

periment (which is the simplest in its conception and explanation), these glimpses are obtained by looking through an opening in a screen corresponding exactly in size and shape to one of the intervals between the teeth of a metallic wheel which is made to revolve before the opening, so that as the teeth pass in succession, they intercept the light so long as they cover it ; but allow it to pass when, in place of a tooth, an interval is presented before the eye. Imagine such a wheel, screen, and opening, the wheel being at rest in the last-described situation ; and through another such an opening in the same screen, corresponding exactly in size, shape, and situation to another of the intervals between the teeth, let a sunbeam be directed outwards, in a direction parallel to the axis of the wheel, by a highly-polished reflector, so as to strike upon another such reflector so placed at some considerable *and measured* distance from the wheel, that the light shall be reflected back again by this second mirror. By slightly inclining and properly adjusting this it may be made to return, not to the orifice from which it issued, but to the other behind which the eye of the observer is placed. In this state of things, when all is at rest, he will see the reflected light ; but if the wheel be turned slowly round, a tooth will come before the first reflector in place of an opening, and intercept the light—then another opening, another tooth, and so on, producing successive glimpses of light separated by dark intervals.

(14.) If the motion of the wheel be gradually accelerated, so that more than ten teeth pass before the orifice