

(194)—A Mysterious Printing Machine Prizes for Solutions

There is no doubt that conjuring tricks exercise an extraordinary fascination over boys and few "M.M." readers can have witnessed some of the seemingly impossible "stunts" performed by professional illusionists without feeling the desire to imitate their efforts. The amateur conjurer who attempts the time-honoured trick of producing a rabbit from a hat or something equally hackneyed and who so often fails dismally, cuts a sorry figure. But if he performs a trick successfully, he is regarded almost as a hero—at least, by the younger members of the audience!

The device shown in Fig. 194 was suggested, by a coincidence, almost simultaneously by two Meccano boys, A. Lonnon (London, W.8) and B. Rowe (Ilford, Essex). Its operation is truly amazing at first glance. On placing a clean piece of paper between the rollers and turning one of the hand wheels the paper emerges on the other side complete with a printed reproduction of a Meccano model! Or a Bank of England note may be inserted and promptly transformed into a piece of blank paper (a result likely to produce much consternation on the part of the person who loans the note!) The operation of the model is so mystifying and yet so simple that, before describing its construction we have decided to set "M.M." readers a test so as to discover how many can solve the mystery for themselves. A prize of half a guinea will be presented to the sender of the first correct solution received and, in addition, six consolation prizes, each

consisting of a copy of the Meccano Engineer's Pocket Book, will be awarded.

To enter this novel competition all that you have to do is to write down briefly and clearly how you think the results just described are obtained. If you think a sketch will help you to explain, you may send one along. Actual

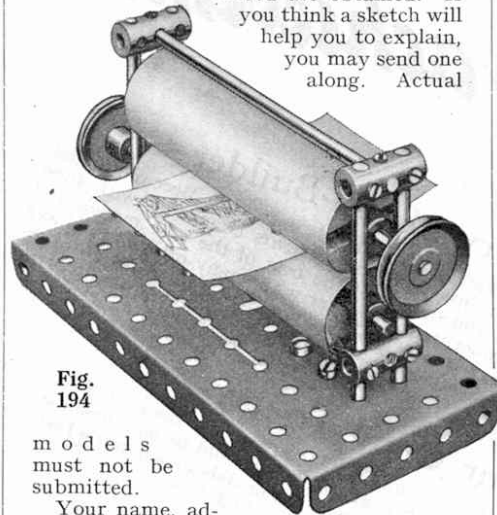


Fig. 194

models must not be submitted.

Your name, address, and age as well as the name of the competition ("Mystery Model") must appear on the back of each sheet of paper used, and envelopes must be addressed "Mystery Model" Competition, Meccano Ltd., Old Swan, Liverpool. Entries must be received not later than 31st May.

(195)—Apparatus for Drawing Ellipses

(E. Armitage, Garston, Liverpool)

To draw a circle or a straight line is, as every "M.M." reader knows, an easy matter, for in the one case compasses may be used, and in the other ruler, pencil, set-square and T-square may be employed. But when elliptical figures are to be traced, a certain amount of difficulty presents itself on account of the fact that none of the usual drawing instruments are of any practical use. With the apparatus shown in Fig. 195, however, figures of this nature may be drawn with a remarkable degree of accuracy.

Two Flat Plates 1 are bolted together face to face with $2\frac{1}{2}$ " Strips separating them so that they are free to slide upon the flanges of $9\frac{1}{2}$ " Angle Girders that are attached to vertical $2\frac{1}{2}$ " Flat Plates on the base frame of the apparatus. The Plates 1 have secured to them a Double Bent Strip, in which is journalled a short Rod carrying a Coupling. The latter carries a Rod 3, which is fitted with a second Coupling to which a third Coupling is attached by means of a 1" Rod. This 1" Rod is passed through a strip 2 before being secured in the Couplings.

The Couplings should be secured very firmly, so that the Rods 3 and 4 cannot move out of alignment with each other. The strip 2 consists of two $12\frac{1}{2}$ " Strips overlapped and bolted

together, and sliding freely in Eye Pieces that are attached to the ends of the frame.

The Rod 4 carries at one end a Small Fork Piece, in which the pencil is clamped by a $\frac{1}{4}$ " Bolt passed through the jaws. To draw an ellipse a sheet of paper is pinned to the base board of the instrument and the Rods 3 and 4 adjusted to give an ellipse of the desired width and length. The pencil is then lightly held between finger and thumb and guided over its elliptical path. The instrument can, of course, be made larger if desired, but in any case it is very important that the Couplings should be secured very firmly to the Rods, and the slide 1 and the Strip 2 should work freely, but without undue play or slackness, in their respective guides.

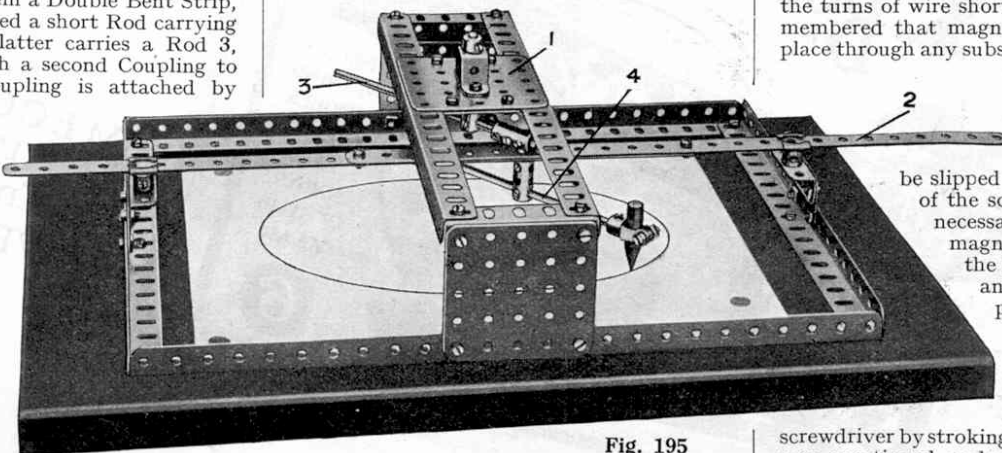


Fig. 195

Miscellaneous Suggestions

Under this heading "Spanner" replies to readers who submit interesting suggestions regarding new Meccano models or movements that he is unable to deal with more fully elsewhere. On occasion he offers comments and technical criticisms that, he trusts, will be accepted in the same spirit of mutual help in which they are advanced.

(M.86). **A Handy Foot Pump.**—An ordinary hand cycle pump may easily be converted into a useful foot pump, if the suggestion described by E. Cook (New Cheriton, Hants.) is adopted. Two Girder Frames are connected together, face to face, by three Double Brackets, and the threaded portion of the pump connector is passed through the hole of the Double Bracket joining the apices of the Girder Frames, before being screwed home into the body of the pump. The feet may be placed on either side of the device and the task of blowing up cycle tyres accomplished with ease.

(M.87). **Improvement to Chassis Clutch.**—Some of our readers assert that the Rubber Ring forming part of the clutch of the Meccano Motor Chassis (Leaflet No. 1) is likely to come off the 1" fast Pulley on which it is mounted. Whilst we have experienced no difficulty in this direction, it may be of interest to describe the way in which E. Whitmore (Tunbridge Wells) remedied the alleged fault. The 1" fast Pulley carrying the Rubber Ring is backed by a $1\frac{1}{4}$ " Flanged Wheel, so that no matter how hard the sliding portion of the clutch pushes against the Rubber Ring the latter cannot slip off its Pulley.

(M.88). **Addition to the Theodolite.**—E. Stradling (Usk, Mon.) puts forward an idea for the improvement of the Theodolite (Model No. 5.8 in the Manual of Instructions). The sighting arm, instead of consisting of one Rod, could, he points out, be composed of two Rods joined together with a short Strip, the connection between the Strip and the Rods being formed by End Bearings or Strip Couplings. If the Strip were arranged opposite the scale, the divisions on the latter could be read off with much greater accuracy than formerly.

(M.89). **Magnetic Screwdriver.**—In the building of intricate models it is often necessary to insert bolts in almost inaccessible positions. In such cases T. Hatch's (Three Rivers, Canada) suggestion for a magnetic screwdriver should prove welcome. To form the tool he wound some fine cotton-covered wire on a bobbin made from tinfoil, and placed the bobbin on the shaft of an ordinary screwdriver. The tinfoil is unnecessary, however, for the bobbin could be made much better from cardboard ends and a paper core, as this would prevent the turns of wire shorting (it should be remembered that magnetic effects can take place through any substance), or it would be

better still to use the Meccano Bobbin (part No. 301), which has the advantage that it can be slipped on and off the blade of the screwdriver. It is not necessary always to keep the magnetising current on, for the blade is of hard steel and the magnetic properties will be retained for a considerable time. R. Chappel sent in a similar idea. The magnetisation of a

screwdriver by stroking it with a bar magnet was mentioned under Suggestion No. 69.