

(No Model.)

E. WOLTMANN & H. A. TRIGGS.
CIRCUIT SWITCH.

No. 497,756.

Patented May 16, 1893.

Fig. 1.

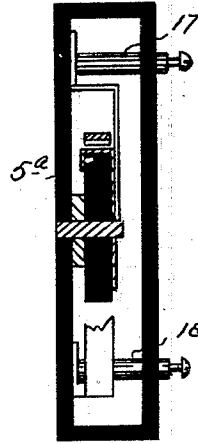
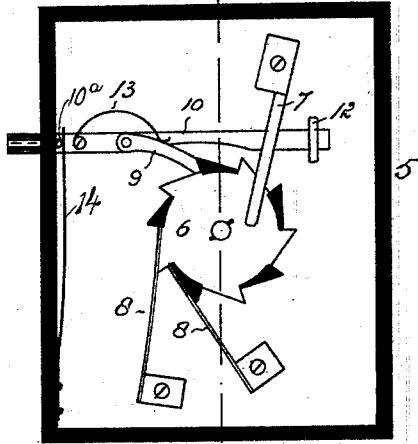


Fig. 2.

Fig. 6

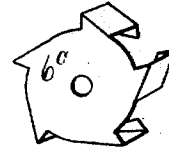


Fig. 3.

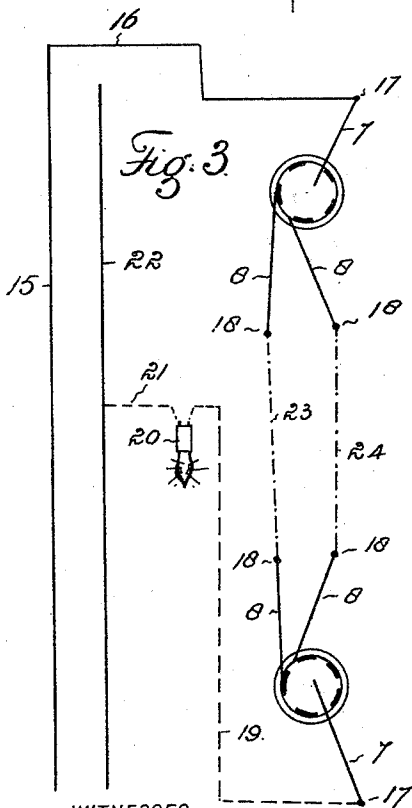


Fig. 4.

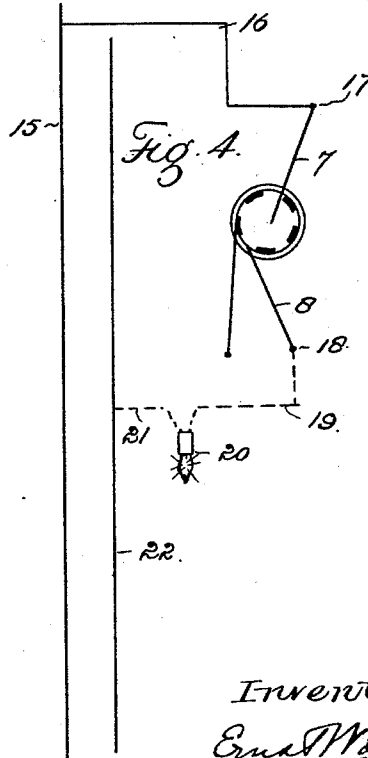


Fig. 5



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UNITED STATES PATENT OFFICE.

ERNST WOLTMANN AND HARRY A. TRIGGS, OF DENVER, COLORADO, ASSIGN-
ORS TO THE ELECTRICAL SPECIALTY COMPANY, OF SAME PLACE.

CIRCUIT-SWITCH.

SPECIFICATION forming part of Letters Patent No. 497,756, dated May 16, 1893.

Application filed January 17, 1893. Serial No. 458,741. (No model.)

To all whom it may concern:

Be it known that we, ERNST WOLTMANN and HARRY A. TRIGGS, citizens of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Circuit-Switches; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in circuit switches specially designed for use in electric light circuits and consists of the features, arrangements and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a plan view of the switch mechanism, the top of the box or receptacle being removed. Fig. 2 is a side view of the same, the casing being open to show the mechanism within. Fig. 3 is a diagrammatic view illustrating the circuit necessary for controlling one or more lamps from two different points. In this case two switches are required. Fig. 4 is a similar view showing a single switch in circuit. Figs. 5 and 6 are perspective views showing the two parts of the rotating disk in detail.

Similar reference characters indicating corresponding parts or elements of the mechanism in the several views let the numeral 5 designate a casing or box preferably composed of insulating material. In one side, 5^a, of this casing which we will term the base, is pivoted a two part toothed disk 6. This disk is composed of insulating material 6^a and an outer portion 6^b of metal or other suitable conductor of the electric current. This outer metallic portion is of such construction that the inner insulating portion is partly exposed and partly covered on the edge of the disk. These exposed parts of the disk alternate regularly with the metallic covered parts. One face of the disk is also covered with the metallic part, this face plate being formed integral with the contact parts overlapping the disk's edge. A

metal brush 7 is secured to the base of the casing, its free extremity being continually in contact with the face plate of the disk. Two other brushes 8, 8 are also secured to the casing at one extremity, while their opposite extremities engage the edge of the disk whereby as the disk is rotated they alternately engage the exposed insulating parts and the metallic contact parts comprising the edge of the disk as explained above. The circuit wire terminals are respectively connected with the brushes 8 and 7. If it is desired to control the light from but one point, only a single switch having one brush 8 is necessary, while if it is desired, to control the same light from two separate points, two switches, each provided with two brushes 8 are necessary. The toothed edge of disk 6 is engaged by a dog 9 pivoted on the movable bar 10, one extremity of which passes through the casing, which forms a support therefor. This outer extremity terminates in a push button, while the opposite extremity is supported and guided by a strap 12. The dog 9 is held in engagement with the edge of the disk by a small leaf spring 13 having one extremity made fast to the push bar. This bar 10 carries a projection 10^a which engages a leaf spring 14 made fast to the casing at one extremity. The function of this spring is to return bar 10 to its normal position after it has been thrust forward to its limit of movement or sufficiently to turn the disk the length of one tooth or notch on its edge.

If but one switch is employed, assuming that the brush 8 engages a contact part of the disk's edge, the current will pass from the feed wire or conductor 15 through the branch wire 16, binding post 17, brush 7 to the face plate of the disk and thence through one of the overlapping contacts of this plate to the brush 8, binding post 18, wire 19 to the lamp 20, and thence through wire 21 to the other feed wire 22, the circuit being closed and the lamp lighted. To put out the lamp it is only necessary to give the disk another partial rotation by actuating the push bar 10, when the brush 8 will engage one of the exposed insulating parts of the disk, breaking the circuit.

When two switches are employed and the light controlled from two points the path of the current, assuming that the two brushes at

the right in Fig. 3 are in engagement with the contact parts of the disks' edges, will be as follows: from feed wire 15 through branch wire 16, binding post 17, brush 7, the face plate of the disk and brush 8, binding post 18 of one switch, then through wire 24 to binding post 18 of the other switch, and thence through brush 8, the face plate of the disk, brush 7, post 17, wire 19, lamp 20 and wire 21 to the feed wire 22. Now if either switch disk be given a partial rotation resulting from a single push of the bar 10 the circuit will be broken and the lamp extinguished, since in this case the corresponding brushes 8 of the two switches will engage opposite parts of the disks' edges, that is, contact and insulating parts respectively. Now when these brushes are in these positions if either disk of either switch be given a partial rotation, the circuit will be again established, the current passing in one case through wire 24 and one pair of brushes 8, while in the other case through wire 23 and the other pair of brushes 8.

Having thus described our invention, what we claim is—

1. In a circuit switch the combination of the make and break mechanism consisting of a two-part rotating disk composed of connecting and insulating material, and two contact brushes engaging the disks the parts of which are so arranged that one brush is continuously in contact with the conducting material while the other brush is alternately in contact with the conducting and insulating

parts, and a single push button or bar for operating the same, substantially as described. 35

2. In a circuit switch the combination of a rotating ratchet disk composed of insulating and conducting material, the latter consisting of a plate attached to the insulating material in such a manner that the conducting and insulating material are alternately exposed on that part of the disk engaged by one of the contact brushes, two brushes, one of which alternately engages the contact plate while the other is continuously in contact therewith, and a single push button carrying a dog for operating said disk, substantially as described. 40 45

3. In a circuit switch the combination of a two-part rotating contact disk composed of conducting and insulating material, three contact brushes engaging said disk the construction of which is such that one of the brushes is continuously in contact with the conducting material while the other two are alternately in contact with the conducting and insulating parts, and a single push button or bar for operating the disk, substantially as described. 50 55 60

In testimony whereof we affix our signatures in presence of two witnesses.

ERNST WOLTMANN.
HARRY A. TRIGGS.

Witnesses:

WM. MCCONNELL,
H. KNIGHT.

Correction in Letters Patent No. 497,756.

It is hereby certified that in Letters Patent, No. 497,756, granted May 16, 1893, upon the application of Ernst Woltmann and Harry A. Triggs, of Denver, Colorado, for an improvement in "Circuit-Switches," an error appears in the printed specification requiring the following correction, viz.: In lines 28-29, page 2, the word "connecting" should read *conducting*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 6th day of June, A. D. 1893.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

S. T. FISHER,
Acting Commissioner of Patents.