

# New Meccano Models

## Simple Hand Loom — Bridge — Rocking Horse

THE simple hand Loom shown in Fig. 1 is begun by building the base. This consists of a  $5\frac{1}{2}" \times 2\frac{1}{2}"$  Flanged Plate mounted on two  $5\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates, which are fixed at each side between the flanges of the Flanged Plate and  $12\frac{1}{2}"$  Strips. Two  $5\frac{1}{2}"$  Strips are attached to the  $5\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates, and between their outer ends they clamp  $2\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates to vertical  $5\frac{1}{2}"$  Strips. The upper edges of the  $2\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates are bolted to the  $12\frac{1}{2}"$  Strips already mentioned. A Rod carrying at each end a Road Wheel is journalled in two vertical  $5\frac{1}{2}"$  Strips at the front of the model.

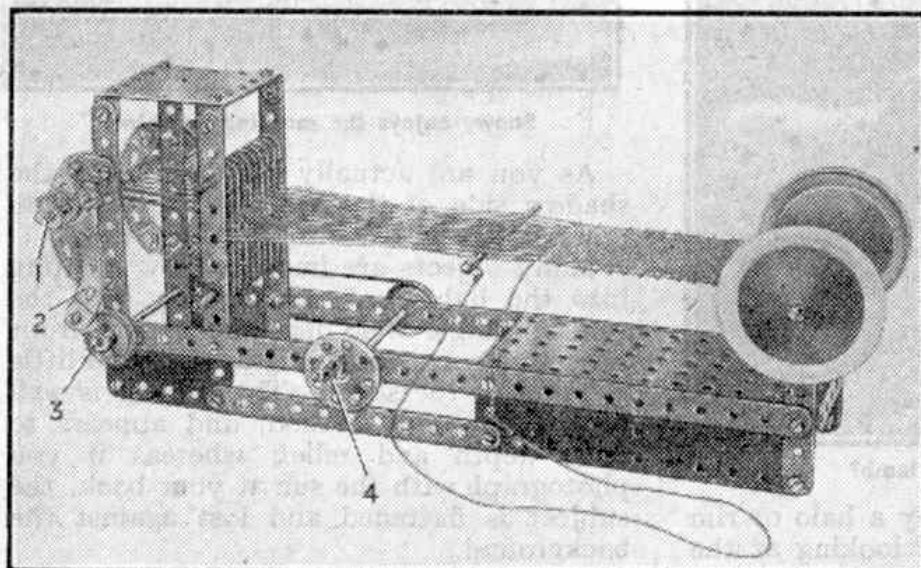


Fig. 1. A simple model hand Loom.

Construction of the warp separating mechanism at the other end of the machine is begun by attaching two  $2\frac{1}{2}"$  Curved Strips to the rear pair of vertical  $5\frac{1}{2}"$  Strips by two Fishplates, in the manner shown in the illustration. Nine  $2\frac{1}{2}"$  Strips spaced from each other by Spring Clips are then placed vertically between the middle pair of vertical  $5\frac{1}{2}"$  Strips, and a  $3\frac{1}{2}"$  Rod is pushed through their end holes as shown. The Rod 1 is passed between the Curved Strips, each end of it being secured by a Reversed Angle Bracket to a  $2\frac{1}{2}"$  Curved Strip 2, which is held in position by two Double Angle Brackets. The other ends of the Curved Strips are attached by two Angle Brackets to the bosses of two 1" Pulley Wheels locked on each end of the Rod 3.

The warp separating mechanism is

operated by turning a Crank Handle 4 journalled in the  $12\frac{1}{2}"$  Strips of the base as shown. The Crank Handle is held in place by a Bush Wheel at one end and 1" Pulley at the other. A Driving Band connects this 1" Pulley with a second Pulley on the Rod 3.

Parts required to build model Loom: 2 of No. 1; 6 of No. 2; 2 of No. 3; 9 of No. 5; 4 of No. 10; 2 of No. 11; 2 of No. 12; 2 of No. 15b; 3 of No. 16; 2 of No. 17; 1 of No. 19g; 3 of No. 22; 1 of No. 24; 6 of No. 35; 38 of No. 37a; 40 of No. 37b; 6 of No. 38; 1 of No. 40; 2 of No. 48a; 1 of No. 52; 4 of No. 90a; 2 of No. 125; 1 of No. 186; 2 of No. 187; 2 of No. 188; 2 of No. 189; 1 of No. 190; 1 of No. 213.

The roadway of the simple model bridge

shown in Fig. 2 is constructed by joining the ends of two compound girders, each comprising two  $18\frac{1}{2}"$  Angle Girders overlapping two holes, by  $4\frac{1}{2}"$  Strips. The space between the girders is filled by four  $12\frac{1}{2}" \times 2\frac{1}{2}"$  and four  $9\frac{1}{2}" \times 2\frac{1}{2}"$  Strip Plates.

The top of the main pier is formed by a  $5\frac{1}{2}" \times 2\frac{1}{2}"$  Flanged Plate, the sides of which are extended by a compound plate consisting of a  $5\frac{1}{2}" \times 1\frac{1}{2}"$  and a  $5\frac{1}{2}" \times 2\frac{1}{2}"$  Flexible Plate. At the ends of the

Flanged Plate are two  $3\frac{1}{2}" \times 2\frac{1}{2}"$  Flanged Plates. The sides and ends of the pier are fastened together by two  $2\frac{1}{2}" \times \frac{1}{2}"$  Double Angle Strips. The base of the pier consists of a second  $5\frac{1}{2}" \times 2\frac{1}{2}"$  Flanged Plate.

The girder work of the bridge is built up by bolting two  $3\frac{1}{2}"$  Angle Girders to each end of the bridge. The upper ends of these Angle Girders are then joined to  $3\frac{1}{2}"$  Strips by Curved Strips of various lengths.

The approach roadways are constructed as separate units and then fastened in position at each end of the bridge. Each unit consists of two  $5\frac{1}{2}" \times 2\frac{1}{2}"$  Flexible Plates bolted together, overlapping one hole along their sides. The sides of the compound plate so formed are strengthened by two  $5\frac{1}{2}"$  Angle Girders, the vertical flanges of which are connected by  $2\frac{1}{2}"$

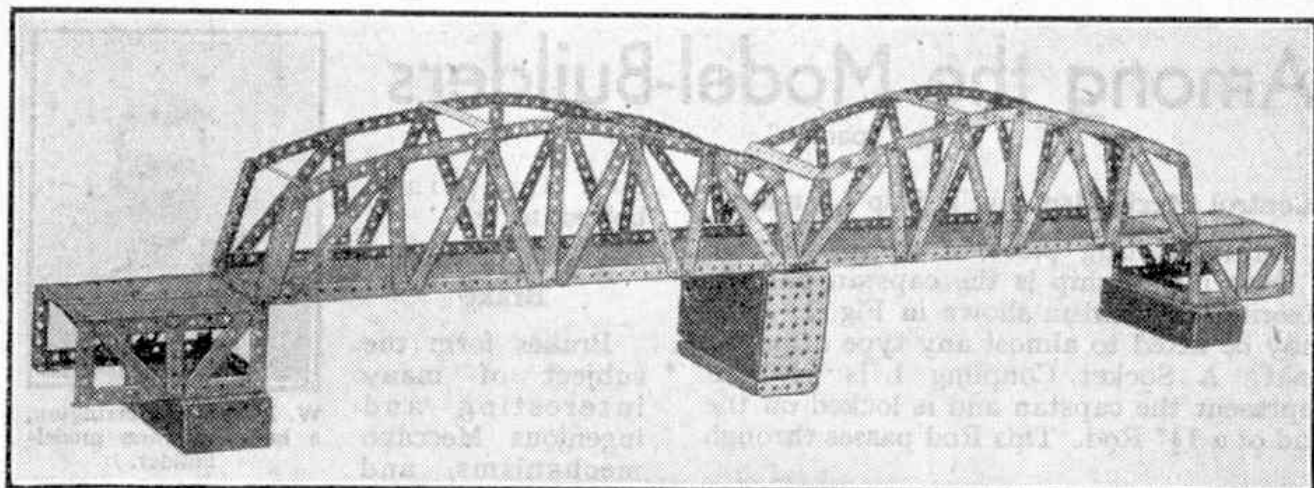


Fig. 2. A sturdy road bridge that is easy to construct.

and 3" Strips to two further  $5\frac{1}{2}$ " Angle Girders. The latter Girders are bolted to the top of a small pier built up by extending the flanges of a  $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate downwards by  $5\frac{1}{2} \times 1\frac{1}{2}$ " and  $2\frac{1}{2} \times 1\frac{1}{2}$ " Flexible Plates. When completed, the approach roadways are attached by Fishplates to the ends of the roadway of the bridge.

To complete the bridge the  $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate at the bottom of the pier is removed, and the pier and roadway can then be bolted together. The  $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate is fixed in position again by fixing a bolt on the lower flange of each  $3\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate by a nut. The  $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate can then be fitted on the bolts and secured by further nuts.

Parts required to build model Bridge: 28 of No. 2; 10 of No. 2a; 4 of No. 3; 24 of No. 4; 12 of No. 5;

8 of No. 6a; 4 of No. 7a; 8 of No. 9; 4 of No. 9a; 4 of No. 9b; 2 of No. 48a; 8 of No. 48c; 4 of No. 52; 2 of No. 53; 4 of No. 89; 4 of No. 188; 6 of No. 189; 6 of No. 192; 4 of No. 196; 4 of No. 197.

Our last model is an amusing rocking horse, which is driven by a *Magic Motor* and rocks backward and forward when the Motor is set in motion. The model is shown in Fig. 3.

The body of the horse consists of a *Magic Motor* to which two  $2\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strips and a  $2\frac{1}{2}$ " Strip are attached to form the two hind legs and one of the fore-legs. The second fore-leg is built up from two Fishplates, and is fastened to a lug of the *Magic Motor* by an Angle Bracket. Two  $5\frac{1}{2}$ " Strips curved as shown are secured to the lower ends of the legs to form rockers.

Two Flat Trunnions placed together represent the horse's head, and its neck consists of two  $2\frac{1}{2}$ " small radius Curved Strips.

The mechanism for rocking the model to and fro is very simple and consists of a  $5\frac{1}{2}$ " Strip 2 loosely attached to one of the hind legs by a bolt held in place by two nuts. The Strip 2 is connected by means of a  $2\frac{1}{2}$ " Strip 1 to a Bush Wheel fixed on the winding spindle of the *Magic Motor*. As the spindle of the Motor revolves, the Strip 2 is moved up and down so that the horse is first rocked backward as the Strip presses against the floor, and then forward under its own weight as the Strip rises. The Strips 1 and 2 are bent slightly so that they do not jam against any part of the model. The Bolts on Strip 1 are lock-nutted.

Parts required to build model Rocking-horse: 3 of No. 2; 4 of No. 5; 3 of No. 10; 3 of No. 12; 1 of No. 24; 21 of No. 37a; 16 of No. 37b; 2 of No. 48a; 2 of No. 90a; 2 of No. 111c; 2 of No. 126a; 1 *Magic Motor* (not included in Outfit No. 0).

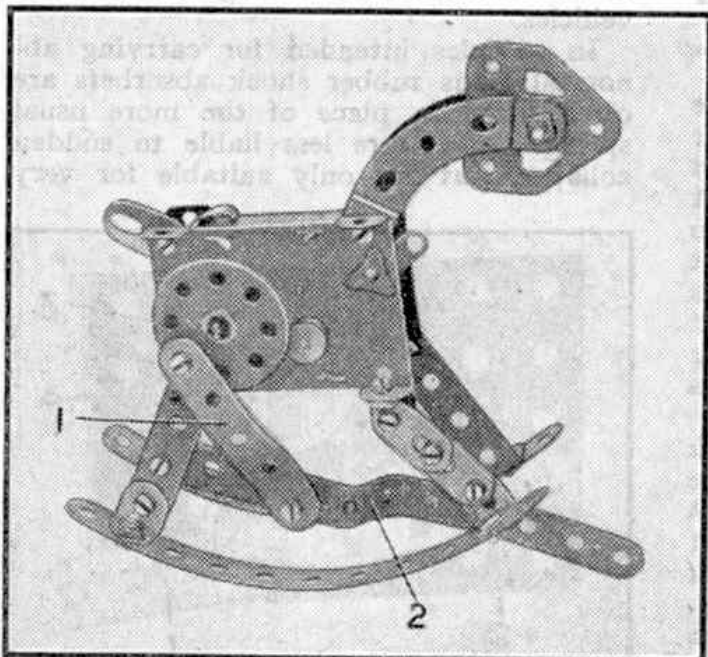


Fig. 3. When the *Magic Motor* of this rocking horse is started, the model rocks backward and forward.