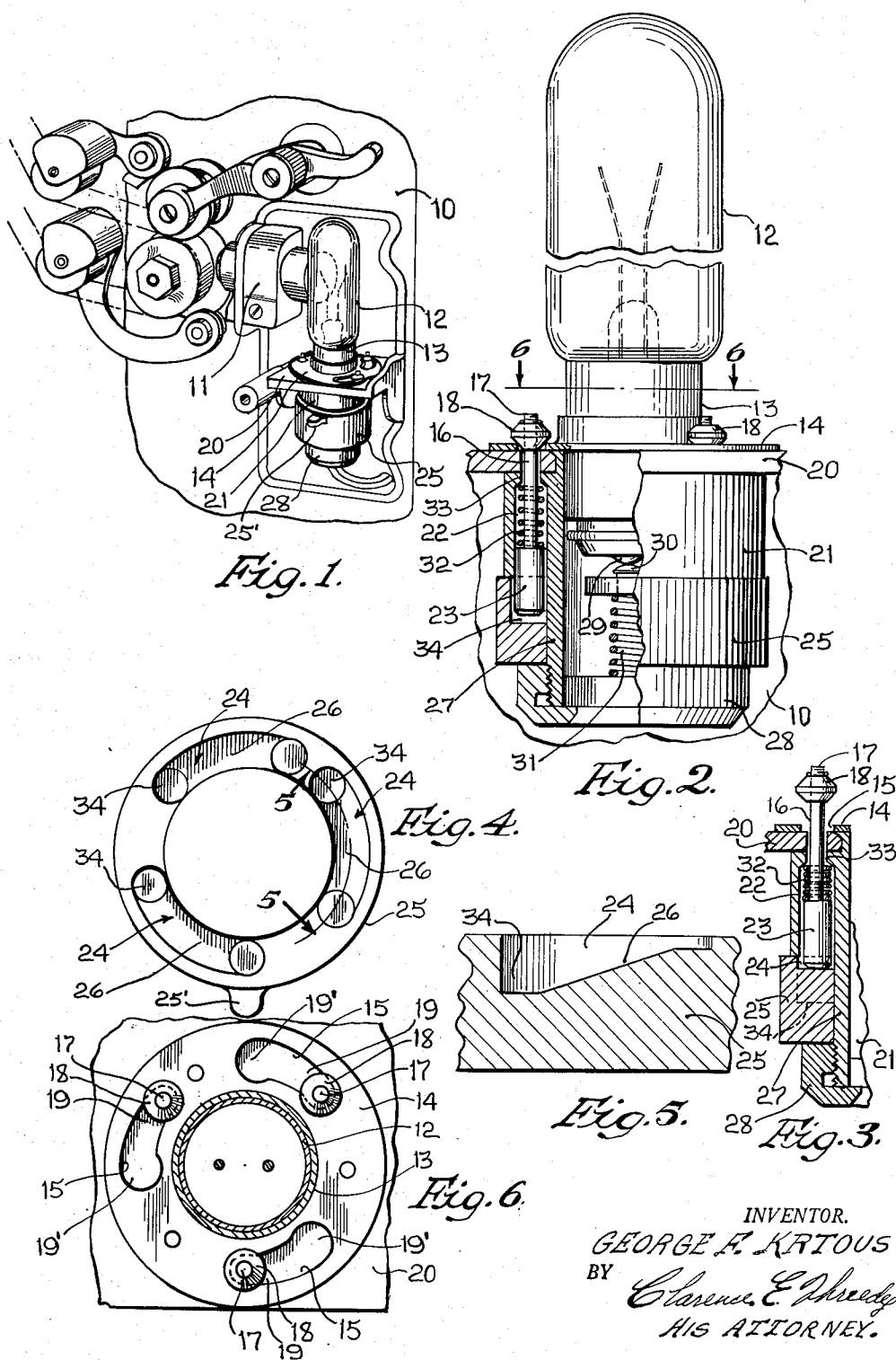


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MECHANISM FOR FACILITATING THE REMOVAL
OF A LAMP FROM ITS SOCKET
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MECHANISM FOR FACILITATING THE REMOVAL OF A LAMP FROM ITS SOCKET

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This invention relates to mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and then given a partial turn to latch the lamp in the socket by engagement of a flange on the lamp with a plurality of latch pins.

In most, if not all, of the conventional motion picture projecting machines, the exciter lamp is mounted in a socket arranged in close quarters with the surrounding structure, affording very little finger space to enable grasping the lamp by the fingers for its removal from the socket. Furthermore, as such latch pins are generally firmly spring held in latched engagement with the flange of the lamp for the purpose of preventing vibration or accidental displacement of the lamp and for the further purpose of firmly holding the electrodes of the lamp and the electrode of the socket in positive contact with respect to each other, great difficulty is encountered in partially rotating the lamp for the purpose of removing it from the socket.

One of the objects of my invention is to provide relatively simple and easily operable mechanism for relieving the tension between the latch pins and the flange of the lamp socket to permit free partial turning of the lamp relative to the latch pins and removal of the lamp from the socket.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a fragmentary perspective view of a motion picture machine showing my invention associated therewith;

Fig. 2 is an enlarged elevational view partly in section of a lamp and lamp socket having my invention associated therewith;

Fig. 3 is a fragmentary sectional detail view showing one of the latch pins cammed to unlatched position;

Fig. 4 is a top plan view of a cam-bearing ring embodied in the invention;

Fig. 5 is a fragmentary sectional detail view taken substantially on line 5—5 of Fig. 4;

Fig. 6 is a sectional detail view taken substantially on line 6—6 of Fig. 2.

In a conventional motion picture apparatus, there is arranged on a wall 10 thereof a lens

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assembly 11. Adjacent to this lens assembly is an exciter lamp 12 including a base 13. This base 13 is adapted to project into a socket by a straight thrust.

Most exciter lamps include a flange 14 having formed therein bayonet slots 15 through which the shanks 16 of latch pins 17 are adapted to project. These latch pins 17 have threaded or otherwise secured thereto latch heads 18, which, when disposed in the restricted area 19 of the slots 15, latch the base to the socket-supporting shelf 20.

As previously pointed out, these latch pins 17 are firmly held in position by means of springs. My invention, as before stated, facilitates the projection of these latch pins 17 to unlatched position whereby to permit free and ready removal of the lamp 12 from its socket.

To accomplish this object, I provide in the socket 21 a plurality of bores 22 into which project the shanks 16 of the latch pins 17. The inner end portions of these latch pins 17 are provided with enlarged bearings 23 which ride in cam slots 24 formed in a ring 25. Each of these cam slots 24 provides a cam hill 26 adapted to engage the bearing 23 for purposes to be presently explained.

The socket 21 provides a reduced portion 27 embraced by the ring 25. The ring 25 is maintained upon the reduced portion for free rotation concentrically with respect thereto by a retaining nut 28 threaded upon the outer end portion of the reduced portion 25.

The electrode 29 of the lamp 12 is adapted to have contact with the electrode 30 of the socket 21, and such latter electrode is projected into bearing engagement with the electrode 29 by a suitable spring 31 arranged within the socket 21.

When the lamp 12 is in latched position upon the socket 21, the latch heads 18 are positioned over the restricted area 19 of the bayonet slots 15. Such latch heads 18 are firmly held in latched position with the flange 14 by springs 32 embracing the shanks 16 and arranged between the bearing 23 and a restricted area 33 of the socket 21. When the latch heads 18 are in latched position with respect to the flange 14, the bearings 23 are located in the area 34 of the cam slots 24, which is at the lowest point of the cam hill 26. To remove the latched engagement of the latch heads 18 with the flange 14, the ring 25 is rotated in a direction so as to cause the bearings 23 to ride upwardly upon the cam hills 26. Such action projects the latch pins 17

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against the action of the springs 32, thereby disposing the latch heads 18 from engagement with the flange 14. In such position of the latch heads, the lamp 12 may be partially rotated to dispose the enlarged areas 19' of the bayonet slots 15 in alignment with the latch heads 18, whereby, upon withdrawal of the lamp base from the socket, the latch heads will pass through the enlarged area 19, thus permitting removal of the lamp from the lamp socket.

By the employment of a ring rotatable concentrically with respect to the lamp socket, the ring serves to maintain the latch pins 17 in projected position, thus freeing the hands of the operator for the purpose of removing the lamp from the socket. To remount the lamp in the socket, the ring is rotated in a direction to permit the bearings to ride down the cam hills to the area 34 at the base thereof, and into which area the springs 32 will project the bearings 23, with the latch heads 18 in latched engagement with respect to the flange 14. Such an arrangement firmly holds the lamp in its socket and yet permits free and easy removal of the lamp from the socket.

To facilitate rotating the ring 25 there may be provided a laterally extending finger piece or handle 25'.

My invention comprises relatively few parts, is simple in construction, easy of operation, and can therefore be manufactured at an economical cost.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and a partial turn, comprising the combination with a flange on the lamp base and provided with a plurality of bayonet slots and latch pins carried by the socket and having latch heads yieldably held against the flange, of a ring mounted on said socket for rotation concentrically with respect thereto and having in one face thereof a plurality of cam slots engageable with the ends of the pins for projecting the pins relative to the socket to a position to disengage the latch heads from said flange.

2. A mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and a partial turn, comprising the combination with a flange on the lamp base and provided with a plurality of bayonet slots and latch pins carried by the socket and having latch heads yieldably held against the flange, of a ring mounted on said socket for rotation concentrically with respect

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thereto and having in one face thereof a plurality of cam slots engageable with the ends of the pins for projecting the pins relative to the socket to a position to disengage the latch heads from said flange, said socket having a reduced portion on which said ring is rotatably mounted, and a retaining nut for said ring threaded upon said reduced portion.

3. A mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and a partial turn, comprising the combination with a flange on the lamp base and provided with a plurality of bayonet slots and latch pins carried by the socket and having latch heads yieldably held against the flange, of a member mounted on said socket for rotation concentrically with respect thereto and having in one face thereof a plurality of cam slots engageable with the ends of the pins for projecting the pins relative to the socket to a position to disengage the latch heads from said flange.

4. A mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and a partial turn, comprising the combination with a flange on the lamp base and provided with a plurality of bayonet slots and latch pins carried by the socket and having latch heads yieldably held against the flange, of a member mounted on said socket for rotation concentrically with respect thereto and having in one face thereof a plurality of cam slots engageable with the ends of the pins for projecting the pins relative to the socket to a position to disengage the latch heads from said flange, said socket having a reduced portion on which said member is rotatably mounted, and a retaining nut for said member threaded upon said reduced portion.

5. A mechanism for facilitating the removal of a lamp from its socket, in which socket the lamp has been inserted by a straight thrust and a partial turn, comprising the combination with a flange on the lamp base and provided with a plurality of bayonet slots and latch pins carried by the socket and having latch heads yieldably held against the flange, of a ring mounted on said socket for rotation concentrically with respect thereto and having in one face thereof a plurality of cam slots engageable with the ends of the pins for projecting the pins relative to the socket to a position to disengage the latch heads from said flange, said socket having a reduced portion on which said ring is rotatably mounted, a retaining nut for said ring threaded upon said reduced portion, and a lateral lug on said ring providing a finger piece.

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