Next Month: "THE HERRING HARVEST." By James Worth

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With the Editor

"Comet" Jet Liner's Trips

Since Mr. D. M. Powell wrote his interesting article on the de Havilland "Comet," published in last month's issue, this successful British jet air liner has given further proof of what can be expected in the way of high-speed long-distance air travel when large jet air liners come into regular service.

The "Comet" recently returned to Hatfield after spending some 15 days in Egypt, the Sudan and Kenya, doing a comprehensive series of tropical flight trials and take-off and landing tests at high-altitude airports. The Eastleigh airport at Nairobi, for instance, where some of the tests were carried out, is 5,370 ft. above sea level, and only 1 deg. 18 min. south of the Equator. On the outward trip the "Comet" was flown from London to Cairo, just under 2,200 miles, in 5 hrs. 6 min., thence to Nairobi, a similar distance, in 5 hrs. 15 min., and finally from there to Khartoum in 3 hrs. 10 min. Each of these successive stages was flown in about half the time taken by present-day airlines, and similar fast times were recorded on the stages of the homeward flight.

Chief pilot throughout the venture was John Cunningham, who had a test crew of five, and there were 10 passengers, most of them senior de Havilland officials. Several thousand pounds' worth of special equipment were also carried in the aircraft.

British Motor Engineering Triumphs

On page 354 of this issue there are pictures of the largest and most powerful tractor ever designed and built in this country, which weighs 15½ tons, and can haul a total load of 100 tons. This giant is fittingly called "The Mighty Antar." The name is that of a great Arab warrior and poet, and the tractor is designed for use in constructing a new oil pipe line across the desert tracks and sandy wastes of the Middle East.

In future issues I hope to tell readers about others, such as the gigantic Dyson trailer, the purpose of which is to carry large excavators, and another tractor with four-wheel drive built by Scammell Lorries Ltd. that can literally go anywhere and was specially designed for difficult conditions in the Borneo area.

This Month's Contents

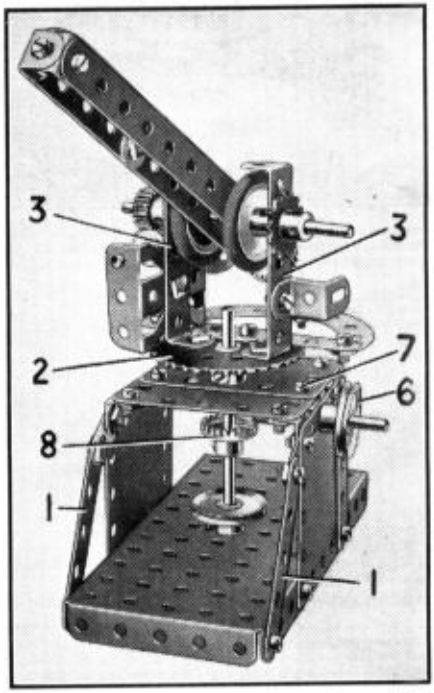
Using the Meccano Gears Outfit "A"

An Anti-Aircraft Gun for Outfit No. 2

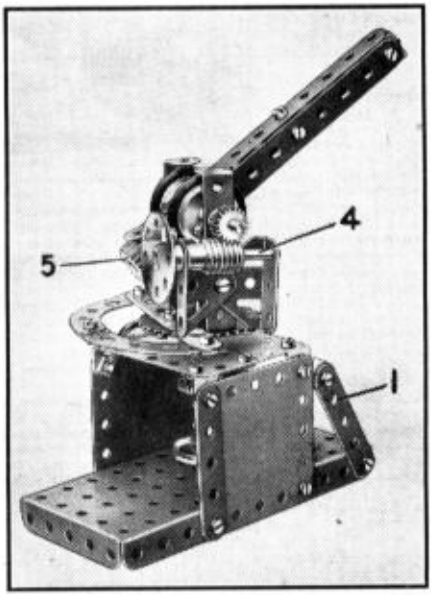
OWNERS of Outfit No. 2 and a Gears Outfit "A" will find the anti-aircraft gun shown in the pictures on this page a splendid subject for their attention. The use of gears enables the gun to be swivelled or the barrel to be elevated as required simply by turning a handwheel.

A 5½"×2½" Flanged Plate provides a solid base for the model and a tower built up from 2½"×2½" and 2½"×1½" Flexible Plates is bolted to it. Stays consisting of 2½" Strips 1 are then attached to the tower by Fishplates. The gun is made by bolting two 2½" Strips, overlapping three holes, to a 2" Sprocket Wheel 2, the Strips having two 2½" Curved Strips bolted to them. Two 2½"×½" Double Angle Strips 3 are also bolted to the Sprocket, and a pair of Trunnions, which form bearings for a 2" Rod 4, are attached to one of the Double Angle Strips. The Rod 4 is fitted with a Worm and can be rotated by a handle.

A ½" Pinion on a 3½" Rod engages with the Worm and the barrel of the gun is held on the Rod between two 1" Pulleys fitted with Rubber Rings. The barrel consists of three 5½" Strips, which are connected at the muzzle and in the centre



A swivelling and elevating anti-aircraft gun built from Outfit No. 2. It includes also some parts from a Gears Outfit "A."



In this view of the anti-aircraft gun the elevating gearing can be seen.

by Angle Brackets, and two of them are bolted to the boss of a ¾" Pinion 5.

The gun is swivelled by turning a 1" Pulley 6, which is locked on a 2" Rod mounted in the side of the tower and in an Angle Bracket spaced from the 2½"×1½" Plates by a Washer. The Bolt that holds the Bracket is shown at 7. A ½" Pinion on the 2" Rod meshes with Contrate 8.

Parts required to build the Anti-Aircraft Gun: 3 of No. 2; 6 of No. 5; 2 of No. 10; 8 of No. 12; 2 of No. 16; 2 of No. 17; 4 of No. 22; 1 of No. 24; 34 of No. 37; 2 of No. 37a; 2 of No. 38; 2 of No. 48a; 1 of No. 52; 2 of No. 90a; 2 of No. 111c; 1 of No. 125; 2 of No. 126; 2 of No. 155; 2 of No. 188; 2 of No. 190; Gears Outfit "A."

Among the Model-Builders

By "Spanner"

WORKING MODEL LATHE

From time to time we have mentioned in the "*M.M.*" model machine tools such as drilling machines and lathes that could be put to practical use on light work. A further example of a model of this kind is the fine lathe shown in Figs. 1 and 2 on this page. This model was built by Miguel Anselmo Viglioglia, Buenos Aires, and we understand that it is capable of working satisfactorily on wood and very soft metals. The headstock mandrel is provided with a three-speed gear-box, and the tool carriage also is capable of operating at three different speeds, which are provided by a separate gear-box. All these drives can be reversed in direction.

A fractional horse-power electric motor is used for driving the model. As will be seen, the model is very neatly constructed and the close-up view of the carriage reveals excellent constructional features and some idea of the sturdy construction adopted. The model is one of the best of this kind that I have seen, and I congratulate its builder on his handiwork.

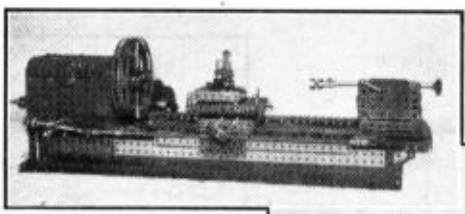


Fig. 1. A well-constructed lathe built from Meccano parts. A close-up view of the sliding carriage is seen in Fig. 2, on the right.

CREEPER TRACK

The construction of realistic creeper tracks using a minimum number of parts has always been a problem with Meccano enthusiasts. Suggestions have been made for creeper tracks built from Strips and using Sprocket Wheels and Chains, but the model-builder is apt to find that most of his Strips have been used up before he has made a track of the desired length. This method therefore is not suitable for owners of small Outfits.

A neat form of track that is suitable for use on medium-sized models, and to which this drawback does not apply to the same extent, is shown in Fig. 3. Two Driving Bands are threaded through the holes in Fishplates and held in place by short lengths of wire. The complete track is fitted so that the Driving Bands lie in the grooves of 1" Pulleys fixed on 1½" Rods journalled in the 2½" Strips. The 1" loose Pulleys support the centre portion of the track, and they are spaced apart by Washers. The short lengths of wire and the Driving Bands provide a good grip, and a model fitted with similar creeper tracks to these should be able to climb fairly steep inclines.

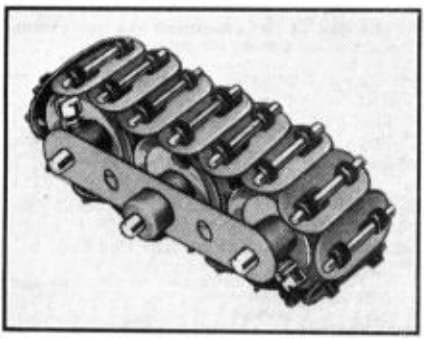
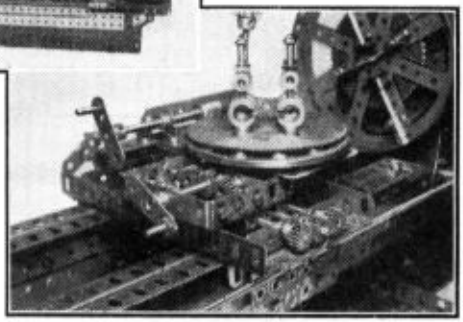


Fig. 3. A suggested method of constructing creeper track for a small model.

MECCANO MODEL ASSISTS IN ERECTION OF A NEW BRIDGE

The possibility of building Meccano cranes and similar models fairly accurately to scale has often led to the use of such models in connection with the development of actual engineering projects. One of the latest instances to come to my notice concerns the erection of a fine concrete bridge across the River Mersey at Carrington. Owing to certain peculiar conditions at the site it was essential to arrange matters so that all the erection operations could be carried out from one side of the river. The only crane the constructors had available was an electric derrick with a 120 ft. jib, and it was necessary that this should be positioned so that the whole of the work could be covered. It was in this connection that Meccano proved useful. The two sons of Mr. H. Woulds, a director of Harry Fairclough Ltd., Warrington, the contractors responsible for the erection of the bridge, are keen Meccano enthusiasts, and at his request they built a ¼" scale model of the crane, which was then used in conjunction with a scale model of the bridge itself to determine the most suitable place on the river bank to erect the real crane when the construction operations began. The models are shown in Fig. 4 and I understand that they proved very helpful.



DERAILLEUR TYPE CHANGE-SPEED MECHANISM

Most readers will be familiar with the Derailleur type change-speed gears fitted to many modern bicycles, particularly sports machines. In this mechanism the gear change is effected by providing a series of different sized sprockets fixed to the hub of the rear wheel, so that the driving chain can be moved on to any one of the sprockets by means of a suitably placed lever. R. Wood, Shafton, near Barnsley, who

is an enthusiastic model-builder, has been experimenting with this type of mechanism in Meccano, and he recently sent me details of a simple change speed device based on the Derailleur principle. The mechanism is shown in Fig. 5.

The bicycle chain wheel is represented by a 3" Sprocket 1, fixed on a Rod mounted in two 5½" × 2½" Flanged Plates that are connected at each end by a 2½" × 1½" Flanged Plate. The Sprocket 1 is rotated by turning a handle 2 that drives the rod of the Sprocket through two ½" Pinions. This arrangement is used so that the handle can be turned in the usual clockwise direction.

The mechanism gives two ratios, which are provided by the 1½" Sprocket 3 and the 2" Sprocket 4. These are fixed on a Rod suitably mounted in the framework. Two small idler Sprockets are carried on a pivoted arm 5, which consists of a 3½" Strip bolted to a Crank. The Crank is fixed on a Rod that is free to slide laterally in its bearings, so that by moving the Rod the arm and Sprockets carry the Chain sideways. In this way the Chain can be transferred to either of the Sprockets 3 or 4, thus altering the ratio between these Sprockets and the Chain Wheel. The Chain is maintained at the proper tension by a Driving Band looped round the arm 5 and fixed at the rear of the mechanism.

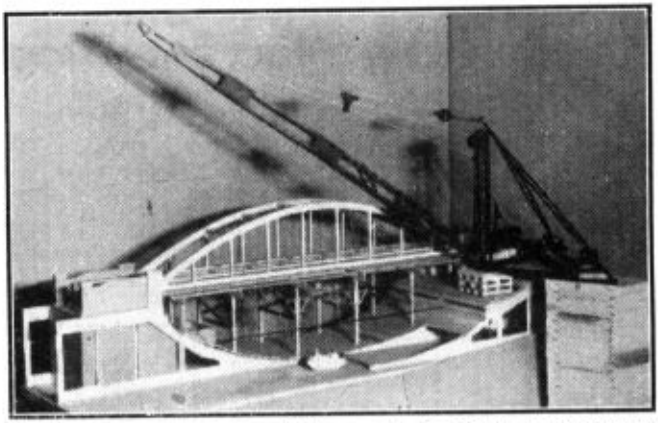


Fig. 4. A model of the Carrington bridge over the river Mersey, and the Meccano derrick crane that was built for experimental purposes in connection with the erection of the actual bridge.

SUMMER HOLIDAY SIMPLICITY CONTEST

This month we are announcing a special Simplicity Competition for models of subjects associated with summer holiday activities and pastimes. Many suitable subjects for this competition are to be found along the sea-front, and amusement machines seen in fairgrounds offer a particularly wide choice for displaying originality and novelty. Well posed groups of simplicity figures of people engaged in summer sports, also will make attractive entries.

Prizes will be awarded to model-builders who succeed in constructing the most ingenious and attractive models *using the smallest number of parts consistent with a realistic appearance.*

Competitors should send in either photographs or sketches of their models to *"Summer Simplicity Contest, Meccano Ltd., Binns Road, Liverpool 13,"* and the sender's age, name and address must be written clearly on each illustration submitted.

The competition will be in two Sections for Home and Overseas readers respectively, and the following set of prizes will be awarded in each Section. First, Cheque for £3/3/–; Second, Cheque for £2/2/–; Third, Cheque for £1/1/–. In addition there will be five prizes of Postal Orders for 10/6, and five of Postal Orders for 5/–. The closing dates are, Home, September 30th, Overseas, December 31st.

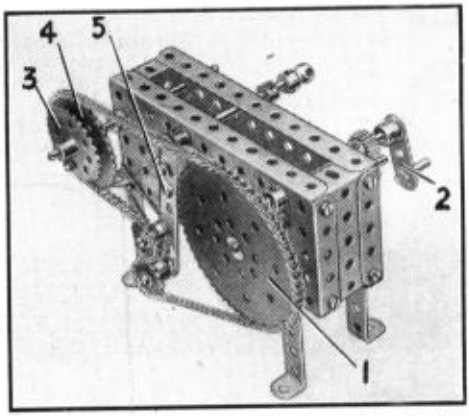


Fig. 5. A Derailleur type change-speed mechanism assembled on a demonstration framework.

MECCANO COMPETITION RESULTS

YULETIDE MODEL-BUILDING COMPETITION (HOME SECTION)

First Prize, Cheque for £3/3/–: C. J. C. Harden, Cambridge. Second Prize, Cheque for £2/2/–: B. R. Osborn, Solihull, Nr. Birmingham. Third Prize, Cheque for £1/1/–: P. A. Crumpton, Maidstone.

Five Prizes each of 10/–: G. Cruickshank, Glasgow S.4; J. Todd, Kingsland, Nr. Leominster; D. McRae, Maybole, Scotland; C. Cruickshank, Glasgow S.4; J. K. Wright, Hull.

Five Prizes each of 5/–: C. Fitzpatrick, Dublin; J. Muir, Purley, Surrey; D. Farrer, Cambridge; B. Davis, Blackpool, S.S.; D. Neale, Edinburgh 9; M. J. Murchie, Dumfries.

OUTFIT No. 3 MODEL-BUILDING COMPETITION (HOME SECTION)

First Prize, Cheque for £3/3/–: C. J. C. Harden, Cambridge. Second Prize, Cheque for £2/2/–: M. Macfarlane, Stafford. Third Prize, Cheque for £1/1/–: D. Thomas, Ilford.

Five Prizes, each of 10/6: R. Martin, Ewhurst, Surrey; C. E. Wrayford, Bovey Tracey, Devon; R. Towner, Harrow; D. Towason, Liverpool 11; M. G. Lyons, Norwich.

Five Prizes, each of 5/–: M. Gulliford, Taunton; D. J. Woolard, Green St. Green, Kent; M. J. Page, London S.W.16; E. D. Froggatt, Loscoe; D. Lindsay, West Lothian, Scotland.

New Meccano Models

Naval Destroyer—Pile Driver

OUR first new model this month is a miniature but realistic naval destroyer, seen in Fig. 1. An underneath view of the model, showing the interior construction of the hull, appears in Fig. 2.

The hull consists of four 12½" Strips connected at the stern by two Formed Slotted Strips. At the prow the Strips are bolted to a 1½" Strip 1, which carries also two 5½" Strips 2 that form each side of the fore-deck. The other ends of the 5½" Strips are joined by Fish-plates 3 to the upper 12½" Strips. The sides of the hull are spaced apart by two 1½"×½" Double Angle Strips 4 and 5 (Fig. 2).

The fore-deck consists of 3½" Strips bolted together at one end and attached at the other to a 1½" Strip 6 bolted by its centre hole to the apex hole of a Flat Trunnion. This Trunnion in turn is bolted to a 1½"×½" Double Angle Strip held by a Bolt 7 on each side of the vessel.

Two 2½"×1½" Flanged Plates 8 and 9 and two 1½" Flat Girders 10 fill in the remaining deck areas and the stern is filled in by a Wheel Disc 11 bolted to a 1"×½" Angle Bracket fixed to the Formed Slotted Strips that form the stern. The fore Flanged Plate is held by a Bolt to the Double Angle Strip 4, while the after Plate is held to one of the 1½" Flat Girders by means of a 3" Screwed Rod that forms the rear mast. This Rod passes through the Washers, Double Arm Crank 12 and 1½" Strips that represent the superstructure built around the mast, and a nut is tightened against the Washers. Another nut on the underside of the Flanged Plate makes the assembly secure.

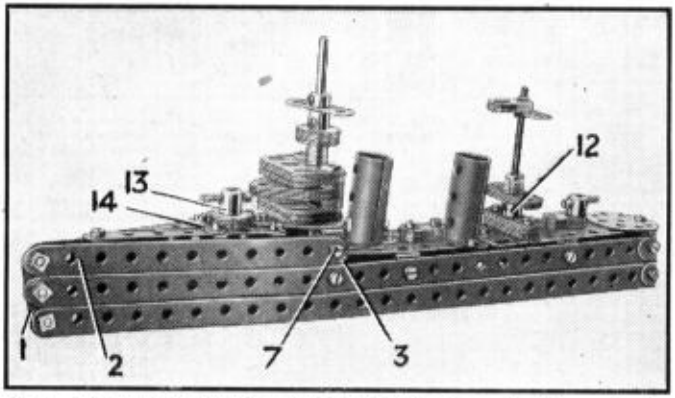


Fig. 1. This naval destroyer is a realistic subject for those who like constructing model ships.

The bridge superstructure consists of 1½" Flat Girders, Flat Trunnions and 1½" Strips, topped with six Washers and four or five ¾" Washers.

The Sleeve Pieces forming the funnels are mounted on Chimney Adaptors bolted to the deck. The gun 13 in the bows consists of a Threaded Boss, four ¾" Washers and a ¾" Bolt. A bolt passed through a 1" Corner Bracket 14 into the

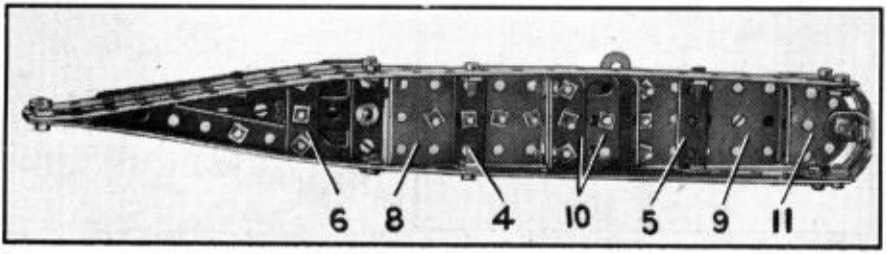


Fig. 2. An underneath view of the destroyer's hull.

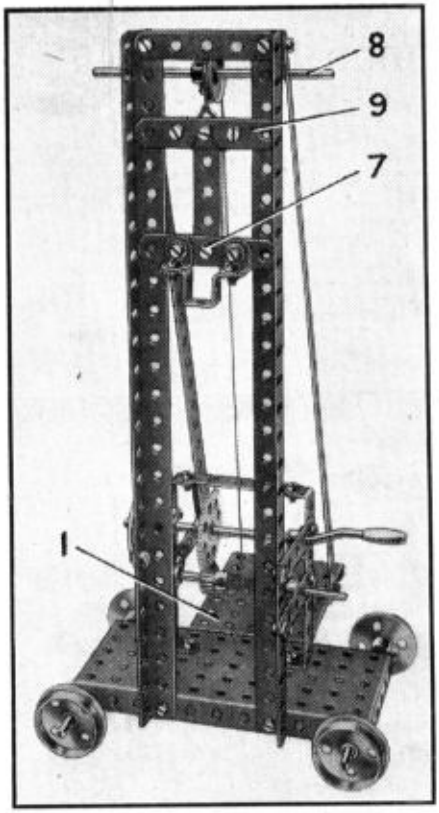


Fig. 3. General view of pile driver.

Threaded Boss holds the unit.

Parts required to build model Destroyer: 4 of No. 1; 2 of No. 3; 28 of No. 6a; 1 of No. 9f; 25 of No. 10; 1 of No. 12b; 1 of No. 16; 1 of No. 24a; 24 of No. 37a; 20 of No. 37b; 21 of No. 38; 11 of No. 38d; 3 of No. 48d; 2 of No. 51; 2 of No. 59; 2 of No. 64; 1 of No. 80a; 14 of No. 103h; 2 of No. 111; 3 of No. 111a; 14 of No. 111c; 6 of No. 126a; 1 of No. 133a; 2 of No. 163; 2 of No. 164; 2 of No. 215.

Our second new model this month is a pile driver of the kind used for driving steel piles or heavy timbers deep into the ground in preparing the foundations for bridges, large buildings and similar constructional work. Our model is operated by hand, but most actual machines are either electrically driven or operated by steam power. The pile driver consists essentially of a heavy block of steel which forms a hammer, and can be raised to a considerable height by hauling it up vertical guides that form the column of the machine. The block is then allowed to drop and strike the end of the pile, thus forcing it gradually further and further into the ground.

A $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate forms the base of the model and is extended by a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 1. Two $12\frac{1}{2}''$ Angle Girders bolted to the $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Plate are braced by two $12\frac{1}{2}''$ Strips attached to the top of the Girders and to Flanged Plate 1. Two $3\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 2 bolted to the $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate are attached to the Angle Girders by $2\frac{1}{2}''$ Strips that form bearings for a Crank Handle and a $4\frac{1}{2}''$ Rod 3. The Cord for hoisting the driver block 7 is tied to the Rod 3, and the Rod is rotated from the Crank Handle through a 57-tooth Gear that meshes with a $\frac{1}{2}''$ Pinion on the Rod 3. The Pinion can be engaged with the Gear at will by means of the lever 4. This is a 3" Strip lock-nutted at 5 and held by a $2\frac{1}{2}''$ Strip 6, which is spaced from the $12\frac{1}{2}''$ Strip by one Washer.

The driving block 7 is formed by attaching a Double Bent Strip to a $2\frac{1}{2}''$ Strip by Angle Brackets, the bolts holding also a second $2\frac{1}{2}''$ Strip that is spaced from the first by two Washers. This forms the lower part of the slide frame and is connected to the other similarly constructed half by means of a vertical $2\frac{1}{2}''$ Strip. The Cord from Rod 3 is taken over a 1" Pulley on a 4" Rod 8 and tied to the driving block.

Parts required for model Pile Driver: 2 of No. 1; 1 of No. 3; 12 of No. 5; 1 of No. 6; 2 of No. 8; 6 of No. 12; 2 of No. 15; 2 of No. 15b; 1 of No. 19g; 4 of No. 20; 1 of No. 21; 1 of No. 22; 1 of No. 26; 1 of No. 27a; 4 of No. 35; 29 of No. 37; 4 of No. 37a; 16 of No. 38; 1 of No. 40; 1 of No. 45; 2 of No. 48b; 1 of No. 52; 1 of No. 53; 6 of No. 59; 4 of No. 111c.

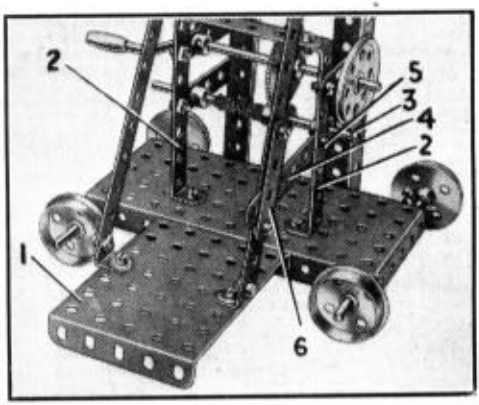


Fig. 4. Close-up of base of pile driver, showing winding mechanism.