

mena referable to the head of diffraction, turns on two considerations, one of which may be regarded as a theoretical postulate (founded, however, on the analogy of sound), viz., that if a portion of a luminous wave be intercepted, the non-intercepted undulation spreads laterally into the dark space beyond, diminishing, however, in intensity as the lateral deviation of the ray (or perpendicular to the wave) from its original rectilinear course increases:—the other, a natural consequence of the mode in which a wave is propagated, viz., that every point in the surface of the non-intercepted portion may be regarded as the origin of a new wave spreading out spherically in all directions from that point as a centre; only with this proviso, that all such secondary waves start, each from its own origin, at the same precise instant of time and in *the same precise phase of its undulation*. And this, be-

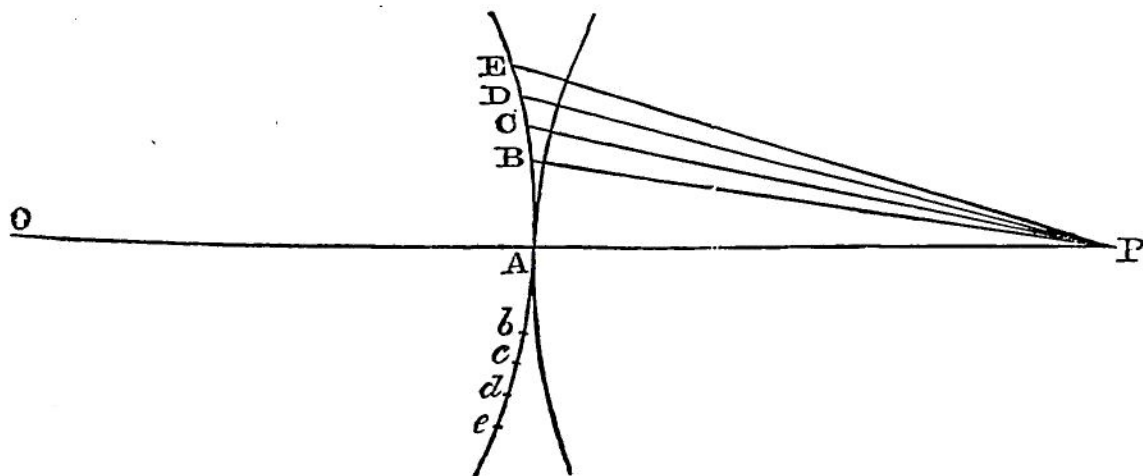


Fig. 10.

cause all belong to one wave surface, and are therefore necessarily coincident in time and identical in phase.

(113.) To show how this last consideration affects the question of diffraction, let us suppose a point P on a