LETTERS TO THE EDITOR.

A clock for sending out electric signals once an hour or oftener.

IT is necessary that the central clock of a system of controlled clocks should send out an electric signal once an hour, by means of which signal the controlled clocks have their hands set to time.

It is often convenient to have such a clock send out signals oftener than once an hour: for example, at the University of Wisconsin a central clock automatically rings an electric bell in each recitation-room at the end of each hour, and also at ten minutes before the end of the hour, i.e., at fifty minutes and sixty minutes.

There are many ways of accomplishing this end. One of the simplest of these is described below from a clock which is now in use at the Washburn observatory to control by hourly signals a system of secondary clocks in the city of Madison.

The apparatus was made in the University machine-shops by me, and cost, perhaps, five dollars; and it is perfectly satisfactory in its operation. Figs. 1 and 2 represent the projection and section of an ordinary clock-dial, with a ring of black walnut or ebony, *B*, screwed on it.

Around the outer circumference of *B*, and about a quarter of an inch from it, runs the brass wire *C*. This wire is threaded from end to end, and, passing through the four screw-eyes *k*, *k*, is held to, and supported by, the wood ring *B*. The two ends of the wire are joined by means of a long nut, or thimble, *b*. Strung loosely on the threaded ring *C*, and at various points of its circumference, are the small brass nuts *a*, *e*. Some of these are employed as jam-nuts, *a*, *a*, to prevent any tangential motion in the threaded ring. The walnut ring can be made of convenient thickness, so that the minute-hand will pass over it; and for final adjustment the minute-hand may be bent in or out to get the required contact pressure. A thin strip of platinum (*P'*, fig. 3) is soldered to the under side of the minute-hand along the portion which traverses the walnut ring *B*. Around this *point* is fitted the small block, *I*, of bone or vulcanite, with its under face sloping upward to form a sort of inclined plane to precede the platinum point *P'*. A short piece of platinum wire of suitable size is flattened at one end (*P*, fig. 3); and the flattened part, secured to the small piece of vulcanite, *s*, is laid upon the walnut ring *B*. The other end is bent round the threaded wire *C*, and secured in place by means of the nuts *e* strung on the ring for that purpose.

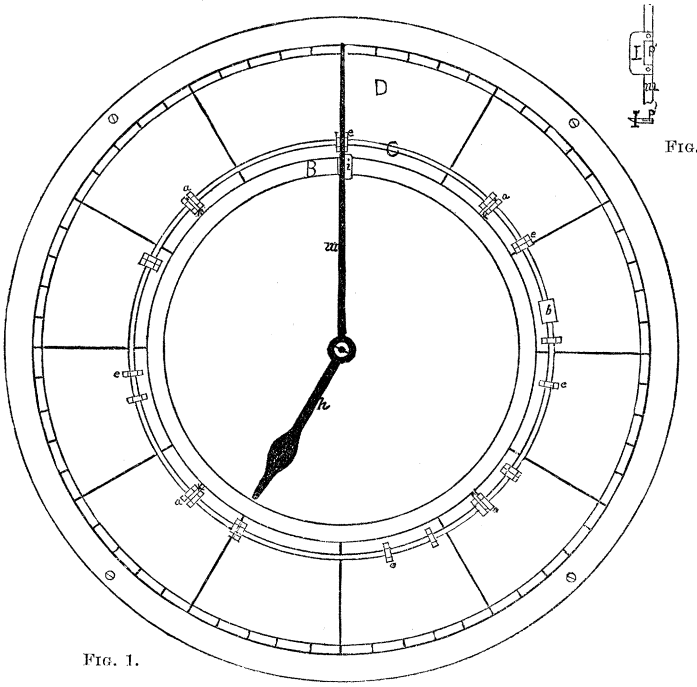

FIG. 1.

FIG. 3.

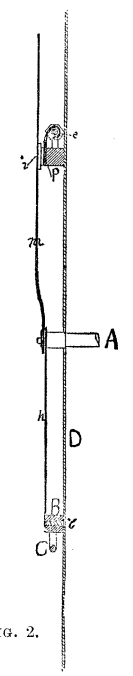

FIG. 2.

The points at which the circuit is made and broken are the platinum points *P*, *P'*. The minute-hand, being carried around with its point *P'* in light contact with the ring *B*, is sprung out when the inclined block *I* comes in contact with the projection of *s*; and, being carried along, the points *P*, *P'*, are brought together by the springing-back of the hand. The length of contact depends on the width of the point *P*, and may be varied at pleasure. The circuit-wires are led from the works of the clock and the threaded ring respectively, and may be provided with suitable binding-posts outside the clock. As the ring *C* runs clear around the dial, a platinum point may be inserted anywhere in its circumference; so that any number of signals may be made during the hour, or those already set may be easily changed. The nuts *e* on the threaded wire not only insure a good metallic contact with the platinum point, but aid materially in its adjustment for a given time of contact. The device is simple, in that it requires no great delicacy of workmanship in its construction, and is of such a form that almost any clock will receive it without change.

H. W. PENNOCK.

Deafness in white cats, and statistics of deafness and epilepsy in America.

In my letter of the 4th inst. (*Science*, iii. 171) I drew attention to the remarkable fact, that white cats, if they have blue eyes, are almost always deaf.

Darwin, in his book on 'Animals and plants under domestication,' attributes the peculiarity to a slight arrest of development in the nervous system in connection with the sense-organs. He thinks there is nothing unusual in the relation of blue eyes and white fur; but in regard to the deafness, he says (ii. 323),—