Aug. 18, 1925. 1,550,197

E. R. BERRY

RADIATION PROJECTOR

Filed June 6, 1923

Fig. 1.

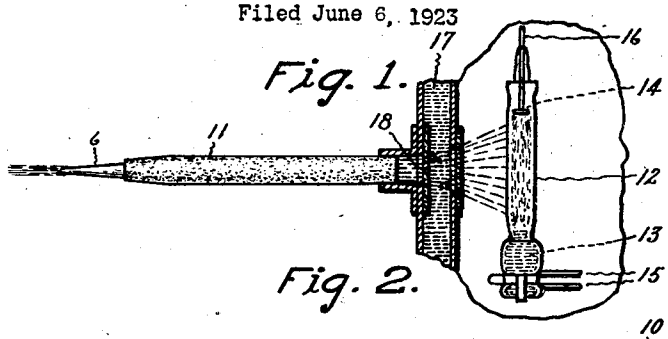


Fig. 2.

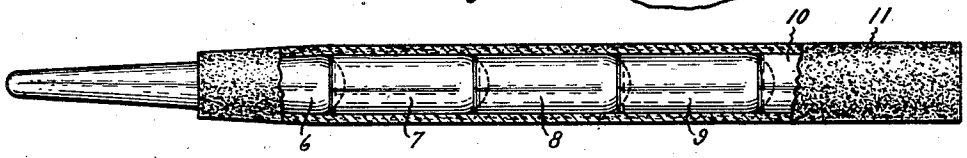


Fig. 3.

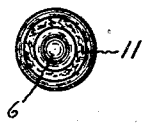
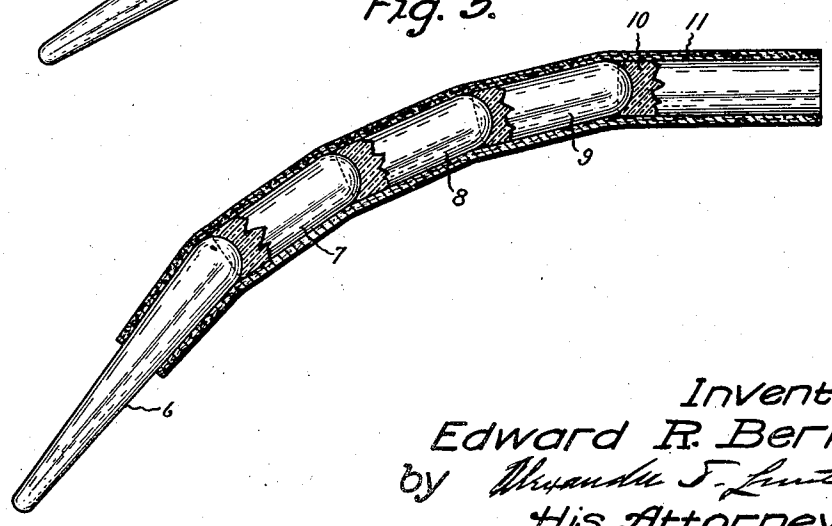


Fig. 4.

Fig. 5.



Inventor,
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Patented Aug. 18, 1925. 1,550,197

UNITED STATES PATENT OFFICE.

EDWARD R. BERRY, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

RADIATION PROJECTOR.

Application filed June 6, 1923. Serial No. 643,785.

To all whom it may concern:

Be it known that I, EDWARD R. BERRY, a citizen of the United States, residing at Malden, in the county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Radiation Projectors, of which the following is a specification.

The present invention comprises a method of conveying light and is embodied in an improved conductor or projector which utilizes the light-conducting properties of quartz for conveying light through a curved path.

Although my invention may have various useful applications, it is of particular utility in therapy when it is desired to subject areas to radiation which are not accessible to direct radiation from a lamp.

My invention utilizes the peculiar property of quartz of conducting light with very little loss through a curved or otherwise non-rectilinear path. The preferred embodiment of my invention comprises a conductor for light comprising a plurality of quartz members abutting each other and held in movable relation.

Fig. 1 illustrates a quartz conductor made in accordance with my invention in assembled relation to a lamp; Fig. 2 shows a quartz conductor or applicator with an enclosing sheath in part removed; Fig. 3 is an end elevation; Fig. 4 shows several quartz members of an applicator in separated relation; and Fig. 5 shows the applicator in a bent position.

The device shown in detail in Figs. 2 to 5 comprises a plurality of quartz members 6, 7, 8, 9 and 10, fitted at their ends by ball and socket joints and surrounded by a sheath or retainer 11 consisting of a suitable flexible or yieldable material, for example, rubber. The end member 6 may be pointed if desired, or have any desired shape. The ball and socket joints permit bending within limits to various desired configurations as shown in Fig. 5.

The member which receives the light, as member 10, may have a flat exposed end face to receive the light as shown in Fig. 1. This figure shows the conductor in assembled relation to a suitable lamp 12 constituted for example, by a vapor arc lamp having a mercury cathode 13 an anode 14, and electric terminals 15, 16. Other desired lamps may be used. The heat from the lamp may be absorbed by a layer of water or other absorbing medium 17, which is confined by a suitable enclosure containing a window 18, conveniently consisting of quartz. Although particularly ultraviolet radiations are conducted by the combinations shown in Fig. 1, I wish it to be understood that my invention is of general utility for conveying radiations whether visible or invisible.

When it is desired to project ultraviolet light, for example, into a wound or body cavity which is inaccessible to direct rays from a lamp, the applicator constituting my invention may be inserted in any convenient bent position to reach the parts to be rayed for the therapeutic or observational purposes, and the light will travel the length of the same, being carried around bends and finally emitted at the free end.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A radiation conducting device comprising a plurality of members which are capable of conducting light or other radiation and which are jointed end to end and a flexible holder therefor.

2. A light or radiation conducting device comprising a plurality of members of quartz assembled end to end and being fitted to one another by ball and socket joints and means for holding said members in abutting relation.

3. A projector for light comprising a plurality of members of light-conducting material fitted to one another by ball and socket joints and arranged in movable relation, and a holder therefor.

4. A photo therapeutic device comprising a plurality of jointed members consisting of silica and a sheath of yieldable material for holding said members in abutting relation.

In witness whereof, I have hereunto set my hand this first day of June, 1923.

EDWARD R. BERRY.