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(54) Title: UNIVERSAL ELECTRICAL BOX SHIELD

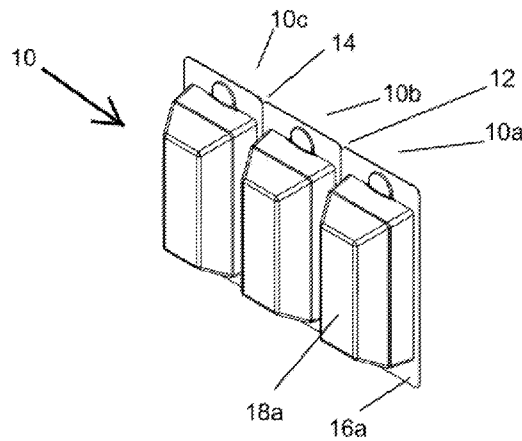


Fig. 1

(57) Abstract: A universal electrical box shield includes a sealing flange including a front surface and a back surface, a first pocket extending out from the front surface of the sealing flange, an adhesive layer including a first surface bonded to the sealing flange back surface and a second surface with a removably adhesive application, wherein the sealing flange and first pocket are dimensioned to go over a selected type of electrical box. The shield may include a double-beveled first pocket and/or a domed first pocket. The shield may be a rectangular cube shape. The shield may include second and third pockets disposed proximate the ends to provide clearance for electrical box mounting screws.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

UNIVERSAL ELECTRICAL BOX SHIELD

CLAIM OF PRIORITY

[0001] The present application claims priority to co-pending U.S. Provisional Patent Application Ser. Nr. 62/773705 filed November 30, 2018, and to co-pending U.S. Patent Application 29/696648 filed June 28, 2019. The disclosures of each of the preceding applications is hereby incorporated by reference into this Application in their entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to temporary covers for sockets, such as electrical outlets, phone/data outlets, and light switches.

BACKGROUND

[0003] When a home or office is painted, or when walls are sprayed with texture compounds, the application crews either must detach outlet and switch covers, and then tape over the exposed openings, in order to ensure paint covers the wall behind the covers but does not coat the electrical components and other components that will be exposed after re-installing the covers (e.g. the switches themselves and the plastic socket plug faces). The tape is never foolproof and inevitably leaks, allowing paint to overspray the plug faces and switches. This leakage often requires time consuming cleaning or even necessitates replacement of the assembly. Additionally, the process of taping over the openings is itself time consuming. Removing tape, especially after becoming embrittled by paint and/or wall coatings, is also time

consuming. In this context, “time consuming” means additional cost related to the particular job, and fewer jobs completed over a given span of time. Commercial painting is a highly competitive field, so even seemingly minor costs and lost time can mean losing a job or significant impacts on the painters’ margins.

[0004] Beyond the efficiency issues, the process of taping over open electrical boxes carries heightened risks of shock from inadvertent contact with exposed wiring and components, especially considering that paint crews tend to include many unskilled workers. The ability to simply press a cover over a box increases separation distance, does not require touching the box with fingers, and therefore increases safety.

[0005] Thus, there is a need for a universal outlet cover which can be installed quickly and reliably to cover any standard size outlet or switch box, is inexpensive, easily removed, and easily scaled to cover multiple outlet boxes, and providing improved safety for users.

SUMMARY AND ADVANTAGES

[0006] A universal electrical box shield includes a sealing flange including a front surface and a back surface, a first pocket extending out from the front surface of the sealing flange, an adhesive layer including a first surface bonded to the sealing flange back surface and a second surface with a removably adhesive application, wherein the sealing flange and first pocket are dimensioned to go over a selected type of electrical box. The shield may include a double-beveled first pocket and/or a domed first pocket. The shield may be a rectangular cube shape. The shield may include second and third pockets disposed proximate the ends to provide clearance for electrical box mounting screws.

[0007] The universal electrical box shield described and claimed herein provides a low-cost apparatus to safely cover typical electrical utility mounts for light switches, fan controllers,

electrical outlets and other common electrical controls/outlets found in residential and commercial buildings, during construction/remodeling activities such as painting, plastering, sanding and other activities. The shield may be applied individually, or in connected banks to cover multi-switch or multi-outlet electrical boxes. The shield prevents inadvertent contact with exposed wiring/connectors, and prevents contamination by paint, plaster, dust and other airborne contaminants into electrical areas. The simplicity, ease of use, and low cost substantially increase the ability and likelihood for individuals and businesses to use the covers thereby improving safety compliance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The accompanying drawings, which are incorporated into and constitute a part of this specification, illustrate one or more embodiments of the present invention and, together with the detailed description, serve to explain the principles and implementations of the invention.

[0009] FIG. 1 shows a top-front perspective view of a First Embodiment.

[0010] FIG. 2 shows front view of a First Embodiment.

[0011] FIG. 3 shows top view of a First Embodiment.

[0012] FIG. 4 shows side view of a First Embodiment.

REFERENCE NUMBERS USED IN THE DRAWINGS

[0013] The following Reference Numbers are used in the Figures:

Reference Nr.	Description
10	Described embodiment of a universal electrical box shield
10a	First shield
10b	Second shield
10c	Third shield
12	First partible seam
14	Second partible seam
16a	Sealing flange
18a	First pocket
20a	Second pocket
22a	Third pocket
24a	First transverse edge
26a	Second transverse edge
28a	First lateral edge
30a	Second lateral edge
32a	First sealing flange corner
34a	Second sealing flange corner
36a	Third sealing flange corner
38a	Fourth sealing flange corner
40a	First sidewall
42a	First sidewall first edge
44a	First sidewall second edge

46a	Second sidewall
48a	Second sidewall first edge
50a	Second sidewall second edge
52a	Front face wall
54a	First sidewall angle
56a	Second sidewall angle
58a	Adhesive layer
60a	Front surface
62a	Sealing flange back surface
64a	Removable adhesive back surface

DETAILED DESCRIPTION

[0014] Before beginning a detailed description of the subject invention, mention of the following is in order. When appropriate, like reference materials and characters are used to designate identical, corresponding, or similar components in differing figure drawings. The figure drawings associated with this disclosure typically are not drawn with dimensional accuracy to scale, i.e., such drawings have been drafted with a focus on clarity of viewing and understanding rather than dimensional accuracy.

[0015] In the interest of clarity, not all of the routine features of the implementations described herein are shown and described. It will, of course, be appreciated that in the development of any such actual implementation, numerous implementation-specific decisions

must be made in order to achieve the developer's specific goals, such as compliance with application- and business-related constraints, and that these specific goals will vary from one implementation to another and from one developer to another. Moreover, it will be appreciated that such a development effort might be complex and time-consuming, but would nevertheless be a routine undertaking of engineering for those of ordinary skill in the art having the benefit of this disclosure.

[0016] As shown in **Figs. 1-4** a First Embodiment of a universal electrical box shield **10** is provided, including three shields **10a**, **10b** and **10c**, connected along partible first and second longitudinal seams **12** and **14**, respectively. Partible seams **12** and **14** allow easy manual separation of shields **10a**, **10b** and **10c** for use individual use on single switch boxes and/or standard dual-plug outlet boxes. Alternatively, a user may leave several shields connected in order to cover larger boxes, such as multi-switch and/or quad-plug outlet boxes.

[0017] In the First Embodiment, shields **10a**, **10b** and **10c** are essentially identical (except for the relative locations of partible longitudinal seams **12** and **14**), so a single shield **10a** will be described in detail with the understanding that shields **10b** and **10c** include identical structures. For purposes of description, the surfaces which mount against the wall are referred to as the "back" side, while the opposite surfaces facing away from the wall when mounted to a wall are referred to as the "front" side.

[0018] Shield **10a** includes a surrounding sealing flange **16a**, a first pocket **18a**, and second and third pockets **20a** and **22a** disposed proximate opposite ends of first pocket **18a**.

[0019] Sealing flange **16a** is planar, including a front surface **60a** and opposed back surface **62a**, and extends longitudinally from first transverse edge **24a** to opposite second transverse edge **26a**, and from first lateral edge **28a** to opposite second lateral edge **30a**. In the

Embodiment, first through fourth sealing flange corners **32a**, **34a**, **36a** and **38a**, respectively, are radiused for safety, and to make it easier to separate shields **10a**, **10b** and **10c** along longitudinal seams **12** and **14**.

[0020] First pocket **18a** is defined by a first enclosing sidewall **40a** extending out from sealing flange **16a** from first sidewall first edge **42a** to first sidewall second edge **44a**, second enclosing sidewall **46a** extending out from first sidewall **40a** from second sidewall first edge **48a** to second sidewall second edge **50a**, and front face wall **52a** which extends to and sealingly joins with second sidewall second edge **50a**. First sidewall second edge **44a** is sealingly joined with second sidewall first edge **48a** and first sidewall first edge **42a** is sealingly joined to sealing flange **16a**. First sidewall **40a** is slightly inclined toward the center at a first angle **54a**, and second sidewall **46a** is inclined toward the center at a second angle **56a**, with second angle **56a** greater than first angle **54a**, forming a stepped-beveled structure. First pocket **18a** provides clearance for common switch sizes. Alternatively, first pocket **18a** could form a rectangular cube or curved dome shape. The stepped-bevel structure provides several advantages, including that it provides a reduced-volume displacement, improved structural stability for the shield **10a** over a rectangular cube (which in the Embodiment is made from thin clear plastic film), and ease of manufacture as a rectilinear mold is less expensive to fabricate than a curved dome shape. Beveled and dome shapes also reduce risk of paint drips which are more prone to form along the bottom corner edges of a rectangular cube pocket **18a**.

[0021] Second and third pockets **20a** and **22a** are formed as small bubbles projecting out from sealing flange **16a**, sized to provide clearance for the top and bottom (or left and right) screw heads from the electrical box mounting screws.

[0022] Shield **10a** includes an adhesive layer **58a** which is disposed as a continuous barrier around the continuous outer region (i.e. proximate edges **24a**, **26a**, **28a** and **30a**) of the back surface **62a** of sealing flange **16a**. In the Embodiment, adhesive layer **58a** is a soft foam film firmly bonded to sealing flange back surface **62a** but including a removable adhesive back surface **64a** to removably adhere to a wall. Adhesive layer **58a** may also be composed of other double-sided tape materials, or directly applied adhesive substance. Alternatively, adhesive layer **58a** may extend partially along the sealing flange back surface **62a**, for example along the top and bottom portions, for situations where risk of side leakage is reduced or a lesser concern. Adhesive later **58a** may include a material which is rated as an electrical insulator for improved safety.

[0023] In the Embodiment, sealing flange **16a** is 4.00 inches (101.6 mm) from first transverse edge **24a** to second transvers edge **26a**, and 1.81 inches (46 mm) from first lateral edge **28a** to second lateral edge **30a**; and, first pocket **18a** is 3.00 inches (76.2 mm) in length by 1.50 inches (38.1 mm) in width along the first sidewall first edge **42a**; and, first pocket first and second sidewalls **40a** and **46a** each project outward 0.50 inches (12.7 mm), for a total depth of 1.00 inches (25.4 mm). These dimensions provide sufficient clearance to fit closely over a standard sized switch box or dual-plug outlet box in the United States.

[0024] Shields **10** may be provided in single shield configurations, in single-shield strips containing a plurality of shields connected side-by-side, or in arrays with pluralities of shields connected along side seams and end seams. The shields **10** are scalable, in that a user may simply leave a plurality of shields connected at their partible seams in order to cover a larger area.

[0025] In the Embodiment, shields **10** are formed from unitary sheets of thin clear plastic.

[0026] Those skilled in the art will recognize that numerous modifications and changes may be made to the preferred embodiment without departing from the scope of the claimed invention. It will, of course, be understood that modifications of the invention, in its various aspects, will be apparent to those skilled in the art, some being apparent only after study, others being matters of routine mechanical, chemical and electronic design. No single feature, function or property of the preferred embodiment is essential. Other embodiments are possible, their specific designs depending upon the particular application. As such, the scope of the invention should not be limited by the particular embodiments herein described but should be defined only by the appended claims and equivalents thereof.

CLAIMS

I claim:

1. A universal electrical box shield, comprising:
 - a sealing flange including a front surface and a back surface;
 - a first pocket extending out from the front surface of the sealing flange;
 - an adhesive layer including a first surface bonded to the sealing flange back surface and a second surface with a removably adhesive application;
 - wherein the sealing flange and first pocket are dimensioned to go over a selected type of electrical box.
2. The apparatus of claim 1, further comprising:
 - wherein the first pocket is double-beveled.
3. The apparatus of claim 1, further comprising:
 - wherein the first pocket is domed.
4. The apparatus of claim 1, further comprising:
 - wherein the first pocket is a rectangular cube shape.
5. The apparatus of claims 1, 2, 3 or 4, further comprising:
 - second and third pockets disposed proximate opposed ends of the first pocket, the second and third pockets dimensioned to provide clearance for the electrical box mounting screws.

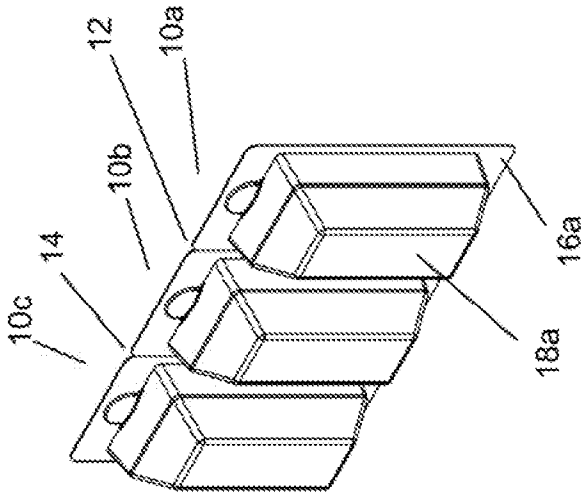


Fig. 1

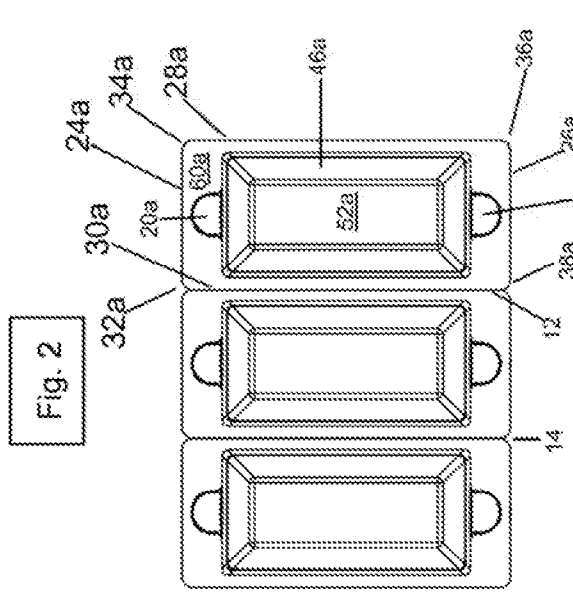


Fig. 2

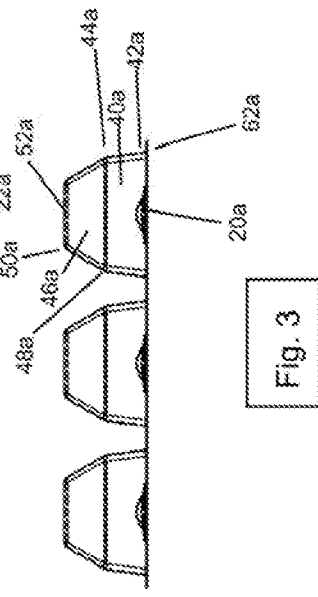


Fig. 3

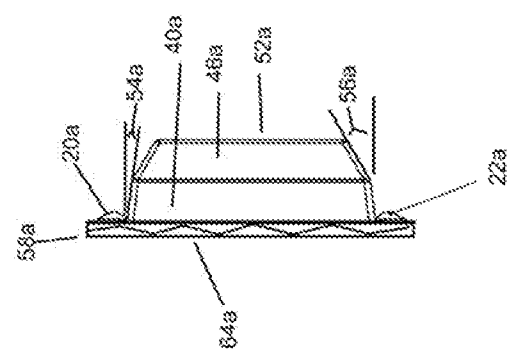


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2019/063768

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - H02G 3/08; B05B 12/20; B05B 12/26; B05B 12/28; B05B 12/32; B05B 12/36 (2019.01)
 CPC - H02G 3/081; H02G 3/088 (2019.08)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC - 118/504; 118/505; 174/66; 174/67; 220/241; 220/242 (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010/0252296 A1 (WIGGINS) 07 October 2010 (07.10.2010) entire document	1, 2, 4, 5
Y	US 2003/0056968 A1 (SKAKUN) 27 March 2003 (27.03.2003) entire document	1-5
Y	US 2008/0245546 A1 (SUTTER) 09 October 2008 (09.10.2008) entire document	1, 3

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

03 January 2020

Date of mailing of the international search report

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