

New Meccano Model

A Performing Conjurer

THE Meccano conjurer shown in Fig. 1 provides an excellent means of entertaining your friends at the Christmas party. The model is quite simple to build and when set in motion, the conjurer goes through the entire routine of performing a mystifying trick, in which a miniature playing card is made to disappear and reappear in a most magical manner!

The sides of the base of the model are made from $12\frac{1}{2}$ " Angle Girders joined at their ends by 3" Angle Girders, and filled

vertically to Angle Girder 1, and two $12\frac{1}{2}$ " Angle Girders 3 are fixed to its outer ends. Girders 2 and 3 are joined by a $12\frac{1}{2}$ " Angle Girder 4 and a $12\frac{1}{2}$ " Strip 5, and the space between Girders 2 and 3 on each side is filled by a $12\frac{1}{2}$ " Braced Girder. The framework formed by the Girders is completed by two $5\frac{1}{2} \times 3\frac{1}{2}$ " Flat Plates 6 and Curved Strips on each side.

The body of the conjurer is made from two $5\frac{1}{2} \times 2\frac{1}{2}$ " Flexible Plates bolted together, and curved at their outer edges to form a shallow U-shaped piece. An Angle Bracket is bolted to each side of the body in the third hole from the top, and these are fixed to the Strip 5. The legs are formed from five $5\frac{1}{2}$ " Strips. Two of these on each side are bolted to a $1" \times \frac{1}{2}"$ Angle Bracket at the top, and to a Double Bracket at their lower ends. The bolts holding the Strips to the Double Bracket hold also $1\frac{1}{2}"$ Strips that represent the foot. The legs are connected together by Double Brackets bolted between the feet, and the Double Brackets are then fixed to the base. A gap of approximately $\frac{1}{2}"$ is left between the body and the legs. The head is a 2" Pulley attached to a Fishplate bolted to the body.

A $3\frac{1}{2}"$ Rod is passed through the upper holes of the body and fitted with a Crank 8 extended by a $2\frac{1}{2}"$ Strip, and two Cranks 9 also extended by $2\frac{1}{2}"$ Strips. A balance weight of heavy parts is attached by Cord to the extension of Crank 8. A 3" Strip is fixed to each of the $2\frac{1}{2}"$ Strips extending Cranks 9, and a small piece of cloth is attached to the outer ends of the 3" Strips by bolts.

The model is operated by an E20R Electric Motor bolted to Girders 7 underneath the base. A $\frac{1}{2}"$ Pinion on the Motor shaft engages a 57-tooth Gear on a 3" Rod. This Rod is fitted also with a Worm, which meshes with a 57-tooth Gear on Rod 11. Bearings for Rod 11 are provided by two $1" \times 1"$ Angle Brackets, one of which is bolted direct to the Motor, while the other is fixed to a $3" \times 1\frac{1}{2}"$ Flat Plate forming an extension of the Motor side-plate.

A $\frac{3}{4}"$ Pinion 12 on Rod 11 engages a $2\frac{1}{2}"$

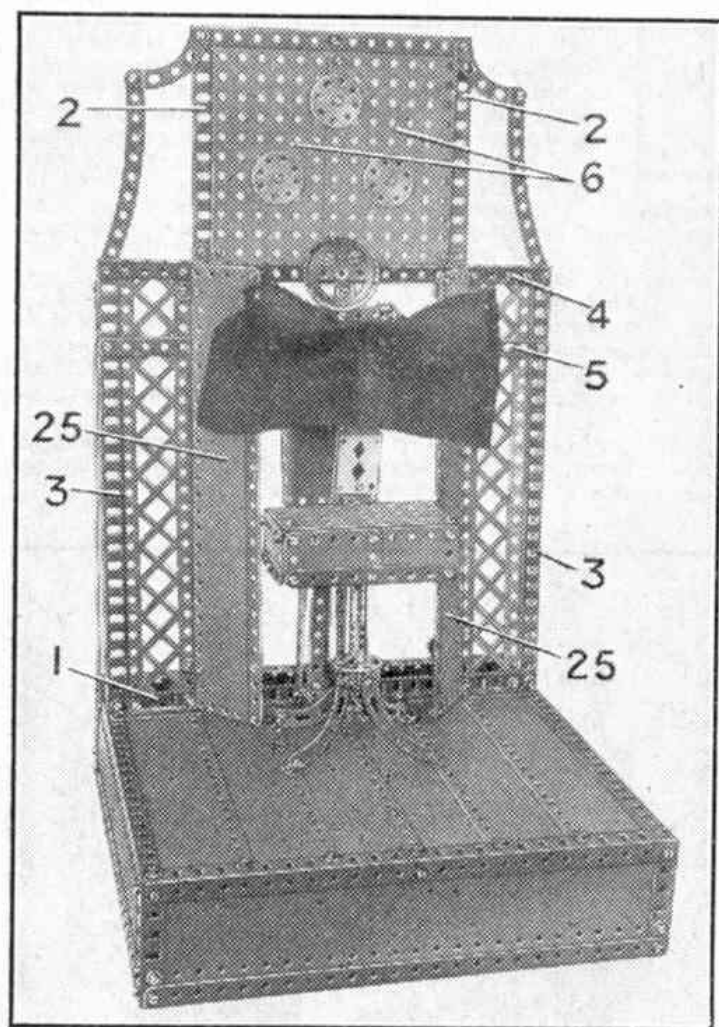


Fig. 1. The Meccano Conjurer described in these pages is an excellent fun provider for a Christmas Party.

in by $12\frac{1}{2} \times 2\frac{1}{2}"$ Strip Plates. The sides are bolted together to form a square, and a $12\frac{1}{2}"$ Angle Girder 1, flange uppermost, is bolted across the top. The top is completed by six $9\frac{1}{2} \times 2\frac{1}{2}"$ Strip Plates strengthened by $9\frac{1}{2}"$ Angle Girders 7.

Two $18\frac{1}{2}"$ Angle Girders 2 are bolted

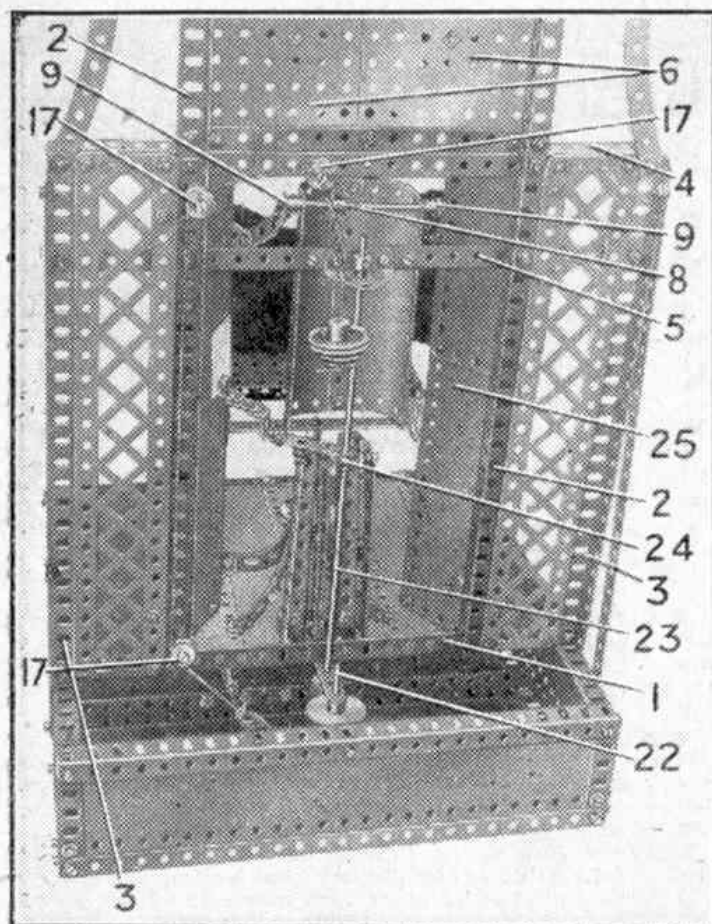


Fig. 2. The Conjurer seen from the rear.

Gear on Rod 13. This Rod is mounted in a Flat Trunnion bolted to a $12\frac{1}{2}$ " Angle Girder 14, and it is connected by a Coupling to a Crankshaft 15. The Crankshaft is supported in a Flat Trunnion bolted to a $12\frac{1}{2}$ " Angle Girder 16.

A piece of Cord is tied to a Fishplate loosely held between Spring Clips on the Crankshaft, and is taken over three $\frac{1}{2}$ " loose Pulleys 17 and tied to the Crank 8. This arrangement raises and lowers the conjurer's arms as the Crankshaft is driven by the Motor. The $\frac{1}{2}$ " loose Pulleys are mounted on $1\frac{1}{8}$ " Bolts fixed by nuts to the framework.

A $\frac{3}{4}$ " Sprocket on Rod 13 is linked by Chain to a similar Sprocket on a Rod 18, which is mounted in Flat Trunnions bolted to Girder 14 and a similar Girder 19. The Rod 18 is fitted with a Double Arm Crank, that carries in its round hole a Threaded Pin 20. As the Crank turns the Threaded Pin contacts one of four other

Threaded Pins fixed in a Bush Wheel 21, and thus rotates the Bush Wheel approximately a quarter turn for each revolution of Rod 18.

The Bush Wheel 21 is fixed on Rod 22, mounted in a 2" Strip bolted to Girder 1 and in the $12\frac{1}{2}$ " Angle Girder 16. This Rod carries also a 50-tooth Gear engaging a $\frac{3}{4}$ " Pinion on $11\frac{1}{2}$ " Rod 23, which is fitted with a Crank 24 extended by a $1\frac{1}{2}$ " Strip. A Reversed Angle Bracket is attached to the $1\frac{1}{2}$ " Strip, and a Fishplate bolted to the Reversed Angle Bracket carries an Angle Bracket to which a playing card is fixed by a bolt.

The arrangement of the gearing ensures that during each complete cycle of the arm movement, the Crank 24 supporting the card makes half a turn. Thus when the arms and cloth are raised to disclose the card, the next movement results in the card swinging out of sight behind the figure, to re-appear after the next cycle.

Light pressure on Rod 23 is maintained by a Compression Spring held between a Collar and the Trunnion. This prevents the arm from swinging too far due to its own momentum. The wings 25 serve to conceal the swinging movement of the arm, and the angle at which they are placed should be adjusted to hide the mechanism effectively.

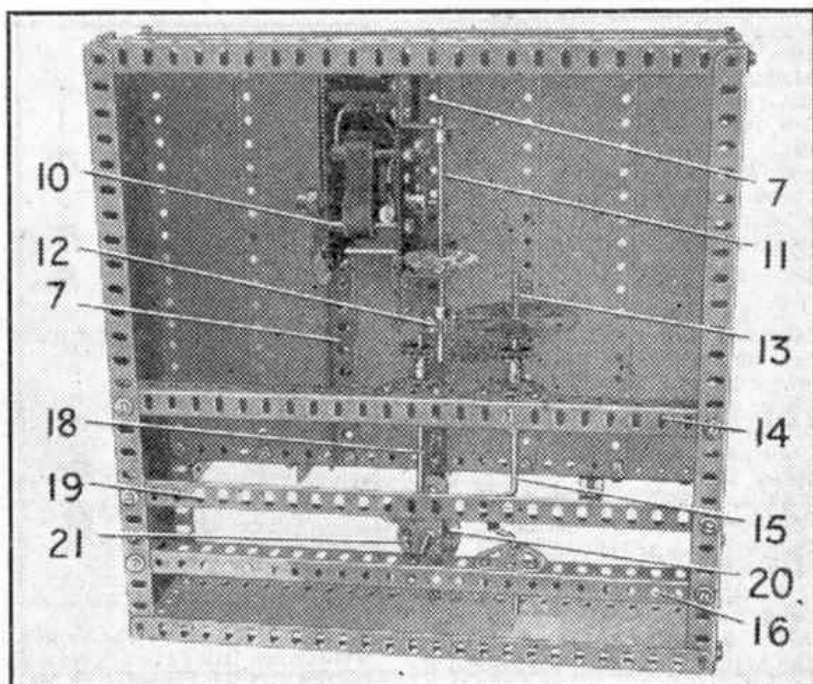


Fig. 3. An underneath view of the base of the Meccano Conjurer, showing the driving Motor and arrangement of the gearing.