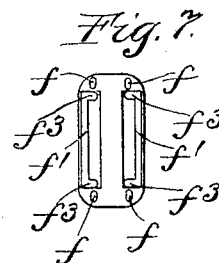
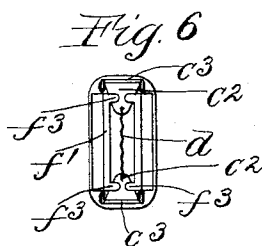
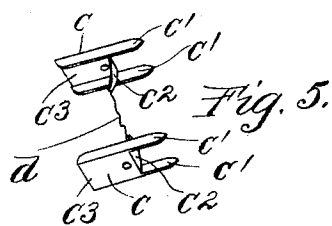
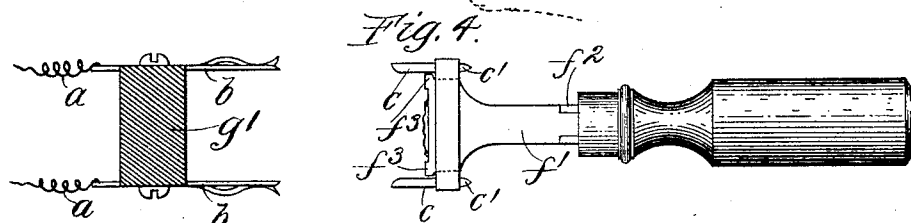
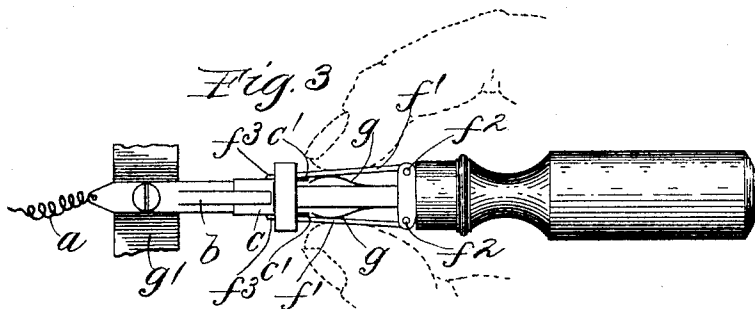
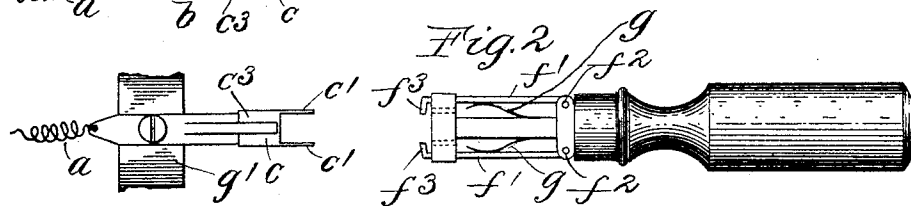
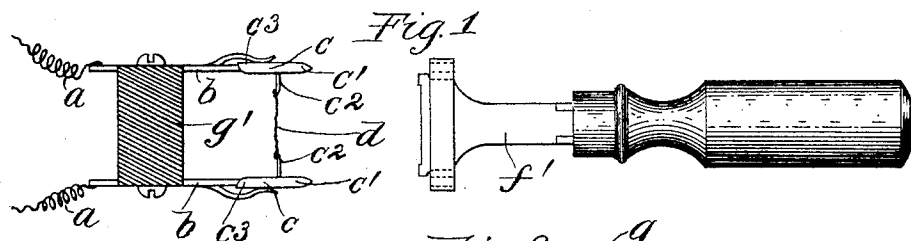


(No Model.)

W. W. DEAN.  
MOUNTING FOR FUSES.

No. 581,455.

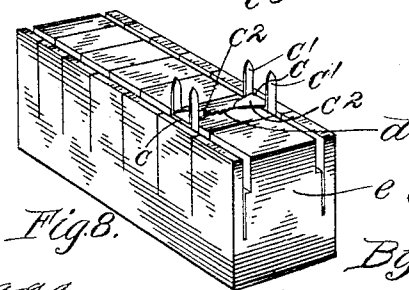
Patented Apr. 27, 1897.



Witnesses:

A. M. C. JAMES

George K. Cragg



Inventor,  
William W. Dean,

By Barton Brown  
Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM W. DEAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE BELL  
TELEPHONE COMPANY OF MISSOURI, OF SAME PLACE.

## MOUNTING FOR FUSES.

SPECIFICATION forming part of Letters Patent No. 581,455, dated April 27, 1897.

Application filed September 19, 1896. Serial No. 606,342. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have  
5 invented a certain new and useful Improvement in Mountings for Fuses, (Case No. 14,) of which the following is full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part  
10 of this specification.

My invention relates to a mounting for fuse-wires, and has for its object to provide convenient means for attaching the fuse-wires to the fuse-blocks and removing them there-  
15 from without danger of straining or breaking even the most delicate wires.

In accordance with my invention a length of fuse-wire is provided with a metallic mounting at each end, which I designate "fuse-  
20 terminal." These fuse-terminals are shaped in such wise that they may be grasped by the jaws of a wrench, which is designed to hold them firmly while inserting them into a spring clip or clips forming a part of the fuse-  
25 block, when they may be released from the wrench, leaving them tightly held by the clips referred to, which form the terminals of the conductor to be protected by the fuse. Throughout this operation all strains come  
30 upon the metallic fuse-terminal instead of upon the fuse-wire, whereby all danger of breaking the fuse-wire is obviated. The mounted fuses are packed for shipment with the fuse-terminals inserted in slots provided  
35 in a block of wood, from whence they may be withdrawn by the wrench.

The method of mounting the fuse-wire upon the metallic fuse-terminals and inserting the latter into the blocks for shipment is described and claimed in my application, Serial  
40 No. 606,343, filed September 19, 1896, and forms no part of the present application.

I will describe my invention more in detail by reference to the accompanying drawings,  
45 in which—

Figure 1 is an elevation of a fuse-block and wrench embodying my invention, the ends of the fuse being provided with metallic terminal mountings in accordance with my inven-  
50 tion, which are engaged by metallic spring-clips upon the fuse-block. Fig. 2 is a plan of

the same. Fig. 3 is a plan view showing the wrench grasping the fuse-terminals, said terminals having been placed in engagement with the spring-clips through the agency of  
55 said wrench. Fig. 4 shows the fuse-terminals held by the jaws of the wrench in the act of being inserted within their engaging spring-clips. Fig. 5 is a detail perspective view of the two fuse-terminals with the fuse-wire  
60 mounted between them. Fig. 6 is a detail end view of the wrench with the fuse and terminals inserted therein. Fig. 7 is a similar view, the fuse-terminals being removed. Fig. 8 is a perspective view of the block in which  
65 the fuses are packed and shipped.

Like letters refer to like parts throughout the several figures.

The conductors *a a*, which it is desired to protect by the fuse, are soldered to the ends  
70 of the spring-clips *b b*, which are mounted upon the block *g'* of insulating material. Each spring-clip is formed of a strip of metal which is provided with two cuts extending  
75 lengthwise thereof, as shown, which separate the spring-clip into three spring-fingers, the fuse-terminal being engaged between the central finger upon one side of the plate and the  
80 outer fingers upon the other side of the plate, as shown. The metallic fuse-terminals *c c* are shaped as shown most clearly in Fig. 5, each having arms *c' c'* formed thereon, be-  
85 tween which an ear *c<sup>2</sup>* is bent at a right angle thereto, one end of the fuse-wire *d* being soldered to the ear of one terminal, the other end of the wire being soldered in like manner to the ear *c<sup>2</sup>* of a similar terminal. The flat  
90 ends *c<sup>3</sup>* of the terminals are adapted to be engaged by the spring-clips *b b* of the fuse-block, and it is these ends which are inserted in the slots of the wooden block *e*, Fig. 8, in which the mounted fuses are packed for trans-  
95 portation.

Wrenches are employed for manipulating the fuses and the terminals to which they  
95 are secured. In order to preserve a fixed relation between the fuse-terminals to prevent the rupture of delicate fuses connected between the same, I provide each wrench with two "receivers," as I term them, between  
100 which a fixed distance is preserved, each receiver being adapted to secure a terminal in

position, whereby a fixed relation is preserved between the fuse-terminals and the rupture of the fuse prevented.

The wrench is preferably formed with four 5 holes  $ffff$  in its ends, into which the arms  $c'$  of the fuse-terminal are adapted to fit. Jaws  $f'f'$ , pivoted at  $f^2f^2$ , are provided, the projections or teeth  $f^3f^3$  whereof are designed to grasp the ears  $c^2c^2$  of the fuse-terminals  $c$  10 to hold the terminals firmly in the wrench when the jaws are moved together by the fingers, as shown in Fig. 3. Springs  $gg$  serve to keep the jaws  $f'f'$  normally apart, each pair of holes  $ff$ , that receive the arms  $c'c'$  of 15 a fuse-terminal, constituting a receiver for that terminal, the jaws  $f'f'$  being provided to preserve the disposition of the terminals within the receivers.

The fuse-terminals are disposed for shipment or storage in wooden blocks  $e$ , the ends 20  $c^3$  of the terminals being inserted within slots  $e'$ . In removing the terminals and fuse from the block  $e$  preparatory to engaging them with the fuse-block clips the wrench is thrust 25 upon the fuse-terminals  $cc$ . The arms  $c'c'$  fit into the holes  $ff$  of the wrench. The jaws  $f'$  of the wrench are closed together, the ends  $f^3$  whereof are thereby caused to grasp the ears  $c^2$  of the fuse-terminals, which may now 30 be withdrawn from the block  $e$  and thrust into engagement with the spring-clips upon the fuse-block, as shown in Fig. 3. The jaws  $f'$  are then released and the wrench withdrawn, leaving the fuse-terminals engaged 35 by the fuse-block clips, as shown in Fig. 1.

It is evident that modifications may be made without departing from the spirit of my invention.

Having thus described my invention, I therefore claim, with only those limitations 40 expressed or implied in view of the state of the related arts, the following:

1. In a fuse-terminal, the combination of the end  $c^3$ , and arms  $c'c'$ , with an ear  $c^2$  to 45 which the fuse-wire may be attached located between said arms and bent at an angle thereto, substantially as and for the purpose described.

2. The combination of a fuse, with terminal plates to which the same is attached, said 50 plates having ends  $c^3$ , arms  $c'c'$ , and ears  $c^2$ , substantially as described.

3. In a wrench for manipulating fuse-terminals, the combination of jaws  $f'f'$  adapted to grasp said terminals, with a recess or re- 55 cesses  $ff$  provided in a fixed portion of said wrench adapted to receive a portion of each of said terminals, substantially as described.

4. In a wrench for manipulating fuse-terminals, the combination of a fixed portion 60 adapted to engage said terminals, with pivotally-supported jaws adapted to grasp said terminals, and springs adapted to separate said jaws, substantially as described.

5. In a wrench for manipulating fuse-terminals, the combination of a fixed portion 65 provided with recesses  $ff$  adapted to receive said terminals, with jaws adapted to grasp said terminals, substantially as described.

In witness whereof I hereunto subscribe my 70 name this 16th day of September, A. D. 1896.

WILLIAM W. DEAN.

Witnesses:

GEORGE P. BARTON,  
GEORGE L. CRAGG.