Feb. 4, 1964 W. P. WESSON, JR 3,120,574

SCREW GUARD FOR ELECTRICAL GUTTERS

Filed Aug. 14, 1961

Fig. 1

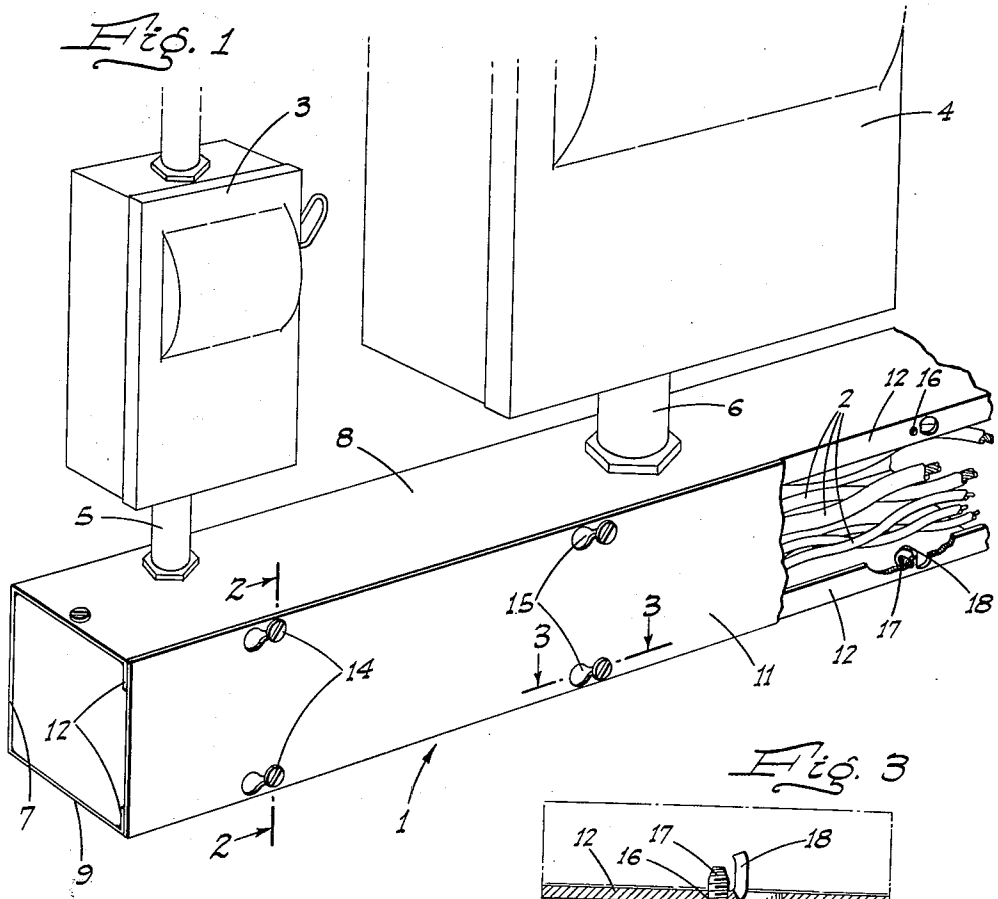


Fig. 3

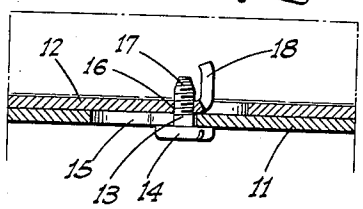


Fig. 2

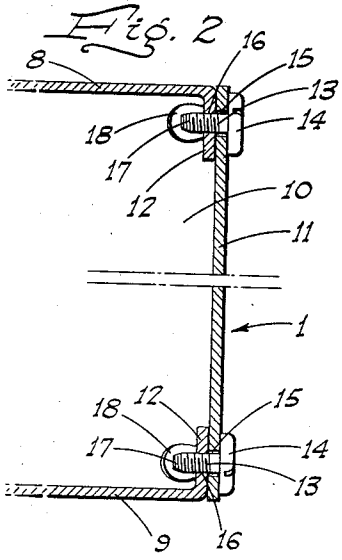
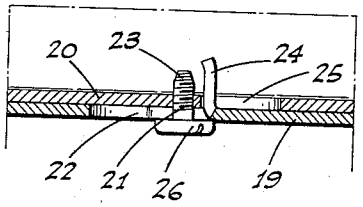


Fig. 4



INVENTOR

Walter P. Wesson, Jr.

BY Webster & Webster

ATTORNEYS

United States Patent Office 3,120,574 Patented Feb. 4, 1964

3,120,574

SCREW GUARD FOR ELECTRICAL GUTTERS

Walter P. Wesson, Jr., Modesto, Calif., assignor to Alwalt Manufacturing Company, Modesto, Calif., a corporation of California

Filed Aug. 14, 1961, Ser. No. 131,249
1 Claim. (Cl. 174—101)

This invention is directed to, and it is a major object to provide, a novel screw guard or shield for electrical gutters that house or enclose electric conductors, such as wires, cables busbars, or the like; the term "gutters," as used herein, being deemed to include wireways, raceways, busways, and similar electrical housing products, together with associated fittings such as ends, connectors, T's, elbows, crosses, etc.

In this type of product, the parts—such as a removable cover plate on a gutter—are commonly secured together by screws whose inner end portions project into the enclosure, with possible engagement or contact with the electric conductors in such enclosure. In order to comply with safety requirements or regulations protective means must be included in the gutter in order to assure against such an eventuality.

It is therefore another object of the invention to provide, in integral relation with one of the parts of a gutter connected by such screws, a protective tab or tongue that extends into the enclosure closely adjacent, lengthwise of, and to a termination beyond, the inwardly projecting end portion of each screw; each such tab or tongue serving as a guard or shield which prevents any electrical conductor in the enclosure from assuming a position in which said portion of the related screw could be run into contact with such conductor.

An additional object of the invention is to provide a screw guard, for electrical gutters, wherein such tabs or tongues are struck, and bent inwardly, from one of the screw-connected gutter parts, and in a predetermined position relative to a pre-formed screw receiving hole in such part; the guard thus being readily, economically, and simply formed from such gutter part, and without the necessity of any separate element being attached thereto.

It is also an object to provide a practical, reliable, and durable screw guard for electrical gutters, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

FIG. 1 is a perspective view showing an electrical gutter embodying the present invention; the view being partly broken away.

FIG. 2 is an enlarged fragmentary transverse sectional elevation on line 2—2 of FIG. 1.

FIG. 3 is an enlarged fragmentary longitudinal sectional plan view on line 3—3 of FIG. 1.

FIG. 4 is a similar view, but shows a modification of the invention.

Referring now more particularly to the drawings, and to the characters of reference marked thereon, and at present to FIGS. 1–3 inclusive, the gutter, as embodying the present invention, is indicated generally at 1; such gutter, in its present orientation, being illustrated as enclosing wires 2 that lead to and from switch boxes 3 and 4 through connecting conduits 5 and 6.

By reference to the gutter 1 when mounted in the position shown in FIG. 1, such gutter includes a back wall 7, a top wall 8, and a bottom wall 9; the walls 7, 8, and 9 being in integral relation and defining a longitudinal channel 10 of substantially U-shape in cross section and

initially open at the front, but which channel is normally closed by a removable cover plate 11 on the gutter 1.

The cover plate 11, just as the gutter 1, is elongated, and at its upper and lower edge portions such cover plate lies in flush engagement with inturned flanges 12 on walls 8 and 9.

The cover plate 11, which matches the front of the gutter 1, is removably secured in place at spaced points along said upper and lower edge portions of such cover plate by headed screws 13, whose heads are indicated at 14.

The screws 13 pass through the small end of longitudinally extending bayonet slots 15 cut in the cover plate 11; the screws 13—which are usually of self-threading type—being run through pre-formed holes 16 in the flanges 12, whereby the heads 14 bear tightly against such cover plate 11 and secure it to said flanges 12.

The screws 13 are of a length such that on each thereof an inner end portion 17 projects into the enclosure defined by the gutter 1, and in which enclosure the wires 2 are disposed.

In the absence of any protective means it is possible for the inner end portions 17 of the screws 13 to engage, damage, and make contact with the wires 2, and to avoid this undesirable eventuality there is provided the following screw guard:

A protective tab or tongue 18 is struck from the corresponding flange 12 adjacent each screw 13, with such tab or tongue being bent inwardly to a position closely adjacent, lengthwise of, and extending to an inner termination beyond, the inner end portion 17 of each screw. Additionally, each tongue 18 has a face width greater than the diameter of the adjacent inner end portion 17 of the corresponding screw 13, and faces said screw portion in substantially symmetrical relation. See FIG. 2.

With each protective tab or tongue 19 formed and disposed as described, it is impossible for any one of the wires 2, or other conductors, in the gutter 1 to assume a position which would permit the inner end portion 17 of the related screw to be run into contact with such conductor.

Also, in certain instances, with the cover plate 11 in place, and with the screws 13 projecting into the enclosure defined by the gutter 1, the wires 2 may be pulled or drawn in one direction or the other in such gutter during an installation operation. Under these conditions the protective tabs or tongues 18 prevent the wires from dragging on the inner end portions 17 of the screws 13.

In the modification of FIG. 4 the arrangement is much the same, and wherein the cover plate is indicated at 19, and an engaged flange at 20, with each screw 21 passing through a bayonet slot 22 in the cover plate 19, and thence being threaded through the flange 20, with an inner portion 23 of said screw projecting into the enclosure of the gutter.

However, in this embodiment each protective tab or tongue 24 is struck from the cover plate 19 and thence bent inwardly, extending through a slot 25 in the adjacent flange 20 and thence projecting inwardly alongside—and in protective relation to—the inner end portion 23 of the screw.

The slot 25, which is on the opposite side of the screw 21 from the bayonet slot 22, is correspondingly elongated in the opposite direction; this to the end that when the screw 21 is loosened, the cover plate 19 can be shifted in a direction to permit of passage of the screw head 26 through the large end of said bayonet slot, the tongue 24 simultaneously moving along the elongated slot 25 so as to not obstruct such sliding of the cover plate.

In this embodiment the protective tab or tongue 24, corresponding to each screw 21, serves the same purpose—and in the same manner—as the tabs or tongues 18 described in connection with FIGS. 1–3 inclusive.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention the following is claimed as new and useful, and upon which Letters Patent are desired:

In an elongated enclosure for an electrical conductor, the enclosure including inner and outer parts in face to face engagement, and a headed screw connecting such parts with the head bearing against the outer part and the screw threaded through the inner part and projecting into the enclosure; a guard for the screw comprising a protective tongue on the outer part and projecting therefrom through an opening in the inner part into the enclosure with its width transversely said enclosure, the tongue being disposed closely adjacent and lengthwise of the screw for at least the full length of said enclosure; the outer part being formed with a bayonet slot extending lengthwise of such part in one direction from and through which the screw passes, and the opening in the inner part being elongated and extending in the opposite direction, the screw and tongue being normally disposed in the adjacent ends of the slot and opening respectively whereby upon loosening of the screw, the inner and outer parts are relatively slidable, with the screw relatively movable along the slot and the tongue along the elongated opening; the extent of elongation of the opening being sufficient to enable the outer enlarged end of the slot to be alined with the head of the screw for disengagement of the outer part from the inner part of the enclosure.

References Cited in the file of this patent

UNITED STATES PATENTS

2,353,121	Adam et al.	July 11, 1944
2,511,277	Lumley	June 13, 1950
2,956,587	Fisher	Oct. 18, 1960