No. 854,827. PATENTED MAY 28, 1907.

E. KUHNE.

SUSPENDING DEVICE FOR ELECTRIC ARC LAMPS AND SIMILAR OBJECTS.

APPLICATION FILED JAN. 31, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

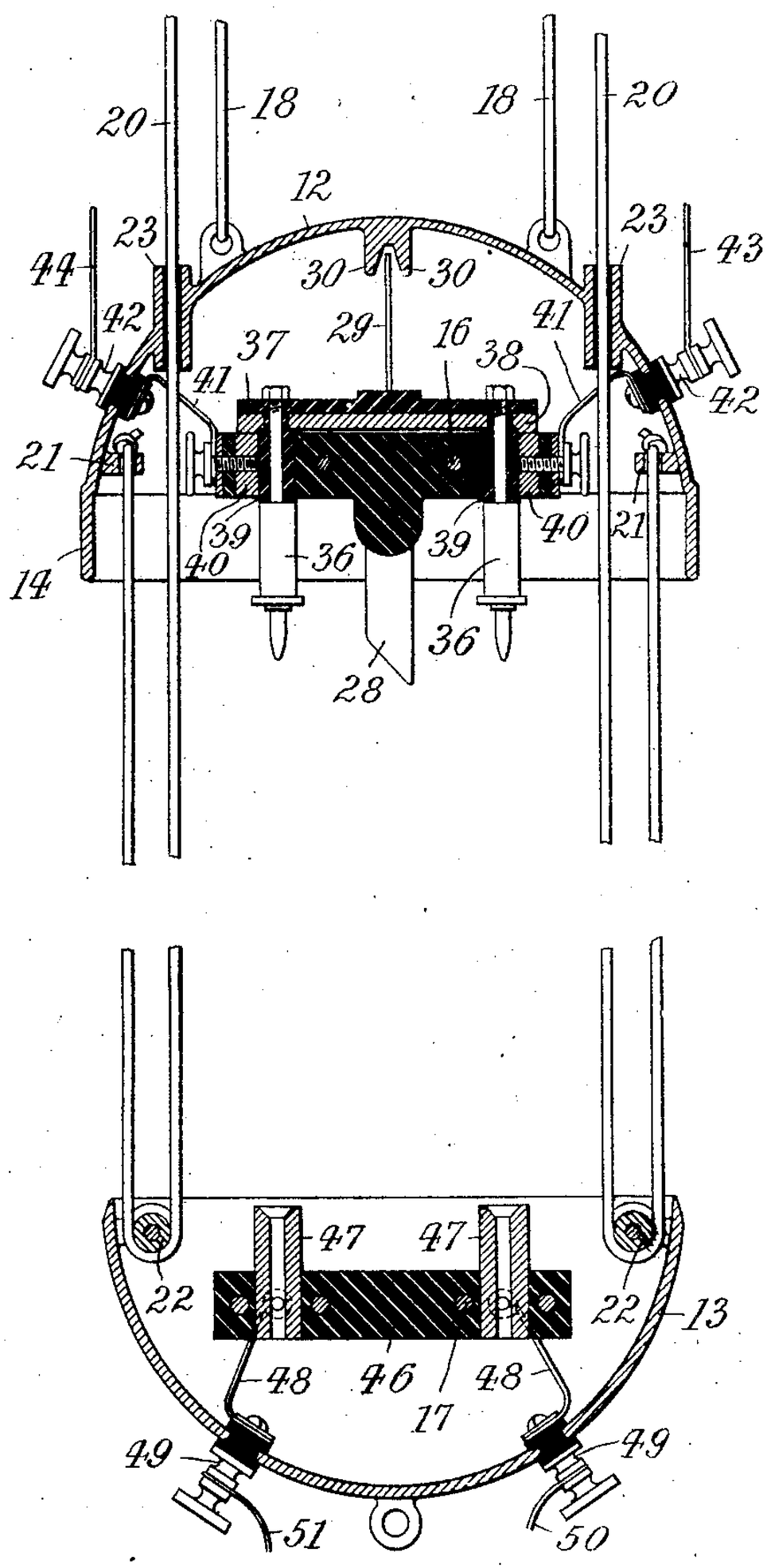


Fig. 4.

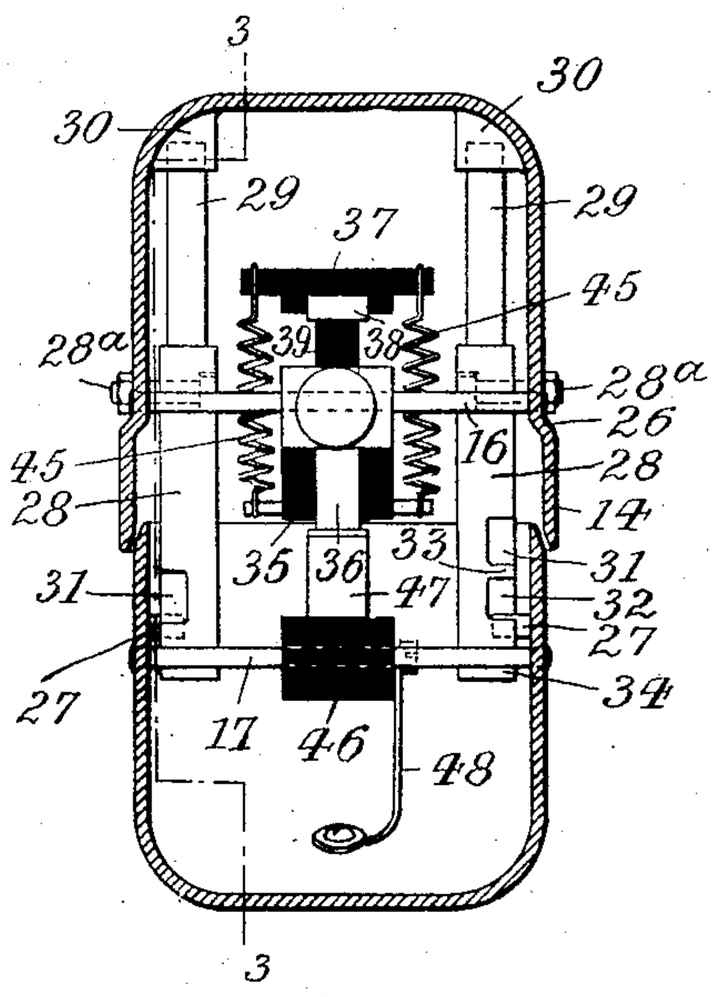
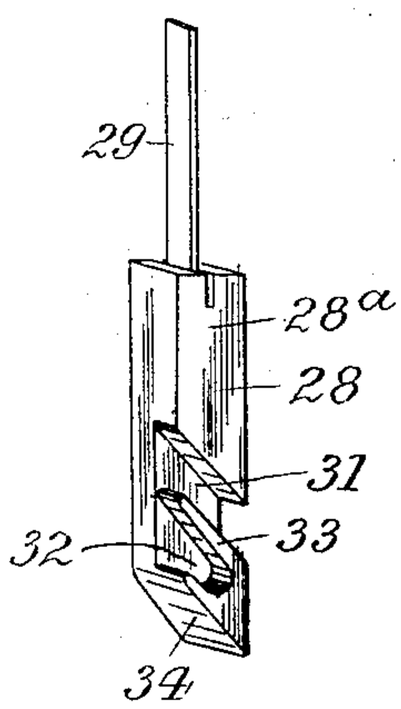


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 2.

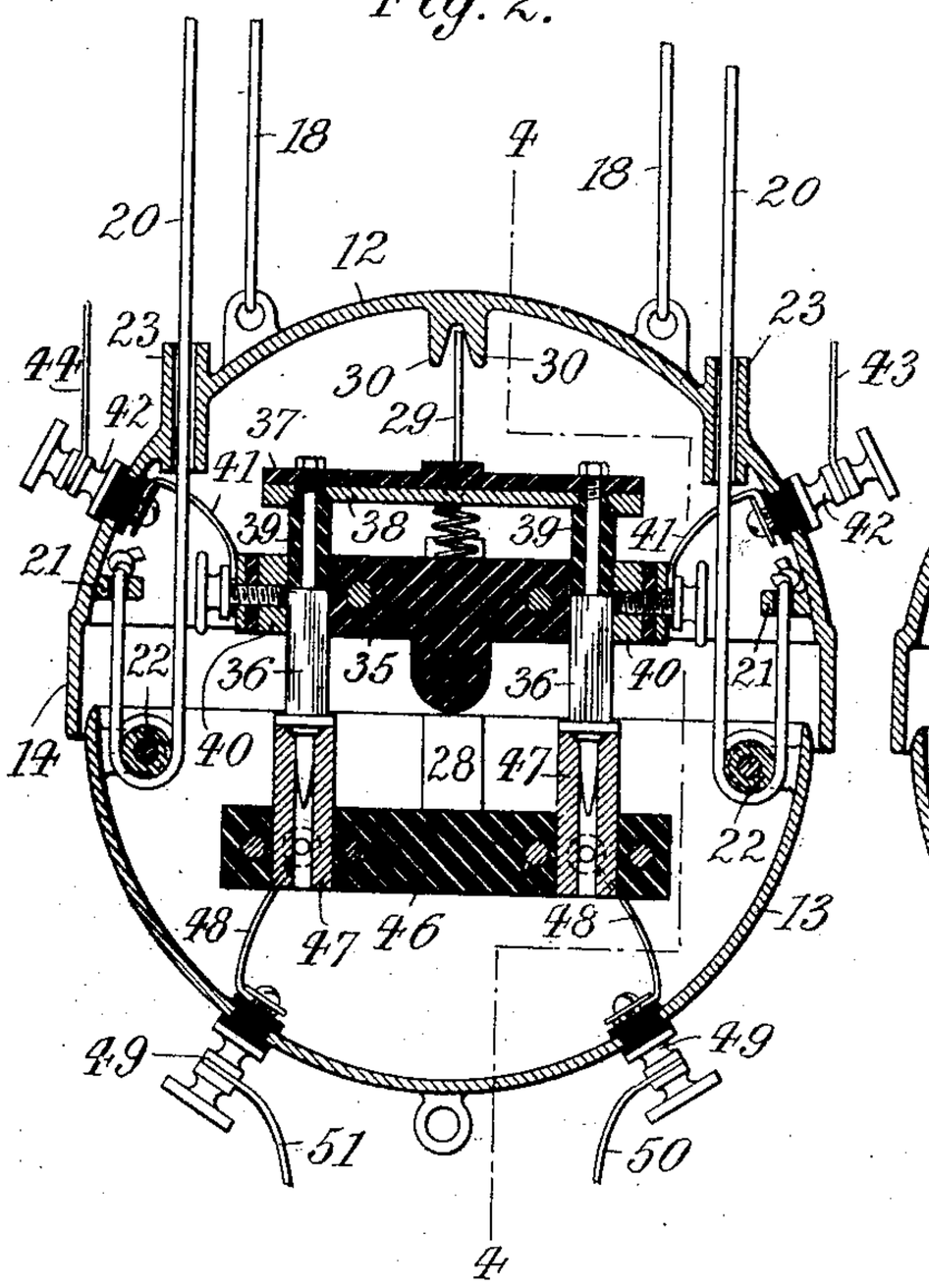


Fig. 3.

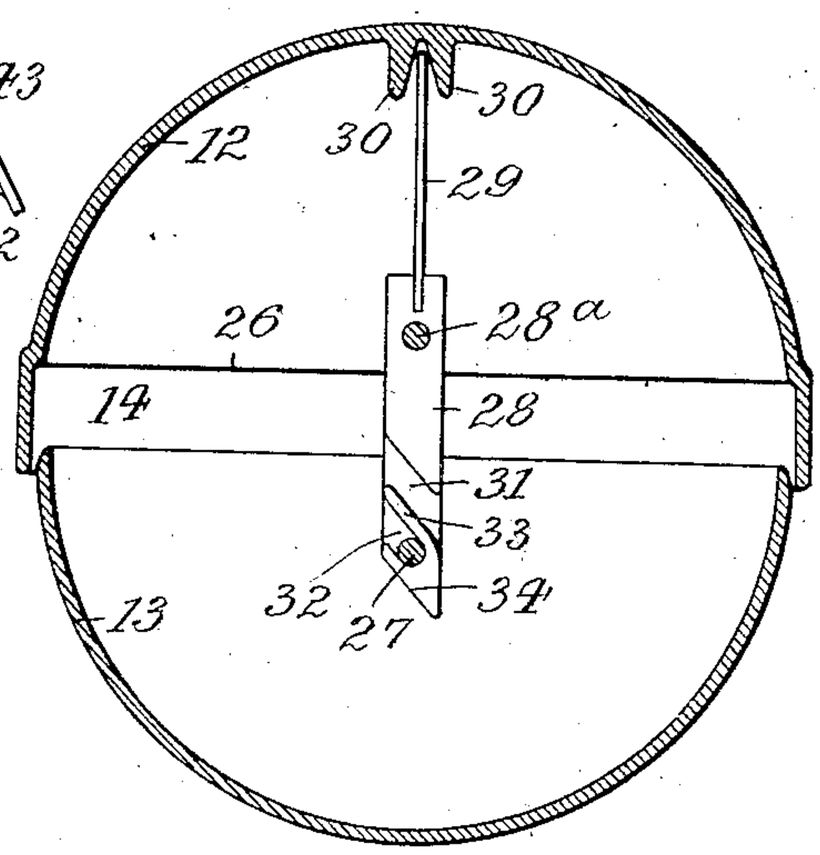


Fig. 6.

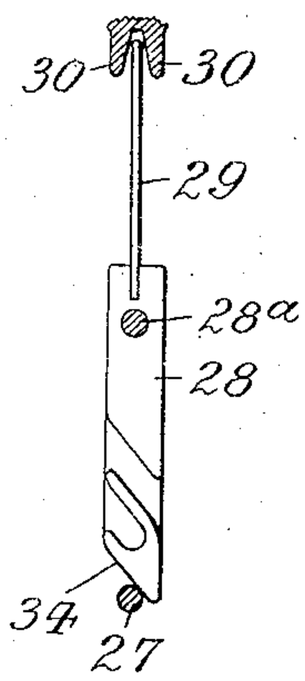


Fig. 7.

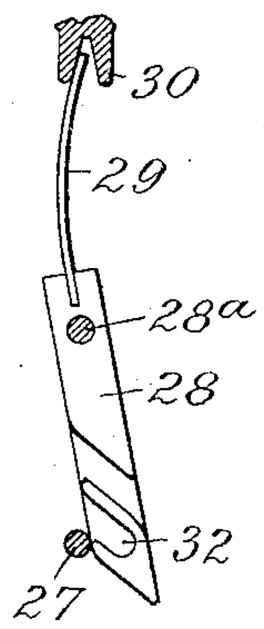


Fig. 8.

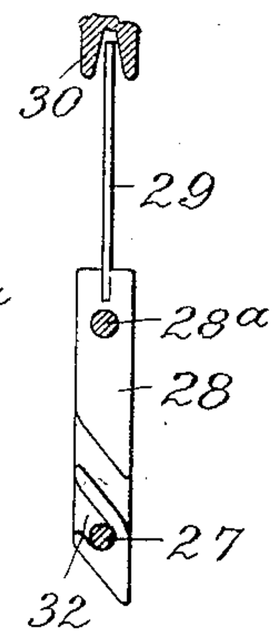


Fig. 9.

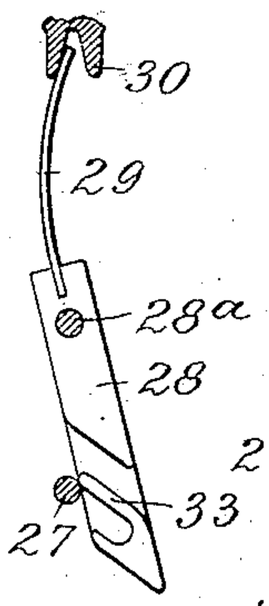


Fig. 10.

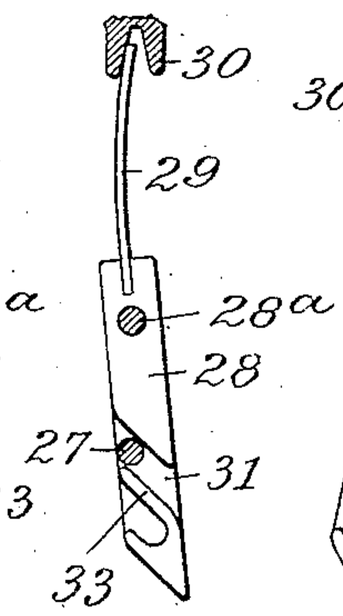
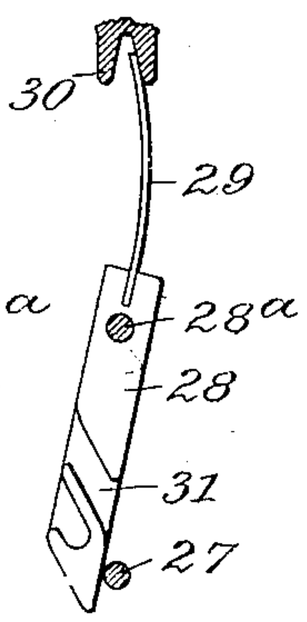


Fig. 11.



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UNITED STATES PATENT OFFICE.

ERNEST KUHNE, OF NEW YORK, N. Y.

SUSPENDING DEVICE FOR ELECTRIC-ARC LAMPS AND SIMILAR OBJECTS.

No. 854,827. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 31, 1907. Serial No. 354,987.

To all whom it may concern:

Be it known that I, ERNEST KUHNE, a citizen of the United States, residing at New York city, Manhattan, county and State of New York, have invented new and useful Improvements in Suspending Devices for Electric-Arc Lamps and Similar Objects, of which the following is a specification.

This invention relates to a suspending device for arc lamps and similar objects, which is composed of two members each carrying one section of a switch. The construction is such that these members may be readily interlocked and uncoupled at a distance, and that by such operation the lamp will be automatically connected to or disconnected from the circuit wires. In this way the manipulation of the lamp, for the purpose of replacing the carbons, etc., is greatly facilitated and the operator is not liable to receive shocks from the current.

In the accompanying drawings: Figure 1 is a central section through the switch-containing casing of the lamp, showing the position of the parts when the lamp is lowered; Fig. 2 is a similar section, showing the position of the parts when the lamp is raised; Fig. 3 a section on line 3—3, Fig. 4, with the switch omitted; Fig. 4 a section on line 4—4, Fig. 2; Fig. 5 a detail of the catch, and Figs. 6–11 are details showing consecutive portions of the catch.

The casing containing the switch of the lamp is composed of two flattened cup-shaped shells 12 and 13. Of these the upper shell 12 is provided at its bottom with a rim 14 adapted to embrace the top of lower shell 13. Shell 12 may be suspended permanently, from posts or other supports. Shell 13, from which the lamp 19 is suspended, may be raised and lowered by means of a doubled hand line 20 accessible from the ground. This line is secured at its ends to lugs 21 of shell 12, passes over pulleys 22 of shell 13, out through guides 23 of shell 12, and is thence guided in suitable manner to hang within reach of the operator. It will be seen that a pull on line 20 will draw shell 13 partly into shell 12, its upward movement being limited by the abutment 26 formed at the top of rim 14. In like manner, shell 13 may be lowered by slacking the line.

Shell 13 is adapted to be locked to shell 12 by means of a pair of catches secured to the latter, and adapted to engage a pair of pins 27 within the former. Each of the catches is composed of a rigid head 28 pivoted at 28^a and provided with a spring shank 29, the upper end of which is received within an upper recessed lug 30 of shell 12. The combined length of head 28 and shank 29 is such that the catch projects to such a distance below shell 12, that it is adapted to grasp pin 27 of shell 13 when the latter is raised into engagement with shell 12. Head 28 is provided with an inclined groove 31 extending across the entire width of the head and open at both ends. Below this groove there is formed a similarly inclined notch or hook 32 which is open at its upper end only and is separated from the groove by an inclined partition 33 having a rounded or sharpened edge. The bottom 34 of head 28 is beveled or inclined in conformity with the slant of the parts 31, 32 and 33. The two catches 28 of the lamp are so fitted that they face in opposite directions, (Fig. 4).

As thus far described, the operation is as follows: When shell 13 is raised by hand line 20, each of its pins 27 will be first carried directly below the beveled base 34 of head 28, (Fig. 6). As the pull on the line continues, the upward movement of the pin will bend spring 29, so as to swing head 28 aside, (Fig. 7), and thereupon cause the pin to enter notch 32, the spring-shank again straightening out, (Fig. 8). Shells 12, 13 are thus interlocked, and the lamp is operatively suspended from its supporting wires. When the lamp is to be lowered, line 20 is again pulled to carry each pin 27 out of notch 32 along the lower side of inclined partition 33, so as to again swing head 28 sidewise, (Fig. 9). As soon as the pin has cleared the front edge of partition 33, head 28 will again be swung forward so that pin 27 will enter the front of groove 31, (Fig. 10). The hand line is now slackened, so that the pin is by the weight of shell 13 and lamp 19 drawn along upper side of partition 33, so as to swing head 28 forward. The hand line being now played out, pin 27 will descend along the back of head 28, (Fig. 11), and permit shell 13 to be lowered to the ground. Means are provided for so cutting out lamp 19, when shell 13 is uncoupled from shell 12, that all electric connections of the lamp are severed and shocks to the operator are prevented. Further, when the lamp is lowered, its wires are short cuited, so therhat the curret flows uninterrupted to the other lamps of the series. Within shell 12 is fitted one section

of a switch, comprising an insulating block 35 which is attached to shell 12 by pins 16, and is perforated for the reception of the two metal shanks or poles 36 of an insulating slide 37. This slide has a metal bottom plate 38 insulated from shanks 36 by non-conducting sleeves 39 arranged at the upper ends of the latter. Block 35 has metal end pieces 40 connected by branch wires 41 with the binding posts 42 of the lamp wires 43, 44. Springs 45 tend to lower slide 37, and thus draw its metal base plate 38 against the metal end pieces 40. Within shell 13 is fitted the second member of the switch, comprising an insulating block 46 which is attached to shell 13 by pins 17 and is perforated for the reception of a pair of upwardly extending tubular metal sockets 47. These sockets are spaced to correspond to the spacing of shanks 36, so that they may receive the pointed lower ends thereof. Branch wires 48 connect sockets 47 with the binding posts 49 of the lamp wires 50, 51. When the shells 12, 13 are interlocked and the lamp 19 is thus in its operative position, sockets 47, by engaging the shanks 36, will force slide 37 upward against action of springs 45. In this position, shanks 36 contact with plates 40, and the lamp is thus placed in circuit, the current flowing as follows: wire 43, post 42, branch 41, plate 40, shank 36, socket 47, branch 48, post 49, wire 50, through lamp 19, and thence through wire 51, second post 49, branch 48, socket 47, shank 36, plate 40, branch 41, post 42, and wire 44. When the shell 13, together with lamp 19, is lowered, socket 47 will release shanks 36, so that slide 37 is drawn down by springs 45, and its plate 38 will contact with end pieces 40, while shanks 36 will be insulated therefrom by sleeves 39. The lamp 19 will thus be disconnected, while the wires 43, 44 will be short circuited, the current traveling as follows: wire 43, post 42, branch 41, contact piece 40, plate 38, to second contact piece 40, branch 41, post 42 and wire 44.

It will be seen that by the means described, the two halves of the switch-containing shell may be readily interlocked or released at a distance, in such a manner that when the shells are interlocked, the lamp will be automatically connected with the line wires, while, when the shells are separated, the lamp will be automatically cut out, the conducting wires being meanwhile short circuited to cause an uninterrupted flow of the current to the other lamps of the series. It is obvious that the invention may also be applied to electric chandeliers and similar electric devices.

I claim:

1. In a device of the character described, an insulating block, a spring-influenced insulating slide, a metal bottom plate secured thereto, a pair of metal shanks depending from the slide, non-conducting sleeves on the upper ends of the shanks, and metal end pieces adapted to be engaged by the shanks in one position of the slide and to make contact with the sleeves in the other position of the slide, substantially as specified.

2. In a device of the character described, an upper shell, an insulating block secured thereto, a spring-influenced insulating slide, a metal bottom plate on the slide, a pair of insulating metal shanks depending from the slide, and metal end pieces adapted to engage the metal part of the slide in one position of the device and the metal shanks in the other position of the device, combined with a lower shell, an insulating block secured thereto, and a pair of tubular metal sockets secured to said block and adapted to receive the lower ends of the shanks, substantially as specified.

3. In a device of the character described, an upper shell, a catch pivoted thereto and having a lower beveled edge, an inclined notch, and a transverse groove above said notch, combined with a spring shank projecting upwardly from the catch, a lower shell, and a pin carried by the lower shell and adapted to engage the catch, substantially as specified.

4. In a device of the character described, an upper shell, a catch pivoted thereto and having a lower beveled edge, an inclined notch and a transverse groove above said notch, a spring shank projecting upwardly from the catch, and a recessed lug that engages the upper end of the shank combined with a lower shell having a pin adapted to co-operate with the catch, substantially as specified.

Signed by me at New York city, (Manhattan,) N. Y., this 30th day of January 1907.

ERNEST KUHNE.

Witnesses:
FREDERICK KUHNE,
FRANK V. BRIESEN