electro-magnets "D'" and "E'," which are placed similarly to the A. C. electro-magnets "D" and "E" at the transmitter station. As will be observed, the magnet coils "D" and "D'" are energized by the same A. C. dynamo "F" and also the A. C. magnet coils "E" and "E'" are excited by the alternator "G." It is therefore evident that the two magnetic-control circuits "D" and "D'" and "E" and "E'" and their resultants are therefore in perfect synchronism, i. e., their actions take place at the same time.

A Crooke's vacuum tube "A'" is used also at the receiving station as indicated, and its cathode electrode appears at "B'." The disk of this electrode, which shoots forth the cathodic ray, is slightly inclined so as to project the ray at a downward angle, through the small opening "a'" in the anode electrode disk "C." Thus, under normal conditions, the cathode rays pass through opening "a'," but they would be stopped by the diaphragm "P" and its centrally located orifice "S." They, in this case, are not brought under the deflecting action of the A. C. electro-magnets "D'" and "E'" and thus do not reach the image screen "H" before the observer at all. At "O" is a metallic circular disk, which is electrically connected with the screens "LL" at the *transmitter* instrument. Under ordinary conditions the cathode rays at the receiver cannot pass beyond the diaphragm "PS," but they can be made to do so, if slightly repelled by the lower diaphragm plate at "O." In this case, they will then fall on the screen "H" and cause *that part* on which they fall *to fluoresce* (i.e., light up).

Now assume that a uniform beam of cathode rays passes at marvelous velocity and without any appreciable inertia or mass in the tubes "A" and "A'" and that also the A. C. electro-magnets "D" and "E," "D'" and "E'" are energized, as previously explained. Also, suppose that the image of a person, for instance, appears at "N" before the tube "X"; this image is focused and projected through the lens "M," and through the gauze screen "LL" on to the back of the metallic screen "J," which, as will be remembered, is made up of a very large number of small metallic cubes. Then as the cathode rays in "A" oscillate under the combined action of the A. C. electro-magnets "D" and "E" they will cause a negative charge of electricity to be imparted in turn to all the metallic cubes, of which the screen "J" is composed. In the case of the shadows of the projected image, or considering those cubes on the screen on which no light falls, nothing will happen in the action of the apparatus, the charge dissipating itself in the tube. Therefore, in the case of those cubes on the screen which are brightly illuminated by the bright parts of the projected image, the negative electrical charge imparted to those cubes by the cathode rays will pass along, owing to the action of the sodium vapor, which is ionized under such circumstances, and so on until it reaches the gauze screen "LL," whence the charge will travel by the line wire to electrode "O" in the tube "A'" at the receiving instrument.

The plate at "O" will therefore become charged and will slightly repel the rays in the tube, with a result that they will thus be enabled to pass through the aperture at "S" and strike, for a fraction of a second, upon a minute portion of the screen, corresponding in position to the small cube surface on screen "J." This is possible, owing to the fact that the electro-magnets "D'" and "E'" are working in perfect synchonism or step, electrically, with the magnet coils "D" and "E" at the transmitter.

It will be understood, of course, from this description that this action will take place successively, but *not* simultaneously. In