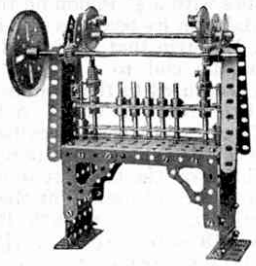

Suggestions Section

Edited by "Spanner"

(244)—An Exciting Race Game

(H. Proctor, Preston, Lancs.)

With the approach of the dark evenings Meccano boys will be turning their attention to indoor pastimes, and new indoor games are sure of a welcome from *"M.M."* readers. Race games of various kinds are always popular, but the motor car race illustrated in Fig. 244 has been designed to provide maximum excitement! The game is intended for three competitors, each one controlling the movements of his car by means of a handwheel; and the individual who decides to exceed the speed limit soon finds that his car automatically stops!

Each of the tracks, as shown, is built up from 18½" Angle Girders spaced apart 2½", but the interest of the game will be increased if these are extended to at least twice the length. The number of tracks and their length depends, of course, upon individual requirements. Six 5½" Angle Girders are used for supporting the tracks, and 18½" and 12½" Girders bolted across the lower ends of these form a base for the model. Flat Trunnions and Braced Girders make the structure rigid. At one end of the track an extension is built to hold the control mechanism. Two 12½" Girders are secured to the transverse Girders of the track and to these 3½" Angle Girders are bolted. Further 12½" and 5½" Girders complete the framework.

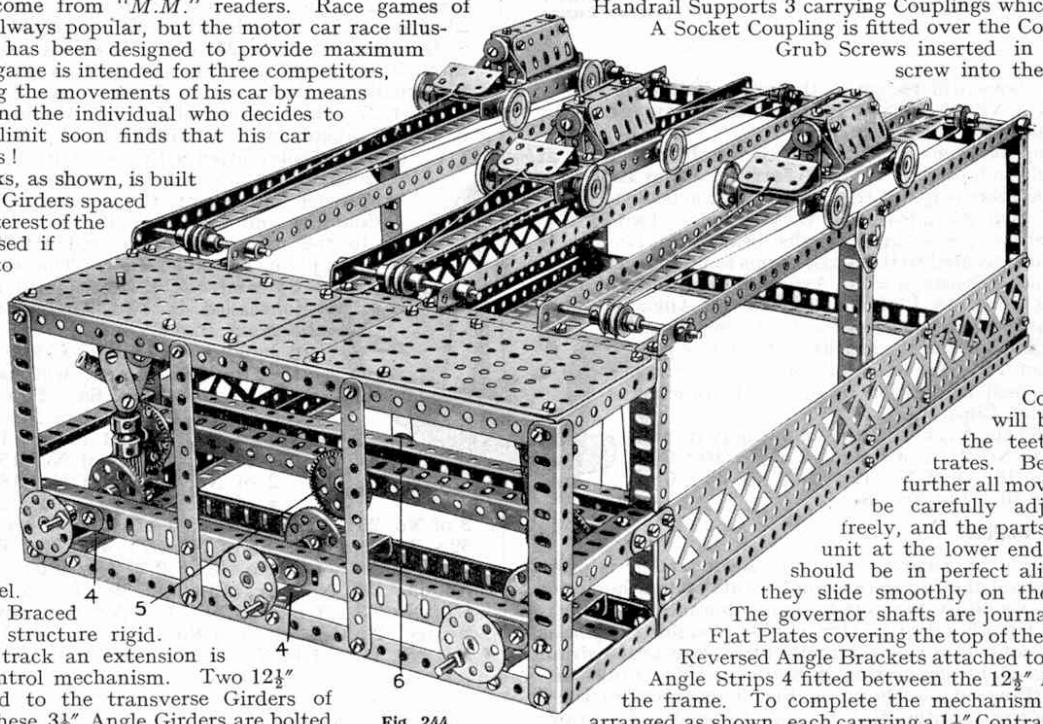

Fig. 244.

The cars each consist of two 4½" Angle Girders, connected together by a Channel Bearing and two Trunnions secured in the slotted holes. The appearance of the cars is improved if the Girders are tapered slightly toward the rear. The Channel Bearings are bent as shown, and a 2½" × ½" Double Angle Strip connects the Trunnions. Flat Girders are suspended from Double Brackets attached to the Strip, and a ½" loose Pulley representing the steering wheel is held on a ⅜" Bolt, the shank of which carries two nuts holding one end of the Double Angle Strip to the Trunnion. Axle Rods journalled in the 4½" Angle Girders carry 1" Pulleys, the grooves of which engage the upturned flanges of the Girders forming the track. It will be found necessary to place washers on the rear axle for spacing purposes.

The operating mechanism is now ready to be assembled. Three handwheels are fitted on 2" Rods journalled in bearings formed by Double Arm Cranks on one side of a 12½" Angle Girder, and Double Bent Strips on the other side. Each of these Cranks carries a 1½" Contrate Wheel engaging the ¾" double width face Pinion of their respective governors. The centre governor has been removed and is shown separately in Fig. 244a to simplify its construction. Two pairs of 1½" Strips are pivotally attached to a fixed Collar 1 at the upper end of the governor shaft by ⅜" Bolts inserted in its tapped bores. The Bolts carry washers for spacing and are screwed tight to grip the Rod. Two further pairs of Strips are pivotally attached to the Coupling 2 by 7/32" Bolts, and a lock nut on the shank of each bolt prevents it gripping the Rod. The Strips are connected to Handrail Supports 3 carrying Couplings which form weights. A Socket Coupling is fitted over the Coupling 2 so that Grub Screws inserted in opposite bores screw into the lower tapped holes of the Coupling, and the ¾" Pinion (½" wide) is fitted in a similar manner in the lower socket. The Grub Screws should be screwed in until their ends are flush with the Socket Coupling or they will be found to foul the teeth of the Contrates. Before proceeding further all moving parts should be carefully adjusted to work freely, and the parts comprising the unit at the lower end of the governor should be in perfect alignment so that they slide smoothly on the Rod.

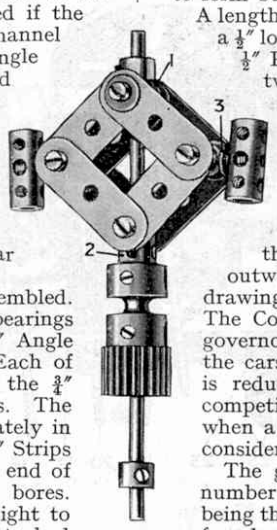

Fig. 244a.

The governor shafts are journalled in 5½" × 3½" Flat Plates covering the top of the gear box, and in Reversed Angle Brackets attached to 3½" × ½" Double Angle Strips 4 fitted between the 12½" Angle Girders of the frame. To complete the mechanism 2½" Rods are arranged as shown, each carrying a 1½" Contrate 5 and a ½" fast Pulley 6. As the Rods pass through the elongated holes of one of the Angle Girders, Flat Brackets should be bolted over the holes to form bearings for the Rods.

A length of cord attached to the front of each car is passed round a ½" loose Pulley at the outer end of the track and over a second ½" Pulley at the opposite end. The cord should be passed twice round the driving Pulley 6 and over a further Pulley at the inner end of the track, to be finally secured to the car. The cord should not be tied too tightly or it will interfere with the smooth working of the governors, the purpose of which will now be apparent. On rotating the handwheels the governors revolve and the drive is transmitted through the ¾" Pinions to the Contrates 5 providing the drive for the cars. As the speed of the governors increases, the weights fly outward, causing the sliding units to be raised, and thus drawing the Pinions out of mesh with the driven Contrates. The Contrates on the driving Rod remain in mesh with the governor Pinions so that the governors continue to rotate, but the cars remain stationary until the speed of the handwheels is reduced. If the mechanism is totally enclosed, so that competitors are unable to observe what causes the cars to stop when a certain speed is reached, the results are sure to cause considerable mystification.

The game may be varied by arranging a race to cover a number of journeys from end to end of the track, the winning car being the first to complete the course. This arrangement will be found particularly suitable when only short tracks are used.