

# A NEW MECCANO MODEL

## Model No. 717. Boat-Lowering Gear

**A**LTHOUGH models of a Boat-Lowering Gear are not entirely new to Meccano users, this model has recently been revised and very considerably improved, as will be seen from the illustration on page 329. Before describing how to construct the model, let us see something of boat-lowering arrangements in every-day use, for by studying actual practice we shall be better able to understand our model and to see exactly what principles are employed and what are the limitations in the method of construction and design.

### Board of Trade Regulations for Ships

Travelling by sea to-day is safer than at any previous time. Not only are the great passenger ships built on the strongest possible lines, but also the provision for the safety of all on board in case of collision or other accident is marvellously complete, nothing being left to chance.

The latest Board of Trade regulations require that every foreign-going passenger steamship shall carry sufficient lifeboats to accommodate all on board.

The regulations also require that the ship shall be equipped with the necessary appliances for getting these boats quickly and safely into the water.

Where the number of lifeboats is more than ten, one of them must be fitted with a wireless installation. Where there are more than fifteen boats, one must be a motor-boat fitted with wireless, and when the number exceeds twenty, two must be motor-boats so fitted. Motor-boats of this kind also must have searchlights. In addition each ship, according to her size, must carry a certain number of lifebuoys, and one life-jacket must be provided for each person on board.

The equipment for lifeboats is laid down in the regulations in great detail. Besides the necessary rowing and sailing tackle, each boat must carry sufficient fresh water to allow one quart for each person carried, and 2lb. of biscuits for each person. Oil for pouring on the water in rough weather and self-igniting red lights are also required to be carried. Each boat must be fully equipped before the ship leaves harbour, and the equipment must remain in the boats throughout the whole time the ship is at sea.

### Inspection Before Sailing

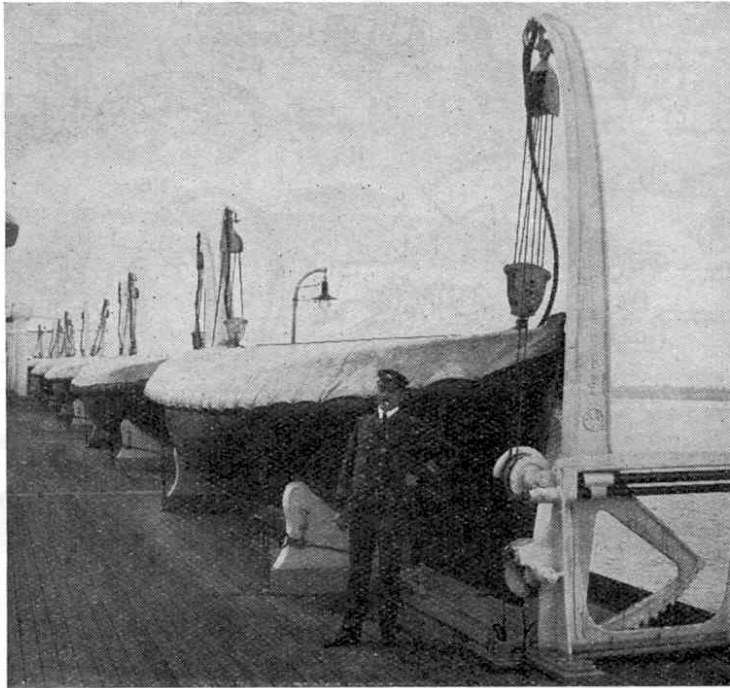
Before any passenger liner sails, her boat-lowering gear is inspected by a Board of Trade official to ensure that all the mechanism is in thoroughly efficient working order. At this inspection one or more boats selected by the official are actually lowered into the water, and the lifeboats generally are examined to see that they contain their stipulated equipment.

### Boat-Lowering by Davits

The lowering of ships' lifeboats is carried out by means of what are called "davits." Davits are really small cranes that can be rotated about their mountings so that a boat can be turned outboard and lowered, or lifted

up from the water and turned inboard.

The majority of passenger liners are now fitted with the Welin davit, the principle of which is clearly shown in Figs. 2 and 3. The boat rests on chocks, the outboard portion of which falls flat on deck when released by means of a rod, fitted on the inboard portion and shown in Fig. 1. The arms of the davit, which carry the boat by rope and pulley falls, have quadrant-shaped bases with projecting teeth that engage in a rack bolted down to the deck of the ship. Each arm is pivoted on a sliding block which travels along a horizontal guide-bar close to the top of the frame, and is operated by a hand-controlled screw placed immediately below the guide-bar. Starting from the inboard position as in Fig. 2, the arms travel outboard to the position shown in Fig. 3, carrying the boat with them. At this point the boat hangs over the ship's side and is then lowered to the water.



*Photo courtesy of]*

*[Messrs. Welin Davit & Engineering Co. Ltd.*

**Fig. 1. The Boat Deck of R.M.S. "Berengaria"**

### A Big Liner's Boat Deck

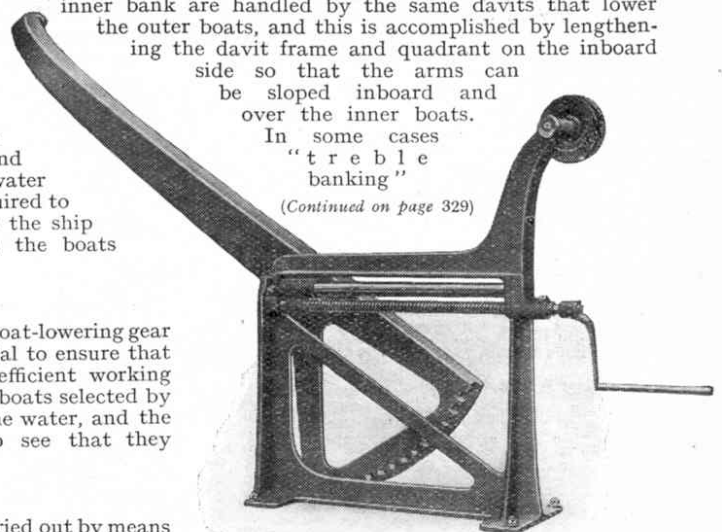
Although the working principle of the davit is simple, the task of stowing away the large number of lifeboats carried by a big liner is somewhat complicated. The boats are usually housed on the top or boat deck of the vessel.

It is of the greatest importance that the amount of space occupied by the boats should be as limited as possible, consistent with perfect accessibility, and this problem is solved on the larger ships by a combination of interesting devices. Instead of "single banking," that is a single row of boats along each side of the boat deck, "double banking" is resorted to, so that there is a double line of boats along each side. The boats forming the

inner bank are handled by the same davits that lower the outer boats, and this is accomplished by lengthening the davit frame and quadrant on the inboard side so that the arms can be sloped inboard and over the inner boats.

In some cases  
"treble  
banking"

*(Continued on page 329)*



*[Messrs. Welin Davit and Engineering Co. Ltd.*  
**Fig. 3. Davit Arm—Outboard Position**



*Photos courtesy of]*

**Fig. 2. Davit Arm—Inboard Position**

## Boat-Lowering Gear—

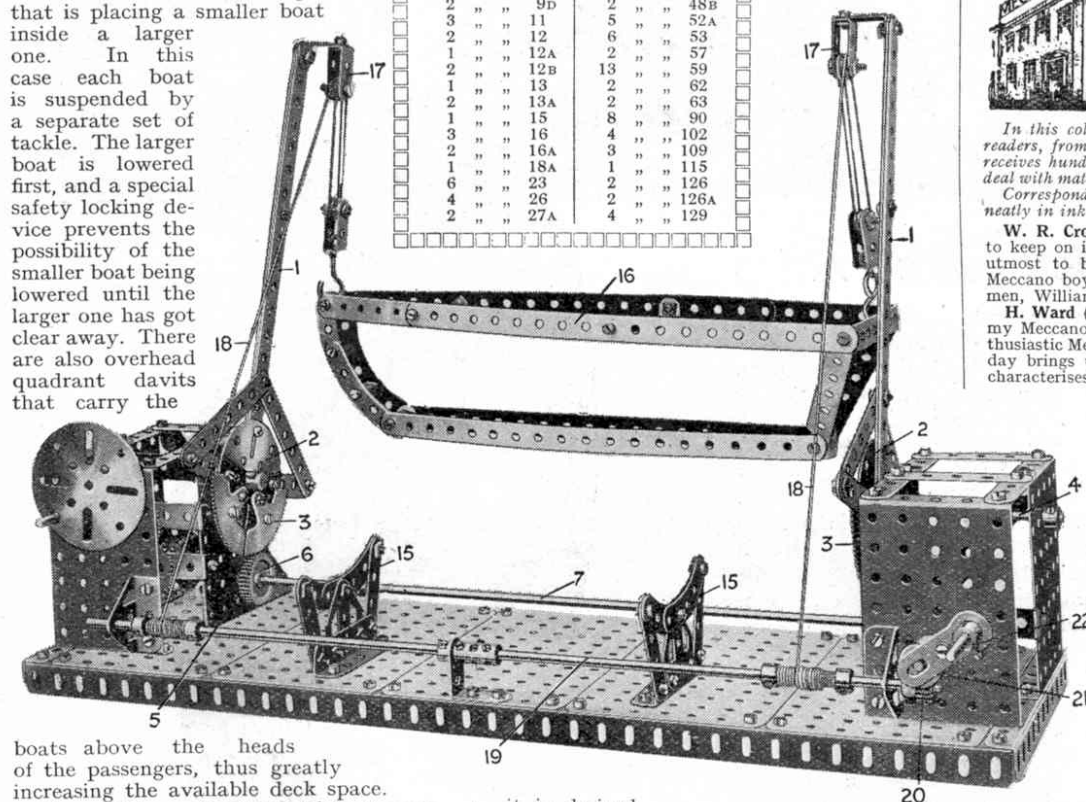
(Continued from page 327)

is employed. "Double tiering," that is a second line of boats suspended above the first, is also regularly used.

Still another space-saving method consists of "nesting," that is placing a smaller boat inside a larger one. In this case each boat is suspended by a separate set of tackle. The larger boat is lowered first, and a special safety locking device prevents the possibility of the smaller boat being lowered until the larger one has got clear away. There are also overhead quadrant davits that carry the

Parts required:					
10 of No.	1A	2 of No.	31		
2 "	2A	2 "	32		
6 "	3	4 "	33A		
7 "	5	142 "	37		
8 "	6	14 "	38		
2 "	7A	1 "	40		
2 "	9	5 "	48A		
2 "	9d	2 "	48B		
3 "	11	5 "	52A		
2 "	12	6 "	53		
1 "	12A	2 "	57		
2 "	12B	13 "	59		
1 "	13	2 "	62		
2 "	13A	2 "	63		
1 "	15	8 "	90		
3 "	16	4 "	102		
2 "	16A	3 "	109		
1 "	18A	1 "	115		
6 "	23	2 "	126		
4 "	26	2 "	126A		
2 "	27A	4 "	129		

As the hand wheel is rotated the davit arms are moved outboard when launching the boat (16) or inboard when



boats above the heads of the passengers, thus greatly increasing the available deck space.

The usefulness of a ship's lifeboat equipment may be still further added to by the employment of traversing gear, by means of which boats may be quickly transported from one side of the ship to the other.

## Constructing the Model

Having now seen something of "the why and the wherefore" of boat-launching gear in practice, we may proceed to construct the Meccano model, as follows:

The davit arms (1) are connected to Face Plates (2) to which are bolted two Rack Segments (3) forming the usual geared quadrants. The davit arms are then secured to Rods (4) journaled in the Face Plates (5), the Rack Segments (3) being engaged and driven by 1" Gear Wheels (6) on an Axle Rod (7).

This Rod (7) carries a Pinion (8), Fig. 6 driven by a Worm (9) and a Rod, to which is secured a  $1\frac{1}{2}$ " Gear Wheel (10). This is driven by a  $\frac{1}{2}$ " Pinion (11) on a Rod, to which is also secured a  $1\frac{1}{2}$ " Gear Wheel (12). This is driven by a  $\frac{1}{2}$ " Pinion (13) rotated by a hand wheel formed by a Face Plate (14).

it is desired

to deposit the boat on the chocks (15). The boat (16) is raised or lowered from the blocks (17) by the ropes (18) which wind on to a Rod (19). On this Rod is secured a  $\frac{1}{2}$ " Pinion (20) engaged by a Worm (21), which is rotated by the Crank Handle (22) formed of two Cranks bolted together. In this way the boat may be lowered over the ship's side.

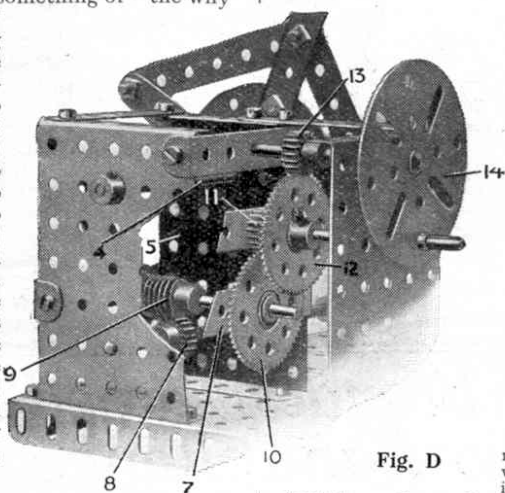


Fig. D

Next Month's  
"New Meccano  
Model"—THE  
HIGH-SPEED  
SHIP-COALER.

How to Build the  
MECCANO  
LOOM

The Meccano Loom demonstrates the process of weaving more perfectly than is possible by any written description. To see the shuttle flying from side to side and to see the reed and the picking-stick at work is a revelation, even to the Meccano boy accustomed to the marvels of model-building. With this Loom and a supply of "Silko" you may weave ties, handkerchiefs, and similar fabrics. These make splendid gifts for your friends, who will be amazed when they learn that the gift is your own handiwork and not the product of some large factory. Full instructions for building this wonderful model are now available in the form of an illustrated leaflet on art paper, price 4d. (post free).

OUR MAIL  
BAG

In this column the Editor replies to letters from his readers, from whom he is always pleased to hear. He receives hundreds of letters each day, but only those that deal with matters of general interest can be dealt with here. Correspondents will help the Editor if they will write neatly in ink and on one side of the paper only.

**W. R. Croft** (Pontesbury).—"I seem to be forced to keep on inventing, thinking, and trying to do my utmost to build more new models." That is why Meccano boys grow up into brainy, useful, successful men, William.

**H. Ward** (Wigan).—"I live three miles away from my Meccano Club, but what are three miles to an enthusiastic Meccano boy?" Quite right, H. W. Every day brings us evidence of the wonderful spirit that characterises the dwellers in Meccanoland.

**R. A. Cammams** (Shoreham).—Nothing pleases us more than to receive thoughtful criticisms of the "M.M." and suggestions for its improvement. You may be interested to hear that your proposal for the extension of the scope of our cycling article to include hints on motor-cycling has been made by several other readers. At present we have too many other important articles on hand to find room for such a feature, but it is quite possible that we shall be able to do so next year.

**D. J. Kendrew** (Southport).—Considering that you have been a reader of the "M.M." for three years, we certainly think you should have written to us before, Donald! We hope you will atone for your neglect by writing regularly in future. As to short stories, we shall publish one or two occasionally, but many of our readers are of opinion that fiction is out of place in the "M.M."

**B. Pearson** (Lye).—We hope you are well on the way to complete recovery now. The knee trouble from which you suffered is always difficult to get rid of, but with the care you are getting we feel sure you will eventually be quite all right again. Write us often.

**W. S. Purves** (Carlisle).—That's an extraordinary rabbit of yours, W. S. P., and we can understand your being so fond of such a clever animal. We think you are right in judging it to be a White Angora. We have no room just yet for a "How to Make" or a "Conjuring" page.

**W. Harvey** (Thornton).—No doubt you lost your medal at the time you fell off the 'bus, which made it a double calamity! However, as you were not damaged and as the police have restored your medal, all is well. We congratulate you on gaining a Scholarship. We find that many successes of this kind are won by Meccano boys.

**D. Maclean** (Chasetown).—We are glad you had such a fine time in London. We have seen all the sights you mention except Big Ben having his face washed, and that particular one has so far been denied to us!

**N. F. J. Ward** (Berkhamstead).—Thanks for photographs of the Bridgewater Monument, of which we had not heard before. What a fine view from the top! Your description makes everything clear.

**A. V. King** (767 Mess 46 London).—What magnificent experiences you have had during your tour round the Empire in H.M.S. "Hood." We are very glad to know that it was through the Meccano Guild and the "M.M." that you formed a friendship with Mr. Sherwood and his son out in Canada. We appreciate all you say regarding us and our work amongst boys.

**G. Corby** (Cheadle).—We congratulate you on having won three prizes in our various Model-Building Competitions. We have a great variety of new Competitions this season and no doubt we shall resume the big Model-Building Contest later.

**H. R. Dorsey** (Leeds).—We also congratulate you on winning three prizes in succession in Model-Building Competitions. We wonder how many Meccano boys besides yourself and G. Corby have performed the hat trick!

**B. Green** (Enfield Wash).—We are glad to know that your thorough knowledge of Meccano has enabled you to secure a job with a first-class engineering firm. We are also very interested to hear that your Meccano Correspondence Club friend in Ceylon is coming over to see you, and we well understand your excitement at the prospect of meeting him.