

MECCANO[®] Magazine



HOBBY MAGAZINE

Publishers of Aeromodeller, Model Boats, Model Cars, Model Engineer, Radio Control Models, Model Railway News.

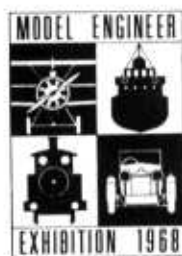
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FRONT COVER
Meccano captures the glory of a by-gone era! This magnificent Showman's Traction Engine is constructed entirely from current Meccano parts. Measuring 30 in. long by 15 in. high it has flashing lights, operating pistons, fly-wheel, governor and drive to the generator. This is a standard Meccano display model and involved some 60 hours of work in its construction.

NEXT MONTH . . .

Full size plans for an easy to construct, electric-powered paddle boat, and a Swing Wing, all-balsa, Catapult Glider as the month's half-size Simple Balsa Model plan. John W. R. Taylor on the Douglas Skyraider, as used in Vietnam, with a photo review of the Revell Skyraider plastic kit. Railway fans are not forgotten, with Trackside Construction: building an OO gauge station from card and wood; the A.B.C. of Locomotives, and prototype Railway Relics. The identification of metals by Chemistry, Electronic Photoswitch, Have You Seen?, together with Dinky Toy News, Meccano Models and Among the Model Builders, make this an issue you must not miss. Watch for the Skyraider cover painting!

January 1968 Volume 53 Number 1

Meccano Magazine, founded 1916

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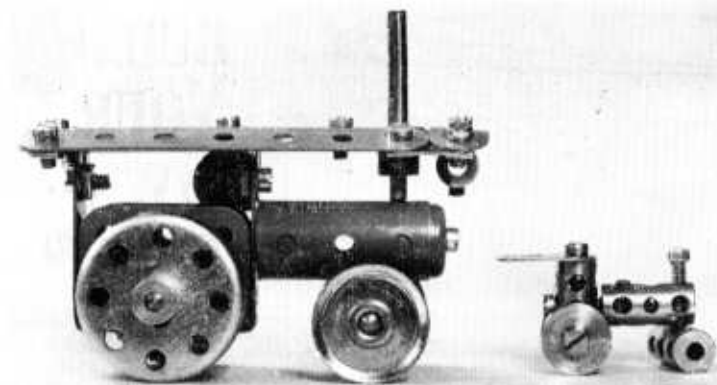
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Simply Ageless

Two from the '20's by Spanner

They might be father and son! A tiny Traction Engine and an even smaller Steam Roller rebuilt from a 1929 issue of Meccano Magazine.



PICTURED IN the October 1929 issue of *Meccano Magazine* was a fascinating group of miniature models built by readers.

As prize-winners in a "Simplicity" Model-building Contest—where the idea was to turn out the easiest possible models without abandoning realism—they made an instant hit with all who saw them. By this time, the competitors who produced the originals nearly 40 years ago are probably fathers or even grandfathers, but the little models themselves are as fresh and appealing now as they were when they were built—witness the two examples rebuilt here!

Both models go back to the age of steam and, quite frankly, we were captivated when we saw them. The first, although not to be confused with the model shown on our cover, is a Traction Engine only four inches long—and if you think that's small, the other, a Steam Roller, is less than two inches long.

By their nature, both models are extremely easy to build, though not produced from any particular Outfit, and yet neither can possibly be mistaken for anything other than the object it represents. In the case of the Traction Engine, a $4\frac{1}{2}$ in Strip 1 is shaped as shown and bolted to a Channel Bearing 2 to represent the body, while the boiler is provided by a Sleeve Piece 3 with a Chimney Adaptor wedged at each end. The rear Chimney Adaptor is bolted to Strip 1 as also is an Angle Bracket to which a $\frac{1}{2}$ in loose Pulley is lock-nutted. Three compound 4 in strips, connected at each end by a $1\frac{1}{2}$ in Strip, supply the canopy, each com-

Despite the utter simplicity of the Traction Engine, there's still no doubt as to what it is.

ound strip consisting of a $3\frac{1}{2}$ in Strip extended by a Fishplate. The canopy is attached to the ends of Strip 1 by Angle Brackets.

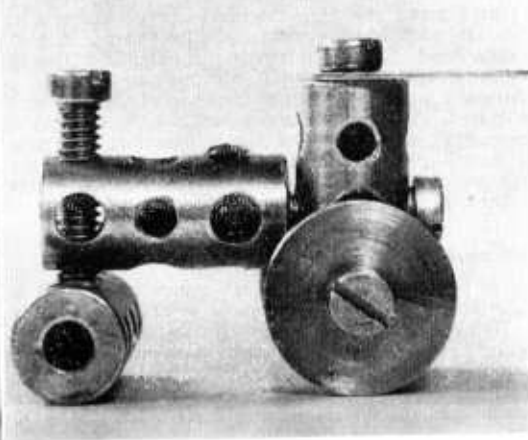
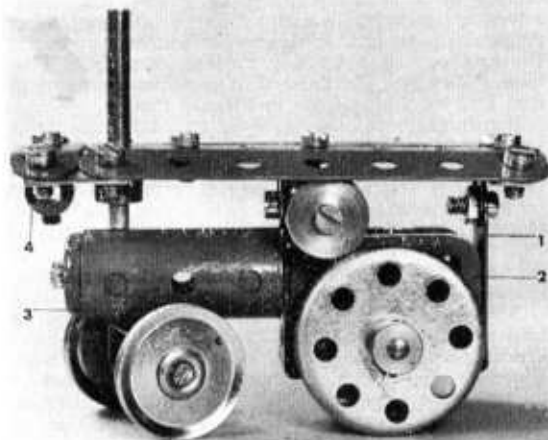
Two $1\frac{1}{2}$ in Contrate Wheels act as the rear road wheels, being mounted on a 2 in Rod, held in Channel Bearing 2 by Collars. The front wheels—two 1 in Pulleys with boss—are fixed on a $1\frac{1}{2}$ in Rod journaled in a Double Bracket which is lock-nutted to Sleeve Piece 3. The chimney is a 1 in Rod, held in a Crank bolted to the underside of the Canopy, and extended by a Rod Connector. A Collar 4 acts as the generator.

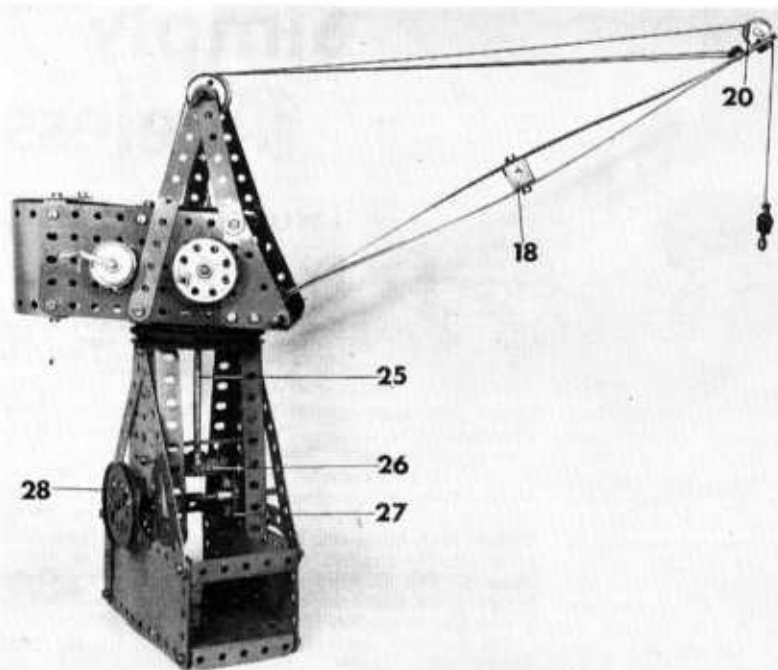
No building instructions are required for the mini Steam Roller. Suffice it to say that it consists of three Couplings, two $\frac{1}{2}$ in loose Pulleys and a Fishplate, all held together by suitable Bolts. Amazingly simple!

Parts Required

Traction Engine		Steam Roller
1—2d	2—3	1—10
2—6d	3—10	2—23
1—11	3—12	1—37b
1—17	1—18a	3—63
1—18b	2—22	2—111a
1—23	2—28	2—111c
17—37a	16—37b	
4—59	1—160	
1—163	2—164	
2—213		

The Steam Roller—three Couplings, two Pulleys and a Fishplate held together by Bolts.





BUILD YOUR OWN ELEVATED CRANE

A No. 4 Meccano
Outfit model
by Spanner

This Elevated Crane built from a No. 4 Meccano Outfit, reproduces all the movements of its full-size counterparts.

THE POSSIBILITIES of Meccano as a miniature engineering system are limitless. Almost anything mechanical can be reproduced in Meccano but, at the same time, it is true to say that some full-sized machines lend themselves more readily to reproduction than others. Cranes are a typical example and, for this reason, cranes have been a mainstay of Meccano builders since the invention of the system. It's only right therefore, that a crane should be featured in the first issue of the new M.M., and so a crane we offer. The example illustrated is an Elevated Crane and can be built with Meccano Outfit No. 4.

Construction is quite straightforward. A base is built up from a $5\frac{1}{2} \times 2\frac{1}{2}$ in Flanged Plate, to each side flange of which a $5\frac{1}{2} \times 2\frac{1}{2}$ in Flexible Plate 1 is bolted. The side and upper edges of the Plate are overlaid by two $2\frac{1}{2}$ in and one $5\frac{1}{2}$ in Strip, respectively, the upper securing Bolts also holding two $5\frac{1}{2}$ in Strips 2 and two $2\frac{1}{2}$ in Stepped Curved Strips 3 in place. In addition, the same Bolts fix two $2\frac{1}{2} \times \frac{1}{2}$ in Double Angle Strips 4 between the Flexible Plates to hold the sides together.

Strips 2 are now brought together at the top and are bolted, along with Curved Strips 3, to a Flanged Sector Plate. The Flanged Sector Plates at each side are then joined by another $2\frac{1}{2} \times \frac{1}{2}$ in Double Angle Strip 5 and by a 3 in Pulley 6, attached to the Plates by Angle Brackets.

Cab and Jib

It is best to complete the cab separately and fit it to the base when finished. Bolted to each flange of a $2\frac{1}{2} \times 1\frac{1}{2}$ in Flanged Plate 7 is a $2\frac{1}{2} \times 1\frac{1}{2}$ in Triangular Flexible Plate 8, extended rearwards by a $4\frac{1}{2} \times 2\frac{1}{2}$ in Flat Plate 9. A $4\frac{1}{2} \times 2\frac{1}{2}$ in Flexible Plate 10 is then curved to shape and fixed to the Flat Plates at each side, the upper securing Bolts holding a $2\frac{1}{2} \times$

$\frac{1}{2}$ in Double Angle Strip between the sides, and the lower securing Bolts holding Angle Brackets, to which a Semi-circular Plate is fixed. Another Semi-circular Plate 11 is bolted, along with a $2\frac{1}{2} \times 2\frac{1}{2}$ in Flexible Plate 12 edged by a $2\frac{1}{2}$ in Strip, to the Double Angle Strip. Plate 12 is attached to the sides by Angle Brackets.

Now bolted to each side of the cab, as shown, are a $3\frac{1}{2}$ in Strip 13 and a $5\frac{1}{2}$ in Strip 14. These are both brought together at the top and are bent inwards slightly to provide bearings for a 2 in Rod, held in place by Spring Clips and carrying a loose 1 in Pulley with boss 15 together with two 1 in Pulleys without boss 16 and 17.

The jib is easily built up from four $12\frac{1}{2}$ in Strips arranged in pairs. The Strips in each pair are bolted together at their ends, but are spaced apart at their centres by a Double Bracket 18. The pairs, themselves, are joined at one end by a $1\frac{1}{2} \times \frac{1}{2}$ in Double Angle Strip 19 and, at their other end, by two Angle Brackets connected by a $\frac{3}{8}$ in Bolt carrying a $\frac{1}{2}$ in loose Pulley 20. The finished jib is mounted on a $3\frac{1}{2}$ in Rod held by Spring Clips in Flanged Plate 7.

Returning to the cab, a $3\frac{1}{2}$ in Crank Handle 21 is journaled in Flat Plates 9, being held by a 1 in fixed Pulley and a Cord Anchoring Spring. A $\frac{1}{2}$ in Bolt in the boss of the Pulley engages with a Bolt, held by a Nut in Plate 9, to act as a brake. The Crank Handle must therefore be allowed to slide a little in its bearings to enable the Bolts to disengage. A length of Cord carrying a Hook is tied to the Crank Handle after being passed over Pulleys 20 and 16.

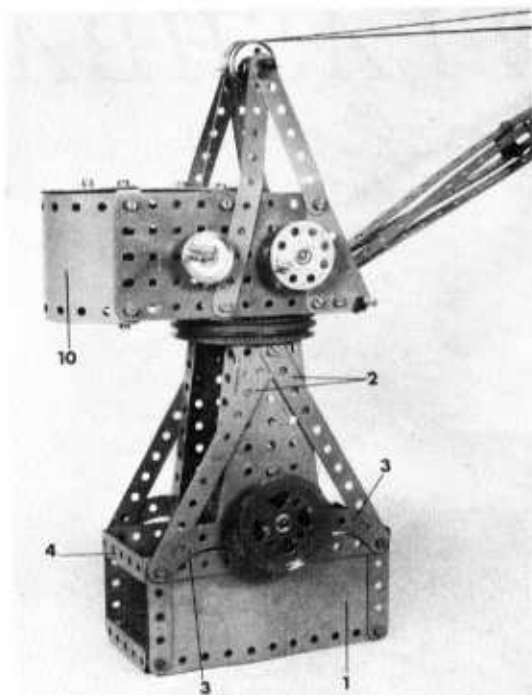
Also journaled in Flat Plates 9 is a $3\frac{1}{2}$ in Rod 22 held in place by a Spring Clip and an 8-hole Bush Wheel. A $\frac{3}{8}$ in Bolt held by a Nut in this Bush Wheel acts as a handle, while a brake is provided in the case of Crank Handle 21. Two identical lengths of Cord are now tied to the end of the jib,

are passed over Pulleys 15 and 17 and are finally tied to Rod 22.

The two sections of the model can now be joined. A 3 in Pulley 23 is bolted to Flanged Plate 7 and to a $2\frac{1}{2} \times \frac{1}{2}$ in Double Angle Strip 24, fixed between Flat Plates 9. A 4 in Rod 25 is secured in the boss of the Pulley and is then journaled, free, in the boss of Pulley 6 and Double Angle Strip 5. A 1 in. Pulley with Motor Tyre 26, fixed on the end of the Rod, makes contact with another 1 in Pulley with Motor Tyre 27 on another 4 in Rod, journaled in the Flanged Sector Plates. Mounted on the end of the Rod is a 2 in Pulley 28 which controls the swivelling movement of the Crane.

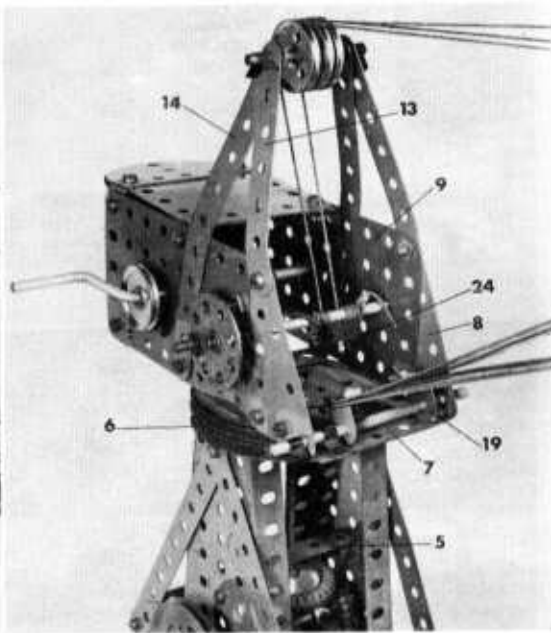
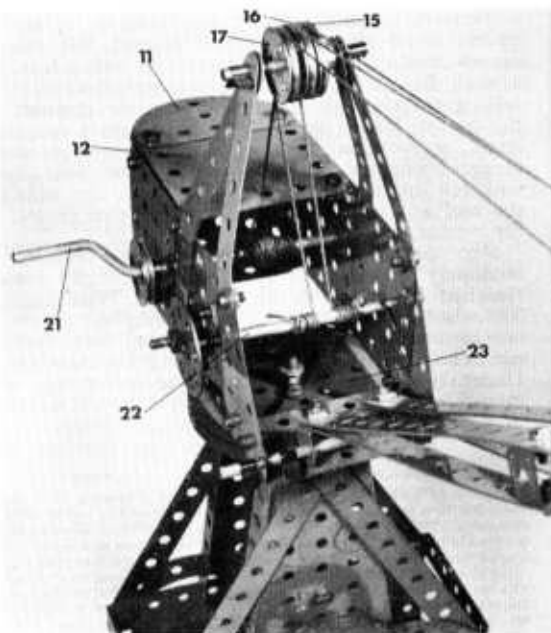
PARTS REQUIRED

4— 1	48— 37b
8— 2	7— 38
2— 3	1— 40
5— 5	1— 48
2—11	5— 48a
8—12	1— 52
2—15b	2— 53a
2—16	2— 54
1—17	1— 57c
2—19b	4— 90a
1—19g	6—111c
1—20a	2—142c
4—22	1—176
2—22a	1—190
1—23	1—191
1—24	2—192
8—35	2—214
53—37a	2—221



Construction of the Base is clearly shown in this view of the Crane.

Two close-up views showing the construction and winding gear arrangement, looking into the cab.



SUPER STEAM CAR

A model for the new Meccano Steam Engine

by Spanner

ONE OF the lesser-known new additions to the Meccano system is the Meccano Steam Engine—a genuine "live steam" unit heated by a methylated spirit burner. *Meccano Magazine* has never featured this unit editorially in the past and, to be quite honest, I have only recently begun to experiment with it myself. Already, however, I can claim it to be highly successful and with sufficient power to operate most models, provided a suitable reduction ratio gear is fitted. It must, of course, be treated with great respect because it is a real steam engine and, as such, gets far too hot to touch, but it is perfectly safe so long as the instructions are carefully followed and you make it a rule never to touch the body or boiler of the engine when in operation.

For our first steam-powered project in this new M.M., I have chosen a "freelance" model, roughly based on an old steam car—surely the ideal subject for the Meccano Steam Engine! It is, incidentally, a modified

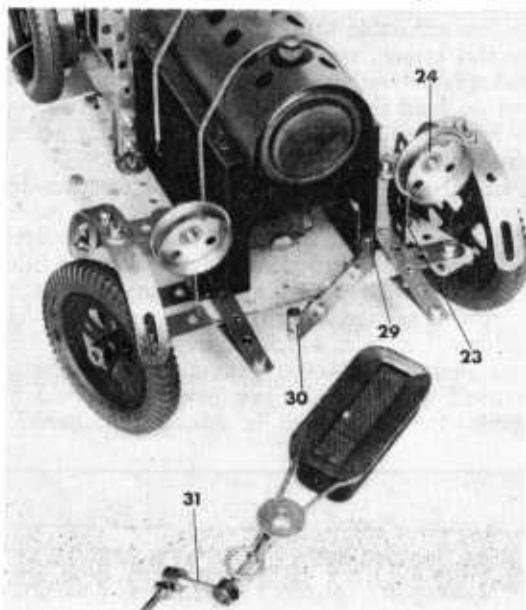
When we were in Liverpool last we saw that poor Spanner had plaster on most of his fingers! That was the price of development of this really super steam car. It was hard to shut up and go home and, together with Doug McHard, we spent a lot of time we should not have done sitting on the floor playing with it. We hope some of you, too, will enjoy it as much as we did!

version of a prototype model designed and built by Mr. Louis Hertz of Scarsdale, New York, U.S.A.

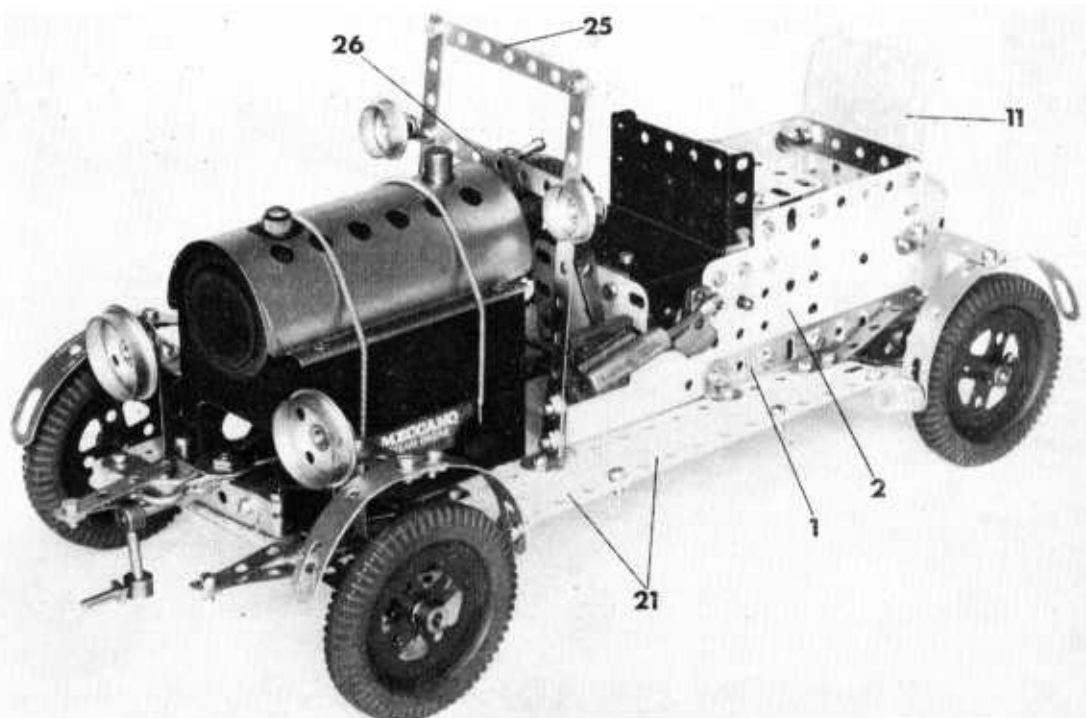
The beauty of the particular model illustrated lies in the fact that the major part of the chassis is provided by the baseplate of the Steam Engine, thus leaving comparatively few other essential sections to be added. In fact, although we included considerable embellishment to improve appearances, all that really needs to be added to give a working model are wheels and a reduction drive system—nothing to it! In our model, however, the Engine base is extended rearwards at each side by a $4\frac{1}{2}$ in. Angle Girder 1, a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate 2 and a $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 3. A 3 in. Angle Girder 4 is then bolted to the lower flange of Angle Girder 1, to provide bearings for a 3 in. Rod that carries a $1\frac{1}{2}$ in. Sprocket Wheel 5 and a $\frac{1}{2}$ in. Pinion 6. Sprocket Wheel 5 is connected by Chain to a $\frac{1}{2}$ in. Sprocket Wheel mounted on another 3 in. Rod 7, held by Collars in the Engine side plates. Also mounted on this Rod is a 57-teeth Gear that meshes with the $\frac{1}{2}$ in. Pinion on the Engine drive shaft.

Fixed between the Engine side plates are two $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flanged Plates 8 and 9, the latter attached by Fishplates and the former with a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate attached to it by Angle Brackets. Another $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flanged Plate 10 is bolted between Flexible Plates 3 as also is a $2\frac{1}{2} \times \frac{1}{2}$ in. Double Angle Strip to which a shaped $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 11 is fixed. A further two $2\frac{1}{2} \times 1\frac{1}{2}$ in. Double Angle Strips, to which a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate is secured, are bolted between Plates 2. Flanged Plate 20 is extended rearwards by a Semi-circular Plate 12, attached by Fishplates, then the back is completed by a $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate 13. A rear lamp is provided by a $\frac{1}{2}$ in. Flanged Wheel 14, fixed to Plate 13 by an Obtuse Angle Bracket. A $\frac{1}{2}$ in. loose Pulley is carried inside the Wheel.

At this stage, the wheels and axles can be fitted. Held by Collars in Angle Girders 4, at the rear, is a $6\frac{1}{2}$ in. Rod carrying a 57-teeth Gear in mesh with Pinion 6. Two 2 in. Pulleys with Motor Tyres act as the rear road wheels. At the front, a $5\frac{1}{2}$ in. Strip 15 is bolted to the Engine baseplate. Lock-nutted to the ends of



A close up view of the front of the model with the methylated spirit burner removed.



this Strip are two Trunnions, between which another $5\frac{1}{2}$ in. Strip 16 is lock-nutted. Yet another $5\frac{1}{2}$ in. Strip 17 is lock-nutted to this Strip and to a Crank 18 fixed on the end of the steering column—a 4 in. Rod 19, held by a Collar in the boss of another Crank, bolted to the Engine baseplate. A $\frac{1}{2}$ in. Bolt in a Collar 20 acts as the "steering handle." Two 2 in. Pulleys with Motor Tyres again provide the front wheels, being held by Collars on Threaded Pins, fixed in the Trunnions.

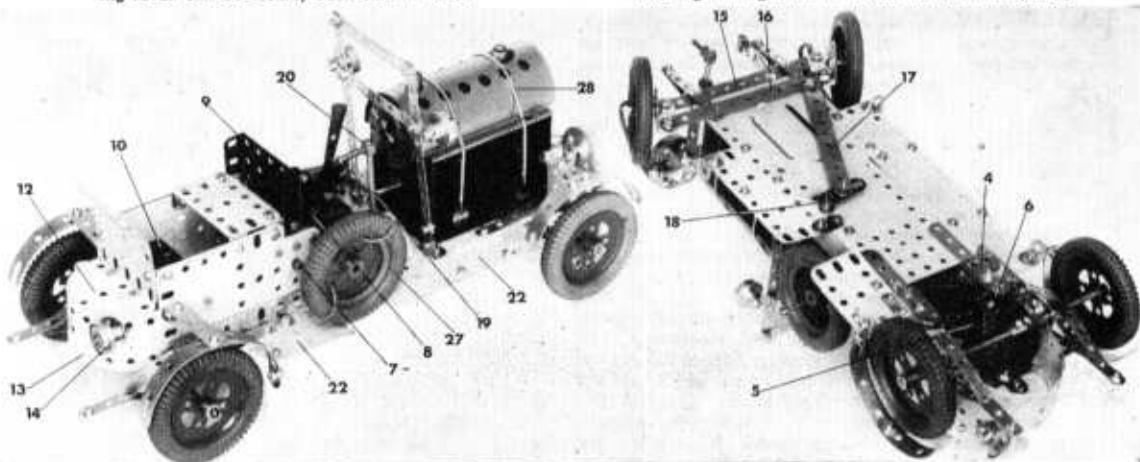
Running boards are built-up, on the nearside from two $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plates 21, and on the off-side from three $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plates 22. Note that,

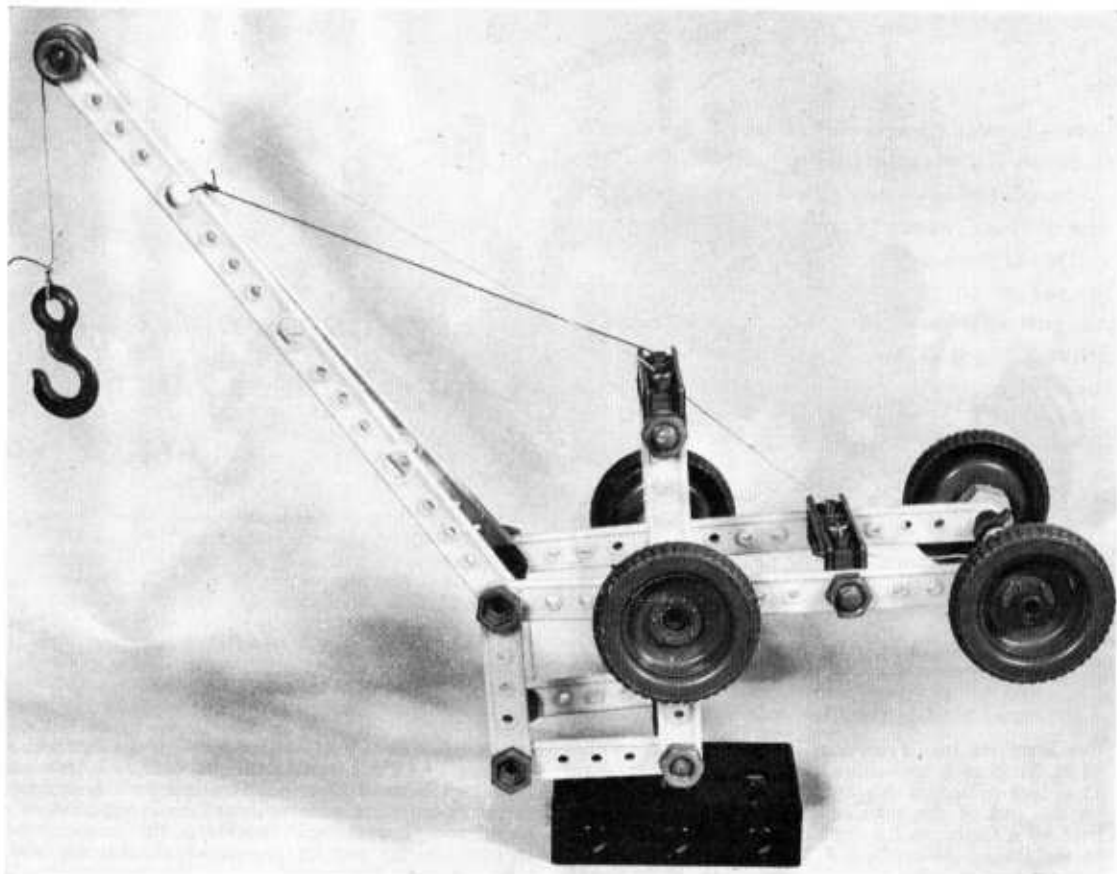
The flywheel, disguised as a spare wheel, and the engine reversing lever can be clearly seen in this view.

in the latter case, a gap is left beneath the flywheel of the Engine. Four mudguards are now each obtained from two Formed Slotted Strips and each is attached to the appropriate running board by a left-hand or a right-hand Corner Angle Bracket as the case may be. In addition, the rear mudguards are fixed to the body sides by 2 in. Strips and Angle Brackets, while the front mudguards are fixed to the Engine baseplate by 2 in. Strips and $1\frac{1}{2} \times \frac{1}{2}$ in. Double Angle Strips 23. Secured to each of the latter 2 in. Strips by an Angle Bracket is a $1\frac{1}{2}$ in. Flanged Wheel 24 representing a headlamp.

Continued on page 37

An underneath view of the Steam Car showing the drive and steering arrangements. Note the basic simplicity.





Plastic Meccano—A Crane to Start With

by Spanner

PLASTIC MECCANO—that large scale, unbreakable system for real youngsters—has now been on the market for something like two years. In that time it has grown tremendously popular, but in the past, *Meccano Magazine* has never featured new models to build with any of the three sets in the system. We on the new M.M. intend to rectify the situation by presenting a Plastic Meccano model whenever space allows and we begin this month with the Crane illustrated here.

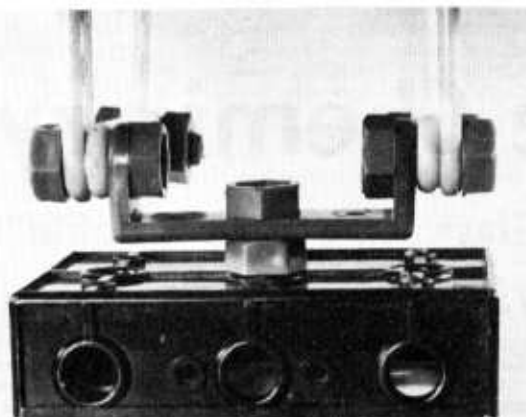
Designed and built from Set A by Mr Colin Hughes of Neston, Cheshire, it incorporates two very interesting features—a swivelling superstructure and a cord arrangement that prevents both the jib and hook from slipping, even under a considerable load. Also, when compared to the standard Meccano Crane on page 24, it proves that Plastic Meccano can be used to build, in a simpler form, many of the things that can be modelled in metal Meccano. Incidentally, it is not generally appreciated that the two Meccano systems are really one! The Plastic Meccano parts

can be used with complete success in conjunction with the traditional metal, and, in fact, there are several of the plastic parts which, by their use, enable far greater realism and more colour to be built into the traditional metal model.

Some examples of such “combination” models will be presented in future issues of *Meccano Magazine*, and we are sure that many of you will be surprised by the impressive effects that the marriage of plastic and metal can produce.

If any readers have already experimented in this direction we would be most interested to hear of their work—more details on page 33.

In the case of this model, as in the case of most Plastic Meccano items, complete building instructions are not necessary as its construction is obvious from the illustrations. There are one or two points to look out for particularly, however, and the cord arrangement is the most important one of these. The forward axle controls the jib, while the rear axle actuates the hook. In both cases the cord is threaded down through



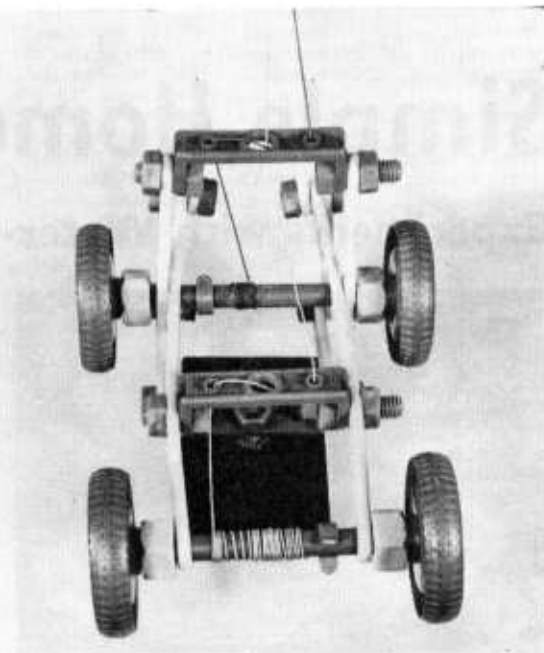
The completed Crane in heading photo opposite illustrates the simplicity of this Plastic Meccano, Set A, model.

Above: The connection between the Crane body and the base.

Right: A rear view of the Crane body showing the method of threading the operating cords through the Double Angle Strips.

the right-hand small hole in the face of the appropriate Double Angle Strip, is brought up through the centre large hole and down through the left-hand small hole to be finally attached to the axle.

This method provides sufficient friction to prevent the jib and load from slipping. Remember, incidentally, that the Bolts anchoring the arms of the jib to the superstructure must not prevent the jib from moving freely. On the subject of the superstructure, this is attached to the base by holding it loosely on a Bolt with a Nut, the Bolt then being screwed tightly into the centre hole of a Base.



PARTS REQUIRED

4—2-hole Strips	12—Nuts
2—3-hole Strips	3—Double Angle Strips
2—4-hole Strips	4—Road Wheels
2—5-hole Strips	1—Pulley Wheel
1—Base	2—Axle Clips
10—Bolts	1—Hook
2—1 in Bolts	2—4½ in Axles

Super Steam Car

(Continued from page 35)

Four sets of imitation springs are now constructed, those at the front from 4½ in. Narrow Strips, and those at the rear from 5½ in. Narrow Strips, all curved to shape as shown. The front springs are bolted to the Engine baseplate and the rear springs to the running boards. A further two 5½ in. Narrow Strips, joined by a 3½ in. Narrow Strip 25 and a 4½ in. Narrow Strip 26, are attached to the baseplate by 1 × ¼ in. Angle Brackets to act as a windscreen. Small Flanged Wheels bolted to the ends of Strip 26 serve as sidelamps.

A 2 in. Motor Tyre 27 is fixed on the Engine flywheel by two short lengths of Spring Cord to represent a spare wheel, at the same time adding extra weight. A Hook for Spring Cord (Part No. 58b) is screwed into each end of each length of Spring Cord to enable the ends to be joined. Further Hooks are added to the ends of longer lengths of Spring Cord 28 which are then fixed over the Engine boiler, as shown, to represent bonnet straps.

Finally, a ½ in. Bolt 29, carrying a right-angled Rod and Strip Connector, is held by Nuts in the front end of the baseplate. Bolted to this Strip Connector is a 1½ in. Strip to the opposite end of which another right-angled Rod and Strip Connector 30 is fixed. This arrangement provides a trap to hold the meths. burner in place and is held closed by another ½ in. Bolt which

can be loosely inserted through Strip Connector 30 and into the baseplate. Incidentally, the handle of the burner, itself, is extended by a 1½ in. Rod, held in an Ordinary Rod and Strip Connector. A Collar with a 1 in. Screwed Rod 31 fixed in one tapped bore is mounted on the end of the Rod, then another Collar, with a Threaded Pin attached, is mounted on the end of Screwed Rod 31. The arrangement, besides increasing safety, also provides a good imitation of a crank handle.

Parts Required

3— 2	2— 27a	3—115
4— 6	113— 37a	2—126
2— 9a	99— 37b	5—142a
2— 9c	2— 38	2—154a
5—10	1— 38d	2—154b
10—12	2— 48	6—188
2—12b	3— 48a	3—189
1—12c	3— 51	3—190
1—14	1— 58	1—212
1—15b	8— 58b	1—214
2—16b	10— 59	8—215
1—18a	2— 62	2—235a
2—20	1— 94	1—235b
4—20a	1— 95a	3—135d
3—20b	1— 96a	6—235f
2—23	4—111	1 Meccano
1—26	6—111c	Steam Engine