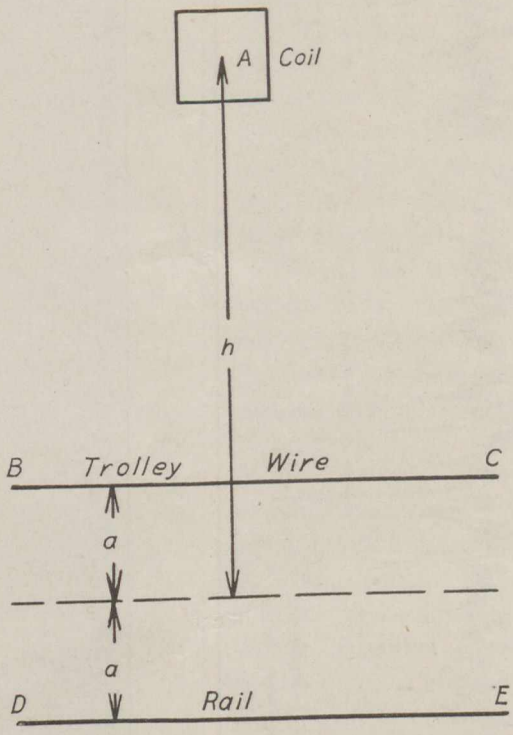
during the period correspond with the two large disturbances. Fig. 3 shows a record taken over a longer period with a reduced time scale. Two of the large deflections correspond with the only two trains during the period. The disturbance at 10.30 P. M. is probably connected with switching operations in the station.

FIG. 4.



It will now be shown that the observed disturbances are of the order to be expected.

In Fig. 4, let A represent the coil, BC the trolley wire, and DE the rails of the electric railway in the tunnel.

Let S be the area of one turn of the coil, n the number of turns, $2a$ the height of the trolley wire above the rails, and h the height of the coil above a line midway between the rails and the trolley wire.

If i is the current in the trolley wire at any time, the field at