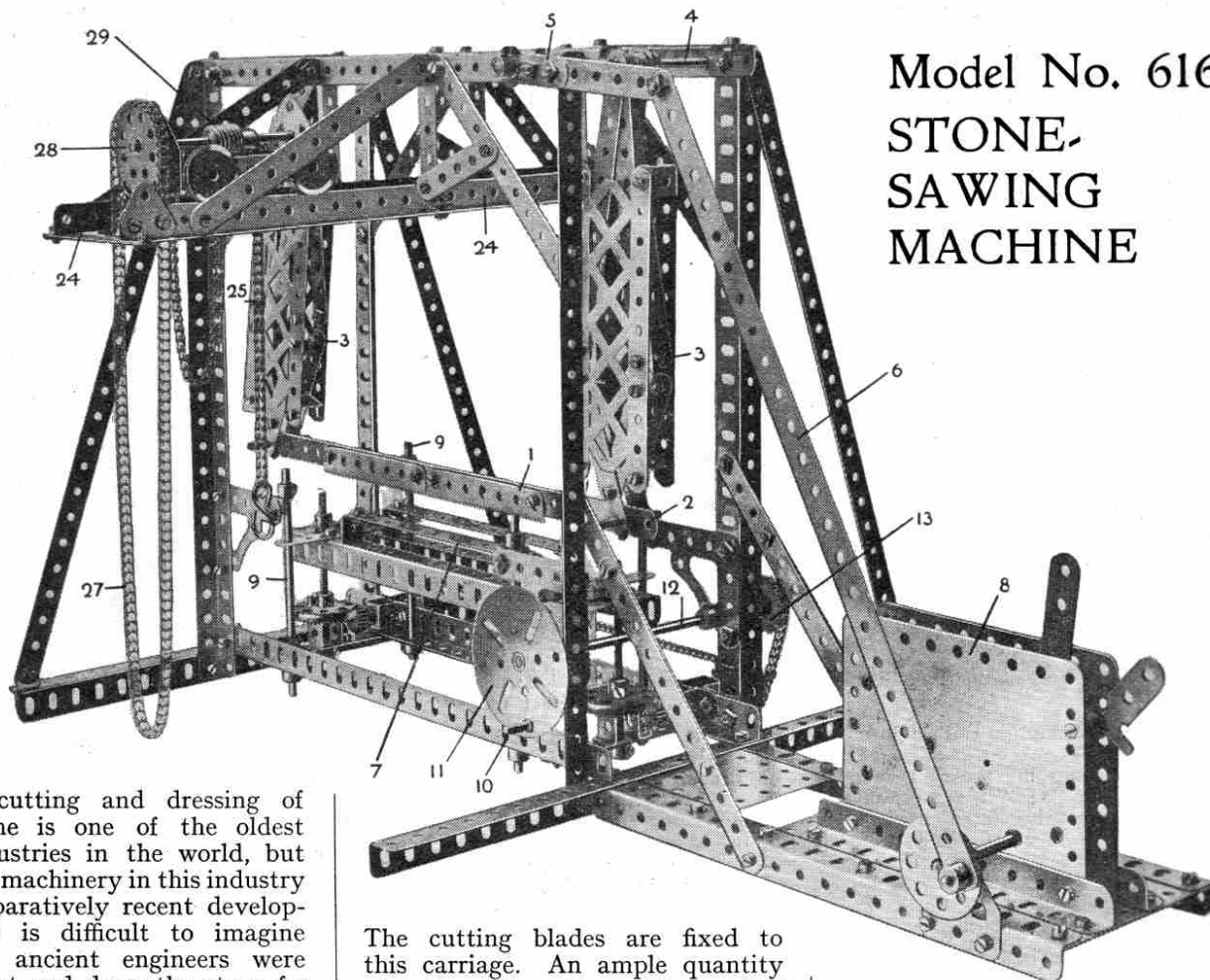


# A NEW MECCANO MODEL



Model No. 616  
STONE-  
SAWING  
MACHINE

THE cutting and dressing of stone is one of the oldest industries in the world, but the use of machinery in this industry is a comparatively recent development. It is difficult to imagine how the ancient engineers were able to cut and dress the stone for their great buildings and monuments. Indeed, this subject presents many interesting problems, and some of the achievements of the ancient craftsmen are remarkable. Some day we hope to publish a series of articles on Ancient Engineering, when the subject of stone-cutting and stone-dressing in early days will be dealt with in greater detail.

## Frame Saws

In modern stone-yards the most important work done by machinery is the actual cutting or sawing of the stone, and for this purpose two main types of saws are used. These are the Diamond Saw and Frame Saw.

The new Meccano model illustrated on this page demonstrates the working of the frame type of saw. This consists of an upright frame supporting a swinging carriage, which is given an oscillating motion from a driving crankshaft.

The cutting blades are fixed to this carriage. An ample quantity of water and sawing grit is supplied to the blades, and by driving this grit backward and forward the blades cut their way into the stone.

## Diamond Saws

The diamond saw is an entirely different machine, and is of more recent origin.\* It operates by means of a circular blade consisting of a steel disc having diamonds mounted in sockets on its periphery. The diamond saw cuts very much faster than the frame saw, and this gives it great commercial value where large output is required.

For some purposes the steel disc and its diamonds are replaced by a wheel having a steel centre and a rim of carborundum. The carborundum wheel gives a very smooth cut with sharp edges, and is largely used in working marble. It takes more power, however, and its cutting rate is slower. In the case

of very soft stone—such as Bath stone, for example—a steel-toothed wheel is often used.

Preliminary rough sawing of large blocks of marble or stone is frequently performed in quarries or yards by a wire running over the surface of the stone. This wire cuts in a similar manner to the frame saw, by means of an abrasive such as sand and water.

## The Meccano Model

The construction of this model is not difficult to follow from the illustrations, and there is little to be said to supplement them.

The sawing strip (1) consists of two Rack Strips bolted to a 12½" Strip (2) connected by 1" Rods to the ends of the swinging frames (3). One of these is loosely pivoted on one of the Rods carried in the frame, the other being secured by a Crank to the Rod (4). The swinging frames (3) are oscillated

\* The first diamond stone saw was made by Geo. Anderson & Co. about 27 years ago. We are indebted for our information on stone saws to Messrs. The Anderson-Grice Co. Ltd., of Carnoustie.

## A New Meccano Model—(continued)

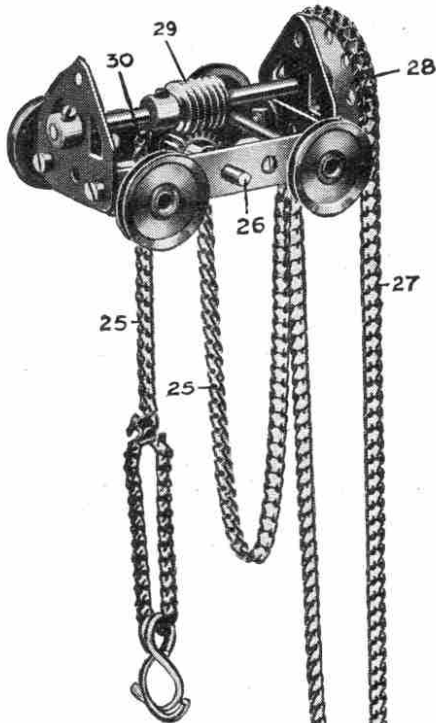


Fig. A

from the Crank (5) and connecting rod (6) driven by the Clockwork Motor (8).

The support frame (7), on which the stone blocks to be sawn are raised and lowered, is guided on the vertical Rods (9) and raised and lowered by the operation of the Threaded Pin (10) forming a handle on the Face Plate (11). This Face Plate is mounted on a Rod (12) carrying a 1" Sprocket Wheel (13) connected by a chain to another 1" Sprocket Wheel (14 Fig. B) on a Rod (15). A third 1" Sprocket (16) on the same rod is coupled to a fourth 1" Sprocket Wheel (17) at the other end of the machine.

The Rods (15 and 18) carry  $\frac{1}{2}$ " Pinions (19) driving Contrate Wheels (20) secured on Screwed Rod (21) and engaging Threaded Cranks (22) secured to the frame (7) by  $1\frac{1}{2}$ " Strips (23).

The trolley (Fig. A) runs on gantry rails (24) and the load chain (25) passes over a  $\frac{3}{4}$ " Sprocket Wheel on the Rod (26), to be secured at one end to the trolley frame.

The chain (25) is raised or lowered by the operation of a Sprocket Chain (27) passing over a  $1\frac{1}{2}$ " Sprocket Wheel (28). This is mounted on a Rod carrying a Worm (29) which engages a  $\frac{1}{2}$ " Pinion on another Rod (26) carrying a Sprocket Wheel (30) over which the load chain (25) passes.

## Parts required :

5 of No. 1	12 of No. 35
19 " " 2	4 " " 37
1 " " 2A	181 " " 37A
11 " " 3	32 " " 38
4 " " 4	6 " " 45
8 " " 5	1 " " 47
2 " " 6A	5 " " 48A
12 " " 7	3 " " 53
4 " " 8A	2 " " 57
2 " " 9	15 " " 59
1 " " 10	2 " " 62
8 " " 11	2 " " 62A
15 " " 12	2 " " 76
1 " " 14	2 " " 80A
1 " " 15	40 " " 94
5 " " 15A	1 " " 95A
3 " " 16	1 " " 96A
2 " " 16A	4 " " 100
1 " " 17	4 " " 108
2 " " 18A	1 " " 109
4 " " 22	2 " " 110
1 " " 24	180 " " 111B
3 " " 26	2 " " 115
2 " " 28	4 " " 125
1 " " 32	3 " " 126A

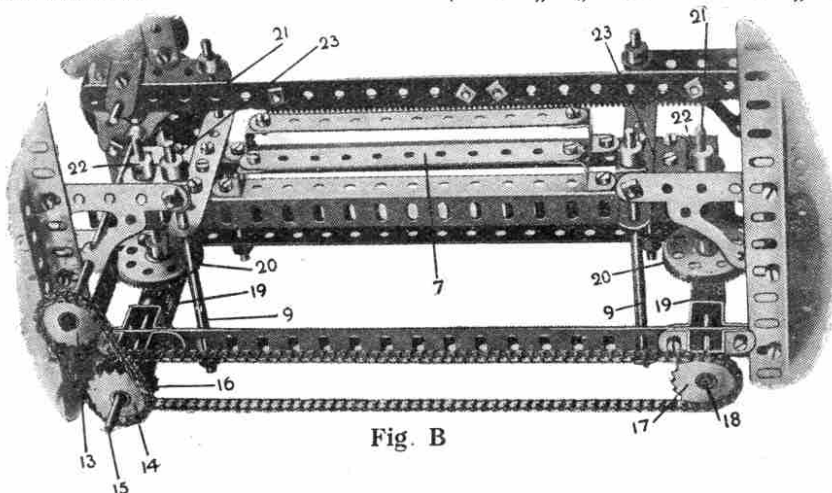


Fig. B

## 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.

**T. Wray** (Peckham).—"If six snakes in a circle began to eat each other's tails, how much would be left of each when they had finished eating? I have been trying to solve this problem for many weeks past but have been unlucky." So have we, Thomas; in fact, we have had no luck at all with it!

**J. Wadham** (Seascale).—"We have many girl members of the Meccano Guild and shall be glad to enrol you. We are pleased that you enjoy model-building so much."

**D. Armstrong** (Sydney, N.S.W.).—"You write an excellent letter for one so young. We gave your congratulations to Mr. Hornby, and he asks us to thank you for your nice wishes."

**I. M. H. Etherington** (Mill Hill).—"I have placed a regular order now with a newsagent for the 'M.M.', so I can sleep in peace at night without fear of missing it." That's a fine feeling to have, Ivor, and you share it with about 50,000 other boys. Thanks for your riddle, which is good, and for your kind wishes, which are acceptable.

**A. E. Fletcher** (Berwick-on-Tweed).—"The 'M.M.' seems to inspire me with feelings that somehow make Meccano a dearer (not in price) thing to me. When I read about all the fine things that other Meccano boys do I feel that I, too, must do something." Many thanks for all the kind things that your letter contains, and which are much appreciated. We hope that all Meccano boys will wear their Guild Badges when they visit Wembley. They will find there many kindred spirits and thoroughly good fellows.

**E. L. West** (Taumarunui).—"I live in the heart of the North Island of New Zealand, amidst the wonderful race of Maoris. Around are lonely bush-clad hills. We envy you, Eric! There is no such glorious scenery as you describe near us, but we have lots of nice rainy days! We hope your forecast of a happy Meccano winter is being realised."

**G. R. Thomas** (Dewsbury).—"We greatly appreciate your keenness in recruiting for the Guild, but you make us shudder when you write: 'If my chum doesn't join soon I know of a way to make him!' What dreadful tortures are you preparing, G. R.? Surely peaceful persuasion will have its reward."

**C. L. Arms** (Macclesfield).—"Your numerous suggestions are very interesting. We have already given consideration to the publication of photographs of British locos on 'cigarette cards,' and some day may be able to add these to the attractions of the 'M.M.' but not at present. Your short story about 'Burglar Bill' is very pathetic, and we may be able to find a corner for it some time."

**L. R. Stockdale** (Thirsk).—"We assure you that we share your anxiety to see the 'M.M.' increase in size, and we will just whisper in your ear that it is already feeling growing pains, so look out for developments before long! We were pleased to hear that you have found the 'Story of Iron and Steel' useful in your school work."

**A. Watson** (Melbourne, Australia).—"One sentence in your letter appealed to us very much: 'Although I am thousands of miles away from you I feel that my Guild membership forms an invisible but real bridge between us.' You are quite right, Arthur, the Guild is a world-wide brotherhood of boys, and the Guild President and Secretary are just as much interested in members who live in far-off countries as they are in boys living next door, as one might say."

**D. C. Young** (Sheffield).—"If your father is able to take you to one of the big Sheffield steel works you will be a very lucky boy, and you must write and tell us about your visit. Your story about the Scotsman is a 'chestnut' that we heard years ago, even before the story of the Scotsman who went to Woolworth's 6d. Stores and asked for the piano department!"

**G. Plowright** (Lower Benefield).—"You seem to have had a real 'wamble' at Wembley. We agree that the Palace of Engineering is the most interesting part of the Exhibition, with the Palace of Industry a good second. Editors are supposed to be very serious-minded people, quite above such things as the Amusement Park, but we confess that we also spent a good deal of time there and enjoyed every minute of it!"

**A. R. Burnicombe** (Lincoln).—"Many thanks for your good wishes. We are glad to know that you have enjoyed the 'Electricity' and 'Iron and Steel' articles so much. We are afraid that your suggestion for a page about pets would not meet with the approval of the majority of our readers. We have an illustration of 'Felix the Cat' in this issue."