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Alilovich

(54) SEXUAL STIMULATION DEVICE

(75) Inventor: **Michelle Alilovich**, Libertyville, IL (US)

Correspondence Address:
**FACTOR & LAKE, LTD**
**1327 W. WASHINGTON BLVD., SUITE 5G/H**
**CHICAGO, IL 60607 (US)**

(73) Assignee: **BIG BANG PRODUCTIONS, LLC**, Northbrook, IL (US)

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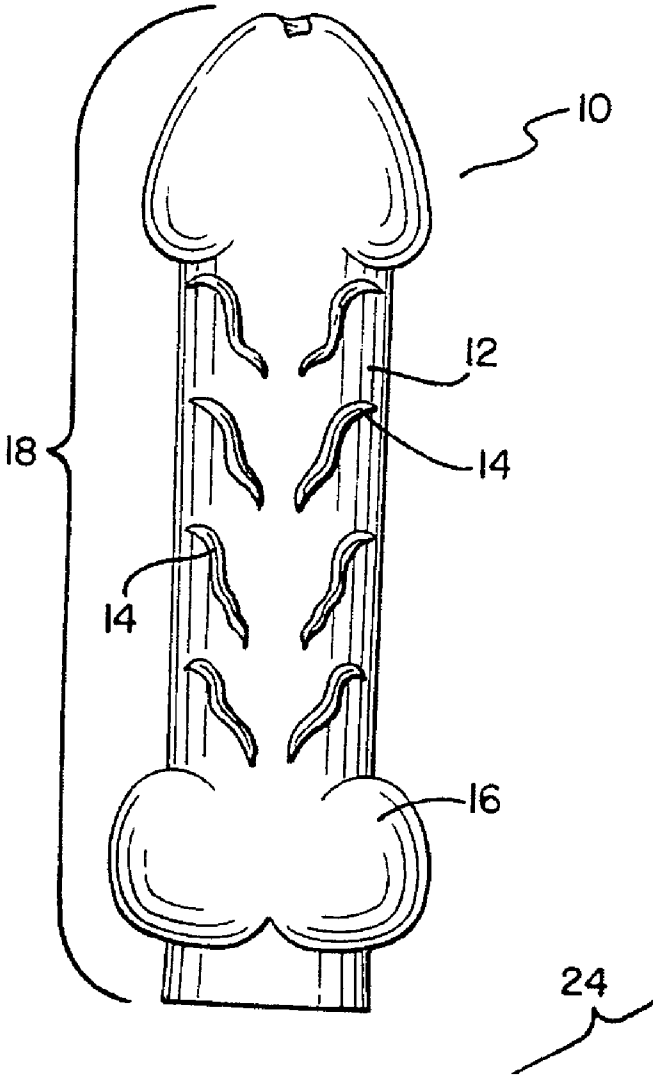
(52) **U.S. Cl.** ..... **600/38**; 601/15

(57) **ABSTRACT**

A sexual stimulation device having an outer skin containing heated, raised ridges surrounding an internal mechanism including two housings, a drive motor, a disc mechanically engaged with the drive motor, a shaft having a planar surface with substantially perpendicular protrusions attached at one end, and angled surfaces attached to the inner surface of at least one of the housings. As the motor and disc rotate, the shaft is translated laterally, pushing the attached planar surface and disc towards the angled surfaces, causing at least one of the housings to expand, thereby increasing the surface area of the surrounding outer skin.



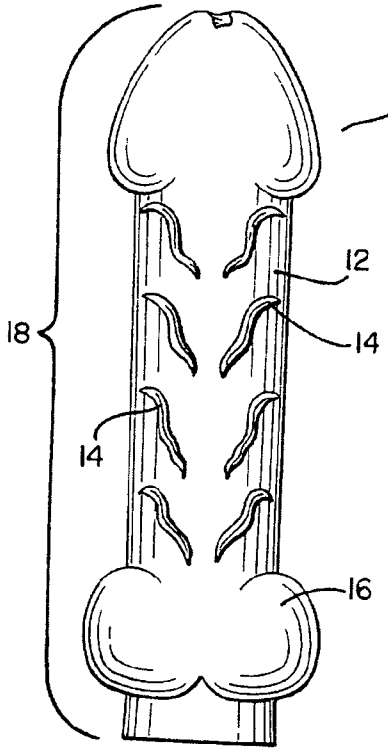



FIG. 1

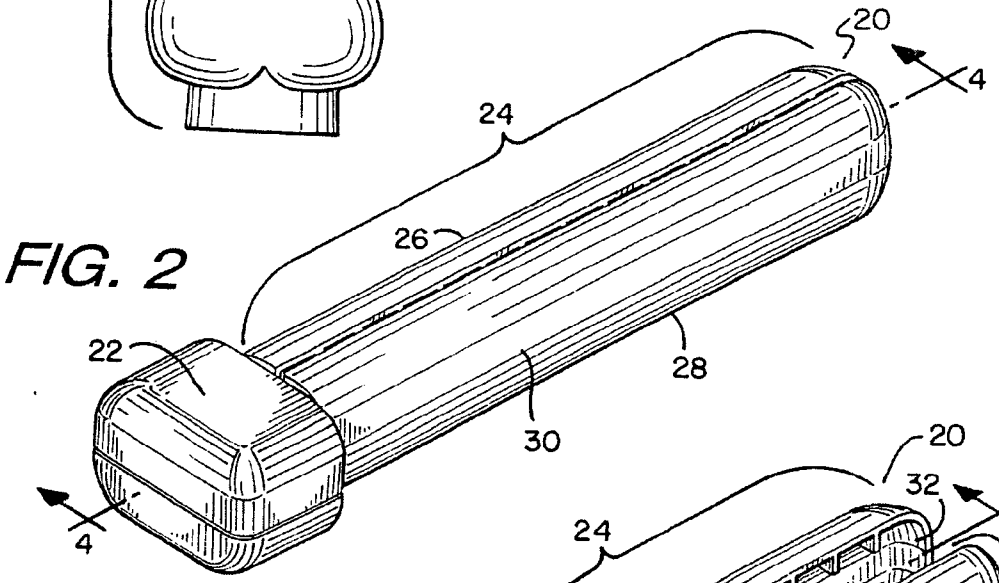



FIG. 2

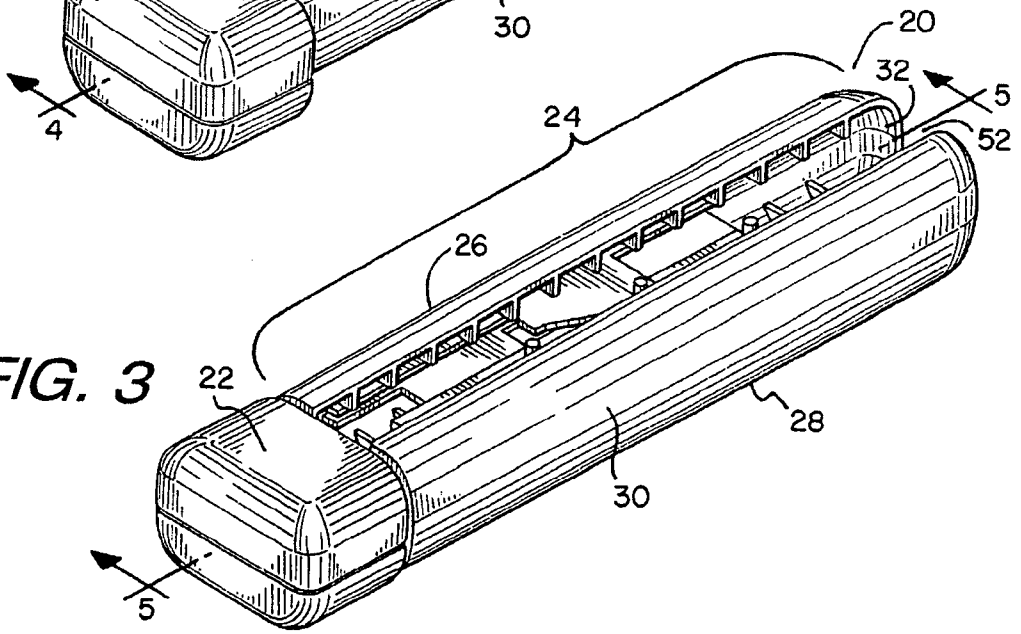



FIG. 3

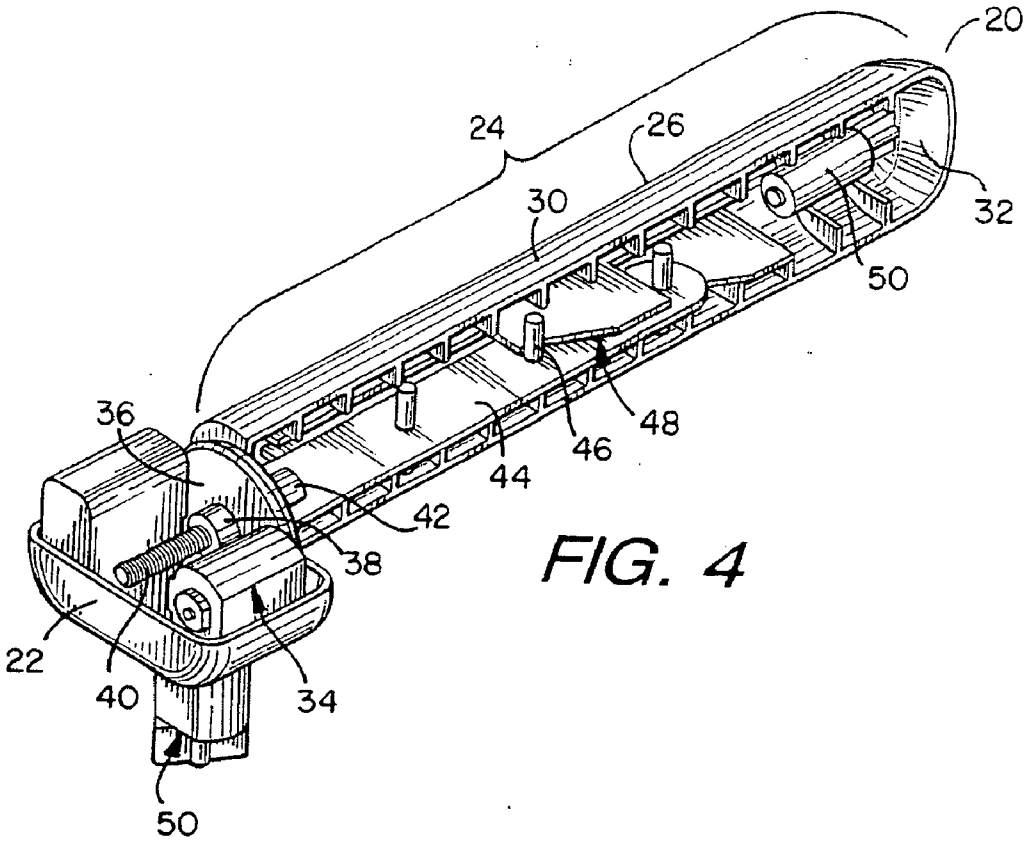

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FIG. 4

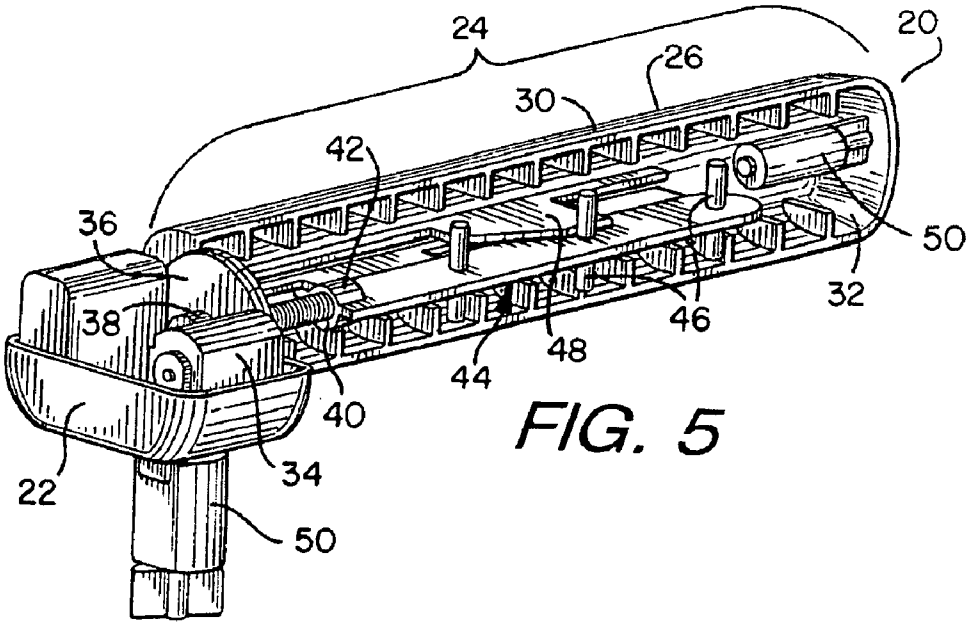
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FIG. 5

FIG. 6

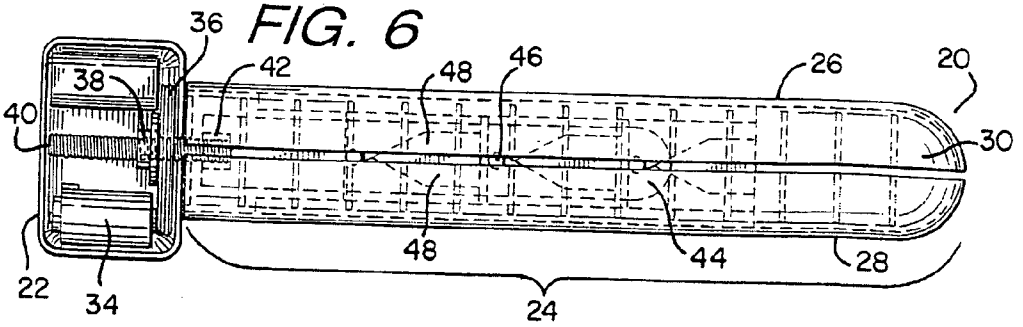



FIG. 7

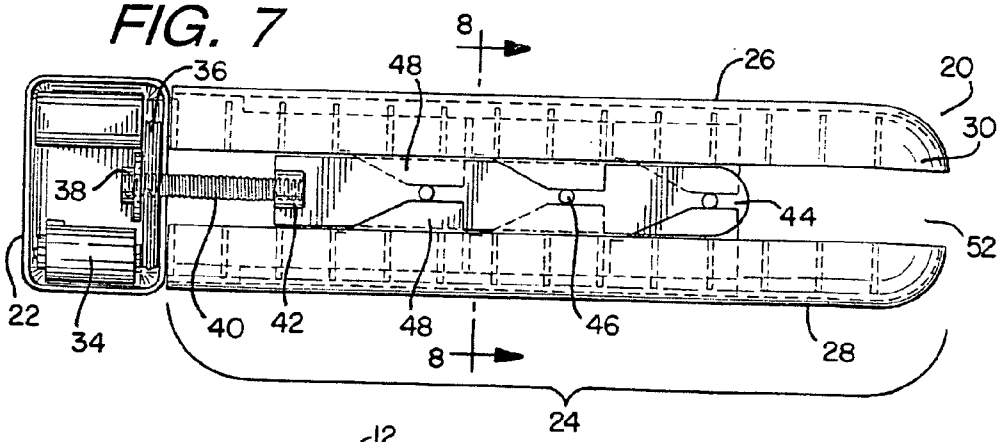



FIG. 8A

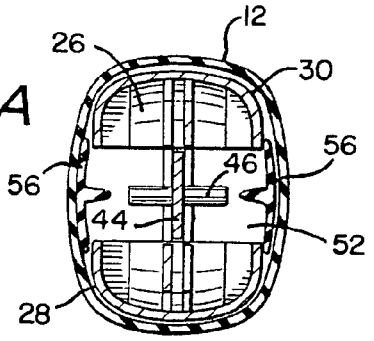



FIG. 8B

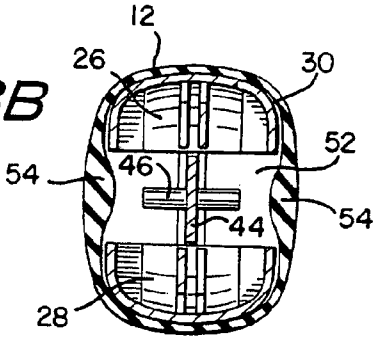
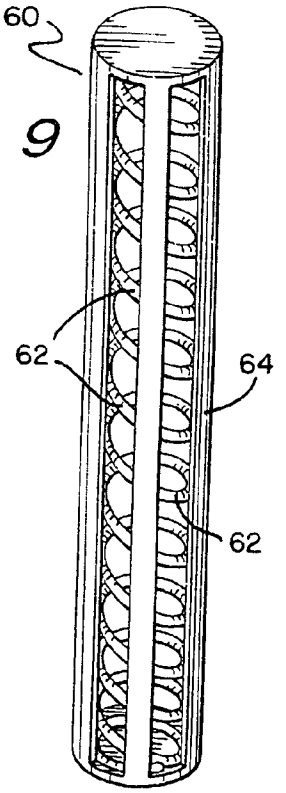



FIG. 9



# SEXUAL STIMULATION DEVICE

## RELATED APPLICATIONS

**[0001]** The present invention claims priority to U.S. Provisional Patent Application Ser. No. 60/978,826, filed Oct. 10, 2007, entitled Sexual Stimulation Device; and in which its contents are incorporated by reference herein.

## FIELD OF THE INVENTION

**[0002]** The present invention relates to sexual stimulation devices. Specifically, the present invention relates to vibrating sexual stimulation devices with heating and shape changing capabilities.

## BACKGROUND OF THE INVENTION

**[0003]** Numerous devices are commercially available which are adapted to enhance sexual function and to provide sexual stimulation. The majority of the devices that are commercially available may be generally described as either a dildo, i.e. a non-vibratory article adapted for either anal or vaginal insertion, or a vibrator, i.e. an article including means for generating a vibration to enhance sexual stimulation. Although dildos and vibrators come in wide array of designs, styles and sizes, they tend to be in elongated, fixed shapes. While there is a wide variety in the designs, styles, and sizes of commercially available dildos and vibrators, it would be advantageous to have a vibrator that contains an apparatus for increasing or decreasing the circumference of the vibrator to increase comfort and/or enhance stimulation. It would be an additional advantage to create a variable size vibrator that contains a heating element to further enhance stimulation.

## SUMMARY OF THE INVENTION

**[0004]** The present invention is directed to a sexual stimulation device having a flexible outer skin surrounding an inner mechanism. The flexible outer skin may contain raised ridges in various shapes and sizes, which may be in either a random or a predetermined pattern, to enhance stimulation. The raised ridges may be further heated via infrared heating elements or the like to further enhance stimulation.

**[0005]** In one embodiment of the present invention, the sexual stimulation device is provided at one end with a perpendicular protrusion. The perpendicular protrusion is covered with the outer skin and may take any shape. The perpendicular protrusion may further include a vibrating motor enclosed within the area surrounded by the outer skin. The outer skin surrounding the perpendicular protrusion may further include ridges or the like in the surface. As in the body of the device, the ridges contained within the outer skin surrounding the protrusion may be of any shape and size, may be in a random or predetermined pattern, and may include infrared heating elements or the like.

**[0006]** In another embodiment of the present invention, the inner mechanism surrounded by the outer skin comprises two housings made of a rigid material surrounding: a drive motor; a disc mechanically connected to the drive motor; a shaft engaged with an opening in the disc and connecting the two housings; a planar surface connected to the end of the threaded shaft extending longitudinally within the housing; at least one guide pin extending in a perpendicular direction from the planar surface; at least one angled surface extending substantially parallel to the planar surface from the inner surface of the housing; and at least one vibrating motor.

**[0007]** In a further embodiment of the present invention, a means for expanding and contracting at least a portion of the device is included. At least one of the two housings preferably includes at least two separable panels forming a cylindrical shape substantially surrounding the guide pins and the planar surface, which may include inclined or angled surfaces extending from the at least two separable panels inner surface.

**[0008]** In a still further embodiment of the present invention, as the motor operates it rotates the disc which then causes the shaft to translate laterally away from the disc and into the opposite housing. As the shaft laterally translates, the connected planar surface and guide pins translate in the same direction, causing the guide pins to engage the angled surfaces within the second housing. As the guide pins engage the angled surface in the opposing housing, the opposing housing expands, causing the surrounding outer skin to increase in surface area. When the motor is reversed, the shaft, planar surface, and guide pins move in the opposite direction, causing the opposing housing to contract which in turn decreases the surface area of the surrounding outer skin.

**[0009]** In yet another embodiment of the present invention, the inner mechanism surrounded by the outer skin comprises two housings made of a rigid material surrounding: a drive motor; a coiled spring; and, at least one vibrating motor.

**[0010]** These and other aspects and attributes of the present invention will be discussed with reference to the following drawings and accompanying specification and claims.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0011]** FIG. **1** shows a front side view of one embodiment of the present invention being covered in an outer skin.

**[0012]** FIG. **2** shows an interior portion of the present invention shown in FIG. **1**, wherein the inner housing and mechanism is in a fully contracted position.

**[0013]** FIG. **3** shows an interior portion of the present invention shown in FIG. **1**, wherein the inner housing and mechanism is in a fully expanded position.

**[0014]** FIG. **4** shows a partial perspective view of a portion of the present invention, wherein the inner housing and mechanism is in the fully contracted position.

**[0015]** FIG. **5** shows a partial perspective view of a portion of the present invention, wherein the inner housing and mechanism is in the fully expanded position.

**[0016]** FIG. **6** shows a partial plan view of the inner housing and mechanism of the present invention shown in FIG. **1** in the fully contracted position.

**[0017]** FIG. **7** shows a partial plan view of the inner housing and mechanism of the present invention shown in FIG. **1** in the fully expanded position.

**[0018]** FIG. **8***a* shows a longitudinal cross section of the inner housing and mechanism covered by an outer skin taken along line **8-8** in FIG. **7**.

**[0019]** FIG. **8***b* shows a longitudinal cross section of the inner housing and mechanism covered by an outer skin when the present invention shown in FIG. **1** is in its fully contracted position.

**[0020]** FIG. **9** shows an embodiment of the inner housing with a coiled spring contained therein.

## DETAILED DESCRIPTION OF THE PRESENT INVENTION

**[0021]** While the present invention is susceptible of embodiment in many different forms, there is shown in the

drawings and will herein be described in detail preferred embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated.

**[0022]** As shown in FIG. **1**, the present invention relates to a sexual stimulation device **10** having a main body **18** covered by an outer skin **12**. The outer skin **12** may include raised ridges **14** that generally comprise a soft, semi-pliable material that mimics human flesh. Some materials that may be used for the outer skin **12** include, and are not limited to: Silicon, Kraton, or Non-Porus plastic. The raised ridges **14** or skin **12** may be heated in order to enhance stimulation. Heating may occur via infrared heating elements contained within the raised ridges **14** or within the surface of the outer skin **12**.

**[0023]** The device **10** may also have attached at one end a semi-spherically shaped protrusion **16** extending in a generally perpendicular direction from the main body **18**. The outer skin **12** may cover the circular shaped perpendicular protrusion **16**. The circular shaped perpendicular protrusion **16** may have enclosed within a vibrating motor, shown for example in FIG. **2** as a vibrating motor **40**.

**[0024]** Contained within the outer skin **12** of the sexual stimulation device **10** is an inner mechanism **20** having various elements for vibrating, expanding, and contracting at least a portion of the device **10** to increase the surface area of outer skin **12**. One embodiment of the inner mechanism **20** is shown in FIGS. **2** and **3**.

**[0025]** As shown in FIGS. **2** and **3**, the inner mechanism **20** is in the fully contracted and fully expanded position, respectively. The inner mechanism **20** may include two or more distinct housings—a first housing **22** taking the form of a rectangular prism, and a second housing **24** taking the form of a generally elongate cylinder—in which a means for expanding and contracting at least a portion of the device **10** may be contained within one or both housings. The cylindrical portion of the second housing **24** may be formed by two or more separable, discrete panels **26**, **28**, each having an outer surface **30** and an inner surface **32**. The outer surface **30** comprises the portion of the inner mechanism **20** that is pushed outwardly to expand the device **10** and increase the surface area of the surrounding outer skin **12**. The components for expanding and contracting device **10** contained within the inner mechanism **20** are better seen in FIGS. **4** and **5**, which are partial perspective views of FIGS. **2** and **3**, respectively.

**[0026]** As shown in FIGS. **4** and **5**, contained with the first housing **22** is a drive motor **34** which is mechanically engaged with a disc **36** having an opening **38** there through. Disc **36** may be operatively connected with drive motor **34** in any manner known in the art—for example, using a drive belt or gear teeth. A shaft **40**, preferably threaded, is cooperatively engaged with the disc **36** via the opening **38**. As the drive motor **34** rotates the disc **36** in a first direction—either clockwise or counterclockwise—the shaft **40** is laterally translated through the opening **38** and extended into the second housing **24**. Essentially, the combination of the drive motor **34**, disc **36**, and shaft **40** may take any embodiment wherein the rotational energy of the drive motor **34** is converted to translation energy to laterally translate shaft **40**. When the drive motor **34** is reversed and the disc **36** is rotated in a second direction, the shaft **40** is withdrawn from the second housing **24** and is substantially pulled back into the first housing **22**. However, as seen in FIG. **4**, when in the fully contracted position, at least a portion of shaft **40** remains within the second housing **24** at all times.

**[0027]** Connected to the shaft **40** at connection point **42** in the second housing **24** is a planar surface **44** having guide pins **46** extending substantially perpendicularly there from. As the drive motor **34** rotates the disc **36**, and the shaft **40** laterally translates further into the second housing **24**, and the planar surface **44** and the substantially perpendicular guide pins **46** are pushed away from the disc **36** and further into the second housing **24**. As the planar surface **44** is pushed further into the second housing **24**, the guide pins **46** engage corresponding angled or inclined surfaces **48** attached to inner surfaces **32**. As the guide pins **46** are pushed further into the second housing **24**, they slide along the angled surfaces **48** and push the separable panels **26**, **28** apart, expanding the second housing **24** and thereby increasing the surface area of the surrounding outer skin **12**. FIG. **5** shows the inner mechanism **20** in the fully expanded position wherein guide pins **46** are at the innermost portion of the corresponding angled surfaces **48**. When the drive motor **34** is reversed, shaft **40** is pulled back out of the second housing **24**, causing the guide pins **46** to slide along the corresponding angled surfaces **48** in the direction towards disc **36**. Moving the guide pins **46** in this direction causes the second housing **24** to contract, thereby decreasing the surface area of the surrounding outer skin **12**.

**[0028]** As seen in FIGS. **4** and **5**, the inner mechanism **20** may also contain a vibrating motor **50** to enhance stimulation. Although vibrating motor **50** is shown in FIGS. **4** and **5** to be located proximate one end of the second housing **24**, it may be located anywhere within the inner mechanism **20**; and it is to be understood by one of ordinary skill in the art that the inner mechanism may contain more than one vibrating motor. In one configuration, a second vibrating motor **50** is located in the semi-spherical shaped, generally perpendicular protrusion **16**, which itself extends substantially perpendicular from the first housing **22**.

**[0029]** Both the drive motor **34** and vibrating motor **50** may be controlled in any manner known by one of ordinary skill in the art, e.g., wired or wireless remote control via buttons attached to the device, turning a knob, etc.

**[0030]** Referring now to FIGS. **6** and **7**, a top plan view shows the present invention depicted in FIGS. **2** and **3** in its respective contracted and expanded positions. As seen in FIG. **7**, the angled surfaces **48** are located on either side (above or below) of the planar surface **44** with the angled surfaces **48** located "below" the planar surface **44** indicated by dashed lines. Thus, the guide pins **46** extend above and below the planar surface **44** and engage the corresponding angled surface **48**, which facilitates the expansion of the second housing **24** from both the top and bottom of planar surface **44**.

**[0031]** As seen in FIGS. **3** and **7**, when the second housing **24** is in the fully expanded position, a gap **52** forms between the separable panels **26** and **28**. As seen in FIG. **8***b*, in one embodiment, outer skin **12** contains a thicker center portion **54** which expands to cover this gap and provide rigidity when in the fully expanded position. FIG. **8***b* shows the device **10** and inner mechanism **20** in the fully expanded position with outer skin **12** surrounding the outer surface **30** of the inner mechanism **20**. In this position, the thicker center portion **54** of the outer skin **12** expands slightly to cover the gap between panels **26** and **28** while providing enough stiffness to maintain a semi-rigid, cylindrical structure.

**[0032]** FIG. **8***a* shows an alternative embodiment wherein a flexible joint **56** covers the gap **52** between the separable panels **26** and **28**. This flexible joint **56** acts to maintain a semi-rigid, cylindrical shape when the device **10** is in the fully expanded position. Though not shown, it is readily apparent by those of ordinary skill in the art that when the device **10** is in the semi or fully contracted position, the flexible joint **56** lays between outer skin **12** and outer surface **30** of second housing **24**. When in the fully contracted position, the panels **26**, **28** of the second housing **24** close around the perpendicular portion of flexible panel **56**.

**[0033]** FIG. **9** depicts an alternative embodiment for expanding and contracting the device of the present invention wherein the inner housing and mechanism **60** includes panels **64** and a coiled spring **62**. In this embodiment, as the coiled spring is stretched, the panels **64** and surrounding outer skin **12** are expanded, thus increasing the surface area of the outer skin.

**[0034]** It is to be understood that additional embodiments of the present invention described herein may be contemplated by one of ordinary skill in the art and the scope of the present invention is not limited to the embodiments disclosed. While specific embodiments of the present invention have been illustrated and described, numerous modifications come to mind without significantly departing from the spirit of the invention, and the scope of protection is only limited by the scope of the accompanying claims.

What is claimed is:

**1**. A sexual stimulation device comprising:

an inner mechanism having a housing having an inner and outer surface; and,

an outer skin substantially covering the inner mechanism, wherein, the mechanism includes a means for expanding and contracting at least a portion of the housing to increase and decrease the surface area of the outer skin.

**2**. The sexual stimulation device of claim **1** further comprising at least one vibrating motor operatively attached to the inner mechanism.

**3**. The sexual stimulation device of claim **1** further comprising two or more separable panels.

**4**. The sexual stimulation device of claim **3**, wherein the means for expanding and contracting the housing is positioned inside in the inner mechanism.

**5**. The sexual stimulation device of claim **3** further comprising a drive motor.

**6**. The sexual stimulation device of claim **1**, wherein the means for expanding and contracting the housing includes a coiled spring.

**7**. The sexual stimulation device of claim **1**, wherein the means for expanding and contracting the housing includes an angled surface operatively attached to the inner surface of the housing.

**8**. The sexual stimulation device of claim **7**, wherein the means for expanding and contracting the housing further includes a shaft and a disc.

**9**. The sexual stimulation device of claim **8**, wherein the means for expanding and contracting the housing further includes a planar surface extending longitudinally from the end of the shaft.

**10**. The sexual stimulation device of claim **9**, wherein the means for expanding and contracting the housing further includes at least one guide pin extending substantially perpendicular from the planar surface.

**11**. The sexual stimulation device of claim **10**, wherein the at least one guide pin operatively engages the angled surface to expand and contract the inner housing.

**12**. The sexual stimulation device of claim **1**, wherein the outer skin includes raised portions.

**13**. The sexual stimulation device of claim **12**, wherein the raised ridges are heated via infrared.

**14**. The sexual stimulation device of claim **3**, wherein the outer skin covering at least one edge of the two or more separable panels includes a greater thickness than substantially the rest of the outer skin.

**15**. The sexual stimulation device of claim **3**, wherein a flexible joint cover is located between the outer skin and an area between the two or more separable panels.

**16**. The sexual stimulation device of claim **1** wherein one side of the device includes a substantially perpendicular protrusion.

**17**. The sexual stimulation device of claim **16** wherein the substantially perpendicular protrusion is a vibrating motor surrounded by the outer skin.

**18**. The sexual stimulation device of claim **1** wherein the device is controlled by an external remote control.

**19**. An internal mechanism for a sexual stimulation device comprising:

a first housing;

a second housing having an inner and outer surface;

at least one angled surface extending from the inner surface of the second housing;

a planar surface extending inside the second housing substantially parallel to the at least one angled surface;

at least one guide pin extending substantially perpendicular from the planar surface, wherein the at least one guide pin operatively engages the at least one angled surface to expand and contract the second housing.

**20**. The internal mechanism of claim **19** further comprising a drive motor positioned within the first and/or second housing.

**21**. The internal mechanism of claim **20**, further comprising a shaft operatively connected to the motor.

**22**. The internal mechanism of claim **21**, wherein the planar surface is attached to the shaft.

**23**. The internal mechanism of claim **22**, wherein the second housing expands and contracts as the motor laterally translates the shaft.

**24**. The internal mechanism of claim **19**, further comprising at least one vibrating motor contained within the first and/or second housing.

**25**. The internal mechanism of claim **19**, wherein the internal mechanism is controlled by an external remote control.

* * * * *