

# Among the Model-Builders

By "Spanner"

## A Giant Model Gold Dredge

One of the largest working models I have come across for some time has been built by Mr. B. J. Huffam, Ikamatua, South Island, New Zealand. It is a giant gold dredge and is shown in one of the accompanying illustrations. The model is based on

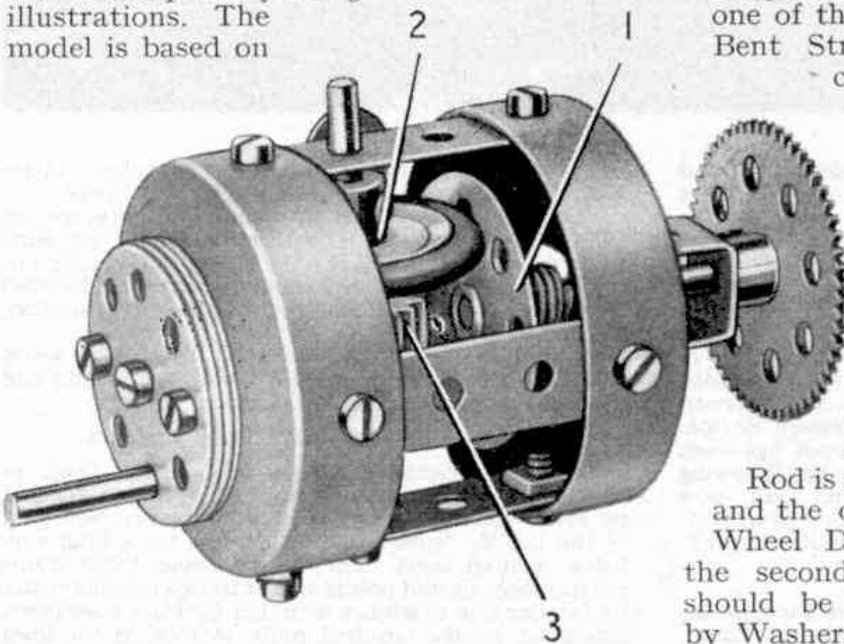


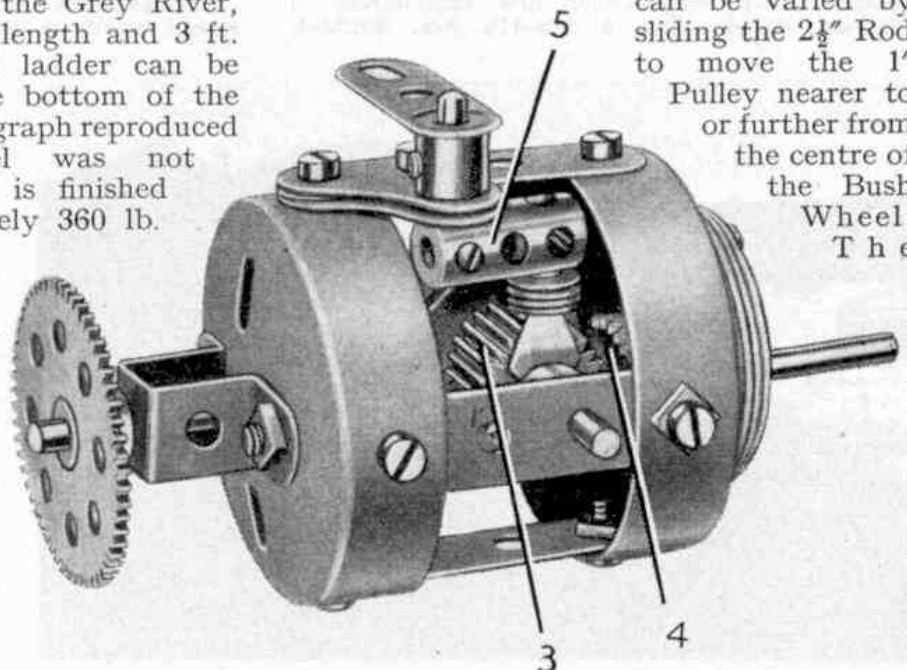
Fig. 1. This neat variable speed mechanism provides a means of obtaining speed ratios of between approximately 3:1 and 1:1.

an actual gold dredge that operated on the gold bearing flats of the Grey River, and it is 14 ft. 1½ in. in length and 3 ft. 6 in. wide. The bucket ladder can be lowered 20 in. below the bottom of the pontoons. When the photograph reproduced was taken the model was not completed, but when it is finished it will weigh approximately 360 lb. and over 12,000 nuts and bolts will have been used in its construction.

## A Compact Variable Speed Mechanism

Occasionally in certain models it is necessary

Fig. 2. Another view of the variable speed mechanism showing the gear drive to the output shaft.



to increase or reduce the working speed gradually, and the variable speed drive shown in Figs. 1 and 2 should prove very useful in such cases on account of its small size.

The housing for the mechanism consists of two Boiler Ends connected by four 2" Strips. The input shaft is mounted in one of the Boiler Ends and in a Double Bent Strip bolted to it. This shaft carries at its inner end a Bush Wheel 1, with a Compression Spring between the Bush Wheel and the Boiler End.

The Compression Spring presses the Bush Wheel against a Rubber Ring against a 1" Pulley 2. This Pulley is fixed on a 2½" Rod that carries also a ¾" diameter, ½" face Pinion 3, and the latter engages a ¾" Contrate 4 on the output shaft. The 2½" Rod is supported in two of the 2" Strips and the output shaft is mounted in four Wheel Discs attached by ⅜" Bolts to the second Boiler End. The Contrate should be spaced from the Boiler End by Washers.

This arrangement provides a friction drive between the Bush Wheel and the 1" Pulley, and the drive is transmitted through the gears to the output shaft. The

speed of the drive can be varied by sliding the 2½" Rod to move the 1" Pulley nearer to or further from the centre of the Bush Wheel. The

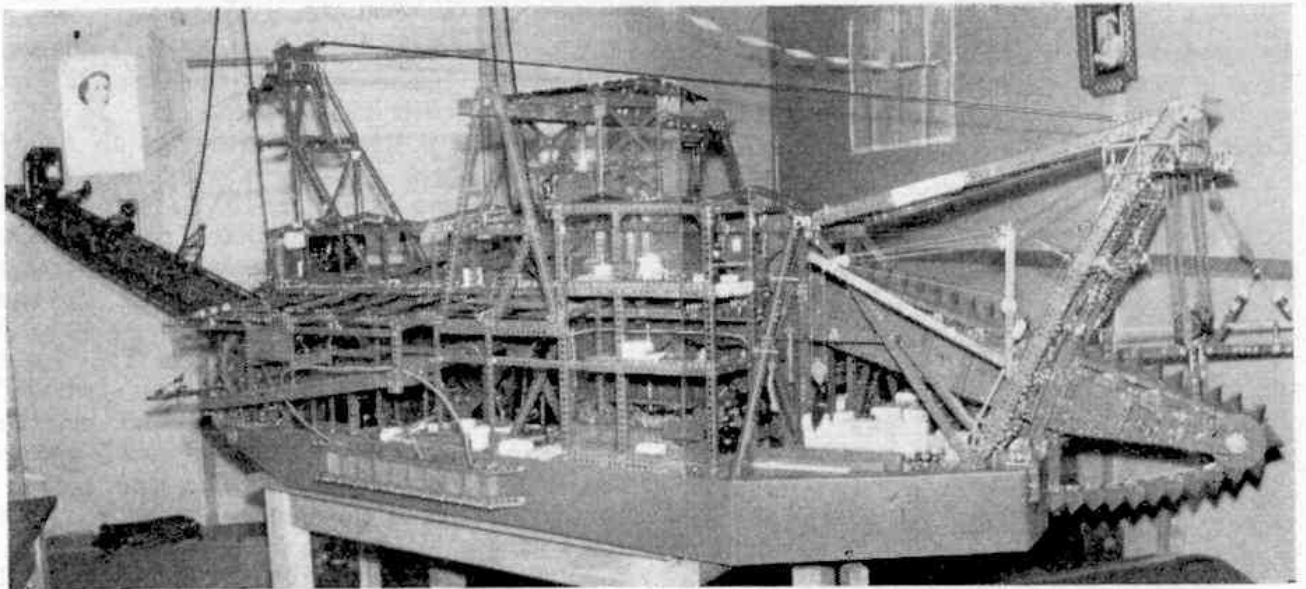


Fig. 3. The fine working model of a gold dredge built by Mr. B. J. Huffam, Ikamatua, New Zealand, mentioned in the notes on the opposite page.

sliding movement is controlled by a Centre Fork that engages between the Pinion 3 and a Collar on the  $2\frac{1}{2}$ " Rod. Four Washers are placed on the shank of the Centre Fork, which is then inserted in a Coupling 5 but is not fixed in place. The Coupling is held on a 1" Rod mounted in two 1" Corner Brackets bolted to one of the 2" Strips.

#### Intermittent Drive

Some form of intermittent driving mechanism is required very often in Meccano model-building. For example, in machine tools of many kinds an intermittent feed is needed to move either a cutting tool or the material being machined after each working stroke. In this kind of arrangement the intermittent movement is comparatively small, and the mechanism shown in Fig. 4 is suitable for this type of work. The mechanism is gear driven and is therefore positive in operation, and with the arrangement illustrated the driven shaft turns approximately a quarter of a revolution in each intermittent movement.

The driving shaft 1 in the mechanism illustrated, is mounted in Angle Brackets bolted to a  $3\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plate, and

carries a Worm 2. The Worm meshes with a 57-tooth Gear 3 that is freely mounted on the driven shaft, between a Collar and a  $\frac{1}{2}$ " Pinion 4. A Coupling 5 is also free to turn on the output shaft and is held in place by a Collar. A  $\frac{1}{2}$ " Pinion 6 is then fixed on a  $1\frac{1}{2}$ " Rod supported in the Coupling and in a hole in the Gear 3.

As the Worm rotates the Gear 3 it carries round with it the Coupling and the Pinion 6. As the assembly turns the Pinion 6 is brought into mesh with the Worm for a short time during each revolution of the Gear, and drives the Pinion 4 fixed on the output shaft.

#### A Realistic Disc Wheel for Model Vehicles

The first step in making this wheel, seen in Fig. 5, is to place together two Semi-Circular Plates to cover the face of a 3" Pulley. Now place a Conical Disc over the assembly and insert four bolts through holes in the Semi-Circular Plates and the

Pulley. You will find that the bolt heads grip the edges of the Conical Disc and hold it firmly in place. A Wheel Flange can be used for a brake drum, but it must

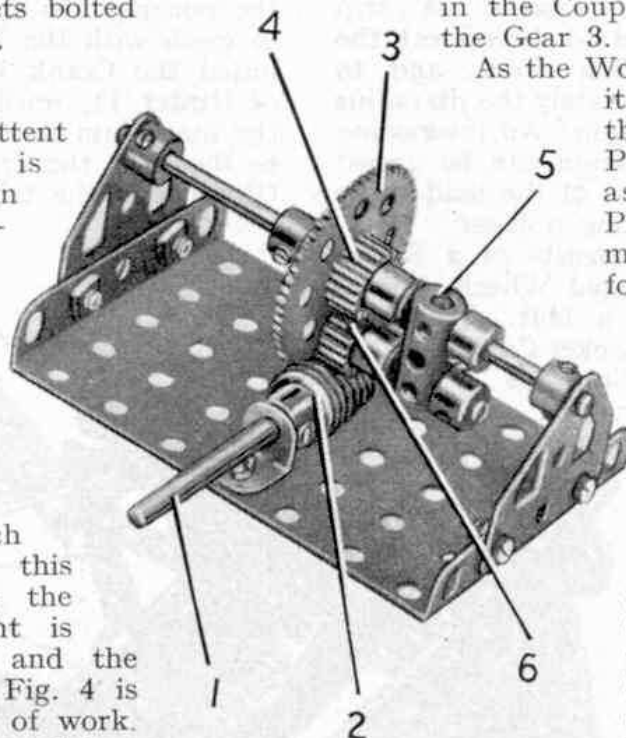


Fig. 4. This gear-operated intermittent motion mechanism is suitable for use in connection with the feed mechanisms of many models such as machine tools.