April 1, 1924. 1,488,888

H. P. LEWENSOHN

THEATER LIGHTING DEVICE

Filed Nov. 10, 1922

Fig. 2

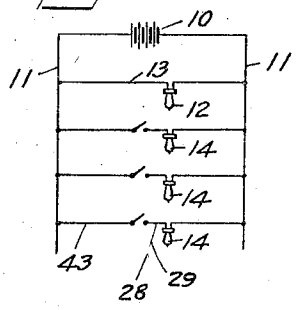


Fig. 1

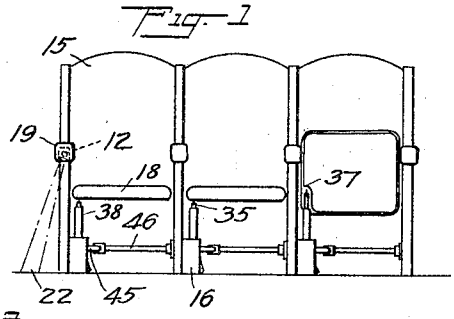


Fig. 3

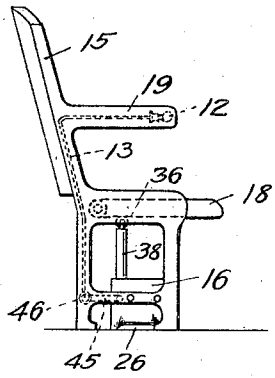


Fig. 4

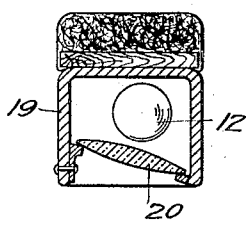


Fig. 5

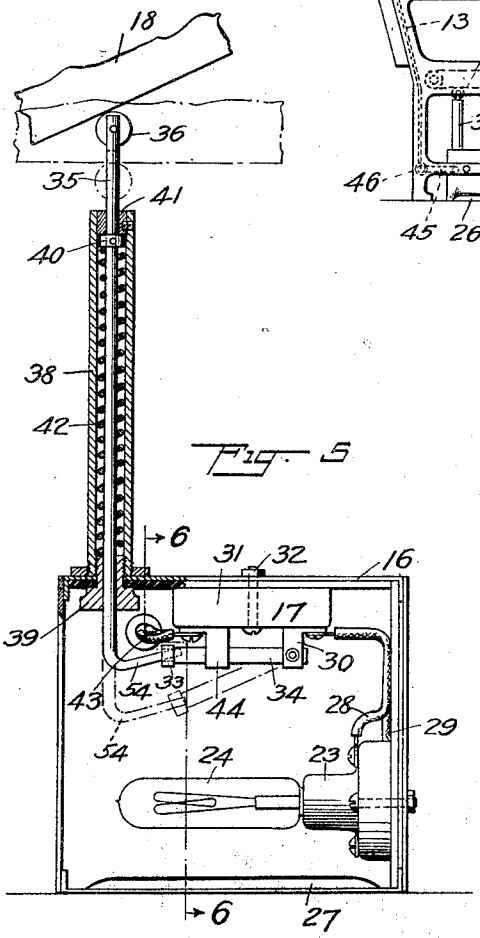


Fig. 6

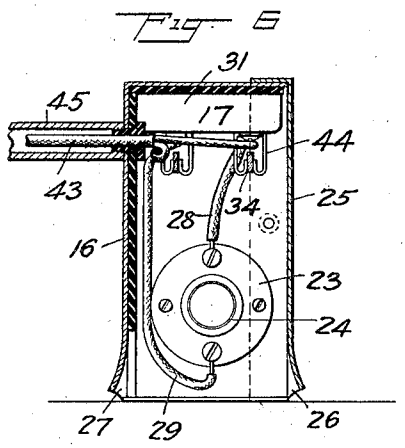
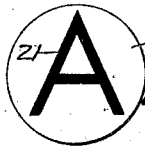


Fig. 7



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UNITED STATES PATENT OFFICE.

HENRY P. LEWENSOHN, OF NEW YORK, N. Y.

THEATER-LIGHTING DEVICE.

Application filed November 10, 1922. Serial No. 599,977.

To all whom it may concern:

Be it known that I, HENRY P. LEWENSOHN, a citizen of the United States, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Theater-Lighting Devices, of which the following is a specification.

This invention relates to theater lighting and is especially applicable to systems and devices for lighting aisles and seat spaces in theaters.

One of the objects of this invention is the provision of simple, compact means, so positioned with relation to the seat as to be ordinarily unnoticed, for automatically lifting a seat into a substantially upright position when said seat is unoccupied and for so indicating unoccupied seats that an empty seat may be readily located from a considerable distance by an observer though the house be in darkness.

A still further object contemplated by this invention is the disposition of seat and aisle lights in such a manner as to prevent panic due to darkness in case of accidental cutting off of the current from the remaining lamps of the house.

For the attainment of the aforesaid and other objects which will appear as the description progresses, I employ the devices, arrangements, and combinations of parts shown in the preferred forms in the accompanying drawings, in which,

Fig. 1 is a front elevation of part of a row of theater chairs showing my improved device in position thereon. Fig. 2 is a wiring diagram of one of the possible circuits to the various seat and aisle lights. Fig. 3 is a side elevation of a chair with my improved device in position thereon. Fig. 4 is a vertical section of the chair arm showing the preferred means for casting the illuminated aisle letter on the floor. Fig. 5 is a vertical section of the automatic seat lighting device and seat lifter. Fig. 6 is a vertical section of the same on line 6—6 of Fig. 5. Fig. 7 is a plan view of a lens which may be used in the illumination of an aisle designating character.

In the illustrated practical embodiment of my invention, I prefer to provide means arranged on the exit lighting circuit and positioned under each seat for lighting up part of the floor area when the seat is raised or unoccupied. This arrangement is advantage particularly in motion picture theaters. Panic has been occasioned in such theaters by reason of the fact that the picture machine operator in emergencies, such as in case of fire and in the excitement incident thereto, sometimes unthinkingly opens the master lighting switch to cut off the power from his machine quickly, whereby the entire house is thrown into darkness. The exit lighting system is however, usually connected on a different circuit from the remaining lights of the house, and is therefore unaffected by the throwing out of the master switch. By arranging my improved seat and aisle lighting system on the exit lighting circuit, sufficient light is always provided for the orderly exit of the audience in emergencies, even though the rest of the lighting system is out of operation.

Referring to the wiring diagram, (Fig. 2), the source of current 10 supplies power to the conductors 11 and preferably to the exit lights, not shown. The aisle light 12 receives its current through the conductor 13 suitably connected as in parallel to the conductors 11 whereby said light 12 is always lighted when the exit lamps are lighted. Each of the theater chairs 15 is supplied with a lamp 14 arranged in a suitable casing as 16, said lamp 14 being preferably connected in parallel with the conductors 11. A switch 17, controlled by the raising and lowering of the chair seat 18, is interposed in the line to said lamp, as will be more fully described hereinafter. It will be noted that the light from the lamps 12 and 14 is out of the line of vision to the stage, and is so directed that only predetermined portions of the floor of the theater are illuminated, and that the stage and house lighting effects are therefore in no manner interfered with. The lamp 14 is preferably arranged in the hollow arm 19 of the chair 15, and is positioned above a lens 20. Said lens has the opaque aisle character 21 preferably painted or otherwise formed thereon, Fig. 7, and is preferably obliquely arranged so that the light from the lamp 12 is cast in the aisle alongside of the end seat of the row in the manner indicated in Fig. 1. The opaque letter of the lens serves to cut off the light from a portion of the illuminated part of the floor so that the char-

acter appears on the floor of the aisle as a dark surface in the midst of a lighted area as 22.

Referring now to the means for casting a light underneath the seat, the casing 16 carries the lamp socket 23, in which the lamp 24 is mounted. Said lamp 24 is preferably of an extremely low candle power, whereby the light from said lamp stands out principally because of the contrast with the surrounding darkness of the floor and the consumption of current is minimized. A suitable cover as 25 for said casing 16 is provided with a suitable opening as 26 preferably near the lower end thereof, through which opening the light from the lamp 24 is cast on the floor. A similar opening 27 may be made near the bottom edge of the other side of the casing 16, for allowing the light from the lamp 24 to be directed on to the floor underneath the seat. The metal of the cover 25 and of that part of the casing 16 immediately above the openings 26 and 27 respectively, is pressed outwardly a sufficient distance so that the light from the lamp 24 may pass through said openings on to the floor, the curvature of the pressed out portion being such as to direct said light on to the floor adjacent to said casing 16. Suitable wires as 28, 29, are connected to the socket 23 and lead to the hinge jaws 30 of the knife switch 17. Said knife switch is secured as by means of its base 31, to the upper side of the casing 16, as by means of any suitable fastening such as the bolt 32. The switch cross bar 33 is connected to the knife blades 34 of the switch and has a suitable opening near the middle thereof, through which the bent end 54 of the rod is passed. At the upper end of said rod 35, is a suitable roller 36, adapted to engage the under side of the chair seat 18, a suitable plate as 37 being secured to the under side of said seat to minimize the friction of the roller thereon. Said rod 35 is suitably supported for vertical reciprocation as by means of the tube 38 suitably mounted in the casing 16 as by means of the nut 39. A collar as 40 near the upper end of the rod 35 serves to limit the upward motion of said rod when said collar comes in contact with the bushing 41 secured in the upper end of said tube 38. For urging said rod 35 into its uppermost position, a compression spring 42 is inserted coaxially with said rod in said tube 38 between said collar 40 and the nut 39.

It will be seen that when the seat 18 is lowered into position for occupancy, the rod 35, through the roller 36, is forced downwardly, whereby the bent end 54 thereof carries the cross bar 33 of the switch 17 downwardly, thereby opening said switch and cutting off the current from the lamp 24. When the seated person rises, the compression spring 42 raises the rod 35, whereby the seat is lifted, and more room for passage in the row is provided, the spring at the same time causing the bent end 54 of the rod to raise the cross bar 33 of the switch and to light the lamp 24. Wires 43 are connected to the split switch jaws 44 and obtain power from a suitable source of current as 10. Said wires preferably pass out of the side of the casing 16 and are enclosed in a suitable tube 45. Said tube 45 is joined to the tube 46 in the usual manner. The tube 46 carries in turn the wires or conductors 11 near the lower rear part of the chair and is preferably arranged just in front of the usual foot rest, whereby said tube 46 and the wires carried therein are protected from the feet of the occupants of the chairs immediately behind.

The lamps 24 and 12, by being arranged on the exit lighting circuit are inoperative unless the theater is in use and need no attention. Said lamps by throwing their light on the floor are out of the line of vision and do not tend to distract the attention of the audience, while at the same time they give sufficient light at all times with a minimum consumption of current, to allow the orderly movement of the audience in emergencies, as in case of fire. The lamps are preferably of about one candle power, and while inexpensive to operate, give sufficient light, by contrast with the surrounding darkness, to enable an observer to discover empty seats and aisle characters quickly and at a considerable distance.

It will be understood that various changes may be made in the device illustrated without departing from the spirit of my invention, such changes including for instance the substitution of means other than the spring shown for raising the rod 35, changing the arrangement and connections of the switch 17 and of the lamps, changing the wiring of the various parts, and changing the position and means of application of the character on the lens.

I claim:

1. In a seat lifter and lighting device, a casing having an opening near the bottom thereof, means adapted to automatically raise a seat projecting part way through said casing, and means in said casing operatively connected to said seat raising means for illuminating through said opening a portion of the floor underneath said seat in the raised position of said seat and for automatically cutting off the illumination on the lowering of said seat.

2. In combination with a chair having a movable seat, means adapted to engage the underside of said seat for urging said seat into its raised position, a lamp, a switch mechanically connected to the seat engaging means for illuminating said lamp

when said seat is unoccupied, apertured means for enclosing said lamp and said switch, and means integral with and arranged above the aperture of said enclosing means for directing the light from said lamp downwardly.

3. In a theater seat lifter and lighting device, a casing having an opening near the bottom thereof, an electric lamp in said casing arranged to throw light through said opening, means for automatically raising said seat when unoccupied, passing through said casing for controlling the flow of current to said lamp, and a switch in said casing operated by said seat raising means and arranged in the circuit to said lamp.

4. In a theater seat lifter and lighting device, a casing having an opening therein, a spring pressed rod, projecting through said casing and adapted to engage said seat, a switch in said casing operatively connected to said rod, and a lamp in said casing controlled by said switch and arranged to cast the light therefrom through said opening.

5. In a theater seat lifter and lighting device, means for engaging a seat, a switch operatively connected to said seat engaging means, an electric lamp connected to said switch and means allowing light to pass therethrough and directing said light toward the floor for partially enclosing said switch and said lamp.

6. In a theater seat lifter and lighting device, means for engaging a seat, an electric lamp arranged to illuminate a portion of the floor near said seat, a switch operatively connected to said seat engaging means for cutting off the current to said lamp when said seat is occupied, and a casing adapted to allow some of the light from said lamp to pass therethrough and to direct said light toward the floor, enclosing said lamp and said switch.

7. In a theater seat lifter and lighting device, a casing having an opening therein, a rod projecting through said casing and adapted to engage said seat for urging said seat into the raised position thereof, a knife switch member secured inside of said casing and connected to the lower end of said rod, a second knife switch member secured to said casing and adapted to be engaged by said first mentioned knife switch member on the raising of said seat, and a lamp inside of said casing controlled by said switch and arranged to illuminate through said opening a portion of the floor of the theater.

8. In a seat lifter and lighting device, means controllable by said seat for illuminating a portion of the floor near said seat when said seat is unoccupied comprising means for engaging the under side of said seat, a lamp, means for urging said seat into the raised position thereof, and means operatively connected to said seat engaging means for cutting off the current from said lamp when said seat is lowered and for allowing current to pass to said lamp when said seat is raised, and apertured means for substantially enclosing said seat engaging means, said lamp and the current controlling means, and for directing the light from said lamp through the aperture thereof and on to said floor portion.

9. In a theater seat lifter and lighting device, means adapted to urge a theater seat into its raised position when unoccupied comprising a plunger rod, a roller at the upper end of said rod arranged to engage the under side of said seat, means for urging said rod toward its uppermost position and a tube substantially enclosing said rod and said last mentioned means, and a lighting unit connected to the exit lighting circuit adapted to cast light on the floor near said seat controlled by said rod, comprising a casing into which the lower end of said rod is inserted, said casing being adapted to rest on the floor near said seat and having openings near the bottom thereof, a stationary knife switch member secured to said casing, a moveable knife switch member operatively connected to the lower end of said rod, and arranged to close said switch when said rod is in its uppermost position, and a lamp in said casing arranged to cast light through the opening in said casing.

Signed at New York, in the county of N. Y. and State of N. Y., this 4th day of Nov., 1922.

HENRY P. LEWENSOHN.