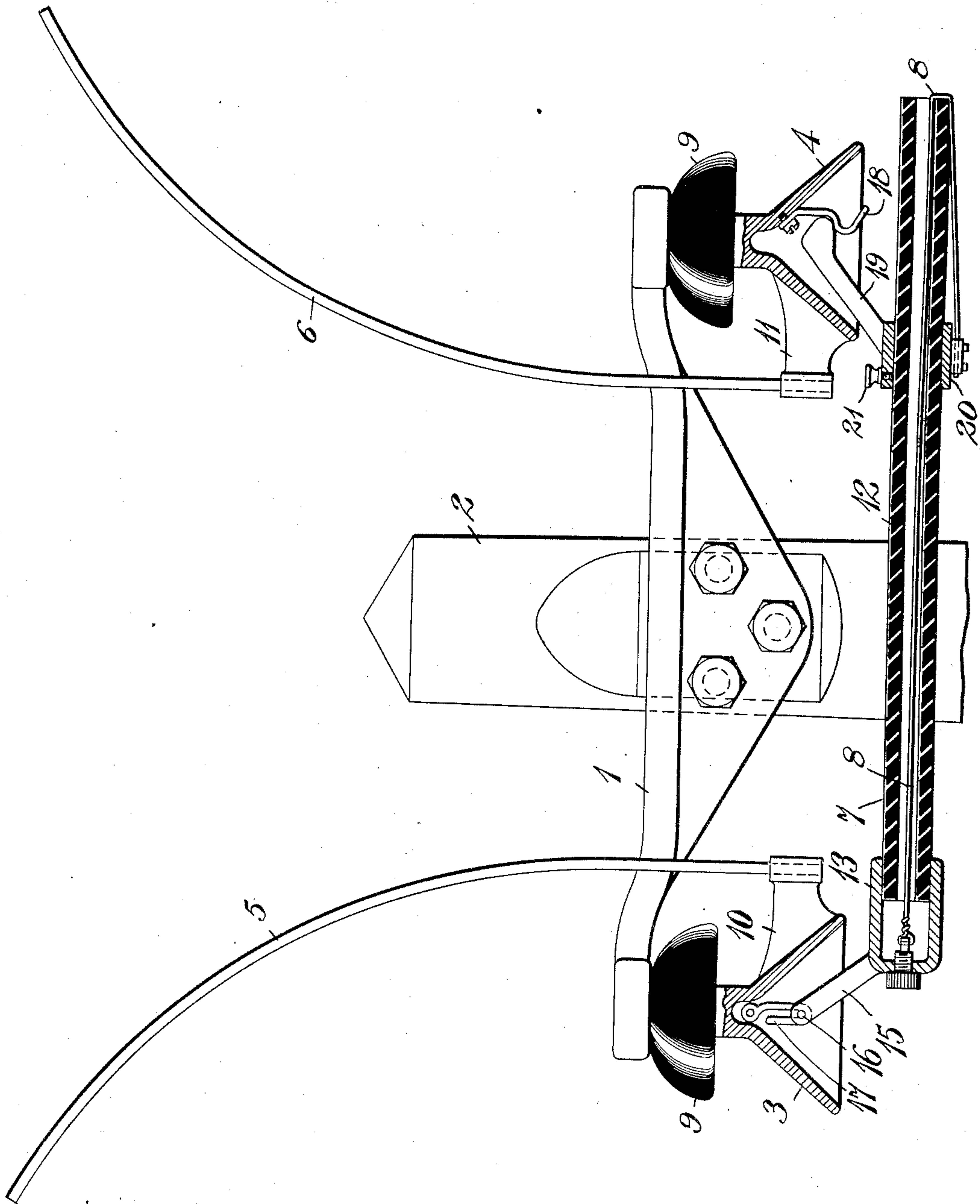


F. W. HARRIS.
ELECTRIC CIRCUIT SWITCH.
APPLICATION FILED APR. 10, 1908.

975,419.

Patented Nov. 15, 1910.



WITNESSES:

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FORD W. HARRIS, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, OF EAST PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ELECTRIC-CIRCUIT SWITCH.

975,419.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed April 10, 1908. Serial No. 426,350.

To all whom it may concern:

Be it known that I, FORD W. HARRIS, a citizen of the United States, and a resident of Wilksburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric-Circuit Switches, of which the following is a specification.

My invention relates to switching devices for electric circuits, and it has special reference to switches that are adapted to automatically interrupt relatively high-voltage lines.

The object of my invention is to provide a device of the class above indicated that shall be simple and inexpensive in construction and adapted to automatically open the circuit under predetermined conditions and also be capable of satisfactory operation in the open air.

The single figure of the accompanying drawing is a partially sectional elevation of a device constructed in accordance with my invention.

Referring to the drawing, the device illustrated comprises a cross-arm or bracket 1 supported by a pole 2, bell-shaped terminal members 3 and 4, horn-shaped arcing members 5 and 6 and a detachable bridging member 7 having a fusible element 8. The members 3 and 4 are secured to the ends of the cross-arm 1 and each of them is insulated therefrom by a petticoat insulator 9. The horn members 5 and 6 are respectively supported by projections 10 and 11 on the outer surfaces of the members 3 and 4 and extend upwardly and outwardly, so that when the circuit is interrupted, any arc produced by the high voltage is broken at the upper extremities of the horns.

The bridging member 7 comprises an insulating tube 12 having a cap 13 of conducting material at one end which is provided with a bifurcated arm 15 having a pin 16 near its outer end to engage a hook or open link 17 which is pivotally suspended from the interior of the member 3 to constitute a link hinge.

The member 4 is provided with a combined catch and contact finger 18 to be normally engaged by an arm 19 projecting from a collar 20 which is adjustably mounted on the tube 12 and may be secured to it at any point by a set-screw 21, the arrangement of

parts being such that when the pin 16 and the free end of the arm 19 respectively engage the hook or link 17 and the catch 18, the tube 12 is thereby detachably supported and the members 3 and 4 are electrically connected together by the parts 13, 15, 16, 17, 18, 19, and 20 and the fusible wire or strip 8. The fusible member 8 extends through the tube 12 and one end is bent backward upon itself along the outer surface of the end 14, the ends being respectively fastened to the cap 13 and the collar 20.

The operation of the device is as follows: Assuming that the parts occupy the positions shown in the drawing, a circuit is completed from member 3 through the hook or link 17, pin 16, projection 15, fuse member 8, collar 20, arm 19 and contact finger 18 to the member 4. If the current traversing the circuit exceeds a predetermined amount, the fuse will be ruptured and any arc which may be formed between the terminal members will be broken at the extremities of the horn projections 5 and 6, in accordance with well established principles. As soon as an arc is formed in the tube 12 the hot gases will be blown out at its open end and the re-action will force the tube toward the left and detach the arm 19 from the catch 18. The tube 12 and its attached terminal members will then swing downwardly upon the hinge formed by the parts 16 and 17, thereby effecting a mechanical interruption of the circuit. The switch may be opened and closed by a hooked stick in the hands of an attendant and the bridging contact member may be completely detached for replacement or other repairs by unhooking the arm 15 from the hook or link 17.

I claim as my invention:

1. A switch comprising a pair of stationary terminal members, and a substantially horizontal bridging member having a fusible element, and means for detachably suspending said bridging member from said terminal members, one of said means being a link hinge.

2. A switch comprising a pair of stationary terminal members, insulating supports therefor, and a substantially horizontal and longitudinally movable bridging member comprising an insulating tube, conducting members secured to the tube and detachably

connected to and suspended from the stationary terminal members, and a fusible strip or wire extending through the insulating tube and connecting the conducting members together.

3. A switch comprising a pair of stationary bell-shaped terminal members having upwardly projecting horn-shaped arcing projections, a supporting bracket for the stationary members, insulators interposed between the arms of the bracket and said members, and a substantially horizontal and longitudinally movable bridging member comprising an insulating tube, a conducting cap at one end having a detachable hinge connection to one of the stationary terminal members, a conducting sleeve adjustably mounted on the tube near its opposite end, a fusible strip or wire extending through the tube and connecting the conducting sleeve with the conducting cap.

4. A switch comprising a pair of stationary terminal members, insulating supports therefor, and a substantially horizontal bridging member comprising an insulating tube, conducting members secured to the tube and detachably suspended from the stationary terminal members and a fusible strip or wire extending through the insulating tube and connecting the conducting members together, said bridging member being detached from one of its supports by the rupture of the fusible strip or wire.

5. A switch comprising a pair of stationary terminal members, insulating supports therefor, and a bridging member comprising an insulating tube closed at one end, con-

ducting members secured to the tube near its ends and loosely suspended from said terminal members, and a fusible strip or wire extending through the tube and connecting the conducting members together, the arc formed by rupturing the fusible wire or strip serving to give the bridging member sufficient end thrust to release it from one of the terminal members.

6. A switch comprising a pair of bell-shaped stationary terminal members having horn-shaped arcing projections, a supporting bracket for the stationary members, insulators interposed between the arms of the bracket and said members, and a movable bridging member hinge-supported by one of the stationary members and detachably connected to the other and comprising an insulating tube, a conducting cap at one end, a conducting sleeve adjustably mounted on the tube near its opposite end, and a fusible strip or wire extending through the tube and connecting the conducting sleeve to the conducting cap, the end thrust produced by a rupture of the fusible member serving to automatically unhook the bridging member from one of the stationary terminal members and permit it to swing downward upon its hinge.

In testimony whereof, I have hereunto subscribed my name this 31st day of March, 1908.

FORD W. HARRIS.

Witnesses:

FRED W. CLOUD,
BIRNEY HINES.