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(51) INT CL[7]:
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H2E ECHU EDLC

(56) Documents Cited:
GB 2368979 A **GB 2288697 A**
GB 2173051 A

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(54) Abstract Title: **Modular electrical socket board**

(57) An electrical socket board includes a base 11, a plate 12 secured to the base 11 and having one or more sets of socket apertures 13. A cover 14 is provided for covering a flexible power cord as it enters the socket board, the cover 14 being manufactured separately from, but engagable with the plate 12. There is also a cord attachment base 24 being manufactured separately from, but engagable with the base 11 and to which the cover 14 is attached. A number of further plates 12' can be attached end-to-end during manufacture to produce socket boards of desired socket number.

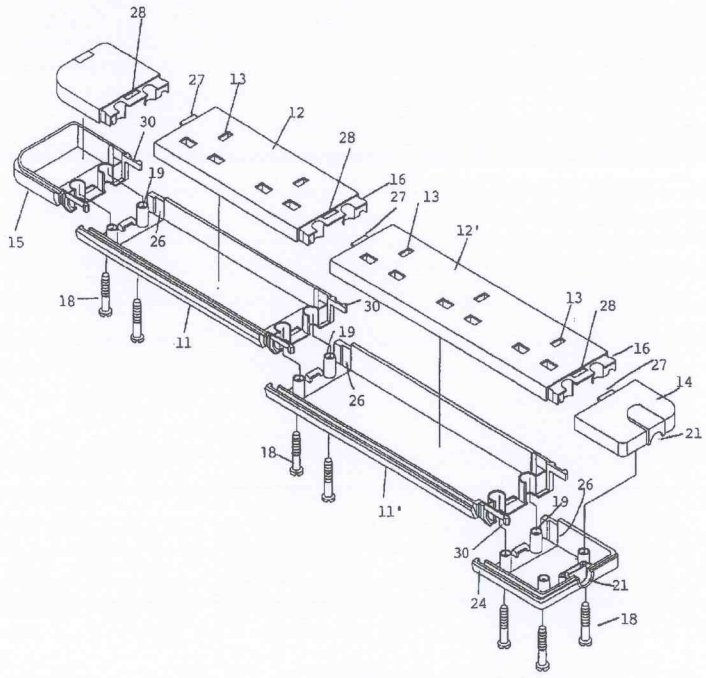

FIGURE 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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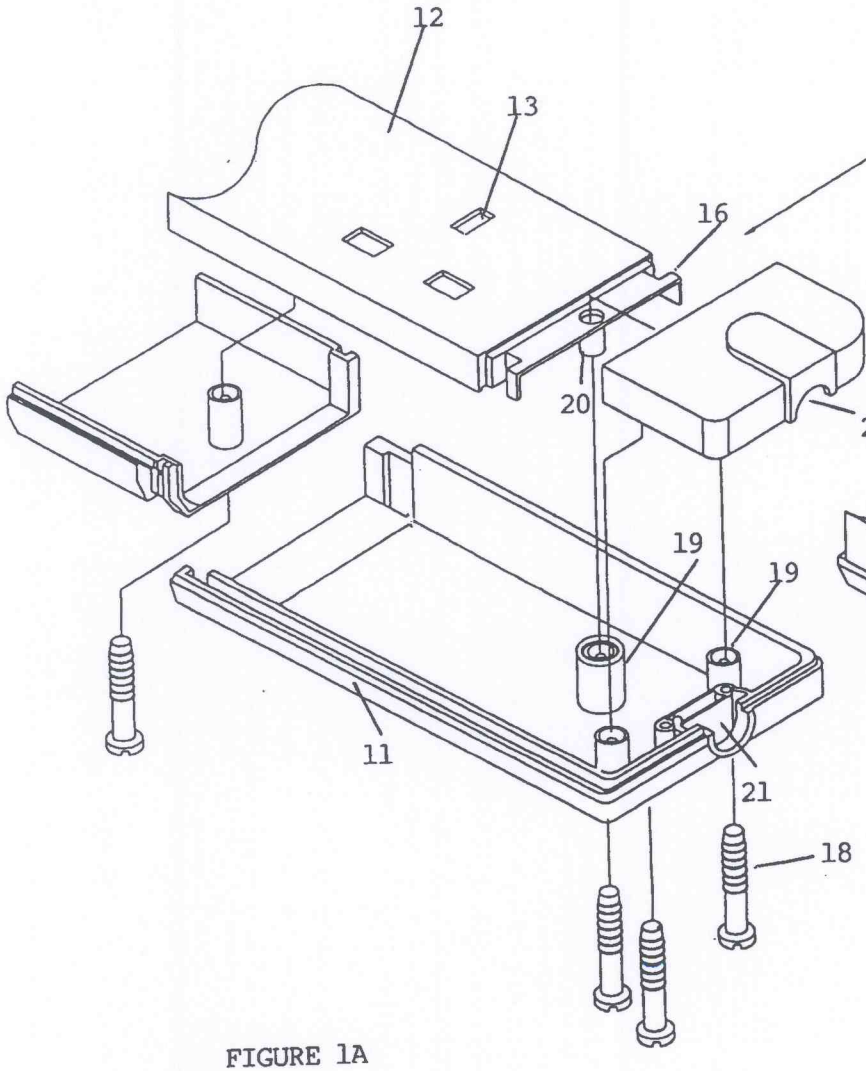

FIGURE 1A

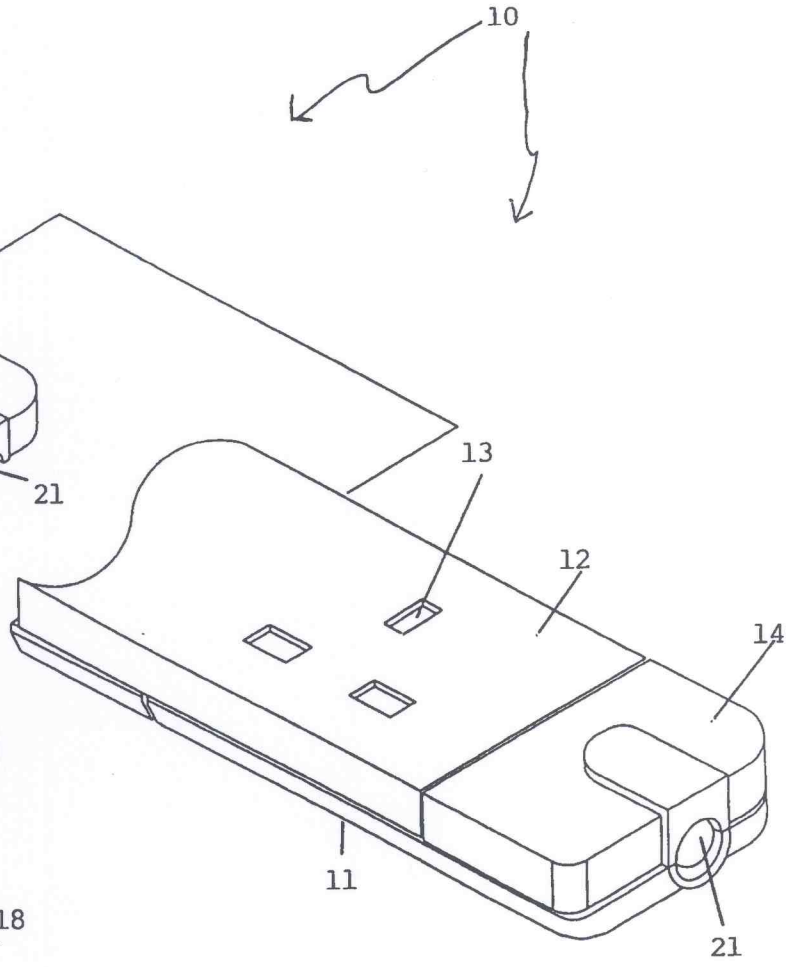

FIGURE 1B

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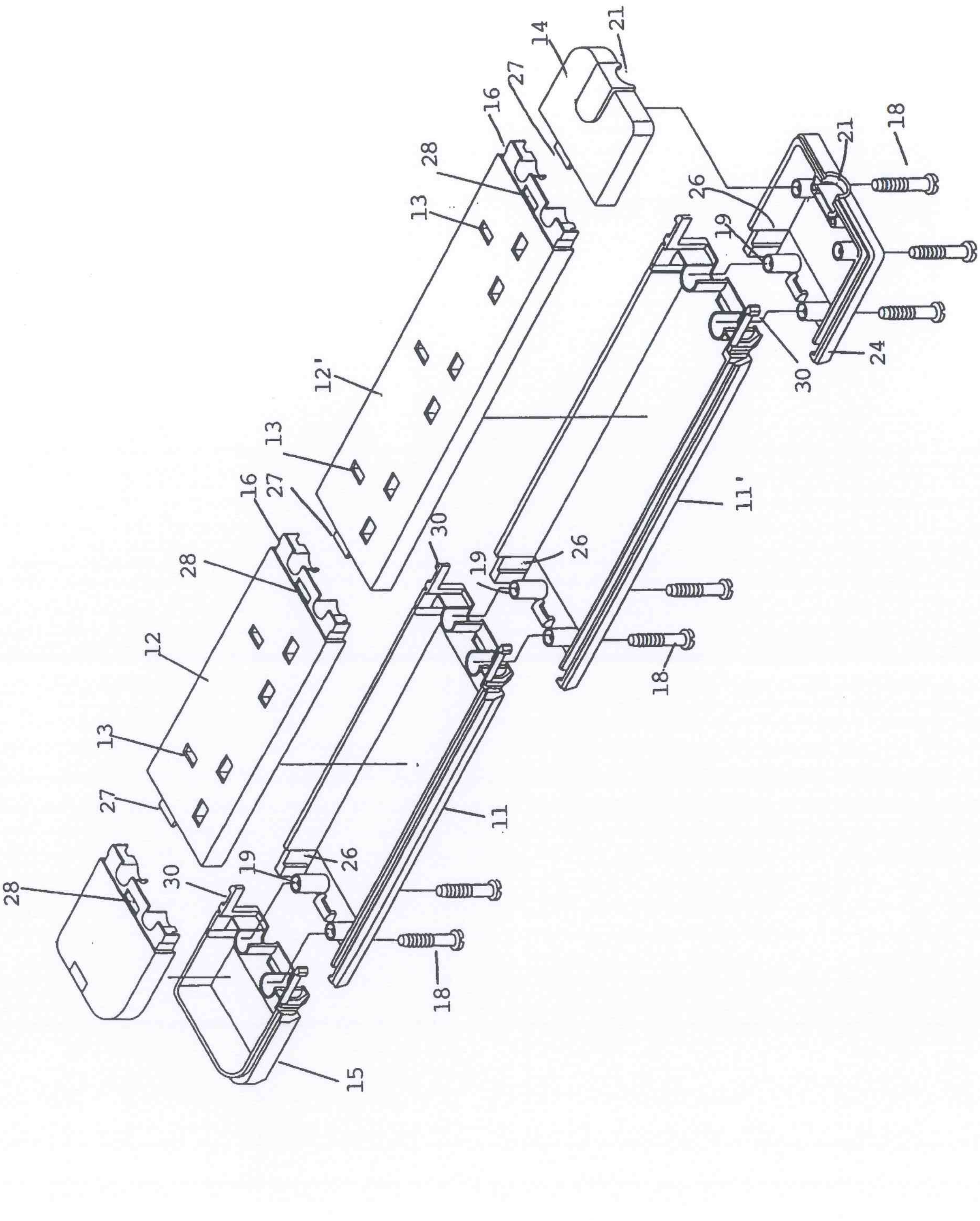
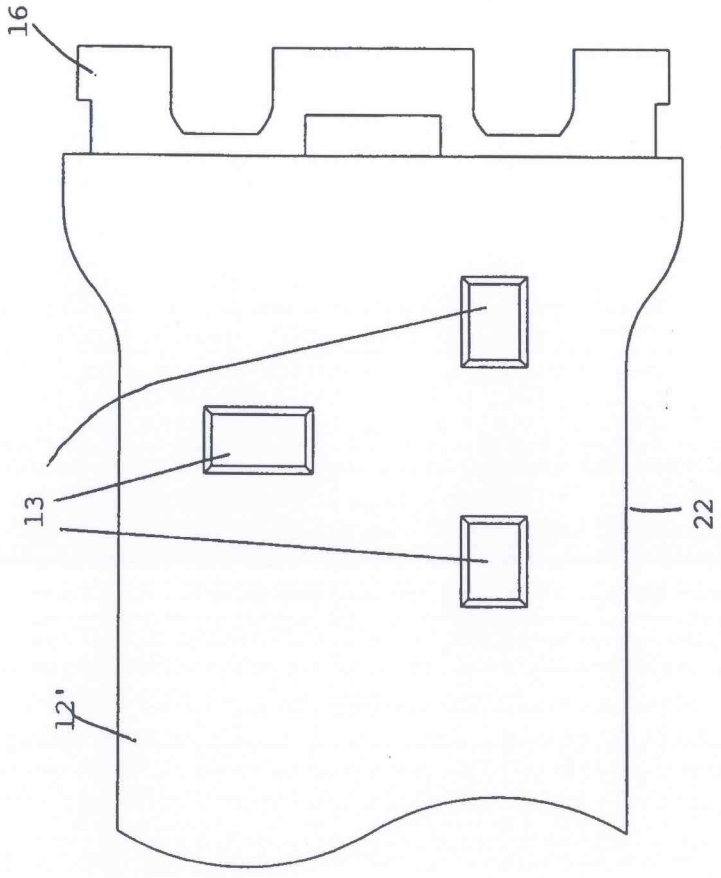


FIGURE 2



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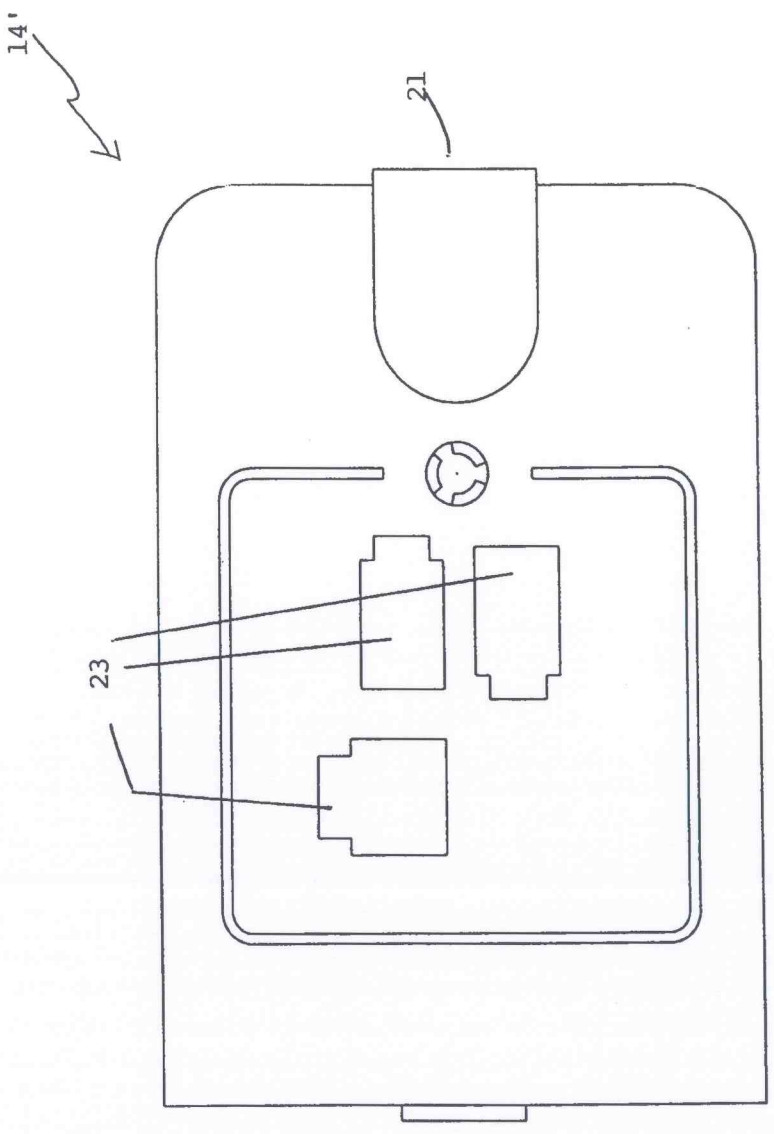

FIGURE 4

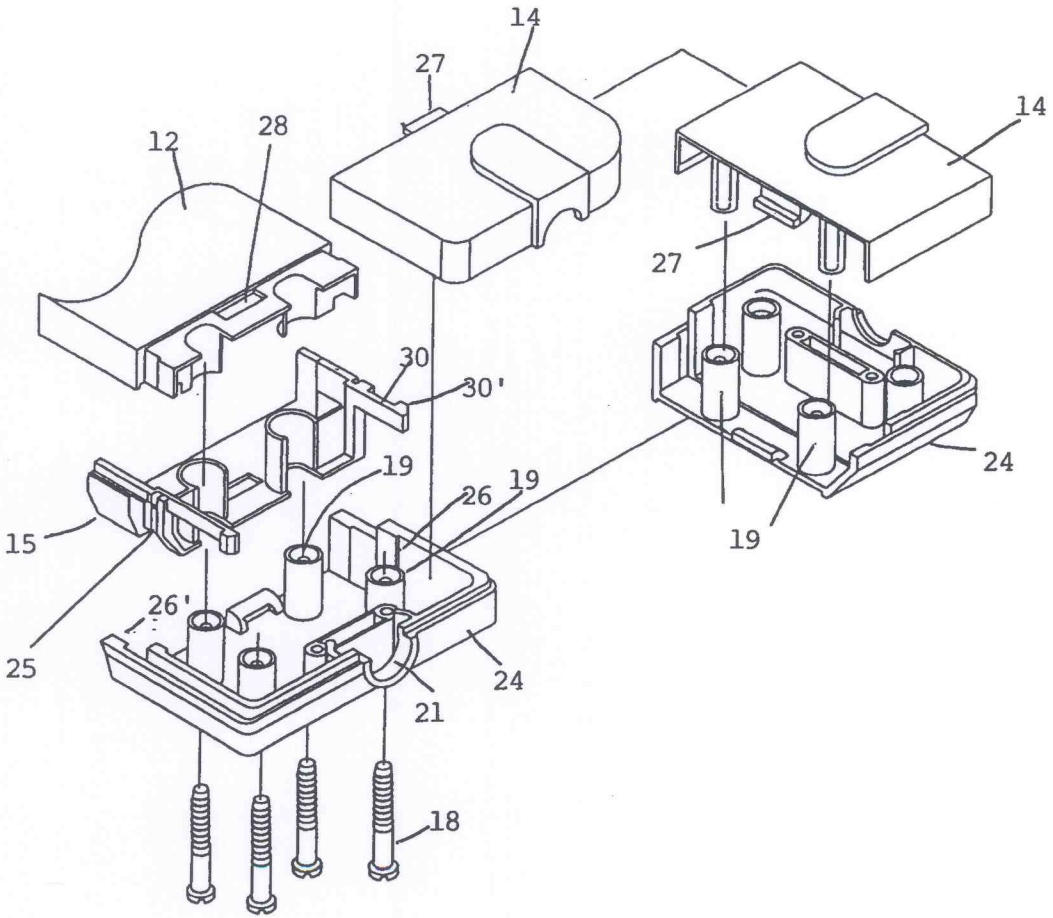

FIGURE 5

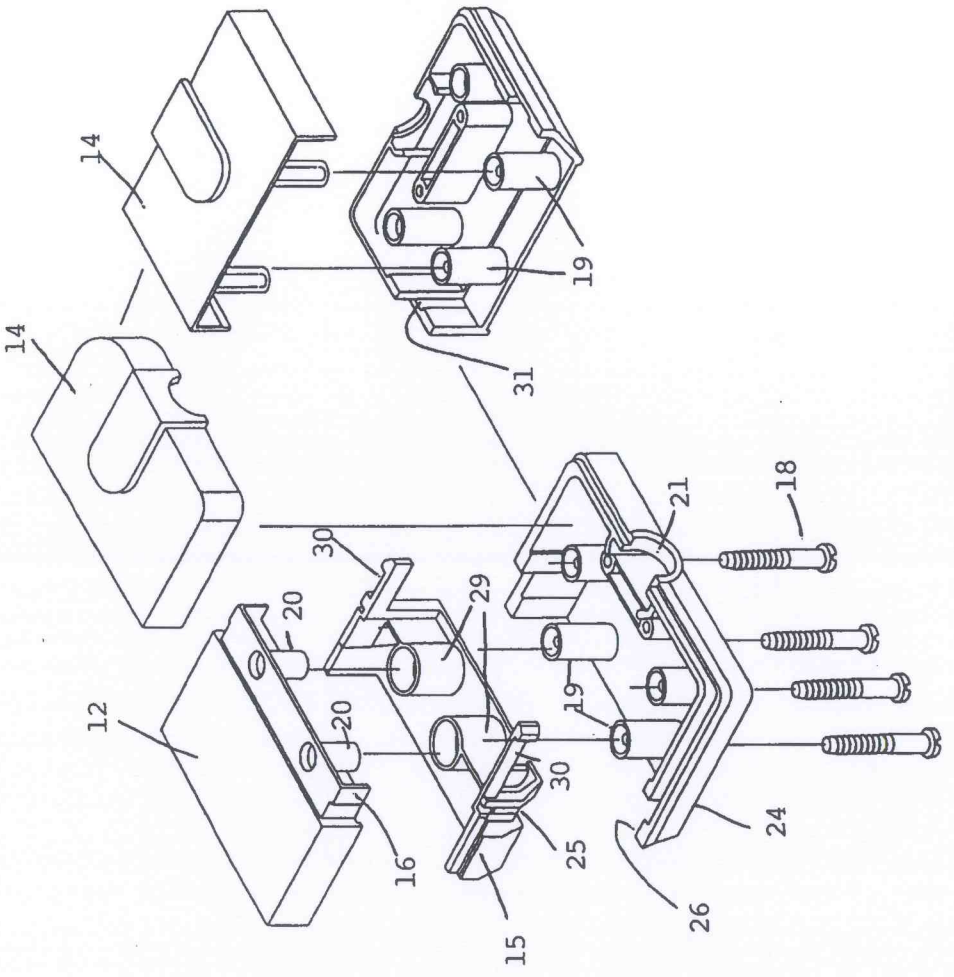

FIGURE 6

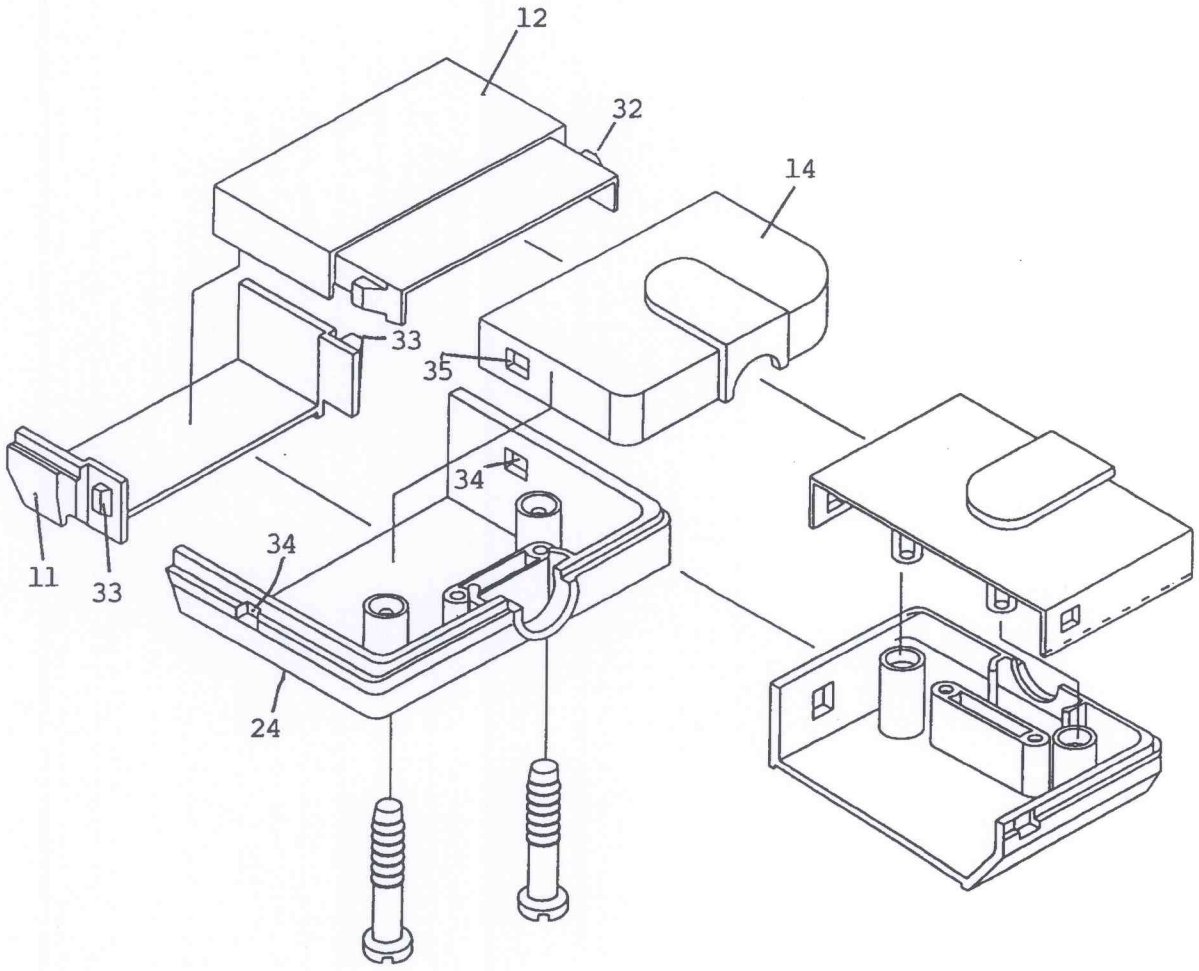

FIGURE 7

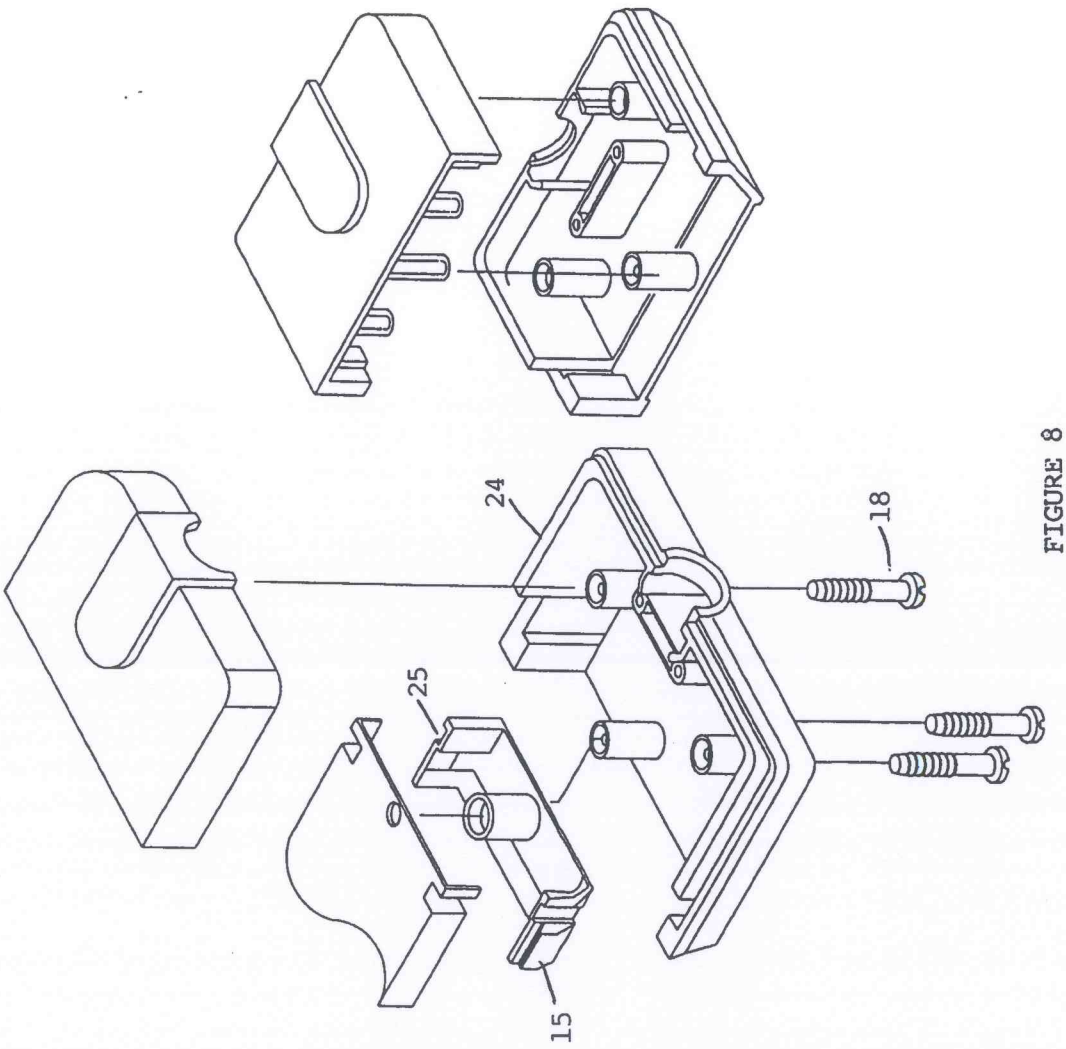

FIGURE 8

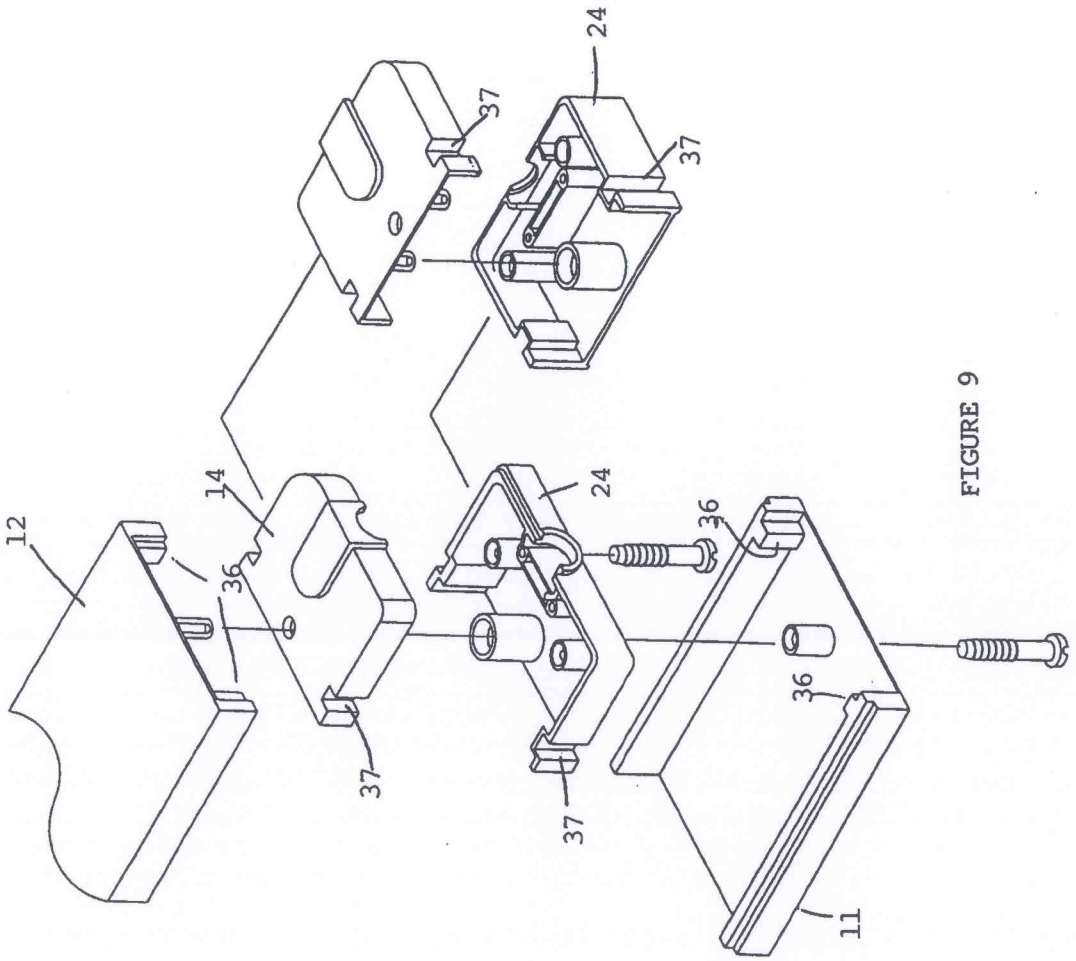

FIGURE 9

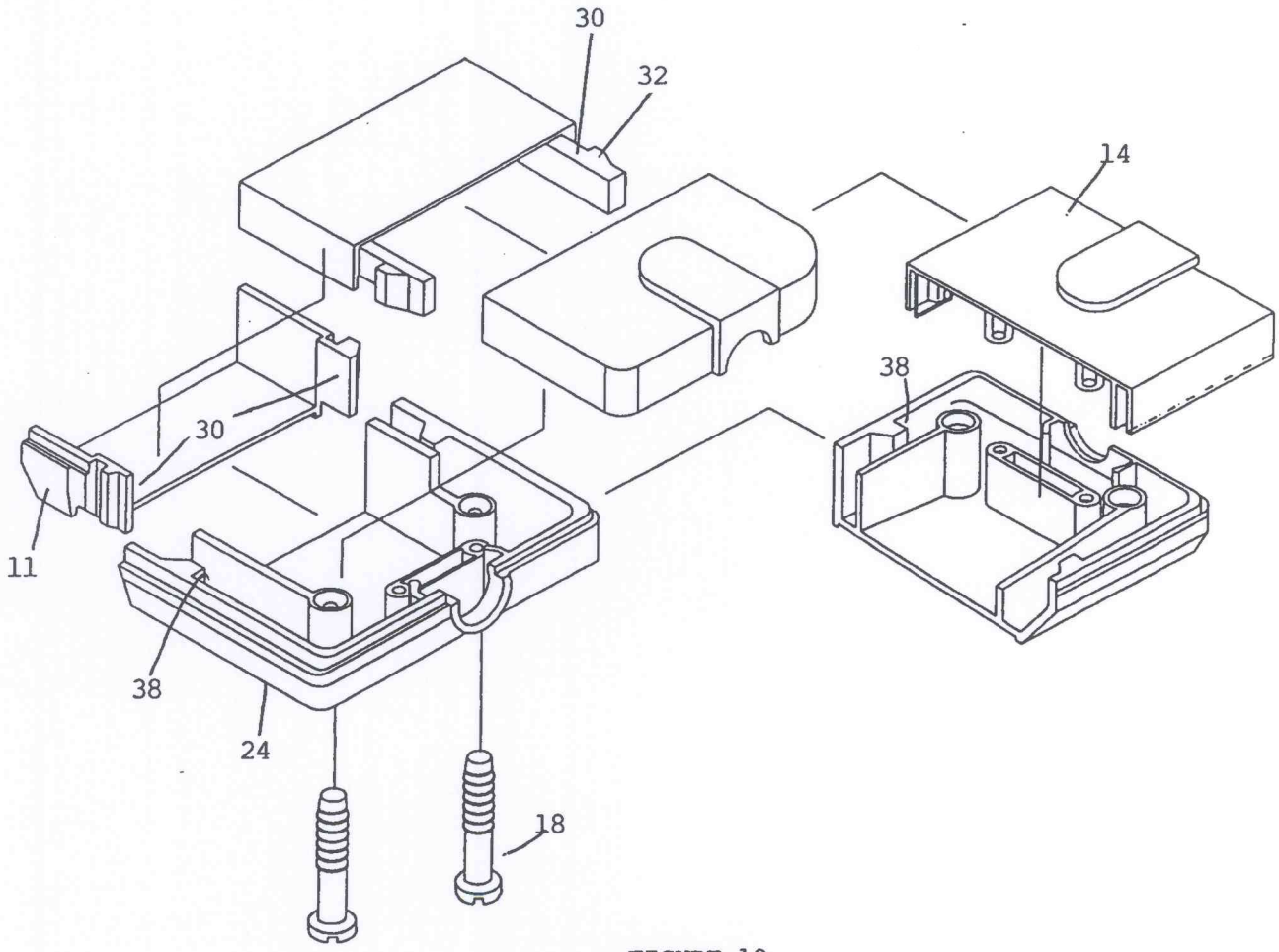

FIGURE 10

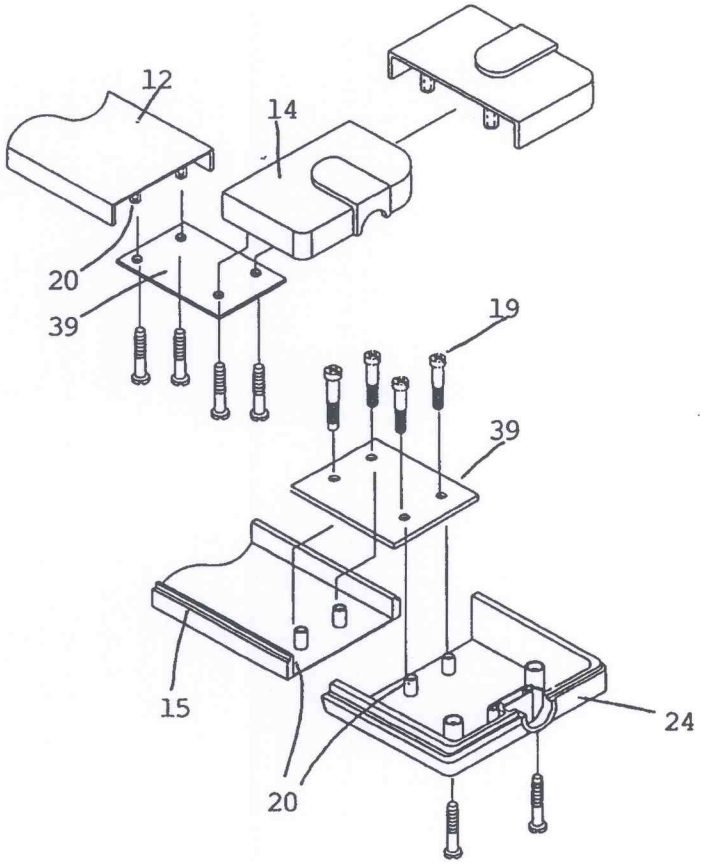

FIGURE 11

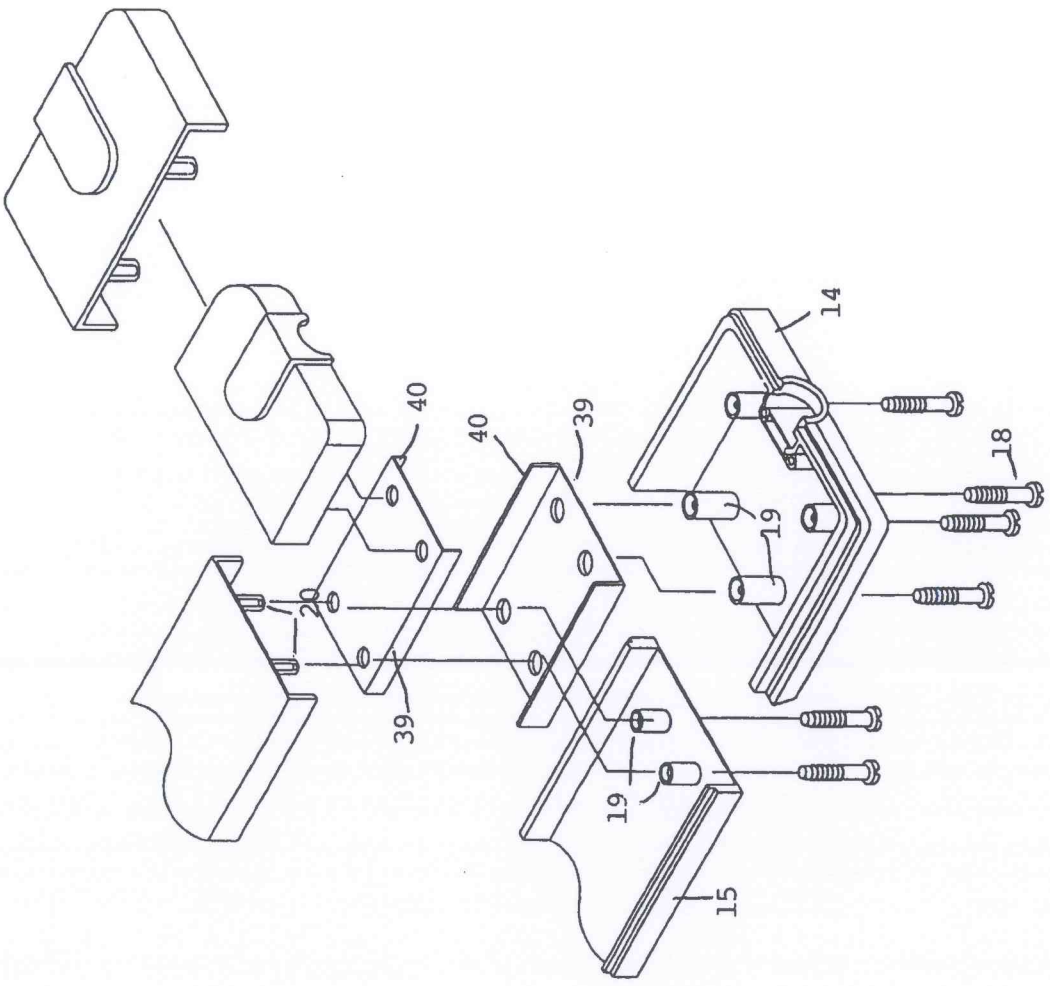

FIGURE 12

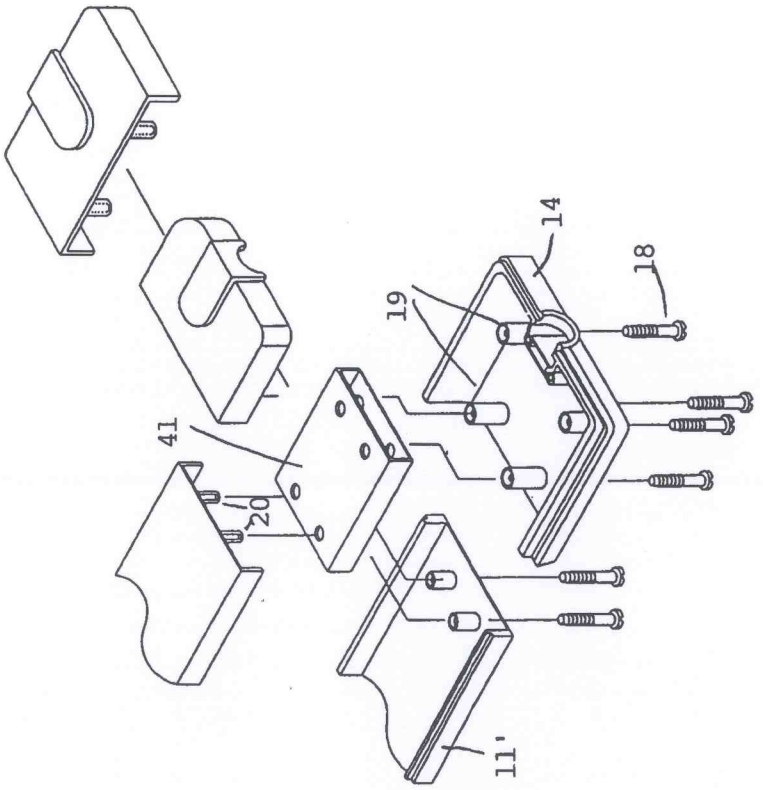

FIGURE 13

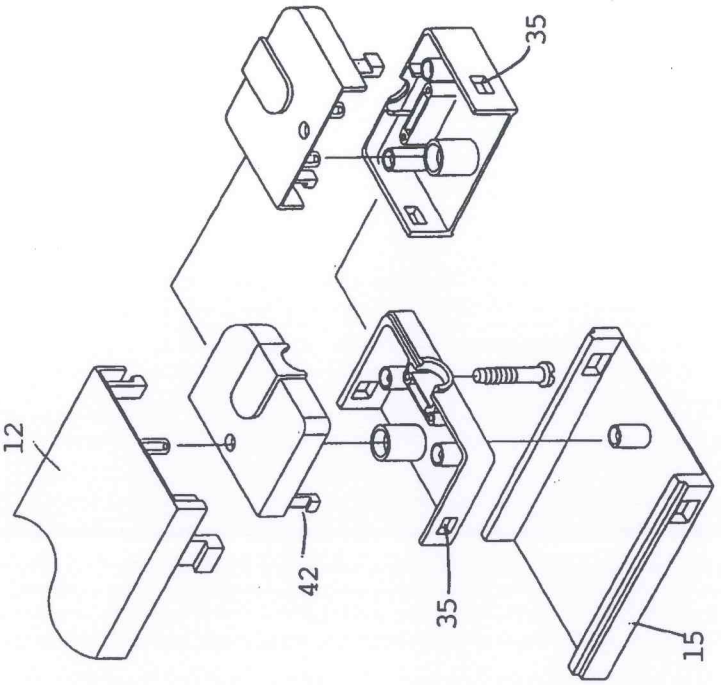

FIGURE 14

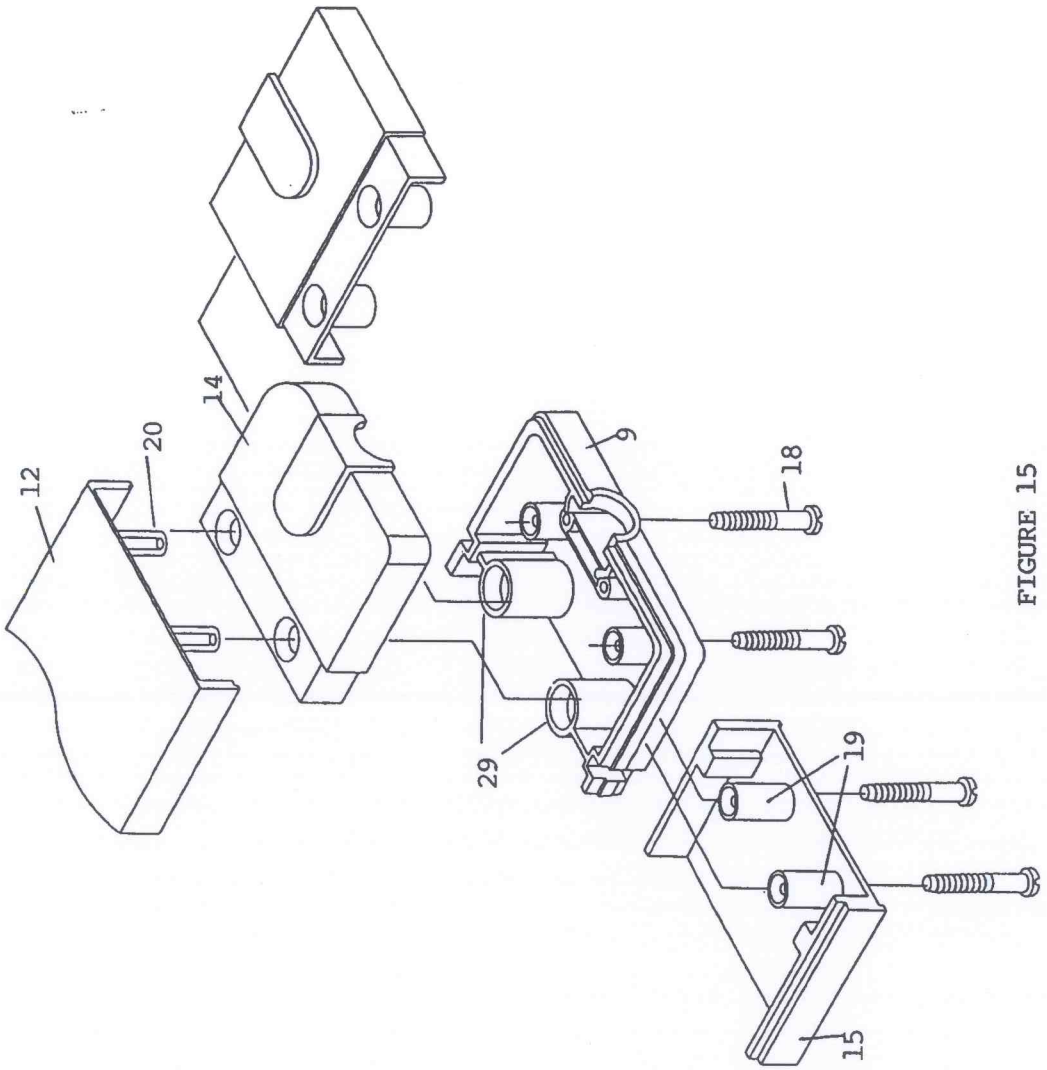

FIGURE 15

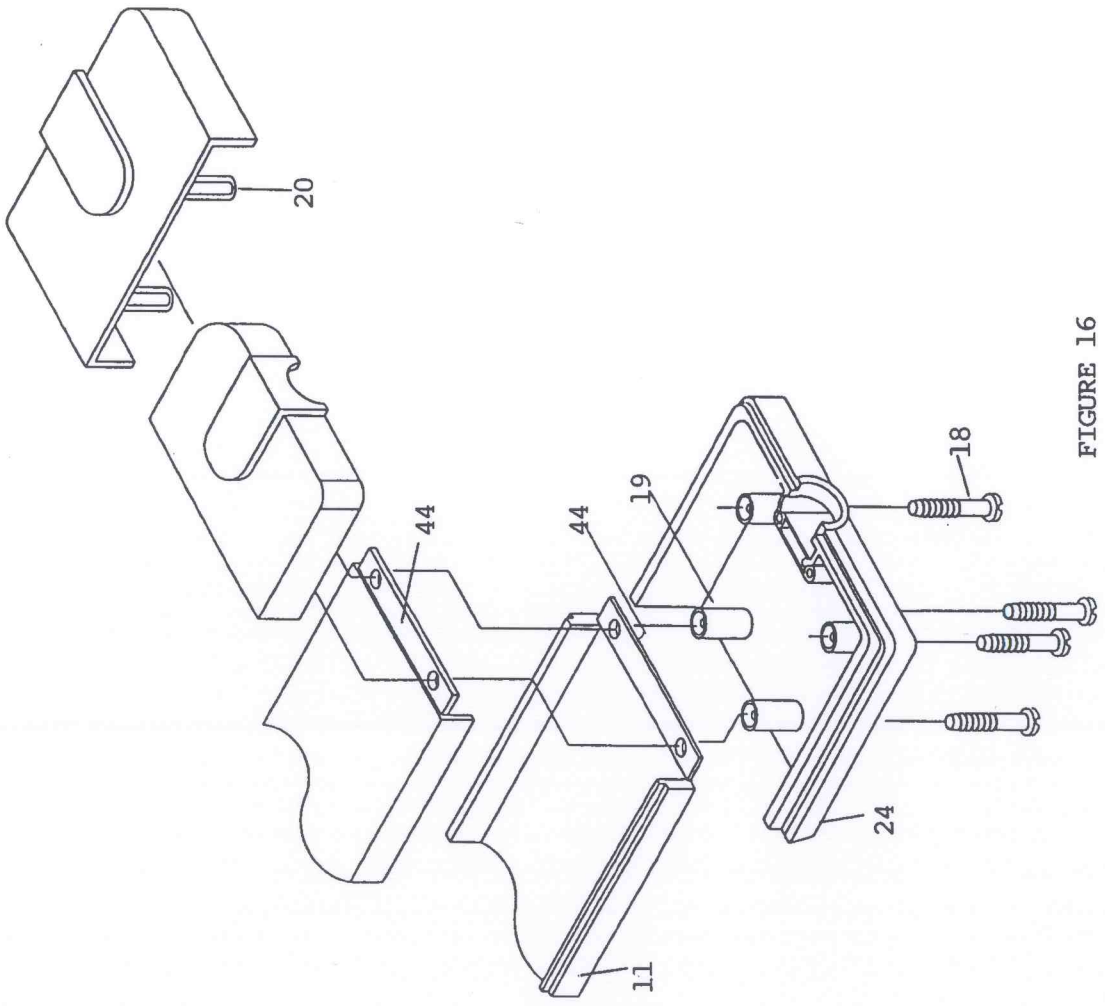

FIGURE 16

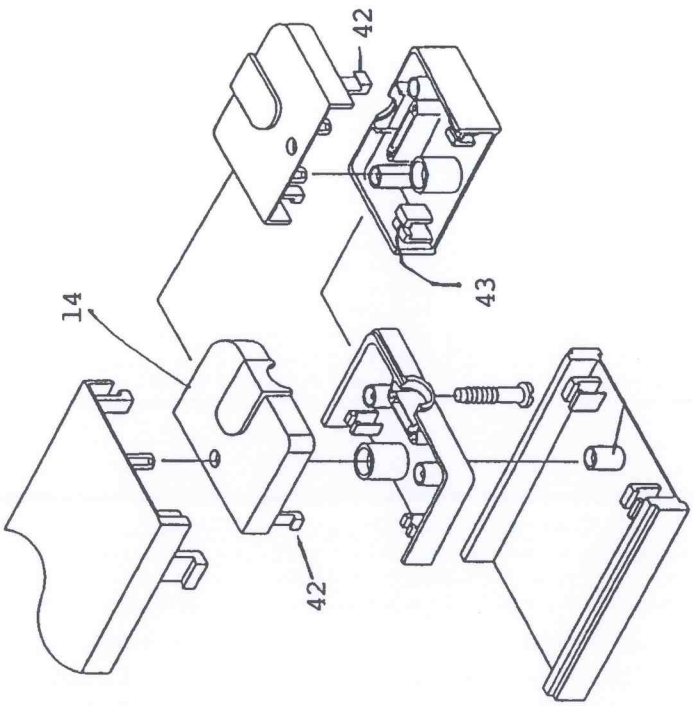

FIGURE 17

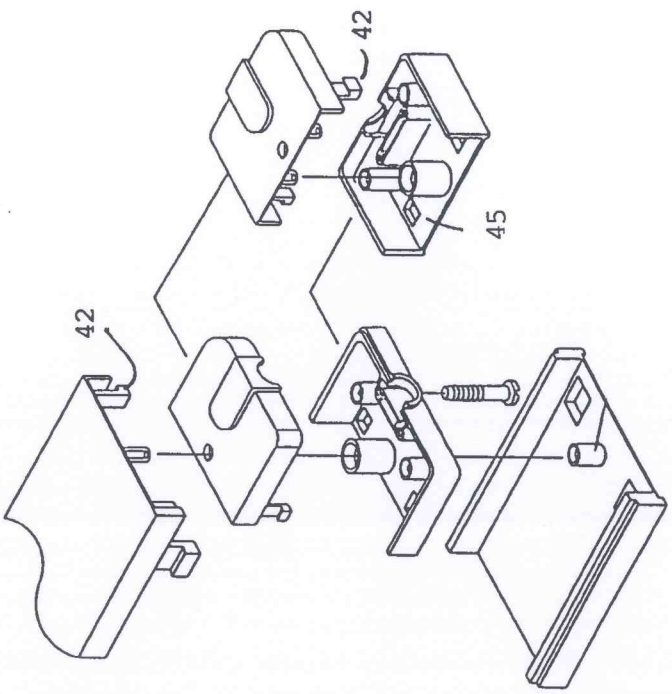

FIGURE 18

Modular Electrical Socket Board

Background of the Invention

The present invention relates to electrical socket boards. More particularly, although not exclusively, the invention relates to a modular electrical socket board easily adapted for manufacture in a variety of lengths, depending upon the number of electrical sockets required on the board.

Multiple-outlet electrical socket boards are known. These are manufactured using different moulds. It can be difficult to estimate consumer-demand for boards of different socket number and this can lead to under or over-production of boards of certain socket number.

Object of the Invention

It is an object of the present invention to overcome or substantially ameliorate the above disadvantage and/or more generally to provide a modular electrical socket board easily adapted for manufacture as a board of specific socket number.

Disclosure of the Invention

There is disclosed herein An electrical socket board

comprising:

a base;

a plate secured to the base and having one or more sets of socket apertures therein;; and

a cord attachment base being manufactured separately from, but engagable with the base and to which the cover is attached.

a cover for covering a flexible power cord as it enters the socket board, the cover being manufactured separately from, but engagable with the plate.

The plate is typically screwed to the base.

The cover is also typically screwed to the base.

Typically the socket board further comprises collars extending from the base and screw pins extending from the plate, the screw pins receiving screws and extending into the collars.

Preferably the cover is screwed to the cord attachment base.

Typically, the cord attachment base is slidably-engaged with the base.

The cord attachment base might be snap-engaged with the base.

In one embodiment, the cover is secured to an intermediate member that is in turn secured to the plate.

Preferably, the cover is slidably-engaged with the plate.

The cover may be snap-engaged with the plate.

One or more additional plates can be engaged end-to-end with the first plate, each having one or more sets of socket apertures therein.

The additional plate(s) typically is/are secured to the base.

The additional plate(s) is/are typically secured to respective base segments attached end-to-end.

Preferably the plates are slidably engaged to one another.

Typically, the plates are snap-engaged to one another.

The socket board might further comprise an end plate engagable with a last one of the additional plate(s).

Brief Description of the Drawings

Preferred forms of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1A is a schematic parts-exploded perspective illustration of part of a modular electrical socket board,

Figure 1B is a schematic perspective illustration of part of an electrical socket board comprising the assembled parts shown in Figure 1A,

Figure 2 is a schematic parts-exploded perspective illustration of another modular electrical socket board,

Figure 3 is a schematic plan view of a portion of an alternative module,

Figure 4 is a schematic plan illustration of a cord cover having telephone sockets, and

Figures 5 to 18 are schematic parts-exploded perspective illustrations of alternative modular electrical socket boards.

Description of the Preferred Embodiments

In Figures 1A and 1B of the accompanying drawings there

is depicted schematically an electrical socket board 10. Socket board 10 is typically formed of moulded plastics parts. The board comprises a base 11 to which there is screw-fixed a plate 12 having a number of socket holes 13 therein. Within the board 10 there would be provided electrical contacts (not shown) with which the pins of electrical plugs are received after having passed through the socket holes 13. There might also be provided sliding plastics parts movable upon insertion of an earth in an extending over the neutral and live socket holes as known in the art. The pins would be connected electrically with a cord passing through a cord hole 21 at the end of the socket board. There is a cord cover 14 screw-fixed to the base 11 by means of self-tapping screws 18. The cord cover 14 together with the base 11 defines the cord hole 21.

The base 11 has a number of screw collars 19 through which the screws 18 pass to be received within screw pins 20 on the underside of the plate 12 or cover 14 as the case may be.

At the proximal end of the plate 12 there is provided an attachment flange 16 with which the cover 14 engages. Various forms of attachment interaction between the plate 12 and cover 14 will be described.

Figure 2 shows a modular electrical socket board having

plates 12 and 12' attached end-to-end using attachment flanges 16 similar to that depicted in Figures 1A and 1B. In this particular embodiment, the base comprises individual base portions 11 and 11' also attached end-to-end. There is a cord cover 14 and a separate cord attachment base 24 at one end of the socket board and a base extension 15 having a separate cover at the distal end of the board. At the proximal end of some of the base sections there is provided a pair of laterally opposed fingers 30 that snap-engage behind flanges 26 at the distal ends of the adjoining units. The screws 18 passing through respective screw collars 19 secure the base portions to the respective plate and cover pieces. There is a locking tab 27 at the distal end of some of the modules that is received within a locking hole 28 of the adjacent portion to assist in maintaining a good attachment between the adjoining pieces.

Figure 3 depicts an alternative plate 12' having a narrowing 22 at which the socket holes 13 are provided. This embodiment is suitable for some markets.

The cord cover 14 might have telecommunications socket holes 23 as shown in Figure 4.

Figure 5 depicts another arrangement comprising parts similar to those described earlier, but also depicting a groove 25 formed in the base 15. This groove receives a

flange 26' in the cord attachment base 24. The fingers 30 comprise ramped protrusions 30' that are received behind flanges 26 of the cord attachment base 24.

Figure 6 shows a further embodiment having details similar to those already described, although details are slightly different - requiring no specific explanation.

In Figure 7 the plate 12 has an extension with ramped bosses 32 similar in function to the fingers 30 described earlier. These ramped bosses are snap-engaged in a longitudinal direction into apertures 35 formed in the sidewalls of the cord cover 14. Similarly, the base 11 has extensions with ramped bosses 33 snap-engaged in the longitudinal direction within apertures 34 through the sidewalls of the cord attachment base 24.

Figure 8 detects an embodiment similar to that of Figure 6, but does away with the fingers extending from base portions 15.

Figure 9 depicts an embodiment wherein a proximal end portion of the plate 12 encases a portion of the cord cover 14 and likewise the proximal end portion of base 11 encases a portion of the cord attachment base 24. There are flanges 36 received within grooves 37 as shown.

Figure 10 depicts an embodiment having resilient fingers

30 at the plate and base, each having ramped bosses 32 received at position 38 behind corresponding formations on the cover 14 and cord attachment base 24.

Figure 11 shows a special attaching plate 39 screw-fixed to the underside of the plate 12 and cover 14. There is another special attaching plate 39 screw-fixed to the base 15 and cord attachment base 24 respectively. Each plate 39 might be made of metal or strong plastics material or even circuit board material for example. There are screw pins 20 with which the screws 19 engage.

Figure 12 depicts a similar arrangement. However, extra strength is added to the special plate 39 by the incorporation of beam edges 40. Once assembled, the plates 39 forms a box section having open ends. Indeed such an open-ended box section is shown at 41 in Figure 13. However, in figure 13, 41 is a unitary component, perhaps formed of moulded plastics material or extruded metal for example. The box section is screwed in place by screws 18 to form a rigid means of attaching the modular components of the socket board.

Figure 14 shows an embodiment similar to that of Figure 7. The difference here is that instead of snap-engaging in the longitudinal direction of the socket board, snap-engagement of components occurs in a vertical direction by virtue of downwardly depending legs 42 that co-operate

with apertures 35.

Figure 15 shows an embodiment similar to that of Figure 1, but without groove-in-recess interaction between the plate 12 and cover 14.

Figure 16 shows an arrangement similar to that of Figure 15, however there is no groove-in-recess interaction between the base 11 and cord attachment base 24. Instead, reliance is placed entirely on the screws 18 passing through collars 19 over which extensions 44 are received.

Figure 17 depicts an embodiment also having downwardly depending legs 42 on the cord cover 14, this time being received by clips 43 in the cord cover base as shown. In Figure 18, legs similar to legs 42 snap-engage through apertures 45 in the floor of the cover base.

By any one of the depicted embodiments, electrical socket boards of desired set number can be manufactured in accordance with current demand without the need for de-commissioning or re-commissioning moulding stations. Instead, modules can be added end-to-end as required.

It should be appreciated that modifications and alterations obvious to those skilled in the art are not be considered as beyond of the scope of the present

invention. For example, there could be many different means of engaging the modules securely end-to-end, not depicted specifically herein. Furthermore, a surge protector might be incorporated into the socket board. Also, the screws used to interconnect the components might be replaced with rivets or other devices. Alternatively glue or ultrasonic welding might be employed to attach the components to one another.

CLAIMS:

1. An electrical socket board comprising:

a base;

a plate secured to the base and having one or more sets of socket apertures therein;

a cover for covering a flexible power cord as it enters the socket board, the cover being manufactured separately from, but engagable with the plate; and

a cord attachment base being manufactured separately from, but engagable with the base and to which the cover is attached.

2. The socket board of Claim 1 further comprising screws securing the plate to the base.

3. The socket board of Claim 2 further comprising collars extending from the base and screw pins extending from the plate, the screw pins receiving screws and extending into the collars.

4. The socket board of Claim 1 wherein the cover is screwed to the cord attachment base.

5. The socket board of Claim 3 wherein the cord attachment base is engaged slidably with the base.

6. The socket board of Claim 3 wherein the cord

attachment base is snap-engaged with the base.

7. The socket board of Claim 3 wherein the cover is secured to an intermediate member that is in turn secured to the plate.

8. The socket board of Claim 1 wherein the cover is engaged slidably with the plate.

9. The socket board of Claim 8 wherein the cover is snap-engaged with the plate.

10. The socket board of Claim 1 further comprising one or more additional plates engaged end-to-end with the first plate and each having one or more sets of socket apertures therein.

11. The socket board of Claim 10 wherein the additional plate(s) is/are secured to the base.

12. The socket board of Claim 10 wherein the additional plate(s) is/are secured to respective base segments attached end-to-end.

13. The socket board of Claim 10 wherein the plates are slidably engaged to one another.

14. The socket board of Claim 13 wherein the plates are

snap-engaged to one another.

15. The socket board of Claim 10 further comprising an end plate engagable with a last one of the additional plate(s).

16. The socket board of Claim 1 wherein the cover has one or more telecommunications apertures.