Stroboscope Encyclopedia Article

Stroboscope

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Stroboscope

A stroboscope is a light that *freezes*motion by flashing at regular, controlled intervals. People dancing under such a light appear to be almost immobile. This illusion of immobility or slow motion stems from the persistence of vision--the eye's ability to retain an image for a brief moment after it has vanished. This phenomenon also underlies the principle of motion pictures.

Joseph Plateau (1801-1883), a Belgian physicist, built the phénakistiscope, a device with flashing lights akin to the stroboscope, in 1832. In the same year, an Austrian named Simon von Stampfer devised the first actual stroboscope. In the 1920s, Harold Edgerton, an American engineer, pioneered the use of modern stroboscopes in photography. These strobes produce extremely short flashes of intense light from a gas-discharge lamp. Strobe photography can capture multiple images of bullets and other fast-moving objects with extreme clarity. Stroboscopes are used in industry to study the movement of machinery and in science to analyze objects as they undergo rapid, cyclic motion, making the objects appear stationary or nearly so by matching the stroboscope's rate of flashing to the object's frequency of motion. Strobe lights are used in this way in automotive timing instruments.