AMONG THE MODEL BUILDERS

with Spanner

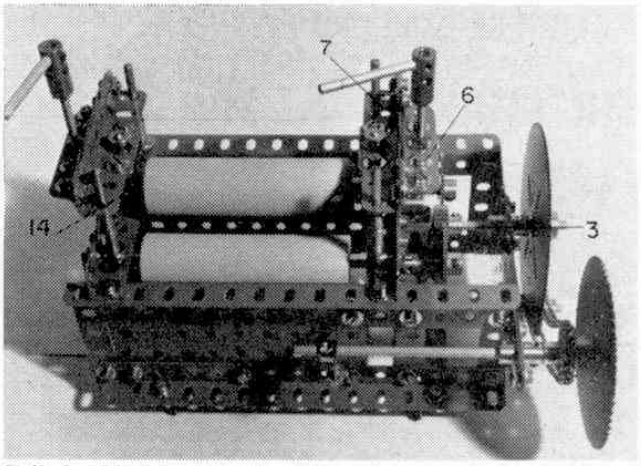
THE INTERNATIONAL appeal of Meccano has often been stressed in these pages—so much so, in fact, that some readers are beginning to wonder if I spend my spare time writing copy for advertisements! I assure you I don't, but I make no apology for frequently mentioning the world-wide interest in Meccano, simply because interest in Meccano *is* world-wide. We often hear of enthusiasts outside the U.K. and, in fact, our first offering this month was designed by one such enthusiast—Mr. Ulysse Bachelard of Zurich, Switzerland.

Ulysse has been building models for something like 40 years and I understand that it has been one of his burning ambitions for some time to have something he has designed appear in print. In the past he has been quite unable to attain this ambition as he neither writes nor speaks English, but, on this occasion, he has overcome the problem by sending a photograph of one of his creations to Mr. Bert Love, Secretary of the Midlands Meccano Guild. The model in question was a Flexible Plate Bending Machine which makes an extremely useful tool for a Meccano workshop. Bert Love built a copy of it from the illustration and, with Ulysse's permission, he has written the following description as well as supplying the accompanying photographs.

"The general construction of the framework," says Bert, "is evident from the three accompanying illustrations and consists of four 7½ in. Angle Girders spaced by three 3½ × 2½ in. Flanged Plates. It will be noted that all bearings for Axle Rods are reinforced by Double Arm Cranks to ensure very smooth and positive motion of the bending rollers. A double thickness of 1½ in. Perforated Strips may be substituted for the Cranks if the machine is used on a short term basis.

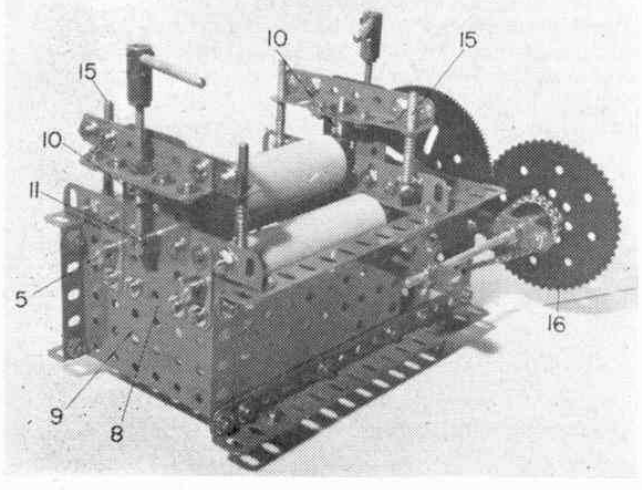
One of the accompanying pictures shows the reduction drive to the lower pair of rollers, both of which rotate in the same direction at the same speed. The ¾ in. Pinion 1 which drives the two 50-teeth Gear Wheels 2 is mounted on a 2½ in. Axle Rod the latter so positioned that only a very small part of it projects through Double Bent Strip 3. This allows clearance for the Screwed Rod 4, used for applying pressure to the top roller, which, like the other two rollers used in the machine, is a standard Meccano Wood Roller covered with a fine grade of sandpaper. This is glued to the Rollers with a few spots of suitable adhesive, the sandpaper being cut carefully to make a neat butt joint and held in place with rubber bands until the glue sets. The lower rollers are carried on 6½ in. Rods 5 kept in place by an inside Collar and a Compression Spring between the face of each 50-teeth Gear Wheel 2 and its adjacent Double Arm Crank. This helps to keep a smooth tension and motion on the Roller shafts and the Springs also act as convenient "Spacers".

Construction of the slides on which the top roller is carried is clearly shown in another photograph. Each slide consists of a 2½ in. Angle Girder 6 bolted to a 3½ in. Angle Girder 7, but spaced from it by a double thickness of Fishplates as shown. This allows the slide to pass freely over the "guide" which is obtained from a 3 × 1½ in. Flat Plate 8 bolted to the Flanged Plate 9 at each end of the Rollers. Both

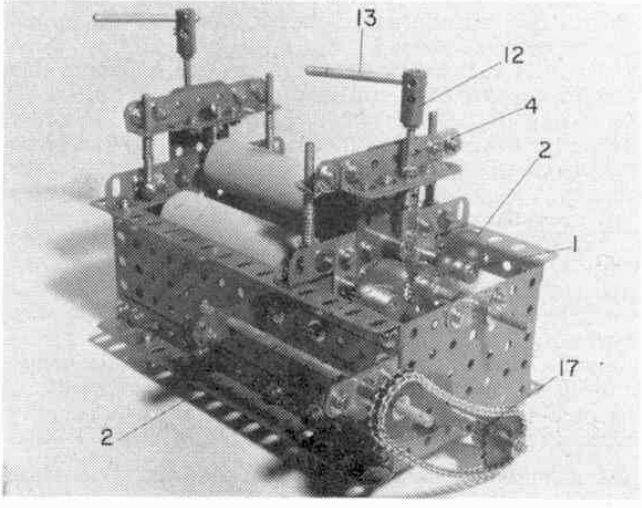


Built for Meccano Magazine by Mr. Bert Love of Birmingham, this Flexible Plate Bending Machine was originally designed by Ulysse Bachelard of Zurich, Switzerland—a Meccano modeller with some 40 years of model building experience behind him.

In this end view of Mr. Bachelard's Machine, construction of the slides for the upper roller is clearly shown.



In this view of the Plate Bending Machine, the built-up crank handle and 3½ in. Gear have been removed to show the reduction gearing to the rollers.



A simple Differential mechanism designed by James Grady of Dundee for use with small models possibly using 1 in. Pulleys with Motor Tyres as road wheels.

Girders forming each slide carry Double Arm Cranks 10 at their centres, bosses pointing downwards. The boss of the outside Crank provides a journal for one of the 3 in. Screwed Rods 4 used for applying pressure to the top roller. The lower end of each Screwed Rod is inserted into the transverse tapped bore of a Rod Socket 11 as shown. Two lock-nuts are secured about half-way down each Screwed Rod where they bear against a Washer acting as a pressure point applied to the outside of the slide. At their upper ends the Screwed Rods are secured by a lock-nut in the tapped bores of Threaded Couplings 12 in which a 2 in. Rod 13 is fixed to provide a lever.

Loose in the boss of each Crank fixed to the inside Girders of the slides is a 1 in. Rod to the lower end of which a Short Coupling 14 is attached to act as one of the bearings for the top roller. A Collar is fixed on the top of the Rod. Additional guides for the slides are provided by four vertical 2 in. Rods 15 mounted in Handrail Supports. Each of these Rods is fitted with two Compression Springs and Washers to raise the top roller when the pressure screws are released.

The machine is hand driven by a special crank consisting of a 3 in. Sprocket Wheel 16 to which a Long Threaded Pin is fixed. A pair of 1 in. Sprocket Wheels and Chain carry the drive to a $\frac{1}{2}$ in. Pinion 17, as shown, this Pinion meshing with a $3\frac{1}{2}$ in. Gear Wheel mounted on the $2\frac{1}{2}$ in. Rod carrying the Pinion 1.

With this useful machine, Meccano Flexible Plates may be bent to a curvature as small as $1\frac{1}{2}$ in. radius with perfect results. To operate it, a Flexible Plate is placed between the top and the two bottom rollers. Slight pressure from the Screwed Rods is applied and the Plate is rolled backwards and forwards while pressure is continuously applied. Inserting a Plate at an angle will produce a spiral bend, such as used on helter skelters or bus staircases."

PARTS REQUIRED

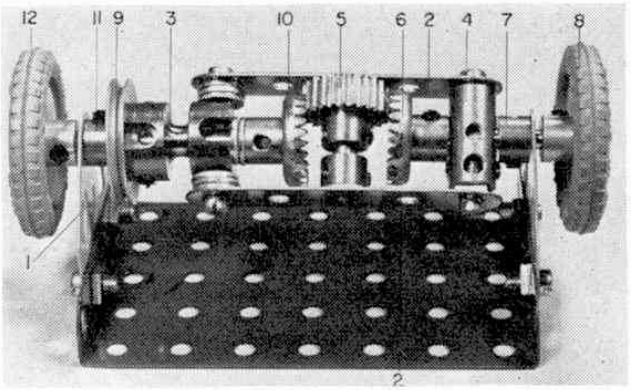
2—5	1—16a	1—44	2—80c
4—8b	6—17	1—47a	1—94
4—9a	2—18b	3—53	1—95b
2—9b	1—25	2—53a	2—96
2—9d	1—26	6—59	3—106
8—10	2—27	11—62b	1—115a
2—14	1—27b	2—63c	10—120b
1—15	80—37	2—63d	4—136
1—16	*186—38	2—73	2—179

Half a sheet of fine grade sand paper.
*** If washers on Nuts and Bolts are omitted, quantity of Part No. 38 is reduced to 26.**

Small Differential

Moving onto a different subject, on two separate occasions during the past year we have featured an extremely interesting mechanism designed by James Grady of Dundee, Scotland. In each case the particular mechanism featured was purposely small in size so that it could be used with small models—especially those using 1 in. Pulleys with Motor Tyres as road wheels. We have already had a Front Wheel Drive system and 4-wheel Independent Suspension from Mr. Grady. Now we have a small Differential Mechanism from the same source, this also being designed for use with 1 in. Pulleys with Motor Tyres.

Construction is not difficult, as the accompanying illustration shows. The mounting will of course vary with the model in which the mechanism is to be incorporated, but, in our example, it consists of a



PARTS REQUIRED

2—5	3—22	5—37b	1—63c
1—17	1—25	9—38	3—111c
1—18a	2—29	1—53	2—126a
1—18b	5—37a	3—59	2—142c
			1—171

$3\frac{1}{2} \times 2\frac{1}{2}$ in. Flanged Plate, to each side flange of which a Flat Trunnion 1 is bolted. The apex holes in these Flat Trunnions will later serve as the bearings for the main axle Rods, but first two $2\frac{1}{2}$ in. Strips 2 are secured to a Socket Coupling 3 by $\frac{3}{8}$ in. Bolts screwed into the threaded bores at one end of the Socket Coupling, each Strip being spaced from the Coupling by three Washers on the shank of the securing Bolt. At their other ends, Strips 2 are fixed to a Threaded Coupling 4, one by a Bolt screwed into the threaded bore of the Coupling and the other by a $\frac{3}{8}$ in. Bolt held by two Grub Screws in the opposite end of the Coupling. A Nut on the shank of this Bolt acts as a spacer. Journalled in the centre holes of Strips 2 is a 1 in. Rod carrying a $\frac{3}{4}$ in. Pinion 5 and held in place by a Collar.

Mounted free in the centre transverse bore of Threaded Coupling 4 and in nearby Flat Trunnion 1 is a $1\frac{1}{2}$ in. Rod on which are fixed a $\frac{3}{4}$ in. Contrate Wheel 6, a Collar 7 and a 1 in. Pulley with Motor Tyre 8. Contrate 6 is in constant mesh with Pinion 5.

A 1 in. Pulley with boss 9 is now fixed in the outside end of Socket Coupling 3. Journalled free in this and in the Socket Coupling, as well as in appropriate Flat Trunnion 1, is a 2 in. Rod carrying a second $\frac{3}{4}$ in. Contrate Wheel 10, spaced from the Socket Coupling by two Washers, a Collar 11 and another 1 in. Pulley with Motor Tyre 12. Contrate 10 also meshes with Pinion 5, Pulleys with Tyres 8 and 12 act as the road wheels, while the drive, in this case supplied by a Driving Band, would be taken to Pulley 9. This Pulley, by the way, could be replaced by another part such as a Sprocket Wheel, if required.

I would like to close this month by drawing your attention to the illustrations on page 162. They show the work of two really keen Meccano enthusiasts, one in this country and the other across the far side of the world, in Australia. Neither of these gentlemen, Mr. D. G. Higginson of Stevenage, Herts., here, and Mr. W. R. Inglis of South Blackburn, Victoria in Australia, court annonymity. On the contrary they are both very active in making the public aware of Meccano and showing the "uninitiated" something of what can be done with the system—and this in the best way possible, by exhibiting well-built and detailed models. The photographs, in fact, show Mr. Higginson and Mr. Inglis with their models on show, the former at a recent exhibition he gave in a Stevenage school,

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