BUILD THIS FINE MODEL

A Meccano Tug Boat

ALL *M.M.* readers, particularly those who live near a port, will be familiar with the duties of the ubiquitous Tug Boats which busy themselves day and night in assisting liners and big cargo ships into, and out of, port. Although tiny vessels themselves they fill a big role in Britain's maritime activities. Here is a model tug boat for Meccano enthusiasts to build. As you can see from the illustrations on this page and the next, it looks most attractive.

The deck of the tug boat is formed by four $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plates 1 overlapped one hole to form a built-up Flat Plate $10\frac{1}{2}'' \times 4\frac{1}{2}''$; a $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plate 2 is then bolted to it, overlapping one hole to make it into a $12\frac{1}{2}'' \times 4\frac{1}{2}''$ built-up Flat Plate.

Three $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 3 form the sides of the hull and they are strengthened at the joints by $1\frac{1}{2}''$ Strips and are bolted to the deck by three Angle Brackets at each side. The two Flexible Plates which overlap at the front are then joined by Obtuse Angle Brackets, at the same time bolting in two $3\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Flexible Plates 4 to form the bow. The stern is made from three $5\frac{1}{2}''$ Strips joined to the Flexible Plates by Obtuse Angle Brackets and strengthened in the middle by a $1\frac{1}{2}''$ Strip. A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 5 is then bolted to the front of the deck overlapping three holes, and the same is done at the stern.

The fore part of the superstructure is made from two $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plates 6 and two $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates 7. Two $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plates, overlapped one hole, are then bolted to the top by Angle Brackets. These should overlap one hole at the side and two holes at the front (Fig. 2). This structure is then fixed to the deck by an Angle Bracket 8, and also two Angle Brackets inside the superstructure. The best way to carry out this assembly is to fix the Angle Brackets to the superstructure and then place the Bolts in the Angle Brackets. The Bolts should be allowed to dangle through the Flat Plates and the nuts can then be placed on them from the other side.

The other half of the superstructure is formed by two $3\frac{1}{2}''$ Angle Girders 9 and two $1\frac{1}{2}''$ Angle Girders 10. These, along with a $2\frac{1}{2}''$ Angle Girder 11 and two $1\frac{1}{2}''$ Strips 12, are bolted together to form a rough box shape.

The sides are then filled in with two $3\frac{1}{2}''$ Strips and the stern end with two $2\frac{1}{2}''$ Strips. The top is covered with a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 13, and the whole structure is bolted to the deck in a similar manner to the other half of the superstructure.

The bridge is constructed as follows. A $2\frac{1}{2}''$ Strip is bolted to each end of two $2\frac{1}{2}''$ Double Angle Strips 14 and these are joined together by $1\frac{1}{2}''$ Strips 15. A $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flanged Plate 16 is then fixed to the upper ends of the $2\frac{1}{2}''$ Strips to form the roof. A $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate 17

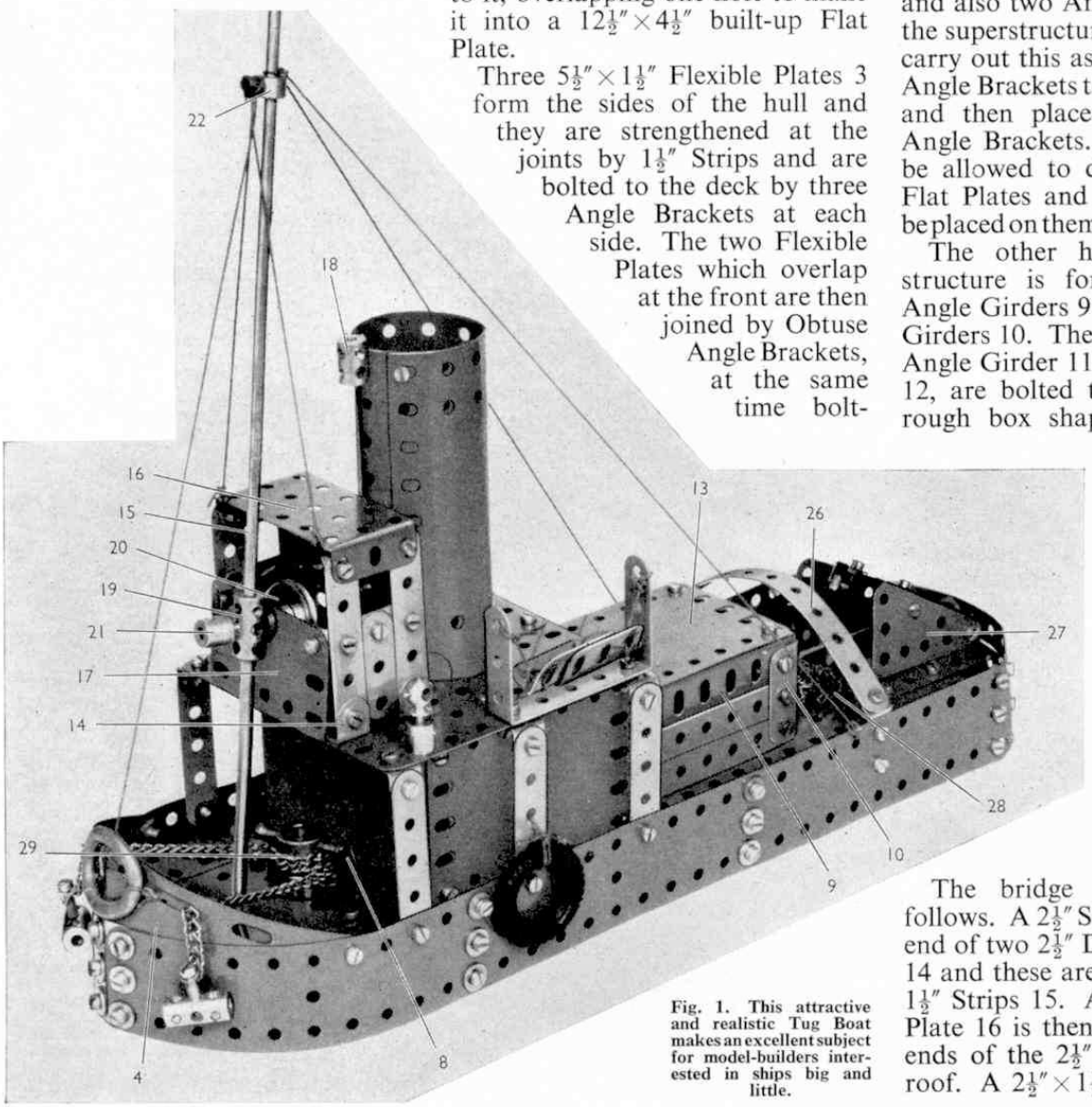

Fig. 1. This attractive and realistic Tug Boat makes an excellent subject for model-builders interested in ships big and little.

is fixed to the front by Angle Brackets and a similar Plate is fixed at the rear. The sides are then filled in with $1\frac{1}{2}''$ Strips.

The funnel consists of a boiler overlapped three holes and bolted to the back of the bridge. A Short Coupling 18 is bolted to the top. The mast is a $11\frac{1}{2}''$ Rod passed through a Coupling 19. This Coupling is joined to the bridge by a $\frac{3}{4}''$ Bolt which is also passed through a $1''$ Pulley 20. The Coupling 19 is spaced from the bridge by two Washers. A Rod Socket 21 is then screwed into the Coupling and a Collar 22 is fixed near the top of the mast as shown.

The overhanging edges of the Flat Plates forming the roof of the main superstructure are connected to the hull on each side by means of three $2\frac{1}{2}''$ Strips 23. The bolts that hold the rearmost two Strips to the roof also fix in place a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Double Angle Strip 24 which forms the davits for the life-boat, which consists of two $1\frac{1}{2}''$ Angle Girders bolted together. The port and starboard lights 25 are Threaded Couplings bolted to the deck, with a Handrail Support screwed into their tops.

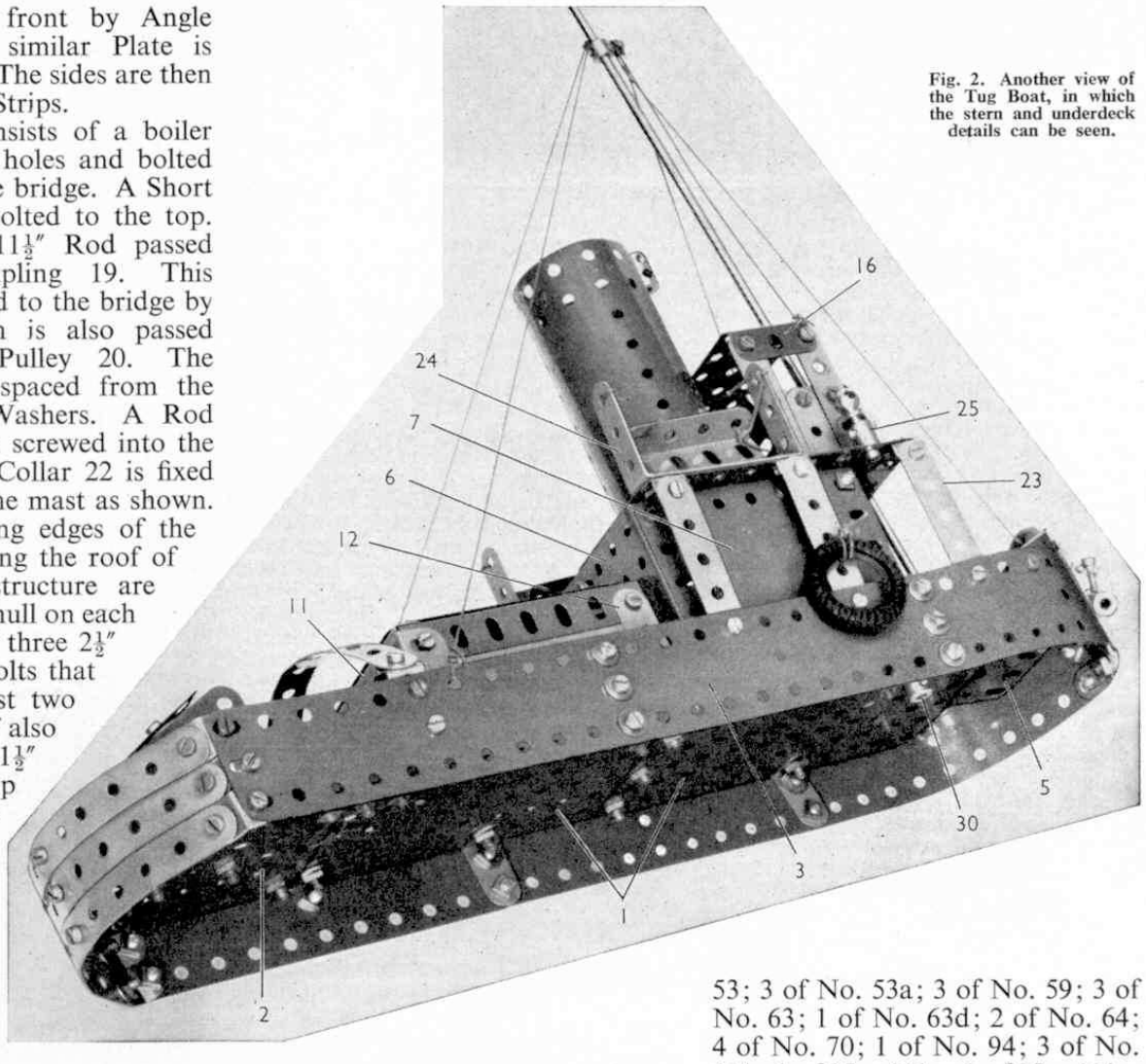

Fig. 2. Another view of the Tug Boat, in which the stern and underdeck details can be seen.

The towing arch 26 is a $5\frac{1}{2}''$ Strip curved as shown and fixed to the sides of the vessel with Obtuse Angle Brackets. Next to be fitted is the small hatch cover in the stern. This is made from two $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Flexible Plates 27 and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate, which are connected together with Angle Brackets and also fixed to the deck with Angle Brackets.

A $\frac{3}{4}''$ Bolt is then fixed in the deck between the superstructure and the hatch, and round this is wound a small length of Sprocket Chain 28. The anchor capstan is a Socket Coupling 29 with a Collar in its top end. This Collar holds a $1''$ Rod, which is passed through the deck and is fixed in place by a second Collar 30 (Fig. 2). A length of sprocket chain is then wound round the Socket Coupling and passed through the Triangular Plates 4. The anchors are made from $\frac{3}{4}''$ Bolts and Couplings.

All that now remains to be done is to tie two $1''$ Tyres to the sides of the hull to serve as fenders. A $1''$ Rubber Ring is slung at the bow, and rigging lines are arranged as shown in Fig. 1.

Parts required to build the model Tug Boat: 4 of No. 2; 4 of No. 3; 12 of No. 5; 11 of No. 6a; 2 of No. 9b; 2 of No. 9d; 6 of No. 9f; 32 of No. 12; 11 of No. 12c; 1 of No. 13; 1 of No. 18b; 1 of No. 22; 162 of No. 37a; 162 of No. 37b; 20 of No. 38; 1 of No. 40; 2 of No. 47; 2 of No. 48a; 1 of No. 51; 2 of No. 53; 3 of No. 53a; 3 of No. 59; 3 of No. 63; 1 of No. 63d; 2 of No. 64; 4 of No. 70; 1 of No. 94; 3 of No. 111; 1 of No. 111a; 1 of No. 111c; 2 of No. 136; 2 of No. 142c; 1 of No. 155; 1 of No. 162; 1 of No. 171; 1 of No. 179; 3 of No. 188; 6 of No. 189; 2 of No. 190; 2 of No. 190a; 2 of No. 221; 2 of No. 224.

ANSWER TO "JUDGE FOR YOURSELF"

The postman lost his case. The judge explained that Mr. Pett would only be liable for personal injuries which Chummy caused if he knew Chummy was likely to cause them. Here there was no evidence that Chummy had ever bitten anyone before. If he did it again, of course, Mr. Pett would be liable.

Mr. Trim lost his claim for compensation for the flowers, since it was up to him to protect his own property by fencing or wiring it off. But he did win his other claim. A special Act of Parliament, the Dogs Act, makes owners liable for harm their animals do to poultry—whether or not they know such harm is likely.