

Two Useful Mechanisms

By "Spanner"

will with gears in the gear-box. The Pinion must be so adjusted for height that it meshes with the Gear Ring attached to the travelling base.

A Neat Crankshaft

Our second mechanism, shown in Fig. 2, is a neat triple-throw crankshaft with two bearings. The crank webs are constructed by screwing the head of a grub-screw into one of the holes of a Collar so that one half of its shank is left projecting beyond the surface of the Collar. A second Collar is then screwed on to the shank of the grub-screw and tightened up so that both Collars are secured

firmly. The centre web portion consists of two Collars secured by grub-screws to a "spider" removed from a Swivel Bearing, so that they are at right angles to one another. Grub-screws inserted in the remaining tapped holes of the various Collars serve to secure in place the crankpins and journals of the crankshaft. The connecting rods consist of Screwed Rods that are partially inserted in the grub-screw holes of Collars that turn freely on the crankpins.

It is not difficult to devise similar crankshafts to suit models for which a triple-throw mechanism is not required, and the method is a novel one that will often be found useful by readers who specialise in building model engines.

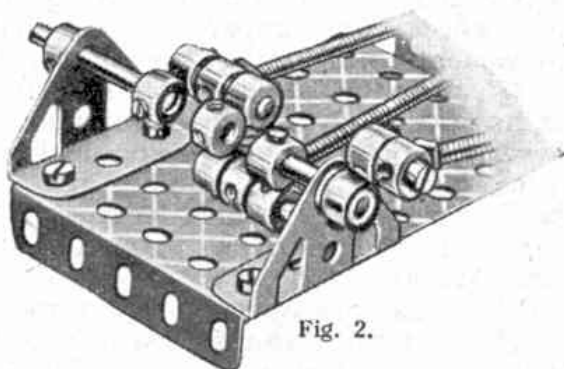


Fig. 2.

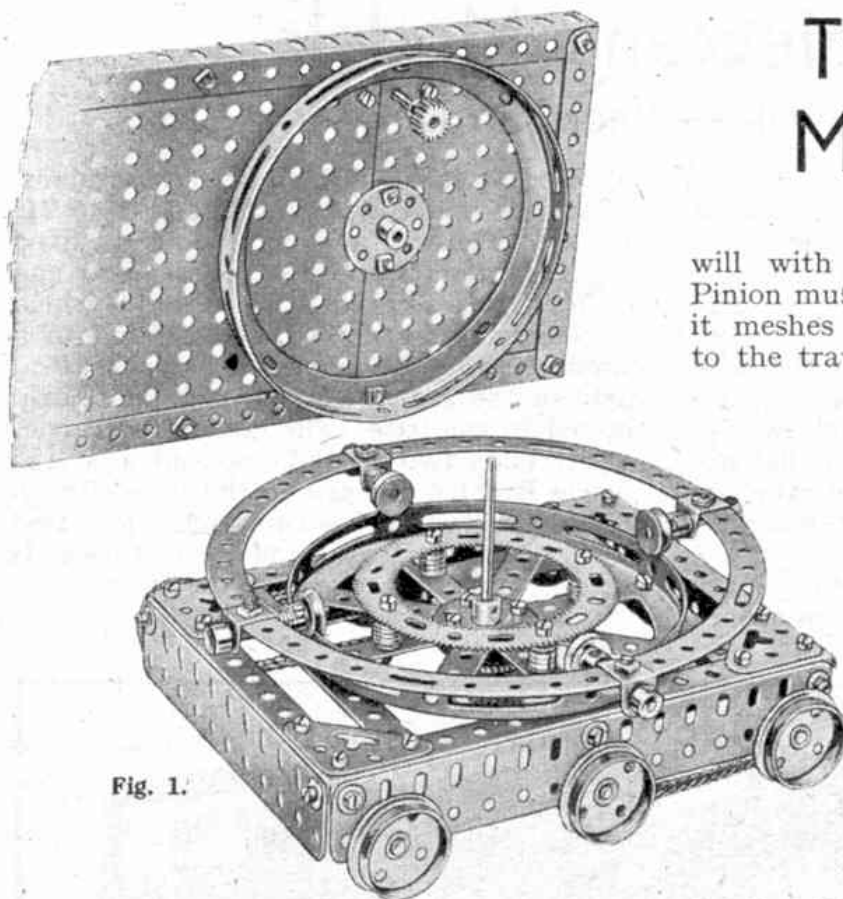


Fig. 1.

A Built-up Roller Race

On this page we illustrate and describe two Meccano mechanisms that should be found useful by many model-builders. The first is a built-up roller race. For models of medium size the Ball Bearing unit often is too small and the Roller Bearing is too large. In these cases this built-up bearing of intermediate size is just the thing. It is shown in Fig. 1. The bottom fixed race consists of a Hub Disc held in place by four nuts and bolts. A Bush Wheel without its grub-screw is bolted in the centre of this Hub Disc to form one bearing for the centre Rod.

A Gear Ring, shown in the illustration, is now secured in place by means of four $\frac{3}{4}$ " Bolts, each of which carries eleven Washers on its shank for spacing purposes. The ring frame consists essentially of a $7\frac{1}{2}$ " Circular Strip, which is fitted at four equidistant points round its edge with rollers, consisting of $\frac{1}{2}$ " fast Pulleys on $1\frac{1}{2}$ " Rods.

The upper race of the roller bearing consists of a Circular Girder that is bolted directly to the base of the revolving superstructure. Slewing is carried out from a $\frac{1}{2}$ " Pinion secured on the lower end of a Rod, a gear on the upper end of which can be engaged or disengaged at

New Meccano Models

Cakewalk—Wheelbarrow

THE amusement machines seen in fairgrounds make interesting subjects for Meccano models and one of the most popular of these is the cakewalk, a simple model of which is shown in Fig. 1. The model is designed for Outfit No. 5, and construction is commenced with the base frame. Two $12\frac{1}{2}$ " Angle Girders 1 are extended 2" at their front ends by $5\frac{1}{2}$ " Strips that are bolted to their flanges, the free ends of the Strips being attached to $12\frac{1}{2}$ " Angle Girders 2. Across the corners of the frame $5\frac{1}{2}$ " Strips are bolted.

There are two oscillating gangways, each of which consists of two $12\frac{1}{2}$ " Strips spaced apart by two $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " and a $4\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate overlapped and attached to the $12\frac{1}{2}$ " Strips by $\frac{1}{2}$ " \times $\frac{1}{2}$ " Angle Brackets. These Strips are also bolted by $\frac{3}{8}$ " and $\frac{1}{2}$ " Bolts to $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strips, $2\frac{1}{2}$ " Strips and $2\frac{1}{2}$ " Cranked Curved Strips at each end. The $2\frac{1}{2}$ " Strips and $2\frac{1}{2}$ " Cranked Curved Strips are bolted to $12\frac{1}{2}$ " Strips forming the handrails, and the rear end of each gangway is enclosed by a large radius Curved Plate. The gangways are completed by bolting $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates and $1\frac{1}{4}$ " Discs to their sides.

The gangways are mounted on pivoted legs, which are set in motion by turning a handwheel and impart an oscillating movement to the gangways. Each leg is a $2\frac{1}{2}$ " Strip, which is pivotally attached at its upper end to the gangway and at its lower end pivots on a $3\frac{1}{2}$ " Rod held in the arms of a $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip bolted to the base. Short lengths of Cord threaded between the pairs of Strips form stops.

The model is operated by turning a handle 3 formed from a Bush Wheel to which is attached a Threaded Pin. The Bush Wheel is mounted on one end of a

5" Rod 4 journalled in two Trunnions, which are bolted to $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " and $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plates 5 and 6 respectively fixed to the Girders 1 and 2. On the other end of Rod 4 is secured a $1\frac{1}{2}$ " Pulley, which is connected by a 6" Driving Band to a similar Pulley 7 mounted on a 2" Rod held in the arms of a Cranked Bent Strip bolted to the base. The latter Rod carries at its ends two 1" Pulleys, and a $\frac{1}{2}$ " \times $\frac{1}{2}$ " Angle Bracket is fixed to the boss of each of these. Two $5\frac{1}{2}$ " Strips are lock-nutted to the Angle Brackets and their other ends are pivotally attached to the inner sides of the gangways.

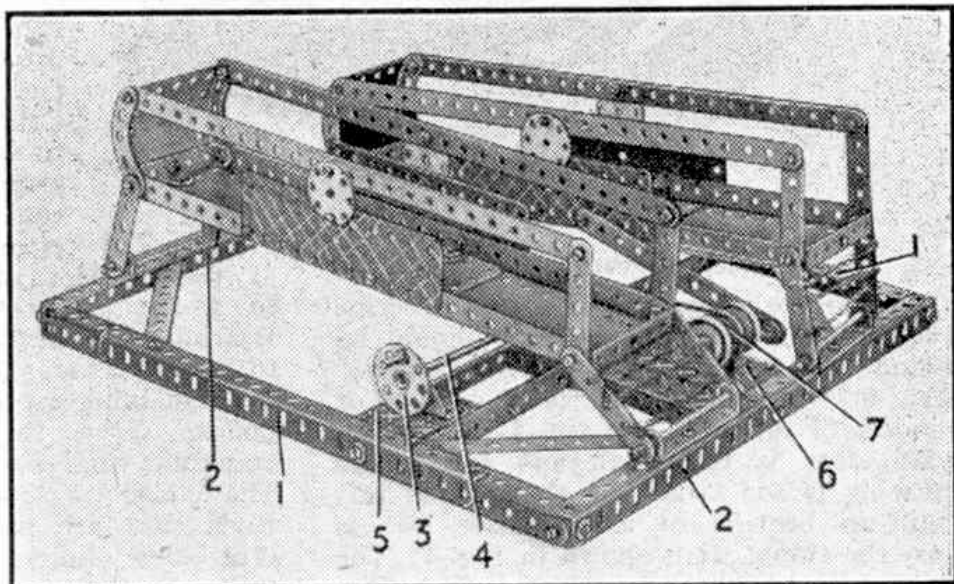


Fig. 1. Fairground fun in Meccano. A realistic cakewalk model that is easily constructed and will provide great amusement.

Parts required to build model Cakewalk: 9 of No. 1; 10 of No. 2; 2 of No. 3; 12 of No. 5; 4 of No. 8; 12 of No. 12; 2 of No. 12a; 1 of No. 15; 4 of No. 16; 1 of No. 17; 4 of No. 22; 1 of No. 24; 12 of No. 35; 91 of No. 37a; 71 of No. 37b; 14 of No. 38; 1 of No. 40; 1 of No. 44; 1 of No. 48; 8 of No. 48a; 1 of No. 51; 1 of No. 52; 4 of No. 90a; 2 of No. 111a; 6 of No. 111c; 1 of No. 115; 2 of No. 126; 1 of No. 186a; 4 of No. 189; 2 of No. 191; 4 of No. 192; 2 of No. 220; 1 of No. 217a.

Fig. 2 shows a miniature and realistic model wheelbarrow, the construction of which provides an interesting pastime for young model-builders. It is built around two $3\frac{1}{2}$ " Crank Handles 1, with Erinoid Grips. These are spaced apart by Couplings fitted in the positions shown, the cranks of the Crank Handles being turned outwards. Before the Couplings are fitted, however, two Collars 2 should be placed

on the Handles to provide attachments for the legs. These are formed from $1\frac{1}{8}$ " Bolts, and two of the Couplings are then placed on the Crank Handles. The bearings for the wheel consist of two Collars, one mounted on each Crank Handle and fixed as shown by means of Threaded Pins 3. Another Collar 4 is bolted to the other tapped bore at each of the first two Collars, and Grub Screws, one in each of these, form the axle for a 1" Loose Pulley fitted with a Rubber Ring.

A third Coupling is then fitted to the front ends of the Crank Handles.

The body of the barrow is formed from a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plate, the edges of which are turned up at each side. This is bolted to the rear Coupling and to it is bolted a second $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plate, which is bent upward at its front end. Two 1 " \times $\frac{1}{2}$ " Angle Brackets are bolted to

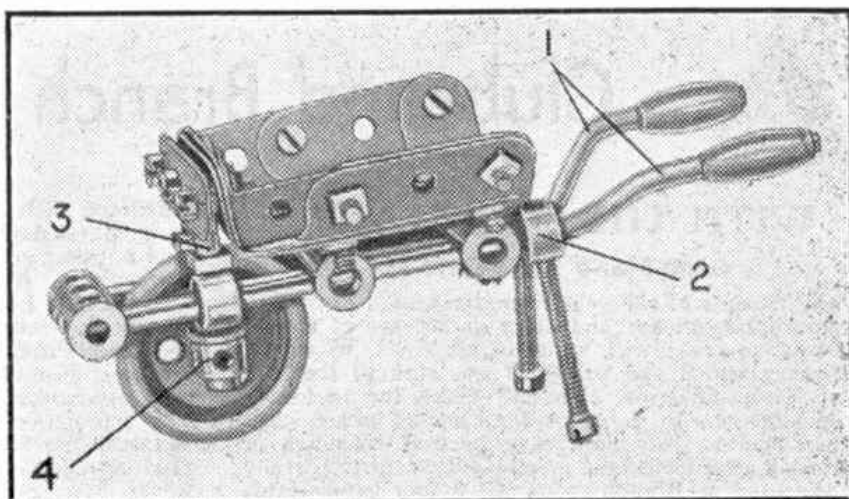


Fig. 2. A simple Meccano wheelbarrow that requires only a few parts.

the Flexible Plates, which are strengthened by fixing to them a $2\frac{1}{2}$ " and a $1\frac{1}{2}$ " Strip. The front of the body is attached by means of another $1\frac{1}{2}$ " Strip to the Threaded Pins 3.

Parts required to build model Wheelbarrow: 1 of No. 5; 4 of No. 6a; 3 of No. 12b; 2 of No. 19g; 1 of No. 22a; 12 of No. 37a; 8 of No. 37b; 2 of No. 38; 6 of No. 59; 3 of No. 63; 1 of No. 111a; 5 of No. 111c; 2 of No. 111d; 2 of No. 115; 1 of No. 115a; 2 of No. 188.

Another "Simplicity" Contest Prizes for Easily-Built Meccano Models

By "Spanner"

At this time of the year, especially if the weather is sunny, model-builders wish to spend as much time as possible in the open air. With this in mind we announce another of our "Simplicity" contests, which will be open until the end of July.

Competitions of this kind are always attractive in themselves, and there are other good reasons that will make this contest welcome and will encourage a large entry. One is that owners of small Outfits and model-builders who have been prevented by wartime regulations from adding to their stocks of Meccano Parts can figure as prominently as those with larger resources. A second is that "Simplicity" models usually can be represented by simple drawings, a great advantage now that films are difficult to obtain.

The first step in the preparation of an entry is to choose a subject that can be represented realistically by a small number of parts and to build a model of it on these lines. It is a good plan to scrutinise the result very carefully in order to see if certain parts can be missed out, or replaced by others, fewer in number perhaps,

that will give an even better effect. The prizes will go to those whose models show the best uses for the least number of parts, so that there will be plenty of scope for model-builders to exercise their ingenuity in simplifying. More than one model may be entered by any competitor, but no competitor can win more than one prize in the contest.

When the model is ready the competitor should have it photographed, or make drawings showing its general appearance and construction, and these should be forwarded, together with any notes that may be necessary, to "1944 Simplicity Model-Building Contest, Meccano Limited, Binns Road, Liverpool 13." The competitor's age, name and full address must be written on each section of his entry.

Entries will be divided into two sections, A for competitors of 15 years of age and over, and B for those under 15. In each prizes of £2/2/-, £1/1/- and 10/6 respectively, will be awarded to the best entries in order of merit, and there will be consolation prizes of 5/- each for other good efforts. The contest closes on 31st July.