

June 16, 1942.

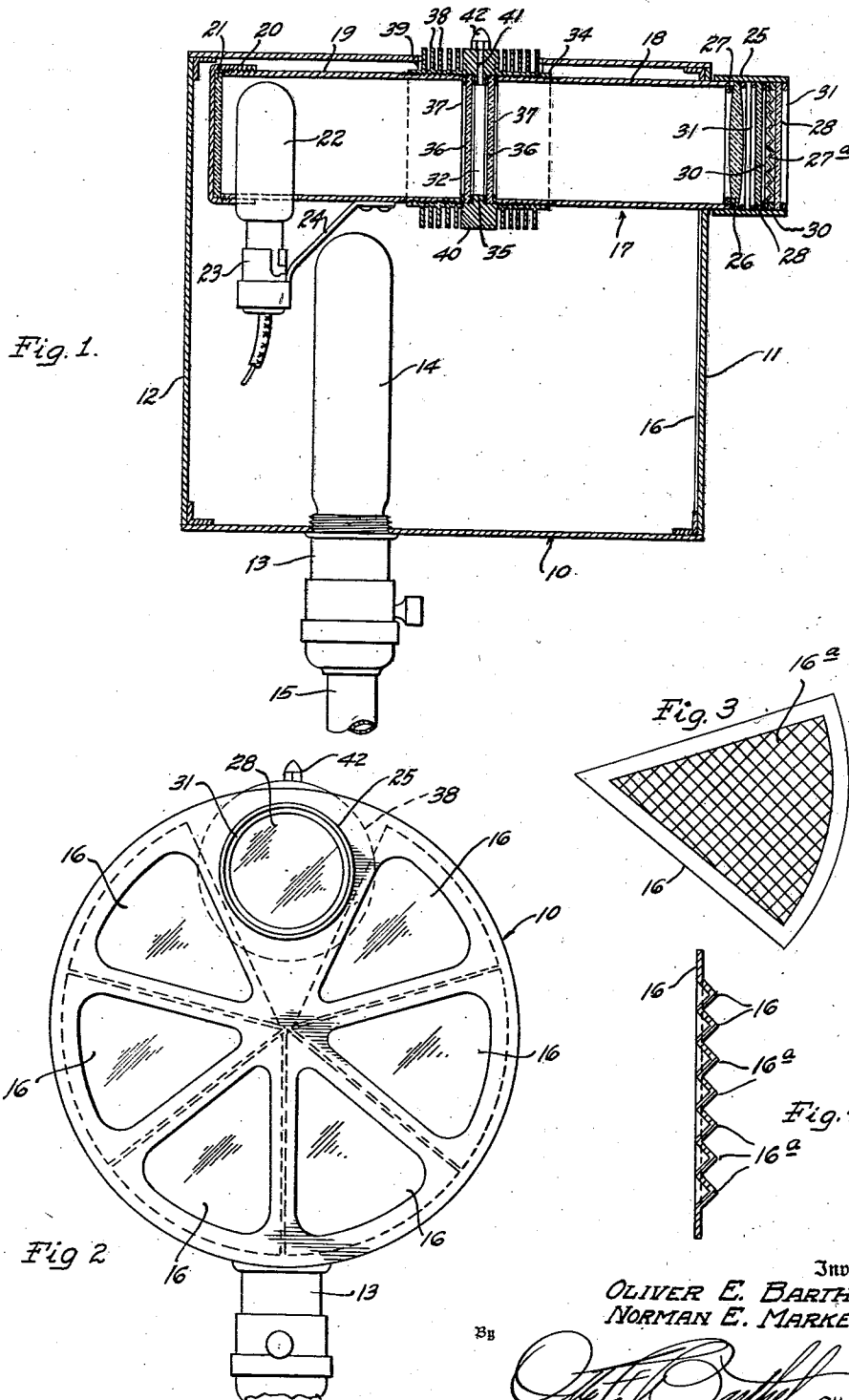
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2,286,783

COLOR PROJECTION LAMP

Filed Aug. 23, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

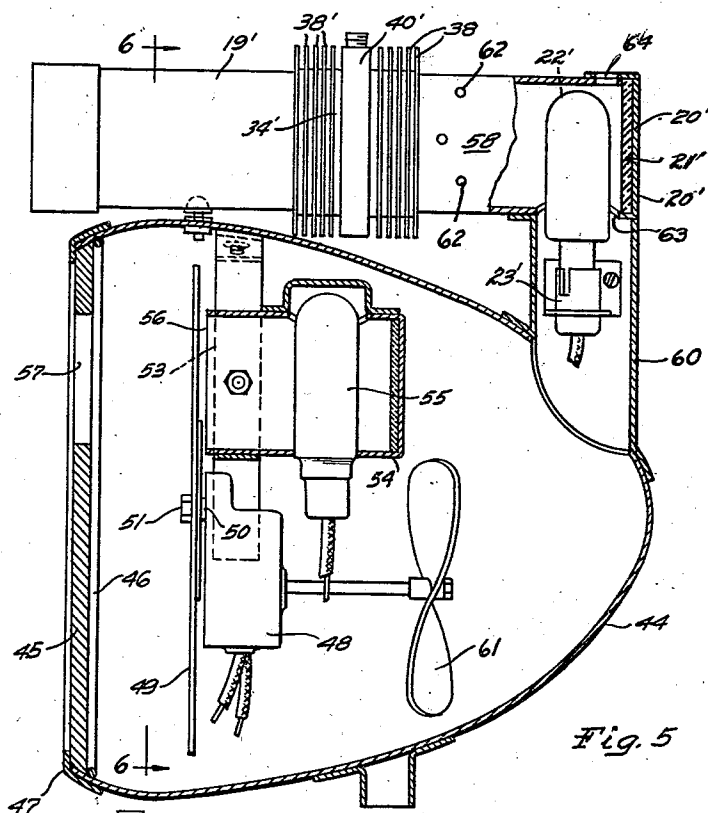


Fig. 5

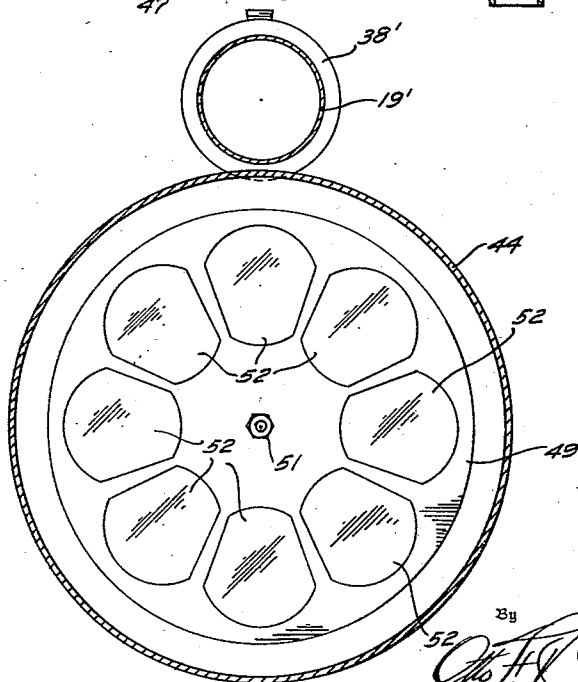


Fig. 6

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## UNITED STATES PATENT OFFICE

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## COLOR PROJECTION LAMP

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2 Claims. (Cl. 240—1)

This invention relates generally to color therapy apparatus and more particularly to color projection lamps.

The therapeutic or curative value of the sun's rays for human ailments has long been recognized, as these rays or color vibrations stimulate the nerves, organisms, protoplasm, etc., causing a general subduing and balancing of the nervous system, also a renewal of the worn out cells of the protoplasm breaking down and deleting all forms of congestion in the human body. Certain of the light rays such as the invisible, infra-red, ultra violet, X-rays and radium rays are beneficial only on limited exposure thereto and become harmful on over exposure. Color projection apparatus have been proposed which filter out the invisible rays, retaining the visible colors, green, yellow, orange, red, violet and blue together with combinations thereof, but such apparatus have not proved entirely satisfactory for, among other reasons, such apparatus also filtered out most of the beneficial rays along with the invisible rays.

Accordingly it is an object of the present invention to provide a new and improved color projection device or lamp of improved therapeutic value.

Another object is to provide a color projection lamp of a character such that only the invisible part of the spectral range is filtered out, permitting the balanced beneficial color ray to travel on at the correct vibration to the patient.

Another object of the invention is to provide a new and improved means for removing substantially all heat from the light rays, furnishing as cold a light as is possible from electric bulbs.

A further object of the invention resides in the material and form of a color plate or screen for successful therapeutic results. When these screens are properly embossed, the indentures being within a correct dimensional range, it is possible to obtain a spectral balance of the colors employed.

Other objects of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical sectional view of our color projection lamp;

Fig. 2 is a front view of the lamp;

Fig. 3 is a view in elevation of a colored screen employed in the lamp;

Fig. 4 is an enlarged view in section of the colored screen;

Fig. 5 is a view partly in elevation and partly

in vertical section of a modified form of color projection lamp, and

Fig. 6 is a cross sectional view of the lamp, taken along the line and in the direction of the arrows 6—6 of Fig. 5.

Referring to the drawings by characters of reference and first to Figs. 1 to 4, the lamp includes a hollow body or casing 10 which may be made of sheet metal, cylindrical in shape and have a front wall 11 and a rear wall 12. In the cylindrical side wall of the casing 10, a threaded aperture is provided in which is screwthreaded a socket 13 for a light bulb 14 which extends upwardly within the casing. A suitable standard 15, wherein the usual electric wiring (not shown) may be contained, is provided and the bulb 14 is preferably the well known 50 watt projection bulb wired to a so-called flasher button.

In the casing front wall 11 is provided a plurality of radially spaced openings of general triangular shape, and respectively closing the openings are colored transparent sheets, plates or screens 16. These screens 16 are of different colors, there being six in the present instance which are preferably green, yellow, orange, red, violet and blue, arranged radially in the order named. In order that the beneficial light rays are not filtered out with the invisible rays, the color screens 16 are made of a cellulose material, preferably Cellophane paper and, to further enhance the therapeutic value of the light projection, the screens 16 are embossed to provide prisms 16a for diffusing the light. Thus, the light from the bulb 14 is filtered to retain only the visible light rays of the several colors mentioned, these several different colors being projected together to insure that a patient will receive a balanced color of the correct vibration which will do the most good for the particular ailment.

For best results, we provide a second color projection lamp 17 for concentrating a color on a particular part of a patient and, in this instance, the lamp 17 is mounted within the casing 10 adjacent the top thereof. The lamp 17 includes a casing formed in part by a pair of aligned tubes 18 and 19, the forward tube 18 projecting externally of the casing 10 through an opening in the casing front wall 11. The rear end of the casing tube 19 is closed by a cap 20 which is screwthreaded thereon and holds a light reflector or mirror 21 in place, and projecting into the casing in advance of the mirror 21 is a light bulb 22 supported in a socket 23 which in turn is supported by a bracket 24 secured to the casing tube 19.

Fitted over the outer end of the casing tube 18 is an open-ended sleeve 25 which may be frictionally or otherwise suitably held thereon and within the sleeve 25 is a lens 26 which is made of a suitable cellulose material. The lens 26 may be held in place by suitable snap rings 27 or by any other suitable means. Also, within the sleeve 25, a colored screen 27a is provided in advance of the lens 26 and like the screens 16 is made of a cellulose material, preferably Cellophane paper embossed to provide prisms for diffusing light. The thin Cellophane paper is held taut by cellulose plates 28 positioned on opposite sides thereof, ring-like spacer members 30 being provided and engaging opposite sides of the screen outer border portion and the plates 28 to prevent the prisms of the screen from being flattened or distorted. The plates 28, spacer members 30 and screen 27a may be held together and in place by snap rings 31 or by any other suitable means. A number of these sleeves 25 having different colored screens may be kept on hand for interchangeability to project different colors, as desired.

Interposed in the casing between the light bulb 22 and the lens 26 is a chamber 32 containing a liquid cooling medium, preferably distilled water, through which the light rays pass and are cooled thereby. Surrounding the inner end portions of the casing tubes 18 and 19 is an open ended sleeve 34 having intermediate its ends an internal annular extended portion or flange 35 against the opposite sides of which a pair of light transmitting or transparent plate members 36 seat and cooperate therewith to form the water chamber 32, the plate members 36 being made of a cellulose material which, unlike glass, for example, will not intercept the beneficial light rays. Disposed on opposite sides of the plate members 36 compressible gaskets 37 are provided against which the opposed ends of the casing tubes 18 and 19 respectively abut, the sleeve 34 being screw-threaded onto the ends of the tubes 18 and 19 and tightened down to draw the tubes together, compressing the gaskets to provide the chamber 32 leak proof. The sleeve 34 is preferably provided with external heat radiating fins 38, parts of which project externally of the casing 10 through an opening 39 in the cylindrical side wall thereof. Intermediate its ends, the sleeve 34 is provided with an external extended annular portion 40 integral with which is the internal flange 35 and through the portion 40 and flange 35 a passage or bore 41 is provided for introduction of water or other cooling medium into the chamber 32, the passage being closable by a suitable plug or relief valve 42.

Referring now to the modified form of lamp shown in Figs. 5 and 6, the numeral 44 designates the lamp body or casing having a front opening closable by a removable closure member 45 which may be held in place by an inner snap ring 46 and an outer rim 47. Within the lamp body 44 an electric motor 48 drives a rotatable plate or disc 49 at the proper speed to obtain a balance in color and overlies and is spaced from the closure member 45, the disc 49 being mounted on and held to the motor shaft 50 by a nut 51. As shown in Fig. 6, the disc 49 is provided with a plurality of radially spaced openings which are respectively closed by different colored screens 52, which like the screens of the previously described lamp are made of a cellulose material, preferably Cellophane paper, embossed to provide prisms for diffusing light rays. The

colored sheets of Cellophane paper may be cemented on the back of the disc 49 or be otherwise suitably attached thereto.

The motor 48 is supported and suspended by a strap or bracket 53 which is rigidly secured to the top of the casing 44, and also supported by the bracket 53 is a tubular casing 54 containing a light bulb 55. The forward end of the casing 54 is open, as at 56, and is positioned off center of the disc 49 to register with the colored screens 52 as they pass the open end 56 of the casing 54. Also registering with the light bulb casing 54 is an opening 57 provided in the opaque closure member 45 through which the light rays emit from the lamp casing 44.

Mounted on top of the casing 44 is a second lamp, designated in general by the numeral 58, provided for projecting a single color at a time. This lamp 58 is substantially the same in structure as the lamp 17 of Fig. 1 and therefore like but primed numerals have been given like parts to avoid unnecessary repetitious description. The lamp 58 is supported at its rear end by a tube 60, one end of which is welded to the lamp body 44 and the other or upper end of the tube 60 is welded to the upper lamp body 19' and registers with an opening 63 therein. The tube 60 houses the socket of the bulb 22' and connects the interiors of the two lamp bodies or casings, the bulb 22' projecting through the relatively large opening 63 into the upper lamp casing 19' adjacent the reflector 21'. Above the bulb 22' the wall of casing 19' and the cap 20' are provided with aligning slots 64 for the passage of heated air from the casing 19' to outside atmosphere. Within the casing 44 is a fan 61 driven by the motor 48 for discharging heated air from the casing 44, the air passing through tube 60 into the casing 19' whence it escapes to outside atmosphere through apertures 64 and 62 provided in the casing 19'. Thus, it will be seen that the fan 61 not only discharges the heated air from the large casing but also cools bulb 22' and further cools the water cooling structure including the container 40'.

In operation of the lamp of Figs. 5 and 6, the motor 48 rotates the disc 49 resulting in the colored screens 52 successively passing in front of the casing opening 56 whereby balanced colored light is projected through the opening 57. At the same time, the lamp 58 may be employed to concentrate a particular color on a patient. Thus in this lamp, like the first described lamp, a patient receives the benefit of a particular color and also the benefit of a plurality of different colored rays or vibrations. By referring to the several colors as balanced is meant that the sum of the degree of color vibration of all of the colors is 100%.

While we have shown and described our invention in detail it is to be understood that the same is to be limited only by the appended claims for many changes may be made without departing from the spirit and scope of the invention.

What we claim is:

1. In a color wave projection lamp, a casing having an outlet for light, a light source within said casing, a sheet of colored cellulose material arranged in the path of light rays and having prismatic formations for diffusing the light, a pair of cellulose plate members on opposite sides of said colored cellulose material, a spacer ring engaging an outer border portion of said cellulose material, said plate members being spaced

from the prismatic formations by said spacer ring, and means for urging said cellulose plate members toward each other to hold said cellulose material taut.

2. In a color wave projection lamp, a pair of 5  
tubular sections longitudinally aligned, an open  
ended sleeve member having external fins and  
fitted over the opposed ends of said sections co-  
operating therewith to provide a casing, said  
sleeve member having an internal annular ex- 10  
tended portion disposed between the opposed  
ends of said sections, a pair of transparent plate

members positioned on opposite sides of said ex-  
tended portion and cooperating therewith to pro-  
vide a closed chamber for a cooling liquid, a light  
source in one of said sections on one side of said  
chamber, the other of said sections having an  
opening for emission of light from the casing,  
and a transparent colored member on the other  
side of said chamber in the path of the light  
rays.

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