No. 895,977. PATENTED AUG. 11, 1908.

C. C. DAWBER.

COMBINED FUSE BOX AND CUT-OUT SWITCH.

APPLICATION FILED JUNE 26, 1907.

Fig. 1.

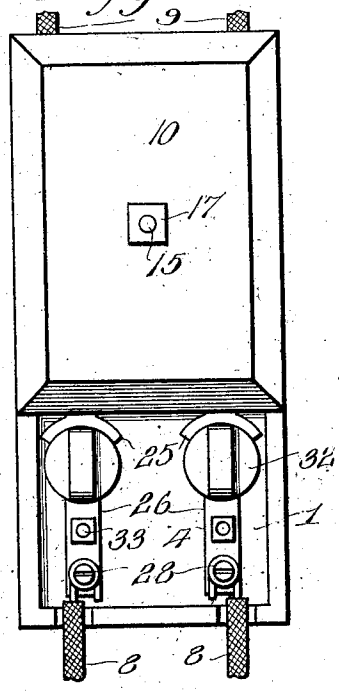


Fig. 2.

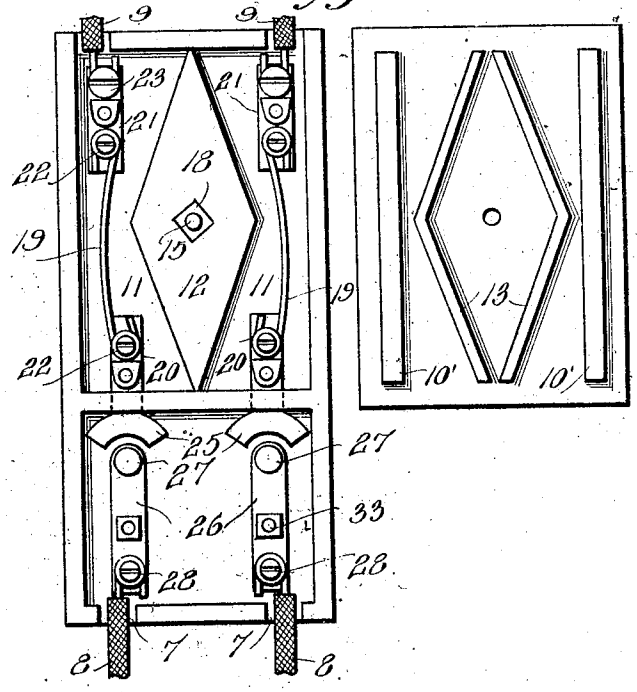


Fig. 3.

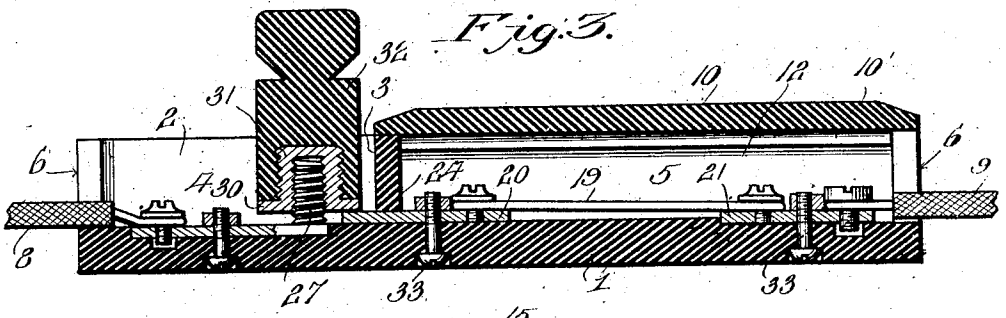
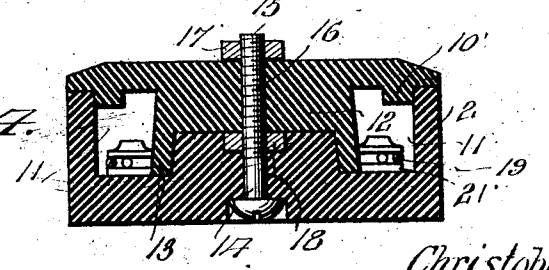


Fig. 4.



Witnesses

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COMBINED FUSE-BOX AND CUT-OUT SWITCH.

No. 895,977. Specification of Letters Patent. Patented Aug. 11, 1908.

Application filed June 26, 1907. Serial No. 380,890.

To all whom it may concern:

Be it known that I, CHRISTOPHER C. DAWBER, a citizen of the United States, residing at Clifton, in the county of Graham and Territory of Arizona, have invented new and useful Improvements in a Combined Fuse-Box and Cut-Out Switch, of which the following is a specification.

This invention relates to protective devices for light, power, telegraph and telephone circuits, and more particularly to a combined fuse box and cut-out switch adapted for use under conditions ordinarily requiring protective fuses and also where circuits are desired to be cut into and out of service.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, thoroughly reliable and efficient in use, and so designed as to permit the fuses to be renewed with comparatively little trouble and with a minimum of danger to the electrician.

A further object of the invention is the provision of a device of the character referred to which is adapted for single or multiple wire circuits and circuits operating with either continuous or alternate current.

Another object is to provide a combined safety device and circuit controller including a common insulating support, a part of which is provided with a cover to form a fuse-containing compartment and on which are separately actuated switches for cutting the binding posts of the fuses out of circuit during the renewal of the fuse wires.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a plan view of the apparatus. Fig. 2 is a similar view showing the cover removed and inverted. Fig. 3 is a longitudinal section of the apparatus. Fig. 4 is a transverse section.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, A designates the body or base-plate of the device which is preferably made of suitable insulating material and is provided with marginal flanges forming an upwardly extending rim 2, there being a transverse wall 3 that divides the box-like body into a switch-containing compartment 4 and a fuse-containing compartment 5. The end walls 6 are formed with vertical slots 7 for the reception of the conductors 8 and 9 of the circuit or circuits to be protected. The compartment 5 is normally closed by a cover 10 so as to prevent the molten lead from dropping out and producing probable damage when the fuses blow. In a multiple fuse device, the compartment 5 is divided into two or more chambers 11, Fig. 2, by means of a partition 12 which may be diamond or any other shape, as preferred, and in the present instance the partition is formed partly on the cover and partly on the base-plate 1, as clearly shown in Fig. 4, and on the cover portion of the partition are depending flanges 13 that form a sort of cap that fits over the portion of the partition on the base-plate. By this means, the fuses are entirely separated so that the arc accompanying the blowing of one fuse would have no effect on the other. If desired, the partition can be made wholly on either the cover or base and the cap formation dispensed with. In the base-plate is a countersunk opening 14, Fig. 4, through which extends a screw 15 that is adapted to hold the cover or cap 10 in place by passing through an opening 16 therein, there being a nut 17 for securing the parts together, and to prevent the screw from turning, a jam nut 18 is employed, as shown. If desired, the bottom side of the cover can be provided with ribs 10′ that engage inside the bottom 2 on the base 1, as shown clearly in Fig. 4, so as to coöperate with the screw in holding the cover in closed position.

In each chamber 11 is contained a fuse 19 such as a piece of lead wire and the ends thereof are fastened to metal plates 20 and 21 by binding screws 22, and to the plates 21 are connected, by binding screws 23, the conductors 9. The plates 20 extend through apertures 24 in the bottom of the transverse partition 3 so as to extend into the switch compartment 4 and the outer ends of the said plates are formed into arcuate extremities 25 that form contacts for the switches. Arranged in line with the plates 20 and spaced from the arcuate extremities thereof are metal plates 26 forming parts of the switches,

each plate having an upwardly extending threaded stud 27 adjacent the companion contact 25, and the conductors 8 are connected with the outer ends of the plates 26 by clamping screws or binding posts 28. On each stud 27 is a contact piece comprising a disk 30 having an internally-threaded stud portion 31 into which engages the stud 27, and on the contact piece is a button 32 of insulation, whereby the contact piece can be readily actuated for opening or closing the circuit. The disk portion 30 of the contact piece is adapted to engage with the adjacent arcuate contact 25 so as to complete the path for the electric current. The plates to which the conductors and fuses are connected are secured in place on the base 1 in any suitable manner, as for instance, by countersunk screws 33 passing upwardly through openings in the base 1 and screwing into tapped openings in the said metal plates.

In practice, the apparatus in connected in any desired circuit with the translating or generating devices, and in case of a fuse being blown, it is merely necessary to first turn the switch controlling the open circuit so as to remove the contact 30 out of engagement with the contact 25 and after this is done, the cover 10 is taken off and a new fuse substituted. The cover can then be replaced, and the switch closed to test the circuit, and in case the fuse should again blow, the circuit can be immediately turned open for placing in a new fuse. It will thus be seen that it is unnecessary to open the controlling switches at the power house or generator, thus enabling electricians to easily and quickly restore the circuits.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of an insulating base, a pair of metal pieces thereon, a fuse connected with the said pieces, a cover on the base disposed over the fuse, a second metal piece having a threaded stud, a member threaded on the stud and adapted to bear on one of the pieces connected with the fuse, and an insulating handle piece fixed on the said member.

2. A device of the class described comprising a supporting base of insulating material, a compartment therein, a cover for the compartment, ribs on the bottom side of the cover and arranged to engage the internal walls of the compartment, a single fastening passing through the base and cover for holding the latter in place, means for dividing the compartment into separate chambers, fuses in the chambers, contact members connected with the fuses and extending out of the compartment, metal pieces having outstanding threaded studs, switch members on the threaded studs for connecting the said pieces with the contact members for opening and closing the circuits including the fuses, and means for connecting the fuses and metal pieces in electric circuits.

3. A device of the class described comprising a box-like structure of insulating material, a partition dividing the structure into separate compartments, a cover for one of the compartments, a means for holding the cover removably in place, a fuse in the compartment, a contact member connected with one end of the fuse and extending out of the compartment, a metal piece, a threaded stud rising from the latter, a movable member on the stud adapted to engage the contact member to open or close the circuit, and means for connecting a conductor with the metal piece.

4. A device of the class described comprising a supporting structure of insulating material having a fuse-containing compartment, a cover therefor, a bolt passing through the base and cover for holding the latter in position, means for dividing the compartment into separate chambers, spaced contact pieces in each chamber, fuses connecting the contact pieces, one of each set of contact pieces extending out of the compartment, contact pieces arranged on the structure outside of the compartment, bridging devices on the last-mentioned contact pieces and having flat under surfaces adapted to engage the contact pieces extending out of the compartment, and binding posts.

In testimony whereof, I affix my signature in presence of two witnesses.

CHRISTOPHER C. DAWBER.

Witnesses:
GEO. CARLTON,
P. P. GREER.