March 16, 1943. I. A. YOST ET AL 2,313,983

LAMP FIXTURE

Filed Oct. 16, 1940 2 Sheets-Sheet 1

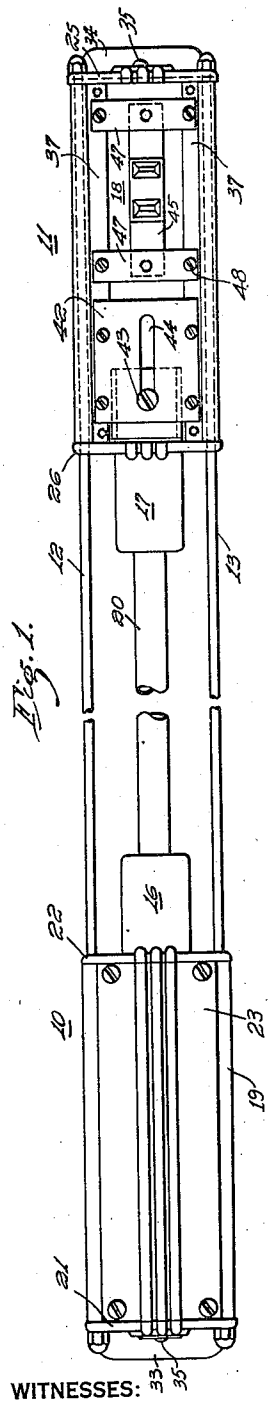


Fig. 1.

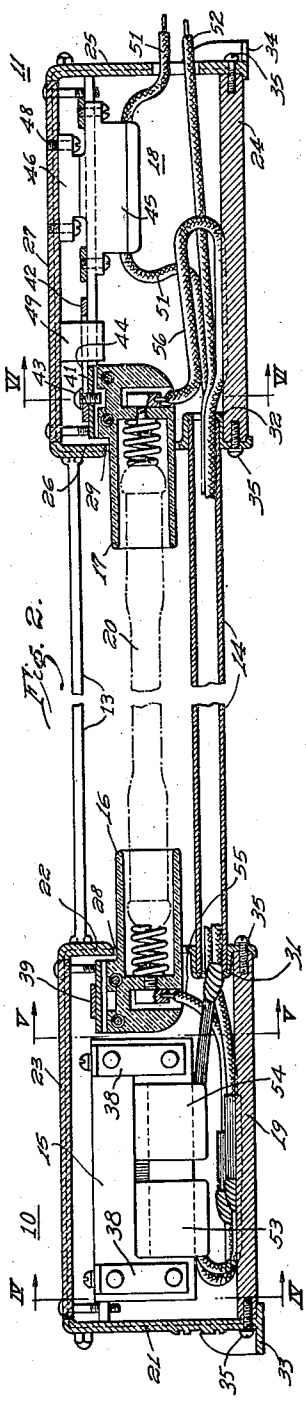


Fig. 2.

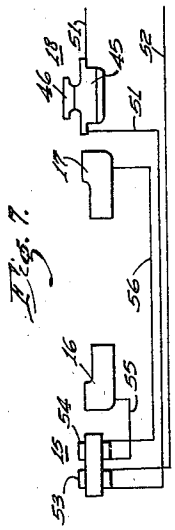


Fig. 7.

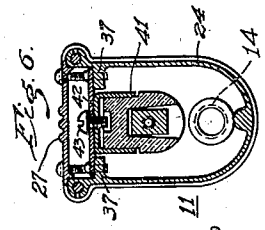


Fig. 6.

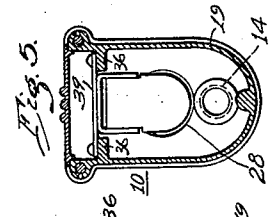


Fig. 5.

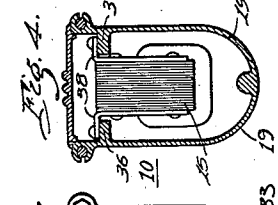


Fig. 4.

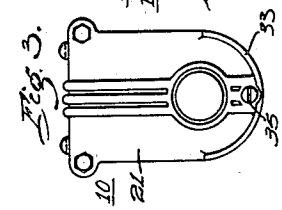


Fig. 3.

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LAMP FIXTURE

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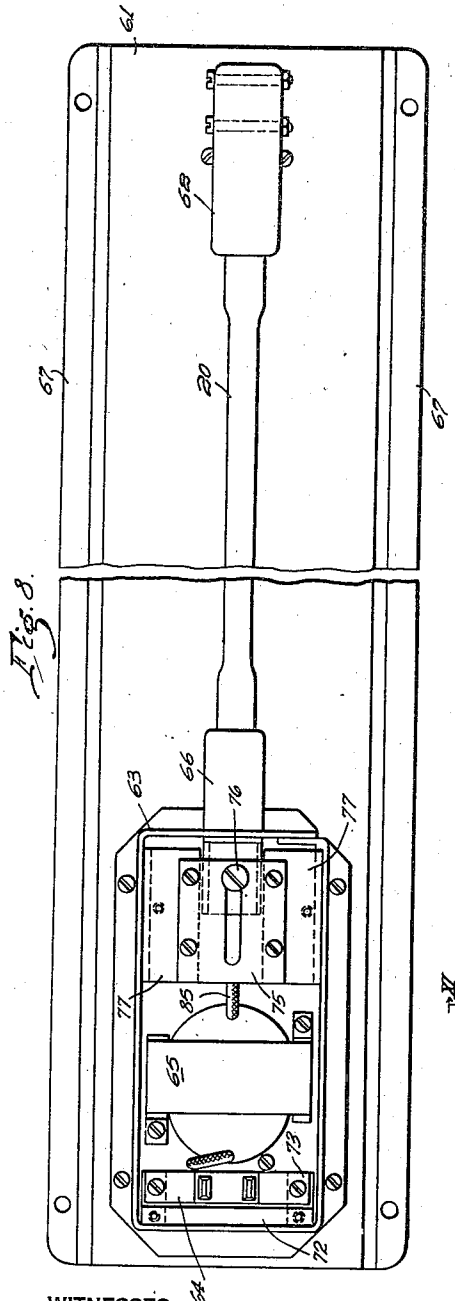


Fig. 8.

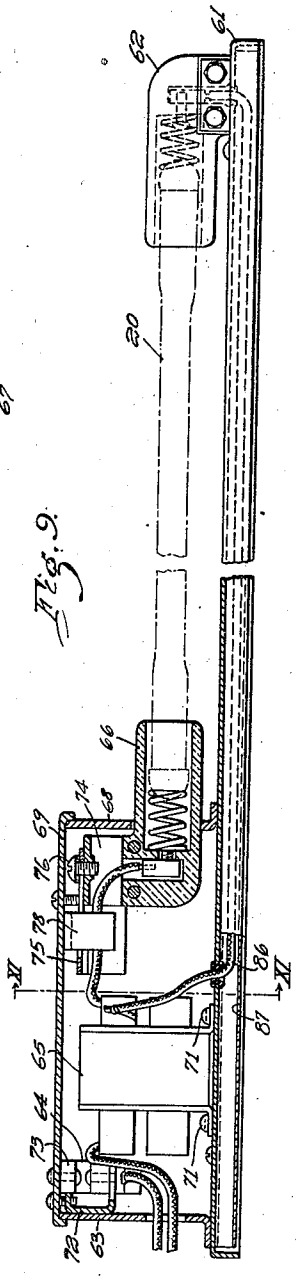


Fig. 9.

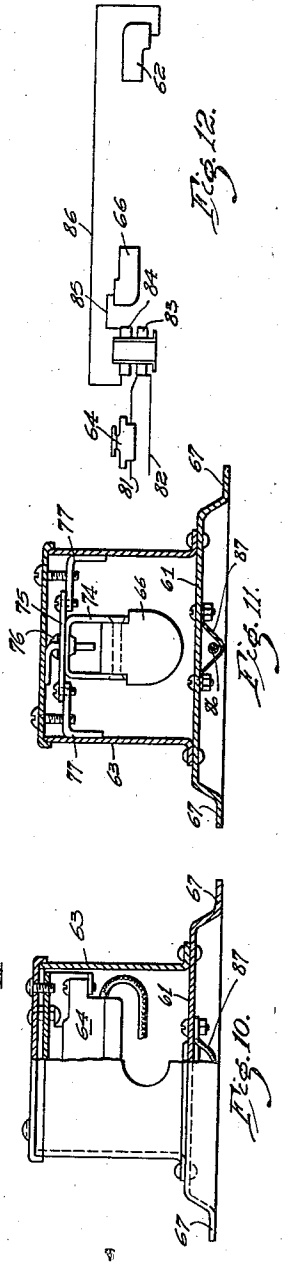


Fig. 12.

Fig. 11.

Fig. 10.

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UNITED STATES PATENT OFFICE

2,313,983

LAMP FIXTURE

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Application October 16, 1940, Serial No. 361,350

11 Claims. (Cl. 240—6)

Our invention relates, generally, to lamp fixtures and, more particularly, to fixtures for use with elongated lamps or mercury discharge devices of the type used for producing germicidal radiations such, for example, as the Sterilamp.

The object of our invention, generally stated, is to provide a lamp fixture especially adapted for use with Sterilamps or the like, which is of simple and economical construction, and which provides a complete unitary lamp and control assembly adapted for mounting within showcases and the like.

A more specific object of our invention is to provide a fixture construction suitable for use with Sterilamps or the like, which embodies in one complete assembly the lamp sockets, transformer and other auxiliary control devices necessary for the proper operation and control of the lamp.

A further object of the invention is to provide, in a fixture of the character described, for utilizing the mounting base or runner member as a reflector.

Another object of our invention is to provide a fixture of the character described which is so constructed and of such appearance that it may be used for showcase mounting and the like, in an exposed position.

These and other objects of the invention will become more apparent from the following detailed description when read in conjunction with the drawings wherein:

Figure 1 is a top plan view with one of the housing covers removed of a fixture embodying the principal features of the invention,

Fig. 2 is a side view partially in section of the fixture of Fig. 1, showing both housing covers in place,

Fig. 3 is a left-hand end view of Fig. 1,

Fig. 4 is a cross-section view taken along the line IV—IV of Fig. 2,

Fig. 5 is a cross-section view taken along the line V—V of Fig. 2,

Fig. 6 is a cross-section view taken along the line VI—VI of Fig. 2,

Fig. 7 is a wiring diagram showing the electrical connections of the fixture of Fig. 1,

Fig. 8 is a top plan view with housing cover removed, of another embodiment of the invention,

Fig. 9 is a side view, partially in section, of the fixture of Fig. 8,

Fig. 10 is an end elevational view of Fig. 9, partly broken away to show the position of the safety switch,

Fig. 11 is a cross-section view along line XI—XI of Fig. 9, and

Fig. 12 is a wiring diagram showing the electrical connection of the fixture of Fig. 8.

A preferred embodiment of the invention may comprise two elongated end housings secured together in spaced end-to-end relation by means of a pair of tie rods and having a tubular member extending therebetween to carry electrical conductors. A transformer and one socket is mounted in one of the housings, and a safety switch and the other socket in the other housing. The housings are of die-cast construction of an ornamental nature and have removable top cover plates. The cover plate for the housing containing the safety switch and the one socket, which is adjustable with respect to the other socket to permit insertion of the lamp, carries one part of the safety switch so that the primary circuit of the transformer is opened when the cover is removed and also carries a safety clip which prevents the cover plate from being fastened in position if the lamp socket is not in its normal operating position.

Another embodiment comprises an elongated base or runner member of rectangular shape on one end of which one of the sockets is mounted and at the other end a housing with a removable cover plate for the safety switch, transformer and the other socket which is adjustably mounted therein. The wiring between the sockets is carried by a wiring trough attached to the underside of the runner member. The cover plate carries one part of the safety switch and also a safety clip.

Referring to Figs. 1 through 7 of the drawings, there is shown a lamp fixture which embodies the principal features of our invention, and which comprises generally a pair of end housings 10 and 11 connected together by means of tie rods 12 and 13 and a tubular member 14, a transformer 15, a pair of sockets 16 and 17 for the lamp 20 and a safety switch 18.

In this instance the housings 10 and 11 are of substantially the same construction and are preferably made of aluminum. The housing 10, for example, comprises a U-shaped body portion 19, an outer end plate 21, an inner end plate 22 and a movable cover plate 23. Likewise the housing 11 comprises a U-shaped body member 24, an outer end plate 25, an inner end plate 26 and a removable cover plate 27. The inner end plates 22 and 26 of the housings are provided with openings 28 and 29 therein to receive the tubular portions of the sockets 16 and 17,

and are also provided with inwardly extending flange members 31 and 32 to receive the tubular member 14. As shown in Fig. 2, the outer end plates 21 and 25 are provided with mounting flanges 33 and 34 and all of the end plates are attached to their associated body portions at the bottom by means of screws 35. The tie rods 12 and 13 not only function to retain the housings 10 and 11 in spaced relation, but also function to clamp the end plates of each housing together at the top as shown in Fig. 2 and serve as a protection against lamp breakage from objects falling against the lamp.

As shown in Fig. 4, the body portion 19 of the housing 10 is provided with oppositely disposed internal mounting flanges 36 which extend longitudinally thereof near the upper edge of the body portion. As shown in Fig. 6, the body portion of the housing 11 is likewise provided with mounting flanges 37.

The transformer 15 and socket 16 are mounted within the housing 10. In this instance the transformer 15 is mounted as shown in Figs. 2 and 4 by means of the support members 38 which are integral parts of the transformer attached to the mounting flanges 36. The socket is stationarily mounted within the housing 10 on the flanges 36 as shown best in Fig. 5 by means of the supporting bridge 39.

The other socket 17 and the safety switch 18 are mounted within the housing 11. In this instance the socket 17 is adjustably mounted for movement toward and away from the socket 16 in order to facilitate placing the lamp in the sockets in operating position. Accordingly the socket 17 is supported by means of a clip 41 supported from a socket adjusting plate 42 by means of a screw 43. As shown in Fig. 1, the adjusting plate 42 is provided with a slot 44 to receive the adjusting screw 43 which permits the socket to be moved back into the housing to receive the lamp.

Any suitable type of safety switch 18 may be utilized in order to prevent energization of the primary winding of the transformer until the cover plate 27 and socket 17 are in their normal positions. In this instance the safety switch is of the two-piece type having a stationary portion 45 and a removable portion 46. The safety switch is so mounted that when the cover plate 27 is removed it functions to open the primary circuit. The stationary portion 45 of the safety switch is mounted within the housing on the cross members 47 attached to the mounting flanges 37 as shown in Fig. 1. The other portion 46 of the safety switch is attached directly to the under side of the cover plate by means of screws 48 as shown in Fig. 2. While a two-piece safety switch has been shown, it will be readily understood that any other suitable type of switch may be utilized for this purpose so long as it performs the same function.

In order to prevent the cover plate 27 from being replaced and the safety switch 18 from becoming closed when the adjustable socket 17 is not in its proper operating position as shown in Fig. 2, the cover plate 27 is provided with a safety clip 49 which extends downwardly into the slot 44 in the adjusting plate 42. It will be apparent that, unless the socket 17 is in the position shown, the safety clip 49 cannot be inserted into the slot 44 and thereby prevents the cover plate 27 from being replaced.

The circuit connections of the fixture are shown in Fig. 7. Conductors 51 and 52, which may be connected to a source of current, are connected to the primary winding 53 of the transformer 15 through the safety switch 18. The secondary winding 54 of the transformer is connected to the sockets 16 and 17 by means of conductors 55 and 56.

As shown in Fig. 2, conductors 51, 52 and 56 extend from one housing to the other through the tubular member 14. Accordingly it is apparent that this member not only serves as a supporting member for the housings, but also as a conduit for carrying the electrical conductors between the two housings.

The socket members 16 and 17 are of well known construction, and since the details thereof do not form any part of the present invention, a detailed description thereof has been deemed to be unnecessary.

Figs. 8 through 12 illustrate another embodiment of the invention in which the lamp fixture shown therein comprises, generally, a runner or base portion 61 having a lamp socket 62 stationarily mounted at one end thereof, a housing 63 mounted at the opposite end in which are disposed the transformer 65 and the other socket 66.

The base portion 61 is in the form of an elongated inverted trough having mounting flanges 67 along the sides thereof as shown in Fig. 10, and also functions as a reflector.

In this instance the housing 63 is formed by means of a box-like member 68 attached to the base portion in any suitable manner and is provided with a removable cover plate 69.

In this construction the transformer 65 is mounted directly upon the base portion 61 and attached thereto by means of screws 71 as shown in Fig. 9.

In this instance the safety switch 64 is mounted in a crosswise position at the end of the housing being supported therein by means of the L-shaped members 72 and having its detachable portion 73 attached directly to the under side of the cover plate 69.

The socket 66 is adjustably mounted within the opposite end of the housing by means of a supporting clip 74 attached to the adjusting plate 75 by means of an adjusting screw 76. The plate 75 is supported by means of the L-shaped brackets 77 attached to the sides of the housing as shown in Fig. 11.

This embodiment of the invention is also provided with a safety clip 78 attached to the under side of the cover plate 69 for the purpose of preventing closure of the safety switch until the socket 66 is in its proper operating position as described hereinbefore in connection with the other embodiment of the invention.

The wiring diagram of this fixture is shown in Fig. 12 wherein the conductors 81 and 82 are connected through the safety switch 64 to the primary winding 83 of the transformer. The secondary winding 84 of the transformer is connected to the sockets by means of conductors 85 and 86. As shown in Figs. 9 and 11, the connecting conductor 86 may be carried by means of the wiring trough 87 provided on the under side of the base portion 61.

In view of the foregoing description it will be apparent that our invention provides a lamp fixture suitable for use with Sterilamps and the like which is of extremely simple and lightweight construction. The fixture is of the self-contained type having all of the elements necessary for effecting proper operation and control of the lamp embodied in a single unitary structure which may

be mounted in any desired position. By means of this type of construction the lamp fixtures may be utilized without the necessity for providing separate transformers and safety switches as was the practice heretofore.

While the fixtures shown and described constitute practical embodiments of our invention, it will be apparent that various changes may be made therein without departing from the principles of the invention as disclosed.

We claim as our invention:

1. A lighting fixture for use with straight elongated double-ended discharge lamps comprising, a pair of sockets, means including a housing for supporting the sockets in spaced end-to-end relation to receive the lamp, one of said sockets being adjustably mounted within the housing for movement toward and away from the other socket to permit insertion of the lamp into the sockets, said housing having a removable cover, a two-piece safety switch mounted within the housing for connecting the sockets to a power source, one portion of the switch having a fixed mounting on the housing and the other portion thereof being removable with the cover to effect disconnection of the sockets when the cover is removed, and means carried by the cover disposed to engage the adjustably mounted socket in the event that said socket is in any position except its normal operating position, whereby the cover cannot be positioned on the housing so as to close the safety switch until the lamp is properly positioned in the sockets.

2. A fixture for use with straight elongated double-ended discharge devices comprising, a pair of sockets for supporting and conducting current to the discharge device, means including a housing for supporting said sockets in spaced end-to-end relation, a removable cover plate for the housing, a slotted plate mounted within the housing intermediate the top and bottom thereof for adjustably supporting one of said sockets within the housing for endwise movement toward and away from the other socket to permit insertion of the discharge device into the sockets, and a rigid member attached to the underside of the cover plate and extending downwardly through the slot in the plate so as to engage the socket and prevent attachment of the cover plate in position when the socket is in any other position than its normal operating position.

3. A fixture for use with straight elongated double-ended discharge devices comprising, a pair of sockets for supporting and conducting current to the discharge device, means including a housing for supporting said sockets in spaced end-to-end relation, a removable cover plate for the housing, means for adjustably supporting one of said sockets within the housing for endwise movement within the housing toward and away from the other socket to permit insertion of the discharge device into the sockets, said socket extending outwardly through an opening in one end of the housing, a two-piece safety switch mounted within the housing for controlling the energization of the discharge device, one element of said switch being stationarily mounted within the housing and the other element being attached to and removable with the cover plate, and a downwardly extending member attached to the lower side of the cover plate adapted to prevent it from being placed in such position on the housing as to close the safety switch until the adjustable socket has been actuated to its normal operating position, said member being so positioned on the cover plate as to engage the socket when in a withdrawn position to permit insertion of the discharge device into the sockets.

4. A fixture for elongated discharge devices comprising, a pair of separate housings each having an opening in one end thereof and at least one of said housings having a top opening, means extending between the housings for securing them in spaced relation with the end openings in facing relation, a socket stationarily mounted in one housing adjacent the end opening, a second socket adjustably mounted within the other housing having a top opening adjacent the end opening for movement toward and away from the other socket to permit insertion and removal of the discharge device, said socket having a normal operating position, and a removable cover plate for said housing having a top opening, whereby access to the interior of the housing to provide for adjusting the socket to and from its normal operating position in inserting and removing the discharge device is provided by removal of the cover plate.

5. A fixture for elongated electric discharge devices comprising, a pair of housings each having an opening in one end thereof and at least one of said housings having a detachable cover, a pair of tie rods securing said housings together in spaced end-to-end relation with their end openings in facing relation, a tubular member extending between the housings, a first socket adjustably mounted within the housing having the detachable cover for movement toward and away from the other housing, a socket stationarily mounted in the said other housing, electrical conductors connecting the sockets, said conductors extending through the tubular member, and means interposed between the detachable cover and movable socket for preventing attachment of the cover to the housing unless the movable socket is in its normal operating position with respect to the other socket.

6. A fixture for elongated discharge devices comprising, a pair of housings each having an opening in one end thereof and at least one of said housings having a removable cover plate, a plurality of tie rods interposed between the ends of the housings for securing said housings in spaced relation with end openings in facing relation, a separate tubular member extending between the housings, a socket stationarily mounted in one housing adjacent the end opening, a second socket adjustably mounted in the other housing with the removable cover plate adjacent the end opening, said second socket being movable bodily toward and away from the stationary socket to permit insertion and removal of the lamp, a safety switch mounted in the housing with the removable cover plate, electrical conductors connecting the sockets and safety switch, said conductors extending through the tubular member from one housing to another, said safety switch being actuated by the removable cover plate to open and close the circuit by removal and attachment of the cover plate, and means interposed between the cover plate and movable socket to prevent attachment of said plate to the housing unless the movable socket is in its normal operating position relative to the stationary socket.

7. A lighting fixture adapted for mounting within showcases and the like and for use with an elongated discharge lamp comprising, a pair of elongated rectangular-shaped housings having removable cover plates, one end wall of each of the housings having an opening therein, a lamp socket mounted within each of the housings and

extending through the opening in the end wall, one of said sockets being adjustably mounted for movement relative to the other socket which is stationarily mounted, a plurality of tie rods interposed between the housings adjacent the top edges thereof for connecting the housings together and holding them in spaced relation with the sockets in facing relation to receive the lamp, an elongated tubular member extending between the housings adjacent the bottom edges thereof for carrying the electrical conductors connecting the sockets, a transformer mounted within the housing containing the stationarily mounted socket, a switch mounted within the other housing having a contact element actuated by the cover plate of said housing, electrical conductors connecting the lamp sockets, transformer and switch in circuit relation, said conductors extending through the elongated tubular member between the housings, and means carried by the cover plate of the housing containing the switch disposed to engage the adjustably mounted socket therein when said socket is not in its normal operating position with respect to the other socket.

8. A lighting fixture adapted for showcase lighting and the like and for use with an elongated discharge lamp comprising, a pair of elongated housings, each of said housings having a detachable cover and an opening in one end wall thereof, a first lamp socket fixedly mounted within one of the housings and extending through the end opening, a second lamp socket adjustably mounted within the other housing for movement along its longitudinal axis toward and away from the other socket and also extending through its end opening, means interposed between the ends of the housings including a tubular member for connecting said housings together in spaced end-to-end relation with the sockets in facing relation to receive the lamp, a transformer mounted within one of the housings, a safety switch mounted within the other housing, said safety switch having a contact element actuated by the cover of the housing, conductors connecting the sockets, transformer and switch in circuit relation, said conductors extending through the tubular member from one housing to the other, and means interposed between the cover of the housing in which the safety switch is mounted and the socket therein functioning to prevent attachment of said cover and closure of the safety switch unless said socket is in its normal operating position relative to the other socket.

9. A fixture for elongated electric discharge devices comprising, an elongated base member, a socket rigidly mounted at one end thereof, a housing having a detachable cover mounted thereon at the other end thereof, a socket mounted in the housing and having a portion thereof extending outwardly through an opening in one end of the housing in facing relation to the other socket, means supporting said socket for permitting adjustment thereof toward and away from the rigidly mounted socket for insertion and removal of the discharge device, a transformer mounted within the housing and electrically connected with the sockets, and means interposed between the socket supporting means and the detachable cover of the housing whereby the cover cannot be attached to close the housing unless the adjustable socket is in its normal operating position with respect to the other socket.

10. A fixture for elongated electric discharge devices comprising, an elongated base member, a socket mounted in fixed relation at one end thereof, a housing having a detachable cover mounted at the other end of the base member, a second socket adjustably mounted within the housing and extending through an opening in one end thereof toward the other socket, said second socket being movable toward and away from the other socket to permit attachment and detachment of the discharge device, a transformer mounted in the housing having its secondary winding connected to the sockets, a safety switch mounted in the housing connected in electrical relation with the primary winding of the transformer, said safety switch having a contact element carried by the detachable cover of the housing whereby said switch is opened and closed by detachment and attachment of the cover to the housing, and means carried by the cover cooperative with the adjustably mounted socket to prevent attachment of the cover to the housing and closure of the safety switch unless said socket is in its normal operating position.

11. A fixture for elongated electric discharge devices comprising, an elongated and relatively flat runner member, a socket stationarily mounted at one end of the runner member, a casing having end and side walls mounted at the opposite end of the runner member forming a housing, a detachable cover for the housing, a second socket mounted in the housing in facing relation to the other socket to receive the discharge device, a slotted mounting plate for the second socket whereby said socket is adjustably supported for movement toward and away from the stationarily mounted socket to provide for insertion and removal of the discharge device, a transformer mounted within the housing and electrically connected to the sockets, a safety switch for controlling the primary circuit of the transformer mounted within the housing, said safety switch having a circuit making and breaking element actuated by the cover of the housing whereby the primary circuit is closed when the cover is attached to the housing, and a member attached to the underside of the cover disposed to enter the slot in the mounting plate only when the socket supported thereby is in its normal operating position, thereby to prevent attachment of the cover and completion of the primary circuit of the transformer unless the adjustably mounted socket is in its normal operating position with respect to the stationarily mounted socket.

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