R. C. COLE.

CUT-OUT BLOCK.

APPLICATION FILED NOV. 26, 1915.

1,199,348.

Patented Sept. 26, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

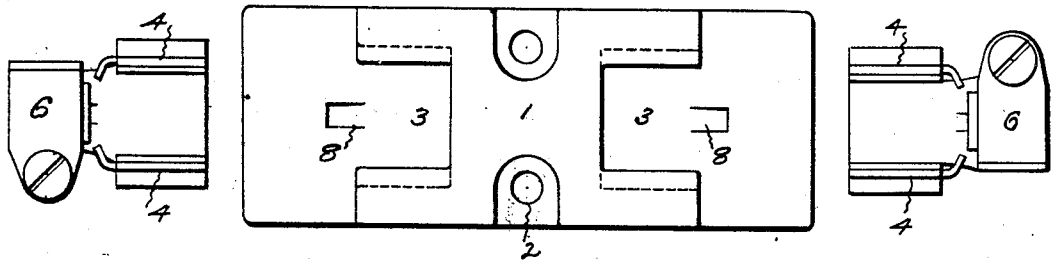


Fig. 2.

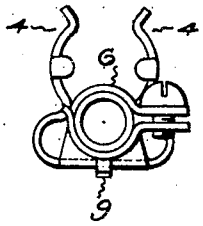


Fig. 3.

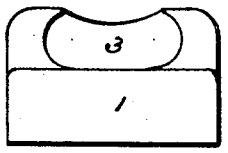


Fig. 4.

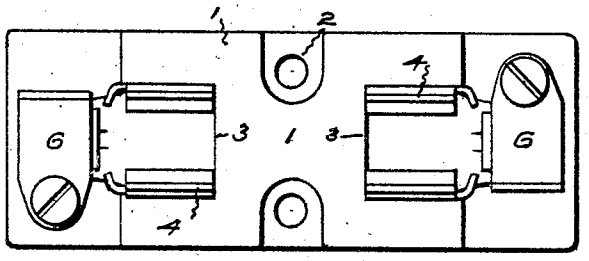


Fig. 5.

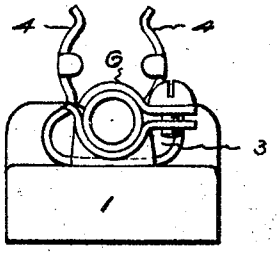
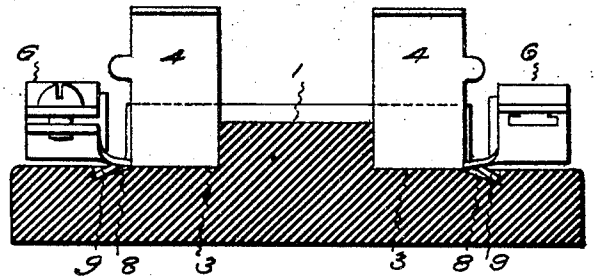


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 7.

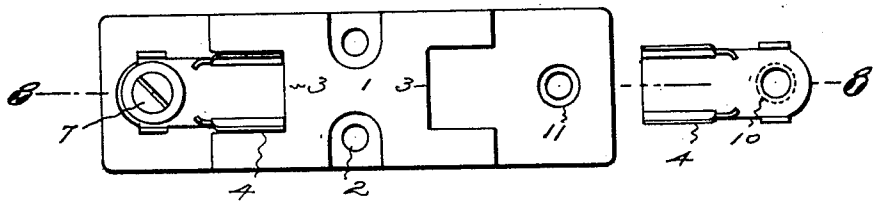


Fig. 8.

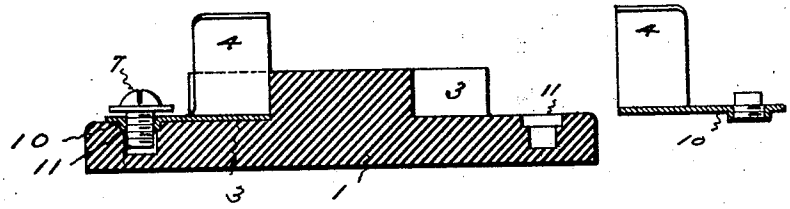
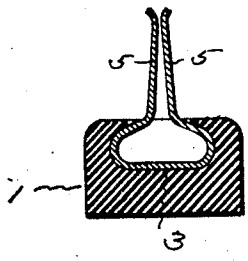


Fig. 9.



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UNITED STATES PATENT OFFICE.

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CUT-OUT BLOCK.

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Application filed November 26, 1915. Serial No. 63,407.

To all whom it may concern:

Be it known that I, ROBERT C. COLE, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Cut-Out Blocks, of which the following is a specification.

This invention relates to the construction of electrical cut-out blocks of the class which have spring conductors for receiving the terminals of inclosed fuses.

The object of the invention is to produce a fuse cut-out block having maximum electrical efficiency, of few parts that are assembled by a minimum expenditure of labor. This object is attained by designing the insulating base and the fuse holders, whether of the spring clip or knife blade type, so that they may be assembled for use by any one at any time without the use of any tools by simply thrusting the fuse holders into pockets on the insulating base where they will automatically lock themselves in operative position.

The invention is equally applicable to the construction of single and multiple pole main and branch blocks, the only change being in the size of the base and the number of fuse holders applied thereto to meet the desired conditions. For conciseness, however, the invention is illustrated in the drawings and described herein as embodied in a single pole block.

Of the accompanying drawings Figure 1 shows a plan of the insulating base and the fuse clips before they are put together. Fig. 2 shows an end view of one of the clips. Fig. 3 shows an end view of the base. Fig. 4 shows a plan of the base and clips assembled. Fig. 5 shows an end view of the base with the clips in place. Fig. 6 shows a side elevation of the clips and a longitudinal section of the base. Fig. 7 shows a plan of the base with one fuse clip in operative position, and the other clip before it has been thrust into its pocket. Fig. 8 shows a longitudinal section on the plane indicated by the dotted line 8—8 on Fig. 7. Fig. 9 shows a transverse section of the base with a fuse holder of the knife blade type, the other views showing fuse holders of the spring finger clip type.

The cut-out base 1 is made any suitable size of insulating material, preferably porcelain, with holes 2 for the passage of the screws which are used to secure it in place. On the upper face of the insulating base are two pockets 3, these pockets extending longitudinally and opening toward the ends of the base. The side walls of the pockets are under-cut and are shaped so as to receive and hold the lower portions of the fuse holders.

The fuse holders may be of the style shown in Figs. 1 and 2 having spring fingers 4 shaped to receive fuse terminals of the ferrule type, or the holders may be shaped as shown in Fig. 9, in which the fingers 5 are shaped to receive fuse terminals of the knife blade type. Connected with the fingers may be clamps 6, as shown in Figs. 1 and 2, for the attachment of the ends of the circuit wires, or connected with the fingers may be binding screws 7, as shown in Figs. 7 and 8,—the clamps being usually used with blocks designed to receive the larger sizes of fuses and the binding screws being used with blocks for fuses of the smaller sizes.

The pockets in the upper face of the block are so shaped that the lower portions of the fuse holders just fit the walls when they are slipped in. In the front face of the base in or adjacent to the bottom of the pockets are notches 8, and bent down from the bottom of the clips, or the conducting plates that extend from the clips in the form of fuse holders provided with the terminal clamps, are teats 9. These notches are so formed and the teats are so bent that when the fuse holders are slipped into the pockets in the upper face of the insulating base the teats snap down into the pockets and engage the walls in such a manner as to prevent the withdrawal of the holders, as shown in Fig. 6. The inner end walls of the pockets prevent the holders from moving toward each other, the undercut side walls of the pockets retain the holders from sidewise and upward movement, and the teats keep the holders from moving back out of the pockets.

In the form of holder for the smaller sizes of fuses, shown in Fig. 8, where binding screws are used, portions of the plate 10 are punched down and these portions threaded for the binding screws. When the holder is thus made the locking recesses 11 in the face of the base may be circular, so that when the holders are thrust into the pockets the depressed portions of the plates will owing to the shape and resilience of the plates snap into these recesses in the face of

the base and retain the holders in place until the plates shall be bent up sufficiently to lift the depressed portions or locking teeth out of the recesses. When the binding screws are turned in they will also assist in retaining the fuse holders in the pockets.

With structures designed according to this invention any one at any time can simply thrust the fuse clips of the desired type into the pockets in the blocks until they automatically lock themselves in place. No tools are required to assemble the parts and no screws are necessary to secure the holders in place. This reduces the cost of labor for assembling the parts to almost nothing; there are no holes through the base, thus eliminating the necessity for waxing or sealing such holes; screws, sealing material and the necessary manipulating tools are eliminated; and the fuse holders, although permanently and securely retained, are more or less flexibly held so that they will aline themselves with the ferrules or knife blades which form the terminals of the fuse that they are to receive, and insure the best possible electrical contact.

The invention claimed is:

1. A fuse cut-out block comprising a base of insulating material having upwardly and outwardly opening clip-receiving pockets with undercut side walls in its upper face, and metallic fuse-holding spring-clips with their lower portions fitting and held from upward movement by the undercut side walls of said pockets, said clips having means projecting downward from their lower portions into engagement with the top of the base for retaining the clips from endwise movement out of said pockets.

2. A fuse cut-out block comprising a base of insulating material having upwardly and outwardly opening clip-receiving pockets with undercut side walls and also having lock-receiving recesses in its upper face, and metallic fuse-holding spring-clips with their lower portions fitting and held from upward movement by the undercut side walls of said pockets, said clips having locking means extending downward from their lower portions into said recesses for retaining the clips from endwise movement out of said pockets.

3. A fuse cut-out block comprising an insulating base with pockets in its front face and recesses at the bottom of the pockets, and spring-clips with portions fitting said pockets and portions entering said recesses, the walls of said pockets embracing and retaining the clips from outward movement and the walls of said recesses engaging and retaining the clips from endwise movement.

4. A fuse cut-out block comprising a base of insulating material having in its upper face pockets closed at their inner and open at their outer ends and narrower at than below the top, and metallic fuse-holding clips with their lower ends fitting and prevented from upward and inward movement by the walls of said pockets, and means extending downwardly from the clips into engagement with the base for detachably retaining the clips from movement endwise out of the pockets.

ROBERT C. COLE.