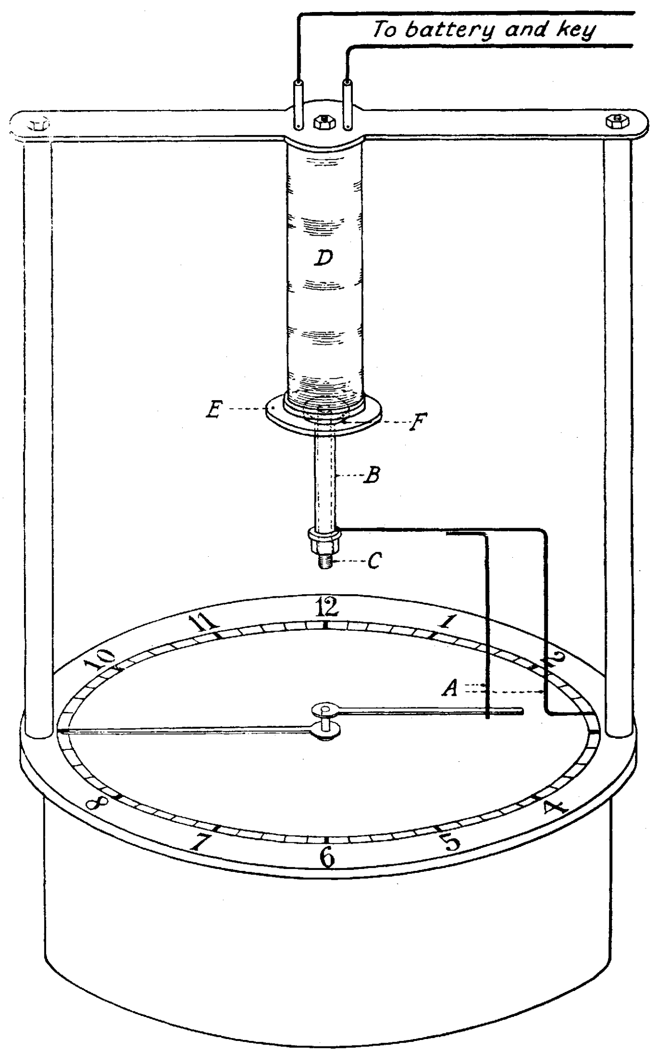
NOTE.

A Laboratory Timing Clock. By GILBERT F. SMITH.

THE usual type of stop-clock records the time interval between two events with an accuracy of at least 1 sec., but is less accurate if a large number of successive events have to be timed while the clock is going. The clock now described does not suffer from this disadvantage and allows the timing of any number of successive events to about $\frac{1}{2}$ sec.

An electric clock of sufficient power to turn a 12″ hand is required. The glass and the hour hand are removed, and the second hand is slightly shortened and provided with a rider *A* (see fig.) made of stiff steel wire. One prong of the rider serves as a pointer to indicate seconds on the scale, and the other engages on the forward edge of the seconds hand. The rider can rotate coaxially with the seconds hand and can also move upwards sufficiently far to disengage from the hand. To obtain these motions the rider is soldered to a brass tube *B*, which is a sliding fit over a thin steel rod *C*, and this is itself fixed firmly into a hole drilled into the centre of the lower face of a 6-volt electromagnet *D*, suspended as shown over the centre of the clock. A thin iron disc *E* is soldered round the top of tube *B*. By means of the hexagon nut at the bottom of the steel rod the rider assembly is adjusted so that the disc *E* is clear of the lower face *F* of the electromagnet.



When the clock is running, the seconds hand drives the rider round in front of it. In order to take a reading the electromagnet is energised by completing the electric circuit by means of a tapping key. This raises the rider clear of the hand and at the same time stops it, so that the reading given by the pointer can be made at leisure. The clock is ready for a second reading when the key is released and the rider is turned backwards by means of the iron disc to re-engage with the oncoming hand. At least four readings per minute can easily be made. The clock is used lying horizontally, and any tendency of the rider to overrun the hand is avoided by using a stiff lubricant, such as vaselin, in the rider bearing.

A clock of this type has been in use in these laboratories for several years, and despite its simple construction, it has never given trouble. It has been extremely useful in measuring the relatively small time intervals which are often required in experiments on chemical kinetics.—THE UNIVERSITY, LEEDS. [*Received, January 5th*, 1944.]