Easy Model-Building

Spanner's Special Section for Juniors

THIS month I have chosen an attractive working model for the owners of a No. 4 Outfit or one larger. It is the realistic Mobile Crane shown in Fig. 1, and I think you will find it interesting to build and to play with when you have completed your model.

The wheeled base of the model should be made first. Bolt two $5\frac{1}{2}''$ Strips to the longer sides of a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate so that each Strip overlaps the Plate by seven holes. Now connect the ends of the Strips by a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip and bolt a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate between this and the Flanged Plate. A U-Section Curved Plate 1 is then fixed to each end of the base.

The wheels should be fixed on 4″ Rods held in place by Spring Clips. Support one of these Rods in Flat Trunnions bolted to the base and mount the other in Fishplates. Make the mudguard on each side from a $5\frac{1}{2}'' \times 1\frac{1}{2}''$ and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate bolted together and shaped as shown, and fit a Formed Slotted Strip to each end. Attach the mudguard to the base by an Angle Bracket at the centre, and at each end bolt a $5\frac{1}{2}''$ Strip between the Formed Slotted Strips and the Curved Plate 1.

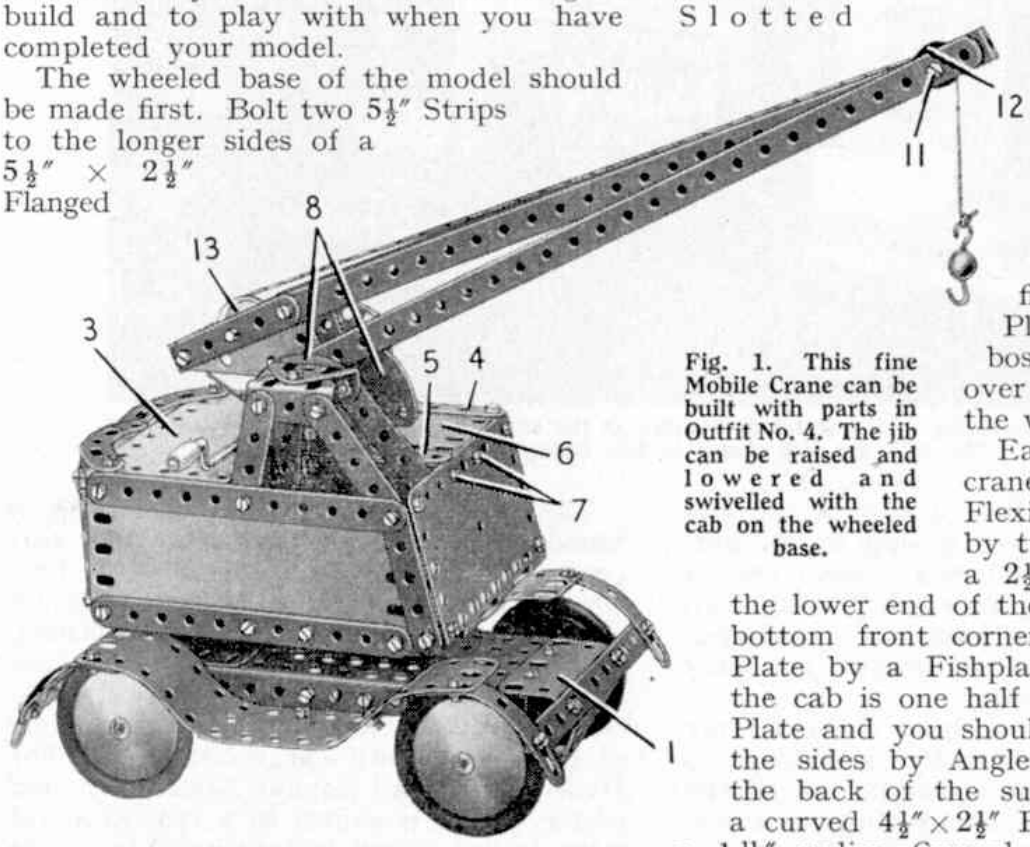

Fig. 1. This fine Mobile Crane can be built with parts in Outfit No. 4. The jib can be raised and lowered and swivelled with the cab on the wheeled base.

You should complete the base by bolting a 3″ Pulley to two $\frac{1}{2}''$ Reversed Angle Brackets fixed to the Flanged Plate so that the boss of the Pulley is over the centre hole of the wheeled base.

Each side of the crane cab is a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate edged by two $5\frac{1}{2}''$ Strips and a $2\frac{1}{2}''$ Strip. Connect the lower end of the $2\frac{1}{2}''$ Strip to the bottom front corner of the Flexible Plate by a Fishplate. The front of the cab is one half of a Hinged Flat Plate and you should connect this to the sides by Angle Brackets. Make the back of the superstructure from a curved $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate and a $1\frac{11}{16}''$ radius Curved Plate overlapped four holes, and connect them to the sides by Obtuse Angle Brackets.

Fit three $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips to a Flanged Sector Plate 2 as shown in Fig. 4, and bolt the lugs of the Double

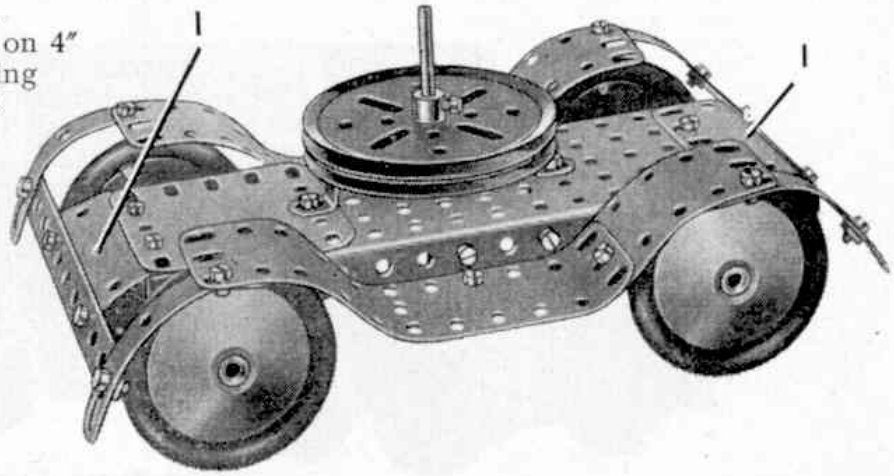

Fig. 2. The wheeled base of the crane, showing the bearing that supports the cab and jib.

Angle Strips to the sides of the cab. Fix a $3\frac{1}{2}''$ Rod in the $3''$ Pulley attached to the base and place another $3''$ Pulley loosely on the Rod with the boss uppermost. Then pass the Rod through the centre hole of the Flanged Sector Plate 2, and fix on it a $1''$ Pulley fitted with a Motor Tyre. This Pulley serves to hold the base and the cab together.

Fill in the top of the cab by attaching the other half 3 of the Hinged Flat Plate to Angle Brackets bolted to the upper rear corners of the sides. Two $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Flexible Plates and two $2\frac{1}{2}''$ Stepped Curved Strips also should be supported by the Angle Brackets to fill in the rounded end. Bolt a $3\frac{1}{2}''$ Strip 4 between the half of the Hinged Flat Plate and an Angle Bracket fixed to the front of the cab, and fix another $3\frac{1}{2}''$ Strip 5 to the half of the Hinged Flat Plate (Fig. 1). A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 6 can now be bolted to the Strip 4 and to a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flanged Plate, one flange of which should be fixed to the front of the cab by two bolts 7.

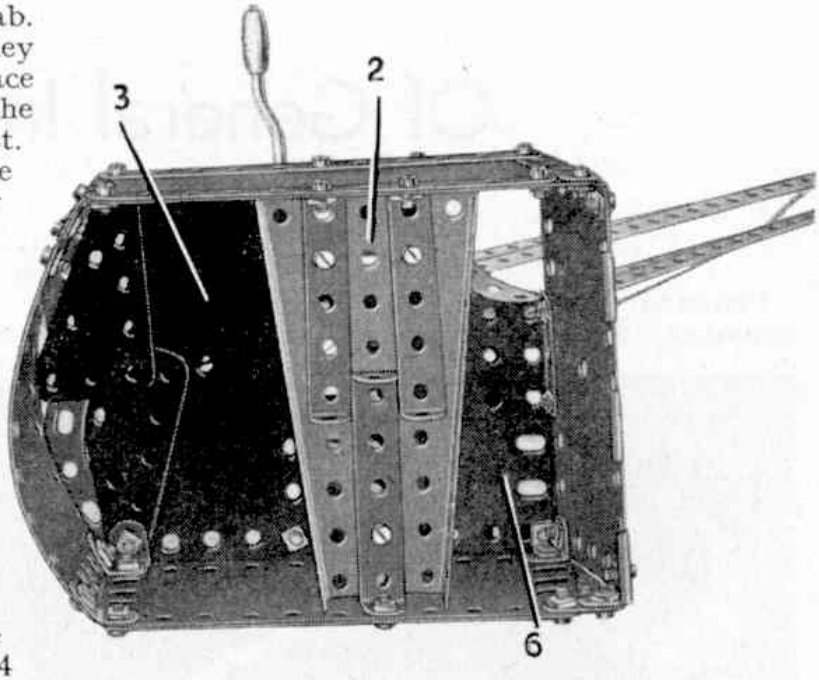

Fig. 4. An underneath view of the cab removed from the wheeled base.

Make the top of the driver's cabin from two Trunnions and arrange two $2\frac{1}{2}''$ Strips on each side to form the window frames. The outer pair of Strips must be bolted to the side of the superstructure as shown. The support for the jib is arranged by fixing a $1\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip to the Strip 5 and to the rear edge of the Flexible Plate 6. Two Semi-Circular Plates 8 are bolted tightly to the lugs of the Double Angle Strip.

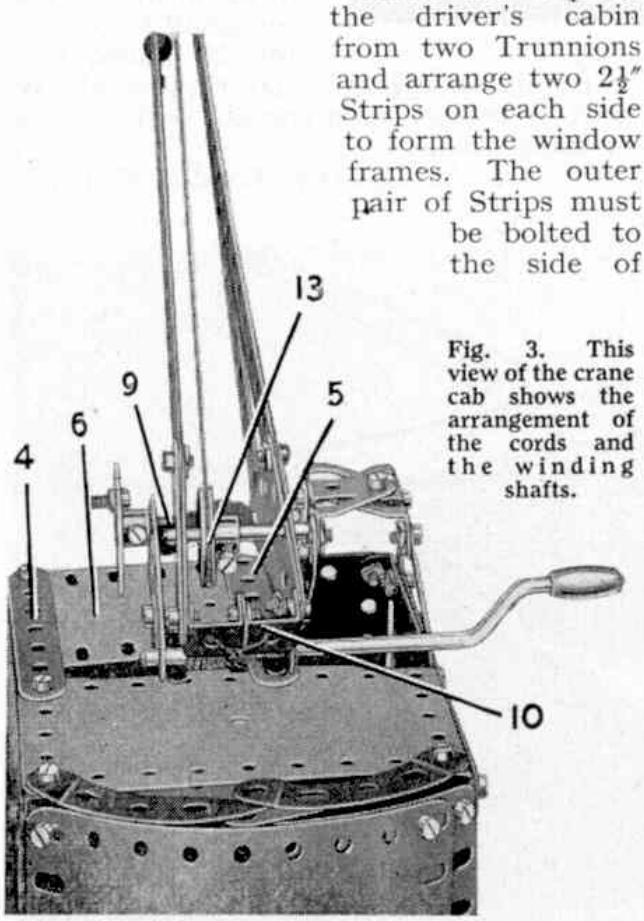

Fig. 3. This view of the crane cab shows the arrangement of the cords and the winding shafts.

You can make each side of the jib with two $12\frac{1}{2}''$ Strips, a $2\frac{1}{2}''$ Strip and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Flexible Plate. Pass a $2''$ Rod 9 through the Semi-Circular Plates 8, the Triangular Flexible Plates and the rear ends of the lower pair of $12\frac{1}{2}''$ Strips, and hold it in place with Spring Clips. This Rod forms the pivot for the jib and also the winding shaft for the hoisting Cord. The sides of the jib should be connected at the rear by a bracket 10, which you can make from two Double Brackets bolted together, and at the jib head by a Stepped Bent Strip. Take care to attach the Stepped Bent Strip to one side by a standard bolt and to the other side by a $\frac{3}{8}''$ Bolt 11, and place a $\frac{1}{2}''$ loose Pulley 12 on the shanks of the two bolts. Mount a $1''$ Pulley 13 on a $1\frac{1}{2}''$ Rod supported in the jib.

The jib can be raised and lowered, an operation called "luffing," by a length of Cord fastened to a Crank Handle and to the bracket 10. The Crank Handle must be mounted in the Semi-Circular Plates 8, and two Spring Clips on it are arranged so that their ends engage the top of the cab and prevent the Clips from turning. This arrangement provides a simple brake on the Crank Handle. A length of Cord tied

(Continued on page 222)

Model Railway enthusiasts of all ages are here seen keenly interested in the operation of one of the several fine Hornby-Dublo layouts that were a striking feature of the Third Annual Exhibition of the Droylsden County Secondary School H.R.C. Branch No. 555, held last December.

Project to Production—(*Continued from page 178*)

and de-pressurised continuously, to simulate in a few weeks or months the stresses involved in years of airline flying at heights up to 30,000 ft.

Even when the first Vanguard flies, it will still be two years before it enters passenger service. During that time, with its sisters, it will prove in the skies the accuracy of the thousands of hours of calculation, and structure and wind tunnel testing. Hundreds of small changes may be made to its design, each contributing something to make the aircraft stronger, more easy to fly or more comfortable to fly in.

Only when Vickers are completely confident that it is as good as it could possibly be, and when B.E.A. are satisfied with its performance, will Vanguards begin to roll off assembly lines like those in our cover picture, destined for service with the airlines of the world. They will then cost about £750,000 each.

Each powered by four 4,470 h.p. Rolls-Royce R.B.109 Tyne turboprops, they will carry 76-105 passengers at well over 400 m p.h. for any distance from 200 to 2,500 miles. It is no coincidence that the latter is the coast-to-coast distance across the United States, for the Vanguard should prove as much a world-beater as its smaller team-mate, the Viscount.

New Cunarders—(*Continued from page 183*)

Despite rough weather she cut nearly two days off the time of the older ships on this service.

On 14th December 1954 the *Ivernia* was launched by Mrs. Howe, wife of a member of the Canadian Government. The liner completed her acceptance trials on 16th June 1955, but was then laid up in the Gareloch owing to the dock strike at Liverpool and made her maiden voyage to Canada on 1st July, from the Clyde. She has since visited her birthplace on several occasions, as a call at the Clyde is included in certain of the Liverpool runs.

The *Carinthia* was launched on 14th December last by H.R.H. Princess Margaret. Despite a strong wind and heavy rain, the great hull took the water perfectly and within half an hour had been safely berthed in the fitting out basin by the tugs *Cruiser*, *Chieftain*, *Strongbow*, *Battleaxe* and *Warrior*.

The *Carinthia*, the 47th Cunarder built by Brown's, is expected to make her maiden voyage from Liverpool on 27th June next. Although outwardly similar to her sisters, an entirely different scheme of decoration has been adopted inboard and an innovation is a soda fountain.

The final member of the quartet, the *Sylvania*, will be launched in 1957.

With this 90,000 ton building programme the Cunard Company is demonstrating in no uncertain fashion its faith in the future of Canada.

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to Rod 9 should be taken over Pulleys 13 and 12 and a small Loaded Hook is then fastened to it. An operating handle for Rod 9 can be provided by a ⅜" Bolt in a Bush Wheel fixed to one end of the Rod.

Parts required to build the Mobile Crane: 4 of No. 1; 8 of No. 2; 2 of No. 3; 8 of No. 5; 4 of No. 10; 2 of No. 11; 8 of No. 12; 4 of No. 12c; 2 of No. 15b; 1 of No. 16; 1 of No. 17; 1 of No. 18a; 2 of No. 19b; 1 of No. 19g; 2 of No. 22; 1 of No. 23; 1 of No. 24; 8 of No. 35; 86 of No. 37a; 81 of No. 37b; 8 of No. 38; 1 of No. 40; 1 of No. 44; 1 of No. 48; 4 of No. 48a; 1 of No. 51; 1 of No. 52; 1 of No. 54; 1 of No. 57c; 2 of No. 90a; 4 of No. 111c; 2 of No. 125; 2 of No. 126; 2 of No. 126a; 1 of No. 142c; 4 of No. 187; 2 of No. 188; 2 of No. 189; 2 of No. 190; 1 of No. 191; 2 of No. 192; 1 of No. 198; 2 of No. 199; 1 of No. 200; 2 of No. 214; 4 of No. 215; 4 of 221.

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