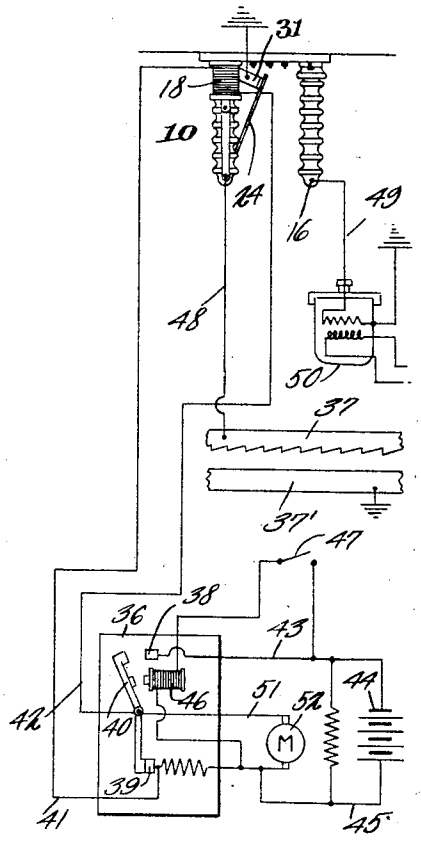
June 4, 1929. W. A. MORITZ 1,715,422

ELECTRICAL SWITCH

Filed Nov. 25, 1924



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WITNESS:

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UNITED STATES PATENT OFFICE.

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ELECTRICAL SWITCH.

Application filed November 25, 1924. Serial No. 752,250.

This invention relates to a means for automatically controlling high voltage current to the neutralizer apparatus of printing presses for removing static electricity from printing presses, during the printing process, or from paper making machines during the process of manufacture of paper, for preventing the operator of the machine or other persons from coming in contact with any charged part of the machine.

Another object of the invention resides in a magnetically controlled switch connected to operate from the motor controller or other electrical equipment of a machine having a static neutralizer or dispeller bar, so that high voltage current is connected and disconnected from the conductor bars or the like immediately upon the starting and stopping of the machine, thereby preventing injuries from high voltage shocks.

Another object of the invention is to provide an automatic means for grounding the conductor bar circuit and wiring when the switch is disconnected, so as to insure it against shock, which might be caused by capacity or leakage effects of the current remaining in the conductor bars.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawing, in which:—

The figure is a diagrammatic view showing my improved means of controlling high voltage current to the neutralizer apparatus of a printing press.

In the drawing, the reference numeral 10 designates a two point magnetic switch, one of the points or contacts being designated at 16 and the other at 31, which latter contact is grounded. The switch includes a pivoted switch arm 24 normally engaging the ground contact 31 and which switch engages the contact 16 when the solenoid 18 of the magnetic switch is energized in a manner presently to be described.

The contact 16 is connected with a transformer 50 by means of a wire 49, while the transformer in turn receives its source of power from the city supply or other such means.

The dispeller bar of the printing machine is indicated at 37, while a portion of the frame of the machine is shown at 37'. A wire 48 leads from the dispeller bar 37 to the switch arm 24 and through which current flows to the dispeller bar when the switch arm is in engagement with the contact 16, but which wire grounds any static charges when the switch arm is in engagement with the contact 31.

A conventional form of motor controller is shown at 36 for controlling the operation of the motor 52 which runs the printing machine and which is arranged in an electric circuit 51 with a battery 44.

The controller includes contacts 38 and 39, and an armature or switch arm 40, while a wire 41 leads from the contact 39 to the solenoid 18 of the switch 10. A wire 42 leads from the armature 40 to the coil of the solenoid 18 and another wire 43 leads from the contact 38 to one side of the battery 44, the other side of the battery being electrically connected by a wire 45 which connects with the wire 41, so that when the controller is in an "on" position, that is, when the armature is in engagement with the contact 38, the current will flow to the coil 18 to energize the same to operate the switch arm 24 to move the same into engagement with the contact 16.

In order to actuate the armature 40, use is made of a magnet 46 arranged in the circuit with a switch 47 and with the battery 44. When the switch 47 is manually closed, the electro-magnet 46 will be energized causing the armature or switch arm 40 to move into engagement with the contact 38 to electrically connect the wires 42 and 43. The switch arm 24 will then engage the contact 16 to bridge the gap between wire 48 leading to the dispeller bar 37 and to the switch arm 24 as hereinbefore mentioned.

From the foregoing description, it will be seen that when the machine is set for operation by the manual closing of the switch 47, the solenoid 18 is energized and high voltage current is permitted to flow to the dispeller bar 37. When the switch 47 is opened, the solenoid is automatically deenergized and the motor shut off whereby the switch arm 24 will automatically move into engagement with the contact 31, whereby any static electricity which remains in the dispeller bar after the machine has been shut-off is grounded.

Although I have shown a particular type of controller for operating a paper making or printing machine, I do not wish to limit myself to this particular arrangement as there

are numerous types of controllers in connection with which my invention could be used, for instance, the invention as shown is used in connection with a direct current motor, while if alternating current were used, the solenoid coil would be connected with the motor winding and not to the controller so that when motor energized, it closes the high voltage switch to energize a neutralizer bar or the neutralizer apparatus.

What is claimed as new is:—

In an apparatus for neutralizing static electricity in printing presses, the combination with the dispeller bar and electric driving motor of a printing press, an electric circuit in which the electric driving motor is arranged with a source of electric energy, a controller arranged in said circuit with a manually operated switch, whereby closing of said manually operated switch will cause the actuation of said controller to an "on" position to close said motor circuit, a source of high voltage current, an electrically operated switch including an electro-magnetic device arranged in an electric circuit with said controller for energization upon the movement of said controller to an "on" position, a ground contact, a movable switch arm normally engaging said ground contact and electrically connected to said dispeller bar, and a stationary contact connected to the source of high voltage current in the path of movement of said switch arm for engagement thereby upon the energization of said electro-magnetic device to cause high voltage current to pass through said switch arm to said dispeller bar when the motor circuit is closed and to ground any high voltage current remaining in said dispeller bar through said switch arm and ground contact when said motor circuit is open.

In testimony whereof I have affixed my signature.

WILLIAM A. MORITZ.