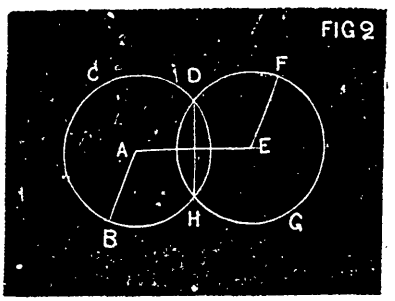
This will prove not only that the rays *diverge*, but also that the rays proceed in straight lines.*

Convex lenses :—We shall now proceed to the consideration of convex lenses, which, for our purpose, is the most important part of the subject. Lenses are made of various transparent substances as amber, alum, quartz, glass, diamond, and even of ice. Those in ordinary use are made of glass. When the two surfaces of a convex lens have the same degree of curvature, the lens is said to be equi-convex. When one of the surfaces is flat or plane, the lens is called a plano-convex lens. Glass spectacles used by old persons for reading, &c., are commonly made double convex.

In order to simplify the subject as much as possible, let us confine our attention to lenses that are equi-convex.



In fig. 2 let A be the centre of the circle B, C, D, of which A, B, is the radius, and let E be the centre of the circle F, G, H, of which the radius E, F, is equal to the radius A, B. The circle F, G, H, will be equal to the circle B, C, D. The part D,H, common to both circles, represent a section of an equi-convex lens. The line A,E, is called the *axis* of the lens, and the line D, H is called the *diameter*. The centre of the diameter (where it is intersected by the axis) is *the optical centre of the lens.*

Reading glasses, and burning glasses, are examples of a double convex lens. Many of you have, doubtless, seen the experiment of

(* Convergent pencils of light do not exist in nature. Parallel pencils or divergent pencils of rays can be rendered convergent by means of a convex lens. Thus in fig. 1, the rays diverging from F, are made to *converge* to P by the convex lenses, A, and B.)