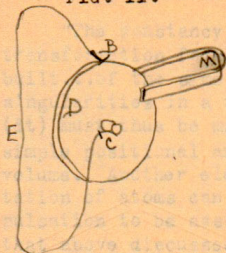


FIG. II.

FIG. I. 1900) says-



Faraday's Disc Machine Arago's Rotation

Whenever the electric oscillation (alternating field) is of a steady character, the force and the speed of rotation are steady. Arago discovered in 1824 that, if a copper disc is set revolving beneath a magnetic needle, the needle is deflected in the direction of rotation, and if the disc moves sufficiently rapid, the needle is carried around with it. Faraday showed that the force exerted was due to currents induced in the copper. Foucault found that a copper disc rotated between the poles of a strong magnet, soon became hot. The energy is first transformed into electric current and then into heat. These eddy currents are sometimes called Foucault currents.

Faraday invented the first form of magneto-electric machine, a copper disc D revolving between the poles of a magnet M. The current is taken off the disc at the periphery and returned to the axle.

The knowledge that the speed of transmission of gravitation, if finite at all, enormously transcends that of radiation shows... no objection to a theory of electric and radiant phenomena (in which) gravitation is not involved. The constitution of the energy relations on which the phenomena depends a new property of the medium becomes implicitly involved in the more refined theory (not merely implicitly as in the energy-function that suffices for ordinary material electro-dynamics) such for instance as the incompressibility that is utilized in the pulsatory theory or illustration of gravitation. The general reasons against the notion that the fundamental property of mass in matter is in direct connection with the mechanism by which gravitation is transmitted have been given above...."