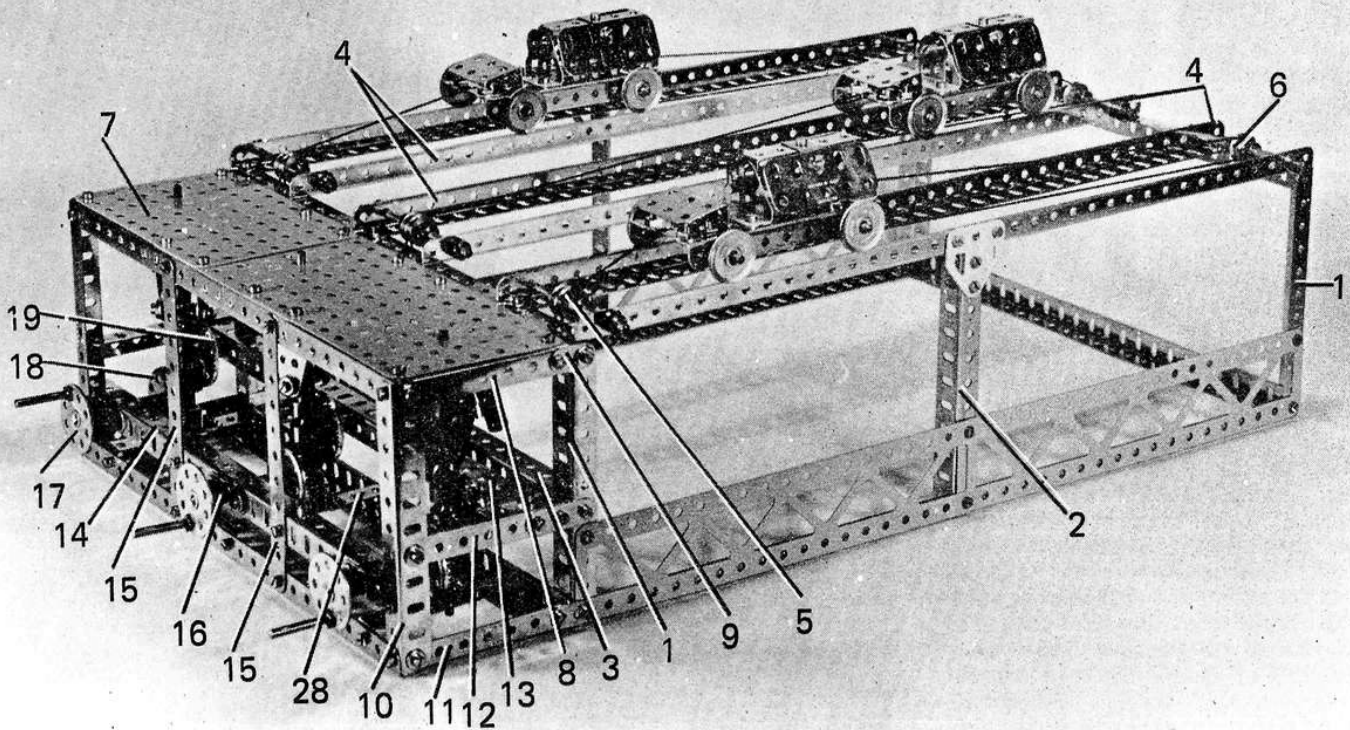


"Past Masters"

3

by Spanner



# RACE-A-WAY!

AS I SIT down to write this, the third in our series of interesting models from the past, it is the end of October. When you read this it will be January 1974 which – at least for those of us in the Northern Hemisphere – means the middle of Winter with its long, dark, cold nights. It is during the long winter evenings that Meccano modelling really comes into its own. Too cold, damp and dark outside, most of us like to spend the time in the warmth of our homes and, with time on our hands, what can be better than a truly constructive hobby like Meccano?

Sales talk aside, though, the model featured here has been specially chosen with winter in mind – and chosen not only for the Meccano modeller, but particularly for the children of the Meccano parent. As any parent knows, keeping the children amused during the long winter evenings can be a problem. Building this model will keep the parent occupied; the model, when built, should keep the kids happy! Rebuilt with some slight modifications from

the September 1931 issue of Meccano Magazine, the model is a race game which was originally designed by Mr. H. Proctor of Preston, Lancs. Three racing cars are "driven" along the track, each independently controlled by its own "driver" winding a small hand-wheel at the front of the model. You might not think that there is anything particularly outstanding in this, but, in fact, things are not as simple as they might appear: the drive systems are governed so that the driver loses control of his car if he goes too fast!

## CONSTRUCTION

Although a very entertaining model, the Race Game is by no means difficult to build. A box framework for the track section is built up from two 18½" x 12½" Angle Girder rectangles, joined together at the corners by 5½" Angle Girders 1 and further joined half-way down the sides by two more 5½" Angle Girders 2. Note that the upper ends of the latter Girders are bolted to Trunnions which are in turn bolted to the vertical flanges of the 18½" Girders

in the upper rectangle. A 12½" Angle Girder 3 is bolted between the fifth holes up of forward Girders 1, then four 18½" Angle Girders 4 are bolted the length of the upper rectangle as shown to provide tracks for the racing cars. Two 3½" Rods are then journalled one in the second hole from each end of each pair of track Girders, being held in place by Collars. Held by further Collars on one of the Rods are two ½" loose Pulleys 5, while, on the other Rod, a single ½" loose Pulley 6 is held by Collars. Each side of the track frame is then completed by two 9½" Braced Girders, bolted in place as shown.

## CONTROL MECHANISM

Only slightly more difficult than the track frame is the control mechanism support framework. Bolted "back-to-back" to the upper front 12½" Angle Girder in the track frame is a 12½" Angle Girder, to the horizontal flange of which are bolted three 5½" x 3½" Flat Plates, overlapped as shown to form a 12½" x 3½" compound flat plate 7. This plate is edged at each side by a 3½"

Angle Girder 8 which is also attached to the top of nearby Angle Girder 1 by a Fishplate 9. A 5½" Angle Girder 10 is bolted to the front end of Girder 8, the lower end of Girder 10 itself being attached to the lower end of nearby Girder 1 by a 3½" Angle Girder 11, extended by a Fishplate. A further 3½" Angle Girder 12, this one extended by a 1½" Strip, is used to connect Girders 10 and 1 through their fifth holes from the lower ends. Girders 12 at each side are themselves connected by a 12½" Angle Girder 13 bolted between their sixth holes.

At the front of the model, Girders 10 at each side are connected at top and bottom by further 12½" Angle Girders and through their third holes up by another similar Angle Girder 14. Two 5½" Strips 15 are then bolted to all these Girders to partition the front of the model into three sections.

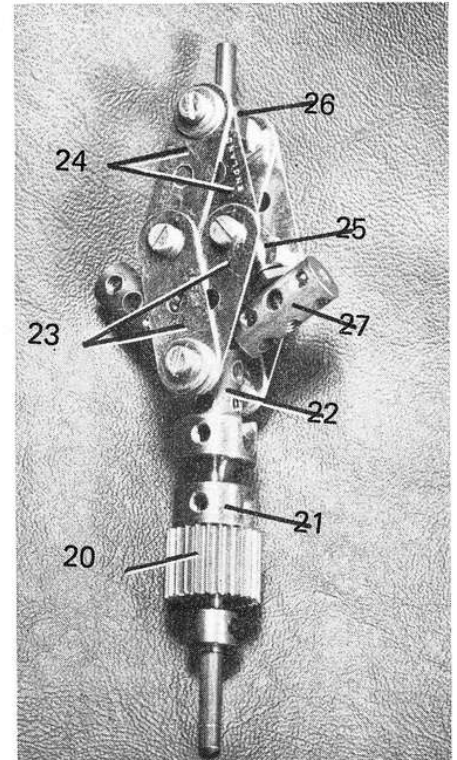
Now bolted to the front of Girder 14 in the positions shown are three Double Arm Cranks 16, the securing Bolts in each case also fixing a Double Bent Strip to the back of the Girder. Journalled in this Double Bent Strip and in the boss of each Crank is a 2" Rod, held in place by an 8-hole Bush Wheel 17 and carrying behind the Double Bent Strip, in order, a Washer, a Collar, and a 1½" Contrate Wheel 18. A Long Threaded Pin is secured to the Bush Wheel to serve as a driving handle. In a vertical line with, but higher than, each 2" Rod is a 2½" Rod, journalled in Angle Girders 3 and 13. Note that the Rod actually passes through the circular hole of a Fishplate bolted to Girder 3 - necessary because the elongated holes of the Girder are facing the Rod in this case. A 1½" Contrate Wheel 19, spaced by a Washer, is fixed on the inner end of the Rod, while a Collar and a ½" Pulley with boss are fixed on the other end of the Rod behind Girder 3.

**GOVERNORS**

Positioned between the two Contrate Wheels mentioned above, in each case, is a governing mechanism. This is built up from a 5" Rod, on which are carried, from bottom to top, a Collar and ¾" x ½" Pinion 20, this being free to turn on the Rod, but held in the lower end of a Socket Coupling 21, in the upper end of which a Coupling 22 is held. The Socket Coupling and Coupling are also free on the Rod. Two pairs, each of two 1½" Strips 23, are pivotally attached to opposite sides of Coupling 22 by ¾" Bolts. Each Bolt is fitted with two Washers, is passed through the lower end holes in the Strip, is fitted with two Nuts, locked together, and is then screwed into the upper transverse bore of the Coupling. The inner lock-nut prevents the shank of the Bolt from fouling the Rod. Note that the Strips must pivot very freely on the Bolt shank.

Lock-nutted to Strips 23 are two more 1½" Strips 24, the fixing 3/8" Bolts also being screwed into the threaded bores in the head of a Handrail Support 25, after first being fitted with the two lock-nuts. Note that Strips 24 must also pivot freely in relation to Strips 23. The upper ends of each pair of Strips 24 are themselves lock-nutted together, the securing Bolts in this case being screwed into the threaded bores of a Collar 26, after first being fitted with lock-nuts. Note that, in this case, the Bolts must grip the centre 5" Rod. Held by a lock-nut, on the threaded shank of each Handrail Support 25 is another Coupling 27, the Handrail Support shank being screwed through the centre tapped bore of the Coupling.

The completed governor is positioned in the framework, the centre 5" Rod being journalled at the top in the appropriate hole in compound plate 7 and, at the bottom, in the

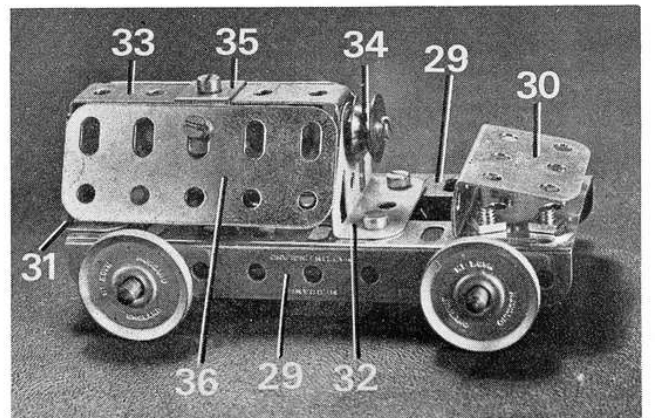
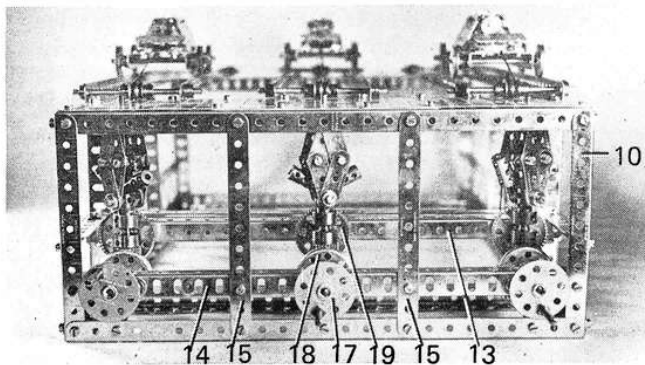


One of the three governing mechanisms removed from the Race Game. Note the ¾" x ½" Pinion 20.

centre hole of a 3½" x ½" Double Angle Strip 28 bolted between the lower lateral 12½" Angle Girders and in a ½" Reversed Angle Bracket bolted to the Double Angle Strip. With the governor at the rest position, Pinion 20 should now mesh with both Contrate Wheels 18 and 19. However, when the driving handle 17 is turned, the governor should revolve, thus causing the Pinion to rise up its supporting Rod. Consequently, if the driving handle is turned too fast, the Pinion will be lifted so far up the Rod that it disengages with Contrate 19 and this in turn disconnects the drive to the car.

*continued on Page 19*

Opposite page: a general view of an exciting Race Game re-built from the September 1931 M.M. Below left: a close-up view showing the control handles and governors. Below right: one of the three simple, yet functional, racing cars.





Above, a new era in die-cast modelling! Meccano is the first British die-cast manufacturer to produce a model to 1/25th scale – No. 2162 Ford Capri. This picture shows the new model alongside the “traditional” 1/42nd scale Capri and it is a giant by comparison. Packed with fine detail, it sports a wealth of action features ranging from opening doors, bonnet and boot, through fully-fitted out interior, engine, underbody and exhaust detail, right down to scale reproductions of the original’s ‘mag’ wheels.

#### Past Masters

*Cont. from Page 13*

It will thus be appreciated that the winner of a race will not be the competitor who can turn the driving handle the fastest, but rather the competitor with the skill to discover and stay at the *optimum* speed, i.e., the speed immediately below that which would cause the governor to disengage the drive.

#### RACING CARS

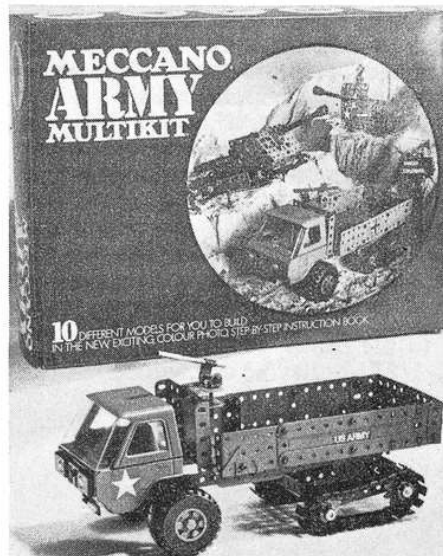
Turning to the three racing cars themselves, each of these is similarly built up from two 4½” Angle Girders 29, connected together at one end by a Channel Bearing 30 and, at the other end, by a Trunnion 31. A second Trunnion 32 is bolted between the Girders through their fourth holes from the rear. The apex holes of the Trunnions are connected by a 2½” x ½” Double Angle Strip 33, the inner securing 3/8” Bolt also holding a ½” Pulley without boss 34 in place to represent the steering wheel. Bolted to the centre of the Double Angle Strip is a Double Bracket 35, the lugs of which are bent outwards slightly and to each of these lugs a 2½” Flat Girder 36 is bolted to serve as a bonnet side. The Wheels are simply 1” Pulleys fixed on 3” Rods, journalled in Girders 29. Note incidentally, that the upper flange of Channel Bearing 30 is angled downwards to improve streamlining.

All that now remains to be added are the winding cords which “drive” the cars. In each case, a length of cord tied to the back of the car, taken over one ½” Pulley 5 down and around the Pulley on the Rod journalled in Girders 3 and 13, and then up and over the other Pulley 5. From there, it is taken the length of the track and around single Pulley 6, to be brought back and finally tied to the front of the car. The cord must be taut, without being so tight that it prevents the Pulleys from turning freely.

The model is now ready for operation, but, for those people with sufficient parts at their disposal, it is a good idea to encase the driving mechanism framework with suitable Plates. This prevents the governors from being seen and thus, besides adding an air of mystery to the operation of the model (what makes the drive cut out?), it prevents the operators from watching the governors to make sure that they keep Pinion 20 in mesh with the Contrate Wheel. It makes things that much more difficult and therefore, that much more enjoyable for them. The tracks, of course, can be made to any length, depending on the parts available.

*The Parts Required list for the Race Game appears on page 7.*

# MECCANO<sup>®</sup> MULTIKIT<sup>®</sup>



Multikit is Meccano like its never been before! In every Multikit Set there's an all-metal cab, 4 wide chunky wheels and lots more.

#### HIGHWAY MULTIKIT

Buils models associated with road transport and construction – tipping lorries, crane trucks, grading machines... Great fun to work with and great value at only £4.75.

#### ARMY MULTIKIT

Buils action packed military models – tanks, firing guns, personnel trucks. . . .

Offers endless excitement for only £5.45.

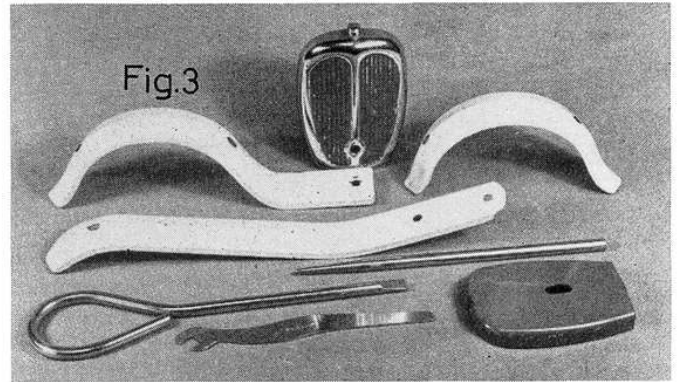
These or any other Meccano Sets sent post free in U.K.; V.A. Tax free, but postage extra to Overseas: M.W. Models, 165 Reading Road, Henley-on-Thames, Oxon, RG9 1DP. England. Tel: Henley (04912) 3342.

flat-headed chromium-plated 6BA nuts and bolts are used for building these cars.

Older observant readers may also have spotted something peculiar about the wheels on the lighter car which are sporting Meccano Tyres. In common with some of the 'O' gauge Hornby locomotives of the mid-thirties, the wheels of the Meccano Motor Cars were made of a manganese zinc alloy which was subject to crystalline breakdown and, although Roger's car still had its original wheels, they were unfit for use and, in the model illustrated here, have been replaced by solid turned aluminium wheels. However, the 1½" standard Meccano Tyres are a perfect fit. Strangely enough, the original wheels of the 1932 car in Fig. 1 are still in perfect condition.

Fig. 3 shows some of the accessories from this outfit and readers will note the Spanner, which is quite different from the standard tool and designed for the 6BA hexagonal nuts used in the set. The Screwdriver is also worthy of note as its blade is a parallel continuation of the shank. This is to allow the Screwdriver to be inserted in the slot of the wheels to tighten the internal Grub Screws which lock the wheels to the back axle which is, in turn, driven via a special contrate wheel and pinion from the horizontally-mounted spring motor.

In the mid-thirties, the price of the outfit was reduced to 20 shillings and, by this time, a smaller version, known as the No. 1 Motor Car Outfit, was also introduced. This is shown in Fig. 4 which is a photograph of a page from the Meccano Magazine of the day. Additional accessories for the larger outfit, then known as the No. 2 set, included a complete lighting set with dashboard switch, pea bulbs on a miniature flex, headlamps, battery clips and coloured discs for the lamps. The spare wheel, included in the outfits from the start, could be attached either to the side of the car body, or mounted on top of the tail section, but, by the mid-thirties, a metal pressing forming a decorative spare wheel cover had been



Some of the accessories included with the Motor Car Constructor outfits: radiator grille, mudguards, drift, screwdriver, spanner and radiator clamping plate. The screwdriver had a special narrow blade and the spanner was for 6BA hexagonal nuts.

added to the range. A further peculiarity of the Motor Car Outfits was that, while neither were compatible with standard Meccano, the No. 1 Outfit was also not compatible with the No. 2! Colour combinations were also extended to include blues, greens and orange so that a wide selection of cars could be constructed.

Enthusiasts often ask the question, "Why does Meccano Limited not re-produce these fine outfits today?" And the answer is, as always, a simple matter of economics. Re-production costs at today's figures, coupled with a limited market, would make the price quite unrealistic and non-viable as a commercial proposition. New products are, of course, still considered and produced by Meccano Limited, the recently-introduced Multikit sets, for instance, proving very popular indeed. Meantime, it goes without saying that anybody still possessing an original Meccano Motor Car Constructor outfit is well advised to treat it with pride, respect and the greatest of care.

Right: a specimen page from a 1935 Meccano Magazine showing reduced prices for the two outfits available.

to build the Race Game featured in Past Masters on pages 12 and 13.

#### PARTS REQUIRED

2- 2	12-23b	4- 99a
26- 6a	3-24	6-103f
8- 7a	3-25a	27-111c
10- 8	6-28	3-115a
8- 9	190-37a	3-125
6- 9a	148-37b	6-126
6- 9b	65-38	2-126a
7-10	3-40	6-136
3-11	3-45	3-160
3-14a	3-46	3-171
6-16	3-48b	
3-16a	3-52a	
6-16b	39-59	
3-17	3-62b	
12-22	9-63	

## Fig. 4 MOTOR CAR CONSTRUCTOR OUTFITS



*No. 1 Meccano Motor Car Outfit*



*Sports Tourer (with hood)*



*Sports Tourer (with folded hood)*

**You will be keen to have one!**

Boys, as soon as you see these fine Motor Car Constructor Outfits you will be keen to have one. The models they build are superb. Sports four-seaters, coupés, speed cars and other perfect miniature reproductions, each one a beautiful model of its prototype. All the models are driven by means of a powerful Clockwork Motor (included in the Outfit), giving a long, speedy and realistic run on each winding.

The motor car parts are finished in rich enamel, nickel-plate and chromium, the complete Outfits being masterpieces of miniature automobile craftsmanship.

**No. 1 Motor Car Constructor Outfit**

The motor car models that can be built with this Outfit are the finest you ever saw. Look at the examples illustrated and think of the fine fun you could have building these and other types equally realistic.

No. 1 Outfit is available in four different colour combinations and is supplied complete with powerful Clockwork Motor. Reduced Price 10/-

**No. 2 Motor Car Constructor Outfit**

Larger models of a superior type can be built with No. 2 Outfit. Their handsome and realistic appearance may be judged from the accompanying illustrations.

No. 2 Outfit is available in four different colour combinations, and a powerful Clockwork Motor that gives a run of 105 feet on one winding is included. Reduced Price 20/-



*No. 2 Meccano Motor Car Outfit*



*Light Six Speed Model*



*Grand Prix Special*