Sept. 30, 1924. 1,510,080

D. S. MURPHY

THERAPEUTIC RAY APPLIANCE

Filed Aug. 9, 1922

Fig. 1.

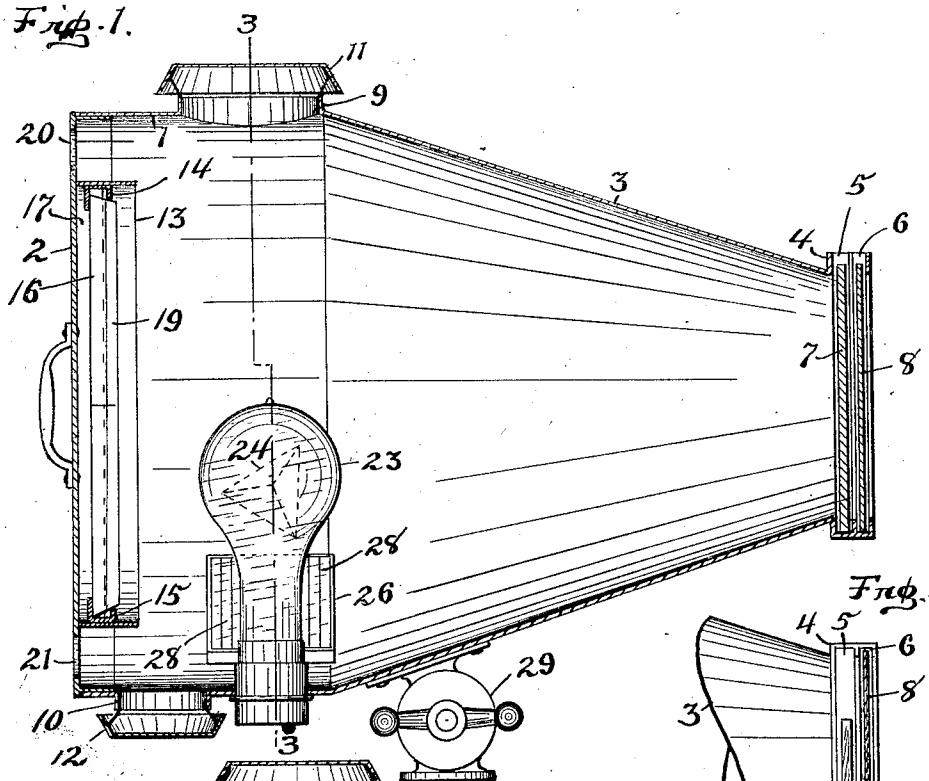


Fig. 2.

Fig. 3.

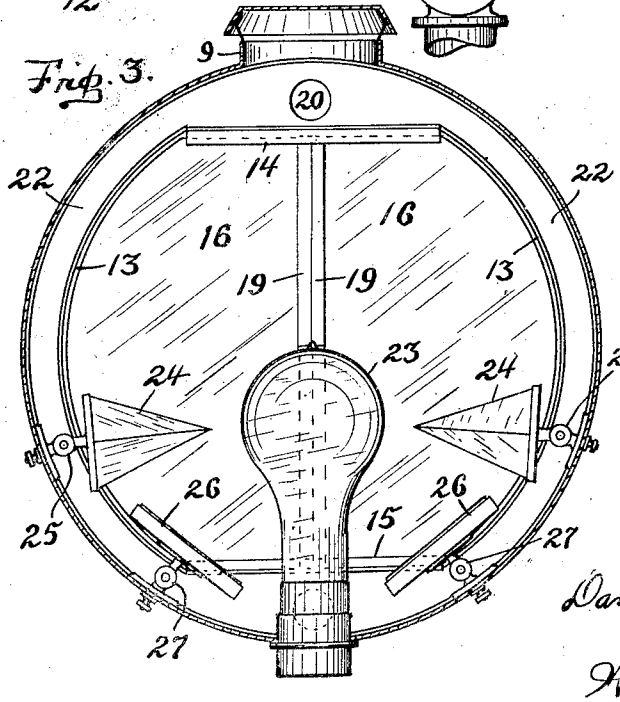


Fig. 4.

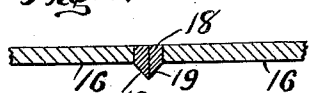
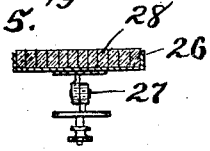


Fig. 5.



David S. Murphy INVENTOR

BY

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Patented Sept. 30, 1924. 1,510,080

UNITED STATES PATENT OFFICE.

DAVID S. MURPHY, OF FORT WAYNE, INDIANA.

THERAPEUTIC RAY APPLIANCE.

Application filed August 9, 1922. Serial No. 580,663.

To all whom it may concern:

Be it known that I, DAVID S. MURPHY, a citizen of the United States of America, and resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Therapeutic Ray Appliances, of which the following is a specification.

This invention relates to improvements in therapeutic ray appliances and the objects thereof are: First, to afford apparatus for producing and applying intensified rays for the treatment of diseases; second, to afford a construction for the generation and concentration of rays of variegated colors; and third, to provide in an apparatus of the kind having an enclosed radiator, reflecting members and filter plates, and effective means for the ventilation of the enclosure such as to eliminate the danger of the reflecting members and the filter plates from becoming broken by the effect of heat from the radiator.

These objects are accomplished by the construction illustrated in the accompanying drawings, in which:—

Fig. 1 is an elevation partly in central section showing a structure embodying the invention;

Fig. 2 is a fragmentary plan view of the mouth of the apparatus;

Fig. 3 is a transverse section of Fig. 1 on the line 3—3 thereof;

Fig. 4 is a detail view showing a transverse section through a portion of the main reflector; and

Fig. 5 is a transverse section of an auxiliary reflector employed as a part of the apparatus.

The characters appearing in the description refer to parts shown in the drawings and designated thereon by corresponding characters.

The invention consists of a cylindrical drum 1, the rear end of which is closed by a removable head 2 and has at its front end a contiguous hollow frustum 3. At the front end or mouth of the frustum is an open frame 4 having a pair of recesses 5 and 6 therein, spaced apart, adapted to receive and hold corresponding filter plates 7 and 8, the filter plates being of a character hereinafter described.

The drum 1 is provided at its top and bottom with a ventilating outlet 9 and 10 respectively, each outlet having a corresponding cover 11 and 12 suspended in close proximity thereto so arranged as to obstruct the emission of light from within the drum.

Secured to the inner side of the head 2 is an annular flange 13, and within the flange at the top thereof is a channel bar 14, and at the bottom a corresponding channel bar 15. Secured in the channel bars are a pair of mirrors 16 that lie in a common plane parallel with the head 2, there being a ventilating space 17 between the head and the backs of the mirrors. Also, arranged between the mirrors are two glass strips 18, the forward edges of which project beyond the corresponding faces of the mirrors and present angular faces 19. These strips may extend from one channel bar to the other and each are preferably of several pieces so that danger of breakage because of expansion and contraction is obviated. The head 2 has a ventilating opening 20 above the flange 13 and a similar opening 21 below the flange so as to provide for the circulation of air through the passage-ways 22 between the flange and the adjacent wall of the drum. The ventilation thus provided reduces the liability of the mirrors and strips from becoming damaged through the action of heat within the drum.

A radiator 23 is mounted within the drum in a position forward of the mirrors. The radiator consists of an incandescent electric lamp or other device for emitting rays and is of the usual construction. The interior walls of the drum and frustum are calcimined or otherwise treated so as to augment reflection of light therefrom.

Within the lower portion of the drum at each side thereof is positioned a prism 24 mounted upon a corresponding adjustable bracket 25 which admits of the prism being tilted and held at various angles. Also, in the lower portion of the drum at each side thereof adjacent the radiator is positioned an auxiliary reflector 26, each being mounted upon an adjustable bracket 27 adapted to admit of the reflector being tilted and held at various angles. Each reflector has a series of glass strips 28 arranged side by side with their upper edges exposed, and it is the intention that the glass strips 28 and the strips 18 as well as the mirrors 16 shall be of red, green, yellow, blue or amber glass, or glass of such other hue as to be particularly suitable for therapeutic purposes. The prisms and the filter plates are also formed

of glass of hues selected according to the particular effects desired in the reflection of colors and the intensity thereof. The filter plate 7 is preferably of heavy plate glass and is positioned in the recess 5 of the frame, and the filter plate 8 is positioned in the recess 6 so as to overlap the plate 7. The recesses 5 and 6 are spaced apart and the plates 7 and 8 positioned therein are therefore held apart so as to admit of the circulation of air therebetween through the mouth of the apparatus.

In utilizing the invention the apparatus is mounted upon an adjustable supporting means 29 of any suitable construction which will admit of the apparatus being tilted at the desired angle, and electric current is supplied to the radiator from a suitable source of energy in the customary manner. The rays emitted from the radiator are reflected by the mirrors and the strips positioned therebetween, and also from the general interior walls of the drum and frustum. By adjustably positioning the auxiliary reflectors and the prisms the refraction of rays emitted from the radiator and reflected thereon from the interior walls may be directed selectively within the interior of the drum and frustum. In this manner the concentration of the rays may be effected and made to appear in various hues. The rays that are emitted through the mouth of the apparatus upon the subject of treatment may be modified as to color by placing filter plates 7 and 8 of selected colors in the frame according to the effect desired.

What I claim is:—

1. In therapeutic ray apparatus, an enclosure consisting of a drum with a contiguous frustum at one end thereof and a removable head at its other end and also a ventilating outlet at its top and bottom; an open frame at the mouth of the frustum having recesses therein spaced apart; filter plates removably positioned in the corresponding recesses and being held apart so as to admit of circulation of air therebetween; a radiator in the drum; an annular flange extending inwardly from the head of the drum; a mirror member comprised of two similar portions spaced apart and positioned within the flange; two reflecting strips arranged adjacent each other and positioned between the mirror portions, the forward edges of said strips projecting beyond the corresponding faces of said portions and presenting angular faces, there being a ventilating space between said mirror member and the head of the drum and also ventilating openings in said head; a pair of auxiliary reflecting members adjustably positioned within the drum, one on each side of the radiator and each having a series of glass strips arranged side by side with their upper edges exposed; and a pair of prisms adjustably positioned within the drum one on each side of the radiator, said auxiliary reflectors and prisms being adapted to be severally tilted at various angles.

2. In therapeutic ray apparatus an enclosure having ventilating openings therein; an open frame at the mouth of the enclosure; a pair of filter plates removably arranged in the frame in parallel planes spaced apart so as to admit circulation of air therebetween; a radiator in the drum; a mirrior member back of the radiator; a pair of reflecting strips having oppositely disposed angular faces and positioned at the middle of the mirror member; prisms adjustably positioned adjacent the radiator; and auxiliary reflectors adjustably positioned adjacent the radiator, each having a group of glass strips arranged side by side with their upper edges exposed; said prisms and auxiliary reflectors being each adapted to be severally tilted at various angles.

3. In therapeutic ray apparatus having an enclosure with a radiator therein and mouth for the emission or rays, a reflecting member including a pair of mirrors spaced apart in a common plane and glass strips placed edgewise between said mirrors with oppositely disposed angular faces, said reflecting member being positioned relative to the radiator opposite the mouth of the enclosure.

4. In therapeutic ray apparatus having an enclosure and radiator therein and a mouth for the emission of rays, one or more adjustably positioned reflectors adjacent the radiator within the enclosure, each having a group of glass strips with exposed edges.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID S. MURPHY.

Witnesses:
MATILDA METTLER,
WALTER G. BURNS.