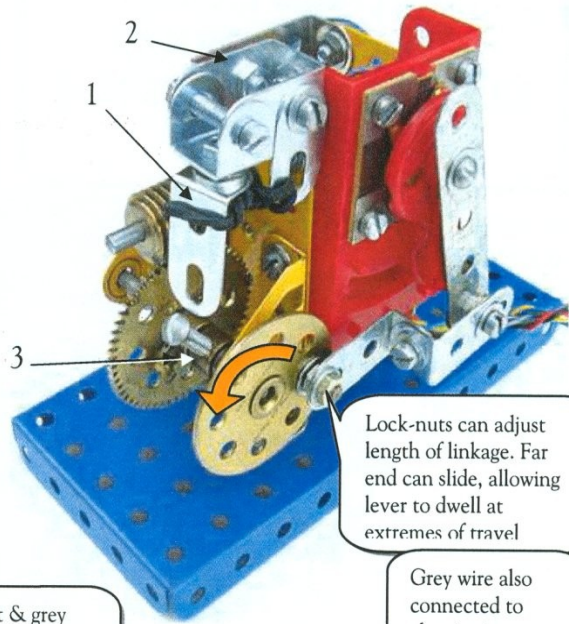


AUTO-REVERSING DEVICE FOR MODEL TRAINS AND TRAMS

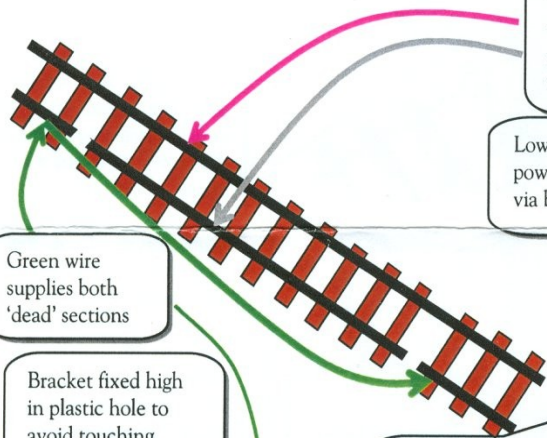
By Chris Shute

Use this device to send a train or tram up and down a length of track, pausing at each end when it enters a dead section. When the switch has reversed the supply, the dead sections are made live, briefly, to restart the train back into the main section of track, travelling in the opposite direction. This is done by the pivoted sprung $1" \times \frac{1}{2}"$ Bracket 1 being briefly earthed by one of a pair of passing $\frac{1}{2}"$ bolts held in a Collar 3. The Bracket is fixed on a $\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Bracket (at an angle to clear the Worm), free to pivot in the arms of a $1" \times \frac{1}{2}"$ Double Angle Bracket 2, which is mounted high in the plastic hole of the switch body to remain insulated from the $3" \times 1\frac{1}{2}"$ Plate. A $2\frac{1}{2}"$ Drive Band pulls the bracket assembly back to the Fishplate shown. The green wire is connected to both dead track sections.



Lock-nuts can adjust length of linkage. Far end can slide, allowing lever to dwell at extremes of travel

Grey wire also connected to chassis via Trunnion below



Violet & grey wires supply power to main track section

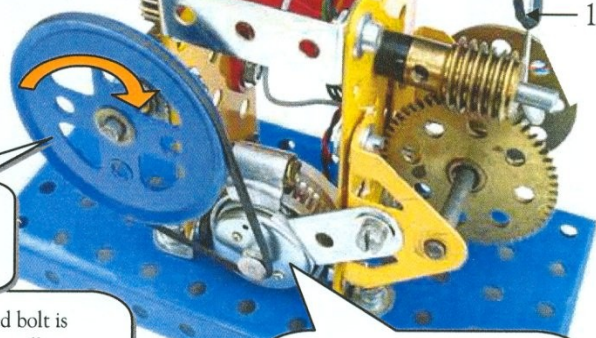
Lower terminals take power from transformer via blue and yellow wires

Green wire supplies both 'dead' sections

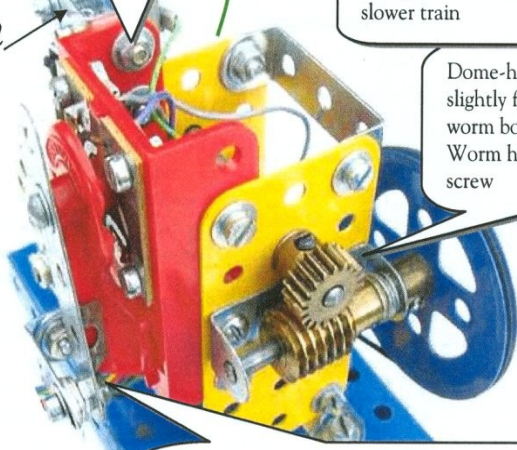
Bracket fixed high in plastic hole to avoid touching chassis plate

Use a larger pulley for a longer track or slower train

Dome-headed bolt is slightly filed to allow worm boss to clear. Worm has short grub-screw



Motor salvaged from old Walkman cassette, held on bracket by Jubilee hose clip. Motor has separate supply via red & black wires



Lock-nuts sandwich $2\frac{1}{2}"$ Strip with Rod & Strip Connector, which has jaws slightly tightened to hold control lever. Linkage is free to slide under bolt head.

Waiting time can be increased with a larger pulley and also varied by having a variable power supply for the motor. If voltages are the same, the motor can share the constant yellow/blue supply.

The bracket switch assembly and green wire can be eliminated if a diode connects each dead section to the main rail (opposing polarities, trial & error!).

Dead sections could also be used on the central rail of 3-rail track, or an overhead wire.

AUTO-REVERSING DEVICE FOR MODEL TRAINS AND TRAMS No.2

By Chris Shute

This device will give a fixed waiting time at each end of the line, regardless of track length or train speed.

A diode (e.g. 1N4001) at each end allows train to restart when supply is reversed

Switch normally closed here

Twin 1/2" bolts strike switch lever

Bracket 11a fixed high in plastic hole to avoid touching chassis plate 73

Use the rear Bush Wheel C to operate semaphore signals and barriers.

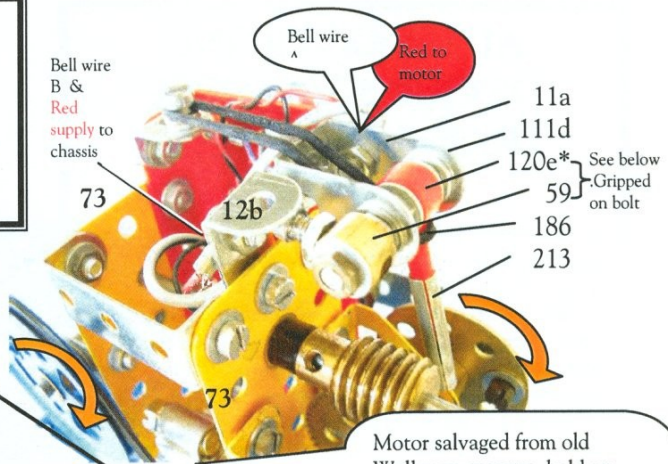
Magnet under train closes reed switch as train stops at either dead section.

12b 186

Lock-nuts can adjust length of linkage. This end can slide, allowing lever to dwell at extremes of travel

Dome-headed bolt is slightly filed to allow worm boss to clear. Worm has short grub-screw

Lock-nuts sandwich 2 1/2" Strip with Rod & Strip Connector, which has jaws slightly tightened to hold control lever. Linkage is free to slide under bolt head.



Motor salvaged from old Walkman cassette, held on bracket by Jubilee hose clip. Motor has separate supply via red & black wires. Red wire is interrupted by switch above. Any small motor will do.

The track supply is reversed by the cassette motor driving the lever 5 left & right. Bolts on the large gear wheel open a switch, breaking power to the motor via its red wire, leaving the track supply set for one direction of train travel. Twin bell wire, also connected to the switch terminals 12b and 11a is taken to reed switches (in parallel) at either end of the line. Here, breaks in one track cause the train to stop. A small magnet beneath the train closes the reed switch and the cassette motor starts turning. After about 30 seconds (depending on voltage, pulley size, etc) the track supply will have been reversed. A diode allows power to reach the train and so it restarts. (Note the diodes are wired with opposing polarities. They may both need reversing, depending upon the direction of the train motor). Soon afterwards, the cassette motor will stop, with the track supply set until the train reaches the other end and a similar process begins again.

3-6v supply for cassette motor

12-24v supply from train transformer

Twin bell wire to each reed switch

Supply to main track section from upper terminals

For exhibition use, replace reed switches with a single push button, so the public can make the train run for one length of the

*Plastic Shock-Absorber Pin. As a substitute, use 59 & 115a, but fit plastic pulleys to bolts on gear wheel.

Feel free to duplicate, & circulate! Chris Shute