

Electric Dockyard Crane

Part 2

A No.10 Set model built & described by B.N. LOVE

In the first part of this feature, published in the July MM, we gave building instructions for the bogies and travelling tower of this highly impressive No. 10 Set model. Now we conclude the building instructions by covering the boom, the upper part of the turntable, the machinery house, the travelling crab and the hoist system.

MAIN BOOM

CENTRE PORTION

Figs. 10, 11 and 13 show the simple box structure and upper turntable ring forming the centre portion of the boom and of these, the turntable ring should be constructed first. A 'flexible joint' arrangement is used here by attaching a large Flanged Ring to a sandwich of two 6" Circular Plates via four 3½" x 2½" Flexible Plates 40 as shown in Fig. 10. This allows the inevitable flexing of the boom under load without distorting the centralising of the gear drive to the turntable. 2½" Curved Strips 41 are overlaid on the slotted holes of the Flexible Plates for additional anchoring where they are attached to the Flanged Ring. Four Double Arm Cranks 42 are bolted to the Circular Plates, as shown, and they carry 2½" or 3" Rods to form a 'cage' axle adding considerable rigidity to the central drive and ensuring that the 3½" Gear Wheel 43 cannot slip. All four rods are locked into their Double Arm Cranks, but only two of them are fixed to the 3½" Gear Wheel by means of Rod Sockets, the other two Rods simply protruding through the Gear by a few millimetres. When securing the inner Bolts, an 8-hole Bush Wheel is inserted through the Circular Plates' centre holes and fitted with a 4" Rod which is also

locked into the boss of the 3½" Gear Wheel, allowing about one inch of Rod beyond the boss. This extension will locate the upper turntable ring in the 8-hole Wheel Disc which is already mounted in the centre of the lower portion of the turntable.

At this stage, the electrical pick-up is fitted for power to the hoisting motor. Fig. 11 shows a second 5½" Circular Girder 44 suspended and insulated by a pair of 5½" x 1½" Plastic or Transparent Plates, 1½" below the first Circular Girder. A feed wire is bolted to the insulated Circular Girder and passed up

eventually to one terminal of the Powerdrive Motor in the machinery house. Modern Meccano is well enamelled so the second terminal of the motor is fitted with an 'earth' (chassis) return lead fastened by a Bolt and lock-nut into a Collar at the top end of the Axle Rod passing through the 3½" Gear Wheel. This ensures a good return path for the power supply to the crane tower.

Fig. 13 shows the central portion of the boom which is of box construction, the base being a pair of 5½" x 2½" Flanged Plates, upside down and secured at the extreme ends of the 9½" Angle Girders 45 shown externally. Standing vertically at the four corners of this 5½" x 9½" base are 5½" Angle Girders 46 sandwiched between the 9½" Girders and the Flanged Plates. Four vertical 5½" x 2½" Flexible Plates reinforce the uprights, overlaid by 5½" Strips and spaced by another pair of similar Strips horizontally to form the windows of the central section. Transparent Plates and 2½" Narrow Strips complete the windows and the construction is clear from Fig. 13.

At this stage, the first of the long girder sections is fitted by placing 18½" Angle Girders

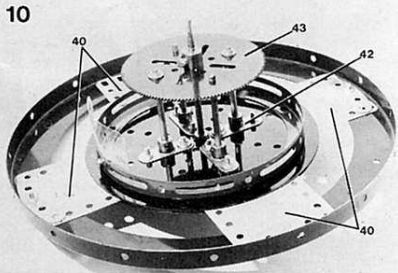


Fig. 10, above, and Fig. 11, below left, show the upper ring of the turntable, Fig. 11 showing it fixed in place to the underside of the boom. Note the 'flexible joint' provided by Flexible Plates 40 which allows flexing of the boom without distorting the centralising of the gear drive to the turntable. Fig. 12, below right, a close-up view of the forward boom showing the crab trolley in position. Note the liberal cross-bracing of the boom.

