(No Model.)

C. E. JONES.

MAGAZINE FUSE FOR ELECTRIC CIRCUITS.

No. 514,554. Patented Feb. 13, 1894.

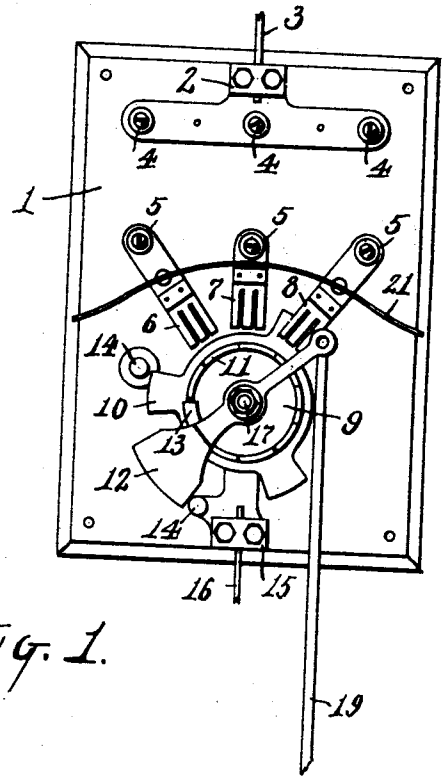


FIG. 1.

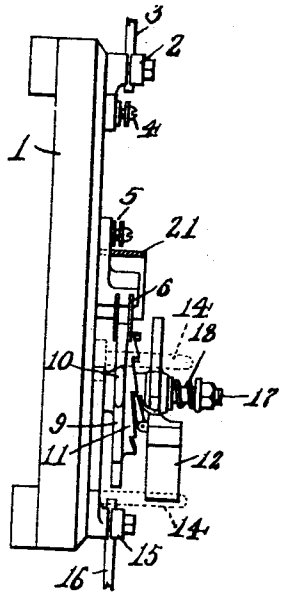
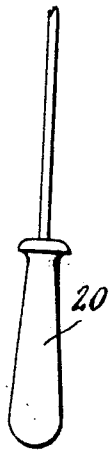


FIG. 2.



Witnesses:
M. S. Belden
C. M. Shelton

Charles E. Jones
Inventor
by James W. Scc
Attorney

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES EDWARD JONES, OF CINCINNATI, OHIO, ASSIGNOR TO THE JONES BROS. ELECTRIC COMPANY, OF SAME PLACE.

MAGAZINE-FUSE FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 514,554, dated February 13, 1894.

Application filed November 10, 1893. Serial No. 490,512. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD JONES, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Magazine-Switches for Electric Circuits, of which the following is a specification.

This invention pertains to improvements in switches for use in connection with the safety fuses employed in electric circuits, several fuses being provided in the device so that when one fuse burns out the circuit may be at once restored by being switched through another fuse, hence the term "magazine switch."

My improvements will be readily understood from the following description taken in connection with the accompanying drawings in which—

Figure 1, is a face view of a switch exemplifying my invention, and Fig. 2, an edge view of the same, the lever-stops, the rope, and part of the shield being omitted.

In the drawings:—1, indicates the non-conducting base, as of slate, adapted to be secured against a wall or other support: 2, a binding clamp thereon to receive one of the circuit-wires: 3, one of the circuit wires secured therein: 4, a series of binding-posts connected electrically together and to the binding clamp 2, these binding-posts being adapted to receive each an end of one of the several fuse-wires to be employed: 5, a second series of binding-posts, insulated from each other, one being in line with each of the binding-posts 4, the binding-posts 5 being adapted to receive the other ends of the fuse wires: 6, 7 and 8, pairs of springs, one pair being connected with each of the binding-posts 5, the three pairs of springs being arranged in a segmental series against the base-piece so that a contact piece having a circular motion may be swept between the springs of a pair or any pair, these springs therefore forming several terminals for the circuit wire 3 through the several fuse wires to be held in the binding-posts 4 and 5: 9, a wheel-switch mounted for rotation on an axis concentric with the segmental series of springs: 10, three contact-blades projecting radially from the wheel-switch 9 at equi-distant intervals: 11, a ratchet-rim projecting from the face of the wheel-switch, and provided, in the example, with nine teeth: 12, an oscillating lever mounted upon the stud upon which the wheel-switch turns, one end of this lever being weighted to bring the lever to one extremity of oscillatory movement and the other end of the lever having an eye for the attachment of a rope or wire, or the like: 13, a spring-pawl carried by the lever and engaging the ratchet-teeth 11: 14, rigid stops projecting from the base and adapted to be engaged by the lever 12 and limit its oscillation to a degree appropriate to one of the ratchet-teeth: 15, a binding clamp electrically connected with the switch-wheel 9, the stud on which the switch-wheel turns being in connection with this binding clamp: 16, the second circuit wire, held by the binding clamp 15 and consequently in electrical communication with the switch-wheel: 17, the stud on which the switch-wheel turns: 18, a spring upon this stud in front of the switch-wheel and serving to create a slight frictional resistance to the turning of the switch-wheel and to insure proper rubbing connection between the switch-wheel and the metal parts connected with the stud: 19, a rope, or the like, connected with lever 12: 20, a handle on the end of this rope: and 21, a shield extending across the face of the base under the binding-posts 5 to protect the parts below from the droppings of the fuse wires as they melt, this shield being being either of insulating material, as vulcanized fiber, or, if of metal, insulated from the binding-posts 5.

Assume the parts to be in the position seen in Fig. 1 and that three fuse wires are in place in the binding-posts 4 and 5. It will be noticed that the switch-wheel is in such position that it makes contact with the right hand spring. Consequently the circuit will be from wire 3, through the right hand fuse wire and spring, and thence through the switch-wheel to circuit wire 16. In case the fuse wire burns out then a single pull is to be given to the handle 20. This gives one-ninth of a turn to the switch-wheel and brings a blade of the switch-wheel to spring 6, thus establishing the circuit through the left hand fuse wire and opening the connection at spring 8. The

lever, after being rocked, returns to its normal position. If the left hand fuse wire burns out, then a pull of the handle advances the switch-wheel and breaks connection at spring 6 and establishes connection through spring 7, thus bringing the middle fuse wire into the circuit. The circuit is always through one of the springs and disconnected at the other springs, thus permitting new fuse wires to be inserted for the idle springs. It will be observed that, owing to the multiplicity of blades in the switch wheel, the motion of the switch wheel is to be uniformly and forever forward as distinguished from magazine switches requiring a backward setting at certain limits.

I claim as my invention—

1. In a magazine switch for electric circuits, the combination, substantially as set forth, of an insulating base, a binding clamp thereon for a circuit wire, a series of binding-posts electrically connected with said binding clamp, a second series of binding-posts insulated from each other and terminating in contact springs arranged in a segmental series, a switch-wheel provided with a circular series of blades adapted to sweep into contact with either of said contact springs, a second binding clamp for a circuit wire electrically connected with said switch-wheel, and mechanism connected with said switch-wheel to serve in turning it progressively only upon its pivot.

2. In a magazine switch for electric circuits, the combination, substantially as set forth, of an insulating base, a binding clamp thereon for a circuit wire, a series of binding-posts electrically connected with said binding clamp, a second series of binding-posts insulated from each other and terminating in contact springs arranged in a segmental series, a switch-wheel provided with an endless series of ratchet-teeth and with a circular series of blades adapted to make contact with either of said contact springs, a second binding clamp electrically connected with said switch-wheel, a pivoted lever carrying a pawl engaging said ratchet, and a handle connected with said lever.

3. In a magazine switch for electric circuits, the combination, substantially as set forth, of an insulating base, a binding clamp thereon for a circuit wire, a series of binding-posts electrically connected with said binding clamp, a second series of binding-posts insulated from each other and terminating in contact springs arranged in a segmental series, a switch-wheel provided with an endless series of ratchet-teeth and with a circular series of blades adapted to sweep into contact with either of said contact springs, a second binding clamp for a circuit wire electrically connected with said switch-wheel, a pivoted lever carrying a pawl engaging said ratchet, a handle connected with said lever, and stops to limit the oscillation of said lever.

4. In a magazine switch for electric circuits, the combination, substantially as set forth, of an insulating base, a binding clamp thereon for a circuit wire, a series of binding-posts electrically connected with said binding clamp, a second series of binding-posts insulated from each other and terminating in contact springs arranged in a segmental series, a switch-wheel provided with an endless series of ratchet-teeth and with a circular series of blades adapted to sweep into contact with either of said contact springs, a second binding clamp electrically connected with said switch-wheel, a pivoted lever carrying a pawl engaging said ratchet and having a weight to rock it in one direction, a handle connected with said lever, and stops to limit the rocking motion of the lever.

5. In a magazine switch for electric circuits, the combination, substantially as set forth, of an insulating base, a binding clamp thereon for a circuit wire, a series of binding-posts electrically connected with said binding clamp, a second series of binding-posts insulated from each other and terminating in contact springs arranged in a segmental series, a switch-wheel provided with an endless series of ratchet-teeth and with a circular series of blades adapted to make contact with either of said contact springs, a second binding clamp for a circuit wire electrically connected with said switch-wheel, a lever carrying a pawl engaging said ratchet, a handle, and a flexible connection between said handle and lever.

CHARLES EDWARD JONES.

Witnesses:
W. H. JONES,
M. E. HINDS.