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2,430,336

SAFETY DEVICE FOR COLD CATHODE LIGHTS OR THE LIKE

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2 Sheets-Sheet 1

Fig. 1.

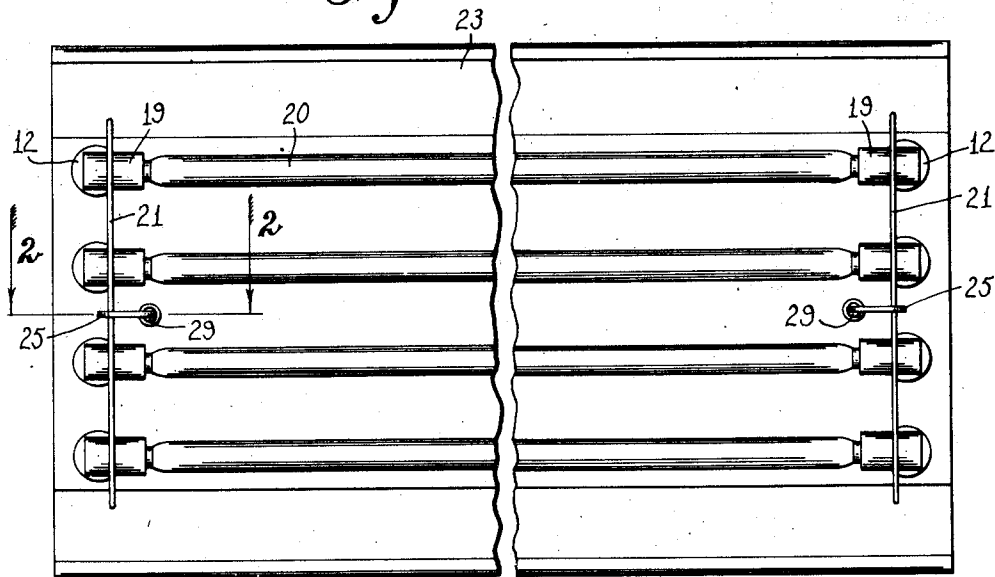


Fig. 2.

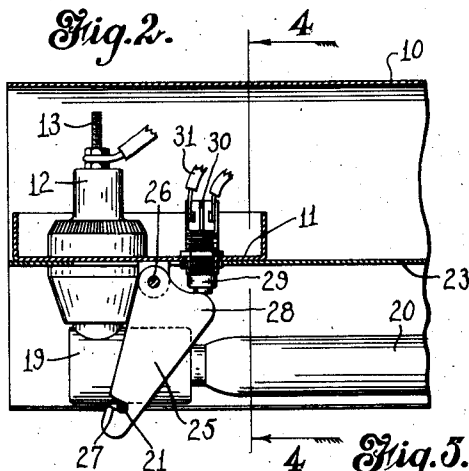


Fig. 3.

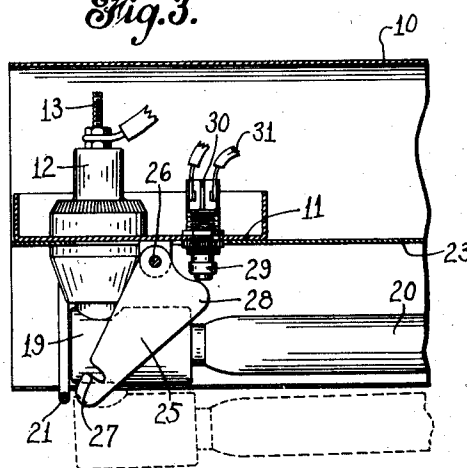
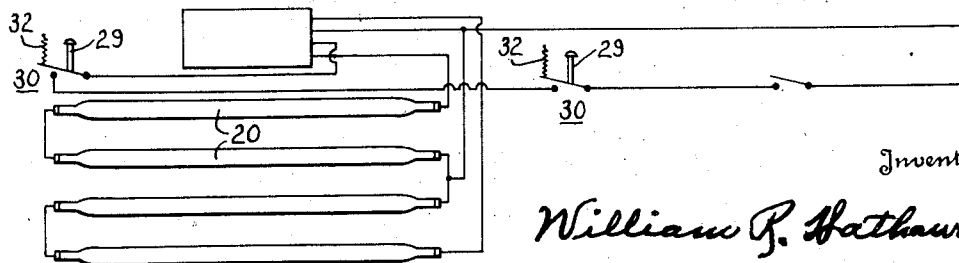


Fig. 5.



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Fig. 4.

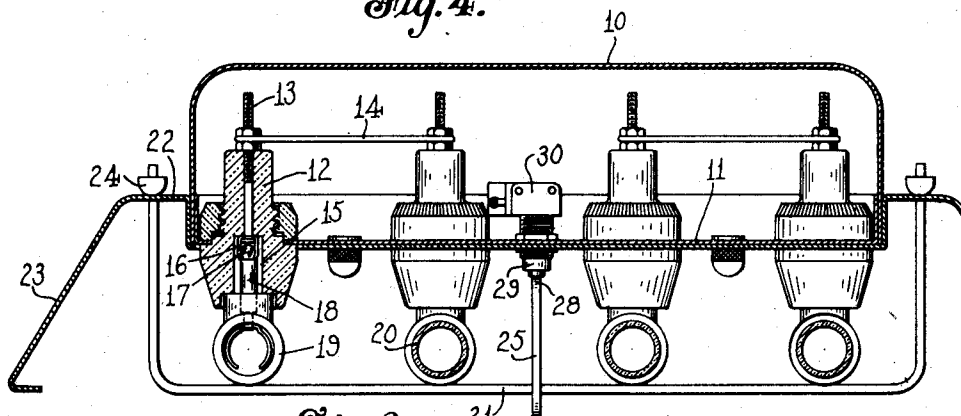


Fig. 6.

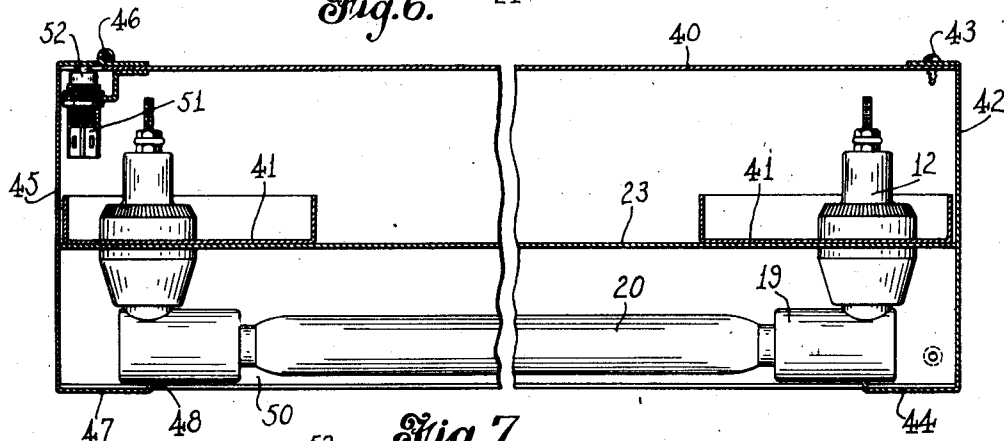
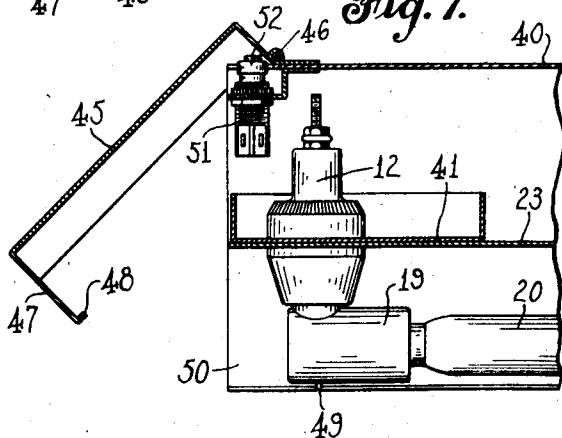


Fig. 7.



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SAFETY DEVICE FOR COLD CATHODE
LIGHTS OR THE LIKE

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6 Claims. (Cl. 200—50)

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This invention relates to safety devices for cathode lamps or the like, and more particularly to a device that will prevent the removal of the lamps or the lamp sockets from their supporting devices prior to the cutting off of the current from the lamps.

In certain forms of lighting, and particularly in connection with what is termed cold cathode lights, a current of high voltage must be employed. As a result, when it is necessary to remove the lamps from their sockets for any reason it is imperative that the current be turned off, since if this is not done the removal of the lamps may subject the operator to injury from the high-voltage current. These lamps are usually of tubular or cylindrical form, and in order to remove them from their sockets it is often necessary to remove the sockets from the devices by which the sockets are supported. This may cause an arc to jump between the contacts which are being separated, and injurious results may ensue.

I contemplate by the present invention securing the lamps in place in such a way that, before they may be removed, the current must be cut off. This result is achieved by means of a switch normally controlled by the means which secures the lamps in place. This switch is biased to open position, and as soon as the securing means is moved to a position to allow removal of the lamps, the switch will be released and will be moved by its spring to open position to cut off the current from the lamps, so as to obviate all danger of injury to the workman.

One object of the invention is to provide a safety device for securing in place electric lights, such, for example, as cold cathode lights.

Another object of the invention is to provide means for holding the sockets of tubular lamps in place, and to arrange a switch for cutting off current to the sockets, which switch will be controlled by the holding means.

More specifically, the object of the invention is to provide a movable or swinging member to engage the sockets of tubular lamps to hold these sockets in place, this swinging member being of bail-like form and being held in place by a latch member, which latch member in turn controls the position of a switch, which switch serves to cut off the current flowing to the lamp sockets in order to prevent injury to the workman.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

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In the accompanying drawings:

Fig. 1 is a bottom plan view of a lamp fixture embodying my invention;

Fig. 2 is a fragmentary sectional view on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2, showing the socket-securing member in its inoperative position;

Fig. 4 is a transverse sectional view on line 4—4 of Fig. 2;

Fig. 5 is a diagrammatic view showing the wiring arrangement of the lamps;

Fig. 6 is a longitudinal sectional view of a modified form of my invention; and

Fig. 7 is a fragmentary view similar to Fig. 6, showing the parts in open position.

To illustrate a preferred embodiment of my invention, I have shown, in Figs. 1 to 4 of the drawings, a lamp fixture comprising a supporting body or casing 10 having a bottom portion 11 within which are secured a plurality of sockets 12, these sockets being formed of insulating material and having a connector post 13 extending through the upper ends thereof, the connector post of one lamp being connected with that of the adjacent lamp at the same end by a wire 14 so as to connect the lamps together in series, as will be apparent from the diagrammatic wiring view of Fig. 5.

Each of the sockets 12 is provided with a recess 15, within which is disposed a spring socket 16 secured to the lower end of the connector post 13. These spring sockets are adapted to receive and grip an enlargement 17 at the upper end of a post 18 carried by the end socket member 19 adapted to receive the end of one of the tubular or cylindrical lamps 20. The above construction may be of conventional form, and will be readily understood by those skilled in the art without further description.

It will be understood that the sockets 19 are releasably held in place by the engagement of the posts 18 in the spring sockets 16, and these parts may be disengaged by a longitudinal pull. It will also be understood that the sockets 19 must be thus disengaged before they can be removed from the ends of the lamps 20. Therefore, when removing the lamps in order to replace them with new ones, for example, the workman must first draw the post 18 away from the spring socket 16, as shown in Fig. 3 in dotted lines, after which he may by a longitudinal movement pull the socket 19 from the lamp and thus remove the lamp in order to substitute a new one. In drawing the post 18 from the spring socket 16, an arc

is apt to jump between these two members, with injurious effects if the current is not shut off.

In order to prevent such an occurrence, the sockets 19 are held in place by a bail-like securing member 21, which member is of U-shaped form, the body portion lying below the sockets 19 and the legs extending upwardly through openings in flanges 22 upon a reflector 23 secured to the lower portion of the casing 10. These legs are held in place by rounded nuts 24, so that the bail-like member 21 is hinged or pivoted to the flanges 22 to swing from the position shown in Figs. 1 and 2 to the position shown in Fig. 3, in which latter position it will no longer engage the sockets 19.

A latch member 25 is pivoted to the bottom portion 11 of the casing at 26, and is provided with a recess 27 to engage the member 21 and latch it in its operative position. This latch member is provided with a heel portion 28 adapted to engage the plunger 29 of a switch member 30, which controls the current to the sockets 12 and lamps 20 through wires 31. As shown in Fig. 2, the plunger 29 is held in its upward or operative position so that current will flow through the lamps, while, as shown in Fig. 3, the heel 28 of the latch member has swung downwardly and the plunger 29 has been moved downwardly by an actuating spring, shown diagrammatically at 32 in Fig. 5, to open the contacts and shut off the current to the lamps, the switch plunger being normally biased by this spring to open position so that the switch will be open except when the plunger is held upwardly by the heel 28 of latch member 25.

As shown in Fig. 1 of the drawings, and as also shown in the diagrammatic wiring view of Fig. 5, this safety locking structure is provided at each end of the casing 10, so that the sockets at both ends of the lamps will be protected against removal prior to the shutting off of the current.

When it is desired to remove a lamp from the fixture, the workman must first disengage the member 21 from the latch 25, and then swing the member 21 on the pivot members 24 from the position shown in Fig. 2 to the inoperative position shown in Fig. 3. As soon as the latch member 25 has been disengaged by the bail-like securing member 21, the spring 32 will move the plunger 29 downwardly to the position shown in Fig. 3 to shut off the current from the lamps. Thus it will be seen that the removal of the lamps from the sockets, and also the removal of the sockets 19 from the sockets 12, is positively prevented prior to the disengagement of the members 21 from the sockets 19, and therefore prior to the cutting off of the current from the lamps.

In Figs. 6 and 7 of the drawings I have shown a modified form of my invention, in which the casing 40 is provided with lower or bottom portions 41 to which the lamp sockets 12 are secured as before. The reflector 23 is secured to the members 41, and the sockets 19 and lamps 20 are of the form and construction described in connection with Figs. 1 to 4.

Adjacent one end of the casing 40 an end member 42 is secured to the casing by screws 43, this member having an inwardly extending lower flange 44 engaging the sockets 19 and holding them in place. At the other end of the casing an end cap 45 is hinged to the casing at 46 to swing outwardly therefrom, as shown in Fig. 7, this cap being provided with a flange 47 adapted to lie below the sockets 12 and having an upwardly turned end portion 48 designed to engage in a recess 49 in the lower portion of the side walls 50 of the re-

flector 23, so that this end cap 45 will ordinarily be releasably held in closed position.

Adjacent the upper end of the casing is a spring-biased switch, shown conventionally at 51, this switch having an actuating plunger 52 normally held in its lower or operative position by the portion of the cap 45 adjacent the hinge 46, as shown in Fig. 6.

When the parts are in the position shown in Fig. 6, it will be seen that the sockets 19 will be held in place, and it will be impossible to disengage them from the sockets 12 in order to remove the lamps 20. When it is desired to remove the lamps, the lip 48 will be disengaged from the recess 49, and the cap 45 swung from the position shown in Fig. 6 to that shown in Fig. 7. In this position, the upper portion of the cap 45 will no longer engage the plunger 52, and the latter will be moved upwardly by its spring to shut off the current from the lamps 20.

While I have shown and described some preferred embodiments of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variations within the spirit of the invention and within the scope of the claims.

What I claim is:

1. A safety device for tubular lamps, comprising a support, a plurality of lamp sockets secured to said support, a member hinged to the support and adapted to be swung to position to engage said sockets to prevent removal thereof from the support, a pivoted latch to hold said member in engaging position, and a switch for controlling delivery of current to the sockets, said switch being actuated by said latch.

2. A safety device for tubular lamps, comprising a support, a plurality of lamp sockets secured to said support, a member hinged to the support and adapted to be swung to position to engage said sockets to prevent removal thereof from the support, a pivoted latch engaging said member to hold it in operative position, a switch biased to open position, said switch having a part engaged by said latch when the latter is engaged with said member and released by said latch when the latter is disengaged from said member whereby said sockets are held against removal from the support when said switch is closed.

3. A safety device for tubular lamps, comprising a support, a lamp socket removably secured thereto, a member carried by the support and removable to position to engage the socket to prevent its removal from the support, a latch element to engage said member, and a switch controlling the supply of current to the socket, said switch being controlled by said latch element.

4. A safety device for tubular lamps, comprising a support, a lamp socket removably secured thereto, a member carried by the support and removable to position to engage the socket to prevent its removal from the support, a pivoted latch element to engage said member, and a switch controlling the supply of current to the socket, said switch being controlled by said latch element.

5. A safety device for tubular lamps, comprising a support, a lamp socket removably secured thereto, a member carried by the support and removable to position to engage the socket to prevent its removal from the support, a latch element to engage said member, a switch controlling the supply of current to the socket, and

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a spring urging said switch to open position, said switch being engaged and retained in closed position by said latch element when the latter is engaged with said member, and said spring maintaining the latch element in engagement with said member.

6. A safety device for tubular lamps, comprising a support, a lamp socket removably secured thereto, a bail-like member pivotally carried by the support and swingable to position to engage the socket to prevent removal thereof from the support, a pivoted latch to engage said member and hold it in operative position, and a switch controlling the supply of current to the socket, said switch being controlled by said latch.

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6

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,135,358	Cole	Apr. 13, 1915
1,413,397	Eaton	Apr. 18, 1922
1,947,634	Anderson	Feb. 20, 1934
2,288,376	Tuppen	June 30, 1942
2,353,507	Schraig	July 11, 1944
2,397,595	Conlan	Apr. 2, 1946
2,405,815	Cartun	Aug. 13, 1946

FOREIGN PATENTS

Number	Country	Date
524,336	Germany	May 12, 1931