

Nov. 28, 1961

R. T. FORD

3,011,099

UNIT TYPE ALARM FUSE MOUNTING

Filed July 22, 1957

FIG. 1

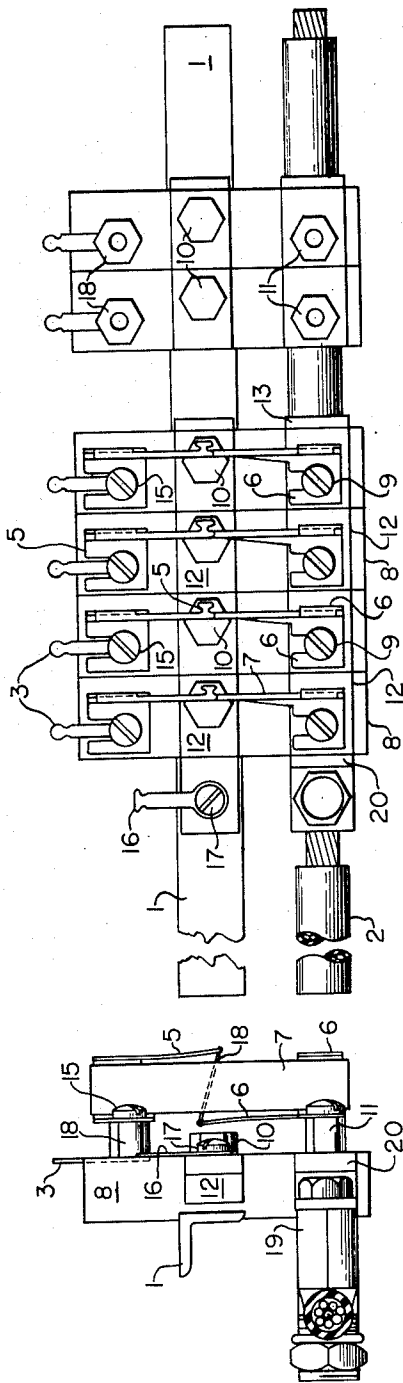
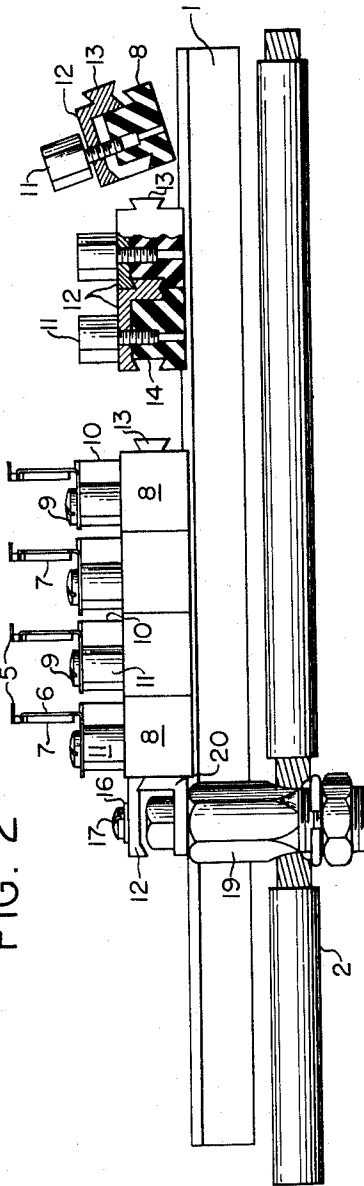


FIG. 2



INVENTOR.
ROBERT T. FORD
BY *C. P. Sipe*
ATTY.

1

3,011,099

UNIT TYPE ALARM FUSE MOUNTING

Robert T. Ford, Berkeley, Ill., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware
Filed July 22, 1957, Ser. No. 673,438
2 Claims. (Cl. 317-116)

The present invention relates in general to telephone systems and more specifically to unit type alarm fuse mountings used in telephone office equipment.

The main feature of the present invention is to provide a simple means for mounting a plurality of unit alarm fuses on a common bar in such a manner that any relative movement of the units is precluded. The arrangement herein disclosed provides such a means. Also, each unit fuse may be easily removed from its mounting or additional fuses may be added without the need for special tools.

A further feature is that additional fuses may be added without disrupting the service rendered by the other fuses.

A still further feature is that as each unit fuse is added to the already existing fuses, a continuous circuit is completed through each unit as it is installed without the necessity of connecting various wires from one unit to the next.

Additional features and objects will become apparent upon a perusal of the following detailed specification in conjunction with the drawings of which,

FIGURE 1 is a top view of the mounting bar showing four unit fuses assembled thereon.

FIGURE 2 is a side view of the apparatus shown in FIGURE 1 with a sectional view of three of the unit fuses.

FIGURE 3 is an end view of the assembly shown in FIGURES 1 and 2.

Angle iron 1 serves as the mounting bar for a plurality of unit fuses 8 of which four are shown assembled in FIGS. 1 and 2. Power cable 2 is connected to the fuses by means of a Frankel connector 19. Each unit fuse is made up of a block 8 which is composed of some non-conducting material such as Bakelite. Each block has two grooves on the upper and side portions thereof into which conductors 12 will fit. As is shown in FIGURE 2, the sides of block 8 are so cut so that when conductors 12 are fitted into the above mentioned grooves, a socket 14 is formed to securely hold the dovetail tongue 13. The conductors 12 are held in position by means of fuse mounting screws 11 which hold the conductors 12 firmly in the aforementioned grooves of blocks 8.

As can be seen from FIGURES 1 and 3, each block has two grooves to hold two separate conductors. The middle conductors 12 are identical in size and shape to the previously mentioned conductors. The middle conductors are each held in place by a fuse alarm screw 10.

At the other end of block 8, a second fuse mounting screw is used to hold terminals 3 in place. The wires connected to terminals 3 lead to any equipment which is to be serviced by power cable 2.

The actual fuse assembly consists of a thin strap 7 of some non-conductive material such as phenol fibre. A mounting plate 6 is securely fastened to each end of the strap. Each plate has an extension spring protruding toward the fuse alarm screw 10 in the center of the block 8. As can be seen in FIG. 3, one spring extends along the bottom portion of strap 7 and the other spring extends across the top portion of said strap. At the end of each spring is a terminal to which a fusible wire 18 is connected to complete the circuit from power cable 2 to terminals 3. The fuse wire is connected against the tension of both springs 5 and 6. The purpose of this is to keep spring 6 away from the fuse alarm screw 10.

The previously mentioned mounting plates 5 and 6 are

2

grooved as shown in FIG. 1. The grooved portions are placed on the two fuse mounting screws 11 and 18 and held in that position by the screws 9 and 15.

Having given this brief description it can readily be seen that incoming current flows through cable 2, Frankel connector 19, end conductor 20, fuse mounting screw 11, mounting plate spring 6, fuse wire 18, mounting plate spring 5, fuse mounting screw 18 and terminal 3 to the equipment to be served.

If too much current is being used, the fuse wire 18 will melt and spring 6 will tension against the fuse alarm screw 10. A circuit will then be completed through spring 6 and through conductor 12 to the fuse alarm terminal 16 which is held in place by screw 17. This will give a signal, indicating that a fuse has blown and proper service can be made.

As can readily be seen in FIG. 2 any number of unit fuses and blocks may be added by dovetailing them together as shown. This is very simply accomplished by loosening screws 10 and 11 to permit the conducting strip 12 to be raised. The dovetail tongue 13 is then fitted into the dovetail socket 14 and the screws 10 and 11 are tightened to make the connection secure.

With this type of connection a continuous conducting path is had through any number of fuses which might be needed without the necessity of additional wiring or strapping. This is due to the fact that all of the conductors 12 are touching each other by means of the dovetail-arrangement as shown.

Thus, a simple means is disclosed whereby a plurality of fuses may be connected together in a continuous circuit without need for special tools, additional wiring or disrupting of the service provided by the remaining fuses.

In this respect it should be noted that fuse can be removed and replaced without breaking the circuit to other fuses on the bar.

While what has been disclosed herein is considered at present to be the preferred embodiment, it is to be understood that structural and organizational changes may be made in this invention without deviating from the true spirit and scope thereof.

What is claimed is:

1. In a multiple fuse mounting assembly comprising a plurality of adjacent fuse mounting blocks each being comprised of an insulating block and a removable conducting member, dovetail connecting means for interlocking adjacent mounting blocks, said dovetail connecting means comprising a dovetail tongue formed on one end of each conducting member and a dovetail socket, said dovetail socket including a recess in each insulating block and an acute angle on the other end of each conducting member, an acute angle in each recess forming one face of said dovetail socket and the acute angle on each conducting member forming the other face of said dovetail socket, and means for securing each conducting member to its insulating block with the dovetail tongue of each preceding conducting member locked in the dovetail socket of each succeeding mounting block thereby providing a continuous conductive circuit including said conducting members of successive mounting blocks.

2. In a multiple fuse mounting assembly, a plurality of mounting blocks of insulating material, a supporting bar extending transversely of said blocks, said mounting blocks being detachably mounted side by side on said supporting bar, each said block including a number of substantially U-shaped grooves each having an angular recess formed at the lower end of each leg thereof, the recess of one of said legs constituting the lower end of a dovetail socket, a corresponding number of removable connecting members of conductive material each having a dovetail tongue on one end thereof and having at the

other end a projection with an inner angular face forming part of the upper end of said dovetail socket, the dovetail tongue of each connecting member being engaged at the upper end by the projection of the next adjacent member, and at the lower end fitting into the other recess of the groove of the next adjacent block, said connecting members having next to the lower end of said dovetail tongue another angular projection fitting into the other recess of the groove of the first-mentioned block, and separate means for securing each said removable connecting member to its individual mounting block, whereby a mechanically rigid assembly of mounting blocks and connecting members is provided with a continuous conducting path extending through said plurality of connecting members.

5

10

References Cited in the file of this patent

UNITED STATES PATENTS

453,029	Warner	May 26, 1891
1,793,032	Wetzel	Feb. 17, 1931
1,802,302	Zagorski	Apr. 21, 1931
1,926,922	Woertz	Sept. 13, 1933
2,601,147	Jackson	June 17, 1952
2,623,087	Latta	Dec. 23, 1952
2,726,375	Gordon	Dec. 6, 1955

FOREIGN PATENTS

357,171	Great Britain	Sept. 10, 1931
---------	---------------	----------------