ELECTRICAL SECTION.

Stated Meeting, October 26, 1897.

THE AMERICAN ELECTRIC METER.

BY WM. DENNIS MARKS.

The mechanism of this meter is so elementary in character that the accompanying illustration of a twenty-two-light meter requires but little explanation. The meter consists in the three-wire system of two solenoids and cores placed above a

Marks' electric meter.

self-starting pendulum actuated by the electric current. The pendulum, by means of a cam, raises a pawl on a ratchet wheel to a uniform height each stroke. The solenoids, by means of their cores, shift the angular position of a pendant arch attached to their axis so as to permit this pawl to drop along the ratchet wheel a number of teeth proportional to the cur-

rent passing through the meter. Thus, at each stroke of the pendulum, the load in ampères passing to the consumer is by means of the ratchet wheel and the dial register, measured and added up in ampère hours. That is all there is of the meter, save a pointer and scale showing through the glass the ampères passing. The interior mechanism is supported by a brass frame similar to that of a Yankee clock, and the case is cast-iron, thus acting as a magnetic shield, and preventing tampering with the meter by means of magnets on the outside.

CORRESPONDENCE.

A CONTRIBUTION TO THE HISTORY OF THE ART OF PHOTOGRAPHING LIVING SUBJECTS IN MOTION, AND REPRODUCING THE NATURAL MOVEMENTS BY THE LANTERN.

To the Editor of the Journal of the Franklin Institute :

SIR :—Among the earliest public exhibitions of photographs taken from living subjects in motion projected by the lantern upon a screen, was that given at an entertainment held in the Academy of Music, in Philadelphia, on the evening of February 5, 1870,* and a repetition of this exhibition was made before the Franklin Institute at its next following monthly meeting, on March 16th, by the writer.

The subjects exhibited embraced waltzing figures and acrobats, shown upon the screen in life-size, while the photographic images were only $\frac{3}{4}$ inch in height. At that day flexible films were not known in photography, nor had the art of rapid succession picture-making been developed ; therefore, it was necessary to limit the views of subjects to those that could be taken by time exposures upon wet plates, which photos were afterwards reproduced as positives on very thin glass plates, in order that they might be light in weight. The waltzing figures, taken in six positions, corresponding to the six steps to complete a turn, were duplicated as often as necessary to fill the eighteen picture-spaces of the instrument which was used in connection with the lantern to project the images upon the screen.

* The printed program of this event contains the following allusion to this feature of the entertainment : " THE PHASMATROPE. This is a recent scientific invention, designed to give to various objects and figures upon the screen the most * * life-like movements. The effects are similar to those produced in the familiar toy called the Zoëtrope, where men are seen walking, running and performing various feats in the most perfect imitation of real life. This instrument is destined to become a most invaluable auxiliary to the appliances for illustration, and we have the pleasure of having the first opportunity of presenting its merits to our audience."