

# A Fine New Meccano Crane

THE large hammerhead crane described and illustrated on this page is a fine model that Meccano enthusiasts will enjoy building and operating. It is driven by an E1 or E120 Electric Motor, and is easy to construct. There is indeed no need to explain in detail how the tower and boom are constructed, as this can be seen readily from the upper of our two illustrations.

The gear-box used in the model to allow the different

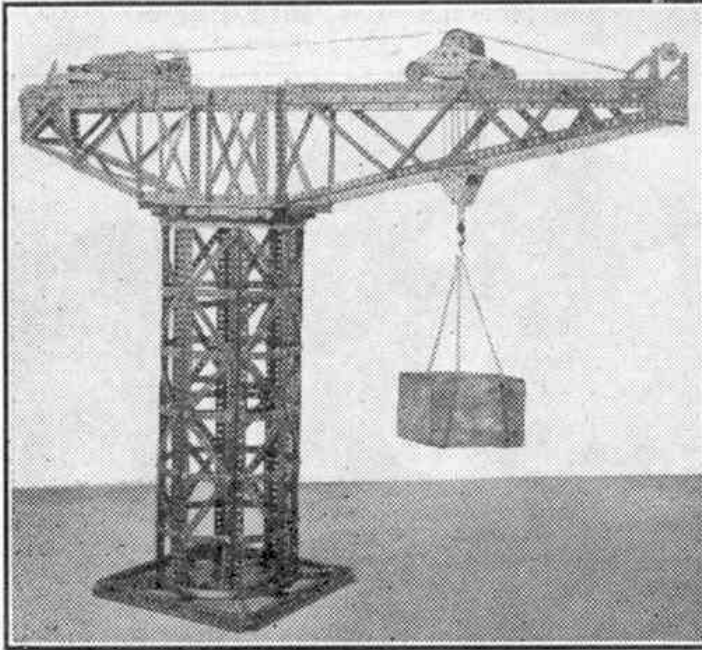


Fig. 1. A fine model hammerhead crane.

movements to be carried out is shown in plan in Fig. 2. The Electric Motor is secured in the position shown and is spaced from the Plates by four washers. A Worm mounted on the armature shaft remains in constant engagement with a  $\frac{1}{2}'' \times \frac{1}{4}''$  Pinion on a  $4\frac{1}{2}''$  Rod 1 journalled in  $1'' \times 1''$  Angle Brackets. This Rod is slideable in its bearings and carries the members of the reversing gear, two  $\frac{3}{4}''$  Contrates which move in and out of mesh with a  $\frac{1}{2}'' \times \frac{1}{4}''$  Pinion 2.

The reversing lever consists of a  $1''$  Rod carrying a Handrail Support that engages between the bosses of the  $\frac{1}{2}'' \times \frac{1}{4}''$  Pinion and one of the  $\frac{3}{4}''$  Contrates. This Rod is fixed on a Collar lock-nutted to a second Collar by means of a  $\frac{3}{4}''$  Bolt, a support for the latter being provided by a Handrail Support fixed to the gear-box. A  $2''$  Screwed Rod is locked in the tapped bore of the second Collar and is pivotally attached by a Swivel Bearing to a  $4\frac{1}{2}''$  Rod 3. The latter is journalled in  $1''$  Triangular Plates bolted to the Motor sideplates, and carries a Handrail Coupling. A Pendulum Connection 4 bent to the shape shown engages with the  $2''$  Screwed Rod.

Pinion 2 is mounted on a  $3\frac{1}{2}''$  Rod 5 that is slideable in its bearings. The selector 6 is formed from a  $2\frac{1}{2}''$  Strip lock-nutted to the side of the gear-box, and also to a  $5\frac{1}{2}''$  Strip that is pivoted to a Collar fixed on a  $1\frac{1}{2}''$  Bolt inserted in the tapped bore of another Collar. The latter is mounted on a  $5''$  Rod that also carries a Collar fitted with a  $\frac{3}{4}''$  Bolt, the head of which engages between two Collars on the Rod 5. On moving the selector 6 forward a  $\frac{1}{4}''$  Bevel mounted on the Rod 5 meshes with

a similar Bevel mounted on a  $3\frac{1}{2}''$  Rod 7. This also carries a  $\frac{3}{4}''$  Pinion, which meshes with a 50-teeth Gear on a  $3\frac{1}{2}''$  Rod 8. The drive is then transmitted from Rod 8 through a Worm and  $\frac{1}{2}''$  Pinion to a vertical  $9\frac{1}{2}''$  compound rod consisting of a  $4\frac{1}{2}''$  and a  $5''$  Rod joined by a Coupling. The bearing for the lower end of this Rod is provided by a Handrail Support fixed to the boom. A Pinion for Roller Bearing is mounted on the lower end of this Rod and engages with the teeth of the lower race.

By pulling the selector 6 to the rear the drive is transmitted to a  $2\frac{1}{2}''$  Rod 9 through a  $1''$  Gear mounted on Rod 5 and a similar Gear on Rod 9. The latter Gear meshes with a further  $1''$  Gear fixed to a  $6\frac{1}{2}''$  Rod 10 that is slideable in its bearings. The selector 11 for this Rod is similar to selector 6. A  $\frac{1}{2}''$  Pinion on Rod 10 meshes with either a  $\frac{1}{2}''$  Pinion 12, or a similar Pinion 13 that are free on a common Rod. The latter is attached by means of a Socket Coupling to a Worm meshed with a  $\frac{1}{2}''$  Pinion on a  $5''$  Rod fitted with a  $1''$  Sprocket Wheel 14. The Rod of Pinion 12 also carries a Worm meshed with a 57-teeth Gear on the Rod of the hoisting drum.

Parts required to build model Hammerhead Crane: 6 of No. 1a; 17 of No. 1b; 43 of No. 2; 40 of No. 3; 2 of No. 5; 26 of No. 7; 15 of No. 8; 2 of No. 8a; 14 of No. 8b; 17 of No. 9; 5 of No. 9a; 5 of No. 9b; 2 of No. 9c; 6 of No. 12; 3 of No. 12a; 8 of No. 12b; 2 of No. 14; 4 of No. 15; 8 of No. 15a; 3 of No. 16; 2 of No. 16a; 2 of No. 17; 2 of No. 18b; 7 of No. 20; 4 of No. 20a; 3 of No. 21; 1 of No. 23; 1 of No. 24; 1 of No. 25; 1 of No. 25a; 5 of No. 26; 1 of No. 26a; 1 of No. 27; 1 of No. 27a; 2 of No. 29; 2 of No. 30; 3 of No. 31; 4 of No. 32; 504 of No. 37a; 471 of No. 37b; 152 of No. 38; 2 of No. 40; 3 of No. 48; 4 of No. 48b; 2 of No. 52; 3 of No. 52a; 1 of No. 53a; 1 of No. 57; 1 of No. 57b; 37 of No. 59; 1 of No. 63; 1 of No. 63b; 1 of No. 70; 2 of No. 76; 3 of No. 77; 2 of No. 80c; 1 of No. 81; 2 of No. 94; 2 of No. 96; 1 of No. 100; 8 of No. 103b; 3 of No. 103c; 4 of No. 108; 3 of No. 111; 1 of No. 111a; 9 of No. 111c; 2 of No. 113; 6 of No. 133; 1 of No. 133a; 7 of No. 136; 1 of No. 136a; 8 of No. 139a; 1 of No. 146; 2 of No. 161; 1 of No. 165; 1 of No. 167; 2 of No. 167b; 1 of No. 171; 3 of No. 172; 1 of No. 182; 1 of No. 182a; 1 of No. 216; 7 of Elektron Part No. 1562; 2 of No. 1563; 1 of No. 1566; 7 of No. 1573; 1 E1 or E120 Electric Motor.

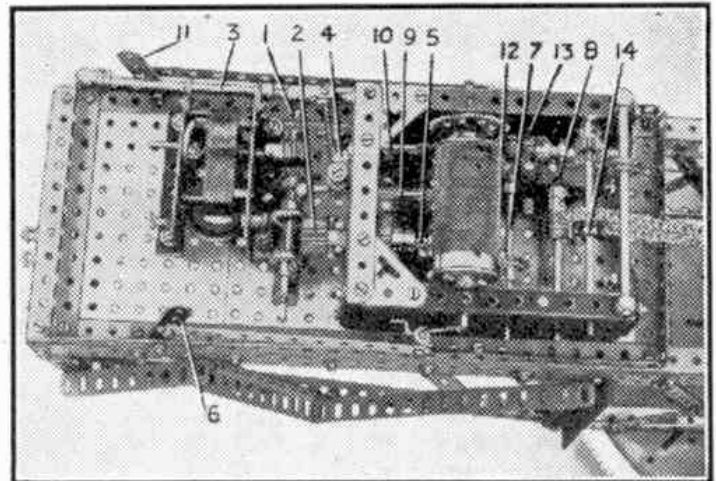


Fig. 2. A plan view of the gear-box of the hammerhead crane