# New Meccano Model

## Vertical Steam Engine and Dynamo

OUR new model this month is a neat reproduction of an electric generating unit, consisting of a vertical steam engine coupled to a dynamo.

The base of the unit consists of two 18½" Angle Girders, which are joined at one end by a 9½" Angle Girder 1, and at the other end by two 9½" Angle Girders 2 and 3. The Girders 2 and 3 are attached to 4½" Angle Girders bolted to the sides, and the space between these Girders is filled in by two 9½" × 2½" Strip Plates. The engine bed is made by bolting a 9½" × 2½" Strip Plate vertically to each of the 18½" Angle Girders. The Strip Plates are braced along their upper edges by 9½" Angle Girders, and at each end by a vertical 2½" Angle Girder. The sides of the engine bed are connected by a 9½" Angle Girder at each end.

Supports for the crankshaft bearings are provided by five 9½" Angle Girders. Two of these Girders are arranged to form a central T-section girder 4, and the others as shown at 5, 6 and 7.

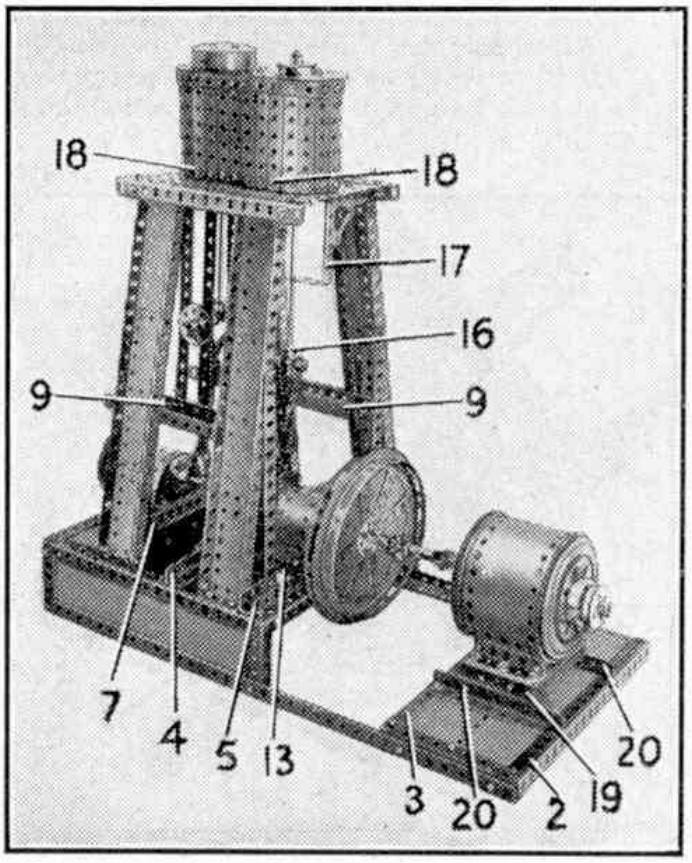


**Fig. 1. A model of a vertical steam engine coupled to a dynamo that is interesting to construct and operate.**

Each of the columns consists of two 12½" Angle Girders joined by 5½" × 2½" Flexible Plates, and is attached to the platform at its upper end by a Corner Angle Bracket. The columns are braced by vertical 7½" Angle Girders 8. The platform consists of two 5½" × 3½" Flat Plates edged by 7½" Angle Girders.

The slide bars for the crosshead are 7½" Strips extended by Fishplates, and they are attached at their upper ends to 5½" Angle Girders bolted underneath the platform. The Fishplates at the lower ends of the 7½" Strips are attached by ½" Bolts to 7½" Angle Girders 9. The slide bars are spaced from these Girders by ten 1½" Strips on each side, and the Girders are connected by 7½" Flat Girders to further 7½" Angle Girders that are bolted to Girders 8. The crosshead is a 3½" Rod fitted at each end with a Bush Wheel 10 and a Wheel Disc 11, placed one on each side of the slide bars. The 3½" Rod carries at its centre a large Fork Piece 12 held in position by Collars, and the piston rod is fixed in the Fork Piece. The connecting rod is formed by two 5½" and two 2½" Strips, which are shaped as shown and pivoted on ½" Bolts screwed into the boss of the Fork Piece. A Collar and a Washer are placed on each Bolt.

The crankshaft is carried in three bearings. The centre bearing consists of a Semi-Circular Plate attached to two 2½" Flat Girders that are bolted to Girders 4. Four Wheel Discs are fixed to each side of the Semi-Circular Plate to increase the bearing surface. The other two bearings are identical, and each consists of two Semi-Circular Plates fitted with four Wheel Discs. The Semi-Circular Plates **a e** bolted to 2½" Angle Girders that are connected together by further 2½" Angle Girders bolted to the Girders 13. A cover plate consisting of a 5½" × 1½" Flexible Plate is also bolted to Girders 13.

The crankshaft is in two sections, and consists of a 3½" Rod 14 and a 6½" Rod 15. The inner ends of these Rods are fitted with Cranks, and further Cranks bolted to them are connected by a 2" Rod. The connecting rod pivots about the 2" Rod. A Triple Throw Eccentric is fixed on the 6½"