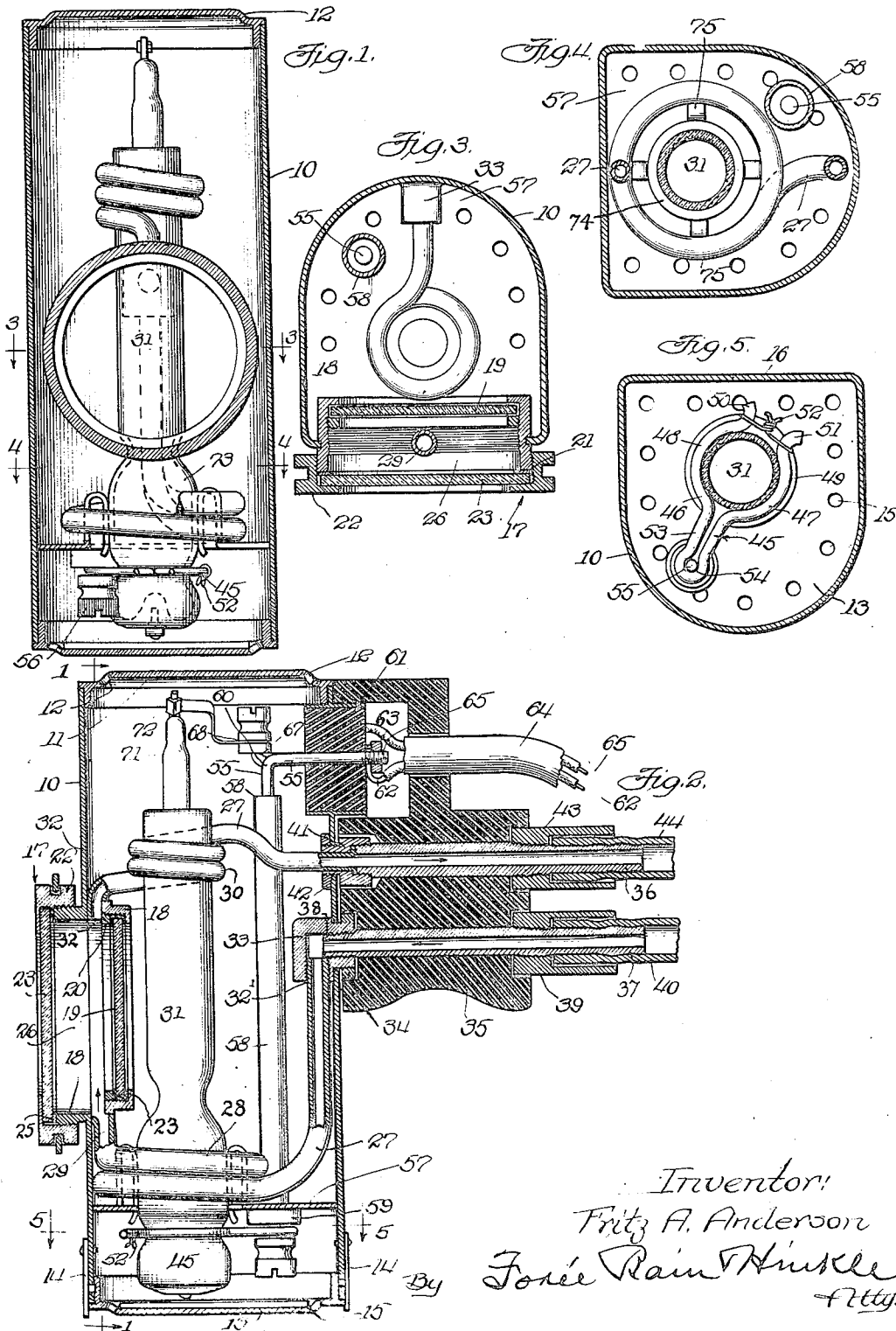


F. A. ANDERSON.
WATER AND AIR COOLED LAMP STRUCTURE.
APPLICATION FILED MAY 26, 1921.

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Inventor:
Fritz A. Anderson
Jesse Rain Hinkle
Att'y

UNITED STATES PATENT OFFICE.

FRITZ A. ANDERSON, OF MILTON, WISCONSIN, ASSIGNOR TO BURDICK CABINET COMPANY, A CORPORATION OF WISCONSIN.

WATER AND AIR COOLED LAMP STRUCTURE.

Application filed May 26, 1921. Serial No. 472,932.

To all whom it may concern:

Be it known that I, FRITZ A. ANDERSON, a citizen of the United States, residing at Milton, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Water and Air Cooled Lamp Structures, of which the following is a specification.

The invention relates to improvements in water and air cooled lamp structures.

One of the objects of the invention is to provide an improved water cooled lamp structure in which the light radiated therefrom is used for therapeutic purposes.

Another object is to provide a new and improved means for cooling lamps of this character.

Another object is to provide a lamp structure inexpensive in construction, not liable to leak, and in which the light rays radiated therefrom and the lens-enclosing casing are water cooled and in which air is also employed to assist in carrying away the surplus heat developed by the lamp.

Another object is the provision of improved means for connecting the light giving lamp in the casing and in the employment of the electrical conducting means for the purpose of holding it in place.

Other, further and more specific objects of the invention will become readily apparent, to persons skilled in the art, from a consideration of the following description, when taken in conjunction with the drawings, wherein:—

Fig. 1 is a section thru the lamp casing taken substantially on line 1—1 of Fig. 2.

Fig. 2 is a similar central section taken at substantially right angles of Fig. 1.

Fig. 3 is a section taken substantially on line 3—3 of Fig. 1.

Fig. 4 is a section taken substantially on line 4—4 of Fig. 1, and

Fig. 5 is a section taken substantially on line 5—5 of Fig. 2.

In all the views the same reference characters are employed to indicate similar parts.

In my copending application Serial No. 472,933; filed May 26, 1921, I have shown a casing and lamp holding structure similar in its broadest aspect to that disclosed herein.

In the drawings 10 in the present case is a casing having a top end 11 perforated, as

at 12, for circulation of air thru the casing. It is provided with a bottom 13 which is removably held by a latch 14, of which there may be as many as circumstances require. The bottom 13 is also perforated, as at 15, for circulation of air.

One side of the casing 10 is flat for convenience of attaching the lens holding box 17. On the inside of the lens box and adjacent the flat portion 16 is secured a ring 18 for a lens 19, the lens being held in place by a threaded ring 20, and the lens having surrounding its edges a suitable gasket 21 to prevent leak of the water into the lamp casing.

Another ring 22, screwed to the outside end of the ring 18, is a means to secure the lens 23 in place, a gasket 25 being also employed to prevent leaking from the water space past the lens. This provides the water space 26 between the lenses.

A water circulating pipe 27 is formed into a coil 28 with the terminal end 29 of the coil communicating with the bottom of the water space 26 between the lenses in the lens box 17. The pipe 27 is formed into another coil 30 near the top of the structure which neatly fits the upper end of the lamp 31 and which terminates, as at 32, in communication with the water space 26 between the lenses. The mercury electric lamp 31 is of such size that it neatly fits the two coils 28 and 30 but may readily be removed therefrom. The end 32' of the pipe 27 is screwed into a fitting 33, which is secured to the lamp casing by a nut 34.

A handle 35, of suitable heat insulating material, is also secured to the casing 10 by tubes 36 and 37 that pass therethrough. The tube 37 is screwed into the fitting 33, as at 38, and has screwed on its outer end a nut 39 that holds the handle in place and serves as a means for protecting the end of the water conveying hose or pipe 40. The pipe 36 also passes thru the handle and is screwed into a fitting 41, which is held in place by a nut 42. On the outer end of the pipe 36 is another nut 43 serving as a protecting means for the hose 44 and also serving for holding the handle 35 in place.

Now, from the foregoing description, it will be manifest that water coming in thru the hose 40, passes thru the pipe 37 and thru the pipe 27, the coil 28, and thence into

the space 26 between the lenses 19 and 23, and then thru the coil 30 into the pipe 36 and out thru the hose 44. A large part of the heat is thus carried away by the water at the same time the rays emanating from the lamp projected thru the lenses 19 and 23 and the water contained in the space 26, are maintained cool by the effect of the heat carried away by the rapidly circulating water.

While the coils 28 and 30 serve the purpose described they also provide staunch durable and very efficient means for holding the lamp in vertical position within the casing. The means for connecting the lamp in electric circuit comprises a tong-like structure 45 having two arms 46 and 47 bent to conform to the curvature of the lamp, as at 48 and 49, and having two outturned ends 50 and 51, respectively. These ends are secured together by a wire 52 and thereby the parts 48 and 49 are brought intimately into contact with the surface of the lamp 31. The projection 53, from the tongs, is provided with an opening 54, thru which an electric conductor 55 is passed, and on the end of which a screw threaded nut 56 is attached.

The lamp casing is provided with a partition wall 57, thru which an insulating tube 58 passes, and which has a head 59 at its lower end against which the part 53 of the conductor 45 is held by the screw 56.

The conductor 55 is bent, as at 60, and passes thru an insulating block 61, being screw threaded on its outer end for securing a wire 62 thereto by means of the nut 63. A hose 64 covers the leading-in wires 62 and 65. The wire 65 is connected in the same manner to a wire 67 upon which two nuts 68 are threaded to contain therebetween a conductor 70 for connection with the upper terminal end 71 of the lamp 31, as at 72.

The lower and larger end 73 of the lamp 31 may be contained between a spring finger structure 74, which is shown to have four arms 75 that are in intimate contact with the coil 28 and with the enlarged surface 73 of the lamp.

From the foregoing description the use and operation of the lamp will be readily understood to persons skilled in the art.

It will be observed that the insulating block 61, which is directly connected with the casing 10, is separable from the insulating block 35 which constitutes the handle, and from which the handle may be removed without disturbing the connection of the wires 62 and 65 with the conductors within the casing, and the handle, 35, may also be removed without disturbing the water con-

nection where the pipes 37 and 36 join their respective fittings 33 and 41.

While I have herein shown and described a single embodiment of my invention for the purpose of clear disclosure it will be manifest, to persons skilled in the art, that considerable change may be made in the general arrangement and configuration of the parts within the scope of the appended claims.

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

1. A therapeutic lamp structure comprising a casing having a pair of spaced apart registering lenses; a water circulating pipe formed into two coils, one above and one below the lenses and communicating with said space between the lenses, and a lamp insertible into the coils which surround the top and bottom ends of the lamp to conduct heat therefrom.

2. A therapeutic lamp structure comprising a casing having air circulating holes at top and bottom ends; a pair of spaced apart registering lenses; a water circulating pipe formed into two coils, one above and the other below the lenses and communicating with the space between the lenses, and a lamp insertible into said coils which intimately surrounds the top and bottom ends of the lamp to conduct heat therefrom and electric conducting means to hold the lamp in place.

3. A therapeutic lamp structure comprising a casing having perforated ends, one of which is removable; a lens holder secured to the casing and containing a pair of spaced apart lenses; a mercury-electric lamp in the casing; a water circulating and conducting pipe coiled about both ends of the lamp and communicating with the space between the lenses and a handle connected to one side of the lamp thru which said water conductor passes.

4. A therapeutic lamp structure comprising a casing; a pair of spaced apart registering window lenses; a lamp in the casing and a water circulating pipe coiled about the lamp and communicating with said space.

5. A therapeutic lamp structure comprising a casing; a pair of spaced apart registering window lenses closing an opening in the casing; a lamp in the casing; a water circulating pipe formed to partly enclose the lamp to carry the heat away from the lamp, said pipe connected to the space between the windows.

In testimony whereof I hereunto subscribed my name.

Fritz A. Anderson.