# MECCANO® Magazine

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**FRONT COVER**

Artist Laurie Bagley captures the action as General Ngkyen Cao Ky fires rockets from his Douglas A1-H Skyraider. In the Republic of Vietnam Air Force markings, the Skyraider makes a colourful plastic model. See pages 76-77 for details.

**NEXT MONTH**

Full size, free plans for a rubber powered, free flight, aircraft model, very easy to build; H.L.D. returns with Battle Gaming; Rolling Stock described in A.B.C. of Railways; part two of Trackside Construction, an OO Signal Box; New Meccano models for the novice and expert alike; Dinky Toy News; Electronics; Air News; Chemistry; Stamps; and How to Fly Control Line model aircraft. Watch out for the Caledonian Railway 4-2-2 locomotive cover, and "Railway Races" feature.


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# TRY YOUR LUCK!!

A NOVEL MECCANO PENNY SLOT MACHINE FOR ADULTS AND YOUNGSTERS ALIKE. THE WHOLE FAMILY CAN PARTAKE.

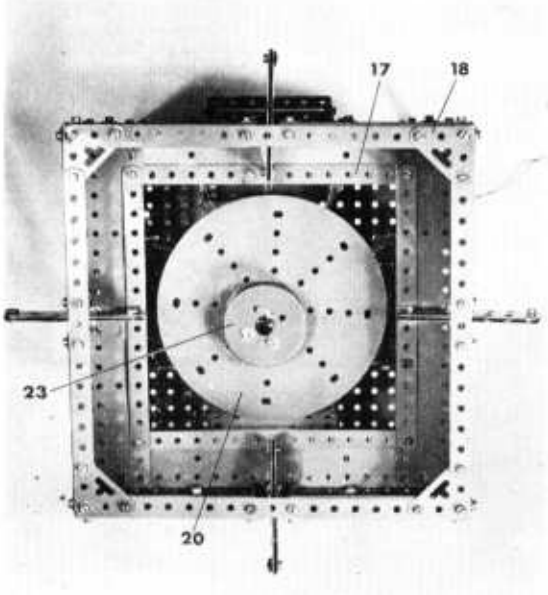
by Spanner

MAYBE IT'S the wrong time of year to think about fairgrounds, but I'm inclined to believe that anything which will take our minds off these long winter evenings is well worth investigating. And so, I have been thinking about fairgrounds!

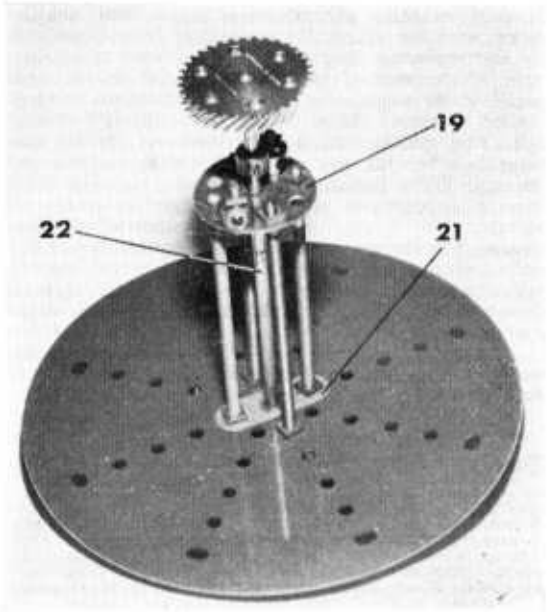
If you have visited any of these fascinating places—dedicated to relieving us of our money as quickly as possible—you will have noticed that you are constantly being tempted to try your luck at the slot machines, be they one-arm bandits, ball games, mechanical grabs or whatever. The chances are, of course, that you will not win, but if you are anything like me, you'll have great fun trying to disprove it. Working on the theory that it should be possible to continue this fun at home, our model-builder has come up with the extremely novel slot machine featured here.

Intended for use by four people, it basically consists of a circular table, in the centre of which an eccentrically revolving "knocker" is mounted. The complete unit is fixed in a cabinet, fitted with four inlet guides and four outlet chutes. The idea is that each "contestant" rolls a penny down his inlet guide on to the circular table, off which it is knocked by the revolving "knocker." If the penny falls into an outlet chute, the "owner" of the chute claims it, but if it misses all the chutes and drops into the body of the machine, then everybody loses. It can become most interesting!

Construction, while being solid, is not difficult. The external framework is built up from four 12½ in. Angle Girders 1, connected, half-way up, by four 9½ in. Angle Girders 2 and, at the top at each side, by two 4½ in. Angle Girders 3, overlayed by a 9½ in. Strip 4.




**A plan view of the Meccano Slot Machine showing the control table and the revolving "Knocker" which is designed to direct pennies rolled down the inlet guide into the outlet chutes.**




**The complete central table, removed from the Machine. Note the 1½ in. Strip 21, fixed across the centre of the Circular Plate to provide an extended bearing for the drive-shaft.**

This latter arrangement leaves a gap of ½ in. between the two 4½ in. Angle Girders. Two opposite Angle Girders 2 are joined through their eleventh holes by a 9½ in. Strip 5, then the entire base of the machine is filled in by four 5½ × 3½ in. Flat Plates 6 and a 5½ × 2½ in. Flat Plate 7.

Angle Girders 1 at each side are now further joined by a 9½ in. Angle Girder 8, then each side is completed by two 4½ × 2½ in. Flexible Plates, edged by 2½ in. Strips 9, and two 4½ × 2½ in. Flat Plates 10, connected by two 4½ in. Strips 11. The large gap remaining accommodates the outlet chute, obtained from two 2½ × 2½ in. Triangular Flexible Plates 12 joined by a 3½ × 2½ in. Flat Plate 13 extended two holes by a 3½ × 2½ in. Flexible Plate 14. Attached by Angle Brackets to this last Plate is a 3½ × ½ in. Double Angle Strip 15, the lugs of which are extended by Fishplates. Also attached by Angle Brackets, to Strips 9, is the inlet guide, obtained from two 3½ in. Flat Girders 16 spaced apart by three 3½ in. Strips.

Inside the cabinet, a ledge is provided all round by bolting two 5½ × 1½ in. Flexible Plates to the horizontal flange of each Angle Girder 8, each pair of Flexible Plates being edged by a 7½ in. Strip 17. When the four 7½ in. Strips are in place, they should form a square, as shown. Note, incidentally, that the upper corners of the cabinet are strengthened by 1½ in. Corner Brackets 18.

## Table and knocker

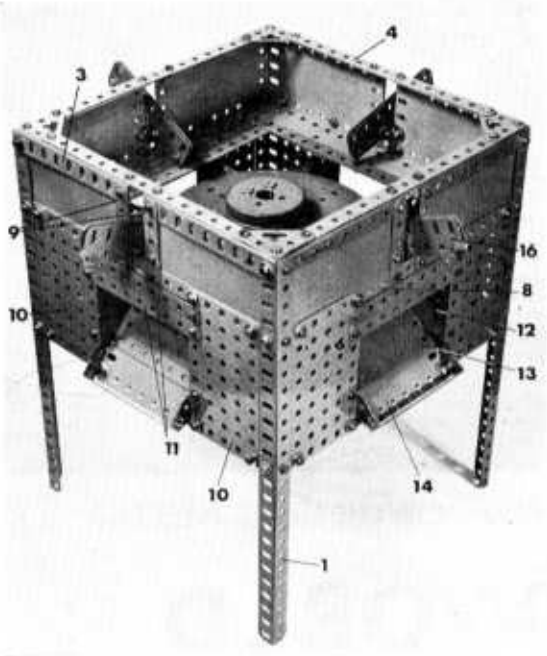
Coming now to the table and knocker, I must recommend that you follow the building sequence exactly. An 8-hole Wheel Disc 19 is fixed by two ½ in. Bolts to the inside of Flat Plate 7, a Collar on the shank of each Bolt acting as a spacer. Held by Nuts in this Wheel Disc are four 3½ in. Screwed Rods, to the top ends of which a 6 in. Circular Plate 20 is secured, also by Nuts, two of which fix a 1½ in. Strip 21 across the centre of the Plate. A Double Arm Crank is now tightly fixed by one Bolt to the back of a Wheel Flange, care being taken to see that the centre bore of the Crank coincides with the notch in the middle of the Wheel Flange. A 5½ in. Rod 22 is mounted tight in the boss of the Crank, then another Wheel Flange 23 is attached by ½ in. Bolts to the first Wheel Flange. Note that the Flanges of both these parts point in the same direction, i.e. down the length of Rod 22.

The Rod is now journalled in the centre hole of Strip 21 and in Wheel Disc 19, as well as in the corresponding hole of Flat Plate 7, to be held in place by a Collar beneath the Plate. Mounted on the end of the Rod is a 1½ in. Helical Gear 24 in mesh with a ½ in. Helical Gear on the output shaft of a Power Drive Unit. This Unit is bolted, along with a 1½ × 1½ in. Flat Plate, to a 1½ in. Angle Girder 25, fixed to one of the 5½ × 3½ in. Flat Plates forming the underside of the cabinet.

**PARTS REQUIRED**

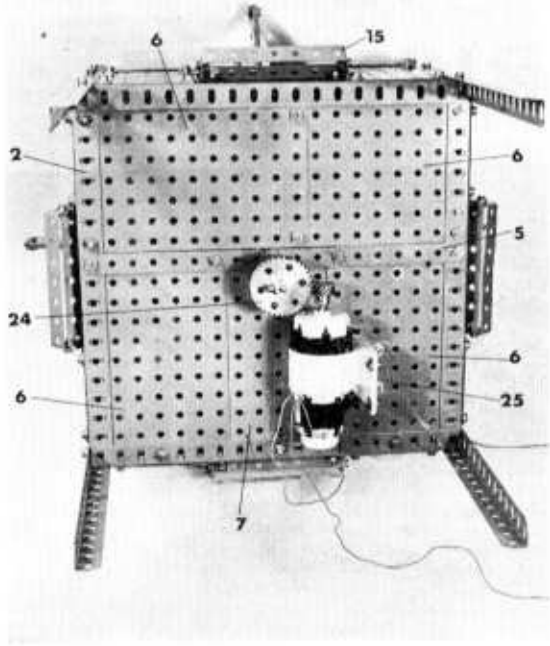
| | | |
|---|---|---|
| 1—1a | 1—14a | 4—80c |
| 4—1b | 1—24a | 8—103d |
| 8—2a | 232—37a | 8—111a |
| 12—3 | 208—37b | 2—111c |
| 8—5 | 60—38 | 4—133 |
| 1—6a | 4—52a | 1—137 |
| 4—8 | 4—53 | 1—146 |
| 8—8a | 8—53a | 8—189 |
| 8—9a | 3—59 | 4—190a |
| 1—9b | 1—62b | 8—191 |
| 8—10 | 1—70 | 1—211a |
| 32—12 | 1—74 | 1—211b |
| | | 8—223 |

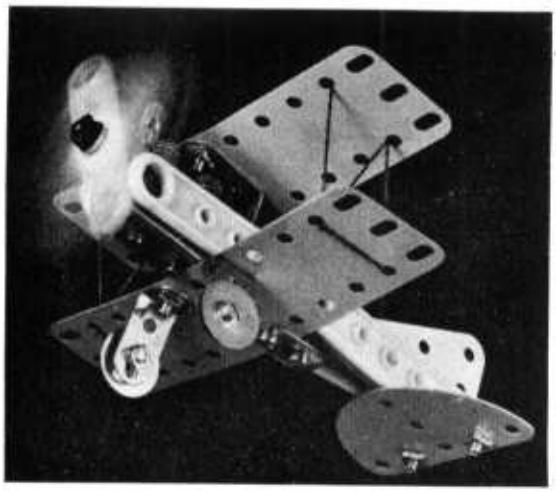
1 Power Drive Unit




**In this general view of the Meccano Slot Machine, the strong exterior construction of the model is clearly shown. Note the "lip" on the outlet chutes.**

**An underside view of the model, with the Power Drive Unit in position. A pair of Bevel Gears transmits the drive from this Unit to the revolving Knocker.**

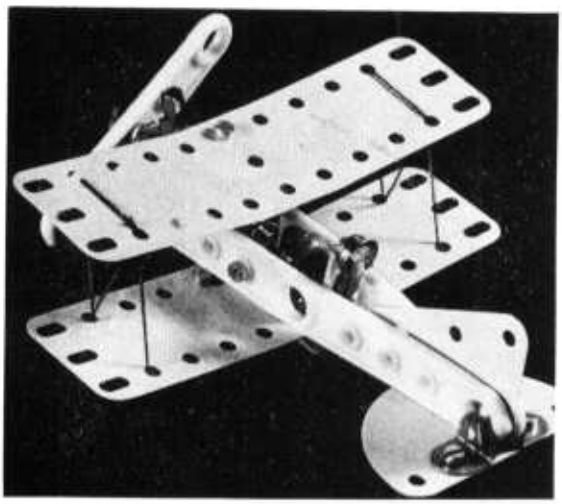




PLASTIC WITH METAL MECCANO

# WORLD WAR ONE BIPLANE

*by "SPANNER"*



PLASTIC MECCANO, besides being a self-contained building system in its own right, is specially designed to enable it to be used with the standard Meccano system, produced in metal. We stressed this point last month and, this month, we prove the statement with the little Plastic-and-metal biplane, featured here. Although not based on any particular prototype, the model is very reminiscent of the aircraft used in the First World War.

Construction is quite straightforward, the fuselage consisting of two Plastic Meccano 3-hole Strips, attached by metal Angle Brackets to a Plastic Double Angle Strip. The $\frac{3}{8}$ in. Bolt securing the Angle Brackets also holds in place a third Angle Bracket, extended by a 1 × 1 in. Angle Bracket, and a $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate, the latter being beneath the Double Angle Strip. Another $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate is bolted to the upper lug of the 1 × 1 in. Angle Bracket.

Engine cylinders are now represented by two Plastic Meccano Bolts attached by $\frac{3}{4}$ in. standard Bolts to the inside of the Double Angle Strip. Strictly speaking, this method of assembly is a little unorthodox as the $\frac{3}{4}$ in. Bolts are passed through the Double Angle Strip and are then "screwed" into the *untapped* bore in the centre of the Plastic Bolts. They are, in effect, wedged in position, but the assembly is perfectly satisfactory provided you remember to use a $\frac{1}{4}$ in. Washer behind the head of the rear $\frac{3}{4}$ in. Bolt to enable it to be passed through the large hole in the centre of the Double Angle Strip.

Fixed by another $\frac{3}{4}$ in. Bolt to the forward lug of the Double Angle Strip is a Rod and Strip Connector and a Fishplate, the former behind the lug and the latter in front of it. Two Washers are placed on the shank of the Bolt, followed by a Plastic Meccano 2-hole Strip which is then lock-nutted in place to serve as the propeller. At the rear of the model, the three-hole Plastic Strips are brought together, with a metal $2\frac{1}{2} \times 1\frac{1}{2}$ in. Triangular Flexible Plate between them, and are joined by a $\frac{1}{2}$ in. Bolt, two Angle Brackets preventing the Bolt from slipping through the large holes in the Strips. A Semi-circular Plate is fixed to these Angle Brackets to act as a tailplane.

A "pilot" is now built up from a Rod and Strip Connector, mounted on a $\frac{3}{4}$ in. Bolt fixed to a Fishplate which is, in turn, fixed to the lower wing. Three Washers are bolted to the Rod and Strip Connector.

Finally, an undercarriage is provided by two 1 × $\frac{1}{2}$ in. Angle Brackets, to each of which a $\frac{1}{4}$ in. Washer is lock-nutted. The Angle Brackets are bolted to the lower wing, which, incidentally, together with the upper wing, is bent slightly in the centre so that the wings have dihedral or are angled upwards from the root to the wingtip.

**PARTS REQUIRED**

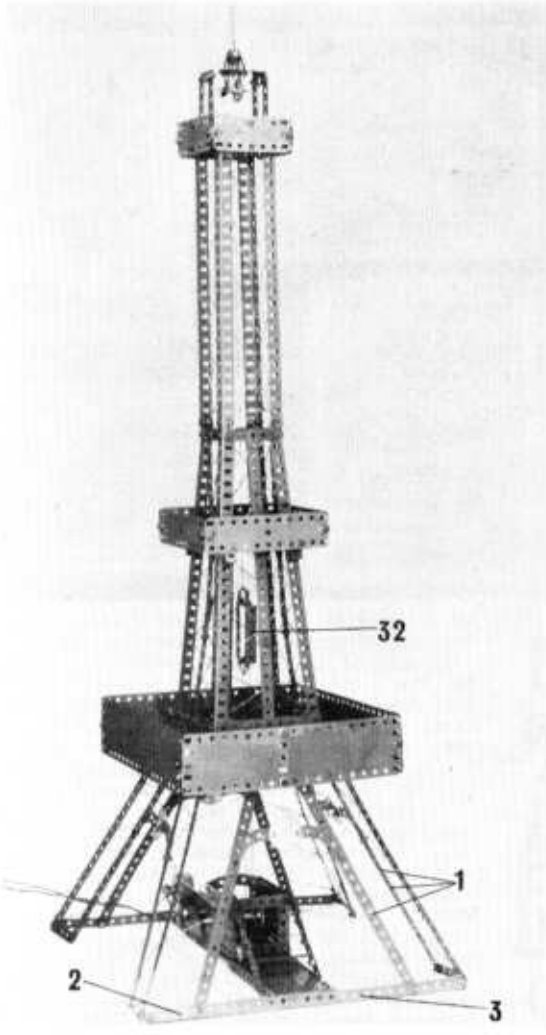
**Standard Meccano**

| | | |
|---|---|---|
| 2—10 | 12—37b | 1—111c |
| 5—12 | 5—38 | 2—189 |
| 1—12a | 3—38d | 2—212 |
| 2—12b | 4—111 | 1—214 |
| 20—37a | 1—111a | 1—221 |

**Plastic Meccano**

| | |
|---|---|
| 2—3-hole Strips | 2—Bolts |
| 1—2-hole Strip | 1—Double Angle Strip |

**Really looking its part, this W.W.1 biplane model constructed from Plastic and Standard Meccano is just the job for "Blue Max" type dog fights.**




# Towering High by Spanner

## Meccano looks at Paris

**You, too, can construct this replica of the famous Eiffel Tower in simplified form using the parts in a No. 7 Meccano Outfit with the addition of an Emebo Motor.**

FOR OUR Outfit model this month we have been casting a practised eye at Paris—that cosmopolitan city of artists, laughter and culture. On the international scene, however, Paris is perhaps most widely known for its soaring engineering wonder of steel, the Eiffel Tower, and it is precisely this that we have been looking at. Because of its latticework girder construction the Eiffel Tower makes an ideal Meccano subject and so, to cut a long story short, we modelled it, in a simplified form, using the parts in Outfit No. 7.

Construction of the major part of the model is pretty obvious from the illustrations. Basically, the tower can be split into three sections, the lower section consisting of four legs, each built up from three 12½ in. Strips 1. In each leg, the 12½ in. Strips are connected by two 2½ in. Strips 2, while the legs, themselves, are connected in pairs by two 9½ in. compound strips 3, each obtained from two 5½ in. Strips. Higher up the section, the inside 12½ in. Strips of the legs at each side are joined by two 2½ in. Stepped Curved Strips bolted to a 6-hole Bush Wheel 4.

The centre section of the tower is built up from four 12½ in. Angle Girders 5 joined, at the top, by four 2½ in. Strips 6 and, at the bottom, by four 4½ in. compound strips 7, each obtained from a 3½ in. and a 1½ in. Strip. Bolted between Strips 6 and 7 are four 12½ in. compound strips 8, each obtained from three 5½ in. Strips. Strips 1 in the lower section of the tower are fixed to compound strip 7 and Angle Girders 5.

To obtain the upper section of the tower, Girders 5 are simply extended, with the use of Fishplates, by further 12½ in. Angle Girders 9. At the top, these latter Angle Girders are joined by two 3½ × ½ in. Double Angle Strips and two 2½ in. Strips, the Double Angle Strips being placed opposite each other as also are the 2½ in. Strips. Note that the Double Angle Strips must protrude a distance of one hole at each side to provide anchoring points for two 3½ × 1½ in. compound flexible plates 10, built up from 2½ × 1½ in. Flexible Plates. Another two 3½ × 1½ in. compound plates 11 are now each built up from one 2½ × 1½ in. Flexible Plate and one 2½ × 1½ in. Plastic Plate, after which they are attached to the tower by Angle Brackets fixed to the lugs of the Double Angle Strips.

At the top of the model, a pair of 3½ in. Strips 12 is bolted to each Double Angle Strip, then the pairs are connected by a 2½ × 1½ in. Flanged Plate, topped by two Trunnions 13. Fixed in the apex holes of these Trunnions is a ½ in. Bolt carrying six Washers and a Rod and Strip Connector in which a 2 in. Rod is mounted. Bolted to the underside of the Flanged Plate is a 1 × 1½ in. Double Bracket in the lugs of which a 1½ in. Rod is held by Spring Clips. Free on this Rod is a 1 in. loose Pulley 14.

The two intermediate floors of the real Tower are represented in our model by Flexible Plates. In the case of the smaller floor, four 5½ × 1½ in. Flexible Plates 15 are joined together by Angle Brackets to form a square and are attached to Girders 5 by Reversed Angle Brackets fixed to Double Brackets. For the larger floor, another square is formed from four 9½ × 2½ in. compound flexible plates 16, also joined by Angle Brackets. Two of these compound plates are each built up from two 5½ × 2½ in. Flexible Plates, while the other two each consist of one 5½ × 2½ in. and one 4½ × 2½ in. Flexible Plate. The "square" is fixed to the tower by four 2½ × ½ in. Double Angle Strips 17.

Next we come to the lift with its control mechanism. This arrangement, as fitted to our Meccano model, is

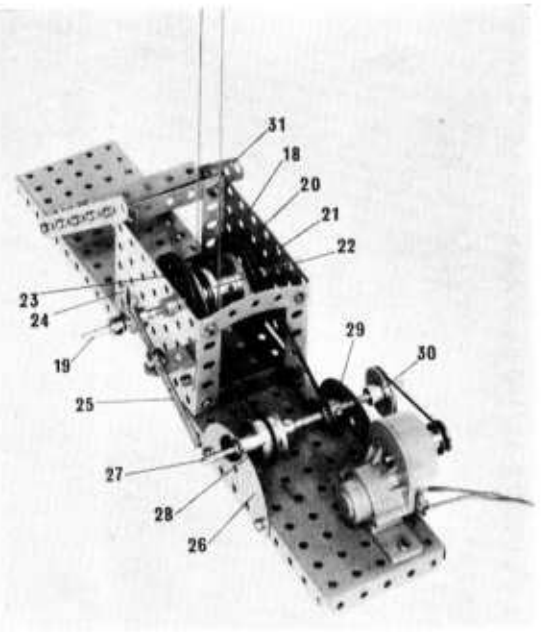
of course meant only as a representation of the real thing, being considerably removed from it. Two 5½ × 2½ in. Flanged Plates, bolted to compound strips 3, are connected by a 3½ × 2½ in. Flanged Plate to which two simliar Flanged Plates 18 are fixed. Journalled in these last Flanged Plates is a 5 in. Rod 19 carrying, in order between the Plates, a free Collar, a free 2 in. Pulley 20, a fixed 1 in. Pulley with Rubber Ring 21, a fixed 1 in. Pulley 22 on its own, another fixed 1 in. Pulley with Rubber Ring, a second free 2 in. Pulley 23 and another free Collar. Mounted on the Rod, outside the Plates, are a further three Collars, the first and last fixed and the centre one free, but carrying a Threaded Pin 24 in one threaded bore. The two free Collars inside the Plates act as spacers, while Pulleys 21 serve as clutches.

**PARTS REQUIRED**

| | | |
|---|---|---|
| 12—1 | 2—20b | 8—90a |
| 18—2 | 4—22 | 2—111a |
| 6—3 | 1—22a | 6—111c |
| 2—4 | 1—23a | 1—115 |
| 14—5 | 2—24 | 4—125 |
| 4—6a | 2—24c | 2—126 |
| 8—8 | 3—35 | 2—155 |
| 8—10 | 190—37a | 1—186 |
| 4—11 | 186—37b | 2—186a |
| 1—11a | 34—38 | 6—188 |
| 18—12 | 1—46 | 4—189 |
| 1—12a | 10—48a | 2—191 |
| 1—15 | 2—48b | 6—192 |
| 1—15a | 1—51 | 2—194 |
| 1—16 | 2—52 | 2—212 |
| 1—17 | 3—53 | 2—214 |
| 1—18a | 6—59 | 1 Emebo Motor |
| 2—20a | 1—90 | |

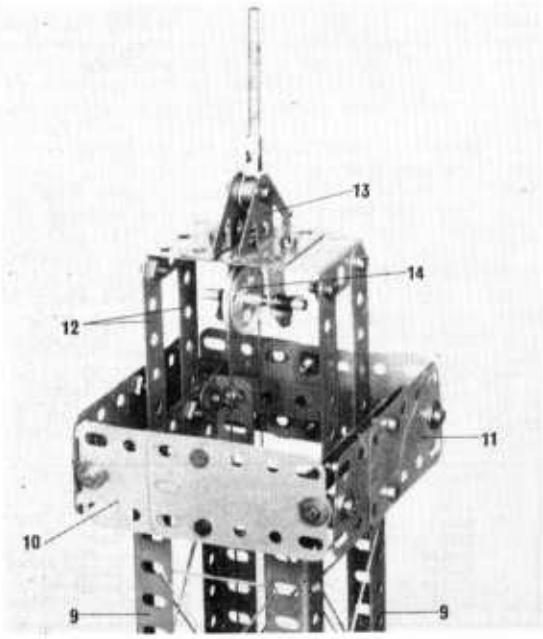
Rod 19 should be able to slide about ¼ in. in its bearings and the parts it carries must be so arranged that, when the Rod is pushed inwards, the Rubber Ring on Pulley 21 makes contact with the face of Pulley 20 and, when the Rod is pulled outwards, the Ring on the other Pulley makes contact with the face of Pulley 23. Movement of the Rod is controlled by a Rod and Strip Connector on a 3½ in. Rod 25 which is held in a Collar bolted to a 1 × 1 in. Angle Bracket

*Continued on page 97*

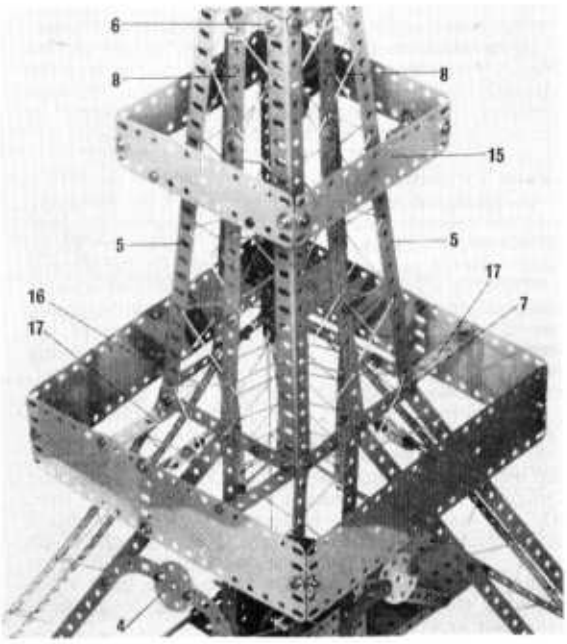



**The control mechanism with the Emebo Motor and drive for the lift, which is suspended on a single continuous cord.**

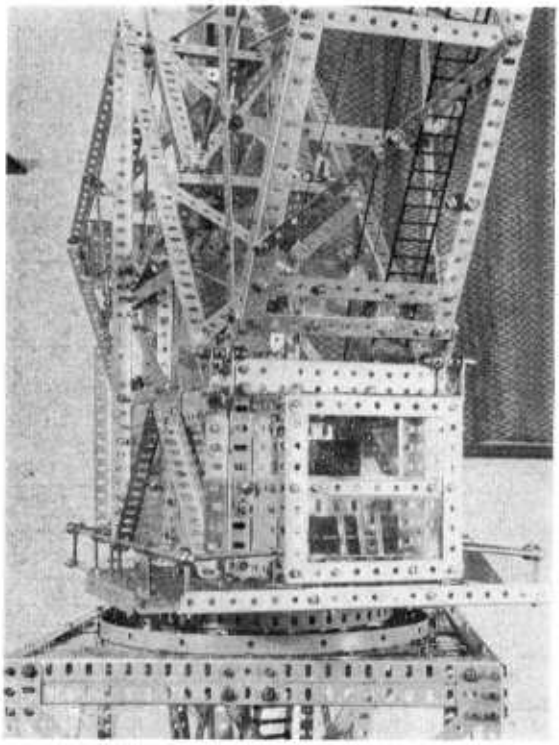
**The top of Alexandre Gustave Eiffel's famous landmark; perhaps not a perfect model, but nonetheless an easily identified example.**




**A close-up view of the second section of the tower, including the two intermediate floors; note the latticework simulated with string.**



# AMONG THE MODEL-BUILDERS with Spanner



**Eric Taylor, a member of the Midlands Meccano Guild, designed and built this Giant Level-Luffing Crane. Some idea of the complex nature of Eric's model can be obtained from this close-up view of the cab area.**

I AM writing this, my first Among the Model-Builders article for the new *Meccano Magazine*, with strong feelings of gratitude to Meccano model-building readers everywhere. As you may know, one of the factors resulting in the resurrection of the magazine was the fantastic support offered by readers when the old *Meccano Magazine* finished last July. We received literally thousands of postcards and letters pledging support and, although there is no way of definitely proving it, I am convinced that it was the Meccano followers who were most active in this direction. I am pleased to be able to say "thanks" in the very publication you helped to bring back!

## Crane Twin-drive Unit

To get down to more solid matters, I am featuring here an interesting twin-drive Crane Gearbox designed by Mr. F. C. Dolman of Winshill, Burton-on-Trent, Staffs. Fitted to a model, the unit enables the jib and the hook of a crane or dragline to be operated entirely independently of each other from a constant-running motor. Also it gives forward/reverse control of the separate winding drums without using the reversing switch of the motor, and even provides a fool-proof, non-slip brake for the jib and hook when disengaged.

In his letter to me, Mr. Dolman explained his reasons for producing his gear box. "Up to a few years ago," he wrote, "I was never very satisfied with the mechanical arrangement of the various Cranes and Draglines I had constructed. The difficulty was that, whilst it was fairly easy to arrange for different drives for propulsion, rotation and the operation of the jib and hook to be taken from one motor, it was a different matter when it came to, say, raising the hook while lowering the jib or raising and lowering both simultaneously as well as independently."

From experience, Mr. Dolman realised what was required, but, he said, "I could find no precedent in my collection of M.M.s and books. Although automatic brakes, reversing gears and twin drives have all been featured, I could find no instance of the three features having been incorporated in one mechanism." So, to cut a long story short, Mr. Dolman designed the not only small and simple but very efficient unit described below.

The framework consists of two 2½ × 1½ in. Flanged Plates placed 2½ in. apart and joined by two 4½ × ½ in. Double Angle Strips 1 and two 4½ in. Strips 2. The lugs of the Double Angle Strips are connected by two 2½ in. Strips 3, while bolted to each Flanged Plate are two 1 in. Triangular Plates, the apex holes of which are joined by a 2 in. Strip 4.

Journalled in one Strip 3 and in the Flanged Plates is the input shaft, the length of which, of course, depends entirely on the model incorporating the unit. Fixed on the shaft, between the Flanged Plates, are two ½ in. Pinions (½ in. face) 5 and a ½ in. Pinion (¾ in. face) 6. Two ½ in. Pinions (½ in. face) 7 and 8 are now fixed, one each on two 3½ in. Rods, mounted in Strips 4 and held by Collars.

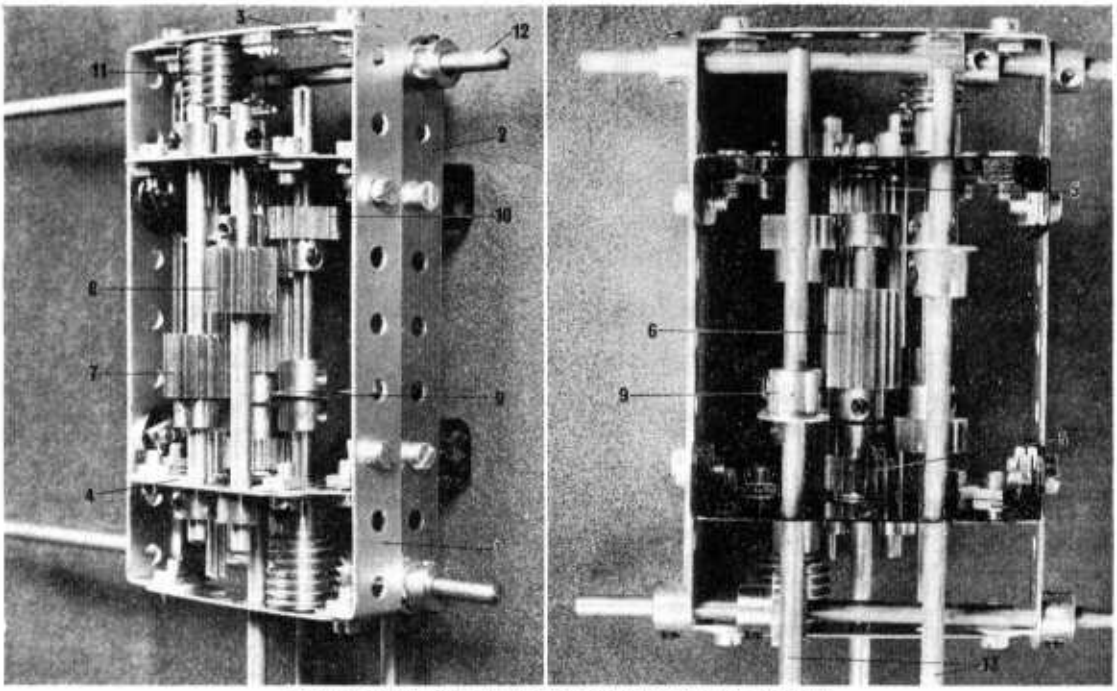
Next, two Keyway Rods are mounted in the Flanged Plates, on a level with and one each side of the input shaft. Fixed on each of these Rods are two Collars, with a Crank 9 between them, and a ½ in. Pinion (½ in. face) 10. Mounted on the end of one of the Rods, between one Strip 3 and the adjacent Flanged Plate is a Worm 11, a second Worm being mounted in a similar position on the opposite end of the other Rod. Note that these Worms are held on the Keyway Rods by Keyway Bolts, thus allowing the Rods to slide in the Worms.

In mesh with each Worm is a ½ in. Pinion (¾ in. face) on a long Rod 12, held by Collars in the ends of Strip 2. One of the Crane winding drums is built on to this Rod, the length of which again depends on the particular model incorporating the unit. The gear box is controlled by another two long Rods 13, journalled in the Flanged Plates and fixed in the bosses of Cranks 9. Movement of Rods 13 causes the Keyway Rods to slide, thus bringing Pinions 10 in mesh with Pinions 5 or Pinions 7 and 8, as the case may be. *The Keyway Rods must slide freely in Worms 11.*

The following Parts List refers to the unit exactly as illustrated. As some Rods vary according to requirements, however, these have been marked with an asterisk (*).

**PARTS REQUIRED**

| | | |
|---|---|---|
| 2—2a | 6—26 | 2—51 |
| 2—5 | 2—26a | 12—59 |
| 2—6 | 1—26b | 2—62 |
| 2—13d* | 2—32 | 4—77 |
| 2—14* | 20—37a | 2—230 |
| 1—15* | 20—37b | 2—231 |
| 2—16 | 2—48c | |




**This extremely well-thought-out, twin-drive unit for Meccano Cranes, designed and constructed by F. C. Dolman, illustrates the versatility of the Meccano system.**

## Midlands Meccano Guild

In "Workbench" last month the inaugural meeting of the Midlands Meccano Guild was reported, a highlight of which was the ceremonial cutting of a christening cake dedicated to the new *Meccano Magazine*. To avoid any possible misunderstanding, however, I should like to stress that the cake was by no means the only exhibit. Rather, a whole host of large and expertly produced Meccano models was shown and described by their respective builders. These included a Dragline built by Mr. Ernie Chandler, a traction engine from Mr. Arthur Locke, a Vertical Steam Engine from Mr. David Goodman, a Breakdown Lorry from Mr. Roger Lloyd and two Tramcars from the Guild President, Mr. Esmond Roden. Among other things, Mr. Alf Hindmarsh showed a most unusual display of aircraft, built from the old Meccano Aeroplane Constructor sets produced in the 1930's, while mechanisms were represented by a multi-speed Gear Box built by Mr. Bob Faulkner. Three first-rate Clocks timed the meeting, two from Mr. Pat Briggs and one from Mr. Ron Fail who has himself contributed to the M.M. in the past.

All models were received with enthusiasm by members, but as Mr. B. N. Love, the Secretary, said, "The focus of the meeting was centred on a magnificent Giant Level-luffing Crane designed and built by Mr. Eric Taylor. It was an absolute masterpiece! Eric claimed that the model was not original as a similar one appeared in a French Meccano Magazine some years ago, but, as the illustration was about the size of two postage stamps, the credit still goes to Eric for a wonderful model."

You will see from the accompanying picture of Mr. Taylor's model how perfectly justified are Mr. Love's comments. The model really is a masterpiece and stands more than six feet high.

## Towering High—continued from page 95

fixed to one Flanged Plate 18. The Rod and Strip Connector engages with Threaded Pin 24.

Bolted to one of the 5½ × 2½ in. Flanged Plates is an Emebo Motor and two Semi-circular Plates 26. The latter provide bearings for a 4½ in. Rod 27 carrying two ¾ in. Flanged Wheels 28, face to face, a ½ in. fixed Pulley 29 and a 1 in. fixed Pulley 30. A Spring Clip holds the Rod in place. Pulley 30 is connected to a ½ in. Pulley on the Motor output shaft by a Driving Band, another Driving Band joining Pulleys 29 and 20. A third *crossed* Driving Band joins Flanged Wheels 28 and Pulley 23.

A set of steps is provided by two 5½ in. Strips 31 connected by four 2½ × ½ in. Double Angle Strips, as shown.

A simple lift cage is now built up from one 2½ × 1 in. Double Angle Strips 32 and two 2½ × 1 in. Double Angle Strips together with two Angle Brackets, one at the top and one at the bottom of the cage. A long length of Cord is tied to the upper Angle Bracket, is taken over Pulley 14, is brought down and is threaded through the free holes in Double Angle Strip 32. From here, it is taken around Pulley 22, is brought up and is then tied to the lower Angle Bracket in the lift.

Finally, the latticework effect is given to the model by threading Cord between all the main Strips and Girders in "criss-cross" and zig-zag patterns as shown. Actually, although Meccano Cord does suffice for this job, a more realistic effect is obtained by using fairly thick string.

# MECCANO TRACTOR AND TRAILER by Spanner. AN OUTFIT "NO. 3 PLUS" MODEL

**Why not build yourself a complete set of farm vehicles and try your hand at model farming? Just the ideal model to start off with is this easy to construct Tractor and Trailer, essential equipment for any farmyard scene. Not just a static, the model really works with a Magic Motor.**

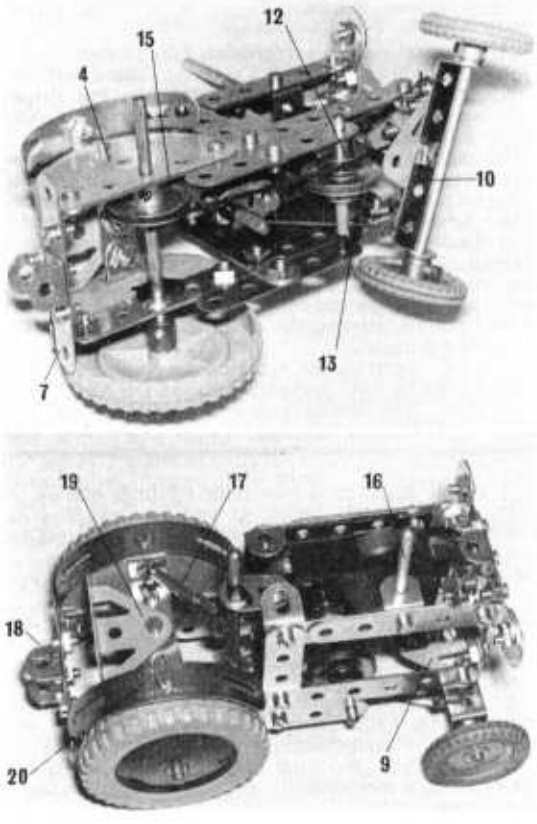
INSPIRATION FOR the simple but most effective Meccano Tractor and Trailer featured here came from the September 1952 issue of *Meccano Magazine*. Except for two 2½ in. Road Wheels, Outfit No. 3 contains all the parts used in the construction of the model itself, although the power plant—a Meccano Magic Clockwork Motor—is not, of course, included.

Before describing the model, however, I feel moved to make some general mention of past Meccano Magazines. In Liverpool we have bound volumes of the Magazine going back in an almost unbroken line to the earliest issues and, as you may have gathered, I like to browse through these when I have a few spare moments (which isn't too often!). I never cease to be amazed at the staggering number of new models that have been featured over the years—literally thousands, based on every prototype imaginable—yet perhaps the most astonishing realisation of all is that by far the great majority of them can be built today with the current system.

When you think about it, this a living tribute to the inventor of Meccano, the late Mr. Frank Hornby. The M.M. first appeared just over 50 years ago, by which time Meccano was an already established system, and the fact that the early models can still be reproduced indicates how little the system has changed over the years. It means, in other words, that Mr. Hornby designed and produced the almost perfect miniature engineering system right from the very beginning! There have, of course, been minor changes from time to time, such as the introduction of new components or the withdrawal of the occasional obsolete part, but there have never been any radical alterations to completely change the basic character of the system. In short, Meccano is as versatile now as it ever was and, in fact, is selling better than it has ever done in the past.

But to return now to our Tractor and Trailer, I would like to deal first with the Tractor section. A 5½ in. Strip 1, a 2½ in. Strip 2 and a 3 in. compound strip 3, obtained from two 2½ in. Strips, are bolted to one side of a Magic Motor. Strips 1 and 3 project forward a distance of one hole in front of the Motor, while Strip 2 projects a similar distance below Strip 1. A Semi-circular Plate 4 is fixed to Strip 1, as shown.

Another, identical, Strip-and-Plate arrangement is now built up and attached to the first construction by a 1½ × ½ in. Double Angle Strip 5 and two 2½ × 1½ in. Flexible Plates 6, overlapped four holes and fixed to the sides by Angle Brackets. Note that the Bolts securing the Double Angle Strip also hold two Angle Brackets in position. A ¾ in. Washer is fixed to each of these to represent headlamps. Strips 1 at the back are




**At left, top, an underside view of the tractor showing the driving band. Lower left, the tractor with the engine cover removed to show the Magic Motor.**

**At right, the completed Tractor and Trailer would look most realistic in a farmyard setting. A clockwork Magic Motor provides the power.**

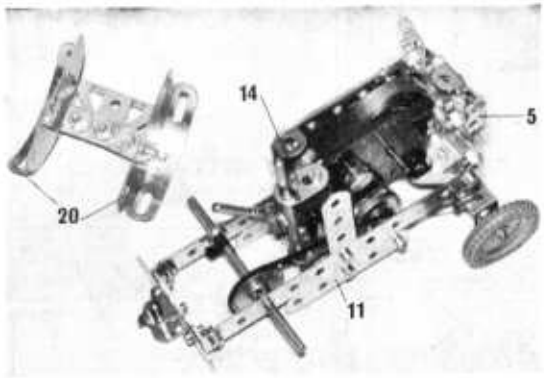
joined by a 2½ in. Strip 7, attached by Angle Brackets.

Bolted to Double Angle Strip 5 at the front is a Flat Trunnion 8, extended by another Flat Trunnion which is, in turn, extended by an ordinary Trunnion 9, also fixed to Strips 1 by Angle Brackets. Lock-nutted to Trunnion 9 is a 2½ × ½ in. Double Angle Strip 10, the lugs of which will later form the bearings for the front axle.

Now bolted to the end of each Strip 2 is a 2½ in. Strip 11 in which is journalled a 2½ in. Rod carrying a ½ in. fixed Pulley 12 and a 1 in. fixed Pulley 13. These will be used to transfer the drive to the rear wheels but, before completing the drive, the steering system should be added. Two Fishplates 14 are bolted, one to each of the rear right-hand anchoring points of the Motor, to provide bearings for a 3½ in. Rod, held in place by Spring Clips and carrying an 8-hole Bush Wheel at its upper end. Mounted towards the lower end of the Rod, but above the lower Fishplate is a Cord Anchoring Spring. A length of Cord is now tied to one end of Double Angle Strip 10, is wrapped several times around the Rod, one of the turns passing through the loop of the Cord Anchoring Spring, and is then tied to the other end of Double Angle Strip 10. Once this has been done, care having been taken to see that the Cord remains as tight as possible, a 3½ in. Rod is journalled in the Double Angle Strip to be held in place by 1 in. fixed Pulleys with Motor Tyres.

The Drive can now be completed. Pulley 13 is connected by a Driving Band to the Pulley on the Motor output shaft, while Pulley 12 is connected by another Driving Band to a 1 in. Pulley 15, fixed on a 3½ in. Rod held by Spring Clips in Semi-circular Plates 4. The two 2½ in. Road Wheels mentioned earlier are mounted on the ends of this Rod.

To complete the Tractor, a few minor operations still need to be carried out. Firstly, an exhaust pipe is represented by a 2 in. Rod 16 extended by a Rod Connector. It is held by a Spring Clip in the lugs of a Double Bracket bolted to the inside of compound strip 3. Secondly, the Motor brake lever is extended by a 1½ in. Rod 17, fixed in a Rod and Strip Connector. Next a towing bracket is provided by a Double Bracket 18, bolted to Strip 7 and, lastly, a seat is obtained from a Trunnion 19, fixed to a 1½ in. Strip. This Strip is, in turn, fixed to Semi-circular Plates 4 by two Reversed Angle Brackets, to the free lugs of which two Formed Slotted Strips 20 are bolted to act as mudguards.




**The tractor, partly assembled, clearly shows the drive band linking the Motor output shaft and back axle.**

Turning now to the Trailer, this presents no problems whatsoever. Two 5½ × 1½ in. Flexible Plates 21 and two shaped 2½ × 2½ in. Flexible Plates 22 are simply bolted to a 5½ × 2½ in. Flanged Plate. Two 2½ in. Stepped Curved Strips 23 are added, one each side, and a 1 in. loose Pulley is lock-nutted to each of these for the wheels. A ½ in. loose Pulley is bolted to rear Plate 22, representing a rear light, then two converging 5½ in. Strips are fixed to the underside of the Flanged Plate to form the tow-bar. Finally a locking pin is provided by a 1 in. Rod topped by a Spring Clip.

**PARTS REQUIRED**

| | | |
|---|---|---|
| 4—2 | 1—24 | 2—126a |
| 9—5 | 7—35 | 2—142c |
| 4—10 | 63—37a | 2—155 |
| 2—11 | 57—37b | 1—176 |
| 9—12 | 7—38 | 1—186 |
| 3—16 | 2—38d | 1—186a |
| 2—17 | 1—40 | 2—188 |
| 1—18a | 1—48a | 2—189 |
| 1—18b | 1—52 | 2—190 |
| 4—22 | 2—90a | 1—212 |
| 2—22a | 3—111c | 1—213 |
| 1—23 | 2—125 | 2—214 |
| 1—23a | 2—126 | 2—215 |

1 Magic Clockwork Motor