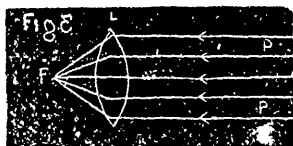setting fire to wood, paper, &c., by means of a burning or sun glass. The explanation of this is simply that the convex lens possesses the property of converging a portion of the sun's rays to a point called the focus.

In Fig. 3, P, P, represent a pencil of parallel rays converged to a focus at F by means of the double convex lens, L.

The focus for parallel rays is called the *principal* focus. It is always the same distance from the optical centre in the same lens. The length of the focus for parallel rays is, in equi-convex lenses, equal to the length of the radius of curvature.

The shorter the focus, the greater is the "power" or "strength" of the lens. A lens that can bring parallel rays to a focus at a distance of one inch from the optical centre of the lens, would be called a *one inch* lens. Another lens whose focus is two inches from the optical centre, is called a *two inch* lens, and so on. Convex lenses therefore receive their names according to the number of inches, or fraction of an inch, the principal focus is distant from the centre of the lens. The strongest lenses used for spectacles are what are called cataract glasses; they are worn by patients who have had their crystaline lenses removed. Their strength ranges from 2 to 4 inches focal length. The weakest spectacles that are ordinarily used have a focus of 36 inches. Convex lenses having a focus of 36 inches do not enlarge the letters of a book at the ordinary reading distance.

Let us now see what practical application we can make of this principle of convex lenses.

Supposing that a person accustomed to using convex spectacles, gets one of the glasses broken, and applies to you to learn the strength of the glass that would be necessary to replace the broken one, or in other words—to learn the strength of the glass that is still whole. How would you proceed ? One method is to use the lens as a sun glass, and ascertain by measurement, how far from the glass, the sun's rays are brought to a focus. If you find, for instance, that the focus is 10 inches from the lens, you will have ascertained that the person has