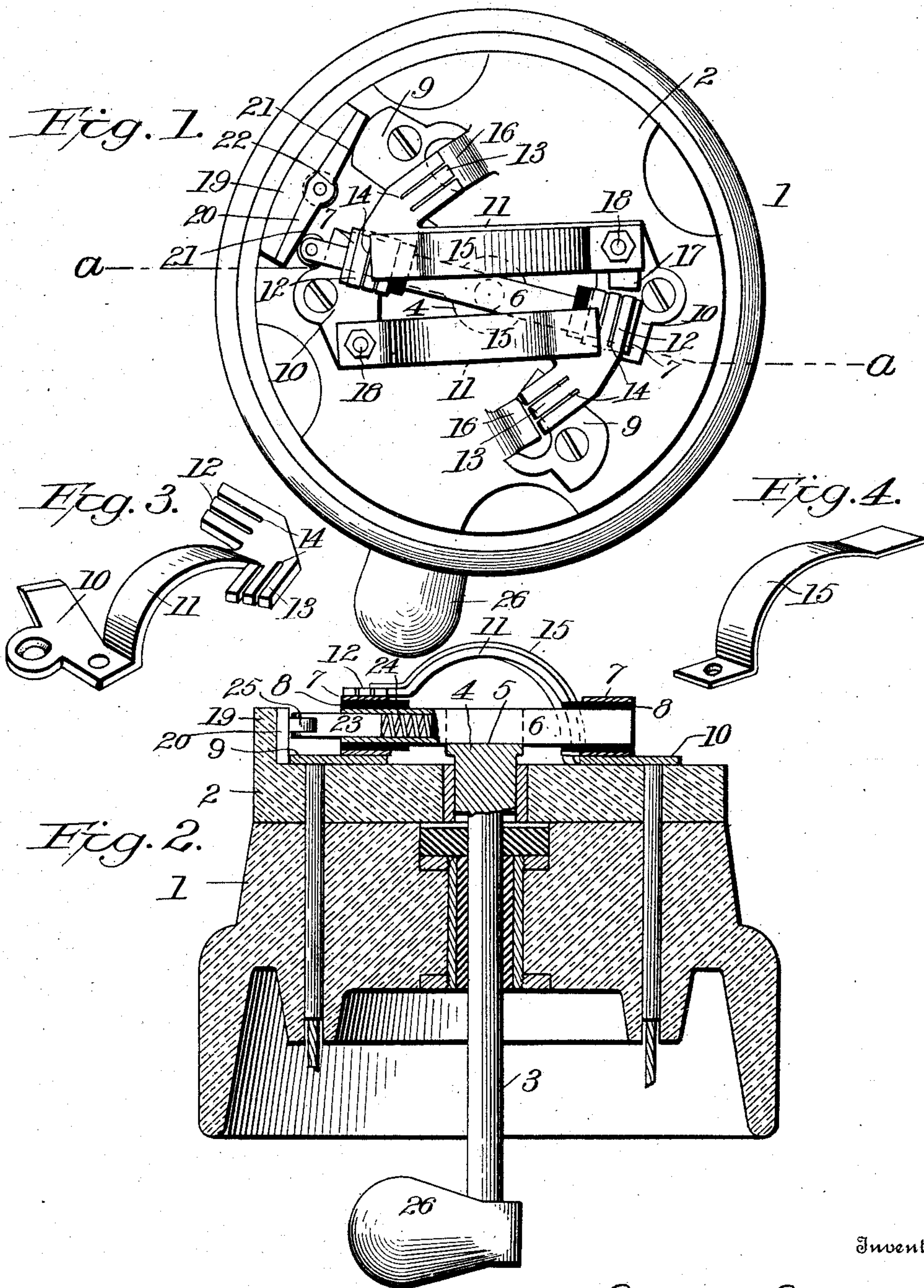


No. 881,306.

PATENTED MAR. 10, 1908.

G. CUTTER.
ELECTRIC SWITCH.

APPLICATION FILED JUNE 13, 1906.



Inventor

Witnesses

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GEORGE CUTTER, OF SOUTH BEND, INDIANA.

ELECTRIC SWITCH.

No. 881,306.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed June 13, 1906. Serial No. 321,549.

To all whom it may concern:

Be it known that I, GEORGE CUTTER, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to electrical switches and more particularly to individual cut out switches for devices such as arc lamps arranged in series.

The invention has for an object to provide a construction which will be simple in operation, inexpensive to manufacture, and not liable to get out of order.

Another object is to provide means which will prevent a switch blade maintaining an intermediate position.

Other objects and advantages will appear in the following description and will be more particularly pointed out in the appended claims:—

In the drawings:—Figure 1 is a plan view showing the switch blade connecting the line wire contacts. Fig. 2 is a vertical section through the switch and the insulator on which it is mounted, the switch blade being shown in section the view being taken on the line *a—a* of Fig. 1. Fig. 3 is a detail view in perspective of one of the line wire contacts, and Fig. 4 is a detail view in perspective of one of the spring arms bearing on the contact.

The switch while illustrated as applied to an arc lamp hanger, for which I have made an application for Letters Patent, may also be employed for other purposes. Referring particularly to the drawings 1 indicates the insulator of my application above mentioned and 2 the porcelain plate supported thereon. Journaled centrally through the insulator and the plate is a shaft 3 having a head 4 at its upper end provided with a transverse slot 5. In this slot is positioned a blade 6 having its ends projecting on opposite sides of the shaft 3 and provided with contact sleeves 7 surrounding the same and insulated therefrom by insulators 8.

The switch blade is movable so that its ends 7 lie upon a pair of terminals or lamp contacts 9 secured to plate 2, or is movable so that its contacts 7 lie upon a pair of line wire terminals or contacts 10. Each line wire terminal 10 is provided with an extension 11 which is bent upwardly from the terminal 10 and has a portion 12 overhanging

the other line wire terminal and adapted to be engaged by sleeve 7 when the latter is engaging the line wire terminal. Said extension 11 is also provided with a portion 13 overhanging one of the terminals 9 and adapted to be engaged when the sleeve 7 engages the underlying contact or terminal 9. The portions 12 and 13 of each contact are slotted at 14 so as to make a good contact with the sleeve 7, and are yieldingly held against the said sleeve by a curved spring arm 15 which extends from line wire contact at the point where said contact is secured to the porcelain plate 2. To limit the throw of the switch blade, I provide lugs 16 on the plate 2, and adjacent each contact 9, also a stop 17 on one of the line wire terminals, said stop being held in place by the bolt 18 which also secures spring arm 15. It will thus be seen that when the switch blade 6 is turned to connect the two line wire terminals 10, the lamp or other device is cut out of circuit and the main circuit is not disturbed, the current passing from each line wire terminal through the sleeve contact 7 on the adjacent end of the blade 6, to the overhanging portion of the line wire terminal.

When the switch blade 6 is turned so that each sleeve 7 rests upon one of the contacts 9, the line wire contacts are, through the overhanging portions and sleeves 7, in circuit with the contacts 9, and thus the lamp or other device is cut into the circuit. Thus it will be seen that each line wire contact has a contact portion common to the other line wire contact and to one of the lamp contacts. So that the switch blade cannot occupy a position between the line wire contacts 10 and the lamp contacts 9, and thus break the circuit throughout the system, I provide the following means. Adjacent one end of the blade between a contact 9 and a contact 10, the plate 2 is provided with a projection 19 on which is secured a plate 20 having two beveled faces 21 which merge into a ridge where there is located an antifriction roller 22 journaled in said plate 20, and located at a point midway between the contacts 9 and 10. The blade 6 is hollow and has mounted therein a plunger 23 which is pressed outwardly by a coil spring 24 located within the blade 6 and bearing against the inner end of the said plunger. The outer end of the plunger is provided with an antifriction roller 25 which rolls on the beveled faces 21 of plate 20. It is apparent that when the handle 26 on the

lower end of shaft 3 is turned so that the roller 25 is located slightly to one side of the roller ridge 22, the spring 24, acting on plunger 23, will cause the switch blade to be quickly moved to its extreme position on the same side of the ridge 22. In this manner it is impossible to maintain the switch blade at an intermediate position, and owing to the quick movement of the blade, little or no sparking takes place.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. The combination with the line wire contacts and the lamp contacts, of a portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade movable to connect the line wire contacts or to connect each line wire contact with a lamp contact and means for supporting said elements.

2. The combination with the line wire contacts and the lamp contacts, of a portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade having a pair of contacts insulated from each other and movable to connect the line wire contacts or to connect each line wire contact with a lamp contact and means for supporting said elements.

3. The combination with the line wire contacts and the lamp contacts, of a portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade operable about the axis intermediate its ends, and having a pair of contacts, one at each end, insulated from each other and each movable between the overhanging portion of one line wire contact and the other line wire contact, or between the overhanging portion and one of the lamp contacts and means for supporting said elements.

4. The combination with the line wire contacts and the lamp contacts, of a curved portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade having a pair of contacts, one at each end, insulated from each other and each movable between the overhanging portion of one line wire contact and the other line wire contact, or be-

tween the overhanging portion and one of the lamp contacts, means preventing the maintaining of the switch blade in an intermediate position and means for supporting said elements.

5. The combination with the line wire contacts and the lamp contacts, of an upwardly curved portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade movable to connect the line wire contacts or to connect each line wire contact with a lamp contact, the curved portion having a slitted part and means for supporting said elements.

6. The combination with the line wire contacts and the lamp contacts, of a curved portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, and a switch blade movable to connect the line wire contacts or to connect each line wire contact with a lamp contact, means arranged to exert pressure upon each curved portion and means for supporting said elements.

7. The combination with the line wire contacts and the lamp contacts, of a curved portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, a switch blade movable to connect the line wire contacts or to connect each line wire contact with a lamp contact, a spring carried by each curved portion to exert downward pressure upon the latter and means for supporting said elements.

8. The combination with the line wire contacts and the lamp contacts, of a portion extending from each line wire contact over the other line wire contact and one of the lamp contacts, means movable to connect the line wire contacts or to connect each line wire contact with a lamp contact, said portion having slitted parts, means having connection with each of said portions to exert a downward pressure upon them and means for supporting said elements.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

GEORGE CUTTER.

Witnesses:

GEORGE OLTSCH,
G. M. COLE.