A New Clock Mechanism

A Fine Subject for Skilled Model-Builders

A CLOCK is one of the most satisfying subjects for Meccano model-builders. Nothing could be more fascinating than setting a clock constructed entirely from Meccano parts to work, and seeing how it ticks off the seconds and marks up the hours with literally "clockwork regularity."

This month we are describing a new and up-to-date clock mechanism that can be incorporated in the grandfather type of casing, or if desired, in the smaller type of case, usually known as the "granddaughter" type. The mechanism is weight driven, and once the escapement mechanism is "set" the clock will keep excellent time and will run for about eight hours on one winding.

The housing for the mechanism is made by bolting two 12½" Angle Girders at each side to a 5½"×2½" Flanged Plate 1 and to a 5½"×2½" Flat Plate 2. The sides are connected at the rear by a 4½"×2½" Flat Plate 3, and by three 4½" Strips at each of the points indicated at 4, 5 and 6 (Fig. 3). A 5½" Angle Girder 7 is held inside each Flanged Plate by the same bolts that fix the 12½" Angle Girder in position, and Girders 7 are connected by two 4½"×2½" Flat Plates 8. Two 4½" Strips 9, placed face to face, are bolted in place as shown in Fig. 3. A 2½" Triangular Plate is fixed to the Flat Plate 3 and the upper Flat Plate 8, and the Triangular Plates are extended upward by 1½" Strips 10.

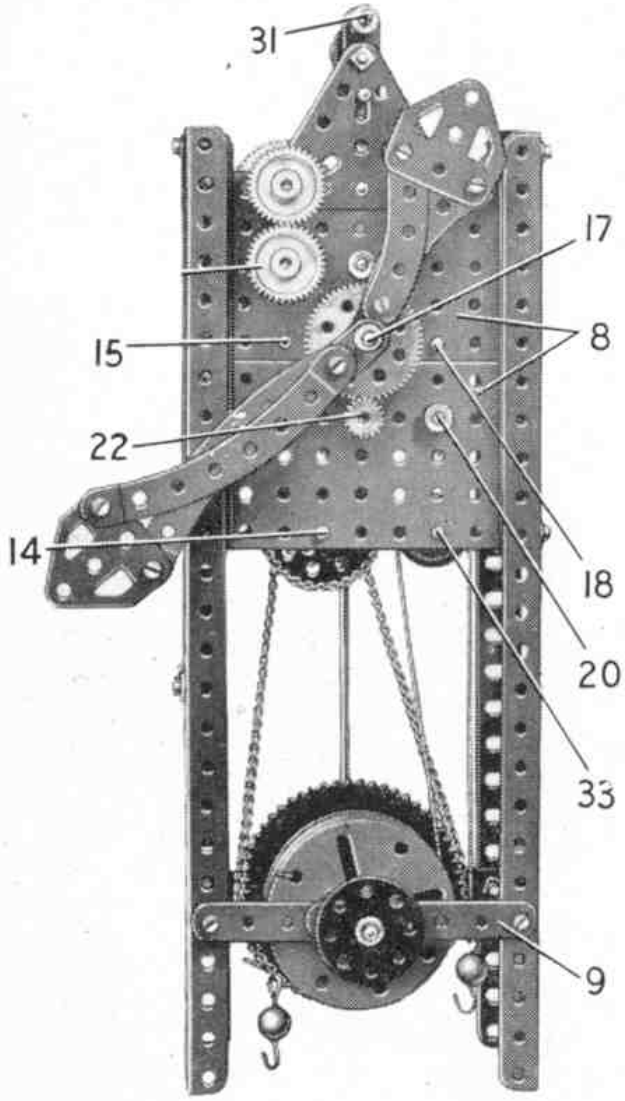

Fig. 1. A weight-driven timekeeping mechanism that can be used in either a wall or a grandfather type clock.

A double winding barrel for the Cords supporting the weights is assembled from three Wheel Flanges and three Face Plates. Two of the Wheel Flanges are placed between two Face Plates to make the drum for one of the Cords, and the second drum consists of a single Face Plate and Wheel Flange. The parts forming the drums are clamped tightly together by four 1⅛" Bolts, and the drums are fixed by the set-screws in the Face Plates to a 4" Rod. A Ratchet Wheel 11 is fixed on the Rod, and a 3" Sprocket 12 is free to rotate between the Ratchet and the Strips 6. The Sprocket is fitted with a Pawl 13, freely mounted on a ¾" Bolt fixed by two nuts in the Sprocket. The Pawl is held against the teeth of the Ratchet by a 2½" Driving Band, which is passed through the hole in the Pawl and is looped over a ½" Bolt fixed by two nuts in the Sprocket. The bearings for the 4" Rod are reinforced by Double Arm Cranks bolted to Strips 6 and 9.

Fig. 2. The clock pendulum and weight "bob."

The Sprocket 12 is connected by Chain to a 1" Sprocket on a 2½" Rod 14, and a 1½" Sprocket on Rod 14 drives a 1" Sprocket on a 2½" Rod 15. Rod 15 is fitted with a 57-tooth Gear 16, and a ½" Pinion that drives a 57-tooth Gear on a 4" Rod 17. The Gear is loose on Rod 17, but it is pressed by a Collar against a 1" Pulley fitted with a Rubber Ring. This arrangement forms a friction drive that enables the clock hands to be adjusted.

A ¾" Pinion is fixed on Rod 17, behind the 1" Sprocket seen on Rod 15 in Fig. 3. This Pinion is in mesh with a 50-tooth Gear on a 2½" Rod 18 (Fig. 1) that carries also a 1" Gear, and the 1" Gear engages a similar Gear 19 on a 2½" Rod 20. Rod 20 is fitted with a ¾" Pinion that drives a 50-tooth Gear 21 on a 2½" Rod. A ½" Pinion 22 (Fig. 1) is fixed on the 2½" Rod outside the Flat Plates 8, and this engages a 57-tooth Gear that is loose on Rod 17. The 57-tooth Gear is spaced from the Flat Plate 8 by a Collar, and the hour hand is bolted to a Double Bracket fixed to the Gear. The hour hand consists of two 2½" Curved Strips bolted to the Double Bracket, and a Fishplate held by the same bolt is slipped over Rod 17. The minute hand is assembled as shown in Fig. 1, and it is bolted to a Crank fixed on the end of Rod 17.

The drive to the escapement wheel is taken from the 57-tooth Gear 16 to a ½" Pinion on a 2½" Rod 23. A 1" Gear is fixed on Rod 23 outside the Flat Plates 8, and it drives a similar Gear on a 2½" Rod 24. Rod 24 is fitted with a 50-tooth Gear that engages a ¾" Pinion on a 2½" Rod 25, and a 57-tooth Gear on Rod 25 drives a ½" Pinion on the escapement shaft 26. This shaft is a 3" Rod, and the escapement wheel, a 3" Sprocket, is fixed outside the Flat Plate 3. Collars are used to hold the gear train Rods in position.

The pallet is a 2½"×½" Double Angle Strip 27 bent to the shape shown in Fig. 4. It is attached by a bolt to a Collar on a 3½" Rod 28, mounted in the Triangular Plates and the lower holes of Strips 10. Three Washers