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F. W. ROBINSON ET AL

THERAPEUTICAL LAMP

Filed May 12, 1927

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Fig. 1

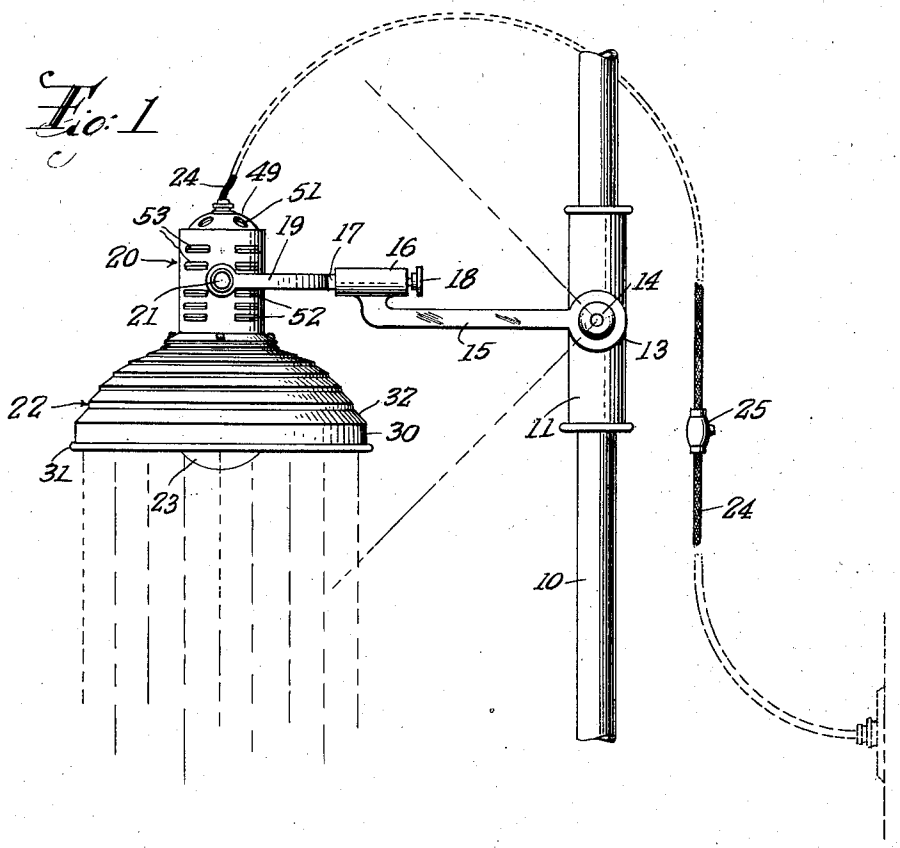
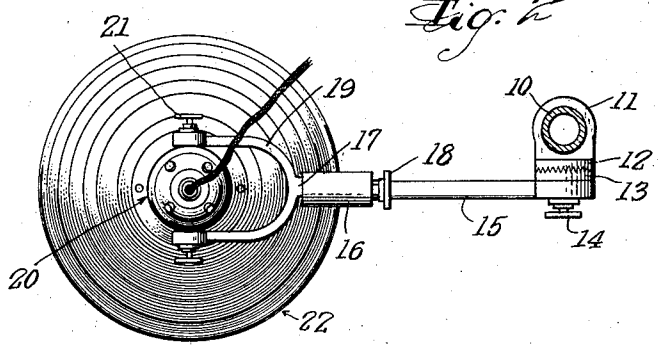


Fig. 2



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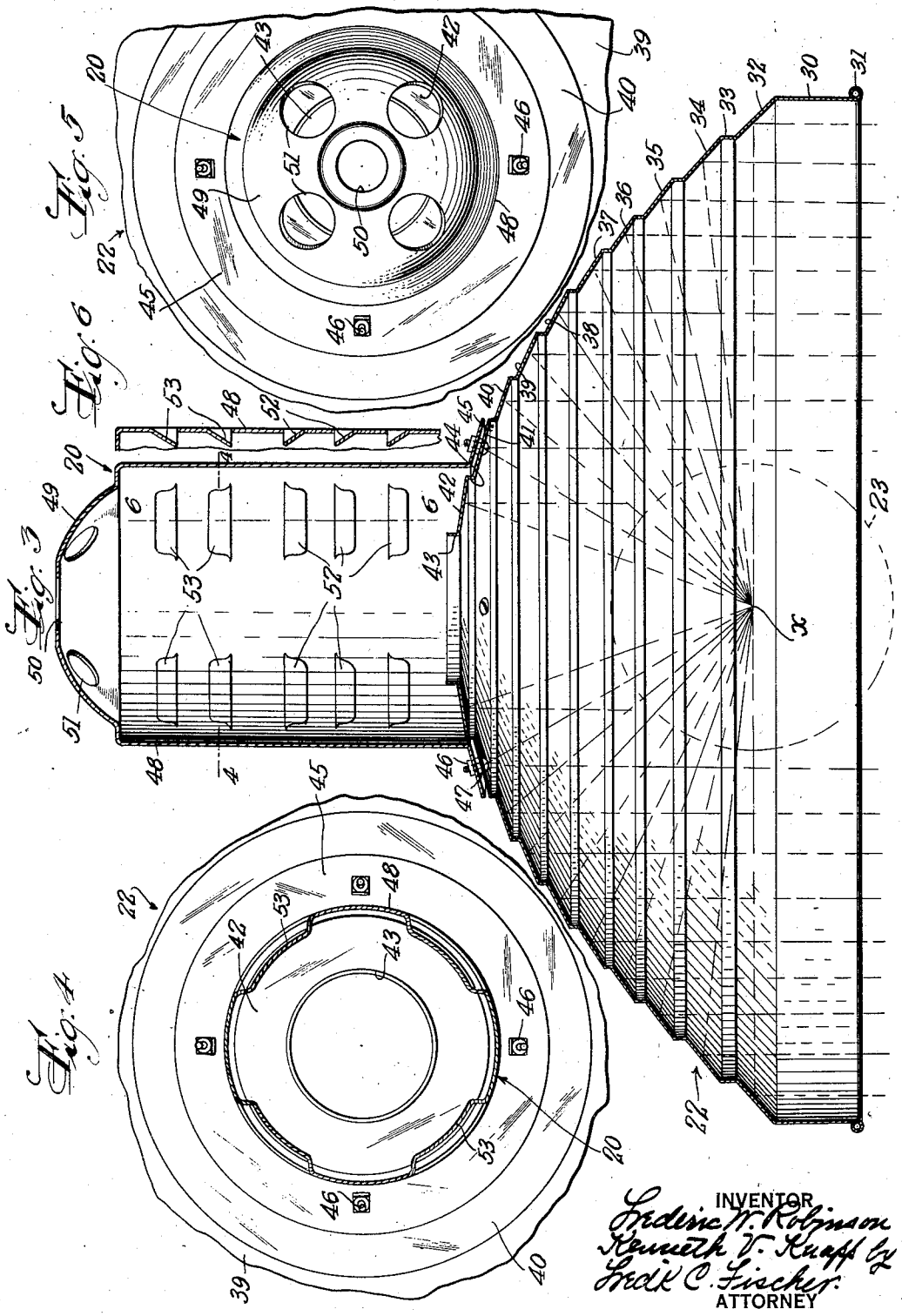
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UNITED STATES PATENT OFFICE.

FREDERIC W. ROBINSON AND KENNETH V. KNAPP, OF NEWARK, NEW JERSEY, ASSIGNORS TO HANOVIA CHEMICAL AND MANUFACTURING COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

THERAPEUTICAL LAMP.

Application filed May 12, 1927. Serial No. 190,668.

This invention appertains to devices for delivering heat and light rays as used in the alleviation and cure of certain ailments.

Prior to the present invention electric lamps have been used for like purposes, certain of the rays were uselessly diffused and others extremely concentrated to an extent regarded as harmful, particularly if the application is of long duration.

Such lamps are not usually provided with ventilating means and therefore produce excessive heat to the discomfort of the person undergoing treatment and even danger to the lamp structure itself.

It is therefore an object to provide a lamp capable of delivering both heat and light rays from a common source and in such manner that the distribution is substantially equal and uniform over a considerable area limited only by the size of the reflector used, the rays having approximately the same intensity at all points within the scope of their action.

A further and particularly important feature of the invention is in the provision of a reflector having its walls shaped in accordance with empirical formulæ, proven by experience to be satisfactory for the purpose designed.

Another purpose is to produce means for causing a circulation of air through the reflector whereby superabundant heat is removed from its interior.

Beside the foregoing it is an aim to provide a universal mount for the lamp, permitting it to be moved and turned in every possible direction and safely secured when such adjustment has been made.

These and other minor features are accomplished by the novel construction and combination of elements hereinafter described and illustrated in the accompanying drawings, forming a very material part of this disclosure, and in which:—

Figure 1 is a side elevational view showing a complete embodiment of the invention.

Figure 2 is a top plan view of the same.

Figure 3 is a sectional view of the reflector and its dome, drawn to a greatly enlarged scale.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 3.

Figure 5 is a fragmentary top plan view of the structure.

Figure 6 is a fragmentary sectional view taken on line 6—6 of Figure 3.

In Figures 1 and 2 are shown an upright 10, the same being one of the elements of any suitable stand and having slidably engaged upon it a sleeve 11 provided with a serrated lateral lug 12 to engage a mating member 13 clamped by the knob 14 when in adjustment.

An arm 15, integral with the member 13, and movable into angular positions as indicated by the broken lines in Figure 1, has formed on its outer end a socket 16 in which is rotatably received a stem 17 provided with a clamp nut 18, easily accessible by reason of the socket being offset from the arm, and by which the stem may be fixedly held in any position it may be rotated into.

At the outer end of the stem 17 is a fork 19 pivotally supporting a cylindrical dome 20 and capable of being clamped in adjustment thereon by screws 21, this dome engaging a reflector generically designated 22.

Within the reflector is an electric light bulb 23, preferably approximately 1000 watt capacity, fed by current conducted by a cable 24 passing out of the top of the dome and provided with a switch 25, the conducting cable being attachable to a wall plug as shown in Figure 1.

From the foregoing it will be seen that the reflector and its associated parts may be placed in any position, due to its universal mounts, and held securely in such adjustment.

The reflector 22, which is preferably about eighteen inches in diameter at its base, is composed of a single sheet of highly polished metal, aluminum being preferred, and consists of a lower cylindrical band 30 of a certain width having a beaded bottom 31 and at the top an adjoining surface 32 disposed at an angle of forty-five degrees.

A short cylinder 33 connects with an angular step 34 of 41°—42′, other similar steps 35 to 42, ten in all, inclusive being positioned at respective angles, approximately 38°—30′, 35°—3′, 31°—45′, 27°—59′, 23°—42′, 19°—41′, 14°—32′ and 8°—21′ from a straight line subtended horizontally from the axis of the reflector.

A series of short cylindrical connections are interposed between each adjacent angu-

lar step, these connections being decreased in length progressively from the lowest 33 to the highest 44 as can best be seen in Figure 3.

It is to be noted that the focal point X of the lamp 23 is central of the reflector and at a point midway in the height of the lowermost angular step 32, whereby the light, and also the heat rays, from this point striking the polished inner surfaces of the several angular steps, 32 to 42 inclusive, are reflected, perpendicularly outward through the base of the reflector, as clearly indicated in Figure 3.

Overlying and spaced from the second angular step 41 is a correspondingly bevelled flange 45 held in position by bolts 46 having spacing collars 47 therebetween, this flange depending from the cylindrical wall 48 of the dome 20, the same being open at its bottom into which the flanged opening 43 projects.

The top of the dome terminates in a raised convex crown 49 having a central opening 50 for connection with a cable support, and through the wall of the crown are several openings 51 for ventilation.

Other means for ventilation are supplied by louvers 52 and 53, in which the wall of the cylinder 48 is sheared transversely at several points in the circumference and then the metal below bent inwardly for the three lower openings 52, the upper openings 53 being reversed, this arrangement causing a pronounced draft complete circulation from within the reflector.

As changes of construction could be made within the scope of the invention, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A therapeutic lamp reflector having a generally parabolic shape composed of a beaded cylindrical lower element, a series of ten bands presenting faces disposed from the bottom to the top progressively at approximately the following angles: 45°—0′, 41°—42′, 38°—30′, 35°—3′, 31°—45′, 27°—59′, 23°—42′, 19°—41′, 14°—32′, 8°—21′, all of said angles being subtended from the axis of the reflector, and plain narrow cylindrical bands connecting between said angular bands, said cylindrical bands decreasing in width from the lowermost to the uppermost, and a cylindrically flanged opening at the top of the reflector, said elements being all of integral construction.

2. A therapeutic lamp reflector having a generally parabolic shape, a series of bands presenting faces disposed from the bottom to the top progressively at approximately the following angles: 45°—0′, 41°—42′, 38°—30′, 35°—3′, 31°—45′, 27°—59′, 23°—42′, 19°—41′, 14°—32′, 8°—21′, all of said angles being subtended from the axis of the reflector and cylindrical bands connecting said angular bands.

3. A therapeutic lamp reflector having a generally parabolic shape, a series of bands presenting faces disposed from the bottom to the top progressively at predetermined decreasing angles, the initial angle being 45°—0′, all of said angles being subtended from the axis of the reflector, and cylindrical bands connecting said angular bands, said cylindrical bands decreasing in width from the lowermost to the uppermost.

4. A therapeutic lamp reflector having a generally parabolic shape, a series of bands presenting faces disposed from the bottom to the top progressively at predetermined decreasing angles, all of said angles being subtended from the axis of the reflector, and cylindrical bands connecting said angular bands, said cylindrical bands decreasing in width from the lowermost to the uppermost.

This specification signed this 6th day of May, 1927.

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