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Description

BACKGROUND OF THE INVENTION

This invention relates to a safety cover for an electrical receptacle, and more particularly, to a combination base-plate and housing member which can be connected and capable of being locked so as to prevent access by young children or the like. The invention is designed so that an electrical plug may be plugged into the electrical receptacle while the housing member is in the locked position.

Electrical wall receptacles present much danger to young children and others who make accidental contact with such current-carrying outlets. Compounding this danger is the fact that electrical cords often suffer wear at the area where the cord meets the electrical plug. This is particularly dangerous when the receptacle or plug is exposed to water, as with an outdoor receptacle.

Safety guards designed to prevent unauthorized access to electrical receptacles do currently exist. All, however, are limited in their effectiveness or marketability due to the following reasons.

The simplest form of safety cover currently available consists of a small plastic disk with prongs extending laterally from one of its flat surfaces. This design is effective only against the smallest of children since it can be easily removed by any child physically capable of grasping and pulling an object. This category includes children as young as one year of age. This weakness is further aggravated by the action of removing and replacing these plugs as they are held in place by friction. This friction abrades the plastic prongs as they are repeatedly inserted and removed from the metal contacts within the receptacle.

More sophisticated safety devices also exist such as U.S. Patent No. 2,526,606 which discloses a protective hood that snaps onto a special base plate. The hood engages the base plate by means of a series of interlocking flanges, each locking flange on the cover having a corresponding receiving flange on the base plate. Removal of the hood is accomplished by flexing one of its two longitudinal edges inwardly to disengage the locking flanges on the hood from those on the base plate. The patent discloses that the hood is made of sufficiently strong material so that the pressure required to release it is more than the average small child can exert. In other words, the effectiveness of this device is limiting a child's access to the receptacle and is totally dependent upon a child's ability to exert enough physical pressure on a single point on the hood. While the average small child may not be able to flex the hood inwardly with his or her hand, it will be appreciated that a small child could, by kicking or striking the hood with a toy or other implement, exert sufficient force to dislodge it from the base plate. Accordingly, protective devices which rely merely upon a child's limited strength may prove ineffective in many situations.

Another approach to the problem of protecting children from hazards associated with electrical outlets has been to cut the power to the outlet entirely when the outlet is exposed. For example, U.S. Patent No. 2,439,708 discloses an electrical outlet with a hinged cover box having arms attached thereto which cooperate with a switch that connects the electrical lead wires to the contacts of the outlet. In operation, when the cover box is in the closed position (preventing access to the outlet), the outlet is energized. When this covering box is in its open position (unlatched and swung away from the outlet), the power to the receptacle is shut off.

While it can be appreciated that this feature of turning the power off when the outlet is exposed may be somewhat more effective than other approaches which rely solely on limiting physical access to the outlet, it is also complex and rather costly to implement. Furthermore, repeated opening and closing of the cover box subjects various component parts to wear, eventually requiring the repair or replacement of the entire receptacle. This approach is thus not subject to widespread commercial acceptance or application.

Another approach, more recently advanced, is one which seeks to limit access to an electrical outlet by means of enclosing the outlet. These covering devices consist of a base plate (which replaces the existing outlet cover plate), and either hingedly attached, or removable covers. For example, U.S. Patent No. 4,070,078 discloses a plate mounted over the electrical outlet to expose the sockets and which has a pair of spaced apart latching elements. These latching elements are hollow and hingedly connected to the plate and are provided with spaced apart flexible abutments engageable with the latching elements for securing the closure elements against different areas of the plate to thereby enclose the sockets and electrical plugs. This approach is complex in design and although it can be seen to be somewhat effective, it still relies totally upon the supposed inability of a child to exert sufficient pressure on the two flexible abutments. In fact, however, this can be accomplished by children as young as two years of age. Another problem which can be readily seen when looking at Fig. 1 of this patent, is that an object, such as a pencil or the like, can be placed in the gap between the two hollow closure elements and used to pry the closure elements open. Also, these closure elements, due to their shape and size, and the fact that they are only held in place by the two clips at the center of the plate, could be dislodged by a small child, who either grasped and twisted, or struck one or both of the elements with a toy or other similar object. For these reasons this approach is both too costly for widespread acceptance and may not be sufficiently effective in all sit-
utions.

Still another approach to the protection of children from electrical outlets is to cover the outlet with a protective cover and base plate, which require larger hands and more dexterity to operate than are present in most small children. For example, U.S. Patent No. 4,652,696 discloses a base plate which replaces the conventional face plate of an electrical outlet, and a cover which is attached to the base plate and is secured to the base plate by three latches which must be simultaneously released to facilitate removal of the cover. It can readily be seen that this approach is, in theory, sound and superior to previous attempts to address this safety hazard. There are, however, several problems with this design, in both of its configurations. The most obvious of these is that the structure would be extremely expensive, if not impossible, to produce, due to the limitations of existing molding and materials technology. This is due to the depth of the cover and base plate sides. Also, because of its straight sided box configuration, a small child, of no more than one year of age, could break the entire structure away from the outlet by either sitting on, climbing on or striking the cover with a foot, toy or other object, thus exposing, not only the outlet and face plate, but the bare electrical wires within the wall. Another problem is with the nature and placement of the retaining latches. These latches are thin and all of the stress exerted, when they are pushed in to disengage the cover, is concentrated in one very small area. Accordingly, with repeated usage, they would lose their elasticity and thus their effectiveness. Also, because of their placement on the sides of the cover, these latches are highly visible and vulnerable to defeat by an inquisitive child using nothing more than a pencil or even a finger.

U.S. Patent No. 4,603,932 overcomes the problem of the vulnerability of the retaining latches to access by a child and stress concentration by providing latching projections on the edge of the cover which engage in recesses in the receiving plate, but to obtain this engagement, the cover slides with a flange on the receiving plate, which makes the cover difficult to seal against the receiving plate.

My recently granted U.S. Patent No. 4,899,019, also provides a solution to the problem of the retaining latches by mounting them within the housing as part of an inner housing, but also has the drawback that the outer cover must slide into a flange on the receiving plate so that the device is difficult to seal.

There still exists a need, therefore, for a safety cover which effectively prevents unauthorized access to an electrical receptacle, both when there is a plug in the outlet as well as when there is not, and which can also be easily sealed to prevent water and the like from getting into it so that it can be used out of doors. This device must also be designed in such a way that it can be manufactured, using existing materials and technology, in sufficient quantities and at a low enough price as to be capable of the widest possible distribution.

OBJECTS AND BRIEF SUMMARY OF THE INVENTION

Accordingly, it is an object of this invention to provide a safety cover which denies unauthorized access by small children to electrical outlet sockets.

It is another object of this invention to provide a safety cover which denies access by small children to an electrical socket when the socket contains a plug.

It is a still further object of this invention to provide a safety cover which denies access by the elements when the socket contains a plug.

According to the present invention there is provided a safety cover for an electric receptacle, comprising a mounting plate capable of being affixed to an electrical receptacle for lockingly receiving a cover assembly, and a cover assembly having a lateral opening and a cover edge extending around the periphery of said lateral opening, said cover assembly being mountable on said mounting plate in a closed position and an open position in which the electrical receptacle to which said mounting plate is attached is exposed, said cover assembly having at least three locking means spaced around the periphery of said lateral opening, the spacing of said locking means being sufficient for making said locking means incapable of simultaneous operation by a hand below a predetermined size, said mounting plate having at least one locking hook receiving aperture therein extending substantially transversely of said cover edge and outwardly of said cover assembly at a position corresponding to the positions of each of said locking means along the periphery of said lateral opening, characterised in that said mounting plate has an edge engageable surface thereon corresponding in shape to said cover edge and in that each of said locking means has a locking projection extending out of said lateral opening adjacent said cover edge and has a free end with a locking hook thereon which extends transversely of said locking projection and said cover edge and outwardly of said cover assembly and which is spaced along said projection from said cover assembly a distance for, engaging said locking hooks in said locking hook receiving apertures with said cover edge snugly abutted against the edge engageable surface, when said cover assembly is moved from the open position, in which said cover edge is spaced from said edge engageable surface, to the closed position in which said cover edge abuts said edge engageable surface, whereby said cover assembly can be moved to the open position only by simultaneous deformation of said cover assembly at the positions of said locking means sufficient to move said locking hooks sufficiently far inwardly of said cover assembly.
to free said locking hooks from said locking hook receiving aperture.

The cover assembly can be any appropriate shape, such as rectangular, round or the like, but in a preferred embodiment, it is comprised of a box-shaped housing member. The housing member having a hinging means on one side wall, which is hingedly connected to the mounting plate, a second side wall with attached locking hook, a top wall with attached locking hook, a bottom wall with attached locking hook, and a back wall. The three walls which have the locking hooks attached are independently depressible. In such a box-shaped housing member, the first and second side walls of the cover assembly are preferably parallel to a point approximately one third of the distance toward the back wall, at which point these walls angle inwardly and continue until they join the back wall of the cover assembly. The top and bottom walls likewise are parallel to a point approximately one third of the distance toward the back wall, at which point these walls angle inwardly until they attach to the back wall of the cover assembly. The locking hooks extend toward the mounting plate, preferably from the center section of the distal edges of the first side wall and the top and bottom side walls. Pushing inwardly on the side walls will cause the locking hooks to be depressed, thereby removing the locking hooks from the means for receiving the locking hooks. To unlock and open or remove the cover assembly from the mounting plate, it is necessary to simultaneously push in on the three side walls which have locking hooks extending from them.

It can be seen, therefore, that locating the locking hooks centrally on the distal edges of three of the four opposing side walls and sufficiently far apart will prohibit unauthorized access. This is true, for example, in the case of children, whose hands are typically too small to reach and depress simultaneously, the central portions of the three side walls of the cover assembly which are adjacent the locking hooks. This central location of the locking hooks also serves to disperse the stresses associated with repeated opening and closing, thus increasing the durability of the device. It can also be seen that the compound angular design of the side walls will increase the amount of pressure necessary to depress the side walls and disengage the locking hooks, further decreasing the possibility of unauthorized access.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 shows an exploded perspective view of a first embodiment of the safety cover of the present invention;

Fig. 1a is a fragmental sectional view taken on line 1A-1A of Fig. 1;

Fig. 1b is a fragmental perspective view of an alternative form of a hook receiving aperture;

Fig. 1c is a fragmental sectional view of an alternative form of a hook receiving aperture;

Fig. 2 shows a top view of the safety cover of the embodiment of Fig. 1 in the closed position and showing it in the open position in phantom lines;

Fig. 2a is a fragmental sectional view of one form of sealing gasket for the cover;

Fig. 2b is a fragmental sectional view of an alternative form of sealing gasket for the cover;

Fig. 3 is a front plan view of the safety cover of the embodiment of Fig. 1;

Fig. 4 is a sectional view taken on line 4-4 of Fig. 2;

Fig. 5 is a perspective view of a modified form of the mounting plate;

Figs. 6 and 7 are perspective views of modified forms of the mounting plate and cover;

Fig. 8 is a perspective view of a further modified form of the safety cover according to the invention; and

Fig. 9 is a sectional view taken on line 9-9 of Fig. 8.

**DETAILED DESCRIPTION OF THE INVENTION**

Referring to Fig. 1, a mounting plate 10 is provided for receiving a cover assembly 12, the assembly 12 being comprised of an outer housing member 40.

The mounting plate 10 of this embodiment is preferably rectangular in shape, having a face 13, a top edge 14, a bottom edge 16, a first side edge 18 and a second side edge 20. The plate 10 is designed to fit over a standard electrical receptacle such as an outlet box 22, which typically has a pair of electrical outlet sockets 24a and 24b covered by an apertured cover plate 23 attached to the outlet box 22 by a screw 23a (all shown in phantom lines). The mounting plate 10 has an outlet hole 26 through the plate 10. The plate 10 may be attached to the outlet box 22 by an adhesive 28 adhered to the outside face of plate 10.

The mounting plate 10 has, along its top edge 14, its bottom edge 16 and its first side edge 18 means for receiving locking hooks 96 on the outer housing member 40. These means may be comprised of a raised flange 30 having a free edge 30a forming an edge engageable surface to be engaged by an edge of the cover assembly 12 as described hereinafter. The flange 30 has through it locking hook receiving through-apertures 32, as shown in Figs. 1, 2 and 4 extending transversely of the edge 30a. Alternatively, the aperture can extend into the mounting plate, as shown in Fig. 1b at 32a. This permits placing the engaging edge 32b of the through-aperture 32a closer to the outlet box engaging face of the mounting plate so as to make the free end of a locking hook 96 less accessible from outside the cover, and also permits making the mounting plate thicker. A still further alternative is shown in Fig. 1c in which the aperture is a
closed bottom aperture as at 32c. This completely blocks access to the end of hook 96 from outside the cover.

In this embodiment the cover assembly is hinged to the mounting plate 10, and to this end means for hinging the cover assembly 12 along the second side edge 20 of the plate 10 is provided. This allows the cover assembly 12 to be swung to a closed position over the outlet box 22 or swung to an open position to allow access to the outlet sockets, as shown in Fig. 2. Any suitable hinge means can be used, but one preferred form may be comprised of hinge pins 34 located along the raised flange 30 on the second side edge 20, and a pair of connecting hinges 45a and 45b, located on the housing member 40 which fit around the pins 34, and thereby hingingly attach the cover assembly 12 to the mounting plate 10.

The cover assembly can be any appropriate shape. In the present embodiment, the outer housing member 40 is of a box like shape, and has five walls: a top wall 42, a bottom wall 44 opposite the top wall 42, a first side wall 46, a second side wall 48 opposite the first side wall 46, and a back wall 50. Opposite the back wall 50 is a housing member lateral opening 52 which fits over the face 13 of the mounting plate 10 when the cover assembly 12 is in the closed position. Around the lateral opening 52 is an edge 52a having a corner 52b at the junction of edge 52a and the interior of the housing 40. Each wall 42, 44, 46, 48 and 50 is of a length and width sufficient to provide a housing 40 of size great enough to be occupied by a standard electrical plug 15 and to fit over the face 13 of the mounting plate 10. The front and second side walls 46 and 48 are parallel to a point approximately one third of the distance toward the back wall 50, at which point these walls angle inward and continue until they join the back wall 50. The top and bottom walls 42 and 44 are similarly shaped.

Located along the edge of each wall 42, 44 and 48, preferably at about the middle thereof, are locking means which in this embodiment are in the form of projections 94. Although one locking means per side is shown in the drawings, it will be understood that a plurality could also be used. The locking projections 94 extend out of the lateral opening 52 at the corner 52b of the edge 52a of the housing member 40, and they have locking hooks 96 at their face ends. The locking hooks 96 are attached to the inner surface of the wall on which they are mounted and extend transversely of edge 52a and they are spaced along projections 94 a distance d from the edge 52a substantially equal to the distance from the free edge of flange 30 to the edge of aperture 32 which is closest to the free edge of flange 30. As a result, the hooks 96 engage in the receiving holes 32 of the mounting plate 10 when the housing member 40 is swung to the closed position, thereby holding the cover assembly 12 in a locked position with the edge 52a snugly against the edge engageable surface 30a of flange 30 of the mounting plate 10 as shown in Fig. 4. An inclined surface 97 located on the side of the hook 96 engaging the raised flange 30 as the housing member 40 closes causes the hook 96 to be easily forced inwardly of the flange 30 and then slid along the inner surface of flange 30 and into the receiving aperture 32. The ends of the locking projections extend rearwardly of the parallel wall portions and are preferably faired into the inwardly angled wall portions, as shown in Figs. 1a and 4, for increased strength, for making them substantially rigid with the corresponding wall, and to eliminate a rear edge so as to make them easy to mold when the cover is molded of plastic.

As a result, the edge 52a engaging the free edge 30a of flange 30 with a tight fit produces some sealing effect. As shown in Figs. 2a and 2b, a water-tight seal can be easily formed by placing a strip of sealing material as a gasket 60 and/or 61 on one or both edges.

The simultaneous inward depression of walls 42, 44 and 48 in turn causes projections 94 to be moved inwardly and hooks 96 to be removed from the apertures 32. The cover assembly 12 can then be swung around its hinged side and brought to the open position, and the plug 15 and socket 24 exposed.

The dimensions of the cover assembly 12 allow the apparatus to cover an outlet box cover while a plug 15 is inserted into an outlet socket 24a, 24b. At least one cord aperture 38 is located in the bottom wall 44 of the outer housing member 40 to form a passage through which an electrical cord 17 attached to the plug which is inserted in the socket can be passed.

It is clear, therefore, that an appliance or other electrically operated device can be safely plugged into an outlet socket without the fear that a small child or the elements may gain access. Only a person having a hand of size large enough to depress all of the locking means simultaneously can gain access.

The central position of the locking hooks 96 along the edges of walls 42, 44 and 48 and the fact that they are substantially rigid with the corresponding walls causes them to remain substantially unbroken when they engage the flange 30 so that the material of the housing 40 flexes inwardly within a relatively large arc around the respective locking hooks, whereby the stress and strain which is associated with repeated opening and closing of the housing member 40 is dispersed throughout the material of the housing 40 instead of being concentrated in the locking hooks.

The compound angular design of the side walls of the housing member 40 increases the amount of pressure necessary to depress the side walls to disengage the locking hooks 96, further reducing the possibility of unauthorized access to the outlet sockets, as well as making the process of grasping the housing more difficult for small hands. This configuration will
also deflect a blow from a child's hand, foot, toy or the like, as well as discouraging an attempt by a child to sit or climb on the cover. However, it will be understood that the walls of the housing member can have other shapes and configurations without sacrificing the advantages of the exact shape shown and without departing from the scope of the invention. Such other shapes and configurations will suggest themselves to those skilled in the art from the foregoing description.

As shown in Fig. 5, the mounting plate 10 of Figs. 1-4 can be replaced with a mounting plate 110, which has a face 113 with outlet socket receiving apertures 124a and 124b for fitting around outlet sockets 24a and 24b in an outlet box 22, and which has a screw 123a extending through a hole in the face 113 to engage a threaded hole in the outlet box to attach the mounting plate 110 over the outlet box as a replacement for a conventional cover plate. The mounting plate 110 is otherwise the same as the mounting plate 10 of Figs. 1-4 and has the outer housing member 40 hinged thereto the same as in Figs. 1-4.

As shown in Fig. 6, the shape of the cover assembly can be a rectangular box shape 212, instead of the special shape as shown in Figs. 1-4. Further, instead of being hinged to the mounting plate, the cover assembly 212 can have at least one additional locking projection 294 in addition to the three corresponding to those shown on the cover assembly in Fig. 1, the additional locking projection being on the wall corresponding to the wall having the hinge means in Fig. 1, and which additional locking projection is not visible in Fig. 6. The flange 230 on the mounting plate 210 has at least one additional locking hook receiving aperture 232 along the portion corresponding to that which has the hinge means thereon in Fig. 1. With this embodiment, the cover assembly is simply placed over the cover plate with the edge of the cover assembly against the edge engageable surface formed by the free edge of the flange 230, and the four locking hooks on the cover assembly snap into the four locking hook receiving apertures 232 to hold the cover assembly in the closed position. The cover assembly can be removed by depressing at least three of the side walls thereof with one hand to the hooks 296 out of the apertures 232 on at least three sides of the cover assembly, at which point the fourth hook will act as a pivot around which the cover can be moved. Alternatively, two hands can be used to depress all the walls to move all of the hooks 296 out of all the apertures, and then the cover assembly can be moved completely free of the mounting plate.

As seen in Fig. 7, the shape of the mounting plate can be other than rectangular. As an example of a different shape, Fig. 7 shows a round mounting plate 310 and a round cover assembly 312. Otherwise the structure is the same as that of the embodiment of Fig. 6.

In the embodiment of Fig. 8, the cover assembly 412 is the same as that of the embodiment of Fig. 1, except that the hinge means (not shown) is adapted to mount the cover assembly 412 on an oblique edge surface 410a of the cover plate 410 so that the entire edge 452a around the opening can seat snugly against the face of the cover plate 410. Otherwise, the shape is the same as that of Fig. 1, and the projections 494 and locking hooks 496 are the same as the embodiment of Fig. 1.

The mounting plate 410 is similar to a conventional face plate, that is if the face thereof is flat, i.e. it has no upstanding flange corresponding to the flange 30 of Fig. 1. Instead, there are provided a plurality of locking hook receiving apertures 432 which extend downwardly through the face of the mounting plate and then laterally outwardly of the cover assembly transversely of the cover assembly edge 452a. The locking hooks 496, when the cover assembly 412 is moved to the closed position, move into the apertures and project laterally, engaging under the upper edge of the lateral opening. It will be seen from Fig. 9 that in this position, the edge 452a engages with a sealing gasket 460 in a groove 410b in the face of the mounting plate 410 and having a shape corresponding to the edge 452a of the cover assembly. It will of course be necessary for the apertures 432 where they open through the mounting plate to be sufficiently large in the direction outwardly of the cover assembly so that the locking hook 496 in each hole can move laterally sufficiently far to be able to move into and out of the hole. It will further be understood that the groove 410b and/or the gasket 460 can be omitted, in which case the face of the mounting plate becomes the edge engageable face against which the edge 452a snugly engages when the cover assembly is in the closed position.

There may be further provided shielding walls 432a and 432b extending downwardly on the side of the aperture inwardly from the edge of the mounting plate 410 and then outwardly toward the edge of the mounting plate. These are to shield the aperture from the sockets 424a and 424b in the receptacle over which the mounting plate is mounted.

It will thus be seen that there has been provided a safety cover for an electrical receptacle which can be easily mounted on the receptacle and which is held against edge engageable surfaces on the mounting plate therefore so as to substantially seal the interior of the cover to avoid entry of foreign substances, and yet which can be easily removed by an adult who can manipulate the cover assembly so as to simultaneously disengage three locking projections which cannot be disengaged by a child.

**Claims**

1. A safety cover for an electric receptacle (22),
comprising a mounting plate (10) capable of being affixed to an electrical receptacle (22) for lockingly receiving a cover assembly (12), and a cover assembly (12) having a lateral opening (52) and a cover edge (52a) extending around the periphery of said lateral opening (52), said cover assembly (12) being mountable on said mounting plate (10) in a closed position and an open position in which the electrical receptacle to which said mounting plate (10) is attached is exposed, said cover assembly (12) having at least three locking means spaced around the periphery of said lateral opening (52), the spacing of said locking means being sufficient for making said locking means incapable of simultaneous operation by a hand below a predetermined size, said mounting plate (10) having at least one locking hook receiving aperture (32) therein extending substantially transversely of said cover edge (52a) and outwardly of said cover assembly (12) at a position corresponding to the positions of each of said locking means along the periphery of said lateral opening, characterised in that said mounting plate (10) has an edge engagable surface (30a) thereon corresponding in shape to said cover edge (52a) and in that each of said locking means has a locking projection (94) extending out of said lateral opening (52) adjacent said cover edge (52a) and has a free end with a locking hook (96) thereon which extends transversely of said locking projection (94) and said cover edge (52a) and outwardly of said cover assembly (12) and which is spaced along said projection (94) from said cover assembly (12) a distance for engaging said locking hooks (96) in said hook receiving apertures (32) with said cover edge (52a) snugly abutted against the edge engagable surface (30a), when said cover assembly (12) is moved from the open position, in which said cover edge (52a) is spaced from said edge engagable surface (30a), to the closed position in which said cover edge (52a) abuts said edge engagable surface (30a), whereby said cover assembly (12) can be moved to the open position only by simultaneous deformation of said cover assembly (12) at the positions of said locking means sufficient to move said locking hooks (96) sufficiently far inwardly of said cover assembly (12) to free said locking hooks (96) from said hook receiving apertures (32).

2. A safety cover as claimed in claim 1 in which said mounting plate (10) has a raised flange (30) extending along the edge thereof with a free edge (30a) on said flange (30) forming said edge engagable surface (30a), said hook receiving apertures (32) being in said raised flange (30).

3. A safety cover as claimed in claim 2 in which said locking hook (96) is spaced along said locking projection (94) from said cover edge (52a) a distance substantially equal to the distance from said edge engagable surface (30a) to the edge of said hook receiving aperture (32) which is closest to said edge engagable surface (30a).

4. A safety cover as claimed in claim 1 in which said cover assembly (12) comprises a cover member (40) having spaced opposed upper and lower walls (42, 44) and spaced opposed side walls (46, 48) joining said upper and lower walls, one of the edges of said thus joined walls defining said lateral opening (52) and the other of the edges having a rear wall (50) joined thereto closing said cover member (12), each of said walls having a portion adjacent said lateral opening (52) parallel to the opposed wall and having a portion angled inwardly of said cover member from said parallel portion to said rear wall (50).

5. A safety cover as claimed in claim 4 in which the dimension of said parallel portion of each of said walls (42, 44, 46, 48) is about one third of the distance from said lateral opening to said rear wall (50).

6. A safety cover as claimed in claim 4 in which said locking projection (94) extends inwardly of said housing member (40) along the parallel wall portion and is formed into the inwardly angled wall portion corresponding thereto for making the locking projections (94) substantially rigid with the corresponding wall.

7. A safety cover as claimed in claim 2 or 3 in which said locking hook receiving apertures (32) are through apertures (32).

8. A safety cover as claimed in claim 7 in which said locking hook receiving apertures (32) are only in said raised flange (30).

9. A safety cover as claimed in claim 7 in which said locking hook apertures (32) are in said raised flange (30) and extend into the part of said mounting plate (10) from which said raised flange (30) extends.

10. A safety cover as claimed in claim 2 or 3 in which said locking hook receiving apertures (32) are closed bottom apertures opening toward the interior of said safety cover.

11. A safety cover as claimed in claim 1 further comprising sealing means (60, 61) around the opposed edges of at least one of said edge enga-
12. A safety cover as claimed in claim 1 in which said mounting plate (10) has a central outlet hole (26) therethrough adapted to fit over a cover plate (23) on a receptacle (32), and has adhesive means on the face of said mounting plate (10) facing away from said cover assembly (12) for adhering said mounting plate (10) to a cover plate (23) on an outlet (22) with outlet sockets on the receptacle (22) exposed through the central outlet hole (26).

13. A safety cover as claimed in claim 1 or 12 in which said mounting plate (10) has at least one outlet socket receiving aperture therethrough adapted to fit over an outlet socket (24a, 24b) in an outlet box (22), and mounting means for mounting said mounting plate (10) on an outlet box in place of a cover plate (23).

14. A safety cover as claimed in claim 1 further comprising hinge means hingedly connecting said cover assembly (12) to said mounting plate (10), and said locking means are spaced around the periphery of the lateral opening (52) at positions other than the position of said hinge means.

15. A safety cover as claimed in claim 1 in which said locking means are spaced around the entire periphery of said lateral opening (52) and said cover assembly (12) is completely removable from said mounting plate by disengagement of said locking hooks (96).

16. A safety cover as claimed in claim 1 in which the face of said mounting plate (10) constitutes said edge engagable surface (30a), and said locking hook receiving apertures (32) extend through said mounting plate (10) and open laterally outwardly below said mounting plate (10).

17. A safety cover as claimed in claim 16 further comprising a shielding wall (432a) extending downwardly from said mounting plate (10) on the inner side of each of said hook receiving apertures (32) where it opens through the mounting plate (10) and a further shielding wall (432b) extending outwardly from the lower end of the downwardly extending shielding wall (432a).

**Patentansprüche**

1. Ein Sicherheitskappe für eine elektrische Steckdose (22), die eine Montageplatte (10) umfaßt, die an eine elektrische Steckdose (22) befestigt werden kann, um eine Kappenbaugruppe (12) verschließbar aufzunehmen, und eine Kappen-
wegen, um die besagten Verschließhaken (96) aus den besagten, die besagten Verschließhaken aufnehmenden Öffnungen (32) zu befreien, in die geöffnete Position bewegt werden kann.

2. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, bei der die besagte Montageplatte (10) einen erhöhten Flansch (30) aufweist, der sich entlang deren Kante erstreckt, wobei eine freie Kante (30a) am besagten Flansch (30) die besagte in Kanten einknickbare Oberfläche (30a) formt, wobei sich die besagten, die Haken aufnehmenden Öffnungen (32) im besagten erhöhten Flansch (30) befinden.

3. Eine Sicherheitskappe, wie in Anspruch 2 beansprucht, bei der die besagten Verschließhaken (96) in einem Abstand entlang des besagten Verschließvorsprungs (94) ab der besagten Kappenkante (52a) angeordnet ist, der im wesentlichen dem Abstand von der besagten in Kanten einknickbaren Oberfläche (30a) zur Kante der besagten, den Haken aufnehmenden Öffnung (32) gleich, die der in Kanten einknickbaren Oberfläche (30a) am in Kanten einknickbaren Flansch (30a) am nachsten ist.

4. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, bei der die besagte Kappenbaugruppe (12) ein Kappenlelement (40) umfasst, das in Abstand angebrachte gegenüberliegende obere und untere Wände (42, 44) und in Abstand angebrachte gegenüberliegende Seitenwände (46, 48) aufweist, wobei eine der Kanten der auf diese Weise verbundenen Wände, die die besagte laterale Öffnung (52) definieren, und die anderen der Kanten eine damit verbundene Rückwand (50) aufweisen, die das besagte Kappenlelement (12) abschließt, jede der besagten Wände einen Teil angrenzend an die besagte laterale Öffnung (52) parallel zur gegenüberliegenden Wand aufweist, und einen Teil aufweist, der ab dem besagten Kappenlelement von dem besagten parallelen Teil zur besagten Rückwand (50) nach innen abgewinkelt ist.

5. Eine Sicherheitskappe, wie in Anspruch 4 beansprucht, bei der die Dimension des besagten parallelen Teils jeder der besagten Wände (42, 44, 46, 48) etwa ein Drittel des Abstandes von der besagten lateralen Öffnung zur besagten Rückwand (50) ist.

6. Eine Sicherheitskappe, wie in Anspruch 4 beansprucht, bei der sich der besagte Verschließvorsprung (94) nach innen vom besagten Gehäuseelement (40) entlang des parallelen Wandteils erstreckt und in den entsprechenden nach innen abgewinkelten Wandteil bündig eingelasen ist, um die Verschließvorsprünge (94) im wesentlichen starr mit der entsprechenden Wand zu machen.


8. Eine Sicherheitskappe, wie in Anspruch 7 beansprucht, bei der sich die besagten, den Haken aufnehmenden Öffnungen (32) nur im besagten erhöhten Flansch (30) befinden.

9. Eine Sicherheitskappe, wie in Anspruch 7 beansprucht, bei der sich die besagten Verschließhaken-Öffnungen (32) im besagten erhöhten Flansch (30) befinden, und in dem Teil der besagten Montageplatte (10) reichen aus dem besagten Flansch (30) herausragt.

10. Eine Sicherheitskappe, wie in Anspruch 2 oder 3 beansprucht, bei der besagten, den Verschließhaken aufnehmende, Öffnungen (32) geschlossene untere Öffnungen sind, die sich gegen das Innere der besagten Sicherheitskappe öffnen.

11. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, die weitere Verschließelemente (60, 61) um die gegenüberliegenden Kanten mindestens einer der besagten in Kanten einknickbaren Oberfläche (30a) und besagter Kappenbaugruppe (12) umfasst.

12. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, bei der die besagte Montageplatte (10) durch diese durchgehendes, zentrales Ausgangsloch (26) aufweist, adaptiert über eine Deckplatte (23) auf einer Steckdose (32) zu passen, und Klemmteil auf der Oberfläche besagter Montageplatte (10) aufweist, die von der besagten Kappenbaugruppe (12) wegzeigt, um die besagte Montageplatte (10) an eine Deckplatte (23) an einem Ausgang (22) zu befestigen, wobei die Ausgangsdosen an der Steckdose (22) durch das zentrale Ausgangsloch (26) freigelegt sind.

13. Eine Sicherheitskappe, wie in Anspruch 1 oder 12 beansprucht, bei der die besagte Montageplatte (10) mindestens eine durch diese durchgehende Öffnung aufweist, die Steckdosen aufnimmt, adaptiert über eine Steckdose (24a, 24b) in einen Steckdosenkasten (22) zu passen, und Montageelemente zur Montage der besagten Montageplatte (10) an einen Auslaufkasten anstatt an eine Deckplatte (23) zu montieren.

14. Eine Sicherheitskappe, wie in Anspruch 1 bean-
sprucht, die weiter Schnerienlemente umfaßt, welche die besagten Kappenbaugruppe (12) klapppar mit der besagten Montageplatte (10) verbinden, und besagte Verschlußelemente sind in Abstand um die Peripherie der lateralen Öffnung (52) in Positionen, abgesehen von der Position der besagten Scharnier-elemente angebracht.

15. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, bei der besagte Verschlußelemente in Abstand um die ganze Peripherie der besagten lateralen Öffnung (52) angebracht sind, und die besagten Kappenbaugruppe (12) von der besagten Montageplatte durch Aushängen der besagten Verschlußhaken (96) völlig entfernt werden kann.

16. Eine Sicherheitskappe, wie in Anspruch 1 beansprucht, bei der die Oberfläche der besagten Montageplatte (10) die besagte, in Kanten einklinkbare, Oberfläche (30a) konstituiert, und sich besagte den Verschlußhaken aufnehmenden Öffnungen (32) durch die besagte Montageplatte (10) erstrecken und sich lateral nach außen unterhalb der Montageplatte (10) öffnen.

17. Eine Sicherheitskappe, wie in Anspruch 16 beansprucht, die weiter eine Schutzwan (432a), die sich ab der besagten Montageplatte (10) an der Innenseite jeder der besagten, den Verschlußhaken aufnehmenden, Öffnungen (32) nach unten erstreckt, wo sie sich durch die Montageplatte (10) öffnet, und eine weitere Schutzwan (432b), die sich ab dem unteren Ende der sich nach unten erstreckenden Schutzwan (432a) nach außen erstreckt.

Revendications

1. Un couvercle de sécurité pour bollitier électrique (22), comprenant une plaque de fixation (10) que l’on peut fixer à un bollitier électrique (22) en sorte qu’elle permette de fixer et de verrouiller une structure de couvercle (12), et une structure de couvercle (12) possédant une ouverture latérale (52) et un rebord de couvercle (52a) recouvrant la périphérie de ladite ouverture latérale (52), ladite structure de couvercle (12) pouvant être fixée sur ladite plaque de fixation (10) en position fermée et en position ouverte dans laquelle le bollitier électrique auquel est fixée ladite plaque de fixation (10) est présentée, ladite structure de couvercle (12) possédant au moins trois moyens de verrouillage disposés autour de la périphérie de ladite ouverture latérale (52), l’espacement desdits moyens de verrouillage étant suffisant pour empêcher que lesdits moyens de verrouillages ne puissent être débloqués simultanément par une main d’une taille inférieure à une taille prédéterminée, ladite plaque de fixation (10) comportant au moins une ouverture (32) destinée à recevoir un crochet de verrouillage, formant un prolongement transversal dudit rebord de couvercle (52a) et un prolongement orienté vers l’extérieur de ladite structure de couvercle (12) à un emplacement correspondant aux emplacements de chacun desdits moyens de verrouillage le long de la périphérie de ladite ouverture latérale, caractérisé par le fait que ladite plaque de fixation (10) possède une surface s’emboîtant dans le rebord (30a) et ayant une forme correspondant à ce rebord (52a), et par le fait que chacun des moyens de verrouillage possède une languette de verrouillage (94) formant un prolongement de ladite ouverture latérale (52) adjacente au rebord de couvercle susdit (52a) et possède également une extrémité libre équipée d’un crochet de verrouillage (96) formant un prolongement transversal de ladite languette de verrouillage (94) et dudit rebord de couvercle (52a) et un prolongement vers l’extérieur de ladite structure de couvercle (12) et qui est disposé le long de ladite languette (94) de ladite structure de couvercle (12) à une distance permettant d’enclencher lesdits crochets de verrouillage (96) dans les ouvertures (32) destinées à recevoir les crochets de verrouillage, le rebord de couvercle (52a) venant buter parfaitement contre la surface s’emboîtant dans le rebord (30a) lorsque l’on déplace la structure de couvercle (12) depuis la position ouverte, dans laquelle ledit rebord de couvercle (52a) est éloigné de la surface s’emboîtant dans le rebord (30a), vers la position fermée dans laquelle ledit rebord de couvercle (52a) bute contre ladite surface s’emboîtant dans le rebord (30a), de manière que l’on puisse uniquement ouvrir ladite structure de couvercle (12) en déformant simultanément ladite structure de couvercle (12) aux endroits où sont fixés les moyens de verrouillage en sorte que l’on puisse faire bouger lesdits crochets (96) suffisamment loin vers l’intérieur de ladite structure de couvercle (12) afin de libérer lesdits crochets de verrouillage (96) desdites ouvertures (32) destinées à recevoir les crochets.

2. Un couvercle de sécurité ainsi revendiqué à la revendication 1 dans lequel la plaque de fixation (10) possède une aile relevée (30) prolongeant le rebord dudit couvercle et un rebord libre (30a) sur ladite aile (30) qui forme ladite surface s’emboîtant dans le rebord (30a), lesdites ouvertures (32) destinées à recevoir les crochets étant situées dans ladite aile relevée (30).
3. Un couvercle de sécurité ainsi revendiqué à la revendication 2 dans lequel ledit crochet de verrouillage (96) est situé le long de ladite languette de verrouillage (94) dudit rebord du couvercle (52a) à une distance égale à la distance séparant ladite surface s’emboîtant dans le rebord (30a) du rebord de ladite ouverture (32) la plus proche de ladite surface s’emboîtant dans le rebord (30a).

4. Un couvercle de sécurité ainsi revendiqué à la revendication 1 dans lequel ladite structure de couvercle (12) comprend un élément de couvercle (40) possédant une paroi inférieure et une paroi supérieure opposées (42, 44) et des parois latérales opposées (46, 48) unissant ladite paroi inférieure et ladite paroi supérieure, l’un des rebords des parois ainsi unies formant ladite ouverture latérale (52), l’autre rebord possédant une paroi arrière (50) fixée à ce dernier et fermant ainsi ledit élément de couvercle (12), chacune des dites parois ayant une partie adjacente à ladite ouverture latérale (52) parallèle à ladite paroi opposée et ayant une partie inclinée vers l’intérieur dudit élément de couvercle à partir de ladite partie parallèle vers ladite paroi arrière (50).

5. Un couvercle de sécurité ainsi revendiqué à la revendication 4 dans lequel la dimension de ladite partie parallèle de chacune des dites parois (42, 44, 46, 48) représente environ un tiers de la distance séparant ladite ouverture latérale de ladite paroi arrière (50).

6. Un couvercle de sécurité ainsi revendiqué à la revendication 4 dans lequel ladite languette de verrouillage (94) est un prolongement vers l’intérieur dudit élément de logement (40) situé le long de ladite partie parallèle et est intégrée à la partie de paroi inclinée vers l’intérieur correspondante, en sorte que les languettes de verrouillage (94) soient rigides par rapport à la paroi correspondante.

7. Un couvercle de sécurité ainsi revendiqué à la revendication 2 ou à la revendication 3 dans lequel les ouvertures (32) destinées à recevoir les crochets de verrouillage sont des ouvertures directes (32).

8. Un couvercle de sécurité ainsi revendiqué à la revendication 7 dans lequel les dites ouvertures (32) destinées à recevoir les crochets de verrouillage sont uniquement situées dans ladite aile relevée (30).

9. Un couvercle de sécurité ainsi revendiqué à la revendication 7 dans lequel les dites ouvertures (32) destinées à recevoir les crochets de verrouillage sont situées dans ladite aile relevée (30) et forment un prolongement vers la partie de ladite plaque de fixation (10) de laquelle sort ladite aile relevée (30).

10. Un couvercle de sécurité ainsi revendiqué à la revendication 2 ou à la revendication 3 dans lequel les dites ouvertures (32) destinées à recevoir les crochets de verrouillage sont des ouvertures à fond fermé et s’ouvrent vers l’intérieur dudit couvercle de sécurité.

11. Un couvercle de sécurité ainsi revendiqué à la revendication 1 et comprenant en outre des moyens de fermeture hermétique (60, 61) autour des rebords opposés d’au moins l’une des surfaces (30a) s’emboîtant dans le rebord et de ladite structure de couvercle (12).

12. Un couvercle de sécurité ainsi revendiqué à la revendication 1 dans lequel ladite plaque de fixation (10) a un orifice central de sortie (28) adapté pour s’ajuster parfaitement sur une plaque-couvercle (23) sur un bûcheron (32), et possède des moyens adhésifs sur la surface de ladite plaque de fixation (10) servant le dos à ladite structure de couvercle (12) pour coller ladite plaque de fixation (10) sur une plaque-couvercle (23) sur un orifice de sortie (22) comportant des prises de sortie sur le bûcheron (22) exposé à travers l’orifice central de sortie (26).

13. Un couvercle de sécurité ainsi revendiqué à la revendication 1 ou la revendication 12 dans lequel ladite plaque de fixation (10) a au moins une coupe destinée à recevoir une prise de sortie adaptée pour s’ajuster parfaitement sur une prise de sortie (24a, 24b) dans un bûcheron de sortie (22), et des moyens de fixation permettant de fixer ladite plaque de fixation (10) sur un bûcheron de sortie remplaçant la plaque-couvercle (23).

14. Un couvercle de sécurité ainsi revendiqué à la revendication 1 compréhensif en outre des moyens de charnière unissant à l’aide d’une charnière ladite structure de couvercle (12) et ladite plaque de fixation (12), dans lequel les dites moyens de verrouillage sont disposés le long de la périphérie de ladite structure (52) à des endroits distincts des endroits où sont situés les dits moyens de charnière.

15. Un couvercle de sécurité ainsi revendiqué à la revendication 1 dans lequel les dites moyens de verrouillage sont disposés autour de la périphérie entière de ladite ouverture latérale (52) et dans lequel ladite structure de couvercle (12) est en-
tièremen détachable de ladite plaque de fixation, suite à la libération desdits crochets de verrouillage (96).

16. Un couvercle de sécurité ainsi revendiqué à la revendication 1 dans lequel la surface externe de ladite plaque de fixation (10) constitue ladite surface s'embrasant dans le rebord (30a), et dans lequel desdites ouvertures (32) destinées à recevoir les crochets de verrouillage sont des prolongements traversant ladite plaque de fixation (10) et s'ouvrent latéralement vers l'extérieur au-dessous de ladite plaque de fixation (10).

17. Un couvercle de sécurité ainsi revendiqué à la revendication 16 comprenant en outre une paroi de protection (432a) formant un prolongement vers le bas de ladite plaque de fixation (10) sur la face intérieure de chacune des ouvertures (32) où l'ouverture à lieu à travers la plaque de fixation (10) et une autre paroi de protection (432b) formant un prolongement vers l'extérieur depuis la partie inférieure de la paroi de protection (432a) formant un prolongement vers le bas.