

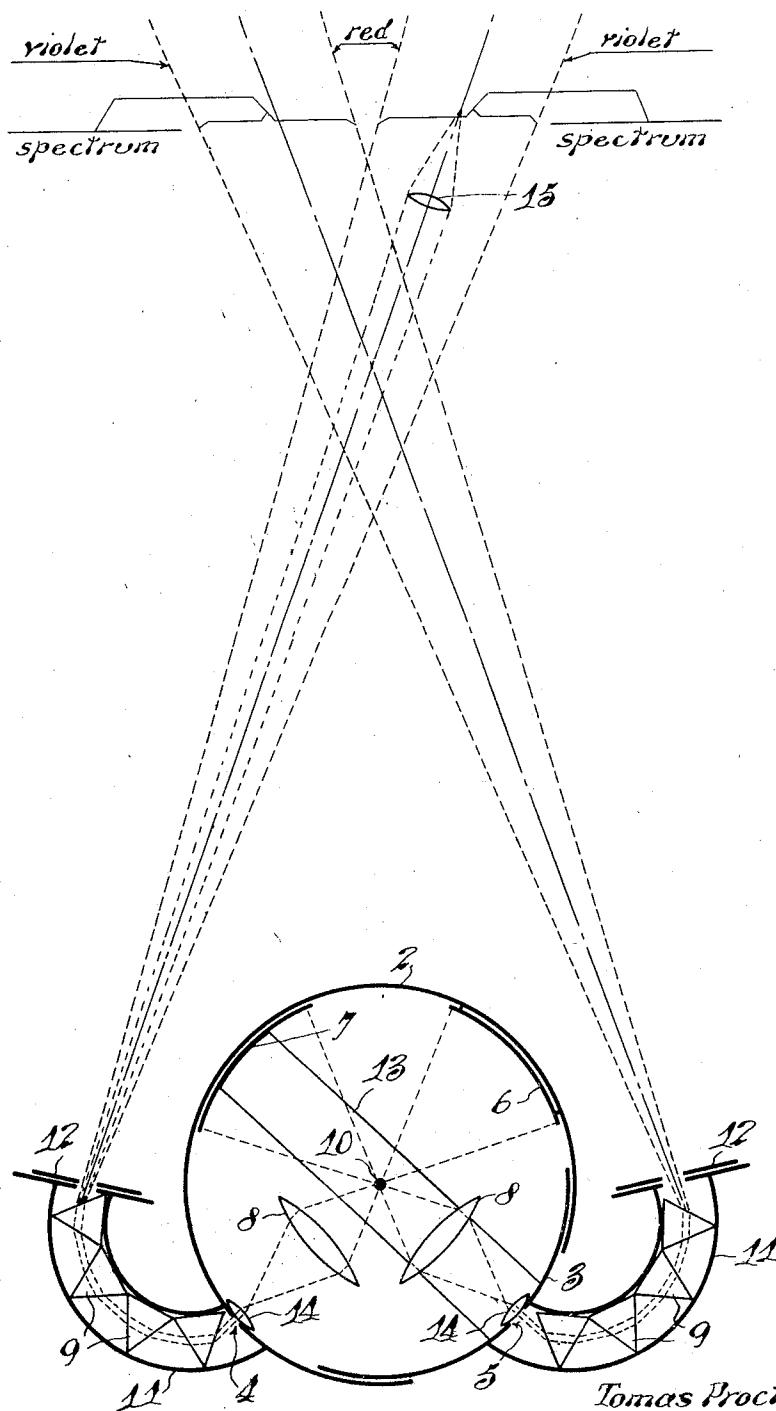
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SPECTRUM LAMP

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SPECTRUM LAMP.

Application filed March 31, 1925. Serial No. 19,686.

This invention relates to a spectrum lamp which has been particularly designed for therapeutic use.

The improvements are directed to the collection and concentration of the light for delivery through two separate apertures and for the delivery of each light beam through a series of triangular prisms so disposed in relation to one another that a very complete spectrum of the dispersed or decomposed light is attained, whereby the undesired colour rays of the spectrum may be effectively shut off and the desired rays only projected from the lamp. There is also provision by which these selected light rays may be directed on desired locality and concentrated when necessary.

The invention is fully described in the following specification, reference being made to the drawings by which it is accompanied, which represents the device more or less diagrammatically in sectional plan.

In this drawing 10 represents an arc, or other suitable light, which is enclosed in a substantially cylindrical light proof casing 2. In this casing 2 is a segmental aperture which is closed with a circumferentially movable concentric segment 3 which is light proof in its connection to 2.

In the casing 2 is an aperture 4 and in the closing segment 3 is a corresponding aperture 5. Diametrically opposite the aperture 4 of the casing 2 is a reflecting surface 6 and opposite the aperture 5 of the closing segment 3 is a similar reflecting surface 7. The latter reflecting surface is rigidly connected by a cross bar or frame 13 to the closing segment 3 to be movable with it and preserve its position diametrically opposite the aperture 5 when the segment 3 is moved.

Between the light 10 and each aperture 4 and 5 is a convex lens 8 to concentrate the light to each aperture, and as the aperture 5 is movable with the segment 3, its lens 8 is supported from 13 so as to be movable with it. At or near each aperture 5 is a lens 14 to render parallel the rays of the light in each case.

The light beam as projected through each aperture 4 and 5 is delivered through a series of triangular prisms 9 disposed in the manner shown in the drawing in a duct 11 secured respectively to the casing 2 and to the segment 3 and curved backward to accord with the angular disposition of the

prisms 9. These prisms 9 not only decompose the light but direct the beams around the sides of the lamp to intersect one another at a distance from it convenient for the treatment of the patient.

The light beams, in passing through the prisms 9, are decomposed or dispersed, which dispersion is rendered more complete by passing the light through a series of prisms. The object of this complete dispersion of the light is to enable any desired colours to be separately projected from the lamp with which object in view the outer or delivery end of each duct 11 has a shutter 12 on each side by which the undesired colours may be cut off from either side of the spectrum.

A lens 15 may be introduced in the path of one or both of the projected rays to concentrate the selected light where desired.

By delivering the light rays from the lamp casing and by using the reflectors 6 and 7 and the lenses 8, I am enabled to collect and project the greater part of the light of the lamp, and by the use of multiple prisms, I effect a very complete dispersion of the light. The shutters 12 enable the undesired rays to be cut off and the fact that the segment 3 with its aperture 5 and the related tube 11 and prisms 9 are movable together enable the two beams of the selected light to be directed on the same or on adjacent locations.

All lenses and the prisms used will preferably be of quartz in order to preserve the ultra violet rays in the spectrum.

Having now particularly described my invention, I hereby declare that what I claim as new and desire to be protected in by Letters Patent, is:

1. A spectrum lamp, comprising in combination, a suitable light, a suitable casing enclosing the light, said casing having an aperture at its circumference, means for collecting and concentrating the light to project it through the aperture, means at or near the aperture for rendering the concentrated rays parallel, a series of prisms through which the light beam is projected, means for cutting off the undesired colours of the resultant spectrum and for directing the selected rays.

2. A spectrum lamp, comprising in combination, a suitable light, a suitable casing enclosing the same, said casing having separate apertures which are movable in rela-

tion to one another, means for collecting and condensing the light in each of the apertures, means for decomposing the light beams, means for cutting off the undesired rays from the spectrum so produced, and means for directing the desired rays from the two apertures to intersect one another at or near the desired object.

3. A spectrum lamp, comprising in combination, a suitable light, a suitable cylindrical casing enclosing the said light, said casing having a lateral aperture through which a beam of light is projected, a series of prisms through which said beam is passed successively, means for cutting off from the resultant spectrum the undesired rays and

for directing the desired rays on an object. 4. A spectrum lamp, comprising in combination, a suitable light, a suitable cylindrical casing enclosing said light, said casing having a lateral aperture through which a beam of light is projected, means for collecting and concentrating the said light to project it through said aperture, a series of prisms through which said beam is passed successively, means for cutting off from the resultant spectrum the undesired rays and for directing the desired rays on an object.

In testimony whereof I affix my signature.

TOMAS PROCTOR HALL.