HAVE FUN WITH THIS MODEL

A Meccano "Aunt Sally"

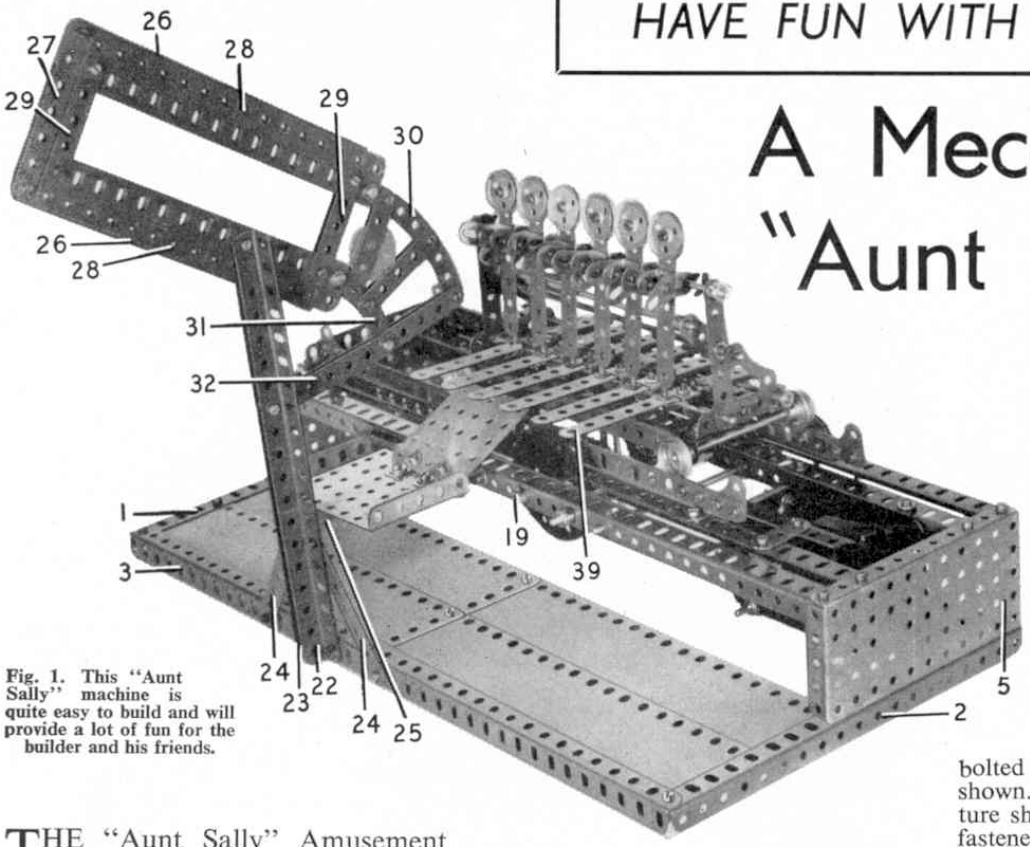

Fig. 1. This "Aunt Sally" machine is quite easy to build and will provide a lot of fun for the builder and his friends.

THE "Aunt Sally" Amusement Machine shown complete in Fig. 1 is not only an interesting and unusual model to build but, when completed, is capable of providing plenty of good fun for the builder and his friends.

The machine consists of six "Aunt Sallies" or dolls pivotally mounted on a carriage that can be driven to and fro along the bed of the machine, bringing each doll in turn in front of a slide mounted at the front side of the model.

The game consists in placing a Wheel Disc in the slide and so timing things that the Disc runs down the slide and strikes one of the dolls, knocking it over. Each competitor is given seven Wheel Discs and with these he tries to knock down all six dolls as they move along. To do this requires skill and good timing in releasing the Discs at the correct moment.

The operation of the mechanism is as follows: When the Wheel Disc emerges from the slide it falls, or rather should fall, depending on the player's timing, on to a Strip 39 pivotally mounted on the carriage, one such Strip being below each doll. The Strip is provided with a $\frac{3}{8}''$ Bolt in its centre hole, and this acts as a "stop" to keep the doll upright. When the Strip is depressed by the weight of the Disc falling on it, the $\frac{3}{8}''$ Bolt disengages the doll and allows it to tumble forward. When all the dolls have been knocked down they can be restored to the upright position again by operating a lever attached to Rod 43 (Fig. 1).

Constructional details of the model are as follows:

Framework

Two $9\frac{1}{2}''$ Angle Girders 1 and 2 are bolted to the ends of four $18\frac{1}{2}''$ Angle Girders, two of which, marked 3 and 4, are shown in the illustrations. The two $18\frac{1}{2}''$ Angle Girders not shown support the four $9\frac{1}{2}'' \times 2\frac{1}{2}''$ Strip Plates seen in Figs. 1 and 3. To each $9\frac{1}{2}''$ Angle Girder is bolted a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 5 and 6, and to these are attached four $18\frac{1}{2}''$ Angle Girders 7, 8, 9 and 10.

Two $12\frac{1}{2}''$ Angle Girders 11 and 12, each end of which is extended by a 2″ Slotted Strip and a 1″ Corner Bracket, are fastened to the $18\frac{1}{2}''$ Angle Girders 8 and 10.

An E15R Electric Motor is bolted to the Angle Girders 8 and 9 as shown. A $\frac{1}{2}''$ Pulley Wheel on the armature shaft drives, by a belt, a $1\frac{1}{2}''$ Pulley fastened to a $4\frac{1}{2}''$ Rod 13, which also has a $\frac{1}{2}''$ Pulley 14 attached to it. A $6\frac{1}{2}''$ Rod 15 carries a $\frac{7}{16}''$ Pinion 16 and a 1″ Pulley 17. The Pulleys 14 and 17 are connected with a Driving Band.

The Pinion 16 drives a 60-toothed Gear Wheel 18 on a $6\frac{1}{2}''$ Rod, which carries also two $\frac{1}{2}''$ Pinions driving $2\frac{1}{2}''$ Gear Wheels mounted on two 3″ Rods 19 (Figs. 1 and 3).

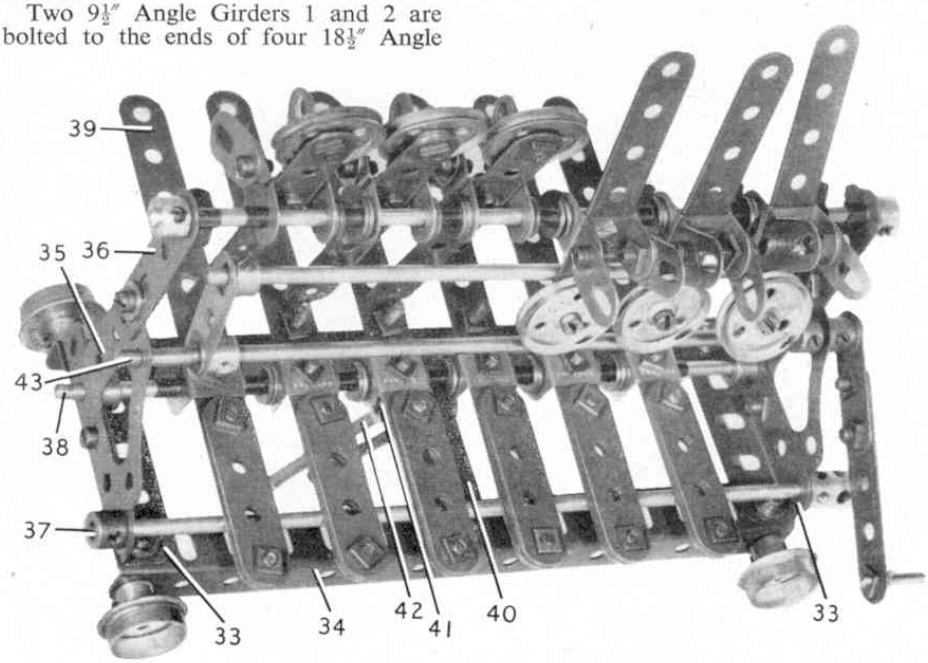

Fig. 2. Details of the six dolls and the travelling carriage.

On each of these Rods, a 1″ Sprocket Wheel is secured, spaced with a Collar. Two 2½″ Rods 20 also carry 1″ Sprocket Wheels and Collars. The two sets of Sprocket Wheels are connected together by endless Chains, each having the same number of links.

On each Chain a Double Bracket is fixed with a bifurcated paper clip. A Collar, placed between the lugs of each Double Bracket, holds the 2″ Rod 21 in position.

The Disc Slide

To make the disc slide bolt two 9½″ Angle Girders 22 and 23 to the Angle Girder 3. These are braced by two 3½″ Strips 24 and two 4½″ Double Angle Strips 25 (Fig. 1). A 3½″×2½″ Flanged Plate is extended by a 2½″×2½″ Flat Plate attached to it by Obtuse Angle Brackets. Two pairs of 7½″ Flat Girders 26 are connected together by two 3½″ Strips 27. A 7½″ Flat Girder 28 is placed on both sides of the Flat Girders 26, forming a slot and runway which is adjusted so that it will take a Wheel Disc freely. These Flat Girders are bolted in place with two pairs of 2½″ Strips 29. In between the outer Flat Girders are bolted two 4″ Curved Strips 30 and two 2½″ Curved Strips 31. Three pairs of 2½″ Strips join the Curved Strips together. A Wheel Disc should now travel down and out of the slide without obstruction. The slide is bolted to the Angle Girders 22 and 23, and held at the correct angle by means of the two 3½″ Strips 32 (Fig. 1).

The Doll Carriage

Two 2½″ Angle Girders 33 (Fig. 2) are bolted on top of two 7½″ Angle Girders 34. The Angle Girders 33 are extended with a Corner Gusset 35 and a 2″ Slotted Strip 36. An 8″ Rod 37 is placed in the Angle Girders 33 as shown, and is held in position by a Collar and a Coupling. Another 8″ Rod 38 supports six lever units, each built as follows:

To a 5½″ Strip 39 a Double Bracket is bolted, and three 2″ Strips are added to one end to form a weight to keep the Strip 39 resting on the Rod 37. Each Strip has a ⅜″ Bolt and nut in its centre hole, and this forms a stop to hold the doll vertical. The lever units are spaced away from each other on the Rod 38 by four Washers and a Spring Clip. A 2½″ Strip 40 (Fig. 2) bolted across the Angle Girders 34 carries a Coupling 41 that supports two 3½″ Rods 42. The Coupling is held with a ⅜″ Bolt secured in its centre threaded hole.

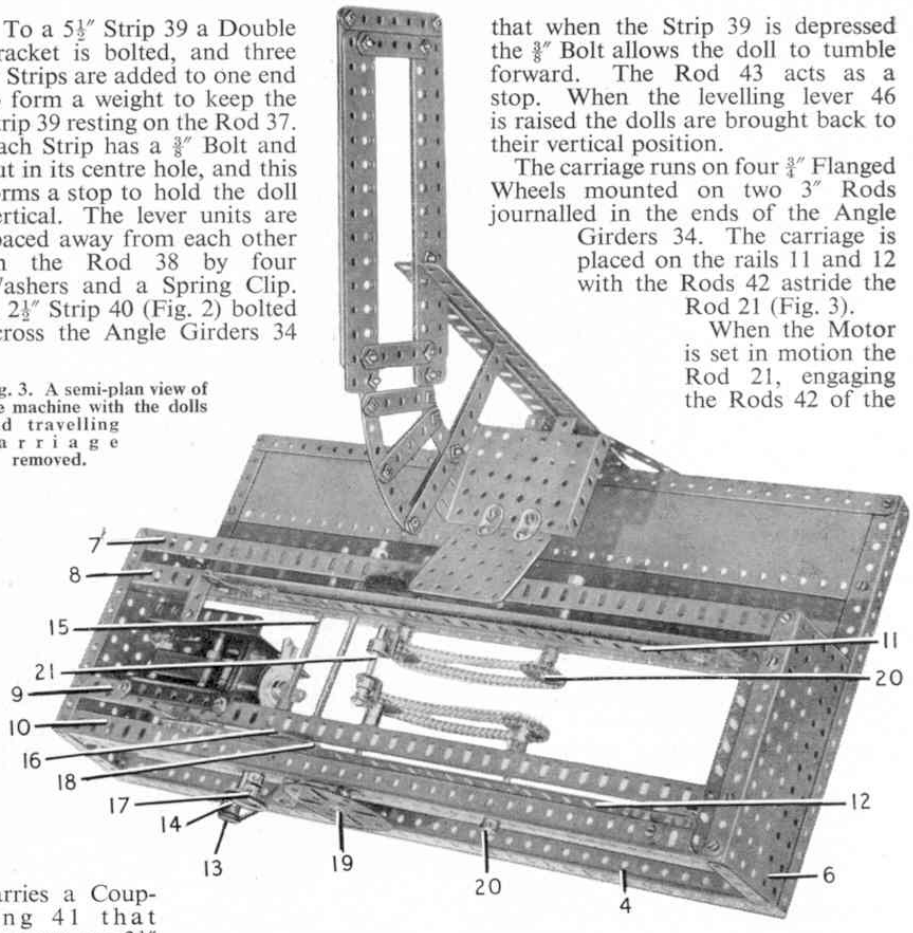

Fig. 3. A semi-plan view of the machine with the dolls and travelling carriage removed.

The Doll Levelling Lever

Two Cranks 44, supporting a 6½″ Rod 45, are fastened to the ends of an 8″ Rod 43. Another Crank 46, extended by a 2½″ Strip and a Threaded Pin, is secured to the Rod 43 so that the Cranks 44 are in a vertical position when the 2½″ Strip is resting on the Coupling as shown.

The Dolls

Each doll is built by bolting two Double Brackets to a 3½″ Strip 47 (Fig. 4). Fishplates are attached to the lugs of the front Double Brackets to represent arms. The head is represented by a 1″ loose Pulley.

The six dolls are placed on an 8″ Rod 48, with four Washers and a Spring Clip between each one. The height of the Rod 48 is so adjusted that when the Strip 39 is depressed the ⅜″ Bolt allows the doll to tumble forward. The Rod 43 acts as a stop. When the levelling lever 46 is raised the dolls are brought back to their vertical position.

The carriage runs on four ¾″ Flanged Wheels mounted on two 3″ Rods journalled in the ends of the Angle Girders 34. The carriage is placed on the rails 11 and 12 with the Rods 42 astride the Rod 21 (Fig. 3).

When the Motor is set in motion the Rod 21, engaging the Rods 42 of the carriage, hauls the carriage along. The Motor must be reversed at the end of each traverse of the carriage.

Parts required to build the Aunt Sally Machine: 6 of No. 2; 12 of No. 3; 13 of No. 5; 22 of No. 6; 1 of No. 6a; 8 of No. 7a; 2 of No. 8; 4 of No. 8a; 2 of No. 8b; 1 of No. 9a; 2 of No. 9d; 12 of No. 10; 22 of No. 11; 2 of No. 12c; 4 of No. 13a; 3 of No. 14; 1 of No. 15a; 2 of No. 16; 4 of No. 16a; 2 of No. 16b; 1 of No. 17; 4 of No. 20b; 1 of No. 21; 1 of No. 22; 6 of No. 22a; 2 of No. 23a; 2 of No. 26a; 1 of No. 26c; 2 of No. 27c; 1 of No. 27d; 16 of No. 35; 136 of No. 37a; 121 of No. 37b; 57 of No. 38; 2 of No. 48b; 2 of No. 52; 1 of No. 53; 2 of No. 55a; 21 of No. 59; 3 of No. 62; 2 of No. 63; 1 of No. 72; 2 of No. 89b; 2 of No. 90; 4 of No. 96; 8 of No. 103k; 2 of No. 108; 15 of No. 111c; 1 of No. 115; 5 of No. 133a; 2 of No. 186; 4 of No. 196; 2 Bifurcated Paper Clips; 1 E15R Electric Motor.

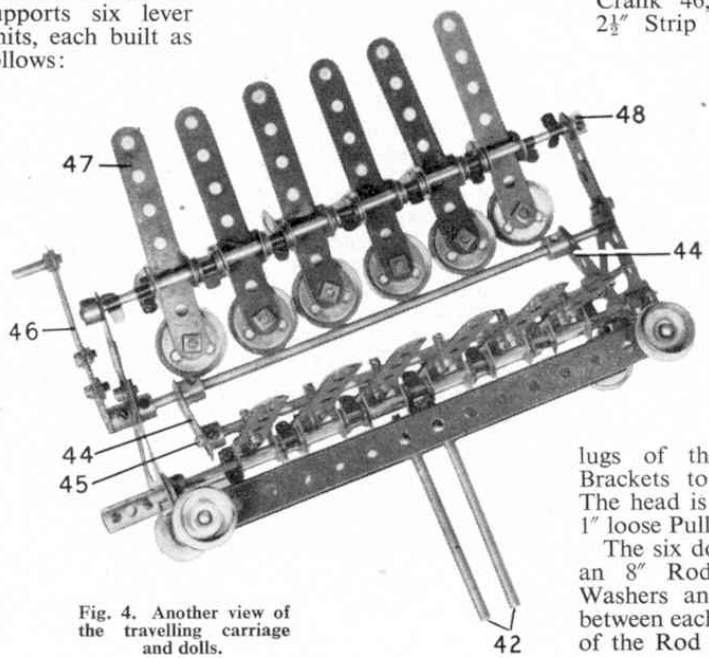

Fig. 4. Another view of the travelling carriage and dolls.

There is always something fascinating about card tricks. **How to Do Card Tricks and Entertain People,** written by Harry Baron, a member of the International Brotherhood of Magicians, lets the reader in on secrets that many young would-be magicians would love to know. Priced at 15/–, and published by Nicholas Kaye Ltd., it contains more than 90 pictures and drawings.