

ERECTOR OF WARREN MASTER FREQUENCY METER
MODEL II, CURRENT IMPULSE PATTERN.

General. A firm base on which to mount the clock is essential. The position chosen should be as free as possible from disturbance by vibration or sudden jars.

The accompanying diagram of connections shows the main principles of operation and should be studied before erection.

Erection. Open the doors of the case and unscrew the clamping screws which will be found one on either side behind the lower edge of the dial. Lift off the top of the case, taking care not to damage the hands in so doing. When wiring up, thread the leads through the hole in the side of the case and connect them to the terminals. The clock should be connected as directly as possible to a supply point, so as to minimize the chance of inadvertent switching off.

Remove the pendulum from its packing, and carefully thread it up from below, between the back of the movement and the pendulum maintaining gear. Suspend it in the slot of the crutch which forms part of the top of the main casting, noting that the brass arm with its gathering pawl points to the left.

Setting to work. Level the case by means of the screwed feet until the point of the pendulum hangs exactly over the centre point of the scale.

Gently swing the pendulum to make sure that the gathering pawl engages and moves the wheel forward one tooth at each swing.

Set the motor switch knob at the top of the dial to "Off" and replace the top cover.

Switch on the supply and set the pendulum gently swinging to the full extent of the scale below it. Each swing of the pendulum should move the gathering wheel forward by one tooth and when this wheel has made a complete revolution a pin will trip the latch and allow the maintaining arm to fall, thus giving the pendulum a slight impulse.

At the same time, a current passes through the electro-magnet behind the main dial and the striker attached to its armature hammers against the 12-point star wheel. If the position of the star wheel is such that the roller does not fall exactly between two teeth, the wheel will be advanced or retarded by the amount necessary to correct its position.

Gently depress the knob, which will be found on the left hand side of the dial, (see A in diagram) so that the long black hand is held firmly in position. This is best done by moving the hand slowly backwards and forwards whilst pressing the knob, when the striker will be felt entering the star wheel. Keeping this knob depressed, rotate the centre disc until the red pointer stands at zero on the outer scale.

Next, whilst still keeping the left hand knob depressed, push in the one to be found in the centre (see B in diagram) of the large dial, and by its means turn the black hand until it also stands at zero. Both knobs can then be released. Listen for the "click" of the pendulum maintaining gear and then at once throw over the switch to "Motor No. 1" when both the central dial and the black hand will commence to rotate.

Set the hands of the two lower dials to standard time.

Maintenance. The clock should be timed as required by raising or lowering the nut under the pendulum bob until it loses a second or so per day, after which the rate can be more easily adjusted by adding weights to the tray, a weight of 1 gram increasing the rate approximately 1 second in 24 hours.

By throwing over to "Motor No. 2" the alternative motor is at once put into use and it is well to employ the two motors alternatively, say for a month each.

The clock should be kept locked, the key being held by a responsible person.

N.B. Whilst the hands of the two lower dials and also of the central rotating disc may be turned as required, the long black hand on the upper dial must on no account be moved, except by depressing the central knob, making sure that the latter is pushed in as far as it will go before turning it.