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(54) **FOLDABLE LOTION APPLICATOR**

(76) Inventor: **J. Erich Sommers**, San Mateo, CA (US)

Correspondence Address:
H. Michael Brucker
Suite 110
5855 Doyle Street
Emeryville, CA 94608 (US)

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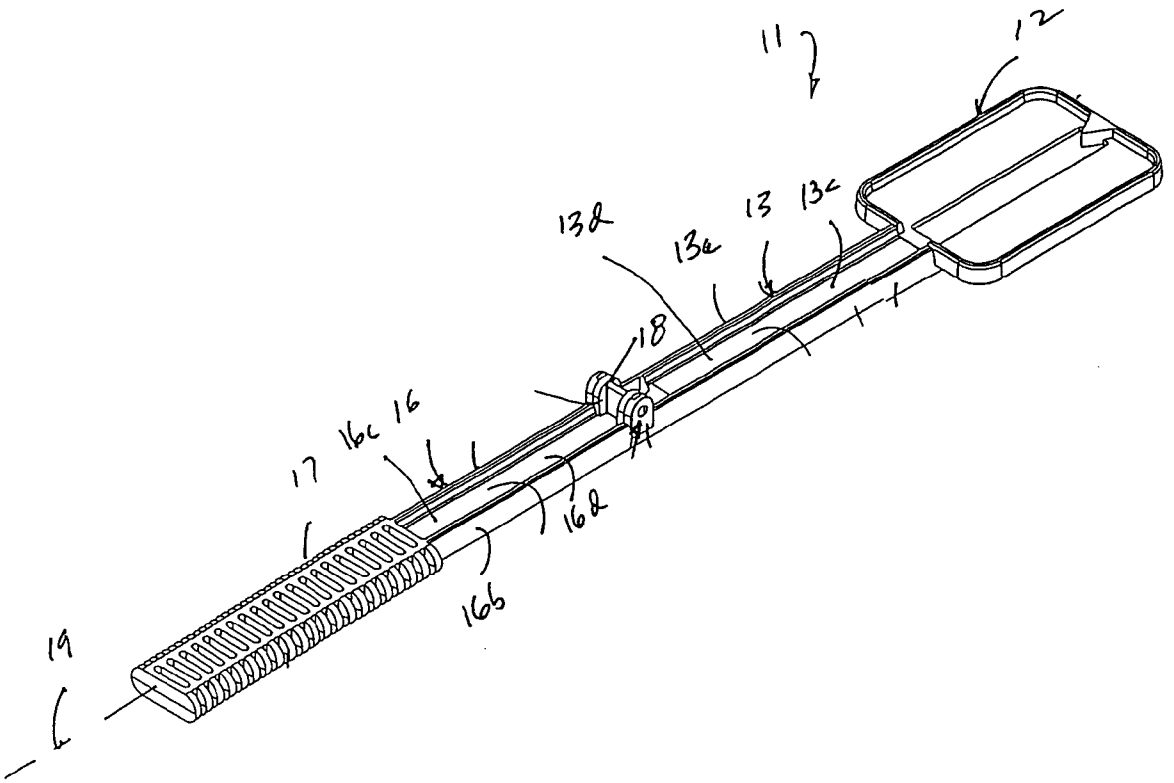
(57) **ABSTRACT**

A foldable lotion applicator for applying body, suntan and medicinal lotions, including creams, gels, ointments, oils and other preparations. The applicator is comprised of a beveled I-beam two-part folding shaft with a one-hand operable locking hinge and a ribbed non-slip grip handle with a removable, replaceable cosmetic foam applicator pad with a snap-on cover to protect the applicator pad from contamination and the unwanted distribution of lotions and the like, with the applicator shaft sufficiently long to reach otherwise inaccessible areas of the back and all other areas of the body.



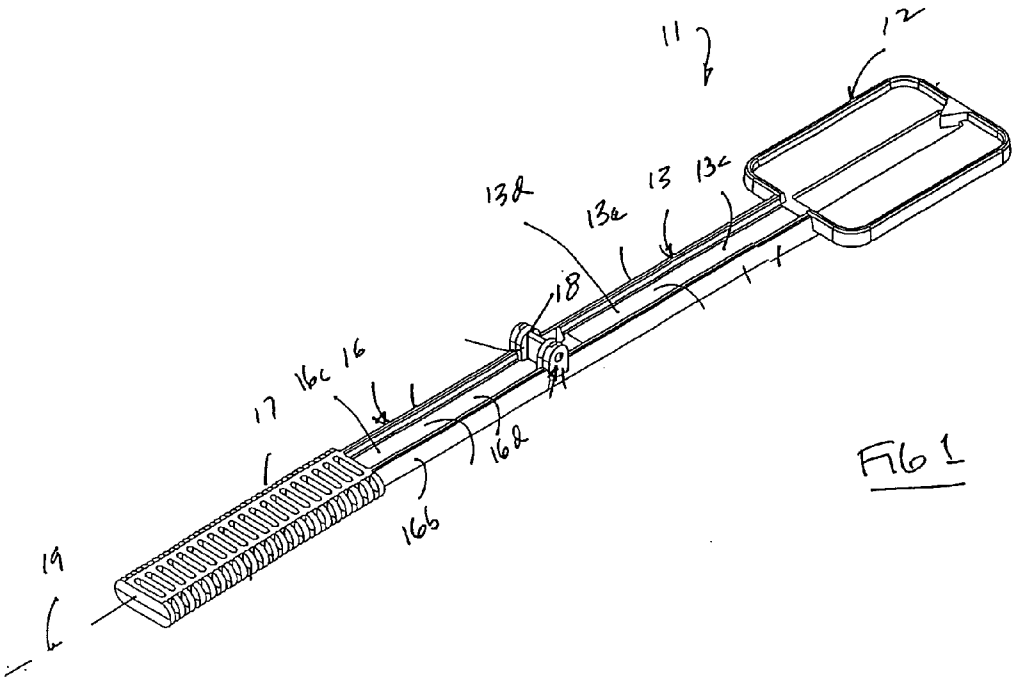


FIG 1

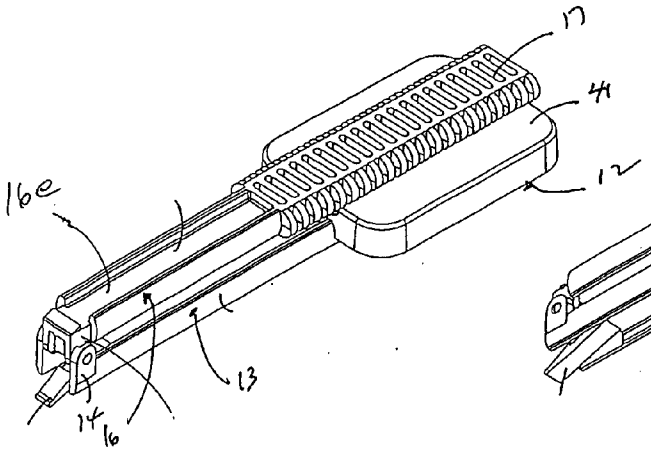


FIG. 6

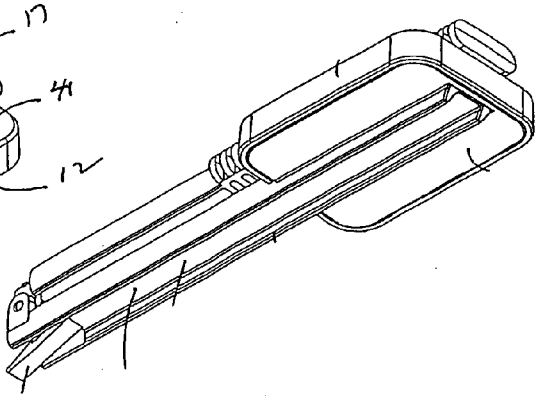


FIG. 7

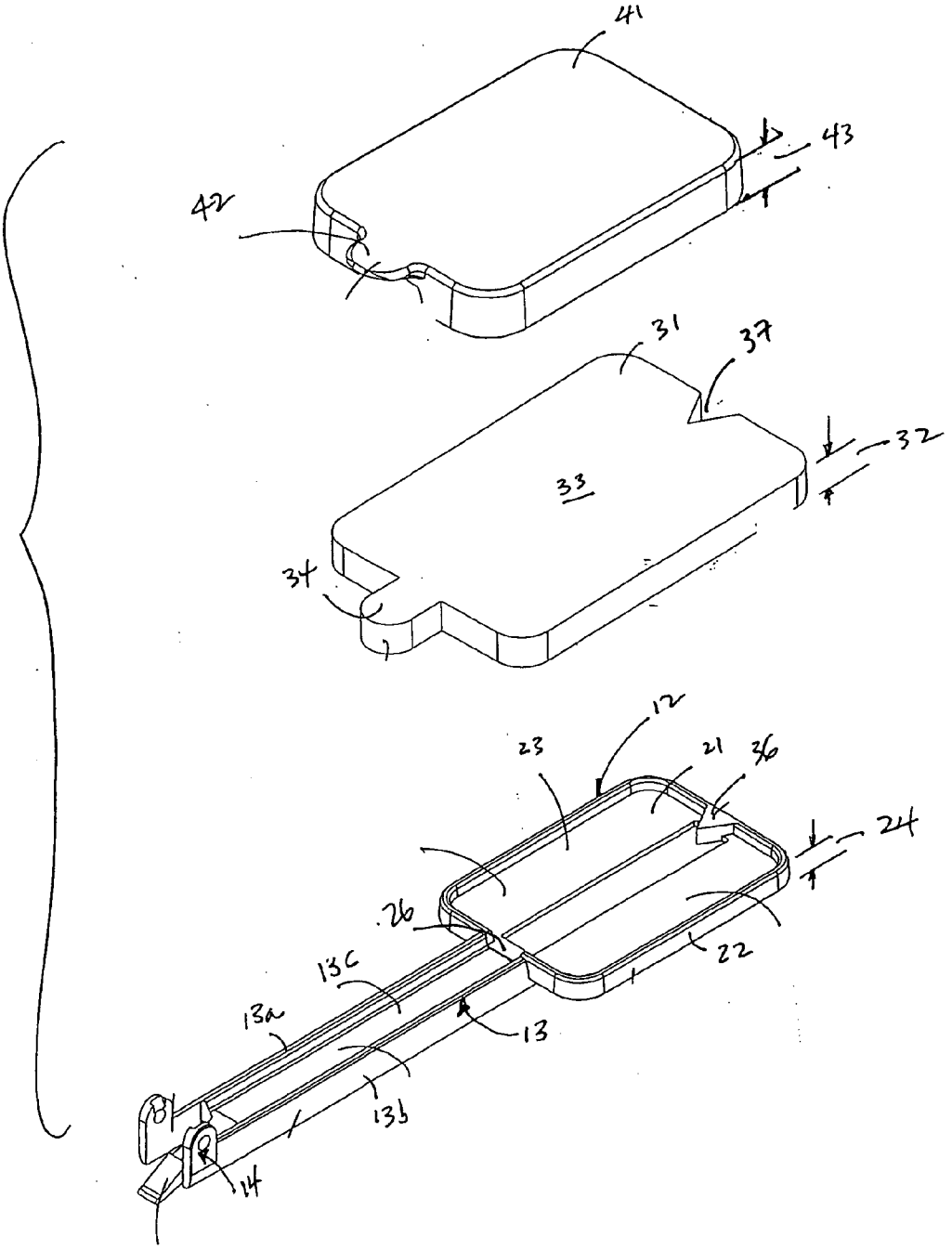


FIG. 2

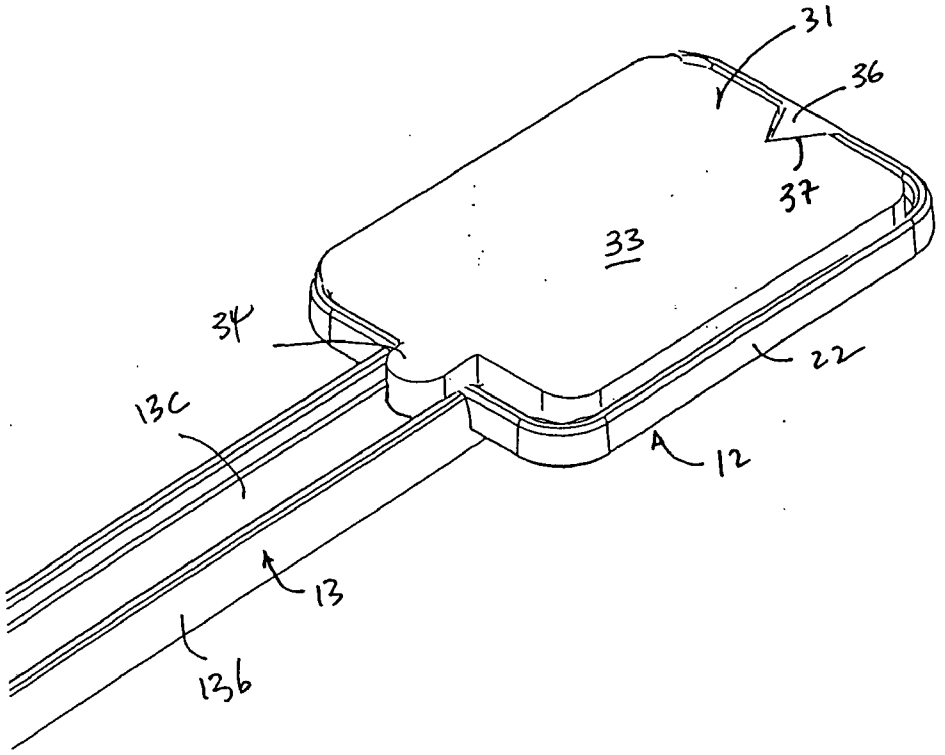


Fig. 3

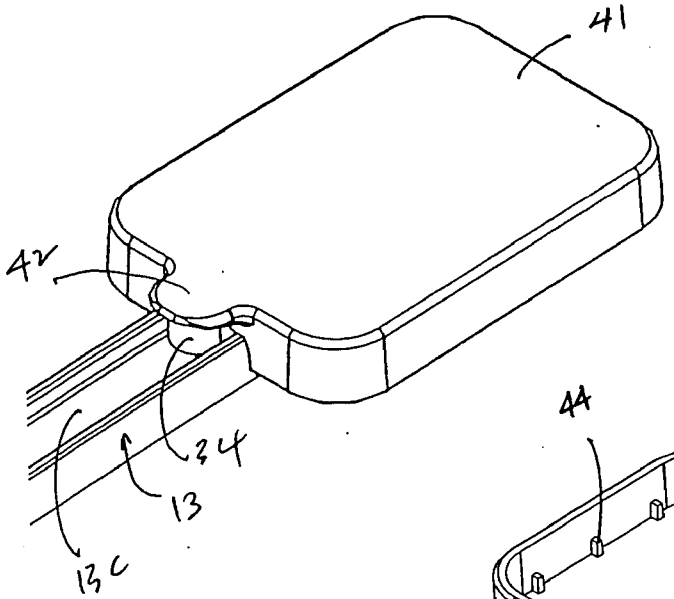


Fig. 4

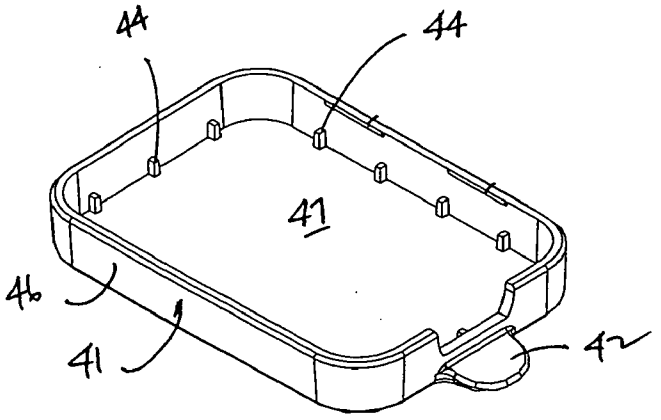


Fig. 5

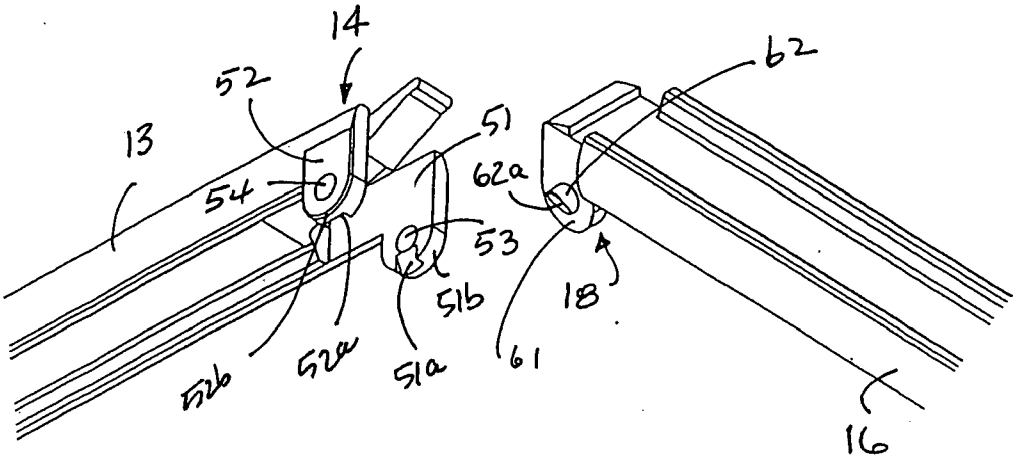


FIG. 8

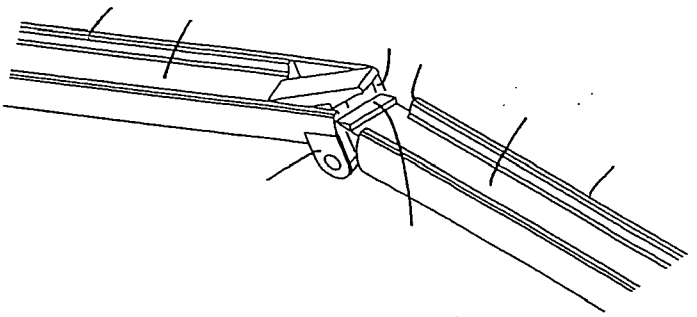


FIG. 9

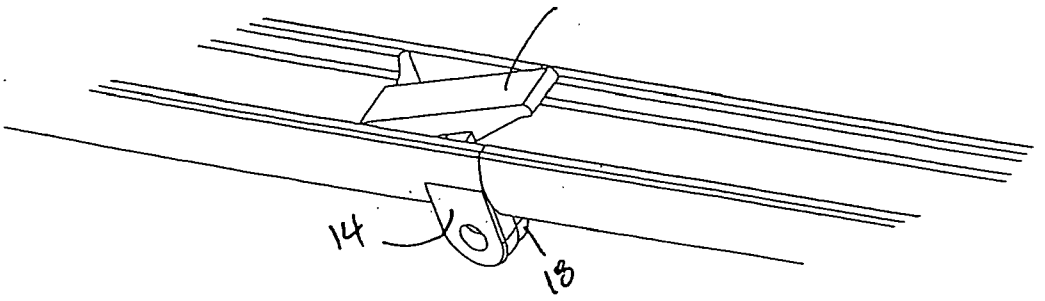


FIG. 10

FOLDABLE LOTION APPLICATOR

FIELD OF THE INVENTION

[0001] This invention relates generally to lotion applicators and, in particular, to a lotion applicator that can be folded into a size convenient for carrying in a purse or pocket, yet long enough, when unfolded, to assist in spreading creams, liquids, gels, oils, medications or other substances (lotions) to the body and, in particular, areas of the body that are otherwise difficult to reach, such as a user's back.

BACKGROUND OF THE INVENTION

[0002] With the increased publicity about the potential health risks from exposure to the sun, there is a need for a convenient and effective lotion applicator. Because prior art lotion applicators are either inconvenient to carry and/or create a high potential for spreading lotion where it is unwanted and/or are not easy to use or clean, lotion is typically applied directly from the hands to the body. Given that certain areas of the back are difficult to reach, the drawback of not using an applicator is that certain parts of the body are frequently missed. Where the lotion being applied can stain the hands, the applicator of the present invention provides a means for applying the lotion without staining the hands or having to use gloves.

[0003] Accordingly, it is an object of the present invention to provide a lotion applicator that folds into a size convenient to carry, but, at the same time, is able to reach all parts of the body.

[0004] Another object of the present invention is to provide a lotion applicator that, when not in use, encloses the lotion-carrying head such that lotion is not spread to unwanted areas while the applicator is being carried or transported and, further, prevents dirt, sand or other contaminants from coming in contact with the pad's surface.

[0005] Yet another object of the present invention is to provide a lotion applicator that is formed by just three snap-together injection molded parts that are strong, lightweight, durable and can be sterilized without losing structural integrity.

[0006] Another object of the invention is to provide a hinge mechanism which releases and comes apart when lateral force is exerted on either part, preventing breakage.

[0007] Yet another object of the invention is to provide a hinge mechanism that can be easily snapped together by aligning parts of the handle and pressing them towards each other.

[0008] Still another object of the present invention is to provide a foldable lotion applicator that has a ribbed handle that has good gripping qualities, that resists slippage when hands are either wet or oily, and can be used as a back scratcher.

[0009] These and other objects, aspects and features of the present invention will be better understood from the following detailed description of the preferred embodiments when read in conjunction with the appended drawing figures.

BRIEF DESCRIPTION OF THE INVENTION

[0010] The present invention provides a lotion applicator that can be folded into a convenient size that can be easily carried in a purse, bag or even a pocket. In addition, the applicator head that carries a lotion-applying absorbent pad has a cover that protects the pad and prevents any residue lotion on the pad from being spread to unintended areas or surfaces.

[0011] In one embodiment, the invention is comprised of three injection-molded parts. The first part is a handle shaft having a handle at one end and a hinge member at the other end. A second part is an applicator head shaft having an applicator head at one end and a hinge member at its other end. When the two hinge members are joined, they create a snap-lock hinge which permits the shafts, when aligned, to be locked into and form an essentially unified shaft and, when released, allow the shafts to overlay each other to reduce the overall size of the applicator for storage and carrying. The third part is a cover for the applicator head which carries a lotion-applying pad. When the cover is in place, the pad is protected from any contamination and, at the same time, any residue on the pad is prevented from being accidentally applied to surfaces while the applicator is being stored or carried. The hinge has a quick-release which permits the shafts to easily rotate relative to each other to assume the compact position. When the shafts overlie each other, the handle extends over the applicator head and provides an extra layer of assurance that the cover does not get dislodged and expose the pad. The handle is formed from a plurality of spaced-apart ribs which provide for an excellent grip that resists slippage when hands are either wet or oily and also can be used as a back scratcher.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] **FIG. 1** is a perspective view of the lotion applicator of the present invention shown in its unfolded position;

[0013] **FIG. 2** is an exploded perspective view showing the applicator head, lotion pad and head cover of the applicator of the present invention;

[0014] **FIG. 3** is a perspective view showing a lotion pad in the applicator head;

[0015] **FIG. 4** is a perspective view of the applicator head with the head cover attached and covering the lotion pad;

[0016] **FIG. 5** is a perspective view of the inside of the head cap;

[0017] **FIG. 6** is a top perspective view of the applicator of the invention in its folded position;

[0018] **FIG. 7** is a bottom perspective view of the applicator of the invention in its folded position;

[0019] **FIG. 8** is a perspective view of the hinge ends of the applicator shafts prior to assembly;

[0020] **FIG. 9** is a perspective view of the assembled hinge ends of the applicator shafts prior to being locked in the extended position; and

[0021] **FIG. 10** is a perspective view of the assembled hinge ends of the applicator shafts locked in the extended position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Referring to **FIG. 1**, a lotion applicator **11** has an applicator head member **12** joined to a head shaft **13** which

terminates in a head shaft hinge member **14**. A handle shaft **16** is joined to a ribbed handle **17** and terminates in a handle shaft hinge member **18**. The handle shaft hinge member **18** and the head shaft hinge member **14** rotatably join the handle shaft **16** to the head shaft **13**, allowing the shafts **13** and **16** to rotate relative to one another. In a first rotated position, as shown in **FIG. 1**, the shafts **13** and **16** are aligned along a common axis **19** so the applicator **11** can be used to apply lotions to difficult-to-reach portions of a person's back.

[**0023**] In the preferred embodiment, the handle shaft **16**, the handle **17** and the handle shaft hinge member **18** are a single injection-molded part of polypropylene, nylon, acetal polyoxymethylene (POM) resins, such as DuPont's Delrin®, and any other materials having similar characteristics. The head shaft **13**, the head member **12** and the head shaft hinge member **14** are a second single injection-molded part of polypropylene, nylon, Delrin or Acetel. Such materials provide strength and durability and can be easily cleaned and sterilized where needed. It is within the scope of the invention, however, for the parts to made by other methods and/or of other materials as may be available, cost-effective and functional to meet the objectives of the invention.

[**0024**] To provide a sure grip that will be durable and can be molded, the handle **17** is advantageously formed by a plurality of spaced-apart ribs **17***a*. The hard-ribbed grip handle **17** is waterproof and can be readily cleaned or scrubbed without causing any damage to the applicator. The ribbed handle **17** has all ribs and edges beveled sufficiently for optimal plastic injection-mold production removal from the die mold and yet retains right angle edges on the applicator handle **17** sufficiently to provide a comfortable yet non-slip grip for the lotion applicator user's hand. The parallel applicator handle ribs **17***a* are spaced far enough apart so that there are sufficient non-slip gripping characteristics, and yet close enough together so that the gripping area feels fairly continuous to the user so loosening one's grip and re-gripping the applicator does not require any particular attention to the orientation of hand placement on the grip. The rib structure also provides a surface that can be used for a satisfying back scratch.

[**0025**] Shafts **13** and **16** are advantageously formed as I-beam structures, with shaft **13** having side members **13***a* and **13***b* joined by a web **13***c*, forming an upper shaft channel **13***d* and a lower shaft channel **13***e* (see **FIG. 7**). Similarly, handle shaft **16** has an I-beam structure formed by side members **16***a* and **16***b* joined by a web member **16***c*, forming an upper shaft channel **16***d* and a lower shaft channel **16***e* (see **FIG. 6**). The I-beam structures reduce the amount of injection-molding material required to achieve the desired stiffness and, at the same time, provide a lightweight lotion applicator.

[**0026**] While the head member **12** is illustrated as generally rectangular in shape, it will be obvious to those skilled in the art, and others, that other shapes, including, without limitation, circular, oval and multi-sided shapes could also be used.

[**0027**] Referring to **FIG. 2**, head member **12** is formed by a head base **21** surrounded by a side wall **22**, forming a shallow pad compartment **23** having a depth **24**. The side wall **22** has a gap **26** where shaft **13** joins head **12** whereby compartment **23** is open to upper shaft channel **13***d* at gap **26**.

[**0028**] Referring also to **FIGS. 2 and 3**, a generally absorbent pad **31** sized and shaped to fit snugly within pad compartment **23** has a thickness **32** which is greater than the depth **24** of compartment **23** whereby when pad **31** is placed into compartment **23**, its upper surface **33** is above the side wall **22**. In the preferred embodiment, the pad **31** extends approximately one-quarter of an inch above side wall **22** when seated in pad compartment **23**. This assures that only the pad contacts the skin during the application of lotion. When pad **31** is placed in compartment **23**, a pad tab **34** extending from one end of pad **31** extends through gap **26** into the upper channel **13***d* of head shaft **13**. The undersurface of pad **31** (not shown) can be coated with a releasable adhesive material that secures the pad to the head base **21** so that the pad **31** stays securely within compartment **23**. The adhesive material extends to the pad tab **34**. Tab **34** can be conveniently grasped and pulled away from head **12** in order to remove pad **31** from pad compartment **23**.

[**0029**] A generally V-shaped alignment tongue **36** extends from head side wall **22** into compartment **23**. A V-shaped notch **37** in pad **31** is sized and located to receive tongue **36** for easy alignment of pad **31** in compartment **23**.

[**0030**] Referring also to **FIGS. 4 and 5**, in order to protect pad **31** in compartment **23** and to prevent any residual lotion on pad **31** from being accidentally dispensed to unintended surfaces, an applicator head cover **41** is provided. Cover **41**, which is also advantageously injection-molded of the same materials as the other parts, snaps onto head member **12** along side wall **22** where it is held in place. When the cover **41** is snapped in place on head member **12**, a tab **42** extending from one end of cover **41** both covers the pad tab **34** and provides a purchase where force can be applied to release the cover **41** from the head member **12** in order to expose pad **31** for use.

[**0031**] A plurality of spacers **44** are distributed at spaced-apart locations around the inner edge of the cover **41** against the cover's side wall **46** and extending from the cover inner surface **47**. The height of spacers **44** is slightly greater than the difference between the thickness **32** of pad **31** and the depth **24** of side wall **22** of head **12**. When the cover **41** is snapped into place over head member **12**, the spacers **44** engage the upper surface of side wall **22** of head **12** whereby the inner surface **47** of cover **41** is disposed above the upper surface **33** of pad **31** so that any lotion on the upper surface **33** is not transferred to the inner surface **47** of cover **41**. Cover **41** is sized to have a snug fit so that when the cover **41** is placed on head **12**, some force (preferably on tab **42**) is required to remove the cover **41** from head **12**.

[**0032**] Referring to **FIGS. 6, 7** and **8**, one of the outstanding features of the present invention is its ability to assume a compact size. The handle shaft **16** can be rotated about hinge members **14** and **18** from a position where the shafts **13** and **16** are aligned along axis **19** (**FIG. 1**) when used to apply lotion, to a folded position, as shown in **FIGS. 6 and 7**, where handle shaft **16** lies over head shaft **13** when the applicator is to be stored or transported. In this folded position, the applicator **11** can be conveniently carried in a purse, beach bag or even a pocket.

[**0033**] The combined length of handle shaft **16** and handle **17** is such that when the handle shaft **16** is folded onto head shaft **13** (**FIG. 6**), handle **17** extends over the head member **12** and, when in place, cover **41**. By locating handle **17** over

cover **41**, additional assurance is provided that cover **41** will not accidentally be dislodged and expose the applicator pad **31**.

[**0034**] The applicator **11** will typically be stored in its folded condition with cover **41** in place, as shown in **FIGS. 6 and 7**. When applicator **11** is to be used to apply lotion, the handle **17** is rotated about the hinge members **14** and **18** until the shafts **13** and **16** are aligned along the common axis **19** and locked in that position (as shown in **FIG. 1** and described more fully below). The cover **41** is then removed by applying pressure to the head cover tab **42** to expose the applicator pad **31**. Lotion can then be applied to the pad **31** and then applied to the body by grasping the applicator at handle **17** and directing the head member **12** to those locations where it is desired to apply lotion. When the application of lotion has been completed, the cover **41** is replaced over the pad **31** and the shaft **16** rotated about hinge members **14** and **18** to overlay the handle **17** onto the covered head member **12** (FIGS. **6** and **7**). At all times, the lotion on the pad **31** is either being applied or protected by cover **41** and, thus, is not distributed to unwanted or unintended surfaces.

[**0035**] Referring to **FIGS. 8, 9** and **10**, hinge member **14** at the end of head shaft **13** includes a pair of spaced-apart, depending bearing support members **51** and **52** having cylindrical post bearing holes **53** and **54**, respectively. Bearing support members **51** and **52** are constructed to elastically flex during assembly and disassembly when a force is applied that pushes the members apart.

[**0036**] The hinge member **18** which extends from the end of shaft **16** includes a pair of depending post mount members **61** (only one of which is shown), each having a cylindrical post **62** attached to and extending outwardly therefrom (the posts **62** are most advantageously formed as an integral part of the mount members **61**). The end surfaces **62***a* of posts **62** are not perpendicular to the post body, as in a right cylinder, but rather at an angle thereto. The post mount members **61** are dimensioned to be rigid so they do not flex during assembly of the hinge.

[**0037**] Support member **51** has a ramped channel **51***a* extending from the distal end **51***b* of member **51** to bearing hole **53**. Likewise, support member **52** has a ramped channel **52***a* extending from the distal end **52***b* of member **52** to bearing hole **54**. The channels **51***a* and **52***a* are sized to receive posts **62** with the angled ends **62***a* engaging the ramped surfaces of channels **51***a* and **52***a*. As the posts **62** are forced up the ramped channels **51***a* and **52***a*, the bearing support members **51** and **52** are forced apart enough to allow posts **62** to enter post bearing holes **53** and **54**. Once the posts **62** are in the bearing holes **53** and **54**, there is no longer a force flexing the supports **51** and **52** apart and the members **51** and **52** return to their unflexed position in which posts **62** are securely held in bearing support members **51** and **52** and rotatable in bearing holes **53** and **54** whereby the hinge members **14** and **18** are rotatably connected and can rotate, one relative to the other, through approximately 180 degrees.

[**0038**] The novel design of the hinge members as described above not only facilitates assembly of the hinge, but also has the unexpected advantage that excessive torque applied to the assembled hinge will result in the hinge members separating without any damage to any hinge part. The hinge can then be reassembled by inserting the posts **62** into channels **51***a* and **52***a* and pushing the posts toward the holes **53** and **54**.

[**0039**] A latch keeper **56** is cantilevered from the end of head shaft **13** to between support members **51** and **52** and has a cam surface **57** that faces into the space between support members **51** and **52**. Pressure applied to the cam surface forces the keeper **56** away from the space between support members **51** and **52**, but returns to its original position when the pressure is released.

[**0040**] A latch member **63** is supported on the upper surface of the hinge member **18** at a location slightly beyond the end of handle shaft **16**. Latch **63** has a cam follower surface **63***a* which terminates in a latch step **63***b*.

[**0041**] As best seen in **FIG. 9**, as the shafts **13** and **16** are rotated towards alignment, the latch surface **63***a* engages the latch cam surface **57** applying pressure thereto, causing the latch keeper **56** to flex away from the space between support members **51** and **52** until the step **63***b* engages the latch keeper step **58**, at which point, the pressure on latch keeper **56** is released and latch keeper **56** snaps back to its original location. When the latch keeper **56** and latch **63** are so engaged, rotation towards the folded position is prevented. At the same time that the steps of latch **63** and latch keeper **56** lock, the ends **13***f* of shaft **13** abut the ends **16***f* of shaft **16**, preventing any further rotation of the hinge members beyond the aligned position shown in **FIGS. 1 and 10**. Thus, when the hinge is latched, the shafts **13** and **16** form a unified structure which remains aligned, regardless of force that is applied to the head **12** until such time as the latch keeper **56** is released from the latch **63**.

[**0042**] When it is desired to fold the applicator **11**, the latch keeper **56** is simply urged away from the latch **63** (most conveniently using the nail of the thumb of the hand holding the handle **17**), which permits the weight of head member **12** to rotate the head shaft **13** to rotate away from handle shaft **16** and assume the folded position illustrated in **FIGS. 6 and 7**.

[**0043**] To unfold the applicator in order to place the shafts **13** and **16** in their locked, aligned position, it is only necessary to grasp the handle **17** and, in one motion, flip the head upwardly, causing the latch **63** to engage and catch the latch keeper **56**, at which point, the shafts become a unified structure. The head cap can then be removed and lotion applied to the pad for application to the body.

[**0044**] Of course, various changes, modifications and alterations in the teachings of the present invention may be contemplated by those skilled in the art without departing from the intended spirit and scope thereof. As such, it is intended that the present invention only be limited by the terms of the appended claims.

What is claimed is:

1. In a lotion applicator, the combination comprising:

a handle shaft having a handle at one end and a handle shaft hinge member at its other end;

an applicator head shaft having an applicator head hinge member at one end rotatably attached to said handle shaft hinge member wherein said shaft members can rotate relative to each other such that in a first rotated position, said shafts are aligned along a common axis

and in a second rotated position, said handle shaft is generally parallel to and overlying, said applicator head shaft;

an applicator head at the other end of said applicator head shaft wherein said applicator head includes an open applicator pad compartment;

an applicator pad compartment cover which attaches to said applicator head enclosing said applicator pad compartment;

wherein said handle shaft is of a length that said handle extends beyond said applicator head shaft and over said applicator pad compartment when said shafts are in their second rotated position whereby said handle overlies said applicator pad compartment cover when said cover is attached to said applicator head, thereby helping to keep said applicator pad compartment cover attached to said applicator head.

2. The lotion applicator of claim 1 wherein said applicator head hinge member and said handle shaft hinge member include complementary parts of a locking mechanism by which said shafts are automatically locked in the first rotated position forming a unitary structure.

3. The lotion applicator of claim 2 wherein said locking mechanism is releasable using just one hand whereby said shafts can be reconfigured from the first rotated position to the second rotated position.

4. The lotion applicator of claim 3 further comprising:

an absorbent lotion pad sized to fit in said open applicator pad compartment and be fully enclosed therein when said applicator pad compartment cover is attached to said applicator head.

5. The lotion applicator of claim 4 wherein said applicator pad compartment is partially formed by a surrounding wall member and said absorbent lotion pad is thicker than the height of the wall whereby said pad extends above said wall when said pad is in said compartment.

6. The lotion applicator of claim 4 wherein said absorbent lotion pad includes a notch and said open applicator pad compartment has a raised alignment guide of the same shape as said pad notch whereby when said notch is aligned with said guide, said pad is properly situated within said applicator pad compartment.

7. The lotion applicator of claim 1 wherein said shafts have an I-beam structure formed by side walls attached by an intermediate web defining an upper channel and a lower channel.

8. The lotion applicator of claim 4 wherein said shafts have an I-beam structure formed by side walls attached by an intermediate web defining an upper channel and a lower channel.

9. The lotion applicator of claim 8 wherein said applicator shaft upper channel opens into said pad compartment and said applicator pad includes a tab that fits into said head shaft upper channel when said pad is properly situated in said pad compartment.

10. The lotion applicator of claim 1 wherein said handle shaft, handle and handle shaft hinge member are a single molded piece and said head shaft, said applicator head and said head shaft hinge member are a single molded piece.

11. The lotion applicator of claim 10 wherein said molded pieces are molded from polypropylene.

12. The lotion applicator of claim 10 wherein said molded pieces are molded from nylon.

13. The lotion applicator of claim 10 wherein said molded pieces are molded from acetal polyoxymethylene (POM) resins.

14. The lotion applicator of claim 4 wherein a space exists between said applicator pad compartment cover and said absorbent lotion pad when said cover is on said applicator pad compartment.

15. The lotion applicator of claim 1 wherein said handle is formed by spaced-apart ribs.

16. The lotion applicator of claim 1 further comprising:

a latch affixed to said handle shaft;

a latch keeper attached to said applicator head shaft, which keeper engages and secures said latch when the shafts are in their first rotated position, preventing the shafts from rotation in a direction toward their second rotated position.

17. A quick-release locking hinge providing a rotatable connection between a first shaft and a second shaft wherein each shaft has an end comprising:

a hinge connecting the ends of the shafts whereby said shafts can rotate relative to one another in a first direction which brings the shafts into alignment along a common axis and the ends of said the shafts abut, preventing further rotation in the first direction;

a latch affixed to the first shaft;

a latch keeper attached to the second shaft which keeper engages and secures said latch when the shafts are rotated in the first direction and brought into alignment along a common axis wherein the shafts are prevented from rotation in a direction opposite to the first direction.

18. The quick-release locking hinge of claim 17 wherein said hinge comprises:

a pair of post bearing holes adjacent the end of the first shaft;

a pair of posts adjacent the end of the second shaft and disposed in said post bearing holes.

19. The quick-release locking hinge of claim 17 wherein pressure applied to said latch keeper releases said latch and permits rotation of the shafts in the direction opposite to the first direction.

20. The quick-release locking hinge of claim 18 further comprising:

a pair of spaced-apart bearing support members at the end of said first shaft each containing one of said cylindrical post bearing holes;

a pair of post mount members at the end of said second shaft wherein one of said posts is carried by each of said mount members;

a ramped channel in each of said support members leading into said post bearing holes;

whereby when said posts are disposed in said ramped channels and forced toward said post bearing holes, said bearing support members are forcibly flexed apart until said posts enter said post bearing holes, after which they return to their original spaced apart positions.

* * * * *