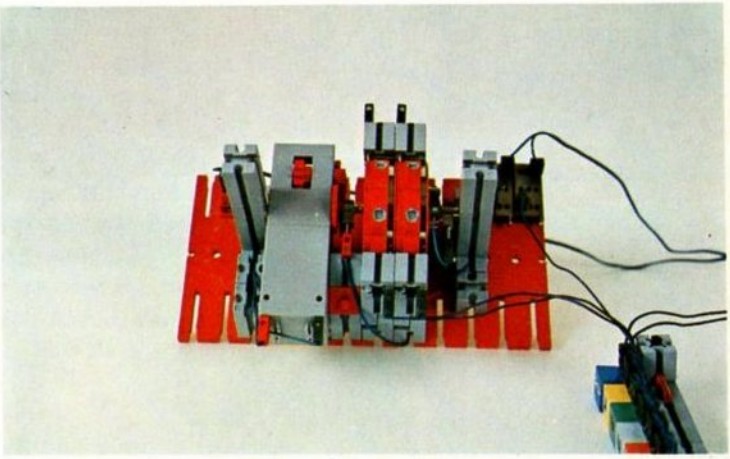
Dear Club Member,

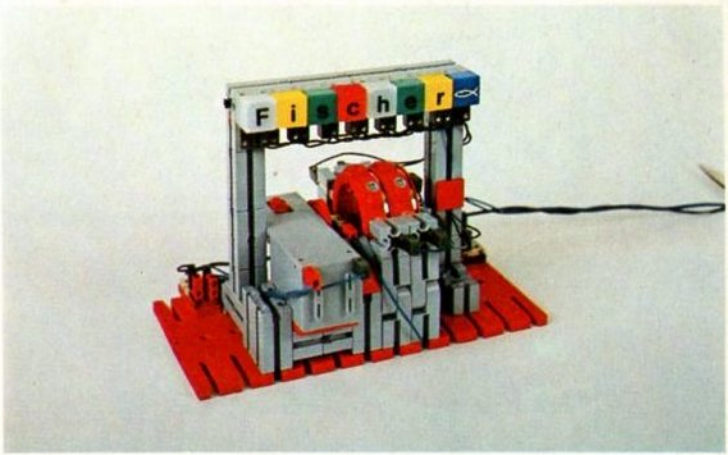
U. K. fischertechnik Modeller of the Year

We have an interesting competition for you and we hope you will all participate.
Simply send in a photograph of your best fischertechnik model, together with a brief description of the model's function, and at the same time saying which kits were used to build it.
All those who enter will receive the new fischertechnik club badge. When you wear the fischertechnik badge and all your friends will ask you what it is for, you can tell them its a special prize for designing a fischertechnik model for us. In addition three prizes will be awarded to the members who, in our opinion, send the most interesting and original design: the first prize will be a fischertechnik 400 S kit, the second a fischertechnik 200 S kit, and the third a 100 S kit.
Providing the designs are suitable we shall consider using blown-up photographs or actual reconstructions of the models for display in shops throughout the country who stock fischertechnik. Where a photograph or a model is used we shall also give the name, age and home town of the designer.

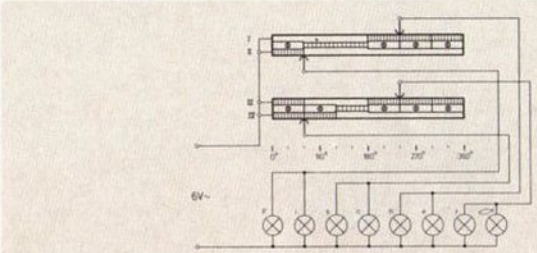


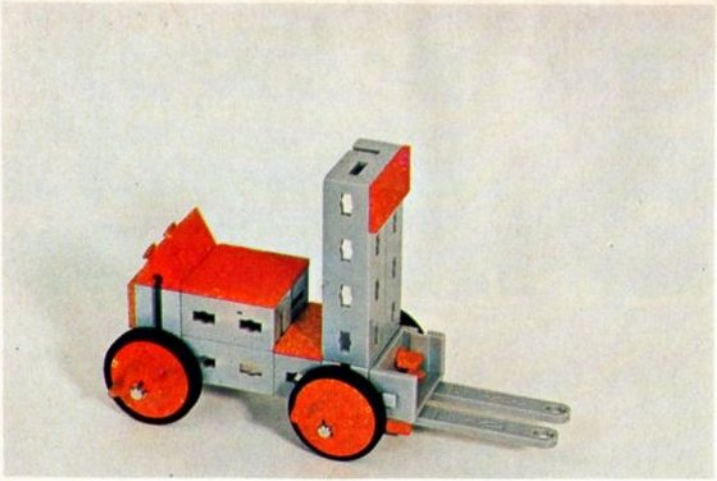
Send your photograph to: fischertechnik Modeller of the Year, Artur Fischer (UK) Ltd., 41 Loverock Road, Reading RG 3, 1 EZ, Berks. Please remember to give your name, age and address. Your photograph should arrive not later than 15th Febr. 1972.
This competition only takes place in the U. K.
And nowwe'd like to show you an interesting model which we have received from your fellow-member, Hans-Jörg Baumann of Hanover-Bornum: a neon-light advertising sign! Just as in real life, the letters light up in succession and then all go out at the same time. The wiring and circuit diagrams, plus the light sequence table for the lamps, make the problem at first sight look rather more confusing than it actually is.
You require the following kits: ft 300, ft mot. 2, ft e-m 1 and ft e-m 4.
In this issue we'd also like to show you some more quite simple models, which you can

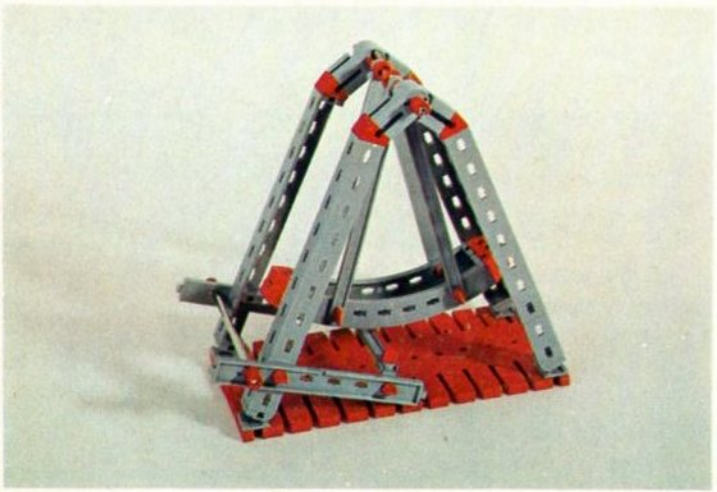


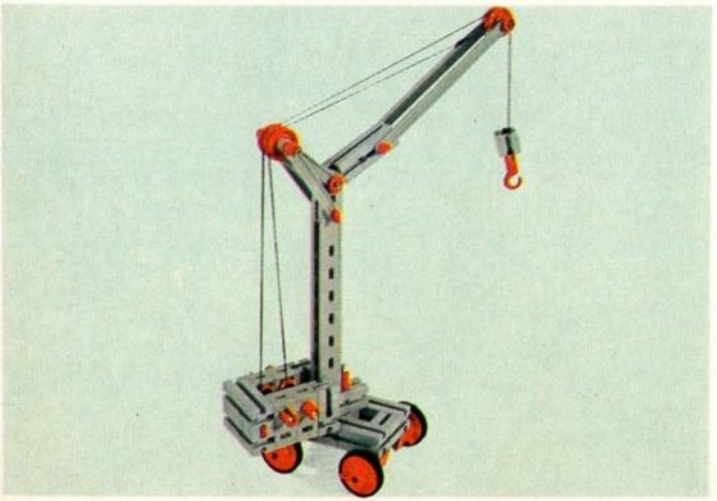


⊗	F	i	s	c	h	e	r	🐟
0°-60°								
60°-120°	⊗	⊗						
120°-180°	⊗	⊗	⊗	⊗				
180°-240°	⊗	⊗	⊗	⊗	⊗	⊗		
240°-300°	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
300°-360°	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗







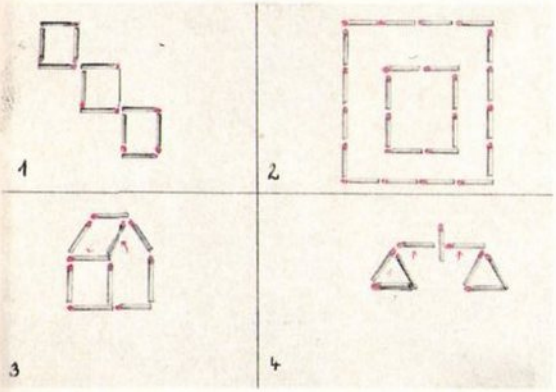


easily make with a few additional static parts. Fig. 1 depicts a fork lift truck, Fig. 2 a swing with a braking device and Fig. 3 an attractive little crane. The rope pulleys in this last model have recently been included in all large statics kits and will also be obtainable in the ft 06 pack as from January, 1972.

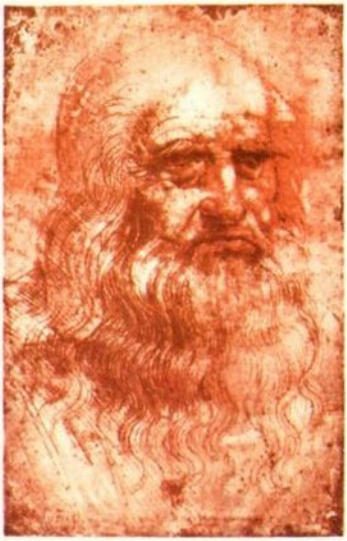
And now for a very important and interesting announcement:
We should like you and all your friends in the Club in every part of the globe to take part in our great new competition, entitled: "Reports from fischertechnik modellers all over the world." This is what happens: you construct a model, of something you've come across, perhaps, or just anything that occurs to you. Then you send us a photograph of yourself, together with a photograph or a picture postcard of the town, village or locality where you live.
In addition, we want you to write us a short report about yourself and your home-town and perhaps anything else that strikes you particularly, or where, for example, you saw the object which you have modelled with your fischertechnik kit.
Starting with our next number, we shall publish the best reports, together with the relevant photos, in our club magazine. The selected winners will receive a certificate plus a valuable special fischer-

technik outfit, which they can choose fo themselves from our various suggestions. Perhaps you will be one of these reporters? It's worth going in for the competition in any case, since everyone who does so gets a club-badge. And if you'd like to correspond with fellow club-members in other countries or other areas, then we'll be pleased – subject always to the limitations of space – to publish your name and address, together with your request, in a special column. But, as we said this applies to the "club reporters" only!

And now, the result of the puzzle competition in our July issue. Once again we received a large number of correct solutions, and this time our lucky fairy picked out the card sent in by Heiner Weber of Solothurn in Switzerland. As we remarked elsewhere, however, we cannot, because of the date-line, report on the lucky winners visit to our works until our next issue appears.
Club-member Michael Hönninger of Mannheim drew his solution so well that we are reproducing the drawing herewith:
There were various correct solutions to the first part of the puzzle, and so naturally we accepted them all as correct.
Incidentally, Reinhard Dietl (11), whose visit we reported in our July number, lives in Oelschnitz, a small village near Münchberg in Upper Franconia.



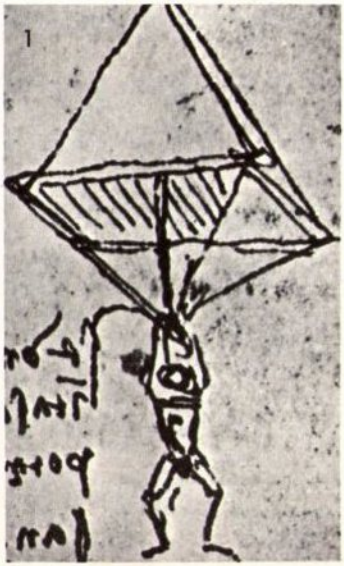
Great Discoverers and Inventors

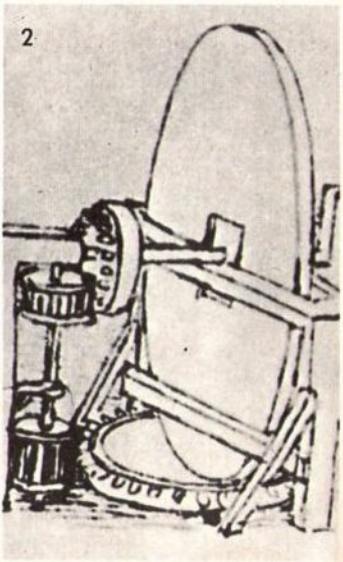


Leonardo da Vinci

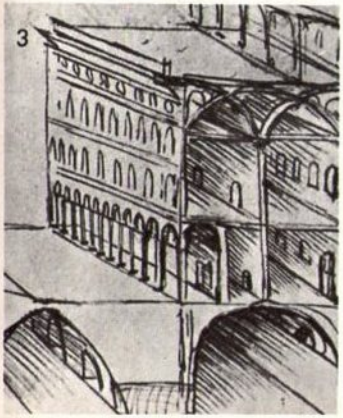
Anyone talking nowadays about inventions like the telephone, colour television, telegraphy, or steam locomotives will mention in connection with them certain personalities from our cultural history. But it is unlikely that the name of Leonardo da Vinci will be among them. Many rate him as one of the greatest painters mankind has ever produced, because the world's best known picture — the "Mona Lisa" which is in the Louvre in Paris for anyone to see — was painted by him. But there are not a few art experts who consider him still more important as a sculptor, because he studied as no other man has ever done the representation of the human body and the formations of mountains. But even as a philosopher, Leonardo da Vinci enjoys even today such a reputation that one of the greatest philosophers of this century, Karl Jaspers, has dealt with the philosophy of da Vinci in one of his chief works. And when we are speaking of one of the world's most famous buildings, the castle of Chambord on the Loire, then the name of Leonardo da Vinci will crop up. The plans for this 550-room castle are attributed to him.

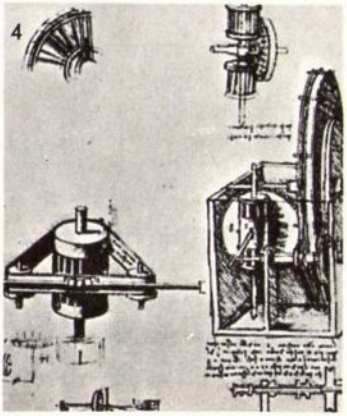
But, dear club friend, we are here talking about Leonardo da Vinci not merely as painter, sculptor, philosopher and architect, but as inventor and discoverer, as scientist and constructor far ahead of his time. And as an inexhaustible fount of ideas for inventors in later centuries. As an inventor and discoverer, Leonardo da Vinci had indeed no direct and recognisable influence on technical mat-

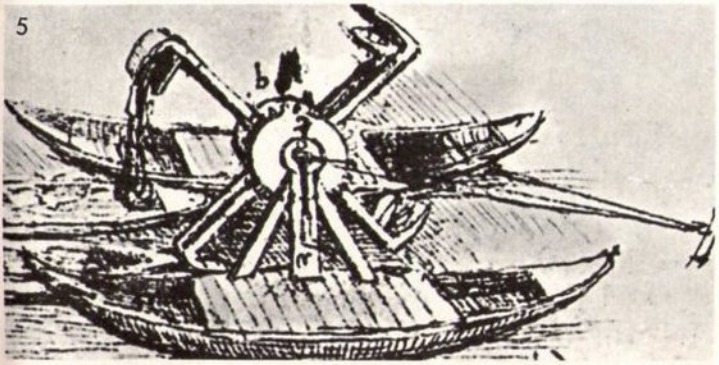




ters. But his contributions are incontestable. He was one of the first discoverers to seek the solutions to problems by the scientific method. He studied a particular case – a so-called technological gap – analysed the problem posed by this case, and "dis" – covered the solution to the problem by the deductive method. An absolutely modern method of finding inventions. Just as is done nowadays, for instance, with the help of computers, when scientists have succeeded in seeking out the technological gap and exactly analysing the problem it poses. Over and above all this, Leonardo da Vinci was a scientific speculator into the future, a distinguished military theorist and constructor of fortifications, and a designer of light and heavy weapons. One of his drawings for a gun – a project not carried out in his time – reminds us strongly of the "Stalin Organs" used by the Russians in the Second World War. These were weapons with multiple projectors, mounted close together, for the launching of small rockets. Also Leonardo da Vinci designed on paper a parachute which would have worked at the time, but it was not manufactured because no one would have been able to try out such a parachute. It was only four hundred years later, with the invention of aircraft, that his invention became an important technical device. One of da Vinci's drawings which have come down to us appeals to us particularly nowadays because it is concerned with a problem that seems absolutely of our own times: the construction of underground roads to cope with the problem of increasing traffic above ground. In particular, Leonardo da Vinci carried out pioneer work in the field of hydrostatics, with is studies of the properties of deformation of liquids, of which we make use today, for instance, in the design of hydraulic equipment. He also studied the laws of capillary







Captions to pictures:

1 "If a man has a tent of material 12 yards long and equally high, he can jump down without danger from any height."

2 "Machine for manufacturing concave mirrors."

3 Section of palace in a town with raised streets.

4 Leonardo's contribution is basic to textile machinery. He is a precursor of Johann Jürgens in that, at least 30 years earlier, he drew on page 393 of the Codex Atlanticus a spinning machine with automatic spindle.

5 Floating dredger.

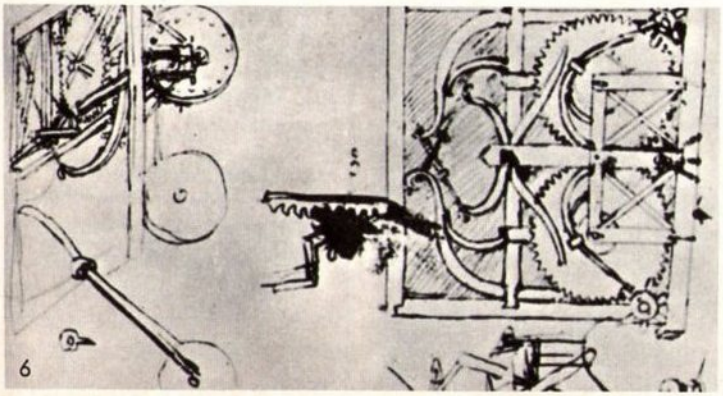
6 View and plan of a vehicle travelling under its own power, driven by a system of springs, and having a differential gear for its transmission.

action and refraction. In all this we must remember that Leonardo da Vinci lived in the 15th Century. It was not till a hundred years later that Galilei formulated his law about falling bodies, and two hundred years later that Newton discovered the thermometer. If we consider in what surroundings da Vinci's technical marvels were committed to paper, then we can probably understand why, in the last years of his life, he was embittered enough to leave his native land of Italy and accept an invitation to the court of the French king Francis I in the castle of Amboise on the Loire. To Leonardo's contemporaries, his inventions must have seemed like the fantasies of a madman totally estranged from reality.

The events of Leonard's life tell us little about him as a man. His name sprang from the place where he was born on 15th April 1452, Achiano near Vinci. His great gifts became apparent at a very early age. The painter Verrocchio took Leonardo with him to his workshop in Florence and there taught him the craft of painting and sculpture. In his thirties he was summoned to the court of Ludovic Sforza in Milan – a prince from whose family sprang many famous Popes. Eight years later, in 1498, Leonardo turned his back on Milan, and after another two years resumed his work in Florence. In 1513 he came to Rome; in 1516 he received the invitation to Amboise where he died in 1519. The latest of his self-portraits which was painted in 1518 shows a man who would not be taken for a 56-year-old but rather for a greybeard of 90.

He was laid to rest in the Chapel of the Castle of Amboise. As little we know about his life, what he has bequeathed to us speaks all the more clearly, and stamps him as the most important personality of the Renaissance. It shows him as a giant among intellects. The scientific results of his life are the various principles which he discovered in his studies of friction and gravity. He anticipated the celebrated formula of Galilei with his assertion that every body in free fall maintains a constant rate of acceleration per unit of time. As a technician, Leonardo da Vinci was the first to succeed in proving that perpetual motion is impossible because he gave the correct explanation for the inclined plane. "Every body exercises its gravity in the direction of its movement." In his research into the connections between these phenomena he discovered as a by-product ball and roller bearings.

Scientist, technician, philosopher, military theorist, sculptor and painter all in one person, and in every one of these skills an undisputed master towering far above all his contemporaries – this is Leonardo da Vinci who, with the enigmatic smile of his Mona Lisa, 450 years after his death made a popular songwriter a millionaire. He himself died embittered, ill, lonely and in poverty.



6

Ideas for fischertechnik models from Europe and overseas

All over the world, in more than 100 countries, boys and girls are building models with fischertechnik kits! And today we'd like to introduce four of these yourg modellers to you:

1. Rahul Duggal (13), from Jaipur in India. Rahul sent us the accompanying photos, together with the following report:

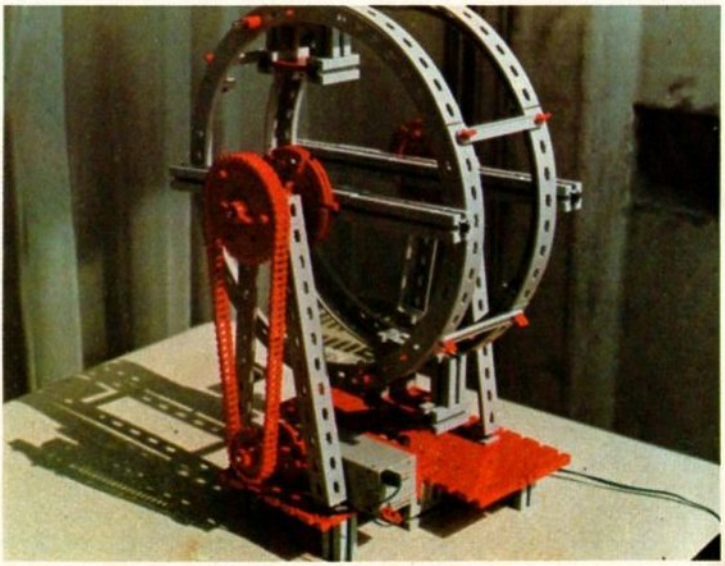
"My name is Rahul Duggal. I was born on the 16th March 1958 at Allahabad. My father Mr. R. N. Duggal is at present Airport Manager at Jaipur. I went to school at the age of 4. Now I am in the 9th class in St. Xavier's High School at Jaipur. I have a lot of subjects to study. My hobbies are fischertechnik Model Building, stamp collecting and photography. A German friend of my father sent me a fischertechnik set as a present.

My daily routine is to get up early in the morning at 5.30 a. m. during summer months. I have a wash and breakfast and then go to school. I come back home at 1.00 p. m., have my lunch and then I have a little afternoon nap. At 5.00 p. m., I have my evening bath and then I have a cup of tea or milk and I go to play with my friends. Then I do my home work. At 9.00 p. m. or so I have my dinner and then I say my prayer and go to bed.

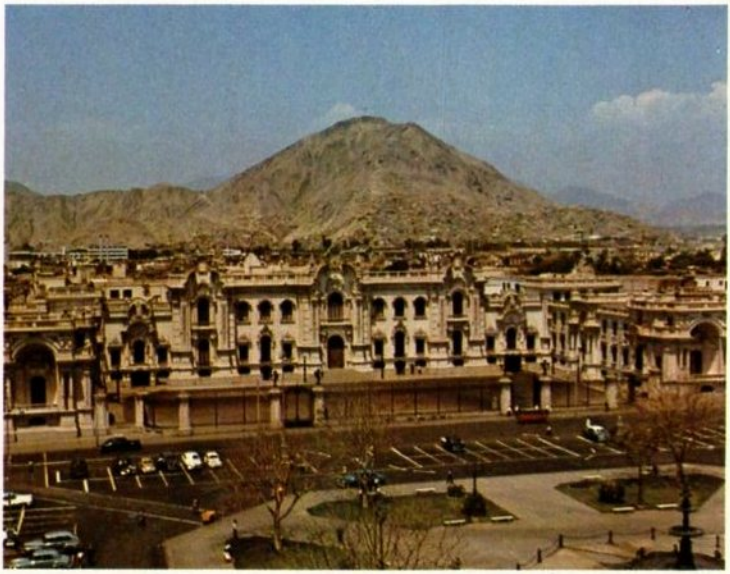
I live in Jaipur. This is a picturesque city, set in the heart of Rajasthan, which is a constituent state of the Indian Union. It is popularly known as the PINK CITY, because all the buildings within the walled city are colour washed in Pink. Jaipur is an old historical city surrounded by rugged hills on the tops of which many medieval fortresses remind us of the good old days of chivalry. It has a population of 452.000 and is the capital of the Rajasthan State."

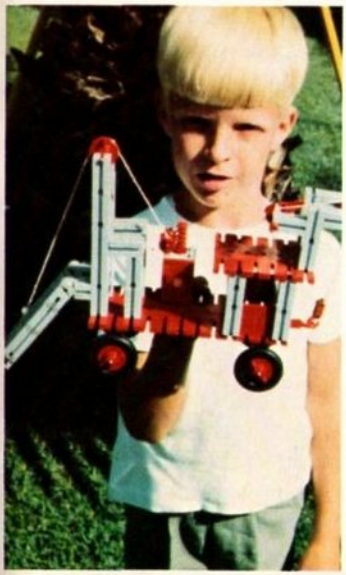
2. Veikko Mättö (11), from Mikkeli in Finland wrote: "I was born in Mikkeli on 29th April, 1960 and I am now in the first form of the secondary school. I go to school at half-past seven in the morning and I get back home about two o'clock in the afternoon. I do my homework and then I go out. I am very interested in birds. My father is a surveyor by profession."

3. Petr Smely (11) comes from Burgdorf in Switzerland. He is a particularly keen fischertechnik modeller and sent us no fewer than 16 different ideas for models: a robot, a milk float, a helicopter, a crane, a ship, a locomotive and a jeep, etc. Petr wrote: "I was born on 11th February, 1960 in Brno in Czechoslovakia. I am in the first form of the secondary school in Burgdorf, a small town in Switzerland. My father was an electrical project engineer. He died in 1967. In the summer of 1969 my mother, my brother, who is 3 years younger than me, and I all emigrated to Switzerland. My mother is an engineering drawer. My hobbies are electro-mechanics and making fischertechnik models."

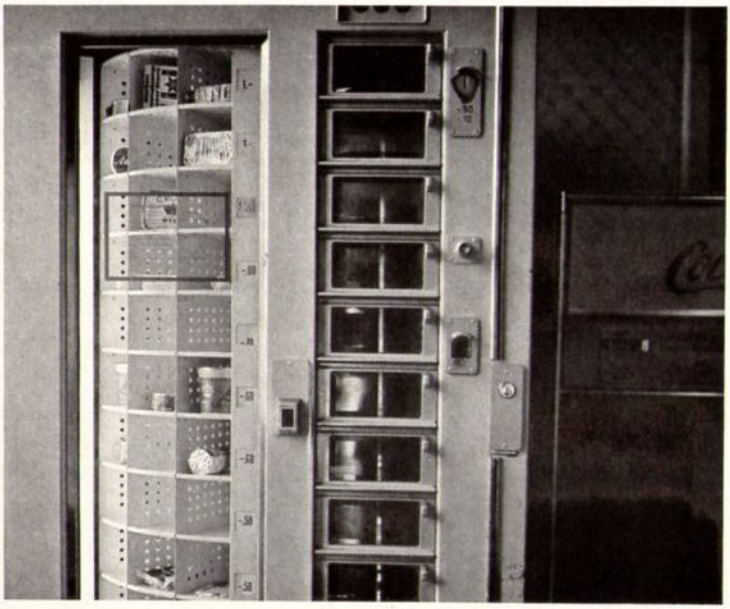


4. Michael Enkerlin (10), who lives in Lima, Peru, wrote: "I was born on 28th March, 1961 in San Luis Potosi, Mexico. I have 5 brothers and sisters and I attend the Alexander von Humboldt School here in Lima. I like building aeroplanes and making fischertechnik models and going cycling with my brother. It is winter here with us in July; it is cold and foggy. But 18 to 19 miles outside Lima the sun is shining all the time. Here there are lots of dolphins swimming in the sea; they're always fun to watch."





Up-to-date models for you to copy



A suggested model to attempt

The fischertechnik automatic vending machine

What do you do of an evening if your father insists on having another packet of cigarettes and the shops are already closed? You simply go, of course, to the slotmachine at the nearest street-corner. You insert a coin and pull out the required brand by means of a drawer. But of course, if you don't put any money in – then nothing happens! But why does nothing happen? How does this type of machine work? Just imagine that you are a designer working for a manufacturer of automatic machines. One morning the boss comes up to you and tells you that you have to design right away an automatic vending machine for a new brand of chocolate called "Children's Delight"! You know the basic principles already: the packets of chocolate must be capable of being stacked one on top of the other in an enclosed magazine; after a coin has been inserted the lower-most packet can be pulled out on a drawer. Once a packet is taken out, the drawer is pushed back into its original position and automatically locked in that position. It is then only possible to pull the drawer out again with the next packet once the locking device has been released by the insertion of a coin.

Would you like to tackle this problem off your own bat – with your fischertechnik kit, of course? Best to do it for smaller coins – then you can skip the next paragraph.

Do you prefer to follow our suggestions? Then you require as a minimum fischertechnik sets 400, e–m 2, e–m 3 and e–m 5. Use the flat red blocks from the 400 set to represent the packets of chocolate.

It's best to subdivide the process into six stages:

1. Construction of the drawer.
2. Construction of the magazine for holding the chocolate.
3. Construction of the electromagnetic locking device.
4. Construction of the coin-insertion mechanism.
5. The electrical circuit.

And now, the individual stages in detail:

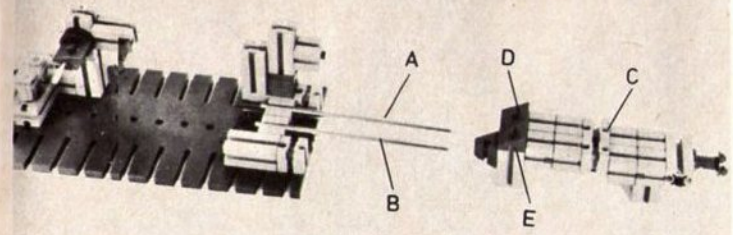


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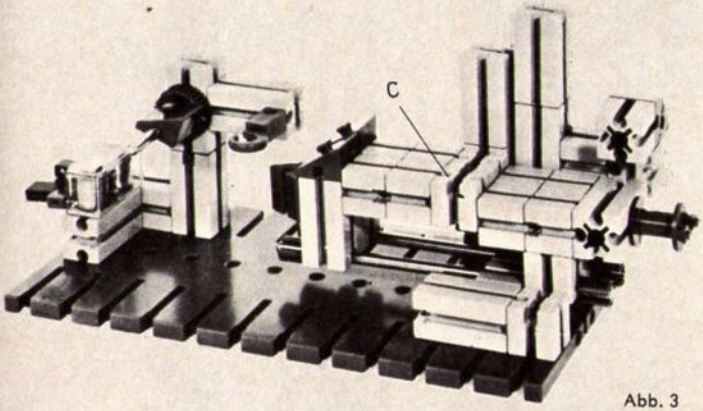
Abb. 1



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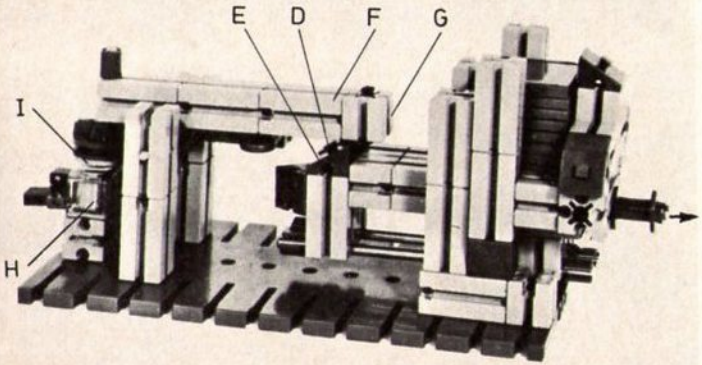


Abb. 4

1. Construction of the drawer as per Figs. 1 and 2.
The drawer is guided in a longitudinal direction by means of the two axles A and B. Lug C must be somewhat lower than the height of the packet to enable the top packet to slide easily over it when it is being extracted. Angle blocks D and E act as stops for the locking device which is fitted later.
2. Construction of the magazine for holding the chocolate as per Figs. 3 and 4.
When the drawer is pulled out with the magazine full, it must only allow one packet to come out each time.
3. Construction of the electromagnetic locking device as per Fig. 4.
Once a packet has been removed, the drawer is pushed back into its original position. When this happens, notched lever F is raised by the two angle blocks D and E, and block G engages with a pin at the edge of angle blocks D and E, thus preventing the drawer from being pulled out again. This cannot happen until the built-in electromagnet H is energized, whereupon it attracts earth plate 1 and notched lever F is released. The impulse to release the lever is produced by the insertion of the coin (e. g. a 1 penny piece).
4. Construction of the coin-insertion mechanism as per Figs. 5 and 6.
The coin drops through slot J on to scale beam K, which (provided the coin is heavy

enough) presses oscillating spring L on to contact pin M. The required weight of coin can be determined by adjusting counterweight N on the scale beam or by altering the height of contact pin M.

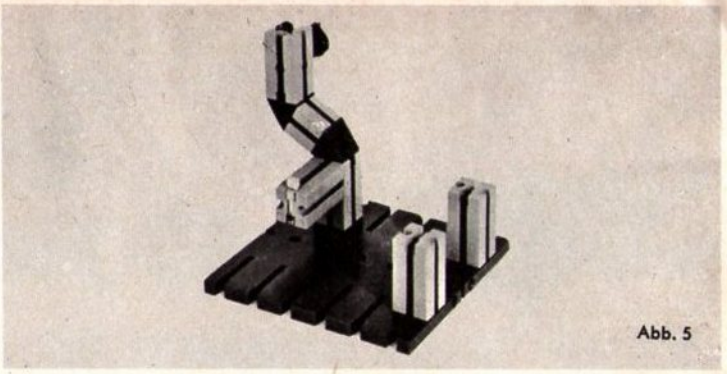
5. The electrical circuit (Fig. 7).

The insertion of a suitable coin closes the control circuit of relay coil O. At the same time, however, the two relay contacts R and S also close. Electromagnet H is energized by contact R and pulls earthplate T to notched lever F, thereby releasing the locking device for the drawer. Again, when oscillating spring L recoils, the relay coil is energized by its own contact S, thereby maintaining the flow of courrent until drawer U is pulled out and key V again interrupts the coil circuit of the relay. Relay contacts R and S then open, electromagnet H is deenergized and notched lever F falls back again. When the drawer is pushed back in, the notched lever re-engages; thus locking the drawer and preventing its being pulled out again.

Figure 8 shows the completed model together with the wiring system.

Figure 9 shows a front view of the model.

If you manage to solve this problem using your fischertechnik blocks, you should seriously consider technical design as a possible profession!



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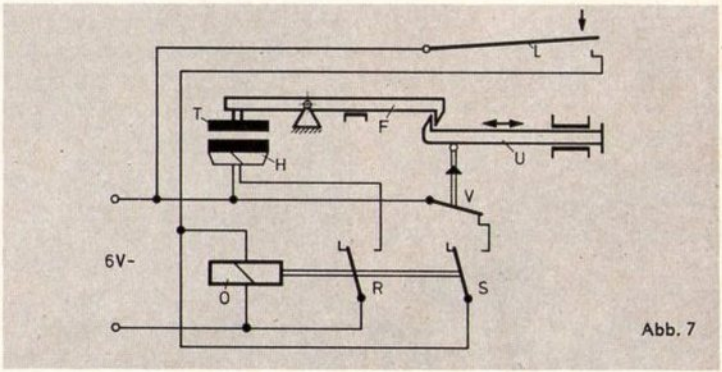

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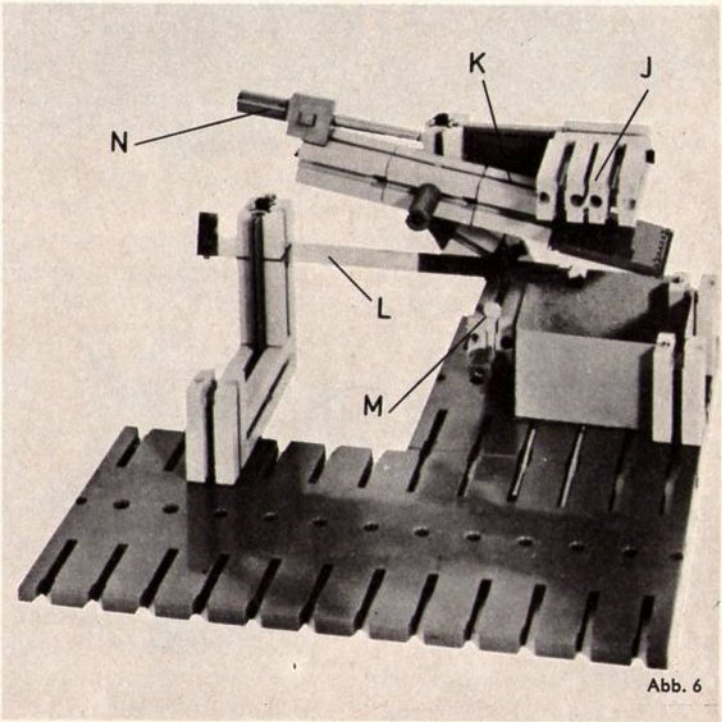

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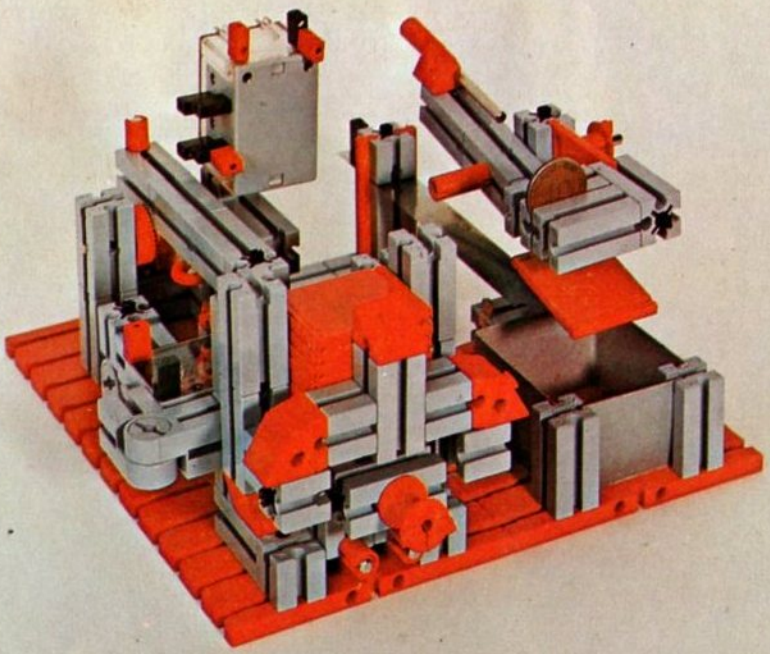

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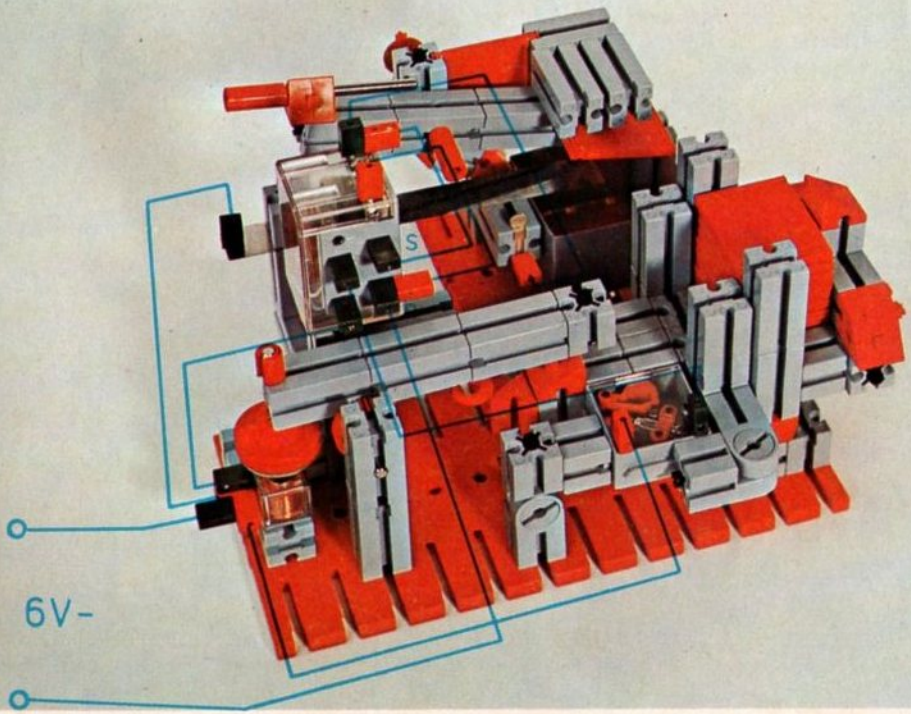

Abb. 9

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