June 23, 1942. J. C. ROSE 2,287,328

STUDIO SPOT LAMP

Filed Feb. 3, 1941 2 Sheets-Sheet 1

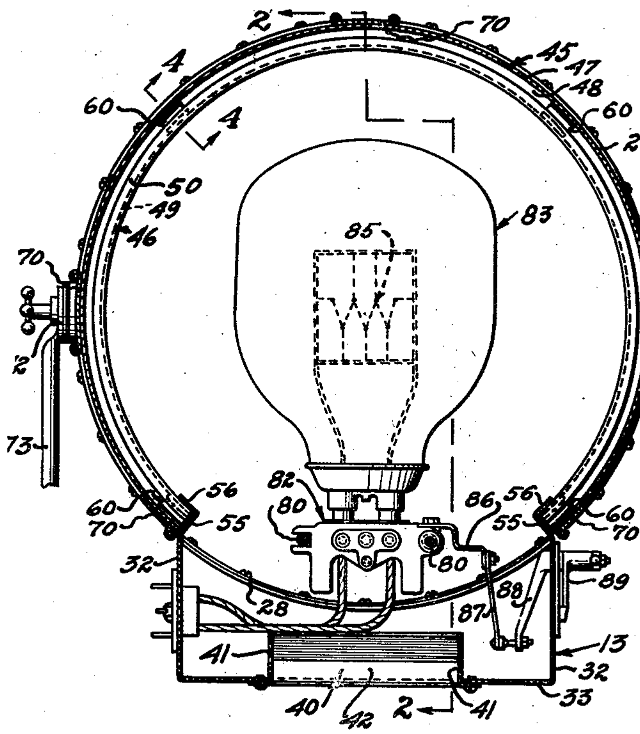

Fig. 1.

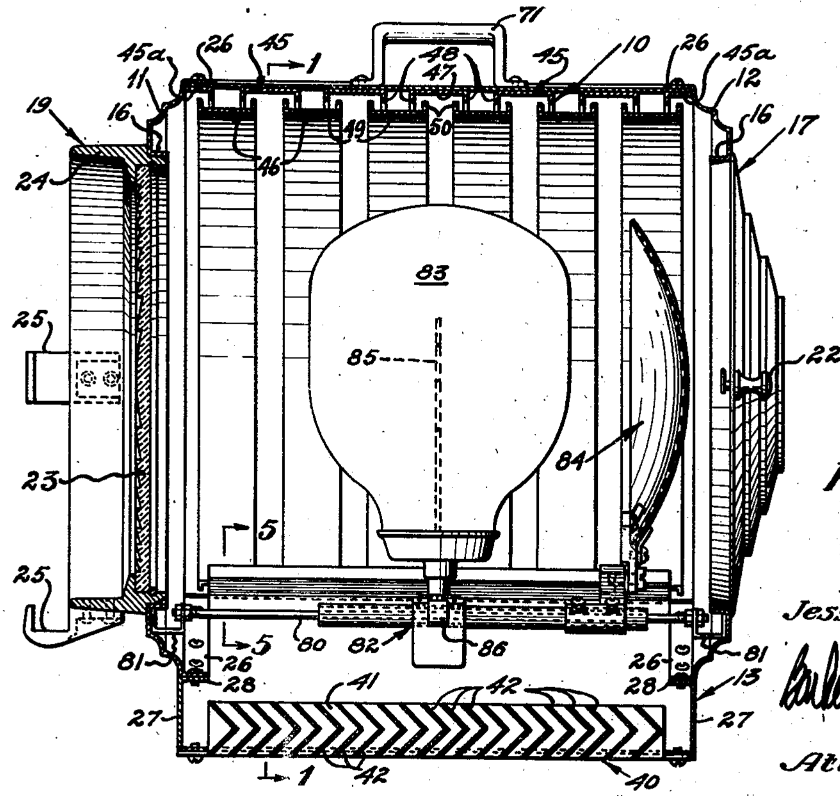

Fig. 2.

Inventor.
Jess C. Rose.

Attorneys.

June 23, 1942. J. C. ROSE 2,287,328

STUDIO SPOT LAMP

Filed Feb. 3, 1941 2 Sheets-Sheet 2

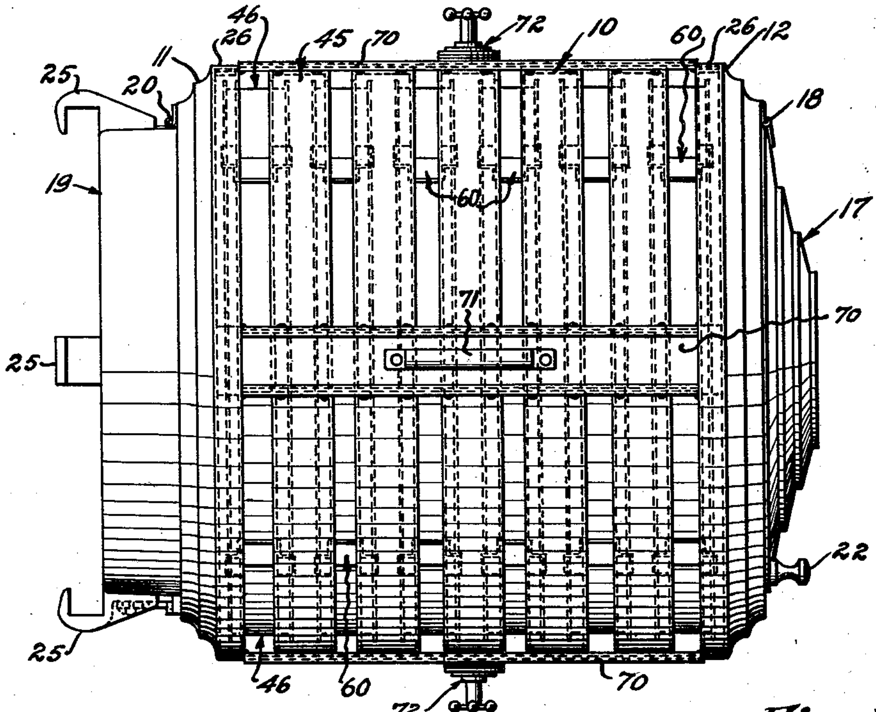

Fig. 3.

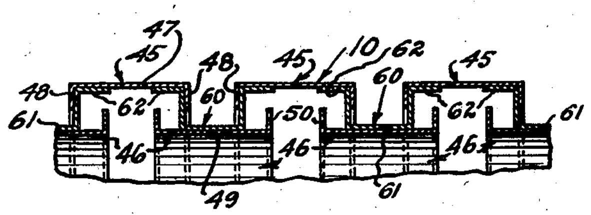

Fig. 4.

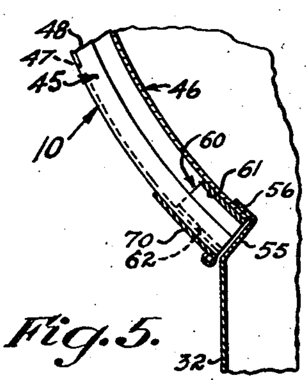

Fig. 5.

Inventor.
Jess C. Rose.

Barkelew & Leavitt & Long

Attorneys.

Patented June 23, 1942 2,287,328

UNITED STATES PATENT OFFICE

2,287,328

STUDIO SPOT LAMP

Jess C. Rose, Los Angeles, Calif., assignor to Bardwell & McAlister, Inc., Los Angeles, Calif., a corporation of California

Application February 3, 1941, Serial No. 377,154

4 Claims. (Cl. 240—47)

This invention relates generally to studio spot lamps such as are used in motion picture studios for illumination of sets.

Studio spot lamps are ordinarily designed with ventilation openings arranged to permit circulation of air through the lamp casing for cooling purposes. It is always an object to arrange these openings in such a way that air circulation and consequent cooling will be ample. Lamps of this type are also sometimes designed with the purpose in view of permitting use under rainfall conditions (either natural or artificial) without liability of water getting inside the casing through these ventilation openings. A still further design requirement is the provision of light trap arrangements at ventilation openings to prevent escape of light through the lamp casing, since stray light on a set is a detriment to good photography.

The object of the present invention is to provide an improved and simplified studio lamp construction designed for maximum air circulation, for effective exclusion of water, and for effective trapping of light at all openings.

The present invention will best be understood without preliminary discussion by referring at once to the following detailed description of one illustrative embodiment, reference for this purpose being had to the accompanying drawings, in which:

Fig. 1 is a transverse vertical section taken on line 1—1 of Fig. 2;

Fig. 2 is a section taken on broken lines 2—2 of Fig. 1;

Fig. 3 is a top plan view of the lamp;

Fig. 4 is a detail section taken on line 4—4 of Fig. 1; and

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 2.

The lamp of the present invention has a cylindric casing 10, extending between circular front and rear end frame members 11 and 12, respectively, and has at the bottom a rectangular housing structure or box 13. In the present illustrative embodiment, the end frame members 11 and 12 are sheet metal spinnings, each having an inwardly turned annular flange 16 defining a circular opening for a hinged door. A rear door 17 is receivable inside the rear door opening, being hinged at 18 on rear end frame 12. A front door 19 is receivable inside the front door opening, being hinged at 20 on front end frame 11. These doors may be of any suitable construction, not necessary here to describe in detail. However, it may be mentioned that the rear door is shown as provided with a manual knob 22, and will preferably be provided with any suitable type of latch mechanism, not here detailed. And front door 19 is equipped with the usual lens 23, preferably and here shown as the Fresnel type, and may have a somewhat forwardly projecting annular flange part 24 equipped with diffuser brackets 25.

End frame members 11 and 12 are formed with marginal inwardly turned flanges 26 within and to which certain parts of the cylindric side wall construction are received and secured.

The rectangular bottom structure 13 of the lamp includes flanged end frame extensions 27 secured to the bottoms of members 11 and 12, and integral side and bottom wall members 32 and 33 which extend between end frame extensions 27 and are received inside and secured to the flanges 28 of the latter. As here illustratively shown, the inner edges of bottom members 33 define an air inlet aperture in which is received a light-trap structure 40, the latter comprising vertical side walls 41 secured to the edges of bottom members 33, and transverse chevron-shaped light baffles 42 extending between walls 41. The baffles 42 are relatively closely spaced, so as to prevent any light escaping downwardly through the bottom of the lamp, while at the same time affording passageways for free circulation of air into the interior of the lamp.

The cylindric side wall 10 of the lamp comprises an outer series of inwardly facing circumferential channels 45 and an inner series of outwardly facing circumferential channels 46, the channels of both series being spaced longitudinally of the lamp by a spacing interval which is somewhat less than the width of a channel. The inwardly facing channels 45 comprise webs 47 and inwardly extending flanges 48, and the outwardly facing channels 46 comprise webs 49 and outwardly extending flanges 50. The outer and inner channels 45 and 46 are staggered, i. e., the channels of each series are positioned opposite the spaces between the channels of the other series. The inner and outer channels 45 and 46 are in close radial juxtaposition, the edges of the respective flanges 48 and 50 preferably being in substantial alinement. Each channel being substantially wider than the spacing between the channels, its two flanges are spaced beyond or overlap somewhat the near flanges of the two next adjacent channels of the other series. Thus the two contiguous flanges of each associated pair of inner and outer chan-

nels define a tortuous air circulation passageway, which is of such a character as to exclude light from leaking therethrough. These tortuous air circulation passageways extend circumferentially around the cylindric part of the lamp casing, and are of sufficient total cross sectional area as to assure free and full circulation of air into and out of the lamp, with the result that the lamp will remain at low operating temperature even after prolonged use.

The lower ends of the outer and inner channels **45** and **46** are here shown to abut a deflector flange **55** that extends inwardly and upwardly from the upper edges of the side wall members **32** of bottom structure **13**, and that has an outwardly and upwardly bent portion **56** positioned inside the lower end portions of the channels.

As here illustratively shown, the series of outer channels **45** terminate at each end frame of the lamp in a half-channel **45***a*, the web of which is received inside end frame flange **26**.

Alternate channels **45** and **46** are connected each to the next by bracket members **60**, such as shown in Figs. 3 and 4. These bracket members **60** as here shown comprise portions **61** secured as by welding to the central portions of the webs **49** of inner channels **46**, and angle portions **62** extending from each end of portion **61** and engaging and secured as by welding to the flange and a portion of the web of an adjacent outer channel **45**, all as will be clearly understood from inspection of Fig. 4. As here shown (see Fig. 1) there are four circumferentially spaced rows of such interconnecting bracket members **60**, and these taken together integrate the inner and outer series of channels into a unitary side wall structure. To further brace the side wall structure, I preferably employ a plurality of longitudinally extending sheet metal strips **70**, laid flat on the outer surfaces of the outer channels **45** and received underneath and secured to the marginal flanges **26** of the two end frame members **11** and **12**. The channels **45** are secured to longitudinally extending strips **70** in any suitable way, as by welding. As here shown, there is one of the strips **70** at the top of the lamp, and to this top strip **70** is secured a carrying handle **71** for the lamp. Two of the strips **70** are at opposite sides of the lamp, in line with its central axis, and to these are preferably secured the trunnion mountings **72** for the usual yoke arms, fragmentarily indicated at **73**. Two further strips **70** are preferably positioned at the lower ends of the channels **45**, as appears in Figs. 1 and 5.

A pair of parallel longitudinal lamp carriage guide rods **80** are here shown as mounted on brackets **81** secured to end frames **11** and **12**, as shown in Fig. 2. Slidable on these rods **80** is a lamp carriage **82**, of any suitable or conventional type, adapted to carry the usual incandescent light globe **83**. Carriage **82** also supports a spherical reflector **84** to the rear of light globe **83**, said reflector being designed to receive light from the filament **85** of globe **83** and to reflect it back to a focus in the plane of the filament **85**. The lamp carriage **82**, globe **83** and reflector **84** may be conventional and will require no detailed consideration herein. Fig. 1 shows a focusing mechanism suitable for sliding carriage **82** along guide rods **80**, and comprising a bracket arm **86** extending from carriage **82**, a link **87** pivotally connected to arm **86**, a crank arm **88** pivotally connected to link **87** and mounted for rotation on side wall **32**, and an exterior operating handle **89**. Such a focusing mechanism is described and claimed in my prior patent, Re. 21,089, issued May 16, 1939. It will be understood that rotation of handle **89** will operate the crank arm **88** and link **87** to slide lamp carriage **82** longitudinally on rods **80**, thus adjusting the position of globe **83** with reference to the lens **23** of the lamp, so as to adjust the focus.

The lamp of the present invention is now described as not only of simple construction and of attractive appearance, but assures a maximum of air circulation through the lamp without possibility of light escaping through the side walls of the lamp casing. The construction as described is especially effective in excluding downpouring water from the interior of the lamp. Water falling on the lamp, either vertically, or at a substantial slant angle, is received by the outwardly facing circumferential channels **46**, travels downwardly around said channels to deflector flange **55**, and is discharged from the lamp over the latter. If any water gets into the inwardly facing channels **45**, it likewise travels downwardly to the deflector flange **55**, a slight spacing being preferably provided between the lower ends of the channels **45** and flange **55** to permit escape of the water from said channels down the flange **55**, as is clearly shown in Fig. 5. The lamp thus combines the features of simplicity of construction, maximum air circulation, effective light trapping, and complete exclusion of water.

One preferred and illustrative embodiment of the invention has now been shown and described; it will be understood, however, that this is for illustrative purposes only, and that various changes in design, structure and arrangement may be made without departing from the spirit and scope of the invention, or of the appended claims.

I claim:

1. In a lamp having a pair of spaced front and rear generally circular end frames: a ventilated, water excluding and light trapping cylindric wall construction extending between and mounted at opposite ends on said end frames, said cylindric wall construction comprising inner and outer rows of spaced circumferential channels extending longitudinally between the end frames and closely radially juxtaposed to one another, each such channel comprising a web and a pair of flanges extending in the same direction from opposite edges of said web, the channels of the outer row facing inwardly and the channels of the inner row facing outwardly, and the channels of each row being positioned opposite the spaces between the channels of the other row, and the spacing between channels being such that the two flanges of the individual channels of each of the rows extend beyond and receive between them the adjacent flanges of the two adjacent channels of the other row, and means interconnecting all said channels to form an integrated structure.

2. In a lamp having a pair of spaced front and rear generally circular end frames: a ventilated, water excluding and light trapping cylindric wall construction extending between and mounted at opposite ends on said end frames, said cylindric wall construction comprising inner and outer rows of spaced circumferential channels extending longitudinally between the end frames and closely radially juxtaposed to one another, each such channel comprising a web and a pair of

flanges extending in the same direction from opposite edges of said web, the channels of the outer row facing inwardly and the channels of the inner row facing outwardly, and the channels of each row being positioned opposite the spaces between the channels of the other row, and the spacing between channels being such that the two flanges of the individual channels of each of the rows extend beyond and receive between them the adjacent flanges of the two adjacent channels of the other row, and relatively narrow supporting brackets connecting the individual channels of each row to each of the adjacent channels of the other row at a plurality of points spaced circumferentially around the channels.

3. In a lamp, the combination of a pair of spaced front and rear generally circular end frames, a cylindric wall structure extending between and mounted at opposite ends on said end frames and comprising inner and outer rows of spaced circumferential channels extending circularly around the sides and top of the lamp, said rows of channels extending longitudinally between the end frames and being closely radially juxtaposed to one another, each such channel comprising a web and a pair of flanges extending in the same direction from opposite edges of said web, the channels of the outer row facing inwardly and the channels of the inner row facing outwardly, and the channels of each row being positioned opposite the spaces between the channels of the other row, and the spacing between channels being such that the two flanges of the individual channels of each of the rows extend beyond and receive between them the adjacent flanges of the two adjacent channels of the other row, a box mounted on and extending between the bottom sides of the two end frames closing the lamp at the bottom, and deflector members extending along the side edges of the box and positioned opposite the lower ends of said channels to divert any water travelling downwardly in said channels outside the side edges of said box.

4. In a lamp, the combination of a pair of spaced front and rear generally circular end frames, a cylindric wall structure extending between and mounted at opposite ends on said end frames and comprising an interlocking channel formation extending circumferentially around the sides and top of the lamp, said interlocking channel formation providing channels formed and arranged to trap water falling on the lamp and to convey any such water to the lower ends of said channels, a box mounted on and extending between the bottom sides of the two end frames closing the lamp at the bottom, and deflector members extending along the side edges of the box and positioned opposite the lower ends of said channels to divert any water travelling downwardly in said channels outside the side edges of said box.

JESS C. ROSE.