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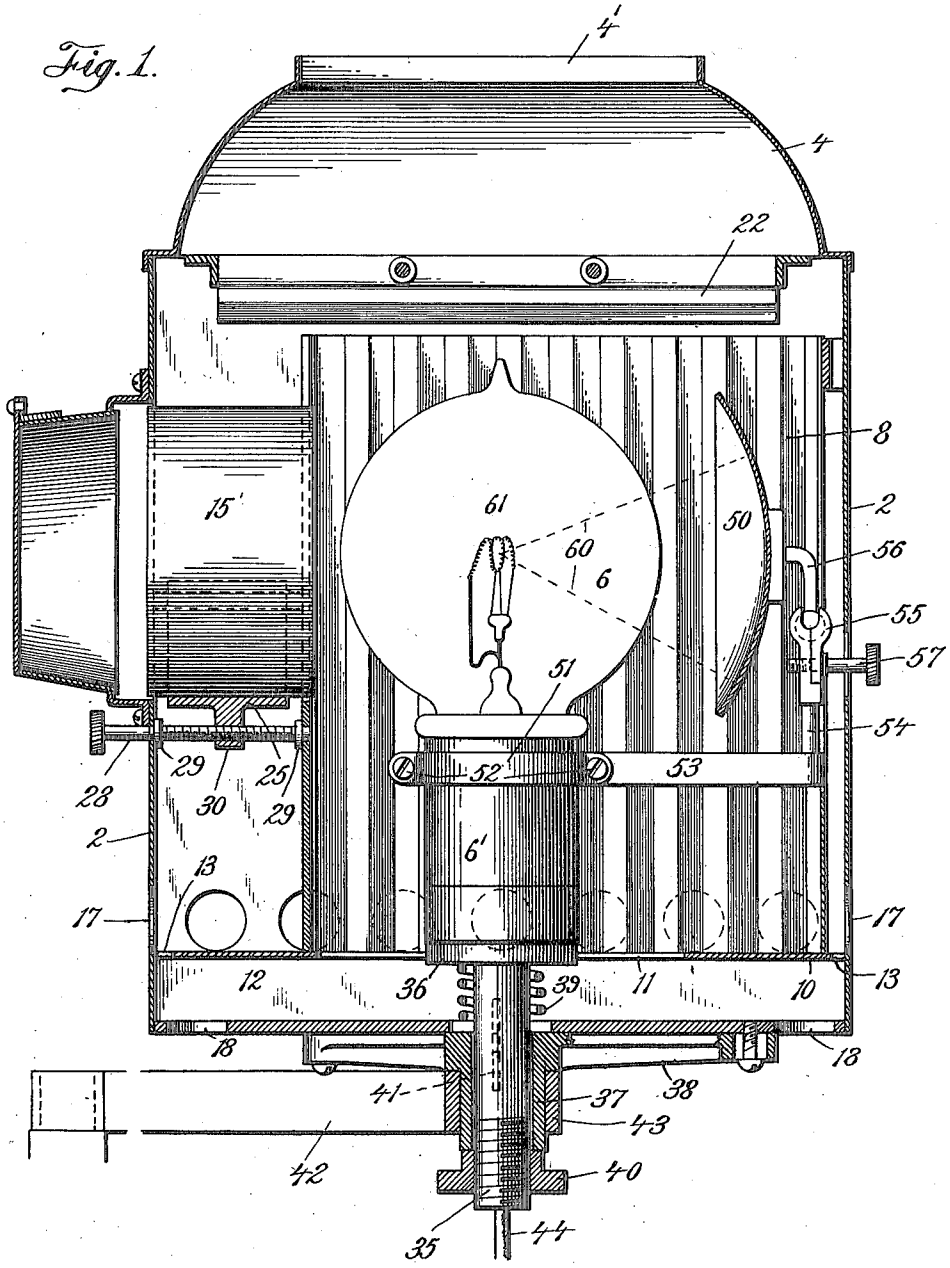
LAMP HOUSE FOR PICTURE PROJECTION APPARATUS.

APPLICATION FILED DEC. 2, 1914.

1,160,764. Patented Nov. 16, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



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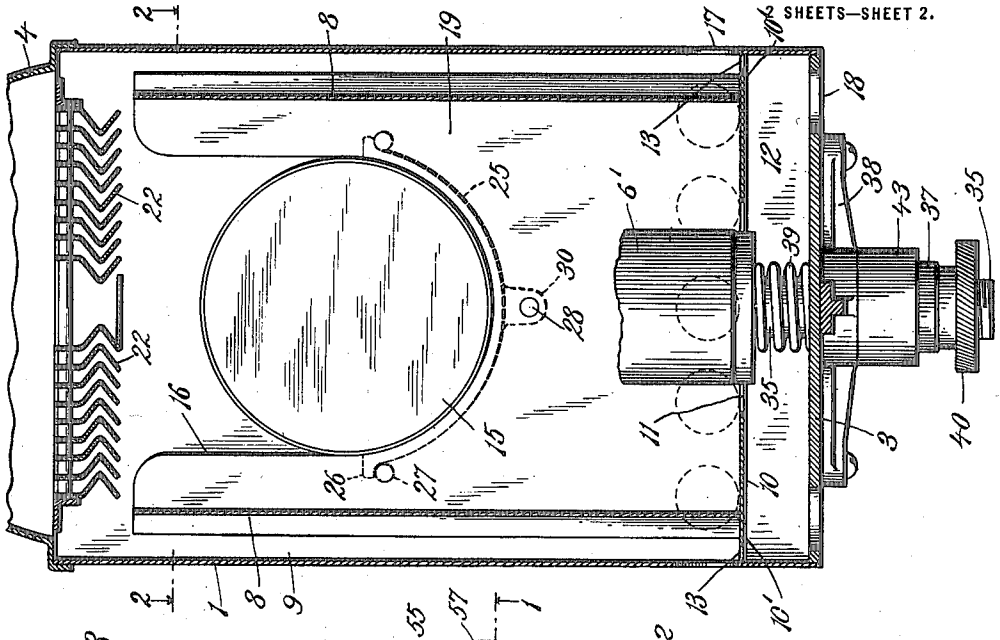


Fig. 3

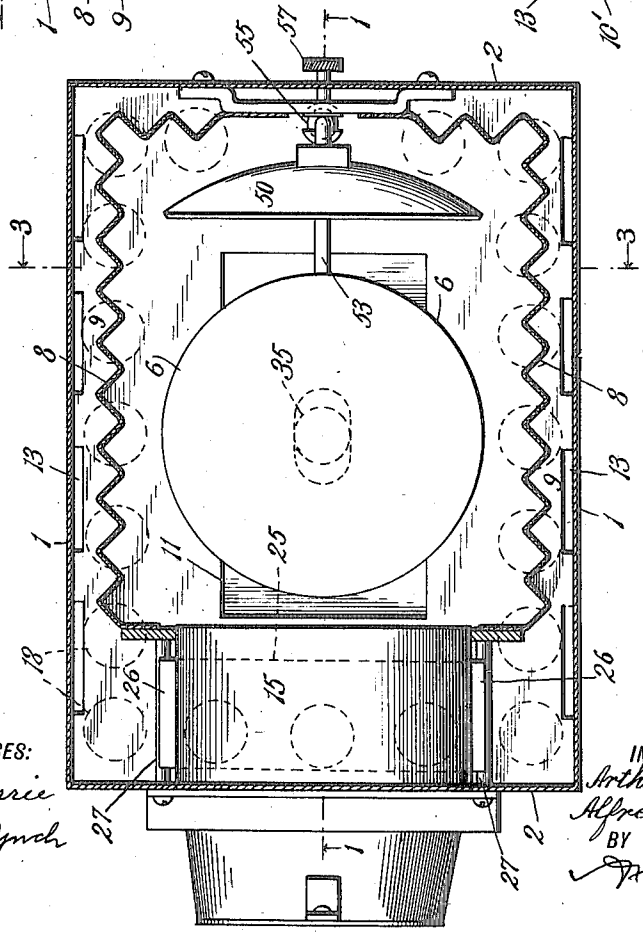


Fig. 2.

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ARTHUR D. ROBINSON, OF NEW YORK, N. Y., AND ALFRED P. BOLLER, JR., OF EAST ORANGE, NEW JERSEY.

LAMP-HOUSE FOR PICTURE-PROJECTION APPARATUS.

1,160,764. Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed December 2, 1914. Serial No. 875,075.

To all whom it may concern:

Be it known that we, ARTHUR D. ROBINSON and ALFRED P. BOLLER, Jr., citizens of the United States, residents, respectively, of the borough of Manhattan, city, county, and State of New York, and of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Lamp-Houses for Picture-Projection Apparatus, of which the following is a specification.

This invention has reference to that portion of picture projection apparatus which comprises the lamp, light reflecting and light condensing means and housing for such parts and which is designated generally as the lamp-house.

The invention is particularly adapted for use in connection with moving picture machines although it may be applied with advantage to other types of picture projection apparatus.

The invention has for an object the provision within the lamp housing of improved heat radiating means.

Other objects relate to improved light reflecting means and to novel means of adjustment of the light projecting devices as will be more clearly brought out in the detail description.

With the above and other objects in view the invention may be said to consist of the features of construction, arrangement and combinations of parts as set forth in the appended claims.

In the accompanying drawings, in which there is illustrated a preferred embodiment of the invention, and in which similar reference characters indicate the same parts throughout the various views: Figure 1 is a longitudinal section of a lamp-house, the view taken on the line 1—1 Fig. 2. Fig. 2 is a horizontal sectional view on the line 2—2 Fig. 3. Fig. 3 is a transverse sectional view on the line 3—3 Fig. 2, the lamp being broken away.

The lamp-house is shown as having an outer casing or housing consisting of side walls 1, end walls 2, a bottom 3 and a top or cover member 4. The lamp is shown at 6 and is supported within the casing in a manner to be pointed out later.

To prevent the casing from becoming unduly heated when the lamp is operating we provide a heat radiating and baffling partition within the casing, such partition having the vertical members 8 spaced inwardly as shown from the side walls 1 of said casing to provide air channels 9, said partition extending between points a short distance from the top and bottom of the casing. (See Fig. 3). This vertical partition 8 rests at its lower edge upon a horizontal partition 10 spaced from the bottom member 3 of the casing to provide an air channel 12 therebetween and the said bottom member. This partition 10 has a central opening 11 to accommodate the lamp socket 6′ and to permit of passage of air, the outer edge portions 10′ of this partition closing communication between the air channels 9 and 12 as shown most clearly in Fig. 3, except through small openings 13 which may be formed in such side portions 10 to equalize the air currents on either side of the partition 8.

As shown in Fig. 2 the partition 8 is preferably corrugated vertically at the sides and rear to increase the radiating surface while the front is in the form of a comparatively heavy flat plate which supports the condenser 15 and is slotted at its upper end at 16 to allow the latter to be inserted in position. Separate sets of intake ventilation openings 17 and 18 respectively are provided in the lower portion of the casing, the openings 17 communicating with the channels 9 and the openings 18 with the channels 12 and through the central opening with the inner chamber 19 inclosed by the baffle partitions.

The cover member 4 has a central aperture 4′ through which the ventilating currents pass from the housing and to prevent the escape of light through such opening a series of baffle strips 22 are disposed horizontally in the upper portion of the casing, being preferably secured to the cover 4 to be removed therewith when access to the interior of the casing is desired. These baffle strips are of angular cross-section, being here shown as of V-shape and arranged sufficiently close together to nest within one another, this arrangement causing them to overlap one another with respect to the path of travel of the light and completely prevent escape of the latter.

The condenser 15, above-mentioned and which is located as usual in front of the

lamp 6, may be of any preferred type and in order that the proper focusing of such condenser with respect to the lamp may be readily effected we have provided an adjustable mounting therefor which, as here shown, comprises a saddle 25 on which the condenser seats and which has side extensions or lugs 26 which rest slidably on a pair of horizontal rods 27 suitably mounted within the housing. Adjustment is effected by means of the screw 28 localized by the collars 29 thereon and threaded through a depending lug 30 on the saddle 25.

To permit of adjustment of the lamp to effect horizontal alinement of the light and condenser we have devised a mounting for the lamp comprising a hollow stem 35 having a flange 36 at its upper end upon which the lamp socket 6′ is rigidly mounted, this stem extending downwardly through a sleeve 37 formed on the spider 38 on which the lamp house is mounted. A helical spring 39 surrounding the stem 35 and bearing between the bottom 3 of the casing and the flange 36 normally tends to raise the lamp while the latter is drawn downwardly by means of a nut 40 screwed upon the threaded lower end of the stem 35 and bearing upwardly against the sleeve 37. A slot and feather device 41 prevents the lamp turning with the nut 40.

In the present embodiment of the invention the lamp-house is shown pivoted on the end of an arm 42 which has an eye 43 encircling the sleeve 37. The wires to the lamp are led up the hollow stem 35 in the form of a cable 44.

50 indicates a reflector located at the rear of the lamp 6 and preferably mounted upon the lamp in order to be adjusted vertically therewith while means are provided to permit of angular adjustment of the mirror with respect to the lamp. As here shown a split collar 51 encircles the socket 6′, being clamped thereto by the set screws 52. This collar has a rigidly extending arm 53 from the end of which projects a rod 54 carrying one member of a ball and socket joint 55 of usual construction, to the other member of which connects a stem 56 carrying the reflector 50. The joint 55 can be loosened by means of the screw 57 to allow of angular adjustment of the reflector. We have discovered that, in order to have the reflector give satisfactory results when used in connection with a condenser in apparatus of this type, it is desirable that the reflector should be of spherical contour having a common center with the lamp, or with the central point from which the light radiates, as indicated by the dotted lines 60 leading from the surface of the reflector to the center of the filament loop 61 of the lamp, the latter preferably being of the concentrated-filament type.

It will be noted that by means of the heat radiation and baffle surfaces within the casing currents of air are induced within the casing which enter through the openings 17 and 18 and flow upwardly on either side of the partition 8, between the baffle strips 22 and out through the opening 4′.

It will also be apparent that the construction herein set forth dispenses with doors in the casing, the removal of the cover rendering all parts accessible.

What is claimed is:

1. A lamp-house for picture projection apparatus comprising: a lamp, a casing surrounding the same, a heat radiating member constituting a partition dividing the space within said casing into an inner lamp chamber and outer channels, and means for conducting currents of air from the bottom of said lamp-house upwardly on both sides of said partition.

2. In a lamp-house for picture projection apparatus, a lamp, a casing inclosing the lamp and provided with ventilation openings at its upper and lower ends, and heat radiating members within the casing adapted when heated by the lamp to induce air currents within and through the said casing in an upwardly direction on both sides of the heat radiating members.

3. A lamp house for picture projection apparatus comprising: a casing, a lamp within said casing, a vertically disposed partition within said casing spaced from the side walls thereof and consisting of vertically corrugated side and rear members and a relatively heavy front plate, and a condenser adjustably mounted between the front plate and casing.

4. A lamp house for picture projection apparatus comprising: a casing, a lamp within said casing, a vertically disposed partition within said casing spaced from the side walls thereof and consisting of vertically corrugated side and rear members and a relatively heavy front plate, connections between the front plate and casing, a saddle mounted on said connections, means for adjusting said saddle, and a condenser carried by the saddle.

5. A lamp house for picture projection apparatus comprising: a casing, a lamp within the casing, a horizontal partition at the lower end of said casing spaced from the bottom thereof and having an opening through which the lamp extends, vertical partitions extending from the horizontal partition in an upward direction and spaced from the walls of the casing to form an inner lamp chamber and outer channels, ventilating means in the walls of the casing above the horizontal partition adjacent to the lower end of the casing, ventilating means in the casing below the horizontal partition, and an open removable top on the

casing having overlapping V-shaped baffles in nested relation.

6. A lamp house for picture projection apparatus comprising: a casing, a lamp within the casing, a horizontal partition at the lower end of said casing spaced from the bottom thereof and having an opening through which the lamp extends, vertical partitions extending from the horizontal partition in an upward direction and spaced from the walls of the casing to form an inner lamp chamber and outer channels, ventilating means in the walls of the casing above the horizontal partition adjacent to the lower end of the casing, ventilating means in the casing below the horizontal partition, an open removable top on the casing having overlapping V-shaped baffles in nested relation, a condenser between the front wall of the casing and the vertical partition, and a reflector on the other side of the lamp between the latter and the vertical partition.

7. A lamp house comprising: a casing, a lamp within the casing, a condenser and a reflector within the casing, and means exterior to the casing for adjusting the position of the condenser and the reflector.

8. A lamp house comprising: a casing, a removable top to the casing, a condenser and a lamp within the casing and both removable from the top of the casing.

9. A lamp house comprising: a casing, a removable top to the casing, a condenser and a lamp within the casing and both removable from the top of the casing, and means for adjusting the position of the condenser with respect to the lamp extending through the side wall of the casing.

10. A lamp house comprising: a casing, a removable top to the casing, a condenser, a lamp and a reflector within the casing all removable from the top of the casing.

11. A lamp house comprising: a casing, a removable top to the casing, a condenser, a lamp and a reflector within the casing all removable from the top of the casing, and means for adjusting the position of the condenser and the reflector with respect to the lamp extending through the side walls of the casing.

12. A lamp house comprising: a casing, a removable top to the casing, a condenser and a lamp within the casing and both removable from the top of the casing, and means extending to the outside of the bottom of the casing for adjusting the lamp.

13. A lamp house comprising: a casing, a removable top to the casing, a condenser and a lamp within the casing and both removable from the top of the casing, means extending to the outside of the bottom of the casing for adjusting the lamp, and means for adjusting the position of the condenser with respect to the lamp extending through the side wall of the casing.

14. A lamp house comprising: a casing, a removable top to the casing, a condenser, a lamp and a reflector within the casing all removable from the top of the casing, and means extending to the outside of the bottom of the casing for adjusting the lamp.

15. A lamp house comprising: a casing, a removable top to the casing, a condenser, a lamp and a reflector within the casing all removable from the top of the casing, means extending to the outside of the bottom of the casing for adjusting the lamp, and means for adjusting the position of the condenser and the reflector with respect to the lamp extending through the side wall of the casing.

16. A lamp house comrising: a casing, a lamp and a reflector within the casing, means connecting the lamp and reflector, means extending through the bottom of the casing for adjusting the lamp and reflector vertically within the casing, and means extending through the side wall of the casing for adjusting the reflector angularly.

Signed at New York city, in the county of New York and State of New York, this 14th day of November, A. D. 1914.

ARTHUR D. ROBINSON.
ALFRED P. BOLLER, JR.

Witnesses:
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LAURA E. SMITH.