

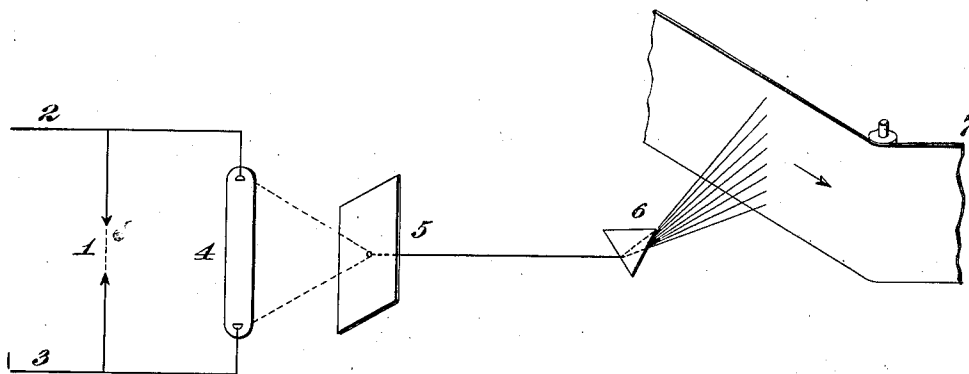
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L. GERARD.

APPARATUS FOR INDICATING THE CHARACTER OF ELECTRICAL EFFLUVIA.

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Witnesses:

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR INDICATING THE CHARACTER OF ELECTRICAL EFFLUVIA.

No. 818,534.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed June 14, 1905. Serial No. 285,258.

To all whom it may concern:

Be it known that I, LÉON GERARD, a subject of the King of Belgium, residing at Brussels, Belgium, have invented a new and useful Apparatus for Indicating the Character of Electrical Effluvia, of which the following is a description.

In the production and utilization of electrical effluvia in chemical operations, such as for ozonizing air for the purification of water, the efficiency of the operation depends upon the character of the electrical effluvia, and while this may be to a certain extent ascertained by the ordinary electrical measuring or indicating instruments—*i. e.*, voltmeters, ammeters, and wattmeters—I have found that a more accurate indication of the conditions producing desirable physical and chemical actions is furnished by shunting the discharge-gap by a vacuum-tube and by subjecting the rays emitted by the vacuum-tube to physical analysis and observation. The efficient character or condition of the effluvia is accompanied by the production of special rays by the vacuum-tube, and the absence of these rays will indicate the necessity for the adjustment of the apparatus to reestablish the most effective conditions. The physical analysis of the rays emitted by the vacuum-tube can be made by means of appliances suitable to the particular character of the rays which it is desired to observe, whether these be luminous rays, X-rays, or cathode rays, as will be well understood. In the case of luminous rays the observation can be made and permanently recorded by means of a traveling photographic sensitive strip upon which the rays will be received, and where the conditions require it the rays can be separated spectroscopically before being received upon the photographic surface. This last method is particularly useful where the electrical effluvia is produced by high-frequency oscillations, since the efficient character or condition of the effluvia in this case is accompanied by the production of ultra-violet rays by the vacuum-tube. The light emitted by the vacuum-tube being separated into its constituent elements by a suitable prism before being projected upon the photographic sensitive surface the presence of the ultra-violet rays can be readily observed. In cases where the photographic sensitive surface is employed it may be fed through the apparatus

with a constant rate of progression by suitable clockwork and through proper developing and fixing baths, thereby giving a continuous record of the result.

In the drawing there is shown diagrammatically one means for carrying the invention into effect.

1 is the gas-gap at which the silent electrical discharge or effluvia is produced, which gas-gap is connected with a circuit 2 3, in which flow oscillatory currents of high frequency.

4 is a vacuum-tube which is connected with the circuit 2 3 in shunt to the gas-gap 1.

5 is a screen, preferably of metallic lead, and provided with an opening to produce a pencil of light from the vacuum-tube.

6 is a suitable prism for separating the pencil of light into its constituent rays.

7 is the traveling photographic surface.

In the case of the analysis of cathodic or X rays the prism 6 will be omitted and the pencil of rays will be thrown directly on the surface 7, which will be placed close to the screen 5. In the opening of this screen would be placed aluminium, ivory, or other suitable material to strain out a certain part of the rays.

What I claim is—

1. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube connected in circuit with the discharge-gap, and means for observing the rays produced by the vacuum-tube, substantially as set forth.

2. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, and means for observing the rays produced by the vacuum-tube, substantially as set forth.

3. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, and means for photographically recording the character of the rays produced by the vacuum-tube, substantially as set forth.

4. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, means for separating the rays produced by said vacuum-tube into their constituent elements, and means for recording the character of said sep-

arated rays photographically, substantially as set forth.

5 5. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, means for separating the rays produced by said vacuum-tube into their constituent elements, a traveling photographic sensitive surface, and means

for projecting said separated rays upon said surface, substantially as set forth. 10

This specification signed and witnessed this 12th day of June, 1905.

LÉON GERARD.

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