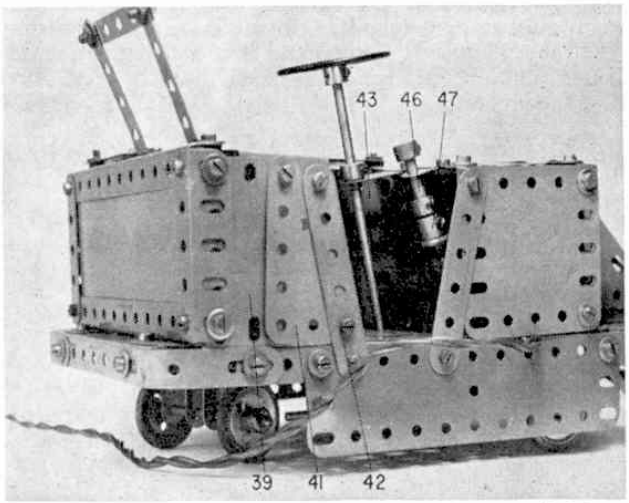
A WORKING PLATFORM SWEEPER IN MECCANO

An unusual and interesting model for Meccano builders described by SPANNER – Conclusion

Steering

At this stage the rear, steerable wheels and the steering linkage should be added. A 2 in. Strip 19, overlayed by a Double Arm Crank, is bolted between the centre of Angle Girder 5 and Flat Plate 2. Journalled, free, in the boss of the Double Arm Crank is a 2 in. Rod, held in place by a Collar above the Crank and by another Double Arm Crank below the Strip. This second Double Arm Crank is bolted to a 2½ in. Strip 20, the securing Bolts also fixing two 1 in. Double Brackets 21 to the underside of the Strip. Incidentally, please note that the Strip projects two holes beyond one end of the arm of the Crank. Journalled in the end holes in the lugs of the Double Brackets is a 2½ in. Rod, on which two 1 in. loose Pulleys 22, fitted with Rubber Rings, are held by Collars. Each Pulley is spaced from the nearby Double Bracket by two Washers.



With the model completed, the E15R Motor is controlled from the cab by means of a short extension lever connected to the Motor switch.

Lock-nutted through the second hole in the protruding end of Strip 20 is a shaped 3 in. Narrow Strip, the other end of which is lock-nutted to the arm of a further Double Arm Crank 23, fixed on the lower end of a 4½ in. Rod 24, forming the steering column. This Rod is mounted in one hole in Flat Plate 2 and will also later be mounted in 1½ in. Strip bolted to the body.

Bodywork

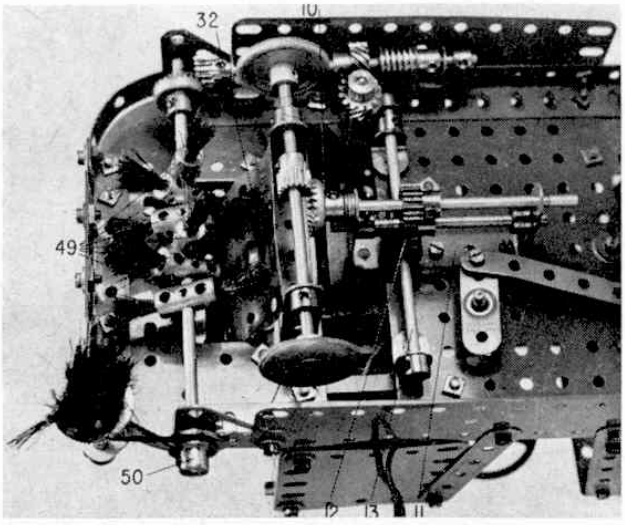
The bodywork, itself, is fairly straightforward. Two vertically-mounted 2½ in. Angle Girders 25 are bolted, one to each end of Angle Girder 5, at the same time fixing a 5½ × 2½ in. Flexible Plate 26 in position. The upper ends of Girders 25 are joined by a 5½ in. Angle Girder 27. Two further vertically-mounted 2½ in. Angle Girders 28 are fixed by Angle Brackets, one to each end of Flat Girder 3, then a 6½ in. compound flexible plate 29 is bolted between left-hand Girders 25 and 28, the compound plate consisting of one 5½ × 2½ in. and one 2½ × 2½ in. Flexible Plate, overlapped three holes. The compound plate is edged along the top by another 5½ in. Angle Girder 30.

Towards the front of the models, two Obtuse Angle Brackets and two 2½ in. Angle Girders 31 are bolted to the top of Flat Plate 3, the Angle Brackets spaced by a distance of three holes and the Girders by a distance of five holes. Secured through its second holes to the free lugs of the Obtuse Angle Brackets is a 2½ × 2½ in. Curved Plate 32 which projects downwards to form a back plate for the sweeping-brush "compartment", while bolted to the spare flange of each 2½ in. Girder is a 2½ × 2½ in. Triangular Flexible Plate 33. A 5½ × 2½ in. compound flexible plate 34,

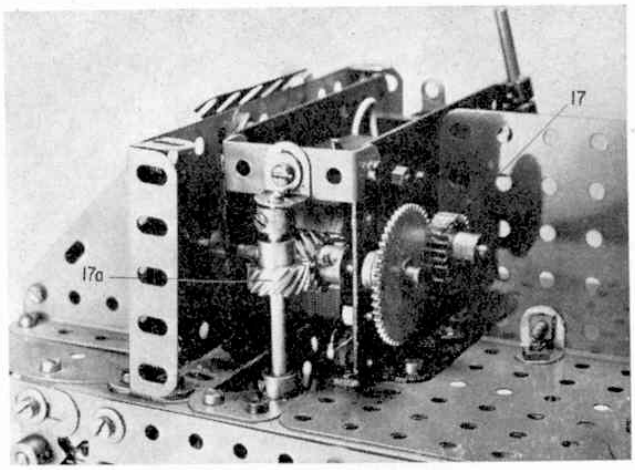
obtained from one $3\frac{1}{2} \times 2\frac{1}{2}$ in. and one $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate, is then bolted between Angle Girders 28 at each side, the two upper securing Bolts each holding an Angle Bracket in place, after which a $4\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 35 is fixed to Angle Girder 7, being bent back to follow the slope of Triangular Flexible Plates 33.

At the right-hand side of the model, a $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 36 is bolted to Angle Girder 28, a 3 in. Strip 37 and an Angle Bracket being bolted to the upper rear corner of this Plate. The Strip is angled, as shown, and the lower end bolted to Flexible Plate 9, whereas a $5\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 38 is bolted to the spare lug of the Angle Bracket, this Plate also being fixed to the two Angle Brackets held by the upper Bolts securing compound plate 34 to Girders 28, as well as to Angle Girder 30. A $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate 39 is bolted to right-hand Angle Girder 25, a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flanged Plate 40 and a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Triangular Flexible Plate 41 in turn being fixed to Plate 39, as shown. The right-hand flange of Flanged Plate 40 is connected to Flexible Plate 9 by a 3 in. Strip 42, while bolted to the left-hand flange is a $4\frac{1}{2} \times 2\frac{1}{2}$ in. Flat Plate 43, this Plate also being attached to Angle Girder 27 by an Angle Bracket. Two Bolts 44, shanks pointing upwards, are held by Nuts in Angle Girder 27, another two corresponding Bolts being held in Flexible Plate 38. Located on these Bolts, and held in place by further Nuts, is a $4\frac{1}{2} \times 2\frac{1}{2}$ in. Flat Plate 45.

Fixed to Flexible Plate 38 in the positions shown are a $1\frac{1}{2}$ in. Strip and a Fishplate, both bent to a very slight obtuse angle. The Strip serves as the upper journal for the steering column, a Collar above the Strip holding the column in place. A $1\frac{3}{4}$ in. Steering Wheel is mounted on the end of the steering column. The Fishplate serves as the journal for a $1\frac{1}{2}$ in. Rod 46, on the end of which an End Bearing 47 is mounted, the arms of the End Bearing being lock-nutted to one arm of the E15R Motor control switch. The Rod of course slides in the Fishplate to actuate the switch, "stops" consequently being provided by two Collars fixed on the Rod. A back for the driver's seat comes in the form of two $2\frac{1}{2}$ in. Narrow Strips 48, the lower ends of which are bent and bolted to Angle Girder 27, while the upper ends are joined by another $2\frac{1}{2}$ in. Narrow Strip.



A close-up view of the drive to the sweeping brushes and the sweeping brushes, themselves.



Motive power for the Platform Sweeper comes from a Meccano E15R Electric Motor, normally hidden from view, but illustrated here to aid construction of the initial drive system.

Sweeping brushes

Everything else having been completed, the sweeping brush assemblies can now be built up and fitted. Two assemblies are included, a main centre-positioned assembly and a smaller side assembly, the bristles for both of which are approximately 2 in. long and cut from a stiff paintbrush, being formed into a number of smaller brushes by the simple expedient of folding groups of 2 in. bristles in half to make 1 in. "brushes" and then by sticking the folded ends together by dipping them into glue. While the glue is still wet, the resulting "brushes" should be positioned in their holders to ensure that the bristles remain in position. The holders in the case of the main assembly consist of six Couplings 49 mounted at varying angles on a $6\frac{1}{2}$ in. Rod journalled in Corner Brackets 8 and held in place by a Collar and a $\frac{1}{2}$ in. fixed Pulley 50. Also fixed on the Rod is a $\frac{3}{4}$ in. Contrate Wheel which meshes with Pinion 15. Two "brushes" are fixed, one in each end of each Coupling, as shown.

The brush holder in the case of the small side assembly is an electrical 1 in. Bush Wheel 51 mounted on the lower end of a $1\frac{1}{2}$ in. Rod held by Collars in a Double Bracket bolted to the right-hand Formed Slotted Strip of the chassis. Six brushes are fixed, one in each hole in the face of the Bush Wheel, the complete assembly finally being driven by a $2\frac{1}{2}$ in. Driving Band passed round the lower Collar on the Rod and around Pulley 50.

PARTS REQUIRED

2—4	3—26	1—154b
1—5	2—26c	1—154b
1—6	1—27	4—155
1—6a	2—29	1—166
2—8b	2—32	1—185
3—9	124—37a	1—186
1—9b	102—37b	2—188
4—9d	33—38	2—189
1—11	2—47	4—190
2—11a	1—48	1—190a
10—12	1—51	1—191
1—14	1—52a	2—192
1—15	2—53a	4—211a
2—15a	20—59	4—214
1—16	3—62b	4—215
2—16a	6—63	1—221
2—16b	2—103	2—223
2—18a	1—103c	3—235
2—22	2—111a	1—235a
2—22a	6—111c	1—518
1—23a	2—133	
1—25	1—133a	1—E15R Motor