

An Attractive Novelty Model

Lighthouse with Automatic Supply Ship

THIS attractive working model represents a supply boat sailing between a boathouse and a lighthouse. The boat moves steadily along its course, and at each end it turns round and makes the return journey. The operating mechanism is concealed in the base, and the action of the model is rather puzzling to onlookers as there is no visible means of driving and turning the boat.

The base of the model should be assembled first. Each side consists of two $24\frac{1}{2}$ " Angle Girders 1 and 2, a $12\frac{1}{2}$ " \times $2\frac{1}{2}$ " Strip Plate and a $9\frac{1}{2}$ " \times $2\frac{1}{2}$ " Strip Plate overlapped, and a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flat Plate 3. The sides are connected at each end by a $3\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate, and two $3\frac{1}{2}$ " Angle Girders 4 and 5 and a $3\frac{1}{2}$ " Strip 6 are bolted between the Girders 2. Two $12\frac{1}{2}$ " Flat Girders are attached to the Girders 1, and support two further Flat Girders 7, which are raised slightly by placing Collars on the $\frac{1}{2}$ " Bolts that fix them in place. The Flat Girders 7 are arranged so that there is a narrow slot between them.

The base of the lighthouse is made by curving two $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates and bolting them together to form a circle. The Flexible Plates are

attached to a $5\frac{1}{2}$ " \times $3\frac{1}{2}$ " Flat Plate 8 by Angle Brackets, and a ring of four $2\frac{1}{2}$ " Stepped Curved Strips is bolted to Angle Brackets fixed to the upper edges of the Flexible Plates. The Curved Strips support further Angle Brackets, to which eight $7\frac{1}{2}$ " Strips are bolted. The upper ends of these Strips are connected together by Obtuse Angle Brackets, and a $1\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip is bolted across the top of the tower formed by the Strips. A 3" Screwed Rod is passed through the centre hole of the Double Angle Strip, two Wheel Flanges, two Chimney Adaptors in a Sleeve Piece, and through $1\frac{1}{8}$ " and $\frac{3}{4}$ " Flanged Wheels. The parts are held tightly together by nuts on the Screwed Rod. The Flat Plate 8 is spaced from the Girders 1 by Collars on $\frac{1}{2}$ " Bolts.

The floor of the boat-house is a $5\frac{1}{2}$ " \times $3\frac{1}{2}$ " Flat Plate 9 and this also is spaced from the Girders 1 by Collars on $\frac{1}{2}$ " Bolts. Each side consists of three vertical 3" Strips, two $4\frac{1}{2}$ " Strips, a $4\frac{1}{2}$ " Angle Girder and two $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates. The $4\frac{1}{2}$ " Angle Girders are bolted to the Flat Plate 9. An E20R(S) Electric Motor is attached by one of its flanges to two $1"$ \times $\frac{1}{2}"$ Angle Brackets bolted to the Flat Plate 9, and the upper side-plate of the Motor is supported by two $2\frac{1}{2}"$ \times $\frac{1}{2}"$ Double Angle Strips seen at 10. The Motor armature shaft is extended by a $2\frac{1}{2}"$

Rod 11 connected by a Short Coupling.

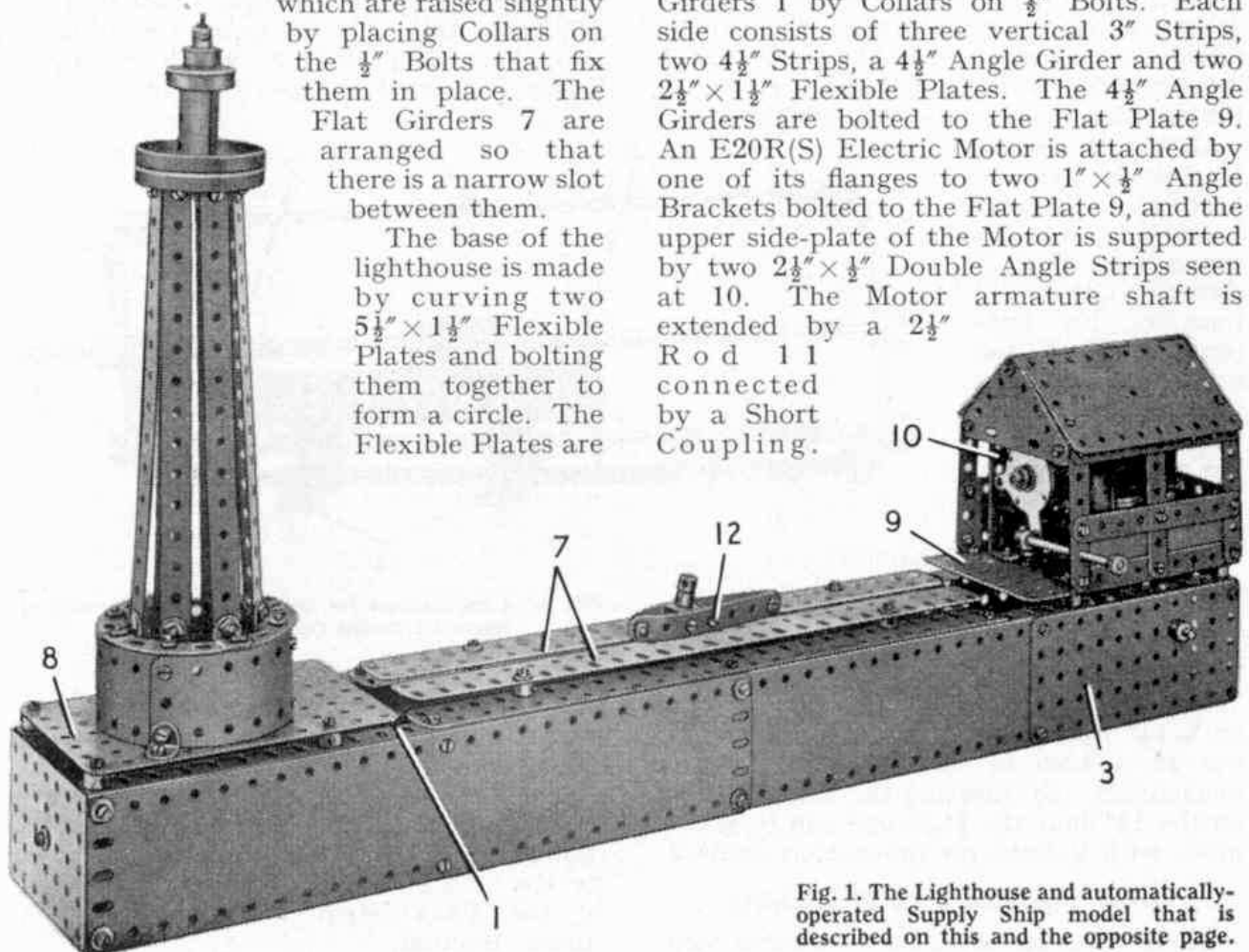


Fig. 1. The Lighthouse and automatically-operated Supply Ship model that is described on this and the opposite page.

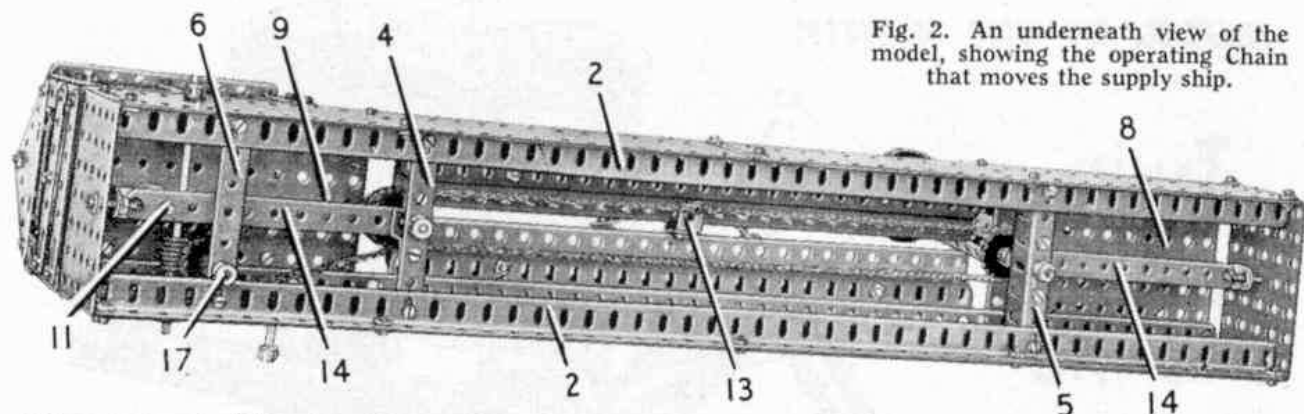


Fig. 2. An underneath view of the model, showing the operating Chain that moves the supply ship.

The rear end of the boat-house is filled in by two 3" and two 3½" Strips, two 2½"×1½" Flexible Plates and a 2½"×2½" Triangular Flexible Plate. These are bolted together and attached to Angle Brackets fixed to the sides. The boat-house roof is a Hinged Flat Plate supported by Obtuse Angle Brackets. At the front a second 2½"×2½" Triangular Flexible Plate is attached to Angle Brackets.

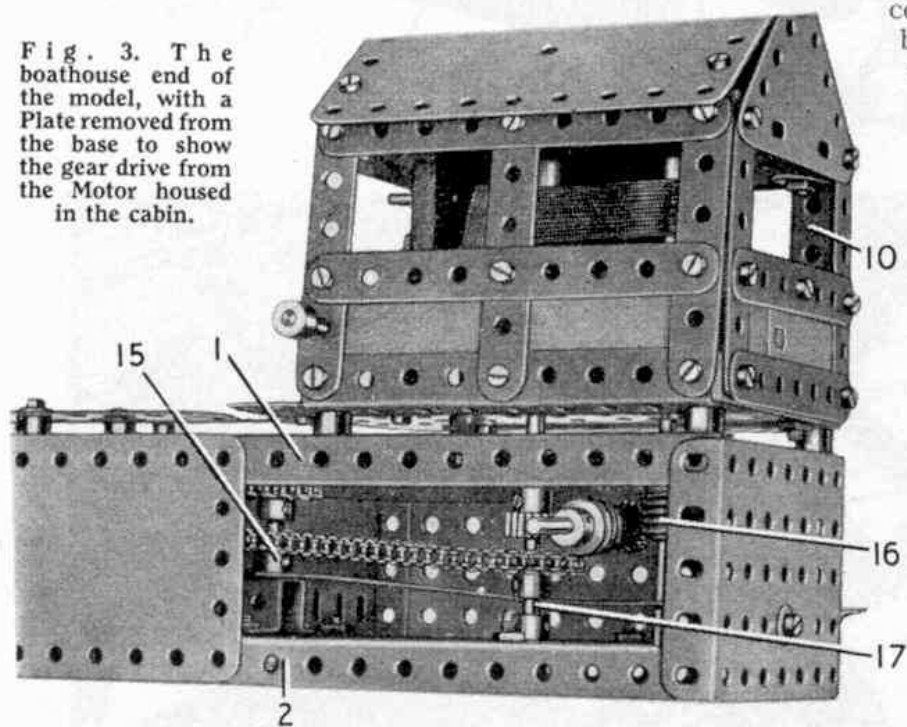
The boat is made by bending two 3½"

through a link in a length of Sprocket Chain. The prongs are then opened out so that the link will pass over the teeth of Sprocket Wheels. The Chain forms an endless length round 1" Sprockets on 2" Rods, which are mounted in the Girders 4 and 5 and in Double Bent Strips bolted to the Girders. The 2" Rods are held in place by Collars, and at each end a 5½" Strip 14 is passed over the Rod and is connected to the end of the base by an Angle Bracket and a ¾" Bolt. One of the 2" Rods carries a 1" Sprocket 15.

The Rod 11 carries a Worm Gear 16, and the lower end of the Rod is supported in one of the Strips 14. The Worm drives a ½" Pinion on a 4½" Rod held in the Plates 3 by Collars. A Worm Gear on the 4½" Rod engages a ½" Pinion on a vertical 3½" Rod 17 mounted in Plate 9 and the Strip 6. A 1" Sprocket on Rod 17 is connected by Chain to the Sprocket 15.

Parts required to build this model Lighthouse and

Fig. 3. The boathouse end of the model, with a Plate removed from the base to show the gear drive from the Motor housed in the cabin.



Strips slightly and bolting them together with a Double Bracket between them. Two Collars fixed on a ½" Bolt passed through the Double Bracket represent the funnel. A Fishplate is located centrally between the Strips by Washers on a ¾" Bolt 12, and the Fishplate is bolted tightly to a ½" Reversed Angle Bracket 13. The prongs of a bifurcated paper clip are passed through the Reversed Angle Bracket and

Automatic Supply Ship: 8 of No. 1b; 2 of No. 2; 4 of No. 2a; 4 of No. 3; 8 of No. 4; 4 of No. 7; 2 of No. 9a; 2 of No. 9b; 1 of No. 10; 1 of No. 11; 24 of No. 12; 2 of No. 12b; 12 of No. 12c; 1 of No. 15a; 1 of No. 16; 1 of No. 16a; 1 of No. 16b; 2 of No. 17; 1 of No. 20; 1 of No. 20b; 2 of No. 26; 2 of No. 32; 138 of No. 37a; 114 of No. 37b; 32 of No. 38; 2 of No. 45; 1 of No. 48; 2 of No. 48a; 2 of No. 52a; 2 of No. 53; 23 of No. 59; 1 of No. 63d; 2 of No. 70; 1 of No. 80c; 4 of No. 90a; 1 of No. 94; 4 of No. 96; 4 of No. 103b; 3 of No. 111; 12 of No. 111a; 1 of No. 111c; 1 of No. 125; 2 of No. 137; 1 of No. 163; 2 of No. 164; 6 of No. 188; 2 of No. 189; 2 of No. 196; 2 of No. 197; 1 of No. 198; 2 of No. 223; 1 E20R(S) Electric Motor.