

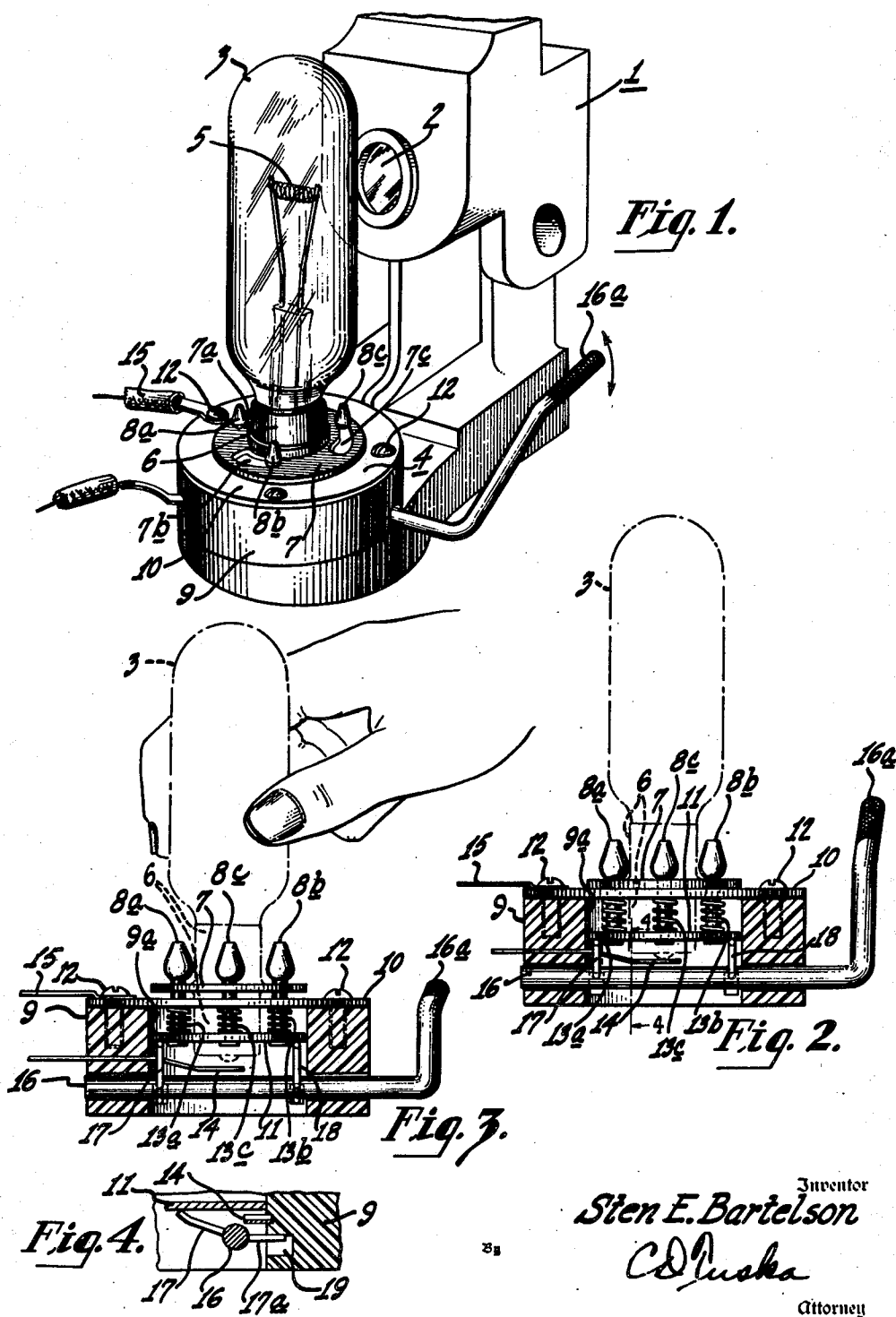
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S. E. BARTELSON

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LAMP SOCKET

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Inventor
Sten E. Bartelson
C. D. Puska
 Attorney

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LAMP SOCKET

Sten E. Bartelson, Ashland, N. J., assignor to
Radio Corporation of America, a corporation of
Delaware

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This invention relates to lamp sockets and particularly to improvements in sockets for pre-focused electric lamps.

Sockets for pre-focused lamps are usually provided with a plurality of spring-biased pins which engage the base of the lamp and hold it in a position whereat the filament is in register with the optical system which the lamp is designed to serve. The removal of a lamp from such a socket against the biasing force of the retaining springs can be an extremely troublesome operation, particularly when the lamp is hot and is mounted in a motion picture projector or other crowded cabinet.

Accordingly, the principal object of the present invention is to provide an improved lamp socket of the type incorporating spring-actuated lamp-retaining pins, and one characterized by the provision of means for relieving the biasing force on the said retaining pins, whereby to facilitate the insertion and removal of the lamp.

The invention will be described in connection with the accompanying drawing wherein Fig. 1 is a view in perspective of a pre-focused lamp assembly including a spring-biased lock-socket having a releasing mechanism constructed in accordance with the principle of the invention. Fig. 2 is an elevational view partly in section showing the interior of the socket with the lamp in position; Fig. 3 is a similar view showing the lamp in a position to be removed from the socket and Fig. 4 is fragmentary sectional view taken on the line IV-IV of Fig. 2.

Referring particularly to Fig. 1, 1 designates generally a casting formed of metal, porcelain or other suitably rigid material which serves as a support for an optical system comprising a lens 2, an electric lamp 3 and a socket 4 which holds the lamp in a position whereat its horizontally disposed filament 5 is in register with the lens 2. The metal base of the lamp is of a conventional type and comprises a dependent tubular portion 6 which is provided, intermediate its ends, with an outwardly extending circular flange 7 having a number of circumferentially spaced slots 7a, 7b, 7c of tapered width arranged for the reception of a similar number of locking pins 8a, 8b, 8c which are mounted, in a manner later described, on the socket 4.

The socket comprises a hollow insulating pedestal 9 having a bore 9a of a diameter substantially larger than that of the tubular portion 6 of the lamp base, and two annular metal discs or washers 10 and 11 through both of which the lower part of the lamp base 6 extends. The

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upper disc 10 is immovably secured to the top of the hollow pedestal 9 as by means of screws 12 and comprises a flat conductive base upon which the tube flange 7 rests. The lower disc 11, on the other hand, is supported for vertical movement within the socket pedestal upon the lower ends of the locking pins 8a, 8b, 8c. The said pins 8a etc. extend upwardly through suitably spaced clearance holes in the upper disc 10 and terminate thereabove in pin heads which limit the extent of the downward movement of the lower disc 11. The pins 8a, 8b, 8c, and hence the lower disc 11 to which the said pins are affixed, are biased in the downward direction by means of springs 13a, 13b, 13c which are wrapped, respectively, about the said pins in the space between the upper and lower discs. A leaf spring 14 which terminates at a point adjacent to the center of the bore of the socket, beneath the lower disc 11, comprises one terminal for the lamp filament 5 and a wire 15 secured to the upper disc 10 comprises the other filament lead.

The socket 4, as thus far described, is of more or less standard construction and the lamp 2 can be mounted and "locked" therein by entering the bayonet slots 7a, 7b, 7c over the similarly lettered retaining pins 8 and twisting the lamp to bring the reduced circular neck portions of the said slots into register with the pins so that the retaining force of the several springs 13a etc. is exerted upon the flange 7 of the lamp. The twisting force required to insert and to withdraw the lamp from its socket must be sufficient to overcome the biasing force applied to the retaining pins by the springs 13a etc. If the springs are stiff, as through long disuse, or the lamp is fragile or hot, it may be difficult to apply the twisting force required to seat or unseat the lamp. This difficulty is overcome in accordance with the present invention by the provision of lever means for relieving the pins 8a, etc., and hence the tube flange 7, of the force exerted thereon by the springs 13a, etc. during the period when the lamp is being seated in, or withdrawn from, the socket 4. In the illustrated embodiment of the invention the lever comprises a rotatable, rod-like piece 16 which spans the bore 9a of the socket pedestal 9, beneath the disc 11 to which the springs 13a etc. are attached, and a pair of lever arms 17 and 18 are affixed to the said rod and bear against the under side of the said disc 11. One end of the rod 16 extends beyond the outer surface of the socket pedestal and terminates in a handle 16a which when pressed down, as indicated by the curved arrows in Fig.

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1, causes the rod to rotate about its axis or fulcrum and to apply a lifting force to the disc 11 through the lever arms 17 and 18. Undesired axial movement of the lever is prevented by extending the lever arms 17 and 18, or one of them, through the rod-like member 16 and, as shown in Fig. 4, placing the extended portion 17a within a slot 19, provided for the purpose, in the inner surface or bore 9a of the socket pedestal 9.

As shown in Fig. 3, raising the lower disc 11 compresses the springs 13a, etc. against the upper, immovable disc 10 and relieves the biasing force on the retaining pins 8a, etc. With the retaining or locking force thus removed from the flange 7 the lamp can be easily removed from its socket.

It will now be apparent that the present invention provides an improved lock socket and one characterized by the provision of a simple, inexpensive and trouble-free mechanism for facilitating the replacement of a lamp therein.

What is claimed is:

1. A socket for an electrical device comprising a hollow pedestal, an apertured disc mounted on said pedestal, a washer provided with pins upwardly extending through said apertures and disposed within said pedestal, at least one spring positioned between said disc and washer for biasing the washer in a downward direction, a cam acting directly on said washer for relieving the tension on said spring.

2. A socket for an electric lamp having a base, said socket comprising a hollow pedestal, a disc mounted on said pedestal, a floating washer disposed in said pedestal, the said washer carrying lamp retaining pins projecting from said washer in a position to engage said lamp base, springs associated with said pins and disposed between said disc and washer for biasing said pins into locking position with said base, a cam disposed under said washer and in direct contact therewith for relieving the biasing force on said pins, and electrical terminals associated with said socket.

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3. A socket for an electric lamp having a base, said socket comprising a hollow pedestal, a disc mounted on a pedestal, said disc having a central aperture adapted to receive said base, a floating washer disposed in said pedestal, the said washer carrying lamp retaining pins projecting from said washer in a position to engage said lamp base, springs associated with said pins and disposed between said disc and washer for biasing said pins into locking position with said base, a cam disposed under said washer and in direct contact therewith for relieving the biasing force on said pins, and electrical terminals associated with said socket.

4. A socket for an electric lamp having a base, said socket comprising a hollow pedestal, a disc mounted on said pedestal, a floating washer disposed in said pedestal, the said washer carrying lamp retaining pins projecting from said washer in a position to engage said lamp base, springs associated with said pins and disposed between said disc and washer for biasing said pins into locking position with said base, a cam disposed under said washer and in direct contact therewith for relieving the biasing force on said pins, means for operating said cam, the said means extending to the external side of said pedestal, and electrical terminals associated with said socket.

STEN E. BARTELSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
298,143	Weston	May 6, 1884
1,770,377	Wolfe	July 15, 1930
1,796,038	Merle	Mar. 10, 1931
2,110,133	Douglas	Mar. 8, 1938
2,191,292	Spence, Jr.	Feb. 20, 1940
2,426,424	Young	Aug. 26, 1947

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