Nov. 17, 1931. B. BERGER 1,832,444

SAFETY DEVICE

Filed July 24, 1928

Fig. 1.

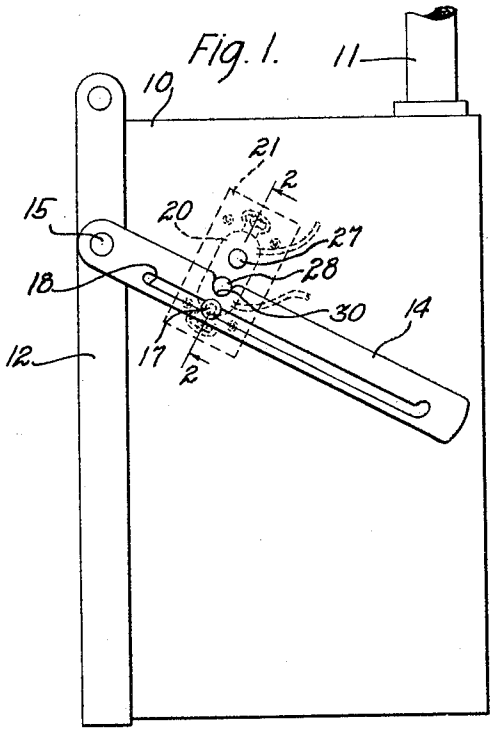


Fig. 2.

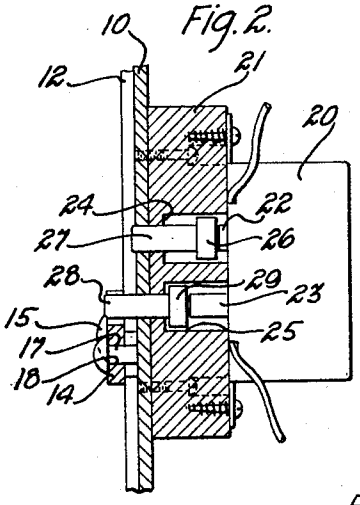
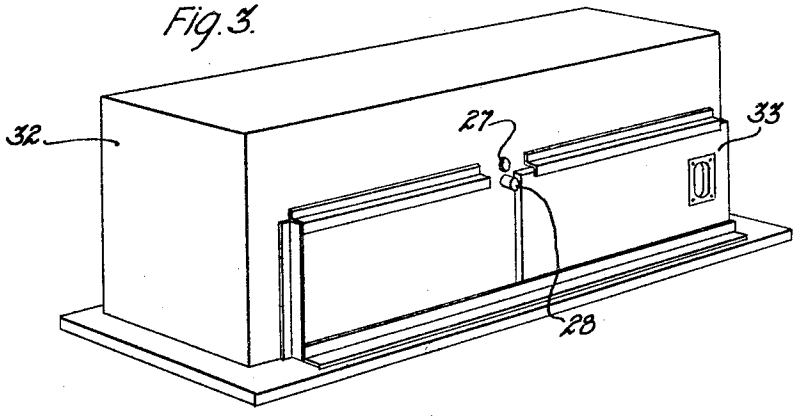


Fig. 3.



Inventor
Brynjulf Berger
by H. A. Patterson. Att'y.

Patented Nov. 17, 1931 1,832,444

UNITED STATES PATENT OFFICE

BRYNJULF BERGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

SAFETY DEVICE

Application filed July 24, 1928. Serial No. 295,088.

This invention relates to safety devices, and more particularly to safety devices for cabinets containing electrical apparatus.

It is the practice, in some instances, to enclose electrical apparatus employing high voltages such, for example, as electrical testing apparatus, in a suitable cabinet in order to protect the operator against the inherent dangers incident to coming in contact with such apparatus when in operation. The cabinet is usually provided with a door which may be conveniently opened for the purpose of inspecting, cleaning or repairing the apparatus contained therein. In order to further protect the operator against any possible injury or electrical shock it has been found desirable to provide some means for positively preventing an operator from opening the door of the cabinet to gain access to the enclosed apparatus without first disconnecting such apparatus from the source of electrical power.

The primary object of the present invention is to provide a simple and economical device for positively preventing access to confined electrical apparatus while such apparatus is in a predetermined operating position.

The invention contemplates the provision of a push button switch of any well known construction for controlling the supply of electrical energy from a main source to the apparatus confined within the cabinet. This switch is preferably mounted within the cabinet and is provided with operating members extending through a wall of the cabinet and projecting outwardly from the exterior surface thereof. These operating members are positioned so as to positively prevent the opening of the cabinet door when the switch is closed and permit the door to be opened when the switch is open.

In one embodiment of the invention the cabinet may be provided with a hinged door having the usual sliding brace for holding the door in an open position. The switch is positioned so that the switch operating member, which projects outwardly from the exterior of the cabinet while the switch is closed, engages a slot in the side of the brace thereby positively preventing the opening of the cabinet door. Upon the depression of the switch operating member to open the switch the brace is free to slide over the top of the switch operating member which at that time is flush with the exterior surface of the cabinet.

In another embodiment of the invention a sliding door is employed and the push button switch is positioned so that one of the switch operating members projects in the path of the sliding door thereby preventing the opening of the door while the switch is closed.

A clear understanding of the invention may be had from the following detailed description, taken in connection with the accompanying drawings, wherein

Fig. 1 is an elevational view of the preferred form of cabinet illustrating one embodiment of the invention;

Fig. 2 is an enlarged fragmentary section taken on line 2—2 of Fig. 1, and

Fig. 3 is a perspective view of another form of cabinet to which the invention is applicable.

Referring now to the drawings, in which like numerals refer to similar parts, the numeral 10 designates a cabinet for enclosing electrical apparatus, such, for example, as electrical testing apparatus employing electrical current of high voltage. Electrical power may be supplied to the apparatus contained within the cabinet through a suitable conduit 11.

The cabinet 10 has a hinged door 12 adapted to be opened for replacing fuses and for inspecting the apparatus contained therein. The usual brace 14 is provided for holding the door in an open position. The brace 14 is hinged to the door at point 15, and is arranged to slide over a pin 17 secured to the cabinet, said pin engaging a slot 18 extending lengthwise of the brace.

A push button switch 20 of any well known construction is secured to a mounting block 21 mounted within the cabinet 10 and serves as a means for disconnecting the supply of electrical current from a main source (not shown) to the apparatus contained within the cabinet. Push buttons 22 and 23 of the

switch 20 extend into recesses 24 and 25, respectively, provided in the mounting block 21. The mounting block 21 serves to conveniently space the switch from the wall of the cabinet so as to permit the use of metallic switch operating members 27 and 28 which are better suited to resist the wear incident to the continued use of the device over a long period of time. It should be understood, however, that metallic switch operating members 27 and 28 and the mounting block 21 are not essential parts of the present invention since the switch may be mounted in close juxtaposition to the wall of the cabinet so that the push buttons thereof project from the exterior surface of the cabinet thus rendering it possible to operate the switch directly by the push buttons.

The switch operating members 27 and 28 engage the push buttons 22 and 23, respectively, and project through suitable apertures provided in the wall of the cabinet. The members 27 and 28 are provided with enlarged head portions 26 and 29, respectively, which engage the ends of the recesses 24 and 25 thereby preventing their displacement. It will be understood that by depressing the member 27, the push button 22 is depressed, thus closing the switch 20 and causing the push button 23 to be projected outwardly, thereby projecting the member 28 outwardly beyond the exterior surface of the cabinet wall. The switch is so positioned with respect to the door brace 14 that the switch operating member 28 engages a slot 30 in the side of the brace when the switch is closed, thereby preventing the opening of the cabinet door. Upon depressing the member 28 to open the switch, the brace 14 is free to slide over the top of the member 28, thus permitting the opening of the cabinet door. While the door is open the brace 14 positively prevents outward movement of the member 28, thus rendering it impossible to close the switch.

It will be understood that the above described structure embodying the features of the invention positively prevents the opening of the cabinet door to gain access to the electrical apparatus confined therein without first disconnecting the apparatus from the current supply.

In a modified form of the invention a cabinet 32, as illustrated in Fig. 3, is provided with a sliding door 33. The button or operating member 28 of the push button switch 20 projects within the path of the sliding door so that the door can not be opened without first depressing the button 28 to electrically disconnect the electrical apparatus contained within the cabinet. After the door 33 is opened the button 28 is covered by the door so that the switch cannot be closed until the door is closed. Thus, it is obvious that in this modification of the invention, there is no chance for a person to reach the electrical apparatus while it is connected to the supply, and once the door is open for exposing the apparatus it is impossible to electrically connect the apparatus with the current supply. The invention thus provides a positive means for preventing access to electrical apparatus while the apparatus is connected to a current supply.

From the above description it will be understood that the present invention provides a simple and economical device for positively preventing access to electrical apparatus confined within a cabinet without first disconnecting such apparatus from the operating current supply. It should also be understood that the novel features of the invention are capable of various other applications within the scope of the appended claims.

What is claimed is:

1. In a safety device for a cabinet enclosing electrical apparatus, said cabinet having a door for exposing the apparatus, a two button push button type switch mounted within the cabinet for controlling the electrical apparatus, one button of the switch projecting outwardly from the exterior surface of the cabinet when the switch is closed so as to prevent the opening of the cabinet door and being flush with said surface when the switch is open.

2. In a safety device for a cabinet enclosing electrical apparatus, said cabinet having a door for exposing the apparatus, an electrical push button type switch for interconnecting the apparatus with an operating current supply, and an auxiliary push button cooperating with a push button of the switch for operating the same, said auxiliary button obstructing the opening of the door while the switch is closed.

3. In a safety device for a cabinet enclosing electrical apparatus, said cabinet having a hinged door, a brace connected to the door for holding the door open, an electrical push button type switch for interconnecting the apparatus with an operating current supply, said switch being positioned so as to be rendered inoperable by the brace when the door is open.

4. The combination with a cabinet for enclosing electrical apparatus, said cabinet having a door which when open exposes the apparatus, of a two button push button type switch for controlling the electrical apparatus, one of the buttons of the switch being positioned so as to render the switch inoperable when the cabinet door is open.

5. The combination with a cabinet for enclosing electrical apparatus, said cabinet having a hinged door, of a brace connected to the door for holding the door open, said brace having a groove in a side thereof, and an electrical push button type switch for controlling the electrical apparatus, said switch

having an operating button engaging the groove of the brace to prevent the opening of the cabinet door while the switch is closed.

6. The combination with a cabinet enclosing electrical apparatus, said cabinet having a hinged door, of a brace connected to the door for holding the door open, and an electrical push button type switch for interconnecting the apparatus with an operating current supply, said switch cooperating with the brace so that the switch cannot be closed while the cabinet door is open.

In witness whereeof I hereunto subscribe my name this 14th day of July, A. D. 1928.

BRYNJULF BERGER.