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(54) IMPROVEMENTS RELATING TO ELECTRIC COMPONENTS

(71) We, CRABTREE ELECTRICAL INDUSTRIES LTD., a British Company of Crabtree House, Aldridge, Walsall WS9 8LT, England, formerly known as J. A. Crabtree & Co Limited of Lincoln Works, Walsall, WS1 2DN, West Midlands, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention is concerned with improvements relating to electric components of the kind (hereinafter referred to as being of the kind specified) adapted to be secured to a mounting surface (such as a wall) and comprising an operating member protruding from a front face thereof. The invention is particularly suitable in the provision of a detachable cover for an electric component such as a light switch.

There is at present a trend which involves the provision on a light switch or similar electrical component of a decoration selected by the individual in whose house or premises the switch is installed rather than as has heretofore been the practice, of accepting a standard design and colour of light switch. Thus, it is becoming the practice to provide a decorative cover member which may be secured across the face-plate of a conventional light switch, and through an aperture in which cover member the operating member of the light switch extends. Thus, a light switch of standard design and colour may be provided, at the choice of the individual, with a particular cover which is in sympathy with the aesthetic sensibilities of the individual.

There are however certain problems which are encountered in the provision of electrical components such as light switches with decorative covers. For example, one method involves the securing of a cover member to the face-plate of a switch by the use of existing fixing screws. This is not wholly satisfactory, in part because the existing fixing screws are retained visible after such securing of the cover member.

Another method involves the provision in

the face-plate of a light switch of grooves or recesses to receive the lip of a clip-on cover plate; whereas this may be acceptable with new installations, this method cannot at present be utilised with existing installations.

According to this invention there is provided a cover assembly for an electric components of the kind specified, such as an electric switch, comprising a mounting plate adapted to be secured between the electric component and the surface to which the component is to be secured, and a cover plate provided with at least one aperture, the assembly being provided with means to enable the cover plate to co-operate with the mounting plate in a manner which allows the cover plate to be secured over the front face of the component with the operating member of the component extending through the aperture.

Conveniently said means comprises at least one pair of co-operating projections and recesses in the mounting plate and cover plate, respectively or otherwise, such projection and recess maintain the cover plate in co-operation with the mounting plate by virtue of some resilience of the mounting plate and/or cover plate. Alternatively, the projection may be pressed into the recess, the cover plate being held in co-operation with the mounting plate by frictional forces.

Preferably the mounting plate is adapted to be secured behind the electric component between a rear face of the component and the object (e.g. wall) to which the component is to be secured by the use of the fixing screws by which the component is secured to the object.

Advantageously the mounting plate is provided with a central aperture within which when the mounting plate is secured behind the component a housing for the working mechanisms of the component extends: desirably, the mounting plate is provided with or may be deformed to provide for a slot or like opening whereby the mounting plate may be secured behind the component without disconnection of electrical wiring of the component.

Preferably the cover plate comprises walls which extend around the side edges of the component, preferably in a rearward direction to a plane substantially flush with the rearmost face of the mounting plate when secured behind the electric component.

There will now be given a detailed description of a cover assembly for an electric component, which cover assembly is a preferred embodiment of this invention, and which has been selected to illustrate this invention by way of example.

In the accompanying drawings:

Figure 1 is a plan view of a mounting plate of said cover assembly;

Figure 2 is a side elevation of said mounting plate;

Figure 3 is a plan view of the electric component, to which the cover assembly has been secured;

Figure 4 is a side elevation on Figure 3;

Figure 5 is an enlarged sectional view corresponding to Figure 4; and

Figure 6 is a view corresponding to Figure 5 showing an alternative form of construction of mounting plate and cover plate.

The cover assembly which is the preferred embodiment of this invention comprises a mounting plate 6 (figures 1 and 2) and a cover plate 20 (Figure 5). The mounting plate comprises four sides 7, 8, 9 and 10 defining a generally rectangular shape, one of the sides, specifically that indicated by the numeral 10, being provided with a slot 11 dividing said side 10 into two parts 10a and 10b. Extending into the side 8, at a position opposite to that of the slot 11, is a cut 8a. The mounting plate comprises a central aperture 12, into which from the sides 7 and 9 two ears 13 and 14 extend, each ear having a central bore 15.

Extending generally at right angles to the plane of the rectangular shape from the sides 8 and from the side parts 10a, 10b are four lugs 16, a terminal end portion of each of the lugs being enlarged, as at 16a.

The cover plate 20 is also rectangular in plan, having a central aperture 22 and comprising an outer peripheral wall 24 and an inner peripheral wall 26, said inner peripheral wall being thinner, and shorter than the outer peripheral wall, and the gap between said walls being similar to the thickness of the enlarged end portions 16a of the lugs 16.

The cover assembly which is the preferred embodiment of this invention is specifically intended for use with an electric component in the form of an electric light switch, of the kind generally described in the specification of our U.K. Patent No. 921819.

Thus, the external dimensions of the mounting plate are slightly larger than the corresponding dimensions of the face plate 40 of the switch, whilst the central aperture 12 is of dimension sufficient to allow the walls 7, 8, 9, and 10 to extend around any housing for the

switch mechanism as may extend rearwardly of the face plate 40.

The thickness of the mounting plate, together with the separation of the wall parts 10a and 10b and the provision of the cut 8a allow the mounting plate to be deformed, specifically in a manner which allows opening of the slot 11.

In the mounting of the cover assembly on the electric light switch, firstly the fixing screws securing the light switch to the wall-mounted box are removed, and the face plate 40 of the switch is eased from the wall or like supporting object. The mounting plate 6 is then inserted between the switch and the wall, the slot 11 being opened to allow passage into the aperture 12 of wires connected to the switch; when the mounting plate is positioned centrally on the back of the switch (aided in part by the lugs 16) the fixing screws are inserted through the bores of the switch face plate, and through the bores 15 of the ears 13 of the mounting plate, and are screwed tightly into the mounting box.

The cover plate is then fitted over the face plate of the switch, the enlarged end portions 16a of the lugs entering the gap between the outer and inner peripheral walls.

In the preferred embodiment, the cover plate 20 is pressed into face to face contact with the switch face plate (Figure 5), engagement between the inner wall and the body of the face plate deflecting the former outwardly, trapping the enlarged end portions 16a of the lugs 16 between it and the outer peripheral wall thereby to restrain separative movement between the cover plate and the mounting plate. However, such deflection of the inner peripheral wall is not necessary, and the cover plate may be retained in engagement with the mounting plate by frictional engagement of the lugs 16 within possibly wedge-shaped gaps provided interiorly of the cover plate.

Alternatively, the means enabling the cover plate to co-operate with the mounting plate in a manner which allows the cover plate to be secured over the front face of the electric switch may be provided by pairs of co-operating projections and recesses, such as is shown in the modification illustrated in Figure 6. Thus, instead of the enlarged end portions 16a the lugs may be provided with outwardly-facing enlargements as indicated by the numeral 16b in Figure 6, the inner peripheral wall of the cover plate being omitted, and the outer peripheral wall being provided with complementary recesses 24b. Thus, the cover plate may be snap-fitted onto the mounting plate, being releasably held in co-operation therewith by virtue of the resilience of the lugs 16 of the mounting plate.

It will of course be appreciated that other constructions may be provided, to afford

releasable engagement between the cover plate and the mounting plate.

Desirably cover plate 20 is provided with a recess 28 of rectangular outline extending a short distance into the outwardly-presented face of the cover plate, effectively providing an exterior peripheral wall 29 and an interior peripheral wall 30 which latter wall bounds the aperture 22 through which, in use, the operating member 42 of the switch protrudes. Within this recess 28 a decorative insert 32 may be secured, such as by the use of adhesive. The insert may be provided with any desired pattern or be of any desired colour or material, and may thus be selected to harmonise with the surrounding decor. Thus, the insert 32 may be cut from a piece of matching wall covering, allowing the cover plate to blend in with the wall to which it is secured. Alternatively, a thin metal plate may provide the insert, the desirable double insulation existing between such an insert and the live components of the switch.

25 WHAT WE CLAIM IS:—

1. A cover assembly for an electric component of the kind specified, comprising a mounting plate adapted to be secured between the electric component and the surface to which the component is to be secured, and a cover plate provided with at least one aperture, the assembly being provided with means to enable the cover plate to co-operate with the mounting plate in a manner which allows the cover plate to be secured over the front face of the component with the operating member of the component extending through the aperture.

2. A cover assembly according to claim 1 wherein the said means comprises at least one pair of co-operating projections and recesses in the mounting plate and cover plate.

3. A cover assembly according to claim 2 wherein said projection and recess maintain the cover plate in co-operation with the mounting plate by virtue of some resilience of the mounting plate and/or cover plate.

4. A cover assembly according to claim 2

wherein the projection is pressed into the recess, the cover plate being held in co-operation with the mounting plate by frictional forces.

5. A cover assembly according to any one of the preceding claims wherein the mounting plate is adapted to be secured between the component and said surface by use of the fixing screws by which the component is secured to the surface.

6. A cover assembly according to any one of the preceding claims wherein the mounting plate is provided with a central aperture within which when the mounting plate is secured behind the component a housing of the component extends.

7. A cover assembly according to claim 6 wherein the mounting plate is provided with or maybe deformed to provide for a slot or like opening, whereby the mounting plate maybe secured behind the component without disconnection of electrical wiring to the component.

8. A cover assembly according to any one of the preceding claims wherein the cover plate comprises walls which extend around the side edges of the component in a rearward direction to a plane substantially flush with the rearmost face of the mounting plate when secured behind the component.

9. A cover assembly according to any one of the preceding claims, adapted for use in conjunction with an electric component in the form of an electric switch.

10. A cover assembly constructed and arranged substantially as hereinbefore described with reference (a) to figures 1 to 5; or (b) to figure 6 of the accompanying drawings.

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2. A cover assembly according to claim 1 wherein the said means comprises at least one pair of co-operating projections and recesses in the mounting plate and cover plate.

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