

Aug. 2, 1949.

J. BRISKIN

2,477,957

LAMP HOUSING

Filed March 19, 1945

Fig. 1.

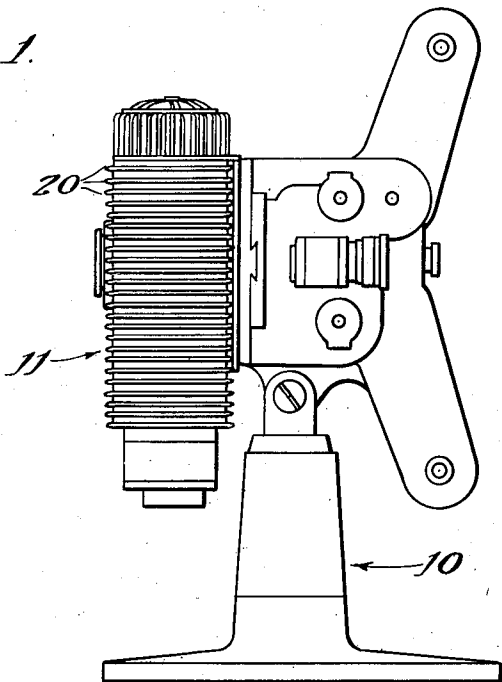


Fig. 2.

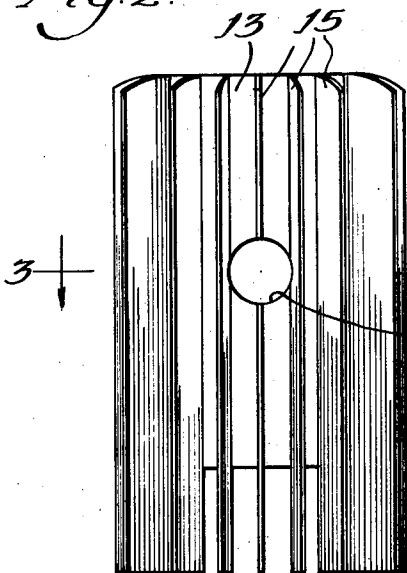
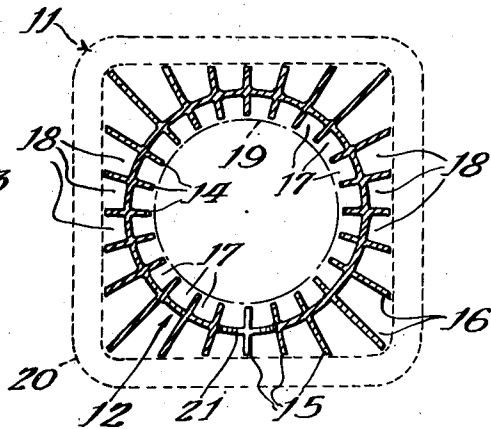


Fig. 3.



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UNITED STATES PATENT OFFICE

2,477,957

LAMP HOUSING

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Application March 19, 1945, Serial No. 583,422

3 Claims. (Cl. 240—47)

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This invention relates to improvements in lamp housings, and in particular to a lamp housing for use in a motion picture projector.

Motion picture projectors are provided with an incandescent bulb of great light intensity. The amount of heat radiated therefrom is often sufficient to soften the glass of the bulb, particularly when the bulb is enclosed in a lamp chamber. It has been the practice to provide such a lamp chamber for the bulb, and said chamber is provided with exterior radiating fins. A blower is provided for blowing a blast of cold air through the chamber. However, in spite of this construction the chamber wall heats to such an extent that it tends to maintain the temperature within the chamber at an undesirably high level.

It is an object of this invention to provide a lamp housing within the chamber which will serve to obstruct the direct radiation from the bulb to the lamp chamber.

It is a further object to provide improved heat dissipating means for such a housing whereby an increased amount of heat may be removed from the interior of the lamp chamber by an air blast.

It is a further object to provide an improved lamp housing embodying means for spacing the bulb in the center of the lamp chamber to effect a more uniform distribution of the heat radiated to the surrounding parts.

Other objects, features and advantages will become apparent as this description proceeds.

With reference now to the drawings, in which like reference numerals designate like parts,

Fig. 1 is an elevation of a motion picture projector showing the usual lamp chamber;

Fig. 2 is an elevation of a preferred embodiment of this invention; and

Fig. 3 is a section taken along line 3—3 of Fig. 2, and also showing in dotted lines the relationship of the lamp housing to the bulb and to the lamp chamber.

The projector 10 shown in Fig. 1 is provided with the usual lamp chamber 11. The projector also embodies the usual blower, not shown, which blows a blast of air through the lamp chamber for cooling the bulb. The lamp chamber is provided with exterior radiating fins 20.

The lamp housing 12, as shown in Figs. 2 and 3, is adapted to fit within the lamp chamber 11. The lamp housing comprises a web portion 13 which is provided with radially disposed interiorly directed fins 14, and with radially disposed exteriorly directed fins 15. The length of the exterior fins 15 is such as to cause the general

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configuration of the lamp housing to conform to the interior of the lamp chamber 11, as shown in Fig. 3. In particular, this is effected by making certain of the exterior fins 15 longer than the others, as indicated by the reference numeral 16. The lamp housing is also provided with an opening 21 through which a beam of light may be projected to the other parts of the projector.

It will be seen that the web portion 13 provides a barrier to interrupt the heat radiation from a bulb 19 which is disposed within the lamp chamber. The interior fins 14 provide a series of interior channels 17, and the exterior fins 15 provide a series of exterior channels 18. These channels completely fill the space between the exterior of the bulb 19 and the inner surface of the lamp chamber 11, and thus serve to canalize the air blast, and provide maximum surface contact between the air blast and the lamp housing. The fins 14 and 15 conduct away a considerable proportion of the heat received by radiation by the web portion 13. Furthermore, the interior edges of the interior fins 14 are closely adjacent to or in contact with the surface of the bulb 19, thus tending to further reduce the temperature at the bulb surface.

The operation of this device is such that a much greater proportion of the radiated heat is removed from the interior of the chamber 11 than when such a lamp housing is not used, or when only fins are used, without the web portion. It has been found that with a projector operating at a speed of fourteen frames per second, that the temperature at the bulb surface is reduced from about 800 degrees F. to 590 degrees F., by the use of this improved lamp housing.

The lamp housing may be an integral die cast structure, or it can be fabricated from a slotted cylindrical member, which constitutes the web portion 13, in combination with the slotted inter-fitting fins, which constitute the interior and exterior fins 14 and 15.

Although only a preferred embodiment of this invention has been shown and described herein, it will be understood that various modifications and changes may be made without departing from the spirit of this invention. The appended drawings and foregoing description are deemed to be illustrative only, and the invention is limited only by the appended claims.

I claim:

1. A lamp housing comprising a substantially cylindrical web portion provided with a series of inwardly extending heat radiating fins and a series of externally extending heat radiating fins,

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the fins of said first series and said second series extending in opposite directions from the same part of said cylindrical web portion and lying in radial planes with respect to the axis thereof.

2. In a motion picture projector, in combination with an incandescent bulb and a chamber therefor, a substantially cylindrical member surrounding said bulb for intercepting radiation from said bulb, and having a series of inwardly extending heat radiating fins and a series of externally extending heat radiating fins for spacing said member from said bulb and from the walls of said chamber the fins of both of said series lying in radial planes with respect to the axis of said cylindrical member.

3. In a motion picture projector, in combination with an incandescent bulb and a chamber therefor, a lamp housing disposed between said bulb and the walls of said chamber, and surrounding said bulb, said lamp housing comprising a substantially cylindrical continuous web portion having substantial non-reflecting inner and outer surfaces, a series of inwardly extending substantially radially disposed heat radiating fins formed integrally with said web portion, and a series of externally extending substantially radially disposed heat radiating fins formed integrally with said web portion, the inner edges of

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said inwardly extending fins substantially abutting said bulb, and the outer edges of said externally radiating fins substantially abutting the wall of said housing so that the entire space between the surface of said bulb and the surface of the side walls of said chamber is divided into a series of vertically disposed channels through which air may be blown, the fins of both series extending from the same part of said web portion.

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