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(54) Applicator assemblies.

(57) The invention concerns applicator assemblies for liquid, semi-liquid, paste-like or viscous materials, particularly, but not exclusively cosmetics products.

Modern techniques for the marketing of cosmetics products include distributing free samples to the public. The use of conventional assemblies, in which a container to which a cap/applicator is attached holds a substantial quantity of the product, is too costly to be practicable. The invention provides a structure which, because it can be made cheaply and will hold only a small amount of product; is ideally suited as a free sample package. In this structure a tube, or other suitable enclosure (4) is adapted to enclose a head (3) of an applicator (1) which also has a shaft (2) integral with, or non-removably fixed to said head, together with a limited quantity of material (7) within a sealed space, the arrangement being such that when the applicator is so sealed, at least a substantial part of the shaft (2) lies outside the space.

Another problem with conventional applicator assemblies is that the applicator tends to become clogged with material and therefore unhygienic. In another aspect the invention provides an applicator system by which an applicator head can be renewed. The system provides a handle and a plurality of applicator heads, each adapted for retaining a liquid, semi-liquid, paste-like or viscous material to be applied, said handle being adapted for engagement with each of said applicator heads for the formation of an assembled applicator, the applicator heads being interconnected to form a multiple head unit from which the heads may be individually detached as they are needed for assembly with said handle.

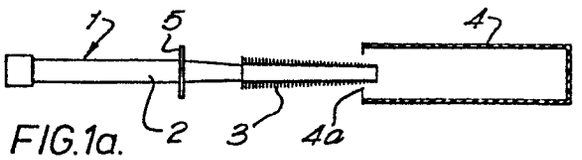

FIG.1a.

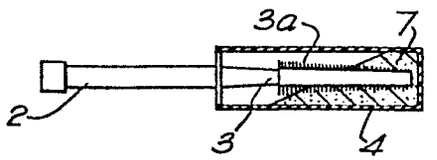

FIG.1b.

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APPLICATOR ASSEMBLIES

The present invention relates to applicator assemblies for liquid, semi-liquid paste-like or viscous materials. It is particularly, though not exclusively, concerned with applicator assemblies for cosmetics material, e.g. mascara, eyeliner compositions etc.

Cosmetic applicator assemblies of the type in which an elongate applicator comprising a shaft one end of which carries or is formed as an applicator head adapted for the retention of cosmetics material is detachably secured to an elongate container containing a substantial quantity of the material to be applied, are well known. Commonly, the shaft is fixed to a cap which screw-fixes or snap fits onto the neck of the container, such that when not in use, the applicator head and substantially the whole length of the shaft is disposed within the container. The cap also forms the handle of the applicator, and the applicator head comprises a material-retaining portion such as a bristle brush, or a row or rows of teeth integrally formed with the shaft. Such assemblies are intended as relatively long-use products to be retailed to the user.

It will be appreciated that the successful marketing of new cosmetics products of this type relies upon the manufacturer's ability to induce the consumer to sample the product and assess it merits. To achieve this, when determining the likelihood of success of a proposed new product, or promoting the market launch of a new product, many cosmetics manufacturers have adopted the practice of distributing free samples to members of the public. However, it is both impractical and expensive to base such promotional/trial campigns upon the long-use type of product discussed earlier, as these assemblies, or packages, often incorporate features which are intended to extend the usable life of the package, this being contrary to the general purpose of promotional/trial campaign, that is to enable members of the public to try out the new product once, or perhaps only a few times as cheaply as possible.

In one aspect, therefore, the present invention seeks to provide an applicator assembly which is suited to this purpose. Accordingly in this aspect, the present invention provides an applicator assembly comprising:

an applicator having a shaft and integral therewith or non-removably fixed thereto, an applicator head adapted to retain a liquid, semi-liquid, paste-like or viscous material; and

means for enclosing said applicator head together with a limited quantity of such a material within a sealed space;

wherein the arrangement is such that when the applicator head is so sealed at least a substantial part of said shaft lies outside said space.

The enclosing means may comprise a short tube into which the applicator head can be inserted through one end thereof. That end can be sealed by means which is provided on the shaft adjacent the applicator head, e.g. an integral sealing disc which is a tight fit in the tube. The other end of the tube is preferably sealable after the introduction, e.g. by nozzle injection, of a quantity of the product into the tube through that other end. Such sealing may be effected by fitting a cap or plug at said other end of the tube, or, if the tube material permits, by pinching and heating sealing.

The applicator head may, for example, be a bristle brush or an injection moulded plastics element provided with surface formations.

Another applicator assembly of the invention, also suited for use as a sample package, comprises an applicator member a portion of which retains thereon a quantity of liquid, semi-liquid, plaste-like or viscous material, and means enclosing said applicator

in an openable sealed space, the only said material within the space being the material retained on said portion of said applicator member.

This applicator comprises a head which is attached or adapted to be attached to a shaft to constitute a handle for the applicator.

As in the previous aspect, the enclosing means may be a short tube in which the head is sealedly enclosed, the seal being provided, for example by a sealing disc which is a close fit within one end of the tube, the other end of which is closed off. Alternatively, the head, or the whole applicator may be enclosed in an openable and non-resealable package, e.g. of the "blister-pack" type.

Another applicator assembly of the invention also suitable for use as a sample package, comprises an applicator member having surface formations, or otherwise adapted for the retention thereon of a liquid, semi-liquid, paste-like or viscous material, and means enclosing said applicator member together with a quantity of said material within an openable sealed space, said enclosing means being non-resealable once opened.

Another applicator assembly of the invention also suited for use as a sample package, comprises an applicator member integrally moulded from plastics

material and comprising a shaft a portion of which has surface formations thereon for the retention of a liquid, semi-liquid, paste like or viscous material, and means enclosing said applicator member together with a small quantity of such material within an openable sealed space.

In all of the above-defined aspects of the invention the applicator assembly is simple in constructing, cheap to manufacture and can be used to present economically to members of the public a sample package including a small quantity of the product to be sampled and an applicator for the product. In all cases the need for such components as wipers to wipe clean an applicator shaft has been obviated.

Another problem in the known applicator-container assembly construction is that the applicator head tends to become clogged with dried material, and therefore unhygienic and inefficient for the proper application of the material, well before all of the material in the container has been used. The point may come where this clogging is so serious that the applicator is totally unusable; it is then necessary either to perform the rather messy process of washing the applicator to remove the clogged material, or to discard the whole device, thus wasting the unused material.

The applicator assemblies defined above in accordance with aspects of the invention offer one solution to this problem in that since the applicator is to be used only a few times, or even only once, and then discarded, hygiene is improved, and because only a relatively small amount of the cosmetics material is to be supplied with the assembly, wastage of the material is avoided. Arrangements in which only the applicator head is enclosed are particularly advantageous, since the applicator shaft will remain unsoiled by the material, further improving hygiene, and the construction can be simplified in that the need for a wiper to clean the shaft is obviated. In general, therefore, improvements in both hygiene and cost can be obtained.

Another approach to this problem of hygiene is to provide an applicator system suitable for use for applying material from a container containing a substantial quantity of such material, the system permitting periodic replacement of the applicator head.

In accordance with this aspect of the invention there is provided an applicator system comprising, in combination, an elongate handle and a plurality of applicator heads, each adapted for retaining a liquid, semi-liquid, paste-like or viscous material to be

applied, said handle being adapted for engagement with each of said applicator heads for the formation of an assembled applicator, the applicator heads being interconnected to form a multiple head unit from which the heads may be individually detached as they are needed for assembly with said handle.

The heads may be identical, and may be interconnected by way of a common support member to which they are all detachable secured.

With this arrangement, the heads can be used and then discarded, in succession. After each head is discarded, a new head can be detached from the support member and secured to the handle, effectively converting a soiled applicator which may have become unhygienic to use, into a new clean one.

The applicator heads are preferably injection moulded from plastics material, in which case the common support member, the heads and respective frangible connector members by which the respective heads are detachably secured to the common support, can be integrally moulded as a one-piece unit. The common support member may be a straight rod or strip, the heads projecting laterally from the support member and being arranged in a row extending along that member.

The system preferably also includes a container for this multiple head unit. This container,

preferably in elongate box form to accommodate the elongate multiple head unit, is preferably formed so as to locate and restrain the common support member and so as to allow the head elements to be individually removed while retaining the remaining head elements attached to the common support member. The container is preferably also formed with partitions which define a row of individual compartments for accommodating the respective head elements. These compartments may be mutually sealed so that they can contain material (e.g. mascara) to be applied by the respective head elements. With individually sealed compartments, the material can be introduced before or after location of the multiple brush unit in the container, the compartment then being sealed in such a way that they can be individually opened when it is desired to use the head element therein. Alternatively, the head elements of a multiple head unit may be individually loaded with the same material, or different materials, and then located in the container, the compartments again being individually sealed so as to be opened individually when required.

According to the invention, therefore, there is also provided an applicator assembly comprising, in combination, a plurality of applicator heads each adapted for retaining a liquid, semi-liquid, paste-

like or viscous material, a container for containing all of said heads, and a handle adapted for engagement with each of said applicator heads for the formation of an assembled applicator.

The container preferably has internal divider means which subdivide the interior space into a number of compartments for accommodating the respective applicator heads. These compartments may be mutually isolated and individually accessible so that they can contain respective quantities of material to be applied, or so that they can maintain separation between the applicator heads if individually loaded with material.

Preferred embodiments of the aspects of the present invention will now be described by way of example with reference to the accompanying drawings, in which:-

Figures 1a and 1b illustrate a first embodiment of a cosmetics applictor assembly according to one aspect of the invention;

Figure 2a illustrates the components to be assembled to form a second embodiment of a cosmetics applicator assembly according to the invention;

Figure 2b illustrates the cosmetics applicator assembly of the second embodiment when completely assembled to provide a sample package;

Figures 3a to 3c illustrate steps in the assembly of a cosmetics package in a third embodiment of the invention.

Figure 4 illustrates a different form of applicator which may be used in place of any of the applicators employed in the embodiment of Figures 1 to 3;

Figure 5 is a plan view of a fourth embodiment of a cosmetics package in accordance with the invention;

Figure 6 is a longitudinal cross-section of the package shown in Figure 5, taken on line VI-VI;

Figures 7a and 7b illustrate a fifth embodiment of a cosmetics package according to the invention;

Figure 8 shows a multiple applicator head unit for use in a system according to another aspect of the present invention;

Figure 9 illustrates the multiple head unit shown in Figure 8, as seen in the direction A of Figure 8;

Figure 10 shows a section along line X-X of the multiple head unit of Figure 1;

Figures 11a and 11b illustrate two cooperative portions of a handle which is detachably connectable to the head portions of the multiple head unit shown in Figures 8 to 10;

Figure 11c illustrates the assembled handle comprising the portions of Figures 11a and 11b;

Figure 12 is plan view illustrating the multiple head unit of Figures 8 to 10 accommodated in an elongate container;

Figure 13 is a section through the container/ multiple head unit assembly shown in Figure 12, as taken along lines XIII-XIII;

Figure 14 is an end view of the assembly shown in Figure 12, as seen in the direction B;

Figure 15 is an end view of a moulded plastics blank from which the container shown in Figures 12 to 14 can be formed; and

Figure 16 is a perspective view of a modified cosmetics applicator and container assembly in accordance with the invention.

It is to be understood that the terms "trial-use" and "sample-use" are not intended to be restricted to single use, nor to exclude the use of the disclosed cosmetics packages for other purposes. They are intended merely to indicate that the disclosed packages are not intended as long-use products, and therefore do not include a substantial quantity of cosmetic product.

With reference first to Figures 1a and 1b, the package of the first embodiment comprises an elongate applicator 1 comprising a shaft 2 constituting a handle of the applicator and a head portion 3 adapted for the retention and application of a liquid, semi-liquid,

paste-like or viscous cosmetics material. This head portion may, for example, be a brush comprising helical flightings of bristles rooted in a twisted wire stem fixed to the end of the shaft 2. More preferably, and as particularly shown, the applicator may be a one-piece integrally moulded plastics member in which the head portion 3 is integrally formed with the shaft 2 and comprises a stem having thereon surface formations, for example, one or more rows of laterally projection teeth 3a.

A small cylindrical container 4 accommodates the head portion 3, and a sealing ring 5 formed on and projecting radially from the shaft 2 seals the opening 4a of the container. The head portion 3 may be preloaded with a quantity of the cosmetics material retained on the surface formations 6 thereof, or a quantity 7 of a cosmetics material may be introduced into the container before insertion of the head.

The package shown in Figure 1 is ideally suited for use as a trial use package since it can be made cheaply, particularly where both the applicator 1 and the container 4 are made from plastics materials, and can be used to present relatively small quantities of cosmetics product. By arranging that a substantial portion of the shaft 2 does not enter the container, the handle shaft constituted by such portion will

remain unsoiled by the cosmetics product, and there is accordingly no need for an effective wiper for wiping this shaft.

With reference to Figures 2a and 2b, there is shown a second embodiment of the cosmetics package in accordance with the invention. With reference first to Figure 2a, the package is shown in exploded form, and comprises a material applicator 8 having an elongate shaft 9 constituting a handle, and a head portion 10 for the retention and application of a cosmetics material. In this embodiment, the head portion 10 is a profiled piece of felt or flock material fixed to the end of the shaft 9. A container, or vial 11 for the cosmetics material comprises a tube 12 into which the head portion 10 and the adjacent end portion of the shaft 9 may be inserted, and an end closure member 13 for closing off the other end 14 of the tube 12.

As in the embodiment of Figure 1, the applicator shaft of this present embodiment is integrally formed with a sealing ring or flange 15 which is adapted to fit tightly in an inner annular rebate 16 formed at the mouth end of the tube 12. The inner surface of the tube is formed with an inwardly projecting annular flange 17 which constitutes a wiper for the head 10 so as to limit the amount of cosmetics material retained thereon when the applicator is withdrawn from the

container. The closure member 13 may be a plug which fits tightly in the end 14 of the tube, or a foil which is sealed to the annular end surface of the tube.

The process of assembling the package comprises several stages. Firstly, the applicator 8 is assembled to the tube 12, the head being introduced through the mouth of the tube, the applicator being pushed inwardly until, after the head has passed through the wiper flange 17, the sealing disc 15 enters and becomes fixed in the rebate 16. Then, a metered quantity of the liquid, semi-liquid, paste-like or viscous cosmetics material 7 is introduced into the tube through the open end 14 thereof. This may be effected, for example, by ejecting the cosmetics material from a nozzle which is temporarily inserted into the open end of the tube. After this introduction of the cosmetics material, the end 14 of the tube is sealed either by fixing the plug within this end of the tube, or by sealing (e.g. heat-sealing) a metallic foil disc to the annular end surface of the tube.

The fully assembled package produced by the steps outlined above is illustrated in Figure 2b.

It will be understood that to make a one-use trial package, the head portion 10 of the applicator can be preloaded with the cosmetics material before insertion into the tube, and the second step described above can

be omitted. In this case, the wiping flange 17 will be omitted.

In the third embodiment, illustrated in Figures 3a to 3c a cosmetics applicator 1 identical to that of the first embodiment is first assembled to an open-ended tube 18 by inserting the head portion 3 into the tube until the sealng ring 5 closes one end of the tube, as shown in Figure 3b. then, as also shown in Figure 3b, a quantity of cosmetics material 19 is introduced into the tube from the still open end 20 thereof, e.g. by means of a nozzle 21 temporarily inserted into the tube. The end 20 of the tube is then sealed, for example, where the tube is of a thermoplastic material, by pinching and heat sealing to form an end seal 21. As shown in Figure 3c the result is a cosmetics package in which the applicator head 3 is enclosed, together with a quantity of the material 19, within an openable sealed space within the tube 18.

The assembly process illustrated in Figure 3, in which the material is introduced into the space <u>after</u> the insertion therein of the applicator, has the advantage of avoiding the plunger effect by which insertion of the applicator into a preloaded space could cause the material to squirt from the insertion opening around the applicator.

In the modified form of applicator 1 illustrated in Figure 4, the head portion 3 which retains, and is used to apply the cosmetics material is a reinforced plastics foam pad 22. Once again, the shaft 2 is integrally formed with a sealing flange 5 for sealing the opening of the tube.

In the fourth embodiment illustrated in Figures 5 and 6, a cosmetics applicator 23 is again preferably of integrally moulded construction, and comprises an elongate shaft portion 24 and a head portion 25 adapted for the retention and application of cosmetics material. The whole of the applicator 23 is sealed in a package, the sealing arrangement comprising a laminated structure consisting of a base layer 26 and an upper sealing layer 27 laminated to the base layer 26 in a "blister-pack" construction, this layer 27 covering the applicator 23 and being peripherally sealed to the base layer 26.

Before being sealed within the package, the head portion 25 of the applicator 23 will have been loaded with a small quantity of a cosmetics material, this material being retained on the bristles or other surface formations constituting the head.

The base layer 26 is made of a suitable rupturable material, e.g. plastics coated metal foil to permit the package to be non-resealably opened and the applicator to be removed from the package for its trial use.

In the fifth embodiment shown in Figures 7a and 7b, an applicator head portion 27 alone is sealed within the package 28. Again, the applicator head is preferably of integrally moulded construction, and the package is a non-resealalbe "blister" type package, the head either having been precoated prior to packing, or a small quantity of the cosmetic being loaded into the package with the applicator head. A separately supplied handle 29 is adpated at one end 29a to attach to a part 27a of the head portion 27 after the latter is removed from the package, as shown in Figure 7b, so as to permit the trial use of the device.

It will be appreciated that in each of the foregoing embodiments, the trial-use package can be manufactured and distributed as free samples at relatively low cost since the applicators themselves and the packaging elements are simple and economically made, and only a small quantity of the cosmetics material is incuded in the package.

With reference now to Figures 8 to 10 , a multiple applicator head unit 30 comprises an elongate common support member 31 and attached to thereto a row of regularly spaced applicator head elements 32. In the figures, five out of a row of thirty-three head elements are shown, the other head elements having been omitted for the sake of clarity. Each applicator head

element 32 comprises a solid cylindrical rod 33 having thereon surface formations for the retention of a liquid, semiliquid, paste-like or viscous cosmetics product. In the disclosed embodiment, the surface formations comprise two adjacent parallel rows of bristles 34 projecting side-by-side generally radially from the rod 33. At one end, each rod 33 is attached to the support member 31 by a frangible connector 35 which tapers from its point of connection to the support 31 to its point of connection to the rod 33. Accordingly, at this latter point, the connection between the connector 35 and the rod 33 is relatively weak and can readily be broken by axially pulling or twisting on the free end of the applicator head element.

This free end is adapted for attachment to a handle member to be described with reference to Figure 11. More particularly, there is provided an axial projection 36 formed at its outer end with a spherical spigot 37. In the disclosed embodiment, the above described elements of the multiple head unit are integrally formed by injection moulding from plastics material, e.g. polyamide polypropylene.

With reference to Figures 11a and 11b, a handle unit is shown which comprises an elongate sleeve 38 adapted at one end 39 to receive and engage the projection 36 of the applicator head element 32, and an

actuator rod 40 which fits axially within the sleeve 38, as shown in Figure 11c and which is actuable to release the connection between the handle unit and the head element. At said end 39, the sleeve 38 is formed with an axially extending opening 41 leading to a recess 42, the dimensions being such as to provide a firm snap fit of this end 39 of the sleeve onto the projection 36 of the head unit. This recess 42 can be provided by a diametric bore intersecting the axial opening 41 and having a diameter greater than that of the opening 41.

The rod 40 fits into the sleeve 38 and has an end cup 43 which, in the assembled condition, is located within the part of the opening 41 on the inward side of the recess 42. At its other end, the rod 40 comprises a button 44 which is a slide fit within the sleeve 38, and which projects from the end thereof.

To assemble a usable applicator, the handle member is pushed onto one of the individual head units 32 in an axial direction C. The spherical spigot 37 locates in the opening 41, and as the handle member is pushed onto the head unit, this opening 41 resiliently dilates until the spigot 37 enters the recess 42, at which time the opening 41 snaps inwardly to engage the outer surface of the remaining part of the projection 36. After this attachment operation is complete, the handle

member can be pulled axially in the opposite direction to the direction C, or rotated about the common axis of the attached handle member and head element so as to break the connection between the connector 35 and the head element. The applicator is now complete and can be used for its intended purpose e.g. for the application of a liquid or semi-liquid cosmetics material, e.g. mascara.

When, for whatever reason, it is desired to detach the head element from the handle member, the button 44 is pressed, and the applied pressure is transmitted by the rod 40 and the cup member 43 onto the spigot 37 located in the recess 42. When sufficient pressure is applied, the spigot is forced out of the recess and is ejected outwardly through the opening 41 to complete the detachment. A new head member can then be attached to the handle member in the manner described earlier.

In the disclosed embodiment, the multiple head unit is preferably accommodated within an elongate box-like container, the details of which are illustrated in Figures 12 to 14. This container comprises parallel elongate side wall members 45 and 46 and an enlongate base wall member 47. There are also two end walls 48 and 49, and a hinged cover flap 50. This container may be formed from a flat blank 51, shown in Figure 15, which is formed with hinge lines

52, 53 and 54 to provide respectively, the hinge between the side wall member 46 and the flap 50, the edge corner between the base wall member 47 and the side wall member 46, and the edge corner between the other side wall member 45 and the base wall member 47. The end wall members 48 and 49 can also be formed from portions (not shown) of the blank 51 integrally formed with the other portions thereof.

One of the side wall members 46 is formed with a row of upstanding, regularly spaced fingers 55 (see Fig. 12) for locating the multiple head unit within the container, and for restraining the common support member 31 when the head units are pulled outwardly of the container for detachment from the unit. Accordingly, this row of fingers is spaced inwardly from the base wall member 47 so as to provide an elongate space sufficient to accommodate the common support member 31, the spacing of the fingers corresponding to the spacing of the detachable head elements. As seen in Figure 12, the frangible connector 35 for each such head element projects inwardly from the common support 31 through a respective gap between a pair of adjacent fingers 55. The same side wall member 46 is formed with a row of spacer elements 56 which extend across the space

accommodated by the head elements 32 of the multiple head unit to divide this space into a plurality of compartments, each accommodating a single head element whereby these head elements can be maintained out of contact with each other. In the disclosed embodiment, the spacers 56 comprise wedge-shaped webs, each extending from a respective finger 55 toward the side of the container which can be opened by hinging the flap 50. The spacers 56 at the two ends of the container extend right up to the base wall member 47, as shown in Figures 12 and 14.

The above described embodiment provides a system whereby the head element of the applicator can be renewed whenever appropriate. The container for the multiple head unit keeps the replacement head elements clean and the arrangement facilitates individual detaching of the head elements from the multiple unit. The container accommodating the multiple head unit can be supplied separate from or attached to a container for the cosmetics material to be applied.

Alternative methods are possible for the assembly of the multiple head unit and container. In the first method, the multiple head unit is positioned on the part of the blank 51 which will form the side wall member 46 with the individual head elements disposed between the spacers 56, the connectors 35 between the

fingers 55, and the common support member 31 behind the row of fingers 55. The container is then formed by bending the blank at the hinge lines 52, 53 and 54, and the hinge lines (not shown) bordering the portions to form the end wall members 48 and 49. The two non-hinged edges of each end wall portion 48 and 49 are then fixed, e.g. by adhesive or by heat welding, to the corresponding edges of the base wall member 47 and the other side wall member 45.

In an alternative method, the container is first formed from the blank 51 leaving one end open, and the multiple head unit is then inserted from that open end until it is in the correct longitudinally registered position, when it is allowed to slot into its correct position with the brush units in their individual compartments.

As can be seen from Figures 12 and 14, the multiple head unit is accommodated within the container in such a position that the spigots 37 by which the head elements can be attached to the handle member shown in Figure 11 lie adjacent the side of the container which can be opened by hinging the flap 50.

The system of Figures 11 to 14 may be used simply as a renewable applicator for a material supplied in a separate container, or may be adapted as a complete cosmetics package, including the material to be

applied. This can be achieved for example, by preloading the applicator heads with the same or different cosmetics material before assembly with the container or container blank, or by filling the container with a cosmetics material before or after insertion of the multiple head unit. In the latter case, where the individual compartments are not mutually sealed, or even where there are no spacers and consequently the interior of the container is not subdivided, a single form of cosmetics material will be supplied.

In a modified form of embodiment, illustrated in Figure 16, however, modified spacers 56 can be adapted to sub- divide the container into a plurality of mutually sealed compartments 57 which can contain cosmetics material to be applied by the respective applicator heads 32 also contained within the respective compartments. The cosmetics material can be introduced into these compartments either before or after fitting of the multiple head unit or of the individual heads. Alternatively, the individual head elements may be preloaded with a quantity of the same, or different cosmetic materials and then fitted individually or as a head unit into the container. In both cases, the hinged cover flap 50 would be sub-divided into respective flaps 50' for each

compartment so as to provide individual access to each head element while keeping the other compartments sealed until they, in turn, are to be opened and the head elements accommodated therein are to be used.

In the modified arrangement of Figure 16, the applicator heads 32 are shown without the common support member 31 of the previous embodiment. This support member may have been detached from the heads during the assembly process, after mutually positioning the multiple head and the container, or the blank from which the container is subsequently formed. In the end product of this embodiment, therefore, the individual heads are more easily removable from their respective compartments.

CLAIMS:-

1. An applicator assembly comprising:

an applicator having a shaft and integral therewith or non-removably fixed thereto, an applicator head adapted to retain a liquid, semi-liquid, paste-like or viscous material; and

means for enclosing said applicator head together with a limited quantity of such a material within a sealed space;

wherein the arrangement is such that when the applicator head is so sealed at least a substantial part of said shaft lies outside said space.

2. An applicator assembly according to claim 1 wherein the enclosing means comprises a tube into which the applicator head can be inserted through an opening at one end thereof, and wherein the applicator includes means provided on the shaft for sealing said opening.

3. An applicator assembly according to claim 2 wherein said sealing means comprises a sealing disc which is a tight fit in the tube.

4. An applicator according to claim 2, further including a closure element for closing the other end of said tube.

5. An applicator according to claim 2 wherein the tube is made of a thermoplastic deformable material which permits said other end of the tube to be pinched and heat sealed.

6. An applicator assembly comprising an applicator member a portion of which retains thereon a quantity of liquid, semi-liquid, paste-like or viscous material, and means enclosing said portion in an openable sealed space, the only said material within the space being the material retained on said portion of said applicator member.

7. An applicator assembly according to claim 6 wherein said applicator member comprises a head which is attached or adapted to be attached to a shaft to constitute a handle for the applicator.

8. An applicator assembly according to claim 6 or claim 7 wherein the enclosing means comprises a tube in which the said portion of the applicator member is sealedly enclosed.

9. An applicator assembly according to claim 8 wherein the applicator member includes a sealing disc which is a close fit within one end of the tube, the other end of which is closed off.

10. An applicator assembly according to claim 6 wherein said applicator member is enclosed in an openable and non-resealable package.

11. An applicator assembly according to claim 7, the head being attached to a said shaft, wherein both the head and said shaft are enclosed in an openable and non-resealable package.

12. An applicator assembly comprising an applicator member having surface formations, or otherwise adapted for the retention thereon of a liquid, semi-liquid, paste-like or viscous material, and means enclosing said applicator member together with a quantity of said material within an openable sealed space, said enclosing means being non-resealable once opened.

13. An applicator assembly according to any of claims 10 to 12 wherein said package is of the "blister-pack" type havig a flat base and a shaped cover having a flat

periphery sealed to said base and a profiled central portion defining, with said flat base, said sealed space.

14. An applicator assembly comprising an applicator member integrally moulded from plastics material and comprising a shaft a portion of which has surface formations thereon for the retention of a liquid, semi-liquid, paste-like or viscous material, and means enclosing said applicator member together with a small quantity of such material within an openable sealed space.

15. An applicator system comprising, in combination, an elongate handle and a plurality of applicator heads, each adapted for retaining a liquid, semi-liquid, paste-like or viscous material to be applied, said handle being adapted for engagement with each of said applicator heads for the formation of an assembled applicator, the applicator heads being interconnected to form a multiple head unit from which the heads may be individually detached as they are needed for assembly with said handle.

16. An applicator system according to claim 15 wherein the heads are interconnected by way of a common support member to which they are all detachable secured.

17. An applicator system according to claim 16 wherein each said head is secured to said support member by way of a frangible connector, the heads, support member and frangible connectors being integrally moulded from plastics material as a one-piece unit.

18. An applicator system according to claim 16 or claim 17 wherein said support member is a straight rod or strip, and wherein the heads project laterally from the support member and are arranged in a row extending along said support member.

19. An applicator system according to any of claims 15 to 18, in combination with a container for said multiple head unit.

20. An applicator system according to claim 16 in combination with a container for said multiple head unit, said container comprising an elongate box formed so as to locate and restrain the common support member and so as to allow the head elements to be individually removed while retaining the remaining head elements attached to the common support member.

21. An applicator system according to claim 19 or claim 20 wherein the container is formed with

partitions which define a row of individual compartments for accommodating the respective head elements.

22. An applicator system according to claim 21 wherein said compartments are mutually sealed so that they can contain material to be applied by the respective head elements.

23. An applicator system according to claim 22 wherein closure means for the container comprises a plurality of individually openable closures one for each said compartment.

24. An applicator assembly comprising, in combination, a plurality of applicator heads each adapted for retaining a liquid, semi-liquid, paste-like or viscous material, a container for containing all of said heads, and a handle adapted for engagement with each of said applicator heads for the formation of an assembled applicator.

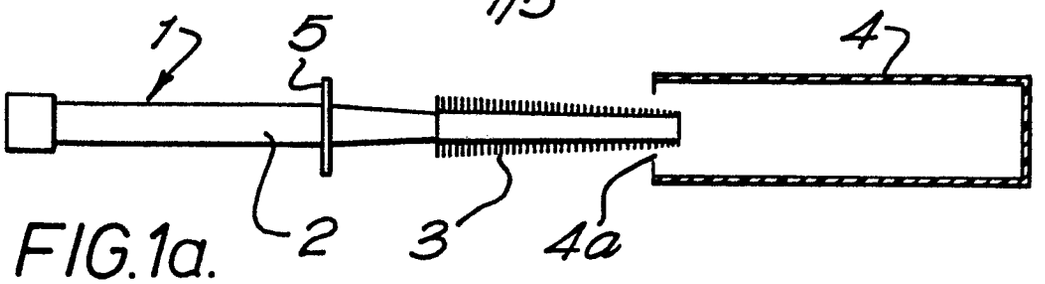


FIG.1a.

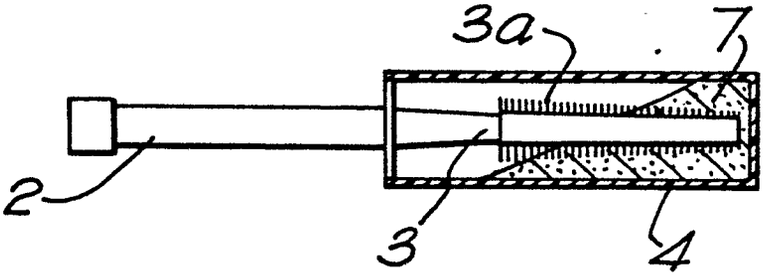


FIG.1b.

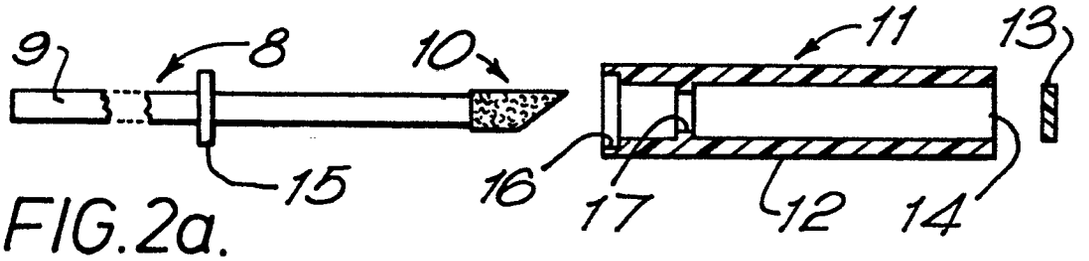


FIG.2a.

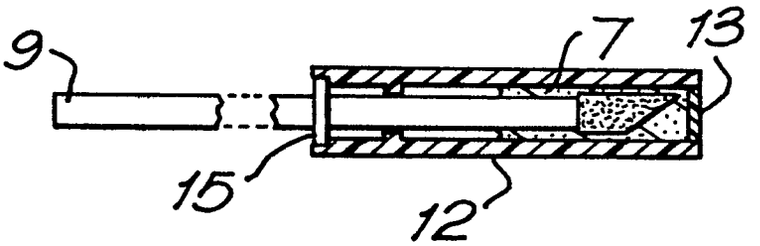


FIG.2b.

FIG.4.

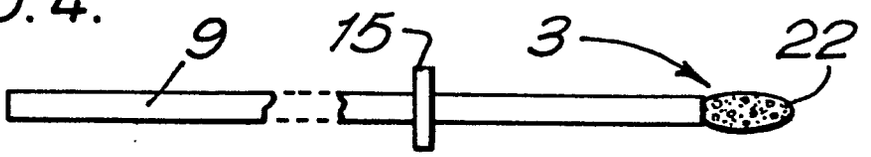


FIG.3a.

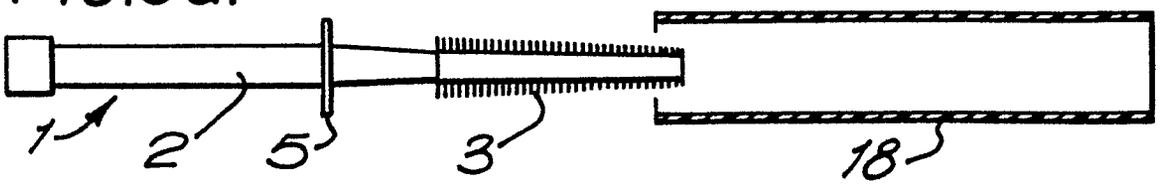


FIG.3b.

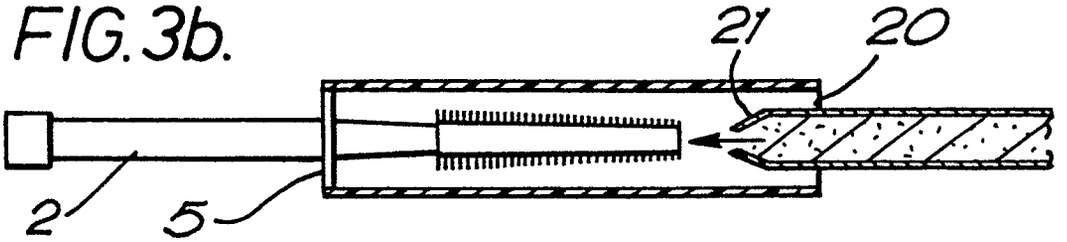
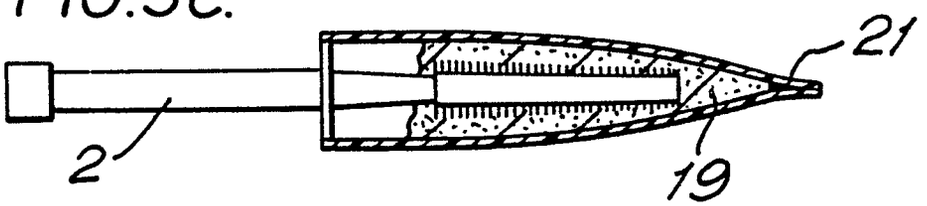


FIG.3c.



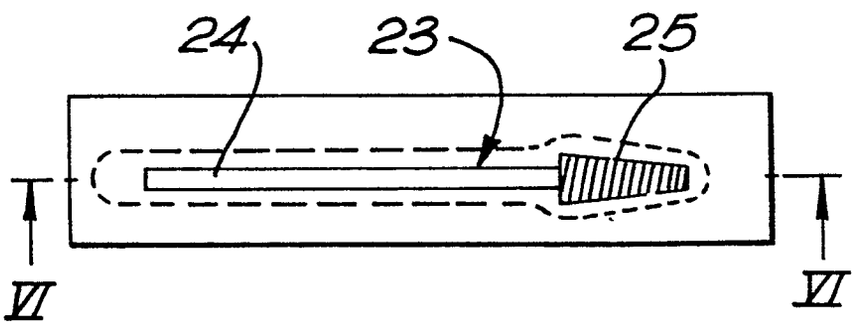


FIG.5.

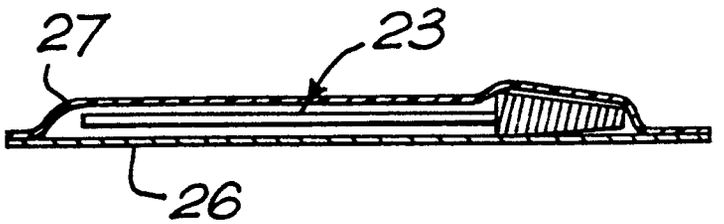


FIG.6.

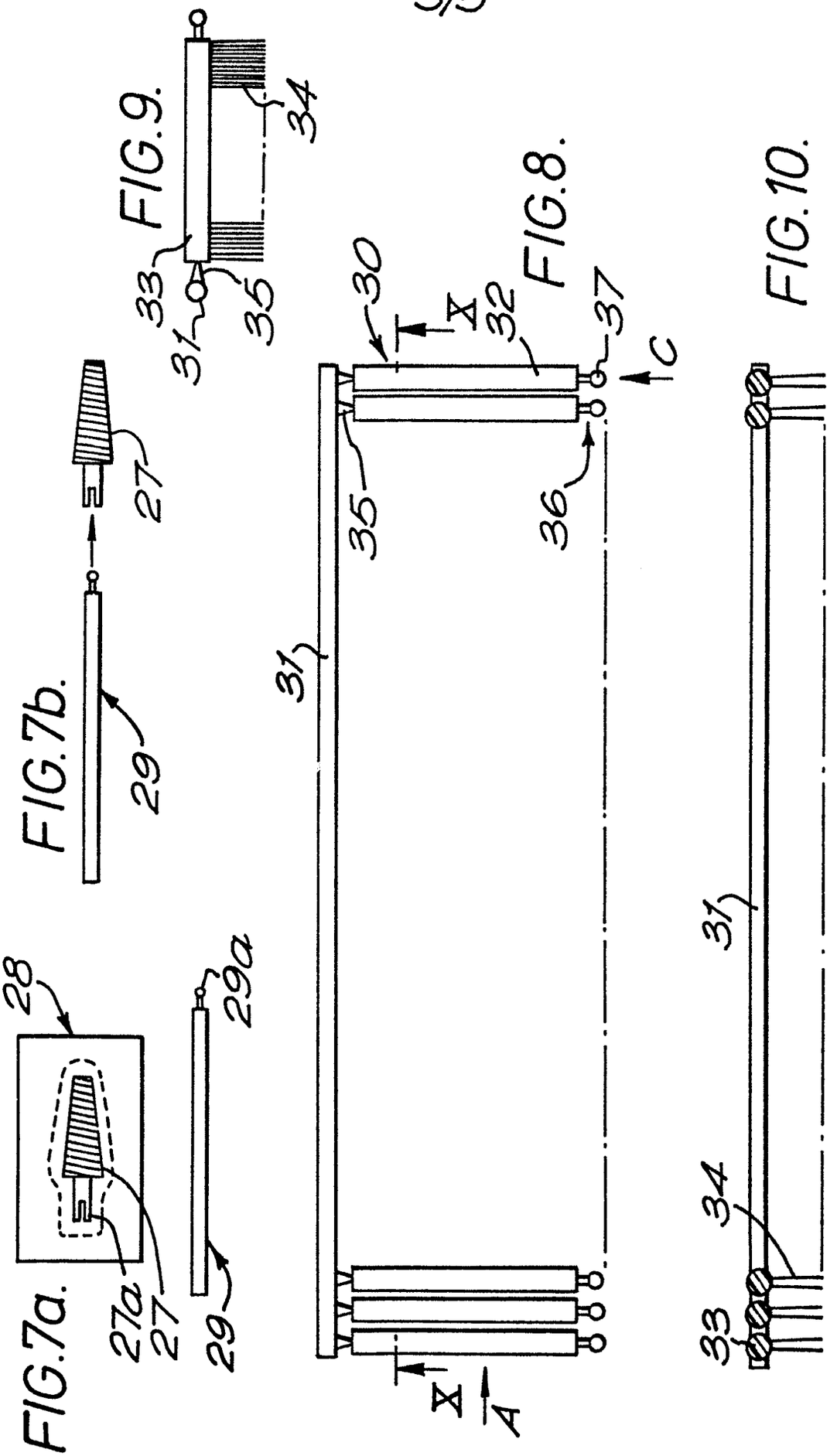


FIG.7a.
28
27a
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29a
FIG.7b.
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FIG.9.
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31
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FIG.8.
30
X
32
37
C
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36
31
X
A
FIG.10.
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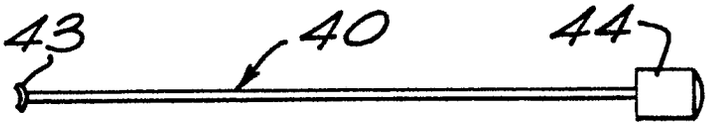

FIG.11a.

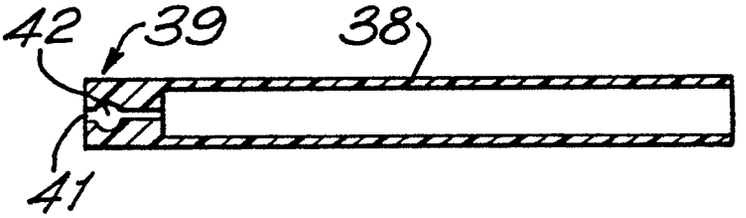

FIG.11b.

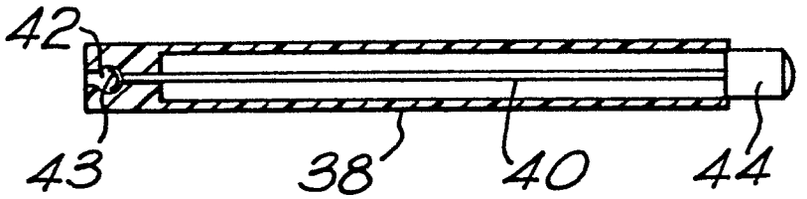

FIG.11c.

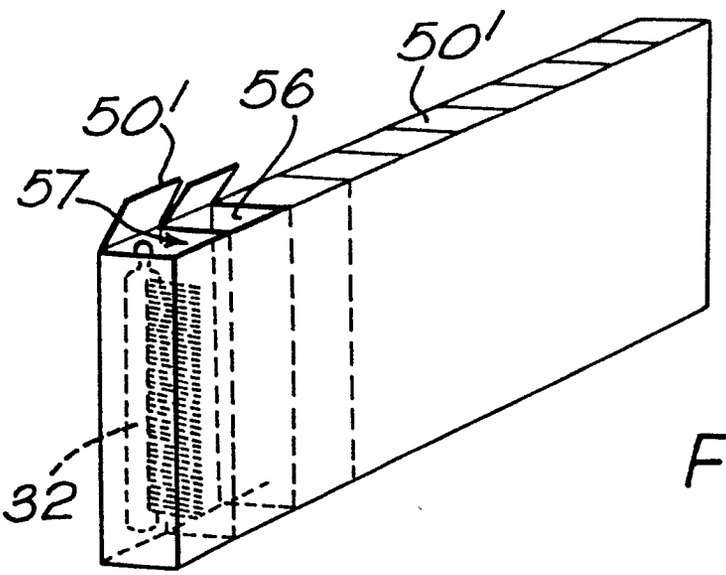

FIG.16.

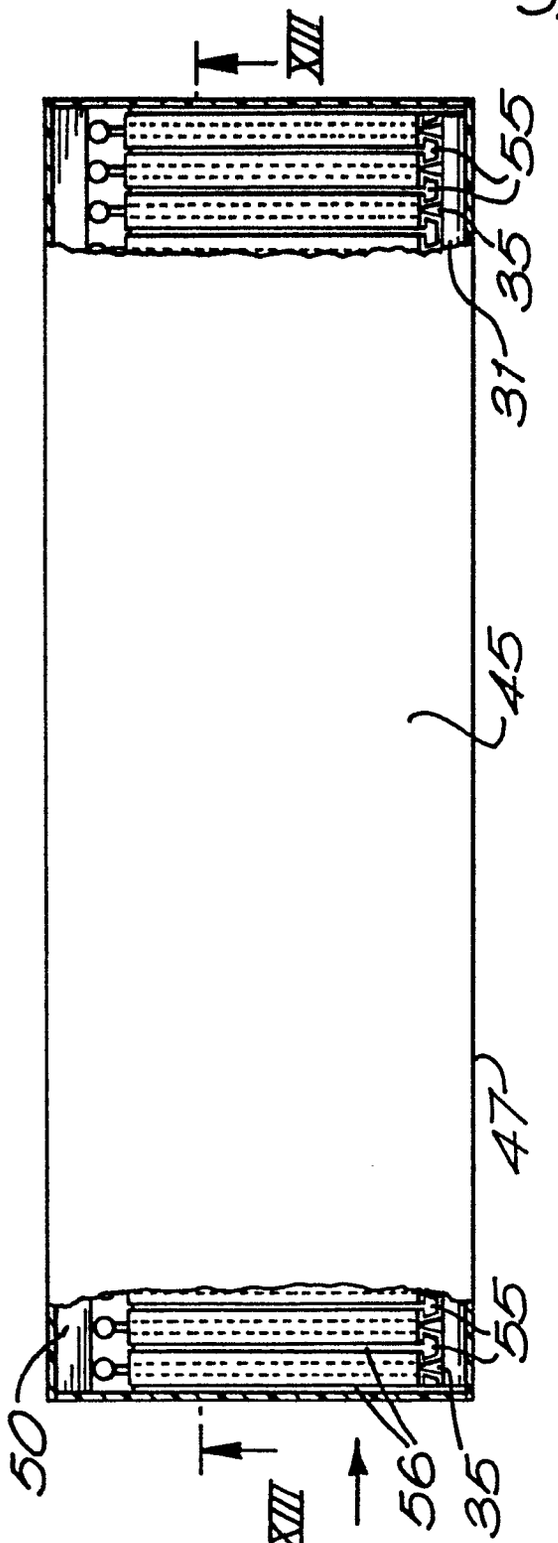

FIG.12.

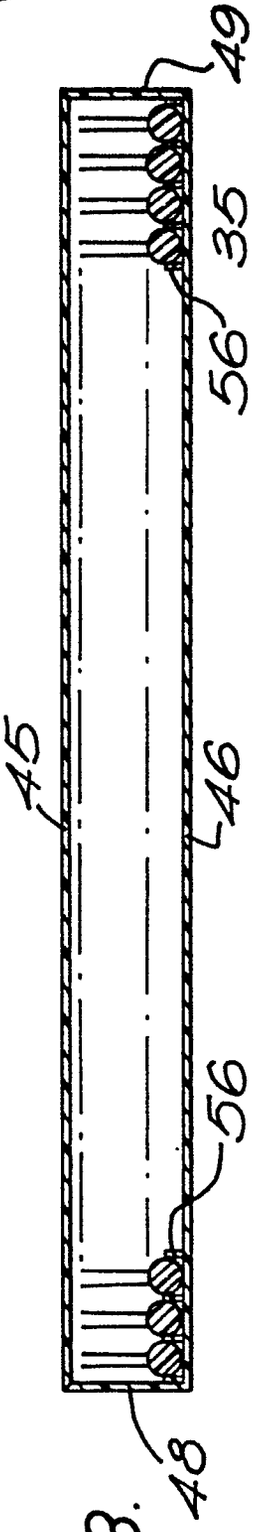

FIG.13.

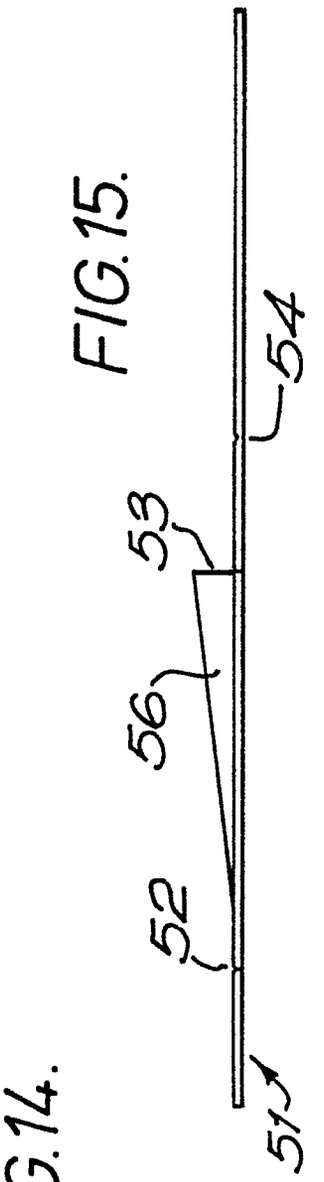

FIG.15.

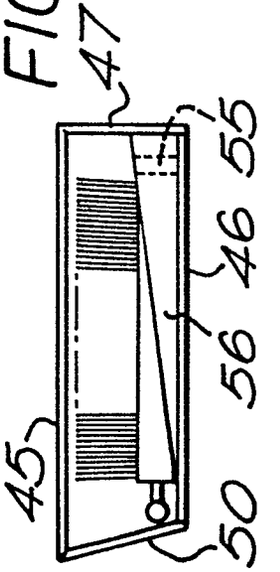

FIG.14.

European Patent Office

EUROPEAN SEARCH REPORT

0171983
Application number

EP 85305521.8

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
X	US - A - 2 721 561 (DYCHE) * Totality * --	1,2,6, 7,10, 11,12, 15,24	A 45 D 34/04
A	DE - A1 - 2 425 062 (TEISSEIRE) --		
A	FR - A - 960 784 (LENGYEL) --		
A	US - A - 3 369 854 (FERRIS) ----		

TECHNICAL FIELDS SEARCHED (Int. Cl 4)

A 45 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	28-10-1985	NETZER

CATEGORY OF CITED DOCUMENTS

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Y : particularly relevant if combined with another document of the same category
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