

Among the Model-Builders

By "Spanner"

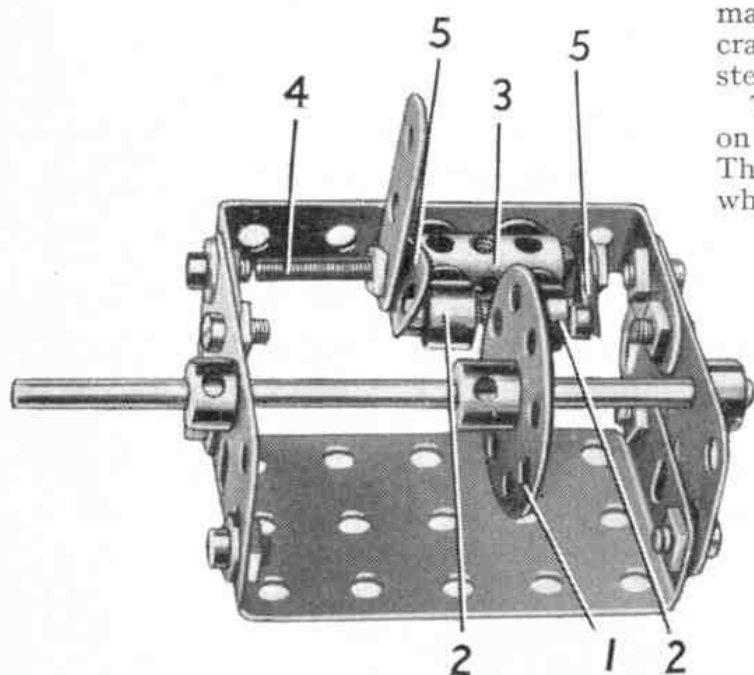


Fig. 1. A disc brake device suitable for use in model cranes.

Disc Brake

Many model-builders specialise in their choice of subjects, and I know of several who continually build nothing but cranes of various kinds. Much of the fun and interest obtained from specialising in this way comes from the scope for variation that is provided in designing the various essential parts of the equipment such as brakes, clutches, gearboxes, etc. Brakes particularly give ample scope for the exercise of constructional skill and ingenuity in design, and as a further addition to the many that have already been described in these pages. I am including a disc type of brake that makes an interesting variation from the internal expanding and strap brakes usually fitted to models. It is shown in Fig. 1 and it gives a powerful braking effect that is applied smoothly and progressively. If required the operating lever can be spring loaded so that the brake remains "on" until the lever is moved. The smooth action of this brake

makes it particularly suitable for use in cranes, as it enables the load to be lowered steadily under absolute control.

The brake disc is a Bush Wheel 1 fixed on a shaft mounted in suitable bearings. The brake shoes are two $\frac{3}{8}$ " Bolts, each of which is passed through a Collar 2. The grub screw of each Collar is partly unscrewed and the portion outside the Collar is screwed into the threaded hole of a Coupling 3. The Collar is then turned until it is locked tightly against the Coupling.

The Coupling 3 is attached to a suitable framework by two bolts, each of which is fitted with two Washers so that the bolt does not project into the bore of the Coupling. A 2" Screwed Rod 4 is passed through the Coupling, and a Fishplate 5 is fixed on the Rod at each side between two nuts. The Fishplates are twisted slightly, so that they can act as cams against the heads of the $\frac{3}{8}$ " Bolts used as the brake shoes. The operating lever is a $1\frac{1}{2}$ " Strip, and when it is moved the Fishplates force the $\frac{3}{8}$ " Bolts through the Collars until they bear against the face of the Bush Wheel.

A Neat Friction Clutch

The miniature clutch unit shown in Fig. 2 is small enough to be fitted to model

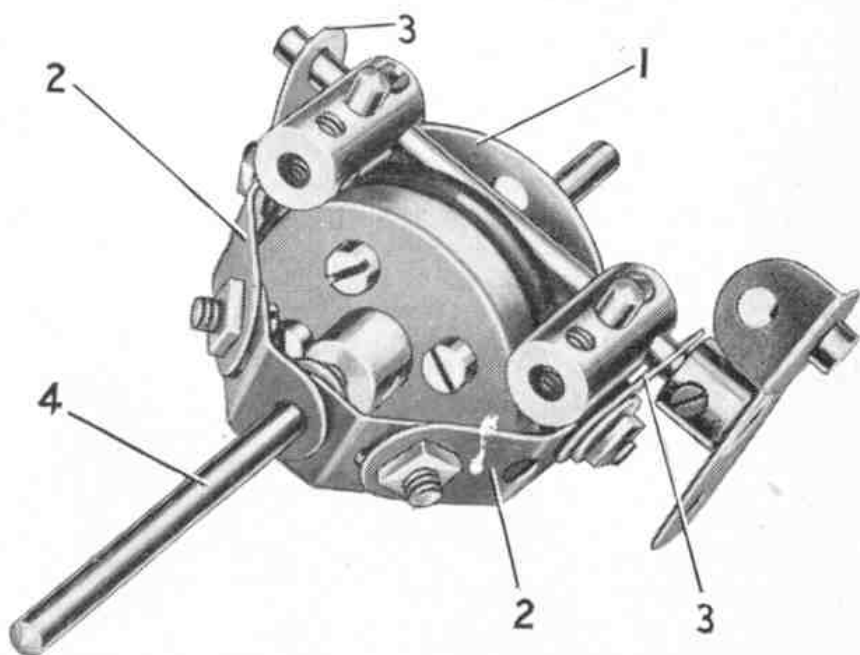


Fig. 2. A small friction clutch unit designed for use in models where space is limited.

vehicles where little space is available to accommodate all the essential features of a highly detailed model. In spite of its small size however, the unit will take quite a powerful drive without slipping, and one of its features is a novel substitute for the splined shaft used in an actual clutch to ensure that the sliding member rotates with its shaft.

The casing for the unit consists of a Wheel Disc 1 fitted with two Angle Brackets. A $1\frac{1}{2}$ " Strip 2 is bolted tightly to each Angle Bracket, and the bolt fixes also a Fishplate 3. Obtuse Angle Brackets are bolted to the $1\frac{1}{2}$ " Strips, and the free holes of these Brackets form the bearings for the output shaft 4.

The input shaft carries a 1" Pulley fitted with a Rubber Ring, but it extends only part of the way into the boss of the Pulley. The free portion of the boss therefore can be used to provide the inner bearing for the output shaft. The Pulley is fixed by its set-screw to the input shaft, but the shaft 4 is free to rotate.

A $1\frac{1}{8}$ " Flanged Wheel is loosely mounted on shaft 4, and its rim is forced against

Fig. 3. The Rev. G. H. Retief, Elsburg, Transvaal, photographed with his model of an Albion Chieftain Lorry.



the Rubber Ring on the 1" Pulley by a Compression Spring fitted between the boss of the Flanged Wheel and the Obtuse Angle Brackets. A Bolt is fixed in each of the holes in the Flanged Wheel, and these engage Bolts in a Collar fixed tightly on shaft 4 between the Flanged Wheel and the 1" Pulley. The action of these Bolts ensures that the Flanged Wheel rotates with shaft 4, but it can be slid to the rear against the pressure of the Compression Spring.

The withdrawal pedal is a Double Arm Crank fixed on a Rod mounted in the Fishplates 3. This Rod is fitted with two Couplings, and 1" Rods held in the Couplings bear against the flange of the Flanged Wheel.

The Albion Chieftain Lorry in Meccano

Model makers are to be found in all walks of life and especially Meccano model-builders, and one of the latest instances of

this came to my notice recently when I received details of a fine model of an Albion Chieftain lorry built by the Rev. G. H. Retief, of Elsburg, Transvaal, South Africa. The model, together with its builder, is shown in accompanying illustrations, and is complete with steering gear, four-speed gear-box, clutch and differential. It will be noticed that the model is remarkably neat and clean in outline, and it has a solidarity of appearance that is sometimes lacking in models of this type based on modern heavy goods vehicles.



Fig. 4. Another view of the Albion Chieftain showing the details of the chassis.