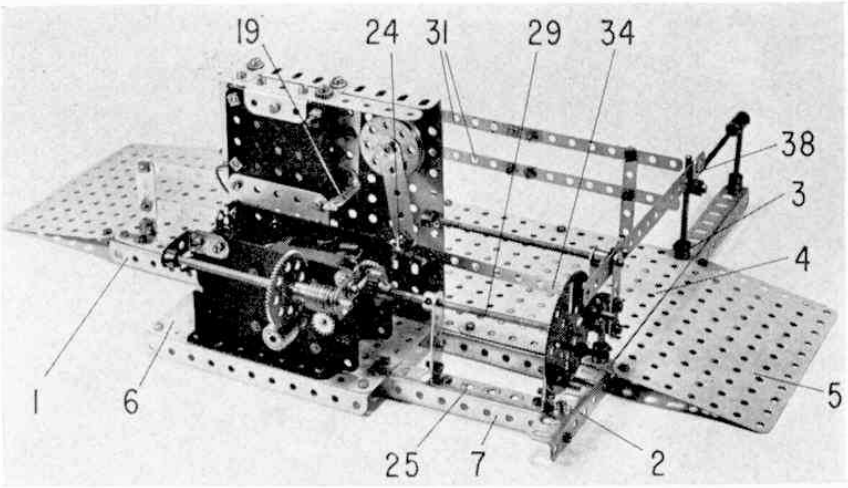


Try building this AUTOMATIC CAR-PARK ENTRANCE

says 'Spanner'

IN these days of mass production, increased efficiency and cost reduction, the emphasis is being placed more and more on automation—the replacement of man by machine.

Automation can be found in all walks of life from the heaviest industry to the humble office switchboard and it is also having an increasing effect on that other example of modern man, the motorist. The motorist himself has not of course been replaced as yet, but he is coming into contact with machines with increasing frequency: the serve yourself petrol pump, the coin-operated car wash, the automatic barrier, and so on. It is one of these—the barrier—which has provided inspiration for our new model, illustrated—an Automatic Car Park Entrance working on the "coin-in-the-slot" principle. The car draws up at the barrier, a coin is inserted into a slot in the barrier control unit, the barrier rises, the car drives through, and the barrier drops.

As regards construction, a runway is built up from two 12½ in. Angle Girders 1 connected together at one end by a 12½ in. Angle Girder 2, the connections being made by Rod Sockets 3 instead of Bolts. These Rod Sockets also hold two Fishplates and a 5½ × 3½ in. Flat Plate 4 in place, three further 5½ × 3½ in. Flat Plates being bolted as shown between the remainder of the Girders. The Bolts at the opposite ends of the Girders also hold two Fishplates in position, these and the first Fishplates then being angled downwards slightly, after which two more 5½ × 3½ in. Flat Plates 5 are bolted, one to each pair of Fishplates to serve as runway access ramps.

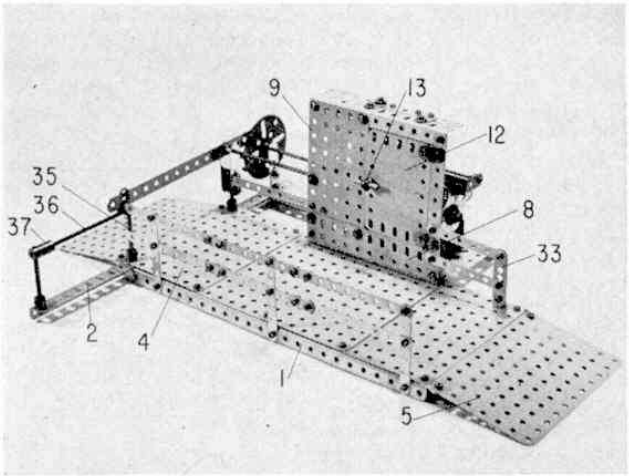
The Bolts securing the two centre Flat Plates to one Angle Girder 1 also fix in position a 5½ in. Angle Girder and a final 5½ × 3½ in. Flat Plate 6, the latter projecting outwards from the run-way and edged by another 5½ in. Angle Girder. Flat Plate 6 is attached to Angle Girder 2 by a 4½ in. Angle Girder 7, then bolted to the spare flange of the first 5½ in. Angle Girder is a 5½ in. Flat Girder 8, to which are secured a 4½ × 2½ in. Flat Plate 9 and a 4½ in. Strip 10, the upper ends of the Strip and Plate being connected together by a further 5½ in. Angle Girder. A 5½ in. Strip 11 is attached to the spare flange of this Girder by two Fishplates, use being made of the slotted holes in the Fishplates to ensure that a gap exists between the Strip and Girder large enough to take the operating coin, or, in our case, an 8-hole Wheel Disc representing the coin.

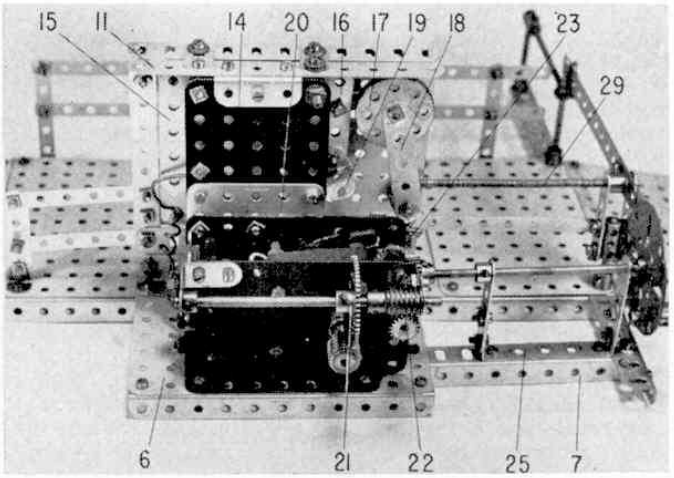
When the model is completed and operational, the coins fed into it are retrieved through a small door supplied by a 3½ × 2½ in. Flexible Plate 12 attached to Strip 10 by two Hinges. A Fishplate, lock-nutted to a Handrail Support 13 revolving in a hole in the Plate, serves as a door catch, with the handle supplied by a 1 in. Rod fixed in the head of the Handrail Support.

Secured to Strip 11 by a 1½ in. Angle Girder is a 2½ × 2½ in. Insulating Flat Plate 14, to which the coin guides 15 and 16 are attached, each guide consisting of three 2 in. Strips between two 2½ in. Flat Girders, the upper ends of the Strips being level with the upper ends of the Girders. Guide 15 is rigidly fixed on two ¾ in. Bolts held by Nuts in the Insulating Flat Plate, while guide 16 is pivotally attached to the Plate by being fixed on a 1⅛ in. Bolt lock-nutted to the Plate. The Bolt passes through the upper holes in the Girders and Strips of the guide. Note, incidentally, that in both guides the fixing Bolts pass through the slotted holes of the Flat Girders, full use being made of the slots to ensure a shallow channel between the edges of the Girders and the intermediate 2 in. Strips.

A counterweight, acting on guide 16, is provided by five Wheel Discs 17 bolted, along with a 2½ in. Strip 18, to a 2 in. Strip which is in turn bolted through the second holes from the top of the guide. Bolted through the second holes from the lower end of the guide is a 1 × ½ in. Angle Bracket 19 which serves as a "stop" to hold the guide close to the vertical against the action of the counterweight. With the guide in the vertical position, the operating coin is prevented from dropping straight through the guides by a Bolt carrying two Washers, fixed in the inner lower hole of each guide. An Angle Bracket is bolted to the lower end of Strip 18.

Now secured to Flat Plate 6 is an E15R Electric Motor, the inner sideplate of this Motor being attached to the lower edge of Insulating Flat Plate 14 by a 2½ in. Flat Girder 20. A Worm Gear, fixed on the output shaft of the Motor, meshes with a 57-teeth Gear 21, fixed, along with another Worm 22, on a 4½ in. Rod journalled in a 1 × 1 in. Angle Bracket and a 1 × ½ in. Angle Bracket, both bolted to the nearby Motor sideplate. Note that a Fishplate is bolted to the longer lug of the 1 × ½ in. Bracket to provide a circular hole in which the Rod is journalled. Worm 22 meshes with a ½ in. Pinion fixed on a 3½ in. Rod, held by Collars in the Motor sideplates. Also mounted on this Rod, between the sideplates, is a ¾ in. Contrate Wheel 23, while fixed on the inner end of the Rod is a Short





Opposite, Easy to build and interesting to operate is this Automatic Car Park Entrance Barrier which works on the 'coin-in-the-slot' principle. Shown in this picture from the control section side.

Above left, A general view of the completed model from the car ramp side.

Above right, A close-up view of the control section of the model showing the E15R Motor and drive to the barrier

Below left, In this close-up view of the control box, the coin-retrieving door has been opened to show the coin guides with the 'coin' (a Wheel Disc) in position in the guides.

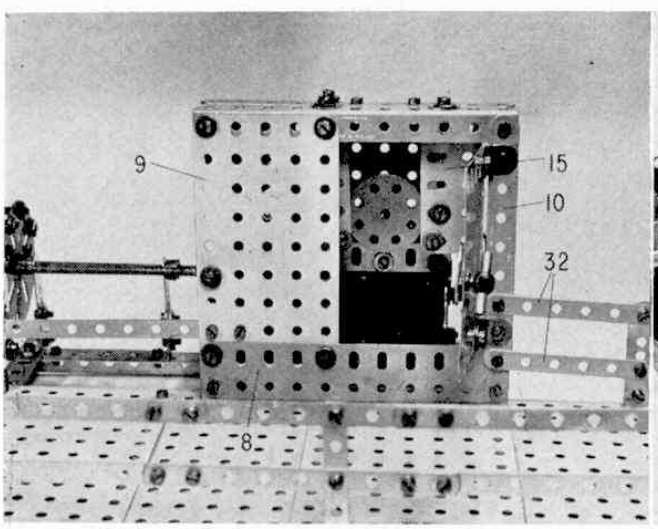
Below right, The barrier is raised by means of a special large cam built up from a Faceplate, to which four Threaded Pins are secured.

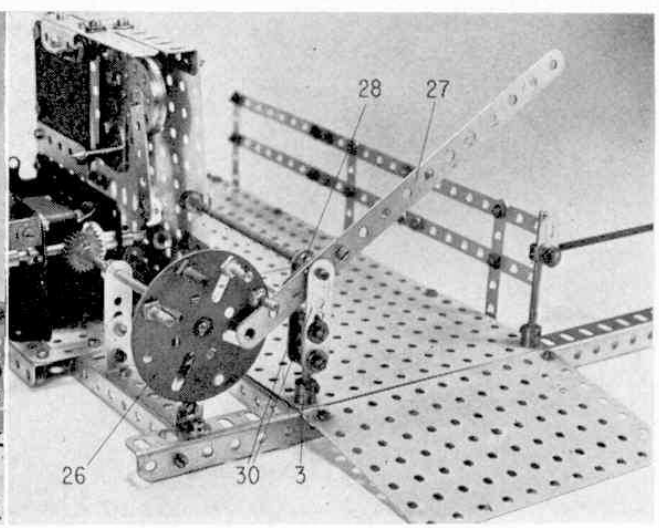
Coupling 24, in the longitudinal bore of which a short electrical 1 in. Pivot Rod is held. When the model is in operation, this Pivot Rod strikes against the Angle Bracket at the lower end of Strip 18 to tilt guide 16, thus allowing the operating coin to drop from the guides to complete the operating sequence.

In mesh with Contrate 24 is a $\frac{3}{4}$ in. Pinion on the end of a $4\frac{1}{2}$ in. Rod journalled in the upper end holes of two 2 in. Strips, bolted to the lugs of a $2\frac{1}{2} \times 1$ in. Double Angle Strip 25, bolted in turn to Angle Girder 7. Mounted on the opposite end of the Rod is a Faceplate 26, in adjacent holes in the face of which four Threaded Pins are fixed, as shown. This whole arrangement serves as a large cam which raises the entrance barrier when the model is set in motion. The barrier itself consists of a $7\frac{1}{2}$ in. Strip 27 bolted to a Double Arm Crank 28, pivoting freely on another $4\frac{1}{2}$ in. Rod 29, mounted in a Collar fixed by one of its threaded bores to Flat Plate 9. The other end of the Rod is mounted in two 2 in. Strips 30 fixed to a Coupling which is mounted on a $1\frac{1}{2}$ in. Rod held in nearby Rod Socket 3. Note that two Washers are carried on each Bolt securing the Strips to the Coupling, one Washer each side of the Strip.

The final touch of realism is given to the model by fencing lining the runway. Along the open side, two horizontal $11\frac{1}{2}$ in. compound Narrow Strips 31, each built up from three $4\frac{1}{2}$ in. Narrow Strips, are bolted to three upright 3 in. Narrow Strips secured to Angle Girder 1. At the opposite side, two 3 in. Narrow Strips 32 are bolted between Strip 10 and a 2 in. Strip 33, attached to an Angle Bracket fixed to one of the $5\frac{1}{2} \times 2\frac{1}{2}$ in. Flat Plates of the runway. A $4\frac{1}{2}$ in. Narrow Strip 34 is also bolted to Flat Plate 9 to run parallel with Rod 29.

Mounted in remaining Rod Socket 3 is a $2\frac{1}{2}$ in. Rod 35 on which a 4-holed Collar (Electrical Part No. 500) is fixed. Screwed into one of





the threaded bores of this Collar is a 3½ in. Screwed Rod 36, the other end of which is held in a Coupling 37, fixed on a 2 in. Rod held in a Rod Socket secured to the end of Angle Girder 2. Also attached to the 4-holed Collar is a Fishplate 38 which, together with the Collar and the upper end of Rod 35, provides the receiving "slot" for the end of the entrance barrier.

Wiring

To finally complete the model, the wiring circuit is added and this should present no problem. It will be realised at this stage that the two coin guides are electrically isolated from each other, being attached to an Insulating Flat Plate. The rigid guide is therefore connected by a short length of insulated wire to one of the Motor terminals, one lead from the power source being connected to the other Motor terminal and the second lead from the power source being connected to the protruding shank of the 1⅛ in. Bolt on which the pivoted coin guide is mounted. When the coin or Wheel Disc is then inserted in its slot, being metal, it completes the circuit and brings the motor into operation. This raises the barrier and at the same time revolves Short Coupling 24 which, in due course, strikes against the Angle Bracket bolted to Strip 18, with the result mentioned earlier. When the coin drops, the circuit is broken and the Motor stops, by which time the barrier has returned to the "down" position. Careful adjustment is of course required to ensure that the timing of operations is correct, but once this has been achieved, the model will be found to work well and very impressively.

PARTS REQUIRED

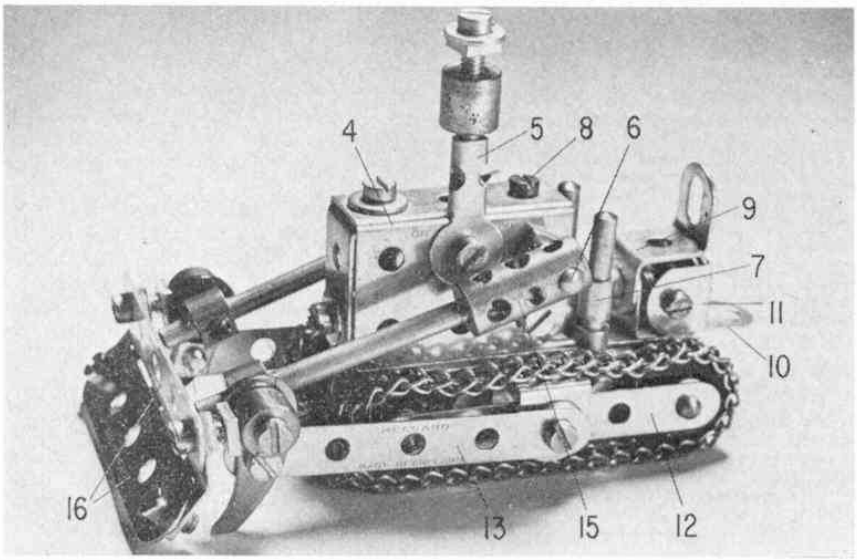
1—1b	3—15a	30—38	3—111c
1—2	1—16	1—46	1—111d
1—2a	1—16a	7—52a	2—114
1—5	1—17	1—53a	4—115
12—6	2—18b	6—59	1—136
3—8	5—24a	1—62b	1—166
3—9	1—25	2—63	3—179
1—9a	1—26	1—63d	1—190a
1—9b	1—27a	1—80a	6—235a
9—10	1—29	1—103	7—235d
3—12	2—32	5—103f	1—500
1—12a	88—37a	1—109	(140y)
2—12b	82—37b	2—111	1—511
			1—550
			1—E15R Motor

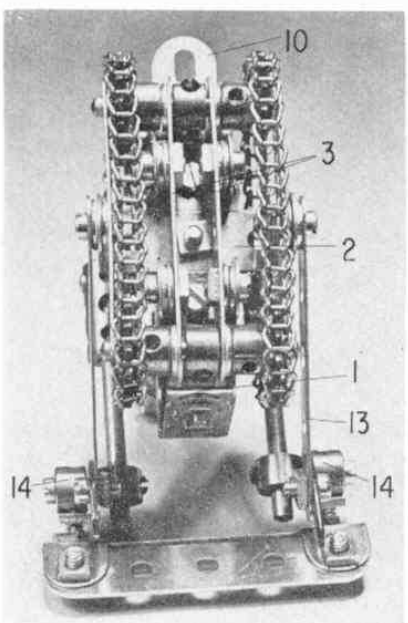
Simplicity Special

'Spanner' describes three captivating miniatures from readers

Right, all the atmosphere of the real thing has been captured in this Simplicity Bulldozer, designed by Mr R. J. McEnery of Yate, Bristol.

Below, an underside view of the Bulldozer showing the chassis layout.





REGULAR readers of Meccano Magazine will not be surprised at the sight of the three delightful little models featured in this article. I particularly like "Simplicity" models and I have made no secret of the fact in these pages over the years. I feature such models fairly regularly, however, not only because of my personal feelings, but also because the vast majority of Meccano modellers share my opinion—practically everyone likes the "little-'uns"!

For the benefit of readers new to the hobby, Simplicity models are small-scale reproductions which capture the lines and atmosphere of their subjects, while using only a comparatively few, carefully selected parts. I am sure all will agree that the three models illustrated fall into this category.

First in line is a splendid little Bulldozer, designed and built by Mr. R. J. McEnery of Yate, Bristol. The chassis consists of a 2½ × ½ in. Double Angle Strip 1, lugs upward, to which two Double Brackets are bolted, lugs downward, the fixing Bolts passing through the second holes from each end of the Double Angle Strip. A 1½ × ½ in. Double Angle Strip 2 is also bolted to Double Angle Strip 1, then secured inside the lugs of the Double Brackets are two 2½ in. Strips 3, the Strips being spaced from the lugs by two Washers on each securing Bolt.

Fixed by its longer lug to the forward lug of Double Angle Strip 1 is a 1 × ½ in. Angle Bracket, to the shorter lug of which a Channel Bearing 4 is bolted to represent the engine casing. Secured to the Channel Bearing before it is fitted, however, are a Rod and Strip Connector 5, two Threaded Pins 6, one each side, two right-angled Rod