

# Among the Model-Builders

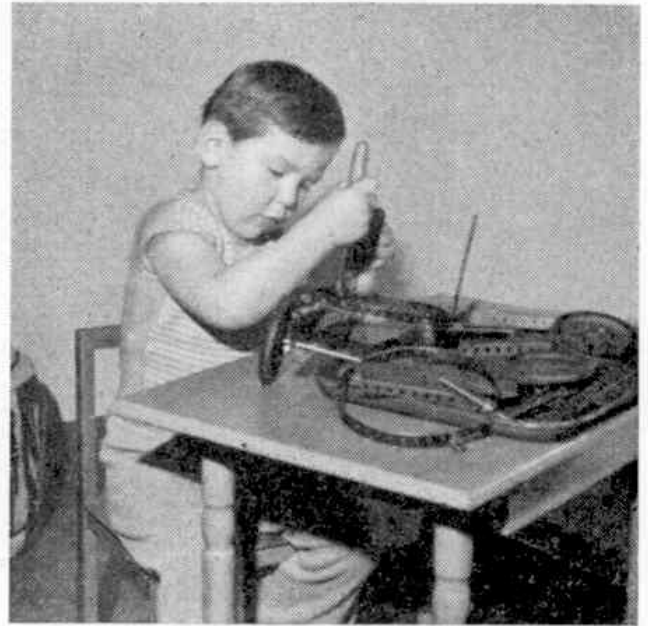
By "Spanner"

## An Unusual Quick Return Mechanism

Machine tools of all kinds make attractive subjects for model-builders with good stocks of parts at their disposal, as most of them incorporate interesting mechanisms. Among these are devices for speeding up the return or non-cutting stroke. Several quick return arrangements have been described in the *M.M.*, but the mechanism I am describing this month is specially interesting as it is operated by a Crank and an ingenious arrangement of pivoted levers that can be seen in the illustration below.

The Crank 1 is fixed on the driving shaft, and to it is pivoted on a lock-nutted bolt a  $3\frac{1}{2}$ " Strip 2. The other end of this Strip is lock-nutted to a  $2\frac{1}{2}$ " Strip 3 and a 3" Strip 4. A  $\frac{3}{8}$ " Bolt is passed through the Strip 3 and is gripped in the boss of a Slide Piece, which is slipped over a  $5\frac{1}{2}$ " Strip supported by Angle Brackets. The Strip 4 is bolted to a Crank that pivots freely on a  $\frac{1}{2}$ " Bolt 5.

Assuming that the Crank 1 is rotating anti-clockwise, when it is in the position shown in Fig. 1 the Slide Piece moves slowly to the left, to make the cutting stroke. As the Crank turns towards the Bolt 5 the Slide Piece returns more rapidly. The closer the end of Crank 1 is to the Bolt 5, the more rapid is the movement of the Slide Piece.



Is he the youngest reader of the "M.M."? Denis Philippe Donner, Bienne, Switzerland, is only four years of age, but he is already a Meccano enthusiast and takes a keen interest in the "M.M."

## A Meccano Front-Wheel Drive Mechanism

The introduction of the Dinky Toys Army Covered Wagon has prompted many enthusiasts to make Meccano models of this and other army vehicles and several have written to tell me of the difficulties they have found in reproducing the front-wheel drive mechanisms fitted to most up-to-date army vehicles. Actually it is quite easy to assemble an efficient front-wheel drive mechanism from standard parts, and the arrangement shown in Fig. 2 is quite satisfactory.

The front axle consists of two built-up strips, each made from two  $5\frac{1}{2}$ " Strips overlapped nine holes. The strips are spaced apart by three Washers on each of the Bolts that fixes them to the front springs. The road wheels are mounted quite freely on short Rods, each of which is fixed in a Coupling that carries two 1" Rods. A  $\frac{3}{4}$ " Pinion 4 is free to turn on the upper 1" Rod, but it is held in place by a Collar, and the

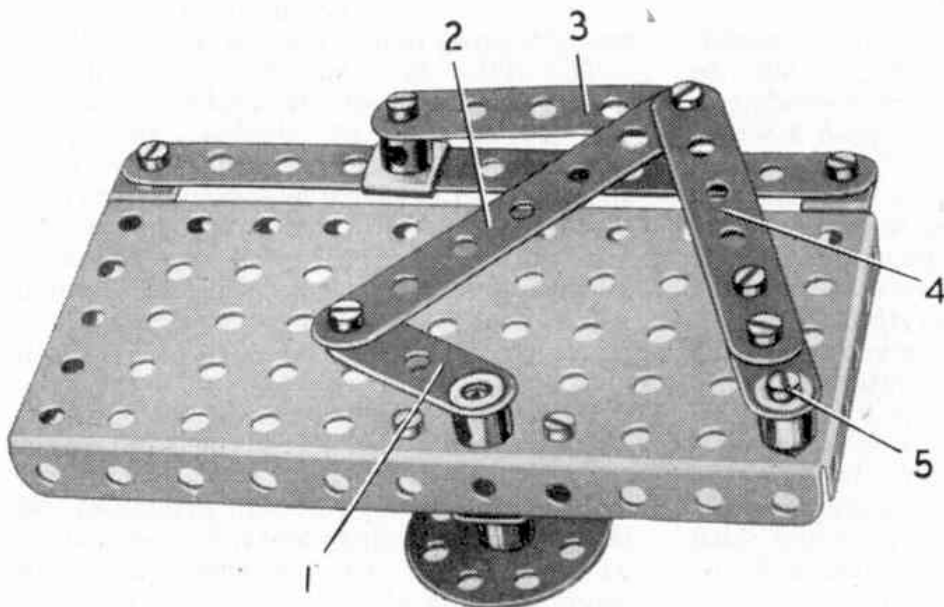


Fig. 1. A quick return mechanism of unusual design, suitable for use in planing machines and models of other machine tools.

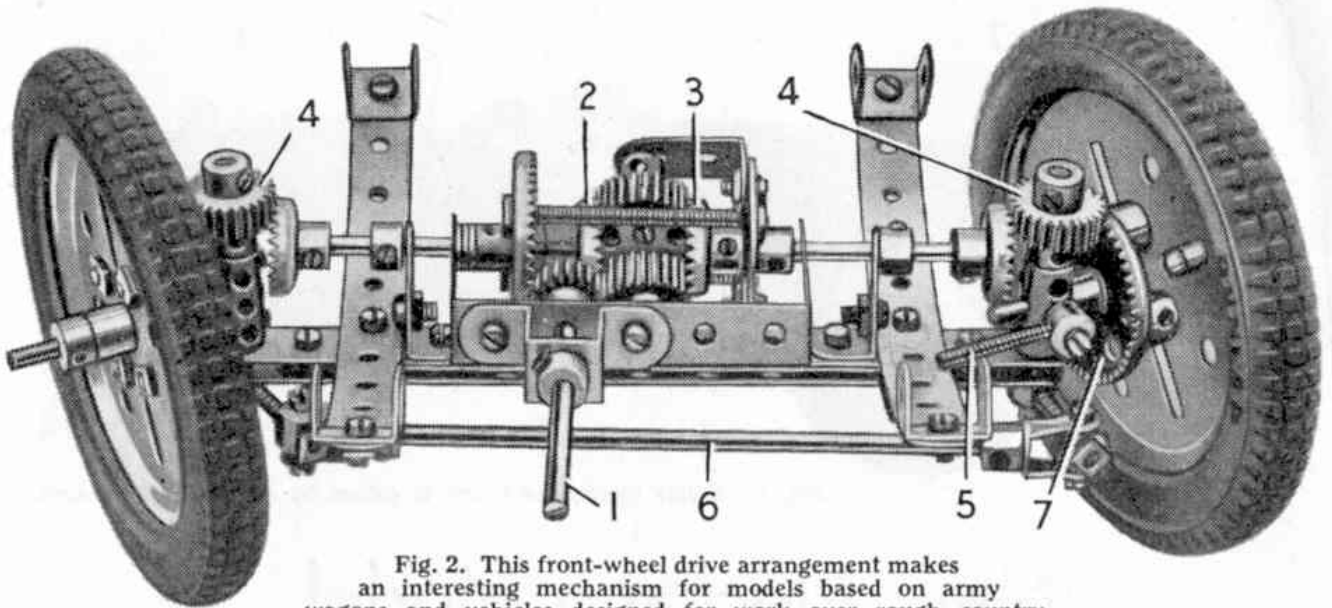


Fig. 2. This front-wheel drive arrangement makes an interesting mechanism for models based on army wagons and vehicles designed for work over rough country.

lower Rod is supported in the end holes of the front axle and is also kept in position by a Collar. A  $1\frac{1}{2}$ " Contrate 7, spaced from each road wheel by Collars on  $\frac{1}{2}$ " Bolts, is driven by the Pinion 4. A 1" Screwed Rod threaded into the Collar on each of the lower 1" Rods is provided with a Swivel Bearing. The Swivel Bearings are connected by a Rod 6. Another 1" Screwed Rod 5 is fixed in a Collar attached by a  $\frac{3}{8}$ " Bolt to one of the Couplings. This Screwed Rod is connected by suitable links to the steering gear.

The driving shaft to the differential is a Rod 1 supported in a Double Bent Strip and a  $2\frac{1}{2}$ " x 1" Double Angle Strip. A  $\frac{1}{2}$ " Pinion on Rod 1 drives a  $1\frac{1}{2}$ " Contrate that is connected to a Bush Wheel by 2" Screwed Rods. Two 1" x  $\frac{1}{2}$ " Angle Brackets are bolted to the Bush Wheel, and in them is mounted a  $1\frac{1}{2}$ " Rod fitted at its centre with a Coupling. Two  $\frac{3}{4}$ " Pinions are free to turn on the  $1\frac{1}{2}$ " Rod.

The differential half shafts are supported in 1" x  $\frac{1}{2}$ " Angle Brackets bolted to the front axle, and are passed through the  $1\frac{1}{2}$ " Contrate and the Bush Wheel into the centre Coupling of the differential. The  $\frac{3}{4}$ " Contrates 2 and 3 on the half shafts are meshed with the  $\frac{3}{4}$ " Pinions.

A  $\frac{3}{4}$ " Contrate fixed to the outer end of each half shaft is arranged so that it drives one of the Pinions 4.

### Non-Slip Built-Up Pulley

Master J. Basham, Romford, tells me that he has found the simple built-up pulley shown in Fig. 3 useful for operating the traversing Cord of simple hammerhead cranes as it prevents cord slip. The pulley is very simple and consists of two 1" fixed Pulleys fitted with Motor Tyres and pressed tightly one on each side of a 1" loose Pulley fitted with a Rubber Ring.

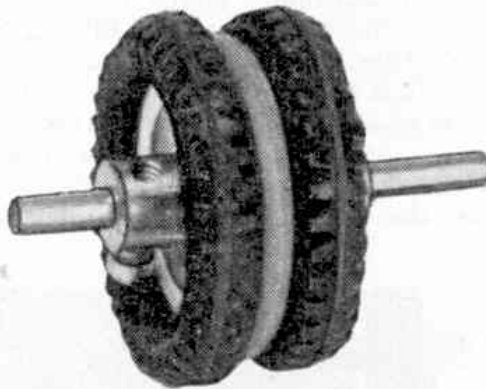


Fig. 3. Master J. Basham, Romford, is the designer of this non-slip pulley arrangement for operating the traversing Cords of model cranes.

### "SIMPLICITY" MODEL-BUILDING CONTEST

Here is a contest in which owners of even the smallest Meccano Outfits can compete on level terms with those more fortunate possessors of the largest sets, and we hope that every Meccano boy who reads this announcement will decide to send in an entry. Prizes will be awarded to model-builders who succeed in constructing the most ingenious and realistic models from the *smallest number of parts*. A competitor may choose any subject he likes for his model, and the more unusual and

interesting this is the better the chance of winning a prize, provided that the model is kept quite simple.

When the model is completed the competitor should obtain either a photograph or a good drawing of it. He should then write his age, name and address on the back of the illustration and send it to "Simplicity Model-Building Contest, Meccano Ltd., Binns Road, Liverpool 13." The actual model must not be sent.

The competition will be divided into two Sections: A, for readers under 14 years of age, and B, for readers over 14 years of age. The closing date is July 31st next.

The Prizes to be awarded in each Section are as follows. First, Cheque for £3/3/-. Second, Cheque for £2/2/-. Third, Cheque for £1/1/-. There will be also Ten Prizes each of 10/- and Ten Prizes each of 5/-.