

# MECCANO STANDARD MECHANISMS

## Section V. Clutches, Reversing & Drive-Changing Mechanism (cont.)

*This article is the seventh of a series explaining some new and interesting aspects of Meccano model-building practice. Gear Ratios, Belt and Rope Mechanism, Pulleys, and Levers have been dealt with already, and the following article describes some further examples of Meccano Clutches and Drive-changing Mechanisms. The first portion of Section V. appeared in last month's "M.M." The movements described in these articles may be adapted with advantage to numerous Meccano models, and will enhance both their appearance and efficiency in operation.*

**F**OLLOWING the examples given in S.M. Nos. 64 and 65 (see last month's "M.M.") we are illustrating six further types of drive-changing mechanism.

S.M. 67 provides for two separate drives which may be operated independently from a driving shaft 1. A lever 3 is bolted pivotally at its lower end to a 1"×1" Angle Bracket secured to the side of the gear-box, and is connected to a Double Bracket engaging between two Collars on the secondary shaft 5.

On operation of the lever this shaft is caused to slide in its bearings, so bringing the Gear Wheel 4 in or out of gear with the  $\frac{1}{2}$ " Pinion 2.

Another lever 9 pivoted at 10 operates a further shaft 7 in a similar manner, causing the Gear Wheel 6 to engage or disengage with a second  $\frac{1}{2}$ " Pinion on the driving shaft 1.

### S.M. 68—Drive-Changing Gear for Overhead Trolley

The gear-change in this case is particularly adaptable to overhead travelling cranes and similar models. It is operated by means of cords 3 secured to a Boss Crank 2 and hanging to convenient handling position below the rails upon which the trolley runs. The Crank 2 actuates the axle 1 which engages the Worm

Wheel 5 through a Pinion 4. The Worm Wheel is secured to a Rod 6 and so acts as a rack by means of which this Rod may be moved to and fro.

A driving Rod 8 is caused to imitate the

movements of the Rod 6, the method of connection comprising a Crank 7 engaging between two Collars. This Rod 8 carries two Pinions 9 and 10 which, in consequence of the movement of Rod 6, may be brought into engagement with one or other of the gears 11 and 12.

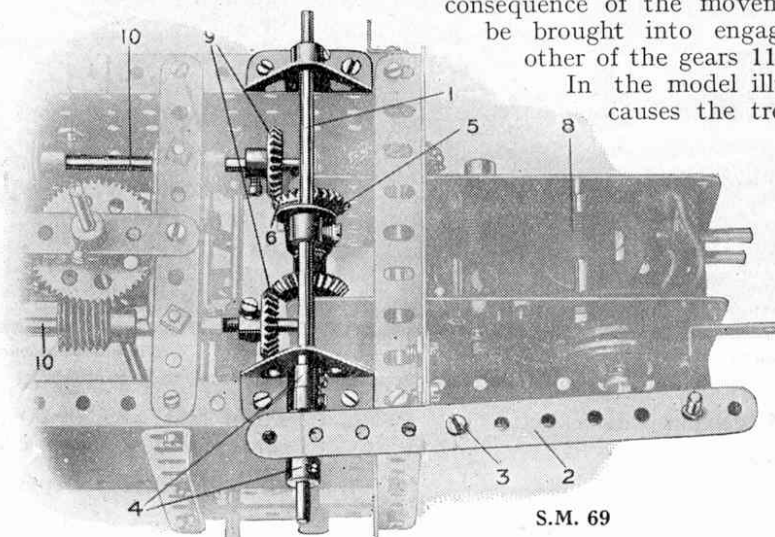
In the model illustrated, the gear 11 causes the trolley to traverse the rails, while the Gear Wheel 12 operates the hoisting cord of the pulley-block; the driving Rod 8 is rotated by hauling on an endless chain 13 hanging below the rails.

### S.M. 69—Drive-Changing Gear

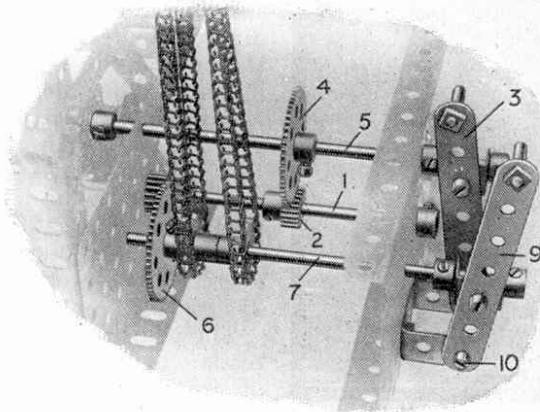
The Rod 1 in S.M. 69 slides in its bearings and is controlled by a lever 2, which

is pivoted at 3 and rests between two Collars with set screws 4 on the sliding Rod 1. The latter carries a Crank 5, the web of which engages between two Bevel Wheels 6 secured to a short Rod 7 driven from the Motor 8, as shown in the sectional illustration, S.M. 69A (see next page). The Crank 5 is suitably spaced with Washers 5A.

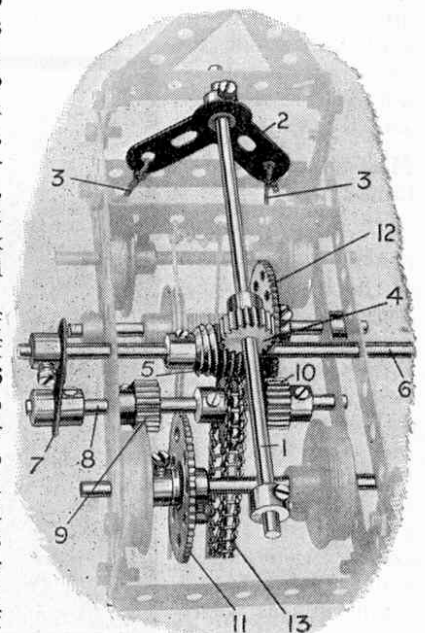
On operation of the lever 2, one of the Bevel Wheels 6 may be brought into gear with one or other of the two further Bevel Wheels 9 mounted on secondary shafts 10. This provides for two independent drives, either of which may be connected with the



S.M. 69



S.M. 67



S.M. 68