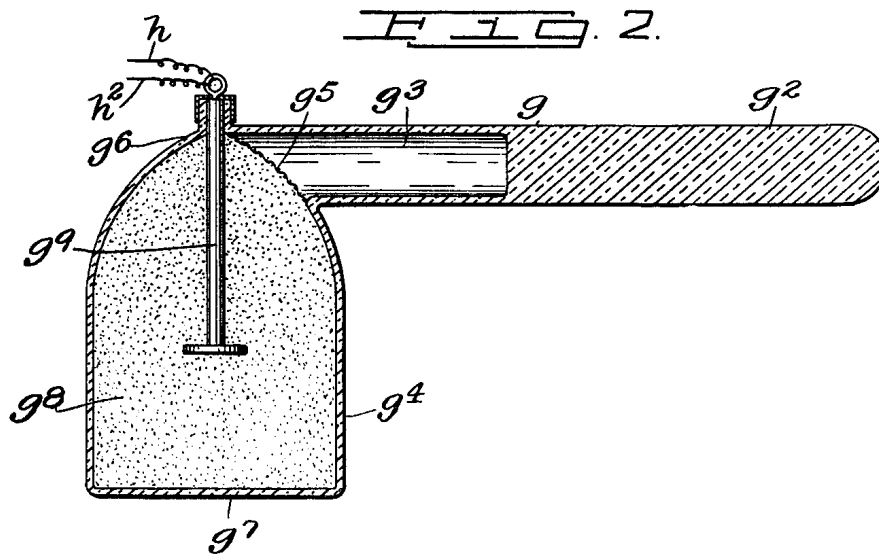
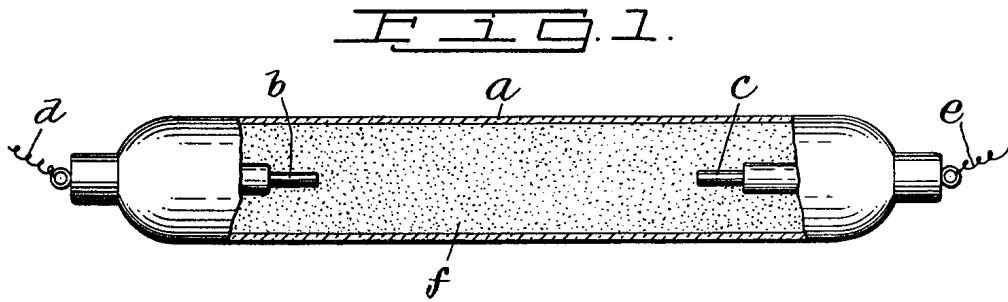


Sept. 4, 1923.

1,466,777

L. WINKELMANN  
RADIOACTIVE VACUUM TUBE  
Filed Sept. 6, 1921



Inventor  
Louis Winkelmann,  
By his Attorneys  
*Edgar & Co.*

# UNITED STATES PATENT OFFICE.

LOUIS WINKELMANN, OF HOBOKEN, NEW JERSEY.

RADIOACTIVE VACUUM TUBE.

Application filed September 6, 1921. Serial No. 498,877.

*To all whom it may concern:*

Be it known that I, LOUIS WINKELMANN, a citizen of the United States, and residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Radioactive Vacuum Tubes, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the treatment of what are known as diseases of the blood or circulatory systems, such as cancers, tumors, ulceration of the stomach and similar diseases, including what are known as skin cancers and rodent ulcers deep-seated or otherwise, or any other disease originating through or by reason of poisonous or deleterious substances in or carried by the blood.

Diseases of the class specified may occur in any part of the system or body, including the skin, and the result thereof will depend on the method of treatment and when such treatment is begun.

It is a wellknown fact that the growth or development of the blood deposits, above referred to, or the diseases resulting therefrom, whatever they may be, may in some cases begin soon after the deposit or deposits have been made, but in other cases the said deposits may be enclosed by a fleshy or fibrous growth in the manner of an ordinary cyst, in which event the growth or development of the disease may be carried on for a number of years, before the disease will assume a malignant type if at all; and this is usually the result in the case of deep-seated rodent and certain other forms of ulcers, and also what is known as skin cancers or ulcers.

The object of this invention, or one of its objects, is to break up, kill or destroy the said poisonous or deleterious substances either while they are in the blood, or after the deposits herein referred to have been made, or after the growth or development of the disease has begun, and to cause the dead material thus produced to be carried away by the blood and other circulatory agencies involved in the circulatory system, and discharged or eliminated from the body in the manner of other substances of this class, by natural processes, and thus permit the healing of the affliction or afflictions by natural processes.

The means or apparatus which I employ involves a vacuum tube or bulb of any desired form, which may be constructed in the manner of an ordinary crook's tube or in any known way, and in reducing my invention to practical form, I place in or fill said tube with a broken up or finely divided or granulated ore or ores containing a radioactive substance or substances, such as radium, thorium, uranium, phosphorous, pitchblende, or the like, which ores may be obtained at a comparatively small cost. The tube or bulb is also provided with a terminal electric pole or poles by means of which an electric circuit wire or wires may be connected therewith, and by means of which an electric current may be directed into said tube or bulb and into the material therein, or into and through said tube or bulb and into and through said material, and the electric terminal or terminals, or pole or poles are preferably made of platinum, aluminum, tungsten or the like and, in practice, the electric current passed into said tube or bulb and the material therein, or through said tube or bulb and the material therein is preferably of high voltage, and in this operation the tube or bulb and the material therein is heated to such an extent as to produce a fluorescent or luminous effect or appearance which causes said tube or bulb to give off emanations or rays.

The anode pole or poles will produce what are known as alpha or electric positive rays, while the cathode pole will produce what are known as beta or electric negative rays, and these rays neutralize each other and form ether waves, called gamma rays, or neutral rays, which pass out of the tube or bulb in the form of emanations, or emanation rays, which have a beautiful green and luminous color and possess great powers of penetration, exceeding, in fact, the penetrating powers of the X-ray, but said emanations or electric gamma rays are harmless, and may be used, if desired, to produce clear radiograph pictures.

The emanations or electric gamma rays are composed of myriads of infinitesimally small neutral ions which have the peculiar faculty of passing through all substances, including insulating material such as rubber, glass or the like, and these emanations or rays will pass into the human body and the said emanations or rays are also purified.

catory, antiseptic and germicidal, while being also a good tissue builder and possessing wonderful healing power.

The characteristics of these emanations or rays may be enumerated as follows:—

They will effect photographic plates, produce phosphorescence in certain substances, cause the surrounding air to become a conductor of electricity and will also produce heat, and said rays or emanations are being constantly produced when the apparatus is in operation.

The glass tubes or bulbs hereinbefore referred to may be made of different elements, and of different shapes or forms to adapt them to specific uses, and the details of my invention are fully disclosed in the following specification, of which the accompanying drawing forms a part, in which drawing the separate parts of the device or apparatus which I employ are designated by suitable reference characters in each of the views, and in which:—

Figs. 1 and 2 are side views partially or wholly in section and showing different forms of devices, tubes or bulbs which I may employ in the treatment of the various diseases hereinbefore specified, according to my improved method or methods.

In Fig. 1 of the drawing I have shown at *a* a vacuum tube or bulb which, in the construction shown, is cylindrical and oblong in form, and mounted in the end portions thereof and passing thereinto are electric poles or terminals *b* and *c*, anode and cathode, formed and connected with the ends of the tube *a* in the usual or any desired manner and consisting of any suitable material, preferably aluminum, tungsten or the like, and with the outer ends of these poles or terminals are connected electric circuit wires *d* and *e*, positive and negative. The electric tube or bulb *a* is also filled with a finely divided ore or ores *f* containing radio-active substances, such as radium, thorium, uranium, phosphorus, pitchblende or the like, which ores may be obtained at a comparatively small cost, and the passage of an electric current into said tube or bulb and the material therein, or into and through said tube or bulb and the material therein, will raise said tube or bulb and the material therein to a fluorescent or luminous condition and cause said tube or bulb to give off emanations or rays, as hereinbefore set out.

The anode pole will produce what are known as alpha or electric positive rays, while the cathode pole will produce what are known as beta or electric negative rays, and these rays neutralize each other and form ether waves, called gamma rays or neutral electric rays, which pass out of the bulb as emanation or emanations, called gamma rays, and these emanations or rays have a beauti-

ful green and luminous color and possess great powers of penetration, exceeding, in fact, the penetrating powers of the X-ray, as hereinbefore set out, but said gamma ray or rays are harmless.

The emanations or electric gamma rays are, as hereinbefore stated, harmless and may be used in producing radiograph pictures equal to, or superior to X-ray pictures, and in using the form of device shown in Fig. 1, the ends of the tube or bulb are or may be grasped by the hands of the patient and applied to any part of the body and the emanations of rays produced, as described, will pass into the body and through the entire system.

The form of tube or bulb shown in Fig. 1 is intended for use in cases where the exact location of the disease or trouble is not understood, or known, but the device shown at *g* in Fig. 2 of the drawing is intended for use in the case of all skin diseases of the class specified, or where the disease is located immediately under the skin, or in proximity thereto, or where the location of the disease is positively known to be in any part of the body or system, and this form of device comprises a glass handle member *g*<sup>2</sup>, one end of which is provided with a vacuum tube *g*<sup>3</sup> with which is connected a vacuum bulb *g*<sup>4</sup>, the interior of which is separated from the vacuum tube *g*<sup>3</sup> of the handle, in the construction shown, by a wire gauze screen *g*<sup>5</sup>. That end of the bulb *g*<sup>4</sup> which is connected with the handle member *g*<sup>2</sup> is preferably conical in form as shown at *g*<sup>6</sup>, and the opposite end of said bulb, in the construction shown, is plain and at right angles to the side walls of the bulb as shown at *g*<sup>7</sup>. The bulb *g*<sup>4</sup> contains, or is filled with a finely divided radio-active ore or ores, or an ore or ores containing a radio-active substance or substances *g*<sup>8</sup>, the same as when the tube or bulb shown in Fig. 1 is employed, and mounted in the conical end portion of the bulb *g*<sup>4</sup> is an electric terminal *g*<sup>9</sup> of any preferred form of construction and with the outer end of which is connected electric circuit wires *h* and *h*<sup>2</sup>, and when an electric current is passed into the terminal *g*<sup>9</sup>, the material in the bulb *g*<sup>4</sup> and said bulb will be raised or heated and raised to a luminous or fluorescent condition, and said bulb will give off emanations or rays similar to those discharged from the tube or bulb *a*. In the use of the form of device shown in Fig. 2, said device may be taken in hand by the patient, or by an operator, and the end *g*<sup>7</sup> of the bulb *g*<sup>4</sup> is applied directly to the afflicted part, or directly over the afflicted part and may be gently moved thereover, and the time involved in this operation will be determined by the operator or expert, and the end *g*<sup>7</sup> of the bulb *g*<sup>4</sup> may be given any desired form, shape or configuration so as

to adapt it to any particular use, or adapt it for use in connection with any particular part of the body, and even the side walls of the bulb  $g^4$  may be used as well as the end  $g^7$  thereof.

It must be understood that my invention is not limited to any particular form of vacuum tube or bulb, or to any particular method or process of making the same, nor is my invention limited to any particular ore or ores containing a radio-active substance or substances, and any ore or ores of this class may be employed in the making of a tube or bulb of any class capable of producing the results herein set out, or for accomplishing the object or objects of my invention, the use of the ore or ores specified, or any material containing a radio-active substance capable of radio-active action in the making of, or in the use of a tube or bulb device for the purpose herein set out constituting one of the chief features of my invention.

It must also be understood that while I have in the preceding part of this specification referred to ores containing radio-active substances, such as radium, thorium, uranium, phosphorus, pitch-blende or the like, that some of the substances named or indicated, such as phosphorus, pitch-blende and perhaps others are frequently found or may be obtained in almost a state of purity and in this event such substances in their natural state might or may be used for any of the purposes herein set out.

It will be understood that while I have described a specific use of my vacuum tube or bulb and have shown and described specific forms of tubes or bulbs of the class under consideration, that my invention is not limited in these respects and various changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a vacuum element containing electrical terminals, of a radio-active substance.

2. The combination with a vacuum element containing an electrode or electrodes, of a radio-active substance.

3. The combination with a vacuum element containing an electrode or electrodes, of a radio-active substance, said substance surrounding and enclosing said electrodes.

4. In a device of the class described a vacuum tube containing an electric terminal or terminals and the ore of a radio-active substance surrounding said terminal or terminals.

5. In a device of the class described a vacuum tube containing an electric terminal or terminals which extend into said tube, and finely divided ore or ores of a radio-substance in said tube and around said terminal or terminals.

6. A device of the class described comprising a tube containing a radio-active substance, and electrical means extending into said tube and cooperating with said substance to produce rays or emanations having predetermined characteristics.

7. An article of manufacture of the class described comprising a vacuum tube containing the ore or ores of a radio-active substance or substances, and means for directing an electric current into and through said tube to the material therein.

8. An article of manufacture of the class described for use in the treatment of blood or circulatory diseases comprising a vacuum tube, a radio-active ore in said tube, and means for introducing an electric current into said tube and the ore therein, to raise said ore to a fluorescent or luminous condition to discharge emanations or rays from said tube.

9. An article of manufacture of the class described for use in the treatment of blood or circulatory diseases comprising a vacuum tube containing a finely divided ore or ores of a radio-active substance or substances, means for passing an electric current into said tube and the substance or substances therein to raise the same to a fluorescent or luminous condition, whereby predetermined emanations or rays are discharged from said tube.

10. An article of manufacture of the class described for use in the treatment of blood or circulatory diseases comprising a vacuum tube, means for passing an electric current into said tube and a radio-active substance enclosing said first named means and adapted to be raised to a fluorescent or luminous condition by the electric current in said tube to discharge from said tube predetermined emanations or rays.

11. An article of manufacture of the class described for use in the treatment of blood or circulatory diseases comprising a vacuum, an electrode or electrodes in said tube and a radio-active substance surrounding said electrode or electrodes.

12. An article of manufacture of the class described for use in the treatment of blood or circulatory diseases comprising a tube, an electrode or electrodes in said tube, and a radio-active substance in said tube and surrounding said electrode or electrodes.

13. The herein described method of producing predetermined emanations or rays for use in the treatment of blood or circulatory diseases which consists in providing a

radio-active substance and raising said substance to a fluorescent or luminous condition by subjecting the same to an electrode or electrodes.

14. The herein described method of producing predetermined emanations or rays for use in the treatment of blood or circulatory diseases, which consists in subjecting the finely divided ore of a radio-active substance to an electrode or electrodes sur-

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rounded by said substance to raise said substance to a fluorescent or luminous condition.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 29th day of August, 1921.

LOUIS WINKELMANN.

Witnesses:

C. E. MULREANY,  
H. E. THOMPSON.