

A Science Service Feature

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? WHY THE WEATHER ? Mailed November 7, 1929.

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THE KLYDONOGRAPH

One of the marvelously sensitive instruments recently introduced for the study of the surges, or sudden brief increases of voltage, produced on electric transmission lines by lightning discharges that either strike the line or occur near it is called the "klydonograph". It was invented in 1923 by J.F. Peters, a Westinghouse engineer, and its operation is based upon the fact that patterns known as "Lichtenberg figures" are produced if a voltage is applied between a pencil-shaped electrode and a metal plate, between which is interposed a photographic film. These figures show the magnitude and the polarity of the voltage, and they are formed with such rapidity that they record the effects of lightning surges lasting only a few millionths of a second. Mr. Peters was recently awarded the Longstreth medal of the Franklin Institute for his invention.

The klydonograph, after installation on a transmission line, requires no attention except a change of film once a week. A clockwork mechanism turns the roll of film and registers the time when the lightning discharge occurs. Klydonographs have been used in hundreds of installations throughout the country and much information about lightning has been obtained with them. In the elaborate investigations carried out by Westinghouse engineers in the Great Smoky Mountains of Tennessee, klydonographs have been used in conjunction with the cathode-ray oscillograph, which gives a more detailed story of the lightning surge.

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