fouling the extended portion of the escape.

Before setting the model in motion apply a little oil to the gears and shafts so that everything will run smoothly. Then wind the Motor and place the model so that it will run to the wall of the room, where, as soon as the Pulley 17 touches the wall, the catch 18 will be released allowing the ladder to be raised and extended.

The following parts are required in the construction of the model: 2 of No. 2; 4 of No. 2a; 4 of No. 3; 7 of No. 5; 10 of No. 6a; 6 of No. 8; 2 of No. 9; 2 of No. 9b; 2 of No. 10; 4 of No. 11; 10 of No. 12; 4 of No. 12a; 1 of No. 13; 1 of No. 14; 3 of No. 15; 2 of No. 16; 2 of No. 16a; 1 of No. 18a; 1 of No. 18b; 4 of No. 19a; 1 of No. 22; 2 of No. 23; 1 of No. 23a; 1 of No. 26; 2 of No. 30; 1 of No. 32; 86 of No. 37; 8 of No. 37a; 2 of No. 38; 1 of No. 40; 2 of No. 43; 1 of No. 48a; 2 of No. 48b; 2 of No. 52a; 20 of No. 59; 1 of No. 62; 1 of No. 81; 1 of No. 102; 5 of No. 111c; 1 of No. 116; 2 of No. 126; 4 of No. 126a; 1 Clockwork Motor. These parts are in Outfit No. 7.

Hand Operated Gantry Crane

On mention of a gantry crane many readers will at once visualise a large and massive structure employed in the casting shops of a locomotive works, etc., where large and heavy masses of metal have to be handled.

The gantry crane has, however, many other uses besides that mentioned above, the prototype of the model shown in Fig. 4 being employed in warehouses, etc., where crates and boxes are unloaded from lorries and wagons. As exceptional lifting power is not required, hand operated hoisting and travelling gear is included in place of the powerful electric motor used to drive the larger types of cranes previously mentioned.

The horizontal frame of the gantry consists of two 12½″ Angle Girders extended at each end by means of 5½″ Girders. Braced Girders 13 support further 12½″ Angle Girders that form the track along which travels the crane trolley.
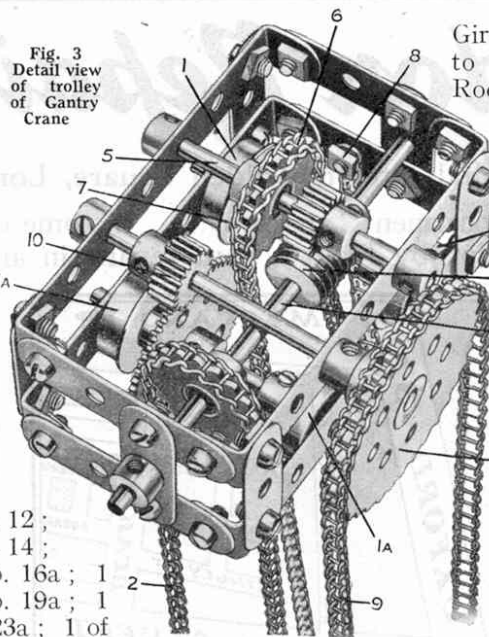
The end towers are each built up from 12½″ Angle

Fig. 3
Detail view of trolley of Gantry Crane

Fig. 4
Gantry Crane with chain operated hoisting and traversing mechanisms

Girders 14, Strips being bolted to them to make the structure rigid. 1½″ Axle Rods are journalled in the lower ends of the Girders, and carry ¾″ Flanged Wheels that form the travelling wheels.

The construction of the trolley or traveller is shown clearly in Fig. 3. Two pairs of 3½″ × ½″ Double Angle Strips are spaced apart by means of 2″ Strips and 1½″ Strips are bolted between each pair. Two 2½″ Rods are journalled in the Double Angle Strips and carry the ¾″ Flanged Wheels 1 and 1a. The Rod of the wheels 1a also carries a 57-teeth Gear which meshes with the ½″ Pinion 10.

By hauling on the Chain 9, which is passed over the Sprocket Wheel 12, the ½″ Pinion 10 and the 57-teeth Gear Wheel is made to rotate, thus driving the Flanged Wheels 1a and causing the trolley to travel along the gantry.

The hoisting mechanism is operated by the chain 2 which passes over a 1″ Sprocket on a 4½″ Rod 3. A Worm 4 on the same Rod engages the teeth of a ½″ Pinion on the Rod 5 carrying a 1″ Sprocket Wheel 6. A length of Sprocket Chain 7 is placed over this Wheel, one end of it being secured between two Flat Trunnions 15, while the other end is secured to the frame of the trolley by means of a nut and bolt 8. By operating the Chain 2 the load hook 16 is raised or lowered.

Track on which the four ¾″ Flanged Wheels of the Gantry may travel can be built up from Angle Girders, or a double length of Hornby track would be equally effective.

The parts required for the model are: 12 of No. 2; 4 of No. 3; 6 of No. 4; 4 of No. 5; 4 of No. 6; 6 of No. 6a; 12 of No. 8; 4 of No. 9; 1 of No. 15a; 3 of No. 16a; 1 of No. 16b; 4 of No. 18a; 8 of No. 20b; 2 of No. 26; 1 of No. 27a; 1 of No. 32; 87 of No. 37; 8 of No. 37a; 2 of No. 38; 4 of No. 48b; 1 of No. 57; 6 of No. 59; 4 of No. 90a; 60″ of No. 94; 1 of No. 95; 2 of No. 96; 2 of No.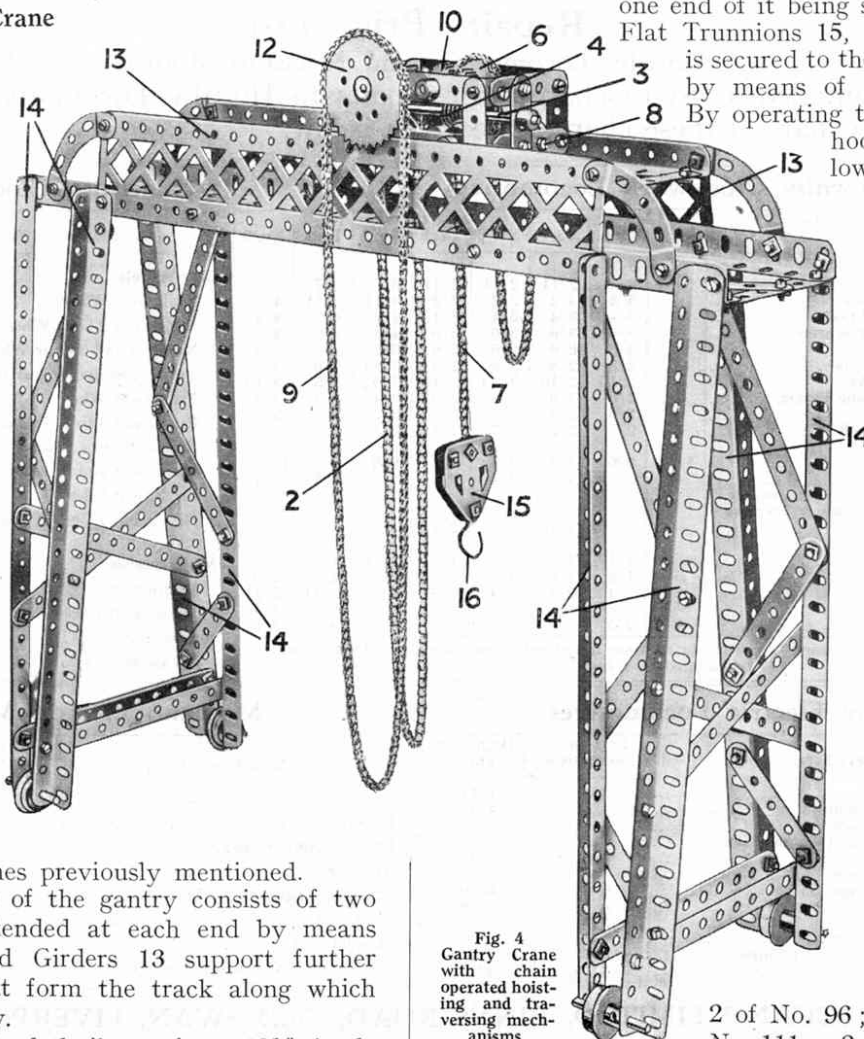 99; 4 of No. 111c; 2 of No. 126a.