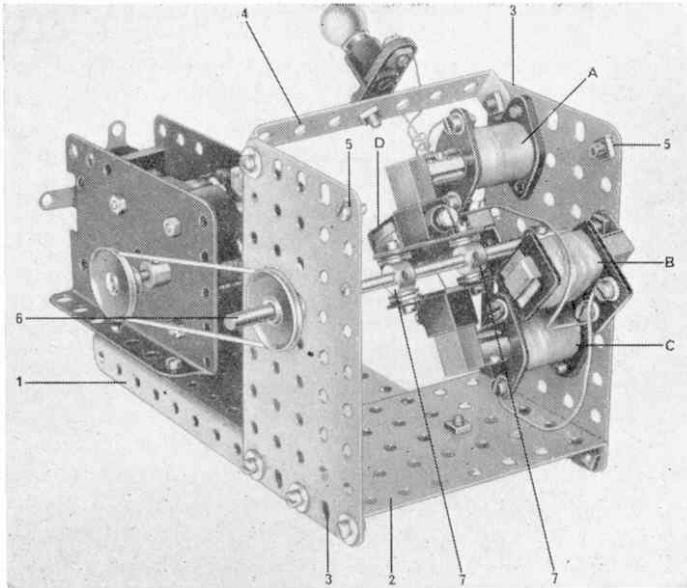


Building a dynamo with Elektrikit



This working model of a Dynamo, powered by an E15R Electric Motor, is built with Elektrikit parts, and is capable of generating enough electricity to power a 12 volt 60 mA lamp. Building instructions are given on this page.

OUR RECENTLY-introduced electrical outfit, the Elektrikit, is proving amazingly popular with Meccano builders the world over. Owners have now had the time and opportunity to assess its capabilities for themselves and must have found that it revolutionises the whole model-building scene, opening up entirely new fields to the interested constructor.

In case any readers are not yet familiar with Elektrikit, I should mention that it contains a collection of small but genuine electrical parts—coils, magnets, insulated plates, pick-ups, etc.—which can be used with existing Meccano parts to build all sorts of models. Elektrikit is, in fact, specially designed to be used with an ordinary Outfit No. 3 or one larger, as is made plain in the instructions manual packed with the kit.

On the purely electrical side, this manual gives building instructions for a wide range of very interesting models, ranging from a simple switch to a complete Morse telegraph, but it also points out that Elektrikit parts can play an important role in modifying existing standard models. One example which springs to mind from the book is Model No. E36. This shows Model 4.12, a Crane out of the Meccano 4/5/6 manual, fitted with electrical Model E.5, Electromagnetic grab, and actuated by Model E.1, two-way switch. The result is fascinating. Illustrated here, however, an out-an-out electrical model, a dynamo—and what could be more electrical than that? Drive is from an E15R motor, and, when correctly adjusted, the completed model is capable of generating sufficient current to make a 12 volt 60 mA lamp glow brightly. Constructional details are as follows:—

A $5\frac{1}{2}$ in by $2\frac{1}{2}$ in Flanged Plate 1 with an E15R Electric Motor attached, is extended one inch by a $3\frac{1}{2}$ in by $2\frac{1}{2}$ in Flanged Plate 2 bolted cross-wise. The flanges of the

Plate 2 have $4\frac{1}{2}$ in by $2\frac{1}{2}$ in Flat Plates 3 bolted to them. Two $3\frac{1}{2}$ in by $\frac{1}{2}$ in Double Angle Strips 4 are secured to the top of the Flat Plates. One of these is not shown in the illustration but, when fitted, it is secured by Nuts and Bolts 5. A 5 in Rod 6, on which is fixed a 1 in Pulley, driven by a 1 in Pulley on the armature shaft of the Motor, is mounted in the Flat Plates, and a 6 in Driving Band is fitted around the Pulleys. Two Magnet Holders are fixed to two 4-hole Collars 7, but spaced away from the Collars by two Washers on each Bolt. Grub Screws fix the Collars to the Rod 6. Permanent Magnets are securely fixed in the Holders, so that, in one case, the north pole projects while in the other the south pole projects. Attached to a Flat Plate, in the position shown, are two Cores for Cylindrical Coil (slotted), and on these are placed Cylindrical Coils which are secured to the Flat Plates by Bolts. Two Rectangular Coils, with base, complete with Core and Core Holders, are attached to the Flat Plates by Angle Brackets. It is important that the air-gap between the Coils and Permanent Magnets be made as small as possible.

To wire the model, connect the 'E' terminal of coil A to the 'S' terminal of Coil B, the 'E' of Coil B to 'S' of Coil C, the 'E' of Coil C to the 'S' of Coil D and the 'E' of Coil D to the Lamp Holder. The 'S' of Coil A is connected to the other terminal of the Lamp Holder, and Collars are placed on each side of the Flat Plates. When the Motor is running at full speed, and the air gap is properly adjusted, sufficient current will be generated to light the lamp.

Parts required to build the Dynamo:—
Standard Meccano Parts:—2 of No. 12; 1 of No. 15; 2 of No. 22; 28 of No. 37a; 33 of No. 37b; 16 of No. 38; 1 of No. 52; 1 of No. 53; 2 of 53a; 2 of No. 59; 2 of No. 111a; 1 of No. 111c; 2 of No. 140y; 1 of No. 186a; 1 E15R Electric Motor. Elektrikit Parts:—2 of No. 520; 2 of No. 522; 4 of No. 525; 2 of No. 526; 2 of No. 527; 2 of No. 537; 2 of No. 538; 1 of No. 539; 1 of No. 540c; 1 of No. 558.