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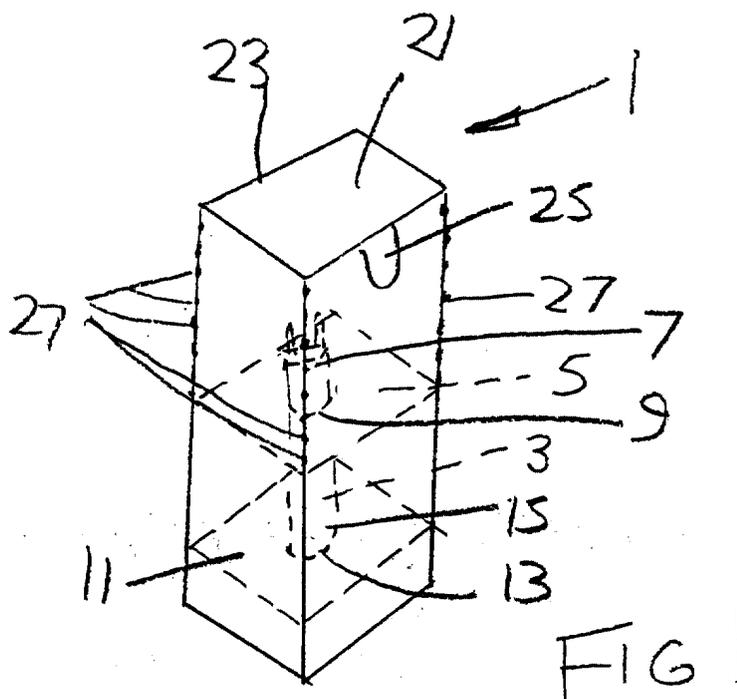
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(54) **Carton for a light bulb or the like**

(57) A carton (1) for a light bulb (3) or the like comprises a carton body, supporting means (5) within the carton body having holding means therein through which the light bulb (3) or the like is intended to pass to support the light bulb (3) or the like in the carton body with its connecting means (7) exposed to one end of the

carton (1). Opening means (27) are provided at the said one end of the carton body openable to reduce the length of the carton body and expose all sides of the bulb connecting means (7) with said supporting means continuing to support the light bulb (3) or the like in the carton body.



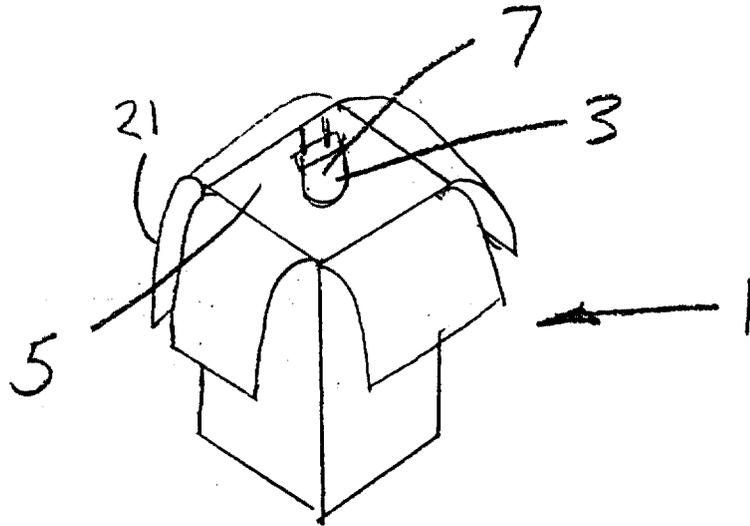


FIG 2.

Description

[0001] This invention relates to a carton for a light bulb or the like. In particular but not exclusively, the invention relates to a carton suitable for receiving quartz bodied light bulbs or like devices such as halogen quartz heating elements or any other device in which it is necessary to plug the device into a power supply without contact with contaminants such as any dirt, sweat or the like on the skin of a person installing the device. Such light bulbs include halogen quartz bulbs which may be either driven a tungsten filament electric discharge.

[0002] In the particular field of halogen quartz bulbs, the difficulty in packaging the bulbs suitably while providing means whereby they can be installed has, in the past, been overcome by the provision of an additional elements within the packaging carton such as a sleeve around the bulb or the separate provision of devices, such as plastics gloves, with which the bulb can be gripped for insertion into a holder.

[0003] These solutions, while successful in practice, suffer from the disadvantage of the possibility of losing the additional elements, which is particularly easy in the case of separate gloves. Another disadvantage is a cost factor in which regulations penalises the use of plastics in packaging and it is therefore desirable to provide a packaging, in which materials other than plastics can be used. There is also another cost disadvantage, particularly in relation to the usual tungsten filament or fluorescent bulbs which are, in any event cheaper, in themselves and do not require any special handling and can therefore be contained solely in a carton.

[0004] The present invention seeks to reduce or overcome some or all of these disadvantages, at least in embodiments of the invention by providing a carton which will enable suitable handling of the lamp bulb or the like without the provision of aids additional to the carton.

[0005] According to the invention, there is provided a carton for a light bulb or the like comprising a carton body, supporting means within the carton body having holding means therein through which the light bulb or the like is intended to pass to support the light bulb or the like in the carton body with its connecting means exposed to one end of the carton and opening means at the said one end of the carton body openable to reduce the length of the carton body and expose all sides of the bulb connecting means with said supporting means continuing to support the light bulb or the like in the carton body.

[0006] Preferably, the carton body, supporting means and opening means comprise a one piece structure and the carton is formed from a single piece flat blank.

[0007] The supporting means may comprise a cross support member extending across the carton from one side to the other, the support member having an aperture therein through which the bulb is intended to pass and may also comprise a second cross support member extending across the carton from side to side and locat-

ed on the opposite side of the first cross support member from the opening means.

[0008] The opening means may enable the sides of the carton to be folded back along the remainder of the carton in the vicinity of the first cross support member and, to this end, may comprise a plurality of lines of perforations extending from the end of the carton to a position in the vicinity of the first cross support member.

[0009] Alternatively, the opening means may comprise means enabling the end carton to be removed up to the vicinity of the first cross support member. To this end, the opening means may comprise a ring of perforations extending completely around the carton in the vicinity of the first cross support member and at least one line of perforations may extend from the end of the carton to the ring of perforations.

[0010] Alternatively, the opening means may comprise a release strip extending completely around the carton in the vicinity of the first cross support member.

[0011] The invention will now be described in greater detail, by way of example, with reference to the drawings, in which:-

Figure 1 is a perspective schematic view of one form of carton in accordance with the invention in a closed state with the position of a light bulb therein being indicated;

Figure 2 is a perspective view of the carton of figure 1 in the open state;

Figure 3 is a plan view of a blank from which the carton of figures 1 and 2 is made;

Figure 4 is a perspective view similar to figure 1 but showing a second embodiment of the invention;

Figure 5 is a perspective view similar to figure 1 but showing a third embodiment of the invention, and

Figure 6 is a perspective view similar to figure 1 but showing a fourth embodiment of the invention.

[0012] Referring firstly to figure 1, there is shown a first embodiment of a carton 1 in accordance with the invention. The carton 1 is of generally standard exterior shape being in the form of a rectangular box. Within the carton 1, for supporting a halogen quartz light bulb (shown in broken lines at 3) is a first cross support 5 located approximately half way down the carton 1 and for supporting the connection end 7 of the bulb 3. To this end, the cross support 5 has a central aperture 9 through which the bulb 3 passes. Below the first cross support 5 is a second cross support 11 having a smaller central aperture 13 to receive the head end 15 of the bulb 3. From the construction shown it will be appreciated that the connection end 7 of the bulb 3 is exposed to the upper end of the carton for a purpose to be discussed here-

after.

[0013] The carton is generally constructed in the usual form of rectangular cartons having a lid portion 21 hingedly connected at its rear at 23 to the back of the carton 1 and having a tuck-in flap 25 at its front end. Where this carton 1 differs significantly from standard cartons is that the corners of the carton 1 are perforated as indicated at 27, the perforations extending down to the position of the first cross support 5, these perforations enabling the carton to be opened up to an extent to expose the connection end 7 of the bulb 3 as will now be discussed with further reference to figure 2.

[0014] The object of the particular construction of carton which has been described is intended to enable the bulb 3 to be retained in the carton 1 while the bulb's connections are fully exposed so that the bulb 3 can be held by means of the carton 1 so that the connections may be inserted in the socket providing the power supply without the bulb 3 itself being touched by the person making the connection. Once the bulb connections have been inserted in their socket, the carton 1 can then be withdrawn leaving the bulb in place.

[0015] Thus, to open the carton the lid 21 is first raised and the front and back of the carton can be pulled apart to tear the perforations 27, allowing the upper parts of the walls of the carton 1 to be folded back along the rest of the carton as shown in figure 2, in the manner of peeling a banana. This will leave the connection end 7 of the bulb 3 exposed completely and it is easy to insert the connections in the appropriate socket gripping only the carton 1.

[0016] The apertures 9 and 13, particularly the aperture 9 through which the bulb 3 actually passes, must be of a size which is sufficiently large to allow the carton 1 to be pulled off the bulb 3 once the connection has been made without disconnecting the bulb at the same time. As most uses for this type of bulb extend from the horizontal to the upwardly directed vertical, the aperture 9 can be completely loose since the bulb will not fall out of the carton while connection is taking place.

[0017] However, if vertically downward connection is needed, at least a minimum frictional fit is needed to stop the bulb 3 from falling out when the carton is upended. This can be achieved by either making the aperture a tight fit or by providing a star shaped aperture in known way. Another possibility is to tilt the cross support member 5 so that the shape presented to the bulb by the aperture 9 is elliptical rather than circular.

[0018] Figure 3 shows one example of a single piece blank 31 from which the carton of figures 1 and 2 can be made. It will be appreciated that this one piece blank can be made into the carton solely by folding the cut blank, no gluing being needed. Preferably, the blank is cut from a sheet of cardboard.

[0019] The blank comprises effectively five sections 33, 35, 37, 39 and 41 divided by fold lines, of which the section 33 forms the cross members 5 and 11 while the sections 35, 37, 39, and 41 form the carton proper. All

of the fold lines on the blank fold in the same direction.

[0020] The folding of the carton manually will now be described to provide an illustration although, of course, on practice, the cartons would be machine assembled.

[0021] Firstly the cross supports 5 and 11 are formed by folding down the section 33 and then the elements 43 and 45 and thereafter the elements 47 and 49 to make a box shaped structure lying along the rear of section 35. The section 37 is then folded down from the section 35 and the sections 39 and 41 follow suit until the right hand side of the section 41 rests against the left hand side of the section 35, providing a closed box containing the cross supports formed by the section 33. At the same time, the flap 51 is folded down and inserted in a slit 53, thus holding the closed shape together.

[0022] Next the bottom of the carton is formed by folding down the two side flaps 55 and 57 and folding down the back flap 59 and the extended flap 61 on the end thereof, the extended flap 61 being inserted behind the appropriate sides of the side flaps 55 and 57 to hold the base in place.

[0023] The top is formed in a similar manner using side flaps 63 and 65 and back flap 67 and extended flap 69. To assist in easy opening of the carton, a curved slit 71 and a semicircular indent 73 are provided.

[0024] Insertion of the bulb 3 in the carton can be carried out at any suitable stage up to the closing of the top end of the carton 1. The perforations for providing the fold back operation of the carton can be seen at 27.

[0025] While a particular blank has been shown and described, it will be appreciated that many different forms of blank could be designed to provide effectively the same carton and any suitable design can be used.

[0026] The above described embodiment has relied on folding back of the upper sides, front and back of the carton to fully expose the connection end 7 of the bulb 3. However, the same effect could be achieved by an arrangement which will allow the entire upper portion of the carton to be removed. Three such arrangements are shown in figures 4 to 6.

[0027] In figure 4, only one of the corners 75 is perforated, this line of perforations extending down to a ring of perforations 77 at the height of the first cross support 5. To open this carton 1, the two sides which come together at the corner 75 are pulled apart so that the corner splits down to the ring of perforations 77 which can be torn round to completely detach the top section of the carton 1.

[0028] It will also be appreciated that, using the blank shown, one corner is already effectively open down to the point of the ring of perforations 77 and that no axially orientated perforations are needed.

[0029] In Figure 5, the blank is formed with a release strip 79 with a projecting lip 81 by which it can be operated. The lip 81 is seized and the release strip is torn right round to once again detach the top part of the carton.

[0030] In Figure 6, only a single row 85 of perforations

is provided, there being no perforations or openings between this row 85 of perforations and either end of the carton as was present in the embodiment disclosed in Figure 4. The row 85 of perforations divides the carton into two parts 87 and 89. The part 87 houses the bulb (not shown in this figure) while the part 89 houses the bulb's connections.

[0031] In order to open the carton for insertion of the bulb into an appropriate socket, the two parts 87 and 89 are grasped, one in each hand and are then twisted in opposite directions to sever the perforations and split the carton into its two parts 87 and 89. The part 89 of the carton can then be disposed of while the part 87, containing the bulb, can then be used for insertion of the bulb's connections into a suitable socket as has been described in relation to the embodiment of figures 1 to 3.

[0032] It will be appreciated that a number of modifications or additions may be made to the above described embodiments without departing from the scope of the invention. For example, in the embodiment of figure 4, two or more comers could be perforated to enable easier access to the circular line of perforations 77. Also, in the embodiment of figure 5, the slit 71 and indent 73 may be omitted since the carton is not required to be opened from the end.

[0033] It will also be understood that while the invention has been described for use with halogen quartz bulbs, it may also be used with other similar devices such as halogen quartz heating elements or indeed any device which needs to be connected to a power supply but should not be touched by the skin of the person connecting the device.

Claims

1. A carton (1) for a light bulb (3) or the like comprising a carton body, supporting means (5, 11) within the carton body having holding means (9) therein through which the light bulb (3) or the like is intended to pass to support the light bulb (3) or the like in the carton body with its connecting means (7) exposed to one end of the carton (1) and opening means (27, 75, 77, 79, 85) at the said one end of the carton body openable to reduce the length of the carton body and expose all sides of the bulb connecting means (7) with said supporting means (5, 11) continuing to support the light bulb (3) or the like in the carton body.
2. A carton as claimed in claim 1, wherein the supporting means comprises a cross support member (5) extending across the carton (1) from one side to the other, the support member (5) having an aperture (9) therein through which the bulb (3) is intended to pass.
3. A carton as claimed in claim 2, wherein the supporting means comprises a second cross support member (11) extending across the carton (1) from side to side and located on the opposite side of the first cross support member (5) from the opening means (27).
4. A carton as claimed in claim 2 or 3, wherein the opening means (27) enables the sides of the carton (1) to be folded back along the remainder of the carton (1) in the vicinity of the first cross support member (5).
5. A carton as claimed in claim 4, wherein the opening means comprises a plurality of lines of perforations (27) extending from the end of the carton (1) to a position in the vicinity of the first cross support member (5).
6. A carton as claimed in claim 2 or 3, wherein the opening means comprises means (75, 77, 79, 85) enabling the end carton to be removed up to the vicinity of the first cross support member.
7. A carton as claimed in claim 6, wherein the opening means comprises a ring of perforations (77, 85) extending completely around the carton (1) in the vicinity of the first cross support member (5).
8. A carton as claimed in claim 7 and comprising at least one line of perforations (75) extending from the end of the carton (1) to the ring of perforations (77).
9. A carton as claimed in claim 10 wherein access to the ring of perforations is obtained using an open corner of the carton (1) obtained when a blank from which it is formed is folded to produce the carton (1).
10. A carton as claimed in claim 6 wherein the opening means comprises a release strip (79) extending completely around the carton (1) in the vicinity of the first cross support member (5).

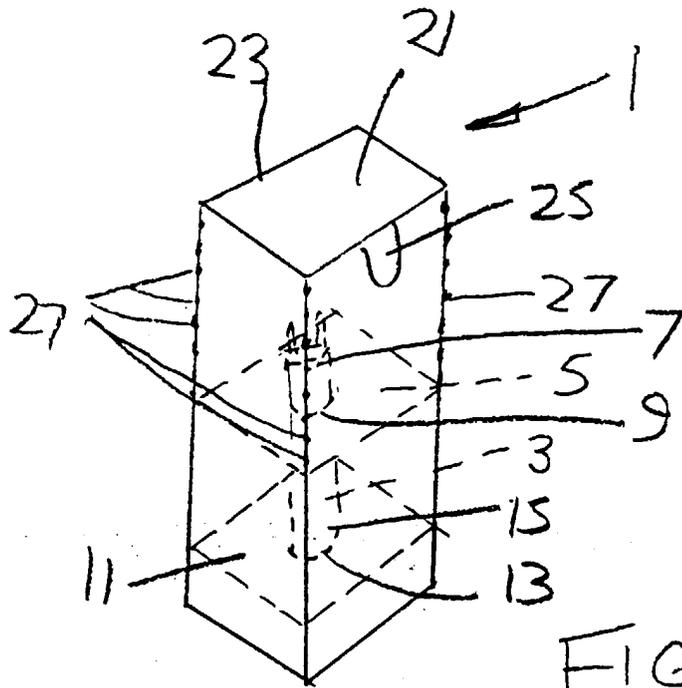


FIG 1

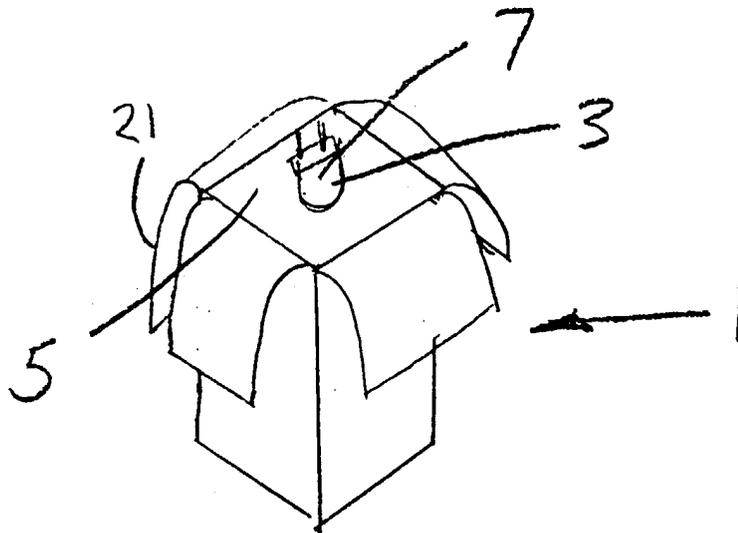


FIG 2

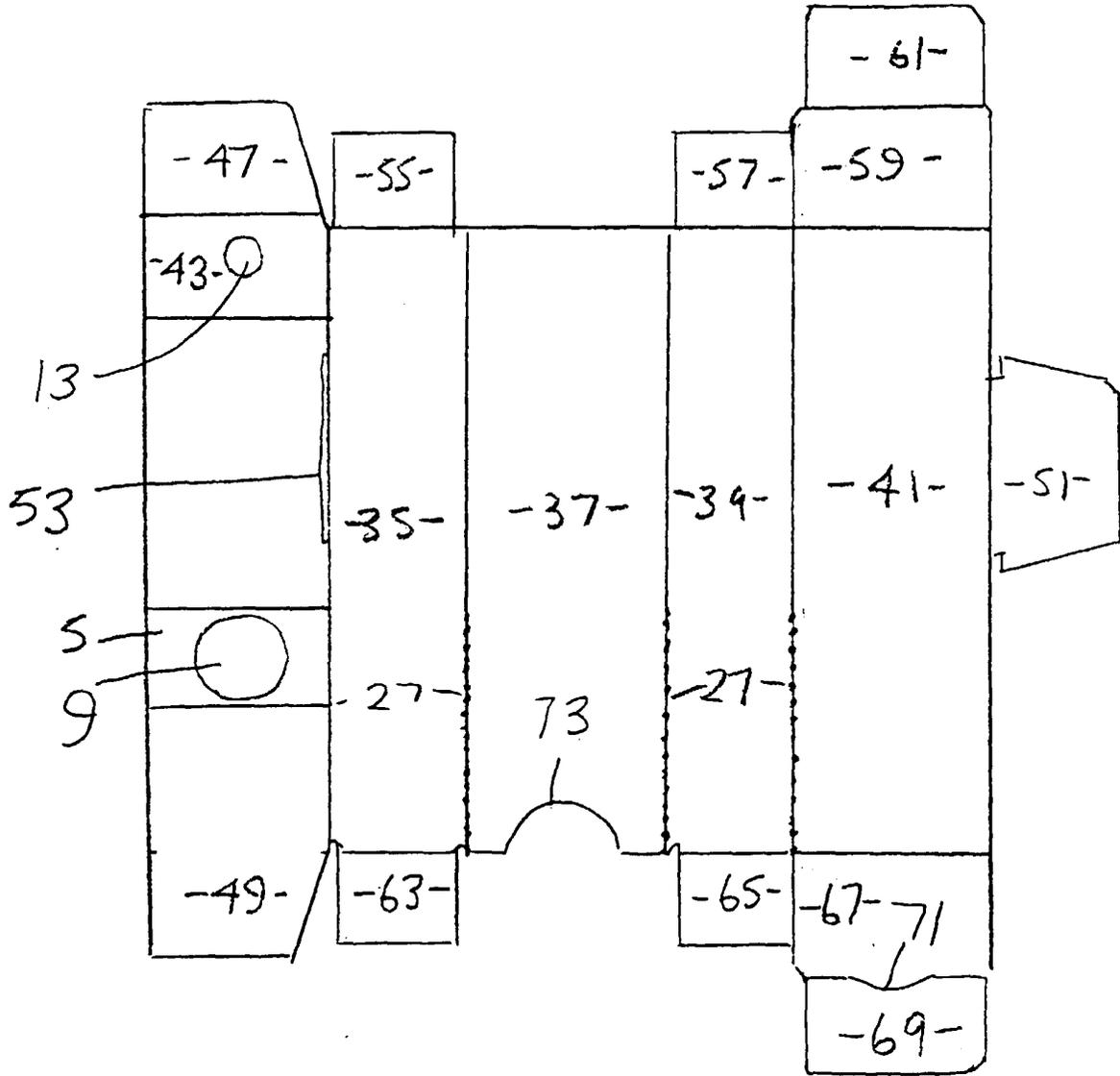


FIG 3

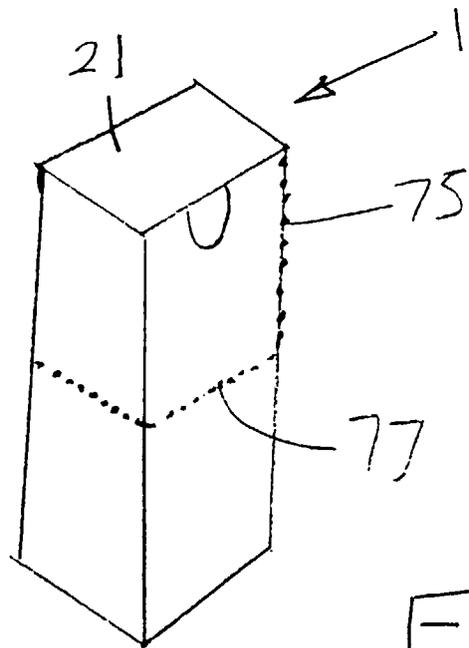


FIG 4

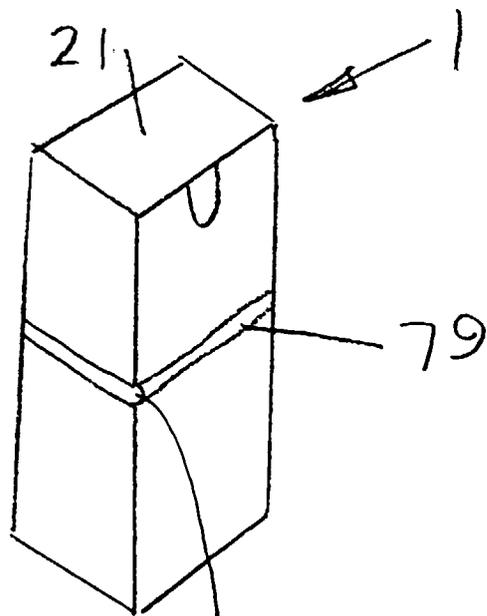


FIG 5

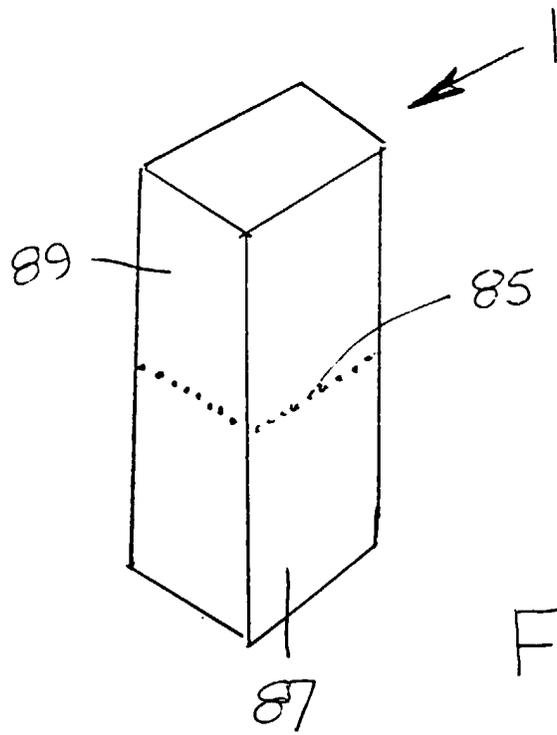


FIG. 6