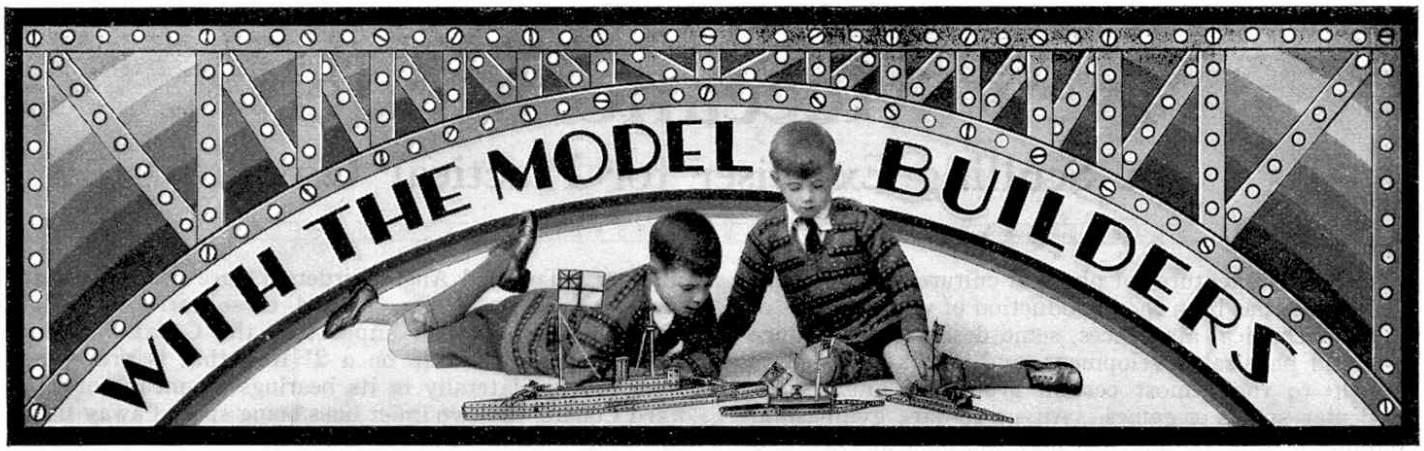


THE NEW AERO WHEEL

Among the new Aero parts that have recently been added to the Aeroplane Constructor Outfits, the Landing Wheel (part No. P53) is of particular interest. The Wheel is of special construction, the boss and set screw being placed between the discs of the Wheel; and the part thus has the 'clean' appearance that is a feature of an actual aeroplane landing wheel. In order to give the complete assembly an up-to-date appearance the old small-section Rubber Tyre (part No. P44) has been discarded and a new tyre of thicker section representing one of the latest low-pressure aero tyres has been substituted. This new Tyre is specially designed to fit into the "well base" rim of the Aero Wheel, and consequently it cannot be fitted to a Meccano 1" Pulley used in model aeroplanes constructed from standard Meccano Parts, as was possible with the original Aero Landing Wheel Tyres.

Many Meccano model-builders will wish to fit aeroplane-type tyres—with smooth-treads as distinct from the studded treads of the Meccano Dunlop Tyres intended for model motor cars—and an excellent substitute for the smooth-treaded Tyre may be formed by a Meccano ⅜" Rubber Ring (Part No. 155). The Ring may be fitted to the groove of a 1" Fast Pulley Wheel, and it will be found to give a very realistic appearance to the complete assembly. For maximum realism, however, the Aero Wheel complete with Aero Tyres should be employed, and as the boss of the special Aero Wheel is drilled with standard Meccano bore, the Wheel may be used in models built partly with Meccano parts.

ELECTRICAL WIRING IN MECCANO

A model that incorporates one or more mechanical movements is very interesting to operate, and when electrical gear is included in addition the interest is increased to a considerable extent. The special Meccano Electrical Parts make electrification of Meccano models a simple matter, but one or two points must be kept in mind when wiring a model for electrical gear, if good results are to be obtained.

In order to light an electric lamp or energise a solenoid, it is necessary to use two separate conductors from the apparatus to the dry battery or accumulator. In models built in metal, however, it is possible to simplify the circuit and use the frame of the model itself as one of the conductors. This is known as the "earth return" system, and it is employed extensively in actual engineering, as for example in motor cars, electric locomotives, etc.

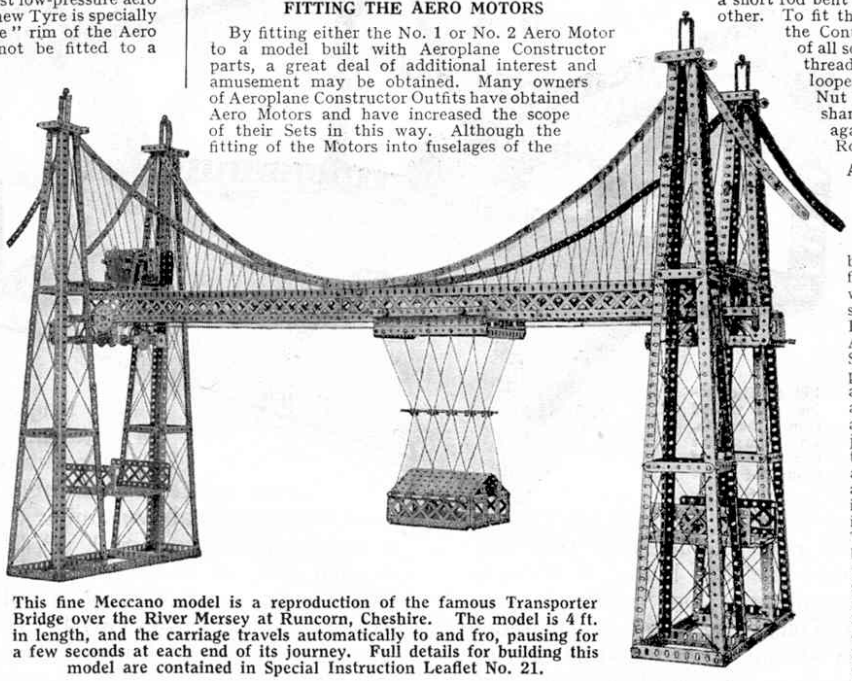
As Meccano models are constructed from metal like their prototypes in actual practice, the earth return system is equally applicable, and a considerable simplification of the wiring of a model will result from the use of this method. If the system is to work satisfactorily, however, it is essential that the complete framework of the model is electrically "bonded," or in other words, that the Strips, Plates, Girders, etc., are bolted together with metal-to-metal joints so that there is complete electrical continuity through the framework. The enamel with which Meccano parts are finished is an insulating substance and does not permit the flow of electricity; and therefore it is necessary to scrape away the enamel where the parts come in contact at the joints.

An instance of the necessity of bonding the frame of the model in this manner is to be found in the Meccano aer al bombing game illustrated and described on pages 774-775 of the October, 1932, "*M.M.*" The current feeding the solenoids in the aeroplanes in the model is led to the coils by means of the frame of the revolving axle, and this makes it possible to use only two insulated collector rings. If in building this model all the joints are not bonded, the current will be unable to reach the solenoids and consequently the model will not work.

Electrical wiring in Meccano is quite a simple operation, and provided that reasonable care is taken in carrying out the work excellent results may be obtained.

FITTING THE AERO MOTORS

By fitting either the No. 1 or No. 2 Aero Motor to a model built with Aeroplane Constructor parts, a great deal of additional interest and amusement may be obtained. Many owners of Aeroplane Constructor Outfits have obtained Aero Motors and have increased the scope of their Sets in this way. Although the fitting of the Motors into fuselages of the model Aeroplanes is described in detail in the Instruction Leaflets supplied, some readers have experienced trouble in mounting the Propeller Stop Control Rod in position, and a few notes on this operation will therefore be useful.



This fine Meccano model is a reproduction of the famous Transporter Bridge over the River Mersey at Runcorn, Cheshire. The model is 4 ft. in length, and the carriage travels automatically to and fro, pausing for a few seconds at each end of its journey. Full details for building this model are contained in Special Instruction Leaflet No. 21.

The Stop Control Rod consists of a length of heavy gauge wire formed at one end into a loop. The wire is bent slightly at the centre so that it fits tightly against the inside surface of the Fuselage Top section. The Control Rod must be dealt with before the Motor or other parts are secured in position. To place the Propeller Control Rod in the Fuselage Top, the plain end of the Rod is first of all threaded through the slot in the rear part of the Fuselage Top Front, the loop being kept in a practically horizontal position. The plain end of the Rod is now guided along the inside surface of the Fuselage Top, and finally is passed through the small hole in the Fuselage Front. The looped portion is then twisted round into an upright position. The bent part of the Rod presses against the underside of the Fuselage, and the friction created holds the Control in either the "forward" or "rear" position without there being any possibility of its slipping out of place.

When the looped end of the Control Rod is pushed through the front end of the slot, the plain end engages the Propeller and prevents it from rotating. As the Propeller is coupled to the Clockwork Motor, it is impossible for the Motor to unwind when the Stop Control Rod is in the "forward" position. By drawing the Control Rod back to the rear end of the slot, however, the plain end of the Control is disengaged from the Propeller, which consequently is free to rotate.

In models of the monoplane type where the wing does not cover the front portion of the fuselage, the looped end of the Stop Control is readily accessible and may be operated with ease by means of the fingers. In biplane models it is not so easy to move the Control, however, as the upper plane partly covers the Control; and it is here that the Stop Control Extension supplied with the Motors should be used. This part consists of a short rod bent up at one end and threaded at the other. To fit the Extension to the looped end of the Control Rod, a standard Nut is first of all screwed on to the Extension and the threaded portion passed through the looped end of the Control, a second Nut being screwed on to the threaded shank. The nuts are finally locked against the looped end of the Control Rod by means of Spanners.

AN ENGINEERING STAFF IN MINIATURE

Set No. 4 in the Modelled Miniatures Series is of particular interest to Meccano model-builders. The Set consists of six figures each representing a typical worker in an engineering shop, shipyard, etc. There are two Fitters, a Greaser, an Engine Room Attendant, an Electrician and a Storekeeper. One of the Fitters is provided with a set of buff overalls, and the other is clothed in blue; and the Engine Room Attendant is attired in a blue boiler-suiting jacket and trousers. The Electrician is dressed in blue overalls and a blue cap, and carries in one hand a small drum of electric cable, and in the other a black case representing an insulation testing machine. The Greaser is provided with a buff boiler-suit, and carries an oil can of the well-known "K" type, a smaller version of the Meccano Oil Can No. 2. Finally there is the Storekeeper wearing a buff dust coat and carrying a "stock list" in one hand. These figures look very effective when placed in suitable Meccano models. Some of the figures could for instance, be arranged around a working model of a marine engine, while several of the Miniatures placed in the engine house of a model pit-head winding plant, will add a "life-like" touch to the scene.

REVERSE GEAR.—We were interested in your suggestion that the Meccano Motor Car Constructor should contain parts that would enable a reverse gear to be fitted to the models. The idea of providing a multi-speed forward and reverse gear-box has already received consideration, but this addition would of course mean a big increase in the cost. It would not be advisable to provide a reverse action without including some reduction gearing as the car would be very uncontrollable when running backward in "top"! You can test this for yourself by moving the driving pin so that it engages with the teeth of the contrate at the right-hand side of the car. (*Reply to E. J. White, Parkstone.*)

ROTARY CONVERTER.—A special machine for converting direct current from house mains to low-voltage current for feeding the Meccano 6-volt Motor would be very useful to constructors who live in districts where only D.C. current supply is available. We are afraid that this is impracticable, however, owing to the very high cost of manufacture of a rotary convertor. A machine of this type may be obtained from an electrical store for about £10. (*Reply to W. D. Perkin, Buxton.*)