Easy Model-Building

Spanner's Special Section for Juniors

Electric Locomotive—Industrial Tractor

A SIMPLE Electric Locomotive that can be built from parts in Outfit No. 2, and an Industrial Tractor for Outfit No. 4, form the subjects of the two attractive models I am describing this month.

The Electric Locomotive is seen in Fig. 1. To make each side of this model you require a $5\frac{1}{2}'' \times 1\frac{1}{2}''$, a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ and a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate. First arrange these Plates as shown and then bolt them to the side of a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate. The Flanged Plate is arranged level with the upper edges of the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ and $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates, and these Plates overhang the Flanged Plate by one clear hole at each end. The $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate projects three clear holes above the Flanged Plate. The lower edge of each side should be strengthened by two $5\frac{1}{2}''$ Strips overlapped nine holes.

To make each end of the Locomotive you should bolt three $2\frac{1}{2}''$ Strips to a Flat Trunnion. Then attach the assembly to Angle Brackets fixed to the sides. To one end you can attach a $\frac{1}{2}''$ Reversed Angle Bracket to support a Small Loaded Hook.

Fix two $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 1 between the upper corners of the $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates, and attach a straightened $1\frac{11}{16}''$ radius Curved Plate 2 to Angle Brackets bolted to the Flexible Plates. Use the same bolts to secure two Trunnions 3. Now loop a short piece of wire through these Trunnions as shown to represent the current collector of a real electric locomotive.

The next step is to add the wheels of the model. These are 1" Pulleys and they should be fixed in pairs on $3\frac{1}{2}''$ Rods supported in $2\frac{1}{2}''$ Stepped Curved Strips 4. To complete the model bolt together a $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 5 and a straightened $1\frac{11}{16}''$ radius Curved Plate 6. Fix a Bush Wheel to the centre of the Flanged Plate, and place the Plates 5 and 6 over the boss of the Bush Wheel so that at the centre the Flexible Plates are raised above the level of the Flanged Plate. Now bolt the Plates 5 and 6 to Angle Brackets fixed to the ends of the model.

Parts required to build the Electric Locomotive: 4 of No. 2; 6 of No. 5; 8 of No. 12; 2 of No. 16; 4 of No. 22; 1 of No. 24; 37 of No. 37a; 37 of No. 37b; 6 of No. 38; 2 of No. 48a; 1 of No. 52; 1 of No. 57c; 2 of No. 90a; 1 of No. 125; 2 of No. 126; 2 of No. 126a; 2 of No. 188; 2 of No. 189; 2 of No. 190; 1 of No. 191; 2 of No. 200.

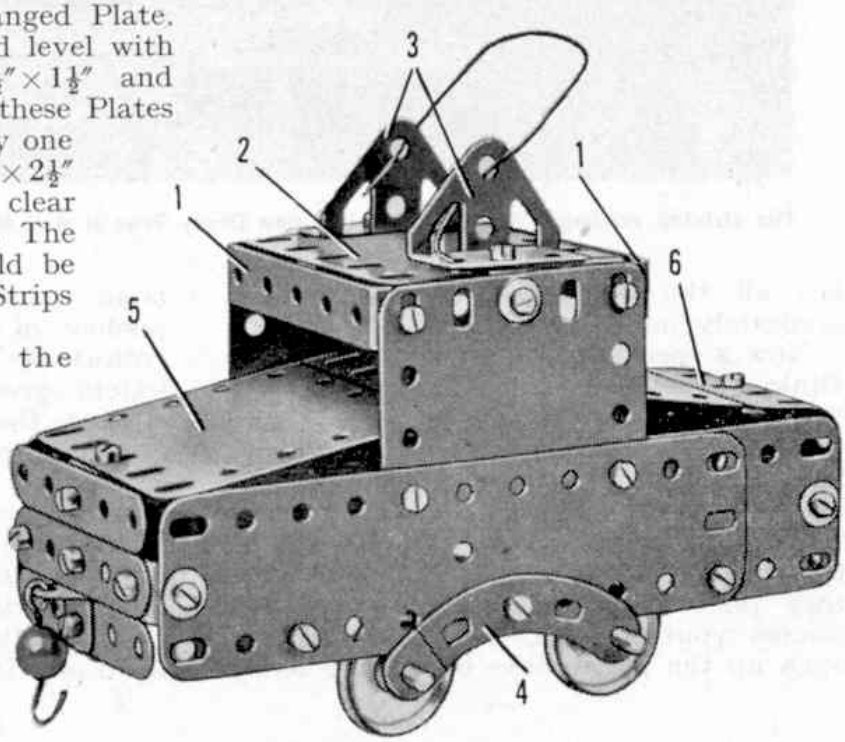

Fig. 1. This Electric Locomotive can be built from parts in Outfit No. 2.

Construction of the Industrial Tractor, which is shown in Figs. 2 and 3, should be commenced with the chassis. Each side of this consists of two $12\frac{1}{2}''$ Strips. These are connected at the rear by a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flanged Plate 1, and at the front the upper Strip on each side is bolted to a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 2. The two Strips on each side are connected by a Fishplate, and the bolt used to fix the upper Strip supports also a Trunnion 3, arranged with its pointed end projecting outside the chassis. The bumper at the front of the chassis is formed by two $2\frac{1}{2}''$ Strips and four Formed Slotted Strips. These are connected together as shown by Fishplates, and the

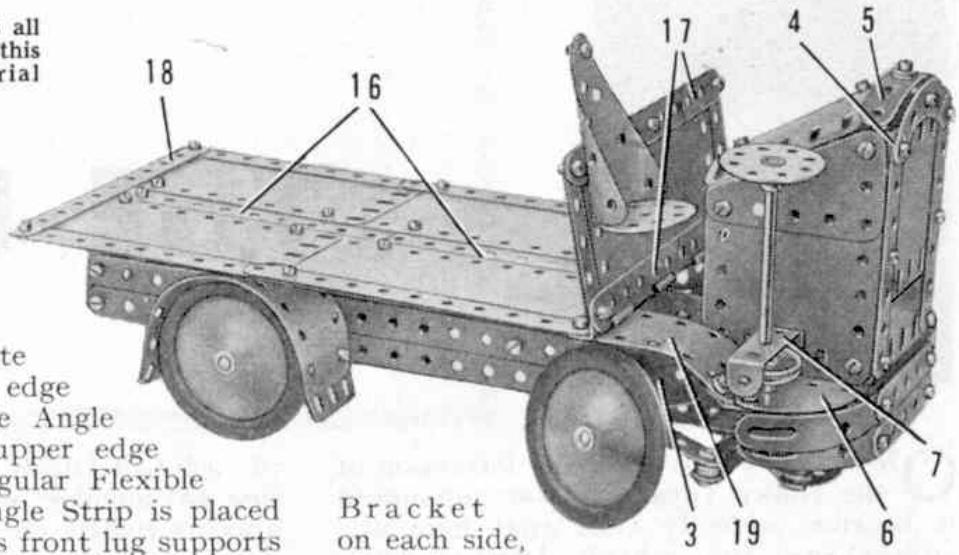

Fig. 2. Outfit No. 4 contains all the parts required to build this attractive model Industrial Tractor.

assembly is bolted to the front flange of the Flanged Plate 2.

Each side of the engine cover is a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate fitted along its lower edge with a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip, and along its upper edge with a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Flexible Plate. The Double Angle Strip is placed inside the Plate, and its front lug supports the lower end of the radiator. The radiator consists of two $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates edged at the sides by two $3\frac{1}{2}''$ Strips and at the top by a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 4 and a $2\frac{1}{2}''$ Stepped Curved Strip. The Double Angle Strip 4 is bolted between the front corners of the Triangular Flexible Plates, and to the centre of the Stepped Curved Strip is fixed an Angle Bracket. This Angle Bracket supports a slightly curved $2\frac{1}{2}''$ Strip 5 and an Obtuse Angle Bracket, and to the other lug of the Obtuse Angle Bracket is bolted one end of a $1\frac{11}{16}''$ radius Curved Plate that forms the top of the engine cover. The other end of this Curved Plate is attached to, but is separated from, a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip by a Spring Clip on a $\frac{3}{8}''$ Bolt.

The Double Angle Strip is fixed between the rear corners of the engine cover.

The complete engine cover is attached to the Flanged Plate 2 by an Angle Bracket on each side, the bolts being used also to fix in place Semi-Circular Plates 6. At one side a $1\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 7 is bolted to the engine cover. The steering column, a 4″ Rod, is mounted in Double Angle Strip 7 and the Semi-Circular Plate, and is held in place by a 1″ Pulley above the Semi-Circular Plate and a Cord Anchoring Spring below it. A 1″ Pulley 8 is fixed on the lower end of the steering column.

The rear axle consists of a $3\frac{1}{2}''$ and a 2″ Rod joined by a Rod Connector. It is mounted in the lower $12\frac{1}{2}''$ Strips of the chassis and in Flat Trunnions 9 and $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 10 bolted to the chassis. The Rod is held in place by 1″ Pulleys. Each rear mudguard is a curved $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate bolted to the lugs of one of the Double Angle Strips 10.

Each front wheel is fixed on a $1\frac{1}{2}''$ Rod held in a Double Bracket 11 by a Spring Clip. A $2\frac{1}{2}''$ Strip 12 is placed between the lugs of each Double Bracket, and a $\frac{3}{8}''$ Bolt is passed through the two parts. This Bolt is then fixed by two nuts in one of the Trunnions 3, leaving the Double Bracket and the Strip free to pivot on the Bolt as a unit. The ends of the Strips 12 are pivotally connected by a strip 13, which is attached by lock-nutted $\frac{3}{8}''$ Bolts with

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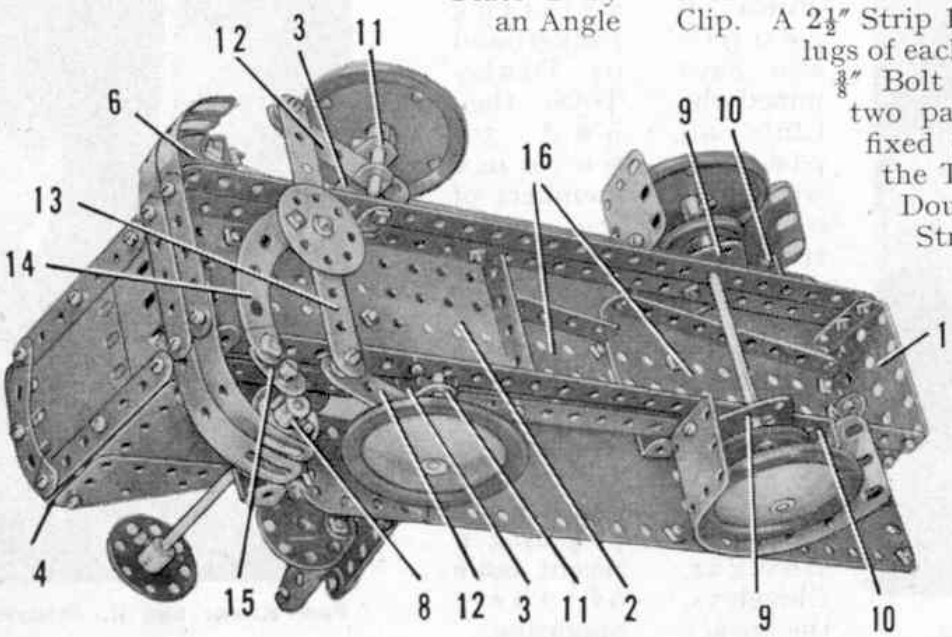

Fig. 3. An underneath view of the Industrial Tractor.

Docks that can be Transported—

(*Continued from page 123*)

some 20 ft. longer. After a special drill had been fitted at each corner the dock was towed from the naval base out into the Atlantic Ocean.

On 16th July the first shoal was reached and the taking of samples commenced. Drilling took three days at each radar station site, with a day taken up in moving on to the next station. In these regions hurricanes cause tremendous damage to anything in their path and so it was decided that drilling must be finished by 10th August, the date of the earliest known hurricane. In spite of bad weather and fog, drilling was completed before the time limit, and the dock was towed back into port with valuable information on the seabed of the Atlantic Ocean.

The Revival of the Festiniog Railway—

(*Continued from page 128*)

services are eventually extended to where the route has more curvature and the grades stiffen, for on the last 12 miles to Blaenau Ffestiniog the average gradient is 1 in 92.

The Railway was single track with passing loops at stations. Trains are now run on the one engine in steam principle, but in former days electric staff and token was employed. At one time the railway set a model example for all narrow lines with its signalling arrangements, by properly protecting all junctions and crossings by signal and catch points, together with a complete telegraph system. Telephonic communications have been restored between Portmadoc and Minffordd, together with Boston Lodge works and a level crossing keeper's house near Minffordd.

Bogie type passenger coaches were introduced about 1872 and were believed to be the first of their kind in Great Britain. Two coaches were reinstated in 1955 and a further two were ready for 1956, the latter both having a first class compartment that appears to have been very much appreciated.

It has always been the practice of the Railway that while trains were in motion all carriage doors were locked, a necessary precaution on account of the fact that the clearance between the side of the train and the rock along the line is less than the width of a carriage door. In addition iron bars are fitted across compartment windows that open as another preventive measure against accidents.

In the two months following the opening of the railway on 23rd July, 1955, 11,371 passengers travelled over the mile stretch from Portmadoc to Boston Lodge. During 1956, with the service extended to Minffordd, there were occasions when all four coaches had to be employed, and 38,689 passengers were carried on the Railway in that year.

Unfortunately it will not be possible to reach Blaenau Ffestiniog by the original route, as a proposed hydro-electric scheme will flood part of the line at the northern end. But it is anticipated that at least eight miles of the line will eventually be opened for traffic, and there is little doubt that the route will not lose much of its scenic value.

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three spacing Washers on each Bolt. Strip 13 is formed by two 2½" Strips and a Wheel Disc bolted together, and to the Wheel Disc is lock-nutted a 2½" Stepped Curved Strip 14.

The Curved Strip is lock-nutted also to a Fishplate 15, and the latter is bolted tightly to an Angle Bracket. A bolt fitted with a nut is passed through the Angle Bracket and is screwed into a threaded hole in the boss of Pulley 8. The nut is then tightened to fix the Angle Bracket firmly to the boss of the Pulley.

Each side of the load carrying platform consists of a 5½"×2½" and a 4½"×2½" Flexible Plate edged by two 5½" Strips, while the centre of the platform is made with two Flanged Sector Plates 16. The centre pin is withdrawn from a Hinged Flat Plate and to one half of this Plate are attached two 5½" Strips 17 and two 2½" Strips. This assembly is then connected to the front of the platform by two Angle Brackets, while at the rear a 5½" Strip 18 is bolted across the end. The complete platform is supported by a ½" Reversed Angle Bracket bolted to the Flanged Plate 2 and by an Angle Bracket fixed to the Flanged Plate 1.

The driver's seat is made from two curved 2½"×1½" Triangular Flexible Plates bolted to the other half of the Hinged Flat Plate, and a Wheel Disc supported by an Angle Bracket. A 2½"×1½" Flexible Plate 19 on each side is bolted to the platform and to an Obtuse Angle Bracket fixed to the Semi-Circular Plate 6.

Parts required to build the Industrial Tractor: 4 of No. 1; 7 of No. 2; 2 of No. 3; 9 of No. 5; 5 of No. 10; 2 of No. 11; 8 of No. 12; 3 of No. 12c; 1 of No. 15b; 1 of No. 16; 1 of No. 17; 2 of No. 18a; 4 of No. 22; 1 of No. 24; 2 of No. 24a; 3 of No. 35; 87 of No. 37a; 75 of No. 37b; 10 of No. 38; 1 of No. 48; 6 of No. 48a; 1 of No. 51; 1 of No. 52; 2 of No. 54; 2 of No. 90a; 6 of No. 111c; 1 of No. 125; 2 of No. 126; 2 of No. 126a; 2 of No. 155; 1 of No. 176; 4 of No. 187; 2 of No. 188; 2 of No. 189; 4 of No. 190; 2 of No. 191; 2 of No. 192; 1 of No. 198; 1 of No. 200; 1 of No. 213; 2 of No. 214; 4 of No. 215; 4 of No. 221.

Now You Can Run Your Own Mail Train—

(*Continued from page 149*)

the traductors alongside the leading doors being well represented.

Toward the rear end of the Van is the hinged flap arrangement for ejecting the mail pouch and working with it is the representation of the folding net of actual practice that picks up the incoming pouch. On the miniature vehicle this is of metal, fitting snugly up to the body of the Van when closed. When the Switch is operated it opens at the right moment, as you see it in the upper picture on page 149, to receive the pouch waiting on the lineside standard.

The contact rail is live *only* as long as the button of the Switch is pressed down. Thus the apparatus is worked only when required by the operator, and not every time a train passes the lineside apparatus, a point of some importance. Incidentally, the button of this T.P.O. Switch is coloured green, so that it will not be confused with the red coloured button of the similar Switch for the EUBR Uncoupling Rail.

Finally, what about the pouches? These are die-cast in order to stand the knocking about to which they are subject. It is important that they should be kept well polished, and another good tip is to have at least a straight half rail at each end of the lineside apparatus, which ensures good operation.

H.R.C. BRANCH EXHIBITION

The Droylsden Littlemoss Boys' County Secondary School Model Railway Club (H.R.C. Branch No. 555) is holding an Exhibition at the school, Cryer Street, Droylsden, on the 15th and 16th March. The many fine exhibits will include both static and working models, and there will be Hornby-Dublo and other model railway layouts in operation.

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