as to bring a 57-tooth Gear on it into mesh with the Worm 4. Movement of this Rod is controlled by a lever 7, which is a 3½" Strip lock-nutted to an Angle Bracket bolted to one of the Flanged Plates. In this Strip is a ¾" Bolt held by two nuts, and this projects between two 1" Pulleys fixed on the Rod 6. The extent of the movements of the three sliding shafts is limited by Spring Clips placed at suitable positions on the Rods.

To complete the mechanism a Driving Band is placed round a 1" Pulley on Rod 6, then passed over a 3½" Rod 8 and round the 3" Pulley 3. Rod 8 is held by Spring Clips in Fishplates bolted to the lugs of a 2½" × 1" Double Angle Strip fixed underneath the Motor.

THE NEW MECCANO PARTS

This year, for the first time since the war, we have been able to add quite a number of new parts to the Meccano System. These have a great variety of uses and together they make a big contribution to the construction of better and more realistic models.

You cannot consider yourself up-to-date in Meccano matters until you have obtained these new parts, and have familiarised yourself with their uses, so if you have not already done so I advise you to go along to your dealer and see them as soon as you can.

In addition to the new parts and Outfits, a completely new range of Instructions Books has been published. These contain many new and attractive models in which good use is made of the new parts.

Some of the new parts have been on sale for some weeks and have already been used in new models described in the *M.M.*, but some of the others have only become available to Dealers very recently. No doubt many model-builders have already added the new parts to their stocks and have discovered for themselves their usefulness and adaptability. I have, however, been asked by some of my correspondents to give a brief description of the new parts and to mention some of their main uses, so I am taking the opportunity of doing so now.

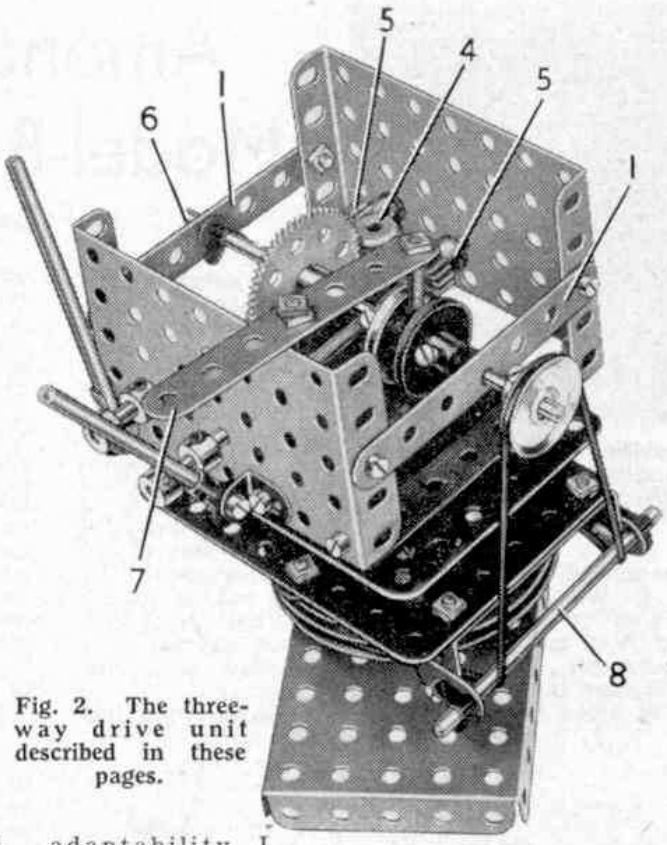


Fig. 2. The three-way drive unit described in these pages.

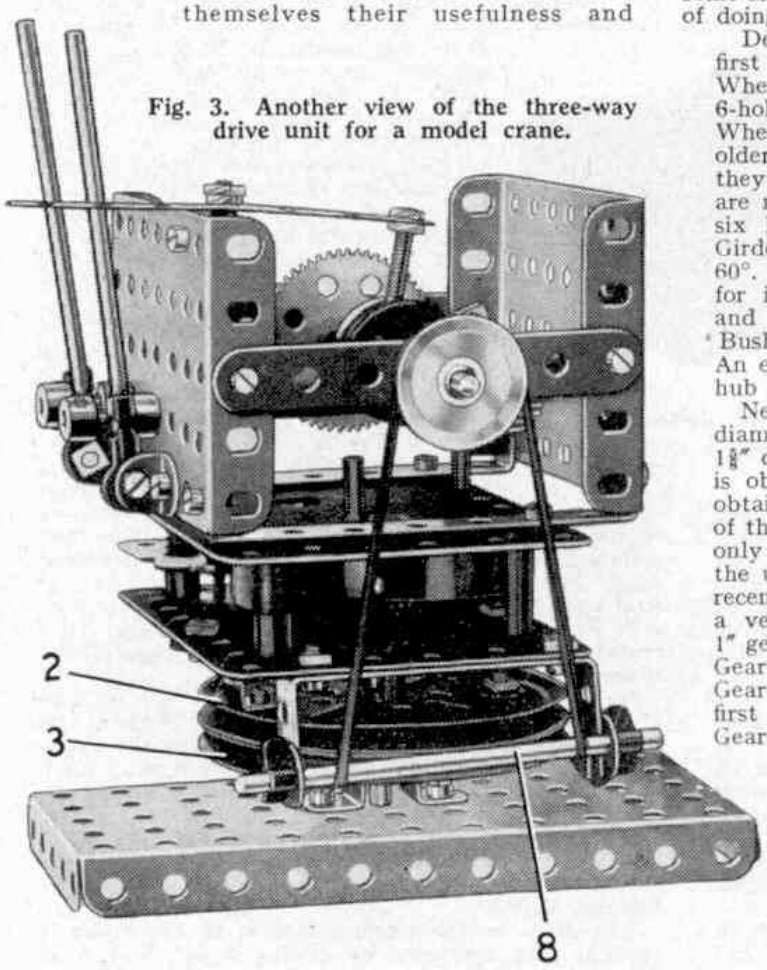


Fig. 3. Another view of the three-way drive unit for a model crane.

Dealing with the parts in catalogue order, the first to be mentioned are Part No. 24b, Bush Wheel, 6-holes, and Part No. 24c, Wheel Disc, 6-holes. These are similar to the 8-hole Bush Wheels and Wheel Discs, which are two of the older and most useful of all Meccano parts, but they can be used in cases where the older parts are not really satisfactory. The provision of only six holes in the new parts enables Strips and Girders to be bolted to them at angles of 30° and 60°. The value of this arrangement is obvious, for it is now quite easy to assemble triangular and hexagonal structures braced to a 6-hole Bush Wheel or a 6-hole Wheel Disc at the centre. An example of the new Bush Wheel in use as the hub of a three-bladed vane is shown in Fig. 6.

Next in the list are Part No. 26c, Pinion 7/16" diam., 15 teeth, and Part No. 27d, Gear Wheel, 1⅛" diam., 60 teeth. The value of these new gears is obvious, for with them a ratio of 4:1 can be obtained in a single stage. Before the introduction of these new gears a ratio of 4:1 could be obtained only by using two stages of gearing, involving the use of four separate gears. As a result of the recent introductions it is now possible to make a very compact four-speed gear-box, using two 1" gears for fourth gear, a ¾" Pinion and a 50-tooth Gear for third gear, a ½" Pinion and a 57-tooth Gear for second gear and the two new gears for first or bottom gear. The new Pinion and the Gear will mesh with other Pinions and Gears in the range, provided that bearings at correct centres are arranged.

Part No. 173a, Adaptor for Screwed Rod, is shown in use in Fig. 4. This part is somewhat similar to the existing Rod Socket, but the hole in its boss is threaded to take a standard Screwed Rod, and it has a plain shank of the same diameter as a standard Axle Rod. The primary purpose of the Screwed Rod Adaptor is to provide

a means of mounting Screwed Rods in bearings without danger of damaging their threads. In use a Screwed Rod Adaptor can be fitted to each end of a Screwed Rod and fixed in place by a nut. The plain shanks of the Adaptors then provide the equivalent of a section of standard Rod at each end of the Screwed Rod, and allow it to be journalled in the holes in Strips or Angle Girders just like an ordinary Rod.

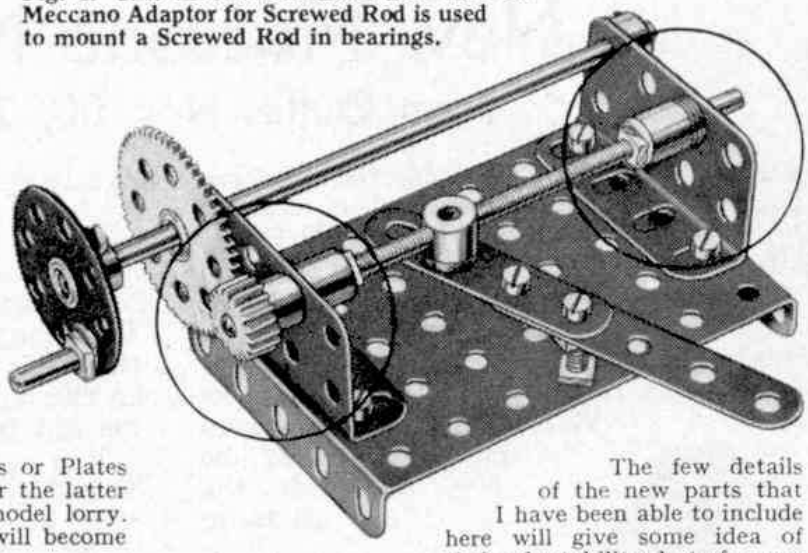
The Right-Angle Rod and Strip Connector, Part No. 212a, resembles one half of a Meccano Hinge without the hinge pin. It is provided with a hole that allow it to be bolted to other parts, and it has a rolled over tube-like end, of such a diameter that a Rod pushed into it is held tightly in place. The Right-Angle Rod and Strip Connector can be used for supporting handrails or for pivotally attaching Strips or Plates to a Rod. A typical example of its use for the latter purpose is in the hinged tailboard of a model lorry. The part has other uses of course which will become apparent in the course of model-building.

Last but by no means least in the list of new parts now available is the splendid range of Triangular Flexible Plates, Parts Nos. 221 to 226. These are available in six sizes as follows: $2\frac{1}{2}'' \times 1\frac{1}{2}''$, $2\frac{1}{2}'' \times 2''$, $2\frac{1}{2}'' \times 2\frac{1}{2}''$, $3\frac{1}{2}'' \times 1\frac{1}{2}''$, $3\frac{1}{2}'' \times 2''$ and $3\frac{1}{2}'' \times 2\frac{1}{2}''$. Together these parts give a considerable boost to the Meccano system, for they are extremely useful in modelling rounded and curved structures such as are so often required in reproducing the graceful curved outlines of modern machines and vehicles. They will deal adequately with the awkward spots in vehicle bodies where the ordinary rectangular Flexible Plates cannot be used successfully, and are ideal for filling wheel arches or edging off the mudguards of a car.

They are made of material similar to that from which the Flexible Plates are made, so that they can readily be pressed into curved form and just as readily flattened out again after use.

Another application for the Triangular Flexible Plates that may not be so obvious, however, is in making the flat plates of non-standard sizes. For instance in Fig. 5, two $3\frac{1}{2}'' \times 2''$ Triangular Flexible Plates are used to form a $3\frac{1}{2}'' \times 2''$ flat plate by bolting them together with their diagonal edges overlapped. Formerly it was necessary to use four $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates to give the same result.

Fig. 4. This illustration shows how the new Meccano Adaptor for Screwed Rod is used to mount a Screwed Rod in bearings.



The few details of the new parts that I have been able to include here will give some idea of their adaptability, but of course the applications I have mentioned by no means exhaust the possibilities of these parts in general model-building. Later on I hope to organise a competition in which prizes will be offered to readers who find the most novel and useful applications for these new parts. So it would be a good idea for you to obtain some of them right now and start experimenting on your own account!

Fig. 5. (Below) Two Triangular Flexible Plates used to form a rectangular flat plate of non-standard dimensions.

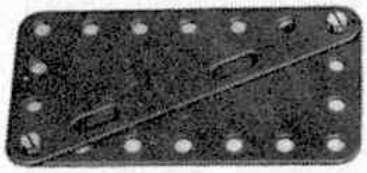
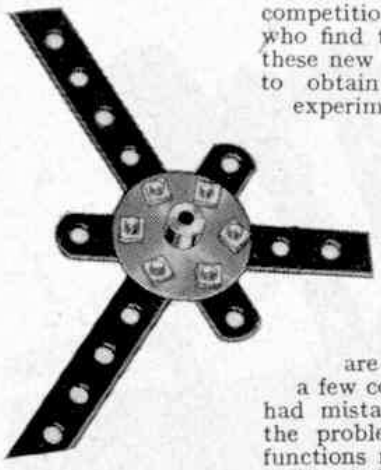


Fig. 6. (Right) The new Bush Wheel, with six holes, (Part No. 24b), used to form the hub of a three-bladed helicopter rotor.



MECCANO BRAIN TEASER (July *M.M.*)

The Prize-Winning Solution

The Meccano "Brain Teaser," of which I gave details in the *Among the Model-Builders* pages of the July *M.M.*, evidently appealed to model-builders, judging from the many letters I received containing suggestions for solving the problem. Some of the methods suggested are most ingenious, but I am sorry to say that a few competitors sent in entries showing that they had mistaken the type of mechanism called for in the problem, for their solutions did not fulfil the functions required.

The judges decided that an entry received from L. Holman, Redruth, Cornwall, was the most skilfully devised and original, and they awarded the prize of One Guinea to this competitor. Holman's mechanism is shown in Fig. 7 on this page. His solution is based on the opposed crank principle, making use of a double crank to overcome the dead-centre difficulty.

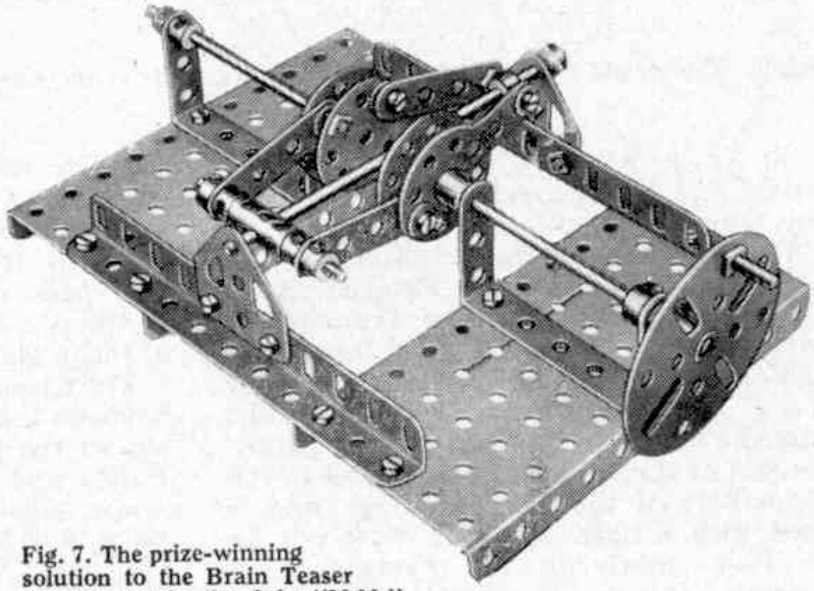


Fig. 7. The prize-winning solution to the Brain Teaser problem set in the July "M.M."