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SCREWLESS TERMINAL FUSEHOLDER

Filed July 29, 1965

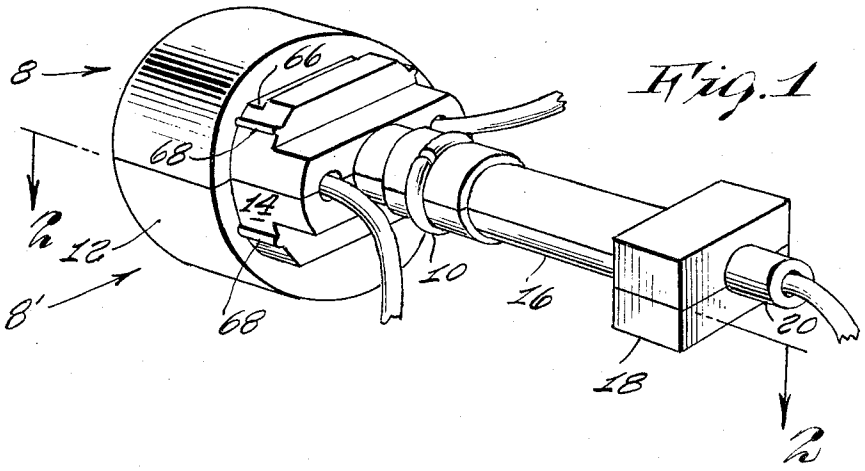


Fig. 1

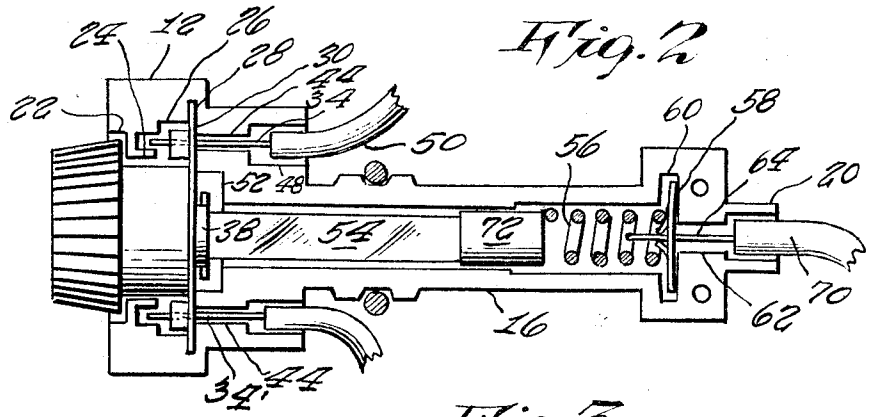


Fig. 2

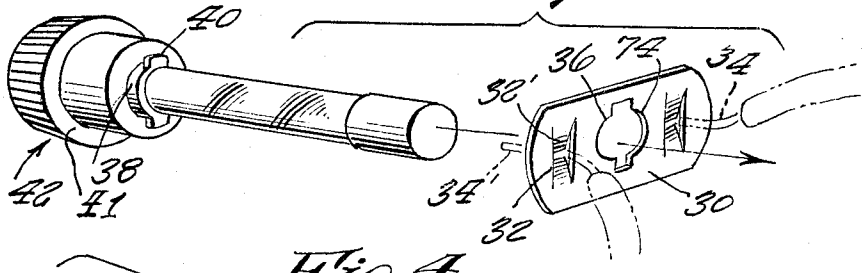


Fig. 3

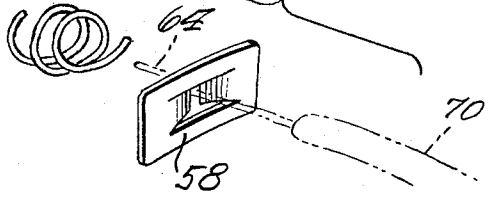


Fig. 4

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SCREWLESS TERMINAL FUSEHOLDER

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This invention relates to improvements in holders for cartridge enclosed protectors for electric circuits. More particularly this invention relates to enclosed screwless terminal fuseholders.

An important object of the invention is to provide an enclosed screwless terminal fuseholder, wherein the leads or wires may be attached to the contacts or terminals without soldering or other connectors such as crimp-on or screw-on connectors.

Another object of the invention is to provide such a fuseholder wherein the leads or wires are held permanently and securely to the terminals or contacts, without the danger of separation or loosening, thus avoiding an interruption of the flow of current through a corresponding circuit.

A further object of the invention is to provide such a fuseholder, wherein the connections of the wires or leads to the terminals or contacts may be quickly and efficiently made without the use of special equipment, such as soldering irons crimping tools and the like.

Still another object of the invention is to provide a screwless terminal fuseholder comprising an assemblable casing for receiving the fuse cartridge, said casing consisting of a pair of identical mating halves and of simple means for securely holding said halves together.

A further object of the invention is to provide means for mounting said fuseholder in standard fluorescent fixtures, various electrical, electronic equipment and the like.

Yet another object of the invention is to provide a device of the character described which can be assembled with a minimum of previous instruction.

Still another object of the invention is to provide a device of the character described which is simple in design, of sturdy construction and which may be manufactured at a reasonable cost.

These and other important objects of the invention will become apparent from the following description and the accompanying drawing illustrating a preferred embodiment of the invention.

In the drawing:

FIG. 1 is a perspective view of the screwless terminal fuseholder;

FIG. 2 is a cross-sectional view taken on line 2—2 of FIG. 1;

FIG. 3 is an exploded view of part of the fuseholder, illustrating the method of securing a wire to one terminal of the fuseholder and

FIG. 4 is an exploded view of another part of the fuseholder, illustrating the method of securing a wire to another terminal of the fuseholder.

Referring now to the drawing in detail, the novel fuseholder comprises a pair of identical mating insulating members generally indicated by the numerals **8**, **8'**, which are held in firm engagement by means of split clinch ring **10**, as shown in FIG. 1. For the sake of simplicity, the construction of the fuseholder will be described in its assembled state. When thus assembled the fuseholder presents a hollow portion **12**, an intermediate reduced portion **14**, an elongated part **16** terminating in a terminal retaining section **18**, and finally a wire guard **20**.

The inner face **22** of the cylindrical portion **12** is formed with an inwardly extending angular flange **24** and a recess **26** merging with a groove **28**, for holding a stud receiver clip **30**, preferably of phosphor bronze.

The stud receiver clip is formed with two pairs of resilient clinching tongues **32**, **32'**, which are adapted to grasp the bare wire ends **34**, **34'**, so that these are firmly secured to the clip **30**. The clip is further provided with an opening **36** conforming in shape to the collar **38** and its projections **40**, of a standard cartridge fuse cap assembly **42** used in fluorescent lighting fixtures.

The intermediate portion **14**, of the fuseholder, has narrow passages **44** communicating with the hollow portion of the part **12**, for passing the bare wire ends **34**, **34'**. The passages **44** terminate as enlarged openings **48** for receiving the insulated parts **50** of wires. The intermediate part **14** is further provided with a cavity **52** to provide clearance for the collar **38** and projections **40** of the cartridge fuse cap assembly **42**. The cavity **52** communicates with one end of the elongated portion **16** of the fuseholder, in order to permit the fuse **54** proper to be inserted in the elongated portion **16**. A coil spring **56** lies in an expanded section near the other end of the elongated portion. Another stud receiver plate **58** is received in a groove **60** of the enlarged section **18**, said groove communicating with the elongated portion, and a passage **62** for the bare wire end **64** and the wire guard **20**.

As shown in FIG. 1, the intermediate reduced portion **14** is formed with slots **66** for bracket mounting and raised ribs **68** for pressure mounting in a panel or other mounting member aperture.

The manner of assembling the components of the fuseholder proper is as follows:

The stud receiver clips **30** and **58** are inserted in the respective grooves **28** and **60** of one of the identical halves **8**, **8'**, followed by the insertion of spring **56** in the large section of the elongated portion **16** adjacent the stud receiver clip **58**. The other half of the fuseholder is then placed over the first half and both are secured by means of the split clinch ring **10**. The spring **56** cannot fall out of the enlarged section of the elongated portion **16**, because its diameter is slightly larger than the inside diameter of the rest of the elongated section **16**.

Connections to the fuseholder are made as follows:

The stripped end **46** of a wire is forced through the opening between the resilient tongues **32**, **32'** of the stud receiver clip **30**, while the insulated portion **50** is inserted in the passage **48**. Due to the resiliency of the tongues **32**, **32'** these grasp the stripped end **46** of the wire, thus assuring a firm contact between the wire end **46** and the stud receiver plate **30**. In a similar manner the stripped end **64** of the other wire is inserted in the stud receiver clip **58** where it is likewise firmly engaged with said clip. The insulated portion **70** is at the same time received in the wire guard **20**. Should a parallel connection be required, a stripped end of another wire is forced through the other pair of resilient tongues in the stud receiver clip **30**. Finally, a cartridge fuse cap assembly is secured in the fuseholder by first sliding the fuse cartridge proper through the opening **36** in the stud receiver clip **30** until the face **41** of the assembly **42** bottoms in recess **22**, while cap **72** makes contact with spring **56**. The fuse cap assembly is then twisted, so that the projections **40** are pressed in contact with the circular edges **74** of the clip **30** by the spring **56**.

While the invention has been described with reference to the above embodiment, it should be understood that various changes in the shapes and dimensions of the elements may be made without confining the invention to said embodiment, without affecting the scope of the invention.

Having thus disclosed my invention, what I claim and desire to secure by Letters Patent of the United States of America is:

1. A screwless terminal fuseholder comprising a casing of non-conductive material, said casing including integral consecutively disposed hollow, intermediate, elongated and enlarged part retaining portions, a first stud receiver contact plate in said hollow portion, at least one pair of resilient clinching tongues, means in said hollow portion transverse to the plane of the stud-receiver contact plate and in alignment with said clinching tongues, for the insertion of a wire end into clamping engagement in said first contact stud receiver plate, said first contact stud receiver plate having a central aperture therein to allow the insertion of a fuse cartridge, a second stud receiver contact plate in said enlarged part retaining portion, said second plate being provided with a pair of clinching tongues for securing another wire end, a spring in said elongated portion in contact engagement with said second stud receiver plate, said first stud receiver plate being provided with means for securing one end of a cartridge fuse in contact engagement with said spring and another end of said cartridge fuse in contact engagement with said first stud receiver contact plate.

2. A screwless terminal fuseholder comprising a casing of non-conductive material, said casing including integral consecutively disposed hollow, intermediate, elongated and enlarged part retaining portions, said hollow portion having a recess transverse to said elongated portion, a first stud receiver plate in said recess, at least one pair of resilient clinching tongues means in said hollow portion transverse to the plane of the stud-receiver contact plate and in alignment with said clinching tongues, for the insertion of a wire end into clamping engagement in said first stud receiver plate, said first stud receiver plate having a central aperture therein for the passage of a fuse cartridge, said enlarged part retaining portion having another recess, a second stud receiver plate in said other recess, said second plate being provided with a pair of clinching tongues for securing another wire end, a helical spring in said elongated portion in contactual engagement with said second stud receiver plate, said spring extending part way of said elongated portion, said first stud receiver plate being provided with means for securing one end of a fuse cartridge in contact engagement with said spring and another end of said cartridge in contact engagement with said first stud receiver plate.

3. A screwless terminal fuseholder comprising a casing of non-conductive material, said casing including a pair of mating members held in engagement with one another, said members forming together consecutively disposed hollow, intermediate, elongated and enlarged part retaining portions, a clamp for holding said members together, a first stud receiver plate in said hollow portion at least one pair of resilient clinching tongues, means in said hollow portion transverse to the plane of the stud-receiver contact plate and in alignment with said clinching tongues, for the insertion of a wire end into clamping engagement for securing a wire end for securing a wire end in said first stud receiver plate, said first stud receiver plate having a central aperture therein for passage of a fuse cartridge, said enlarged part retaining portion having another recess, a second stud receiver plate in said other recess, said second plate being provided with a pair of clinching tongues for securing another wire end, a helical spring in said elongated portion in contactual engagement with said second stud receiver plate, said spring extending part way of said portion, said first stud receiver plate being provided with means for securing one end of a fuse cartridge in contact engagement with said spring and another end of said cartridge in contact engagement with said first stud receiver plate, said intermediate portion having a pair of oppositely disposed slots on its outer face, for bracket mounting and raised ribs for pressure mounting in a fluorescent light fixture, or other electrical equipment panel.

4. A screwless terminal fuseholder comprising a casing of non-conductive material, said casing including a pair of mating members fixed to one another, said members forming together consecutively disposed hollow, intermediate, elongated and enlarged part retaining portions, a clamp for holding said members together, a first stud receiver plate in said hollow portion, two pairs of resilient clinching tongues, means in said hollow portion transverse to the plane of the stud-receiver contact plate and in alignment with said clinching tongues, for the insertion of a pair of wire ends into clamping engagement respectively in said first stud receiver plate, for parallel connection, said first stud receiver plate having a central aperture therein for the passage of a fuse cartridge, said enlarged part retaining portion having another recess, a second stud receiver plate in said other recess, said second plate being provided with a pair of clinching tongues for securing another wire end, a helical spring in said elongated portion in contactual engagement with said second stud receiver plate, said spring extending part way of said portion, said first stud receiver plate being provided with means for securing one end of a fuse cartridge in contact engagement with said spring and another end of said cartridge in contact engagement with said first stud receiver plate.

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