

[The following is a partial reproduction of an IBM product data sheet -- published prior to 1938 -- on the Types B and C master clocks.]

Bulletin No. 102

### Type B and Type C Master Clocks



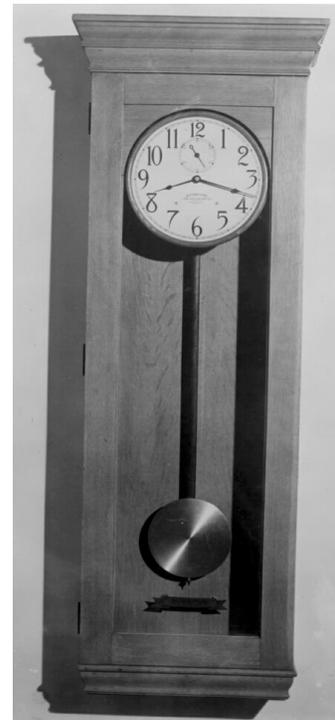
International type B and type C Master Clocks are designed to meet the demand for a medium priced clock that is substantially built and is accurate in operation. These clocks are spring driven and automatically keep themselves wound from a battery, usually the storage battery used to operate the time system controlled by the clock. They wind once a minute and will run for about an hour with the battery disconnected.

The type C Master Clock [has a ] 60-beat regulator [movement] and comes in a case measuring approximately 65" by 24" by 10" with a twelve-inch diameter etched and silvered Arabic dial with seconds circle. It is regularly equipped with a 10-pound wood rod brass bob pendulum. A 15-pound mercurial compensating pendulum can be furnished where close time keeping qualities are desired. We will guarantee this clock equipped with mercurial pendulum to rate within ten seconds per month of correct time when hung in a place free from vibration and regulated in position.

#### TYPE C MASTER CLOCK

The type B Master Clock is in reality a small edition of the above described type C. It has a 72-beat regulator movement, ten-inch diameter etched and silvered dial with seconds circle, and comes in a case measuring approximately 48" by 18 1/2" by 9". It is equipped with a 2 1/2 -pound wood rod brass bob pendulum only.

The cases for both type B and type C Master Clocks are regularly furnished in quartered oak, finished dark golden. They will be furnished in birch finished standard mahogany upon request. They can be furnished in special woods and to match any special finish at a small additional cost. All electrical equipment in these clocks is constructed and installed in accordance with the requirements of the National Board of Fire Underwriters' Laboratories for voltages not exceeding 250 volts. They are designed to operate from a



#### TYPE B MASTER CLOCK

constant source of electric current supply and therefore should not be connected to the electric lighting service excepting where such service is operated in connection with a storage battery plant for the purpose of keeping it constant. These clocks will operate from direct current only.

The movements in the type B and type C Master Clocks are identical excepting that they are fitted with different sized escapements. They are very substantially built of tool steel and hard brass. The pinions and gears are specially cut and burnished. The pivots are hardened and lapped to size. All bearings are wide and carefully polished. The escapements are of the Graham deadbeat type and are fitted with screw adjustments for putting the clocks in beat.

The minute interval contacts used on these movements are of unusually heavy construction. They are of the finger and cam type. The fingers themselves do not carry the electric current. They simply operate to close a pair of contactors that are made of a special non-corrosive contact metal of such low electrical resistivity as to insure a practically dead closing of the electrical circuit when the contact fingers come into position.

The contact fingers are eccentrically pivoted to provide for a contact duration adjustable from a fraction of a second to several seconds' duration. The operating cam is of metal. It is carried on its own shaft independent of the clock train and therefore does not interfere in any way with the time keeping qualities of the clock.

The movements in these clocks are substantially mounted on heavy cast iron brackets. These brackets also carry the pendulum support. This construction serves to always keep the clock movement and the pendulum in perfect alignment with each other which is very important for the securing of even time keeping qualities.

The clocks are kept wound by means of an electromagnet and ratchet and pawl that are built into the movement itself. The electrical connections are so arranged that once each minute the magnet is energized and winds up the driving spring as much as it ran down during the preceding minute. The arrangement contains no delicate parts and operates perfectly so long as battery is kept connected to the clocks.

The diagram at the right illustrates the winding arrangement used in the type B and type C Master Clocks. A is the electromagnet, B is its armature, D is the driving pawl operated by the armature B through the arm C. E is the ratchet wheel that winds the clock spring. F is a back-stop pawl that prevents backward rotation of the ratchet wheel E.

