

## "Spanner's" Special Section for Juniors

# Easy Model-Building

### Caddie Car

The simple little model shown in Fig. 1 represents a type of caddie car that is often seen on golf courses in this country. The first part of it to be constructed is the handle 1, which consists of two  $5\frac{1}{2}$ " Strips overlapped three holes and bolted together by the bolt 2. The bolt 2 holds also two Fishplates, each of which in turn has an Angle Bracket bolted to its free end. These are placed in that position to keep the golf bag in place.

A Trunnion 3 is fixed to the bottom two holes of the handle and this serves as a rest for the bottom of the golf bag. The upper of the two bolts holds also two Angle Brackets 4, to each of which a  $2\frac{1}{2}$ " Strip is bolted. Each  $2\frac{1}{2}$ " Strip is bolted in the second hole on either side of a  $5\frac{1}{2}$ " Strip 5 that is bolted to the caddie car handle and is then bent very carefully so that a  $3\frac{1}{2}$ " Rod 6 fitted with two 1" Pulleys and Tyres can be mounted in its end holes.

A list of the parts required to build this model appears at the end of this article.

### Tricycle

The frame of the Tricycle shown in Figs. 2 and 3 consists of two  $2\frac{1}{2}$ " Strips 1 bolted at one end to the lugs of a Double Bracket 2, which is connected by a bolt to the centre hole of a  $2\frac{1}{2}$ " Strip 3. Two  $2\frac{1}{2}$ " Curved Stepped Strips are bolted to the other ends of the  $2\frac{1}{2}$ " Strips and a Double Bracket is held at its lugs by the same bolts

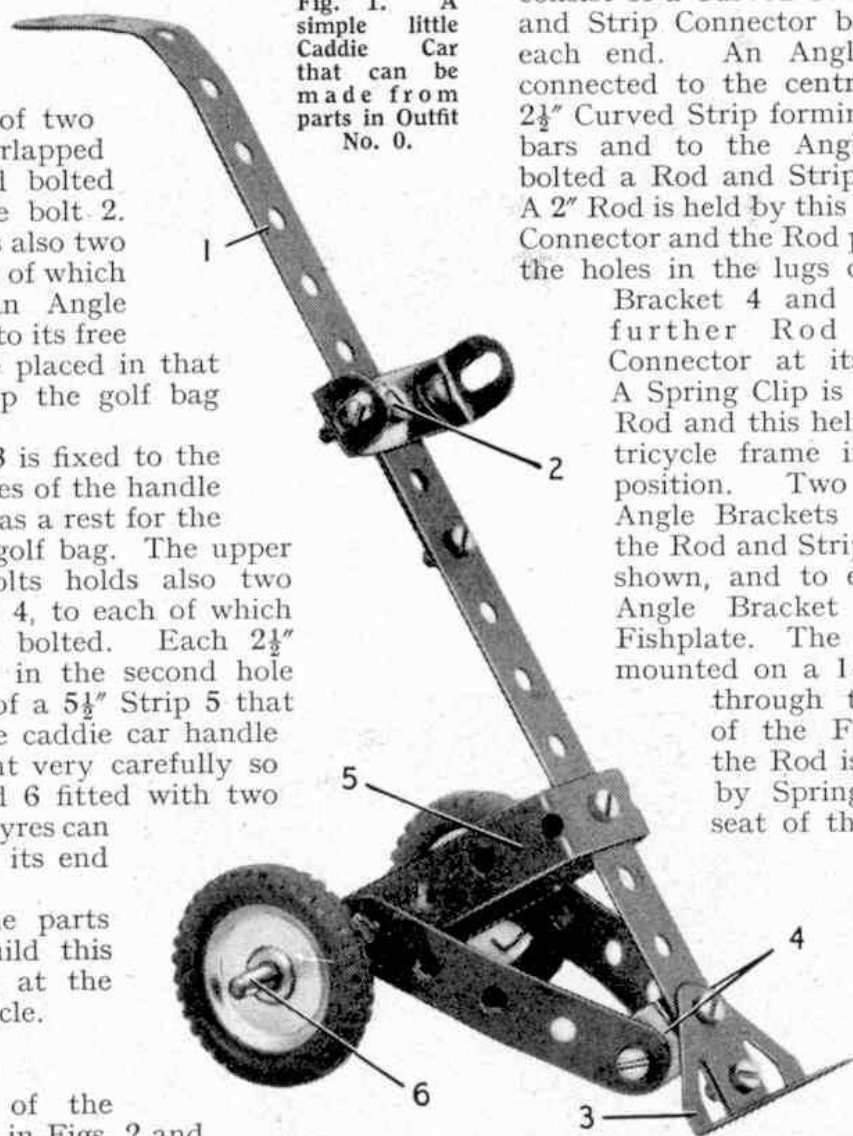
as those that serve to hold the  $2\frac{1}{2}$ " Strips and the  $2\frac{1}{2}$ " Curved Strips together. At the top of the  $2\frac{1}{2}$ " Curved Strips a third Double Bracket is fixed, and it is then bolted to a fourth Double Bracket 4.

The handlebars of the tricycle consist of a Curved Strip with a Rod and Strip Connector bolted to it at each end. An Angle Bracket is connected to the centre hole of the  $2\frac{1}{2}$ " Curved Strip forming the handlebars and to the Angle Bracket is bolted a Rod and Strip Connector 5. A 2" Rod is held by this Rod and Strip Connector and the Rod passes through the holes in the lugs of the Double Bracket 4 and is held in a further Rod and Strip Connector at its lower end. A Spring Clip is placed on the Rod and this helps to keep the tricycle frame in the correct position. Two  $\frac{1}{2}$ " Reversed Angle Brackets are bolted to the Rod and Strip Connector as shown, and to each Reversed Angle Bracket is bolted a Fishplate. The front wheel is mounted on a  $1\frac{1}{2}$ " Rod passed through the free holes of the Fishplates, and the Rod is kept in place by Spring Clips. The seat of the tricycle is a Flat Trunnion that is bolted to a lug of a  $1\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Double Angle Strip. This is connected

at its other lug to an Angle Bracket 6 bolted to one of the  $2\frac{1}{2}$ " Strips 1.

An Angle Bracket is bolted to each end of the  $2\frac{1}{2}$ " Strip 3 and is connected to a Fishplate. A  $5\frac{1}{2}$ " Rod, which is the rear axle of the tricycle, passes through the

Fig. 1. A simple little Caddie Car that can be made from parts in Outfit No. 0.



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# A Meccano Wall Clock

## A Simple Weight Driven Time-Keeper

THE fine wall clock described in this article is quite simple in construction and will interest specially model-builders who have only a limited supply of Meccano parts at their disposal. The frame is formed from two  $12\frac{1}{2}$ " Angle Girders 1, fitted with two  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plates, one of which is shown at 2; the other has been omitted in order to expose the gear-train. A  $5\frac{1}{2}$ " Angle Girder 3 is bolted across the upper flanges of the Flanged Plates 2, and two further Girders of similar size are bolted to the inside edge of each Plate. One of these Girders is shown at 4, and they both form supports for two  $4\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flat Plates. One  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flat Plate and two  $5\frac{1}{2}$ " Strips are bolted between the two rear flanges of the Plates 2, Fig. 2. Two  $4\frac{1}{2}$ " Strips 5 are fitted as shown.

Two  $12\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Strip Plates are secured to the Girders 1, and bridged at the bottom by a  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate. At the top two  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plates are fitted as shown in Fig. 1, and connected together at their upper corners by a  $2\frac{1}{2}$ " small radius Curved Strip. Fancy work is added to the bottom of the clock and this is formed from five  $2\frac{1}{2}$ " small radius Curved Strips and two 4" Curved Strips.

The lower ends of the Girders 1 each carry a  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flat Plate, the outer edges of which are fitted with  $2\frac{1}{2}$ " Angle Girders. The Flanges of these Angle Girders point inward, and at their upper ends they are bridged by a duplicated  $5\frac{1}{2}$ " Strip, a portion of which is shown at 6, Fig. 1. Two Double Arm Cranks are now fitted to form reinforced bearings,

and one of these is secured to the centre of the  $5\frac{1}{2}$ " Strip 6. The other is bolted to the lower  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate as shown.

The winding barrel consists of two Wheel Flanges and two Face Plates, bolted together by two  $\frac{3}{4}$ " Bolts, to form a large diameter drum. The boss of one of the Face Plates is turned inward so that it is accommodated inside one of the Wheel Flanges, and the complete winding barrel is mounted on a  $3\frac{1}{2}$ " Rod that carries also a Ratchet Wheel and a 3" Sprocket. The Ratchet Wheel is locked in the  $3\frac{1}{2}$ " Rod, with its boss pointing to the back of the model. The Sprocket Wheel, which is free to turn on the Rod, is mounted in a similar manner, but is spaced from the Ratchet Wheel by a Washer. In one of its outer holes a Pivot Bolt is secured, and on this is carried a spring-loaded Pawl. The front end of the  $3\frac{1}{2}$ " Rod carries a Coupling 7 fitted with a  $1\frac{1}{2}$ " Rod that forms the winding handle.

The 3" Sprocket drives, through a length of chain, a  $\frac{3}{4}$ " Sprocket Wheel mounted on the same Rod as a  $1\frac{1}{2}$ " Sprocket 8. A second length of Chain connects the Wheel 8 with the Sprocket Wheel 9, which

is mounted on a 3" Rod together with a 57-teeth Gear that is in mesh with a  $\frac{1}{2}$ " Pinion locked on the same Rod as a second 57-teeth Gear. This last Gear is carried on the front end of its Rod immediately behind the clock face, and is in engagement with a  $\frac{1}{2}$ " Pinion mounted on the same Rod as the Gear 10. The Rod is carried at one end in a bearing formed from a Double Bent Strip. A  $\frac{1}{2}$ "

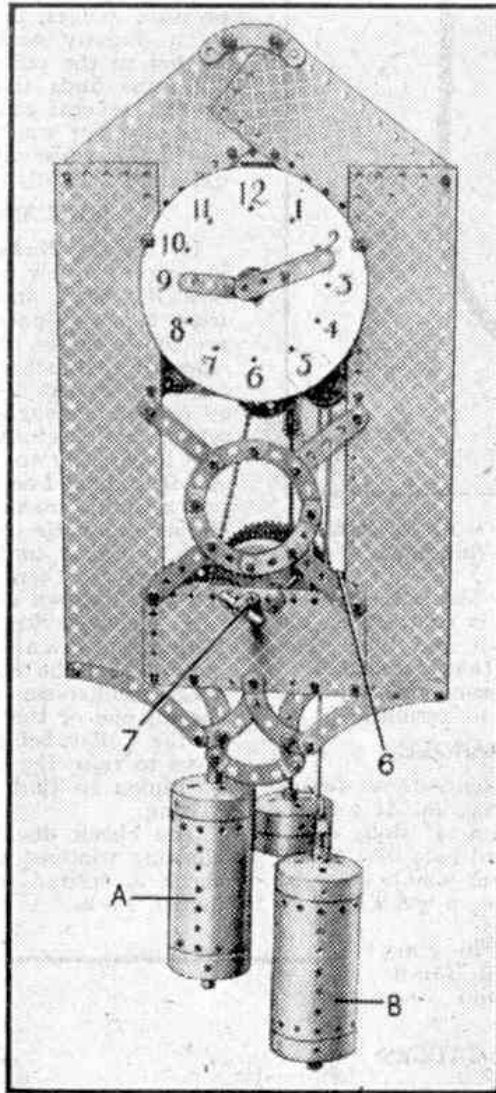


Fig. 1. This fine Meccano Wall Clock is fully described on this page.

Pinion on the escapement rod is in constant mesh with the Gear 10.

The Gears that transmit the movement from the minute hand to the hour hand are now fitted. The Rod bearing the Sprocket 9 is fitted with a  $\frac{1}{2}$ " Pinion that meshes with a 57-teeth Gear 11 on the Rod 12. This Rod is  $3\frac{1}{2}$ " in length and carries the minute hand at its outer end. At its centre is a  $\frac{3}{4}$ " Pinion, meshing with a 50-teeth Gear on the Rod 13, and also a 1" Gear that engages with a similar part on the Rod 14 that carries also a second  $\frac{3}{4}$ " Pinion. This Pinion drives a 50-teeth Gear on the Rod 15, on the front end of which is a  $\frac{1}{2}$ " Pinion. A 57-teeth Gear that is free to turn on the Rod 12 meshes with this latter Pinion, and is fitted with a  $\frac{1}{2}$ " Reversed Angle Bracket. This part is bolted to the 57-teeth Gear and it protrudes through a hole in the centre of the face. A  $1\frac{1}{2}$ " Strip represents the hour hand.

The escapement is a 2" Sprocket Wheel 17 mounted on the final shaft of the clock drive. The pallet is built up from a  $1\frac{1}{2}$ " x  $\frac{1}{2}$ " Double Angle Strip 18 attached

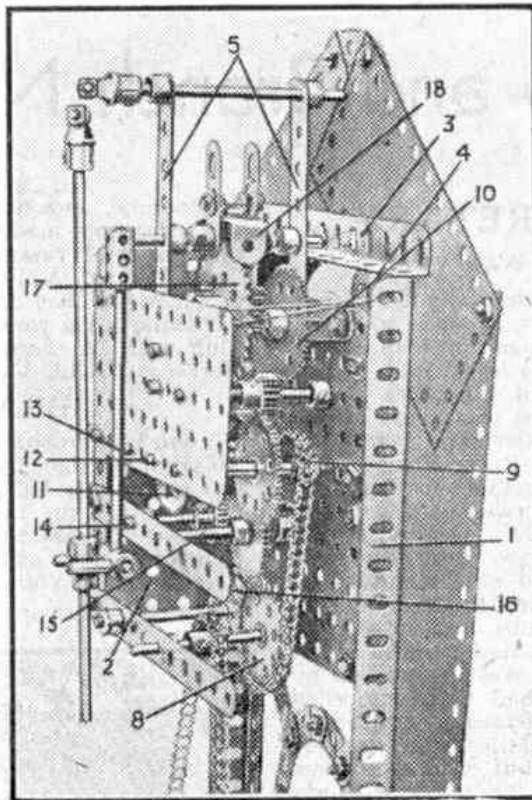


Fig. 2. The gearing of the Wall Clock.

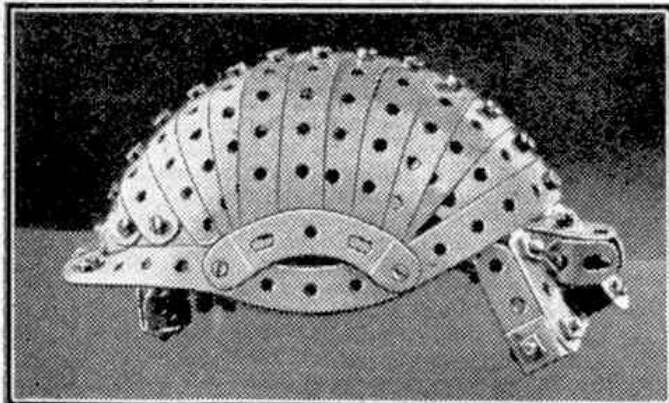
by two  $\frac{1}{2}$ " x  $\frac{1}{2}$ " Angle Brackets to two Cranks. The Angle Brackets are bolted together to form a double bracket, and the Cranks are locked on the ends of two short Rods carried in the Strips 5. The method of mounting the crutch and pendulum will be clear from the illustration. Care must be taken when adjusting the ends of the Double Angle Strips, and the exact position of the pallets in relation to the escapement wheel must be gauged very accurately.

The flexible connection at the top of the pendulum consists of two short lengths of flexible steel wire. The pendulum itself is built up from one 8", one  $11\frac{1}{2}$ " and one  $3\frac{1}{2}$ " Rod joined together by Couplings. The "bob" consists of two Boiler Ends suitably loaded.

The driving weights shown in Fig. 1 are formed from Boilers suitably loaded, and are attached to the driving cords by End Bearings. The cord from weight A is taken to the drum, round which it is wound in an anti-clockwise direction. The cord from B passes over the Pulley 16 and is wound anti-clockwise on the drum.

## "Birds and Beasts" Model-Building Contest

We are organising this month a novel contest to which we have given the title "Birds and Beasts" Com-



A realistic Meccano tortoise, by J. Devereux, Dublin.

petition. This title includes all living things, except human beings! Curiously life-like models of this kind can be constructed from Meccano parts and the competition offers very wide scope for originality. A typical example is the tortoise shown in the accompanying illustration.

Competitors may build their models either solid, or in the flat to resemble a drawing, according to their wishes and the quantity of Meccano parts available.

After completing their models competitors should send either photographs or sketches of them to: "Birds and Beasts Competition, Meccano Ltd., Binns Road, Liverpool 13."

The Contest will be divided into two sections. A, for competitors of all ages living in the British Isles, B, for competitors living overseas. The closing date for Section A is 31st August, and for Section B 28th February 1946.

The prizes offered in each section are as follows: First, Cheque for £2/2/-; Second, Cheque for £1/1/-; Third, Cheque for 10/6. There will be also several consolation awards.