

# Among the Model-Builders

By "Spanner"

## A Dutch Reader's Attractive Model

The picture on this page shows an interesting and well-built model of an armoured tank fitted with rocket-launching apparatus, that was built recently by E. P. Steffens of Haarlem, Holland. I understand that the model can be built from parts in Outfit No. 10. All six wheels of the vehicle are driven from the Motor through a gear-box which provides both forward and reverse drives.

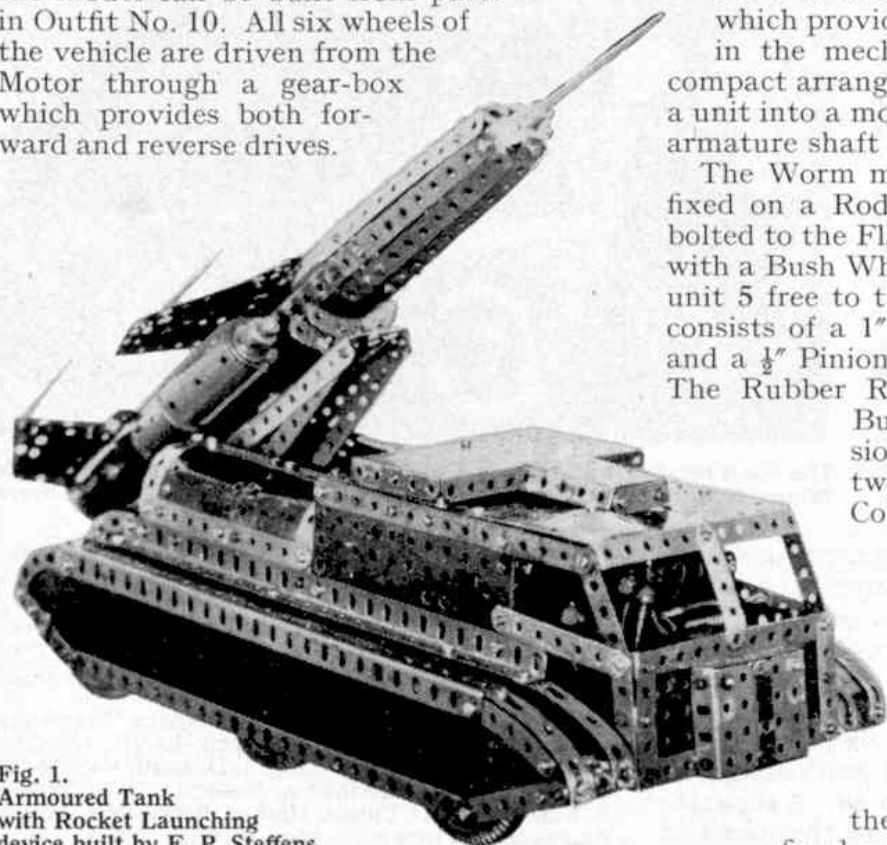


Fig. 1.  
Armoured Tank  
with Rocket Launching  
device built by E. P. Steffens,  
Haarlem, Holland.

The gear box and rocket launching mechanism are controlled from levers in the driver's compartment.

### Friction Clutch Intermittent Drive

Intermittent motion devices are among the most useful of all Meccano mechanisms. They can be used in models such as pile drivers to operate the ram, in cranes to control the raising and lowering of a load automatically, and in countless other models where an intermittent drive is an essential part of the mechanism. In most cases the drive is engaged and disengaged through a Dog Clutch or through sliding gears in and out of mesh, but in models operating at fairly high speeds it may be a disadvantage to use a positive clutch engagement of the

kind provided by gears or a Dog Clutch. Fig. 1 shows an intermittent drive mechanism that gives a smooth take up and release through a simple friction clutch.

The side plates of the Electric Motor are extended by  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Flat Plates which provide bearings for the rods used in the mechanism. This results in a compact arrangement that can be bolted as a unit into a model. Each end of the Motor armature shaft carries a Worm.

The Worm marked 1 drives a  $\frac{1}{2}''$  Pinion fixed on a Rod 3 supported in Trunnions bolted to the Flat Plates. This Rod is fitted with a Bush Wheel 4, locked in place, and a unit 5 free to turn on the Rod. This unit consists of a 1" Pulley with Rubber Ring, and a  $\frac{1}{2}''$  Pinion held in a Socket Coupling. The Rubber Ring is pressed against the

Bush Wheel 4 by a Compression Spring, which is fitted between the  $\frac{1}{2}''$  Pinion and a Collar. Washers are used for spacing purposes. The output shaft is a Rod fitted with a  $\frac{3}{4}''$  Contrate 6 that is in constant mesh with the  $\frac{1}{2}''$  Pinion.

The intermittent drive is operated by a 57-tooth Gear driven by the other Worm. This Gear is fixed on a Rod mounted in Trunnions as shown and fitted with a Bush Wheel 7. A Fishplate is bolted at an angle to the Bush Wheel to make a simple cam.

A Rod 8 is supported in the Flat Plates and carries at one end a Coupling that holds a  $2\frac{1}{2}''$  Rod. A  $\frac{1}{2}''$  Bolt in the Double Arm Crank engages the groove in the Socket Coupling of the sliding unit 5. The position of the Coupling is adjusted so that with the clutch unit engaged the  $2\frac{1}{2}''$  Rod bears lightly against the edge of the Bush Wheel. As the Bush Wheel rotates the Fishplate bolted to it depresses the Rod and the action of the Double Arm Crank 9 forces the Rubber Ring away from the Bush Wheel 4 to disengage the drive.

### Speed Governor for E15R Electric Motor

Attach a  $3'' \times 1\frac{1}{2}''$  Double Angle Strip 1 to the Motor side-plates with Angle Brackets.