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(54) **FINGER GLOVE WITH TAIL**

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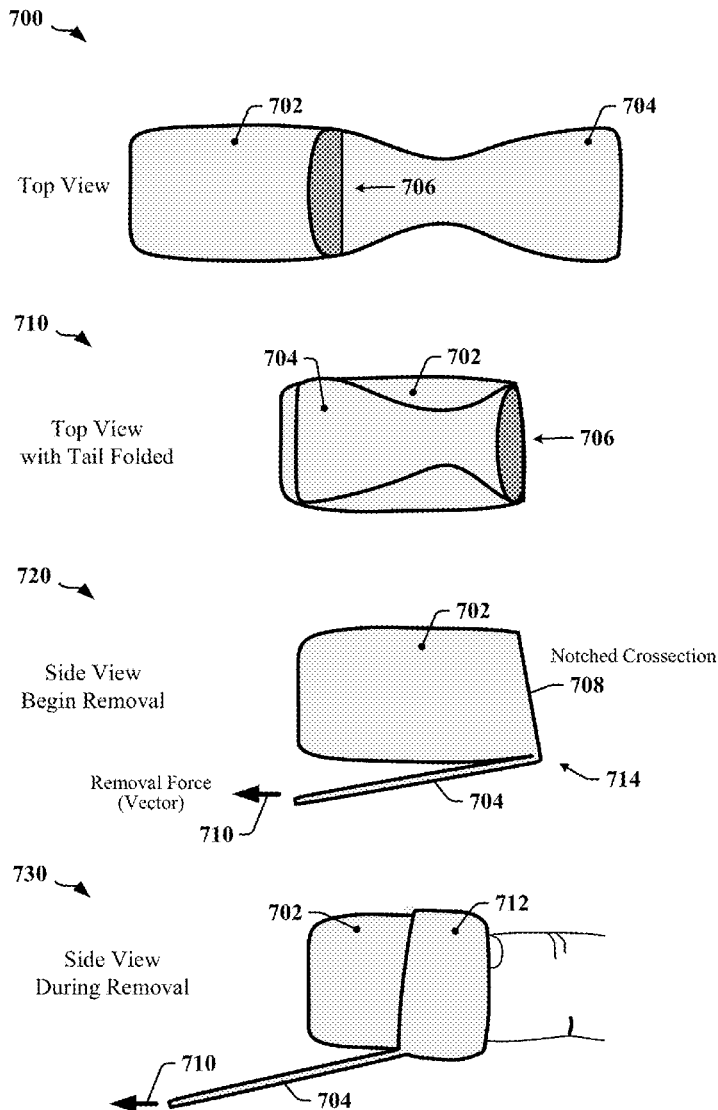
(57) **ABSTRACT**

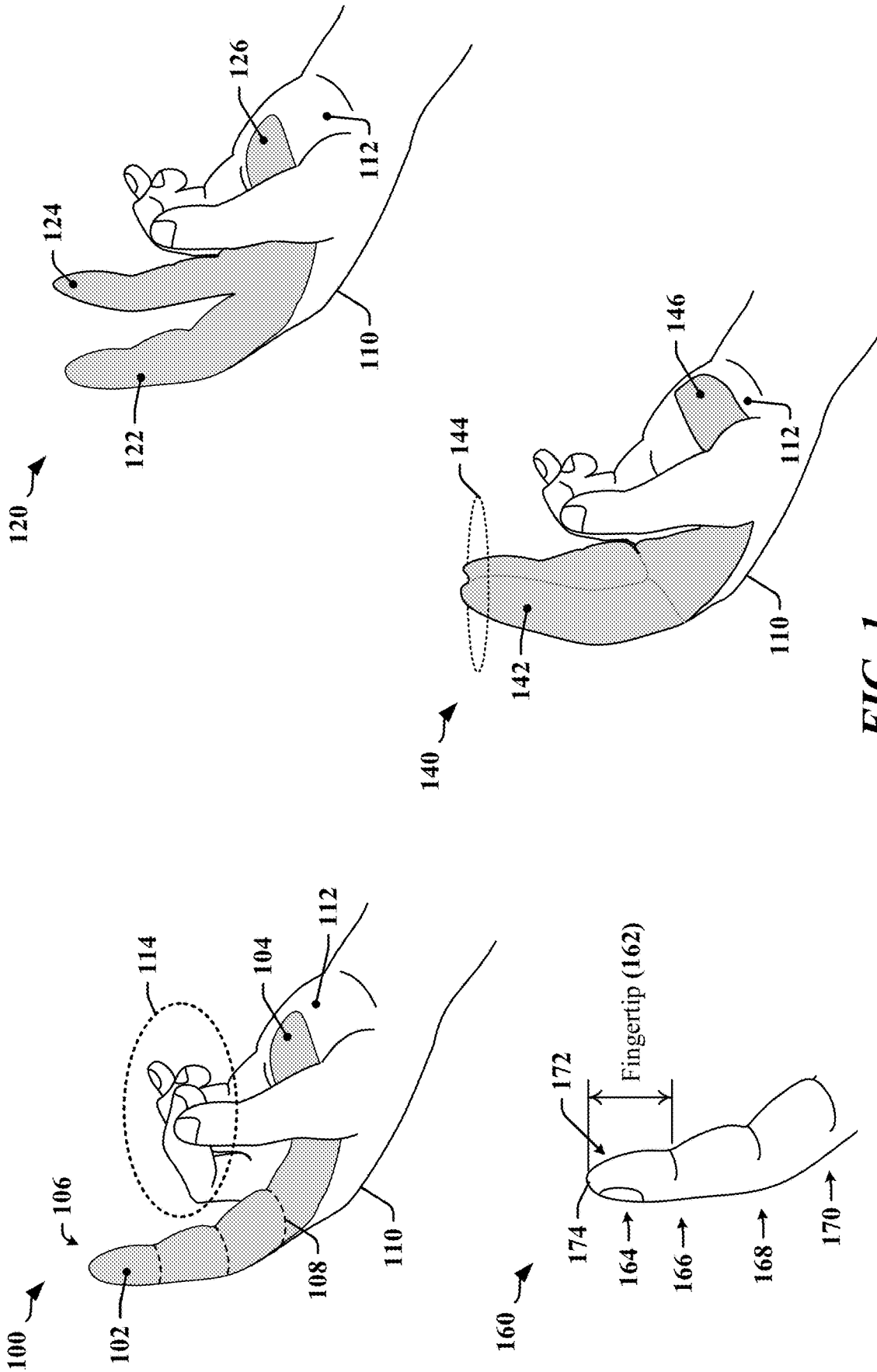
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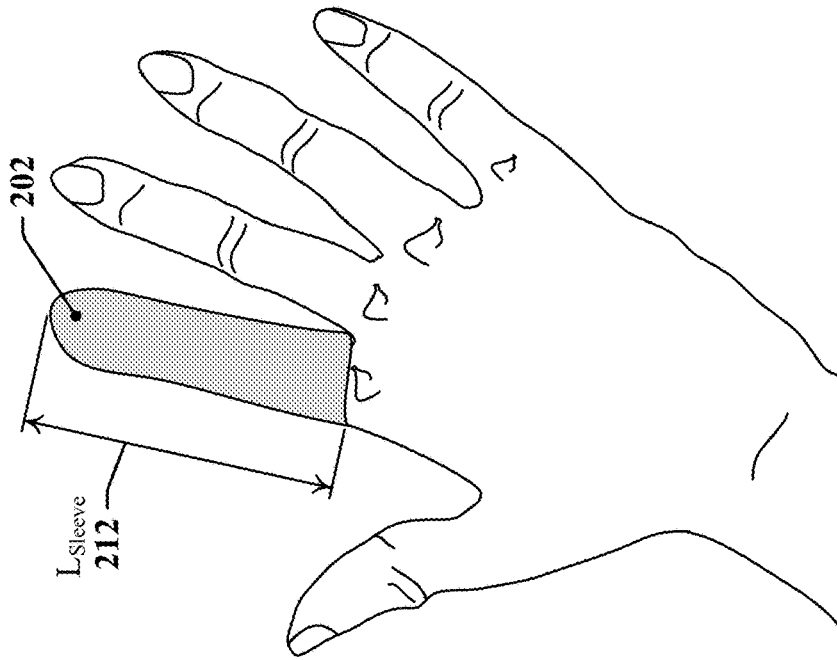
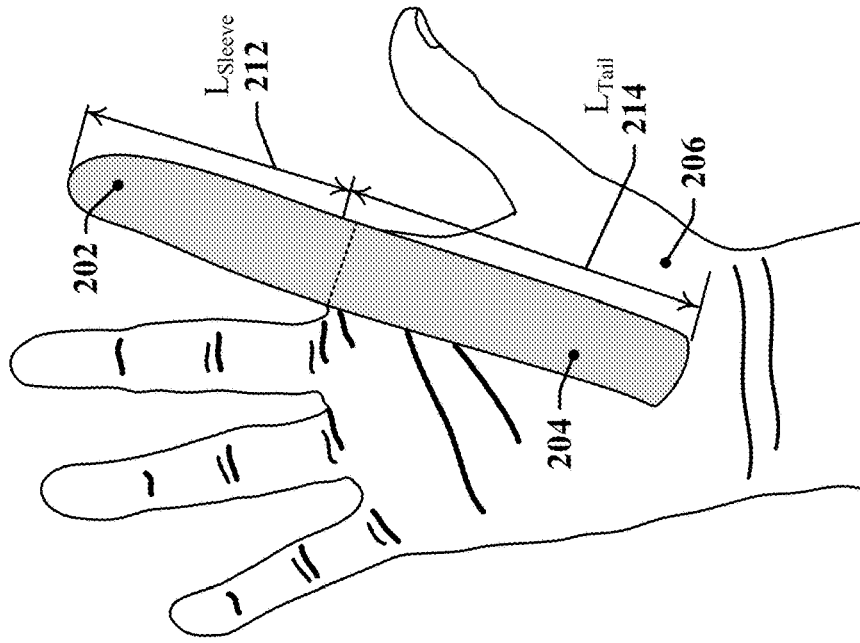
A finger glove includes a finger sleeve that conforms to a finger, and a tail extending from the finger sleeve on one side of the finger toward the palm or wrist. The finger sleeve may form a barrier operable to prevent material contacting an outer surface of the finger sleeve from reaching an inner surface of the finger sleeve. The tail may include a gripping portion configured to receive a force sufficient to draw the finger sleeve into conformity with a shape of a portion of the finger. The gripping portion may be configured to enable the finger sleeve to be separated from the finger while preventing the material contacting the outer surface of the finger sleeve from reaching the finger.

Related U.S. Application Data

(60) Provisional application No. 63/007,360, filed on Apr. 8, 2020, provisional application No. 63/087,864, filed on Oct. 5, 2020, provisional application No. 63/122,895, filed on Dec. 8, 2020.







200 ↗

FIG. 2

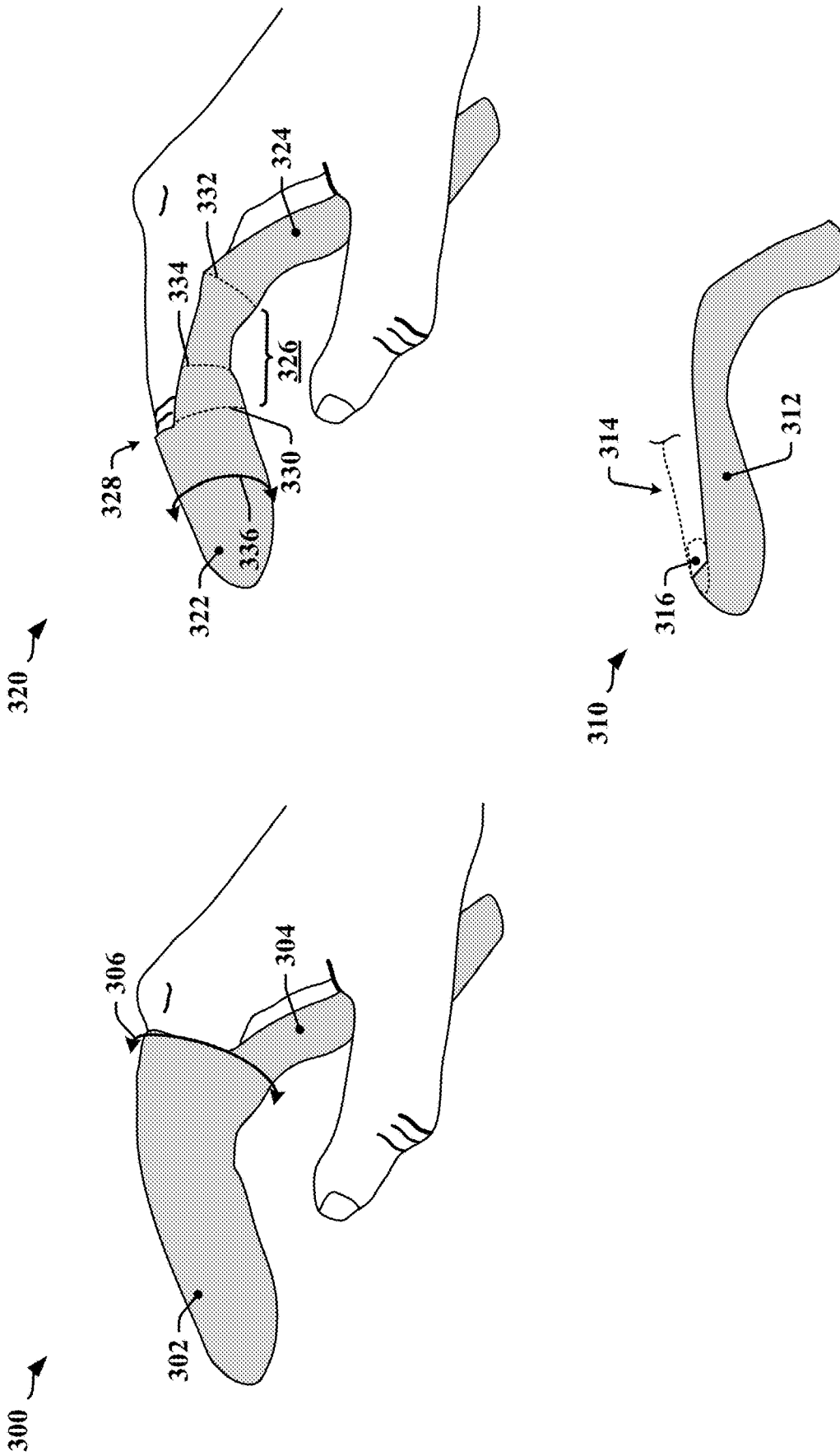


FIG. 3

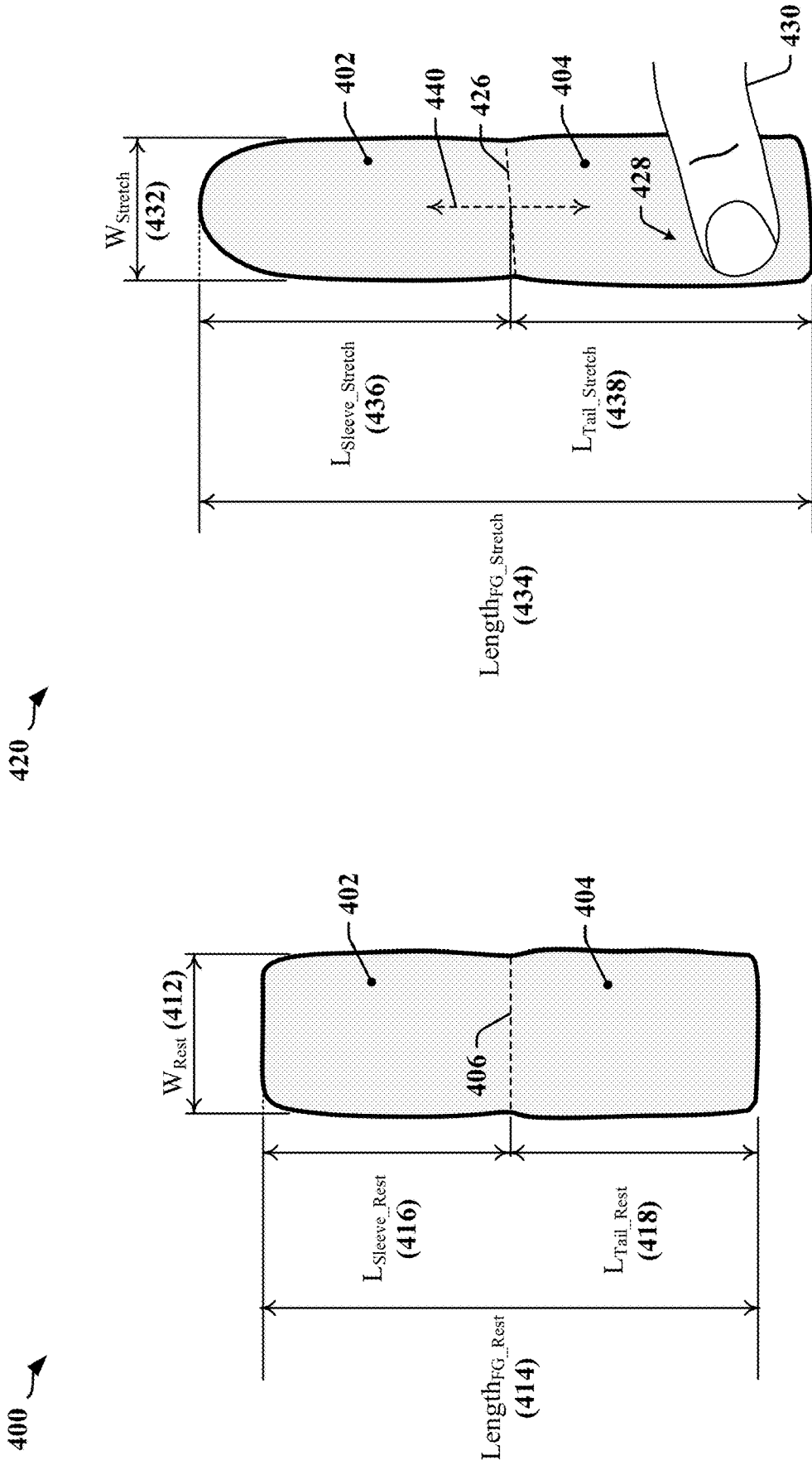


FIG. 4

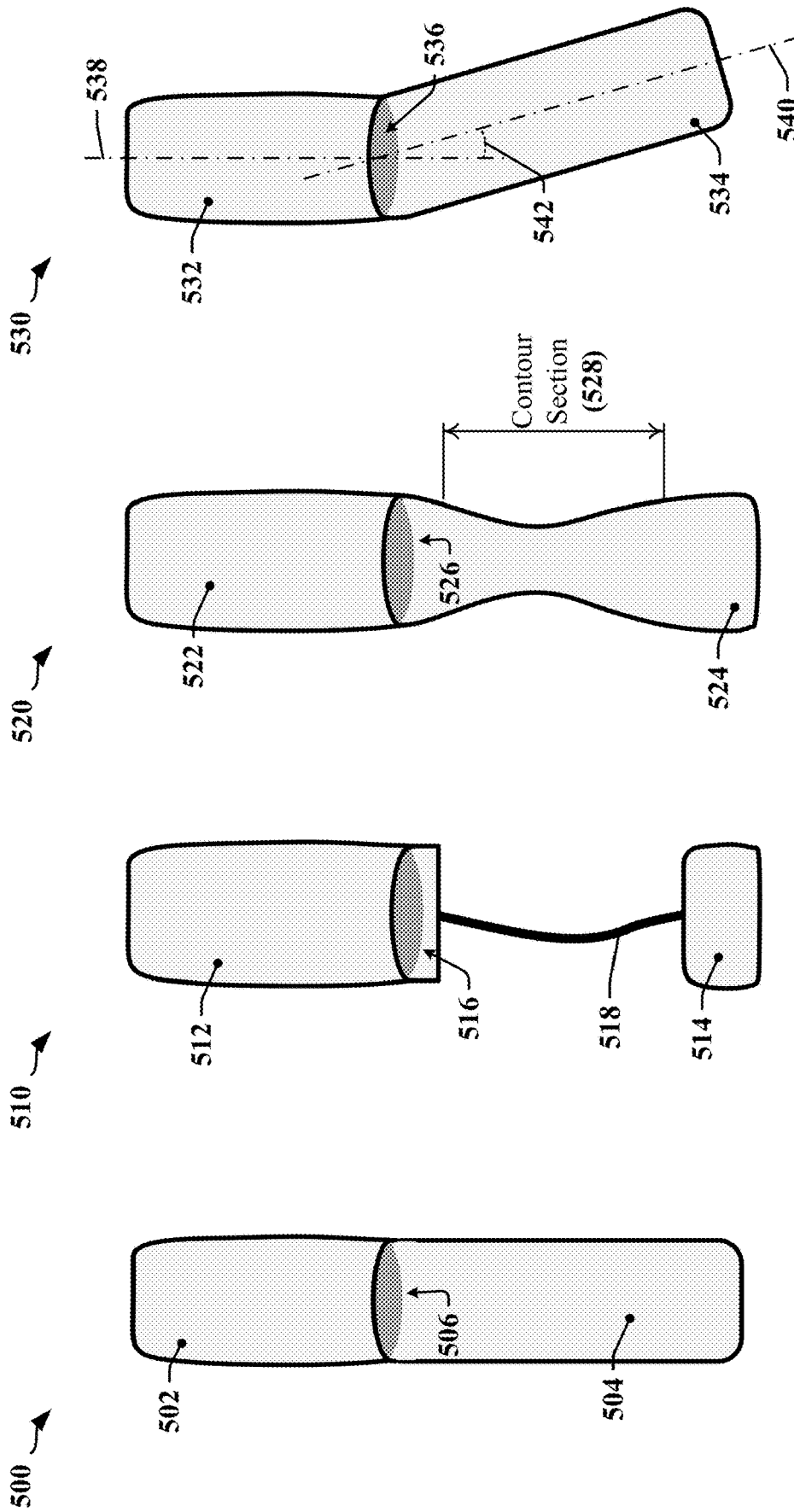


FIG. 5

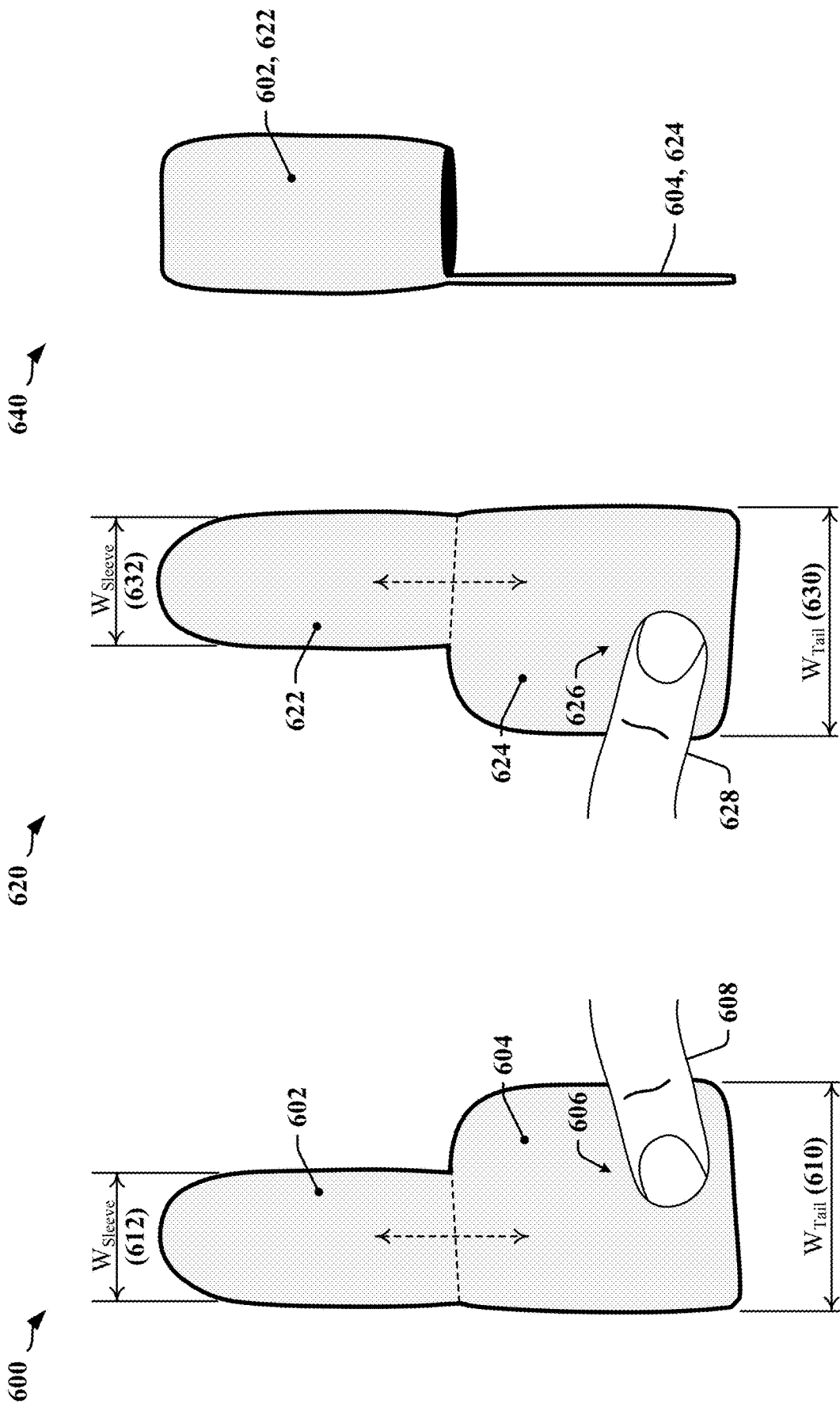


FIG. 6

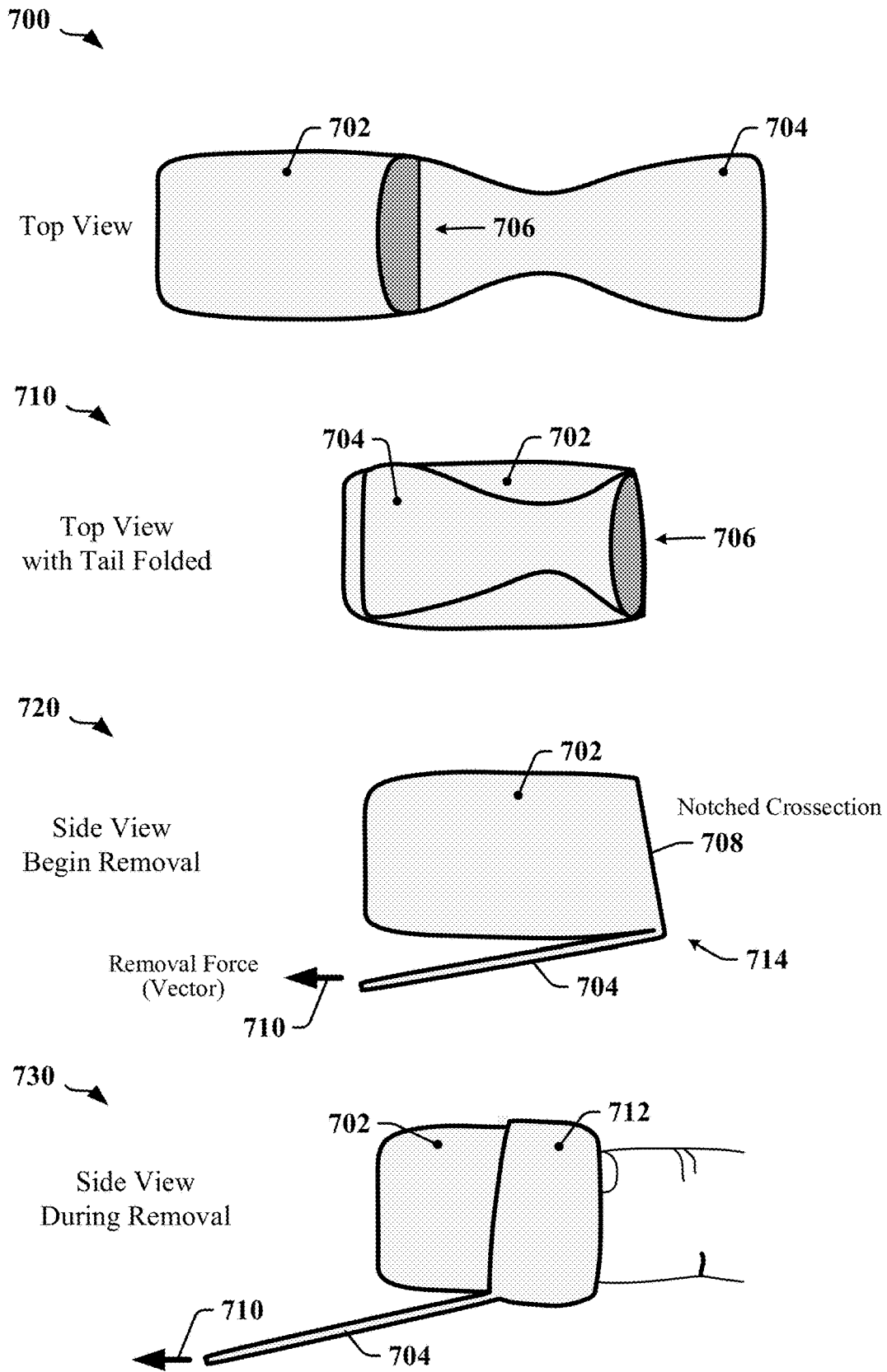


FIG. 7

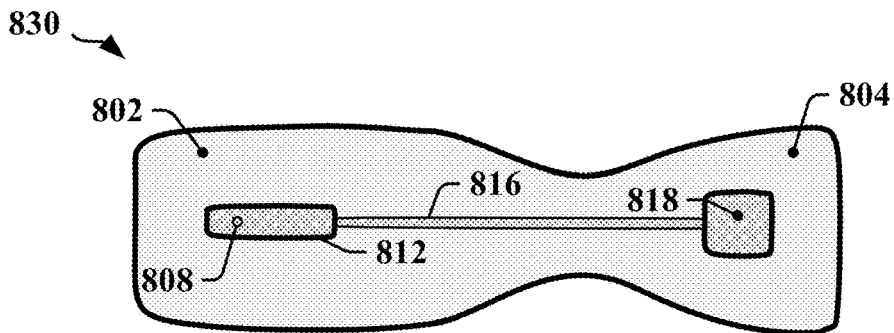
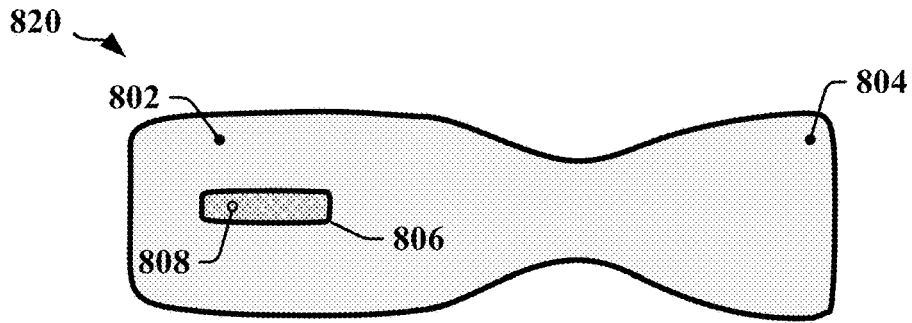
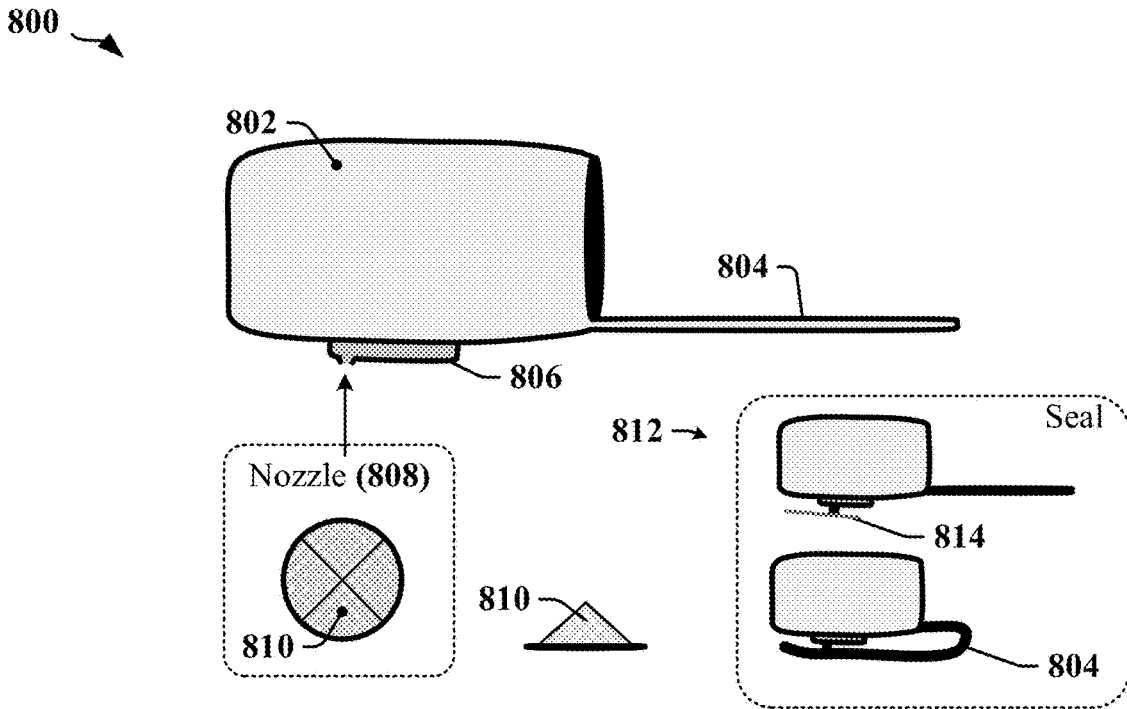


FIG. 8

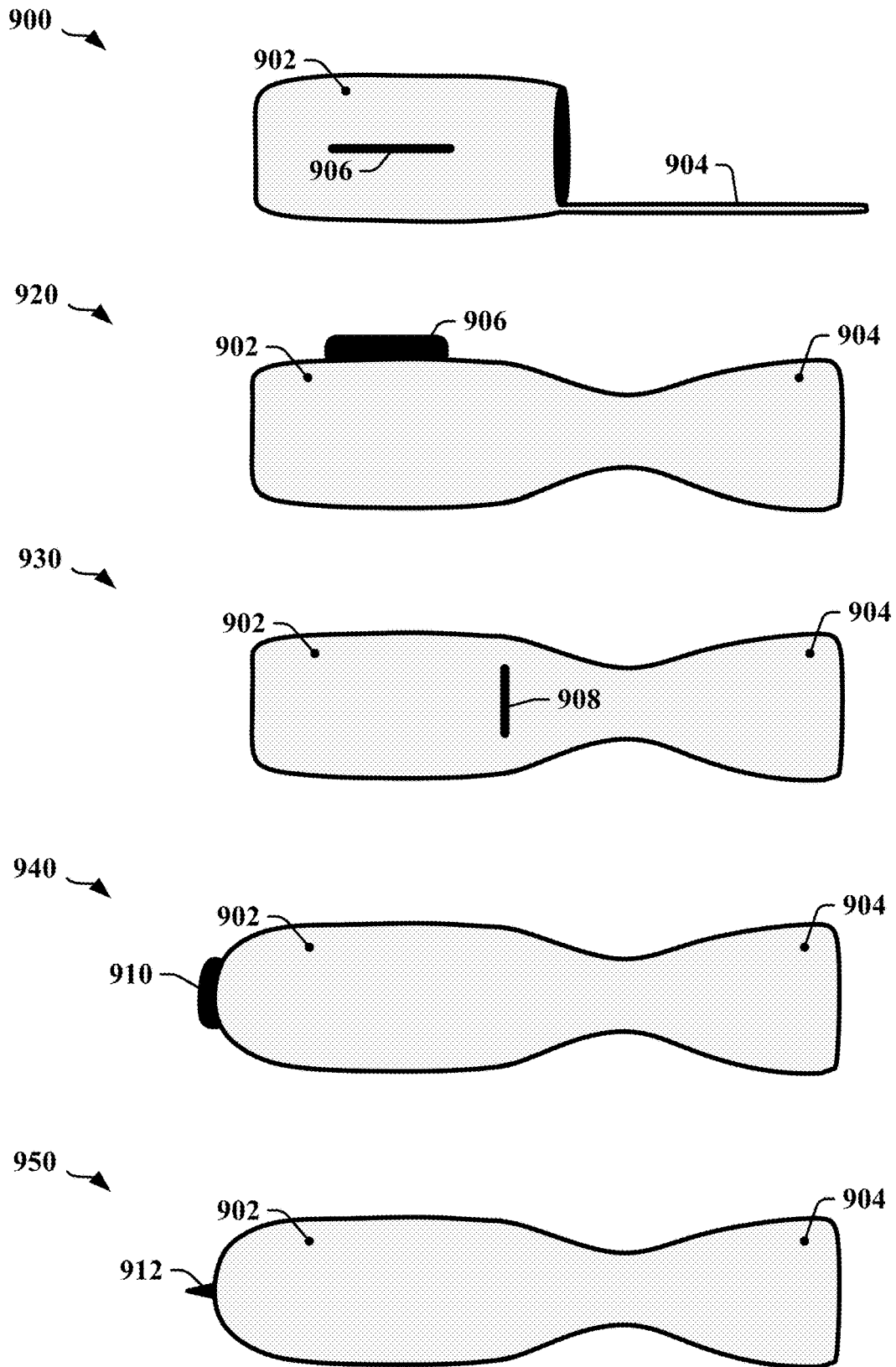


FIG. 9

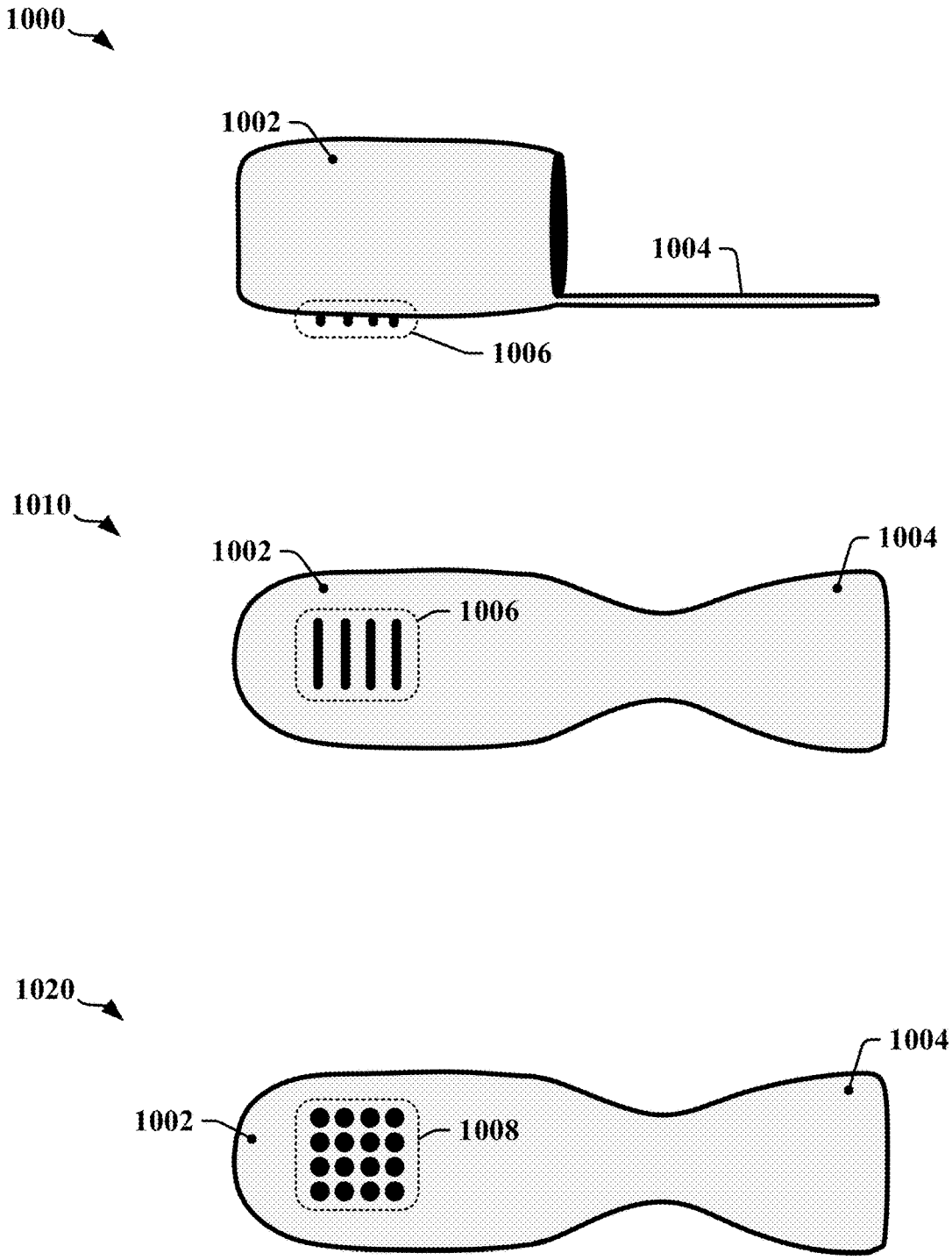


FIG. 10

FINGER GLOVE WITH TAIL

PRIORITY CLAIM

[0001] This application claims priority to and the benefit of provisional patent application No. 63/007,360 filed in the United States Patent Office on Apr. 8, 2020, of provisional patent application No. 63/087,864 filed in the United States Patent Office on Oct. 5, 2020, and of provisional patent application No. 63/122,895 filed in the United States Patent Office on Dec. 8, 2020, and the entire content of each of these provisional applications is incorporated herein by reference as if fully set forth below in their entirety and for all applicable purposes.

TECHNICAL FIELD

[0002] The present application relates to protective equipment, and more particularly to a finger glove that is configured to cover one or more fingers.

BACKGROUND

[0003] There are many situations where a barrier covering certain parts of a hand is necessary or desired, such as when applying diaper cream ointment to a baby's bottom, applying medication to a wound, personal hygiene, activities of daily living, veterinary care (wound care, cleaning an animal's ear), addressing household tasks (applying touch-up paint, spackling damaged walls, baking applications, etc.) and/or providing a barrier when contacting contaminated surfaces.

[0004] Conventional barrier materials and devices intended to prevent contact between fingers and an area of contact are not easily donned or doffed, and generally do not restrict spread of the product to undesired areas. Conventional devices are often characterized by poor fit and may shift in use. For example, conventional gloves can be difficult to manipulate in a hygienic manner during removal and often fail to contain products or contaminants during use and during removal.

SUMMARY

[0005] Certain aspects of this disclosure relate to a device that has a disposable finger glove manufactured or configured with a sleeve portion and a tail. The finger glove may be configured to provide a sanitary barrier between one or more digits (fingers or thumb) and a point of application or contact site. The device may be configured to provide a secure fit when worn and to resist twisting when lateral and other pressure is applied. The device can contain and prevent undesirable spread of products and contaminants while the finger glove is being donned, used or removed. In one example, the tail may be used to cover or contain contaminated areas of the sleeve portion prior to or during removal from a finger. The finger glove can be easily donned in a manner that guards against contamination of the sleeve portion and finger. The tail may be used to secure the finger glove during use and can prevent or limit slippage, twisting or rotation of at least the sleeve portion. The finger glove can be constructed from a material that forms a barrier between skin and application site and that can prevent contamination by chemicals or biological materials. A disinfectant or other product may be infused in the material used to manufacture the finger glove, or may be coated or otherwise applied to a

surface of the sleeve portion or tail. In some examples, the finger glove may include a tool or substance dispensing reservoir.

[0006] In another aspect, the presently disclosed device is formed or manufactured as a disposable finger glove with tail that provides a sanitary barrier between finger and application/contact site.

[0007] In one aspect, a finger glove includes a sleeve that is manufactured or configured to cover at least a portion of the finger or thumb near the fingertip end of a finger or thumb. In one aspect, a finger glove includes a sleeve that is manufactured or configured to conform to at least a portion of the tip of a finger or thumb. The sleeve may form a barrier operable to prevent a substance contacting an outer surface of the sleeve from reaching an inner surface of the sleeve. In various aspects, a finger glove includes a tail that extends from the sleeve toward a wearer's palm or wrist.

[0008] In certain aspects, the tail has a gripping portion configured to receive a force sufficient to draw the sleeve into conformity with a shape of a portion of the finger or thumb. The tail may have a gripping portion configured to receive a force sufficient to retain position of the sleeve relative to the finger or thumb. The gripping portion may be configured to facilitate separation of the sleeve from the finger or thumb after use, while preventing substances contacting the outer surface of the sleeve from reaching the wearer's skin during removal. The gripping portion may be shaped to match a contour of the wearer's palm or wrist. The gripping portion may include a string.

[0009] In one aspect, the sleeve is manufactured or configured to cover or conform to a plurality of fingers. In another aspect, the finger glove has an additional sleeve that is manufactured or configured to cover or conform to a tip of a second finger or the thumb.

[0010] In certain aspects, an inner surface of the sleeve or the additional sleeve includes, or is coated with, a tacky or semi-adhesive material configured to limit slippage or rotation of the corresponding sleeve relative the finger or thumb. In some examples, at least one surface of the tail includes, or is coated with, the tacky or semi-adhesive material that may be operative to limit slippage or rotation of the finger glove. In one aspect, an outer surface of the sleeve is textured. In one aspect, an outer surface of the sleeve is bristled and configured to be used as a brush.

[0011] In one aspect, the finger glove has a reservoir or pocket fluidically coupled to an outer surface of the sleeve. Pressure applied to the outer surface may cause a fluid to flow from the reservoir or pocket onto the outer surface. An outer surface of the sleeve may include an absorptive material. In one aspect, the finger glove includes an edge formed from a material coupled to a side of the sleeve. The edge may be configured as a spatula.

[0012] In various aspects, the finger glove is constructed from vinyl, nitrile or latex. The finger glove may be constructed from a polymer. The finger glove may be constructed from a woven material. The finger glove may be constructed from a non-woven material. The sleeve may include two or more layers of material that are bonded together. The sleeve may have two or more layers of material that are stitched or sewn together to obtain the sleeve.

[0013] This disclosure will now provide a more detailed and specific description that will refer to the accompanying drawings. The drawings and specific descriptions of the drawings, as well as any specific or alternative embodiments

discussed, are intended to be read in conjunction with the entirety of this disclosure. The finger glove with tail may, however, be embodied in many different forms and should not be construed as being limited to the embodiments set forth herein; rather, these embodiments are provided by way of illustration only and so that this disclosure will be thorough, complete and fully convey understanding to those skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 illustrates examples of finger gloves that can be secured on a finger by grasping tails located between thumb and opposing fingers in accordance with certain aspects of this disclosure.

[0015] FIG. 2 illustrates location of a finger glove in an open palm in accordance with certain aspects of this disclosure.

[0016] FIG. 3 provides a lateral view of a hand that illustrates an example of a finger glove located on a finger during use in accordance with certain aspects of this disclosure.

[0017] FIG. 4 illustrates an example of a stretchable finger glove manufactured in accordance with certain aspects of this disclosure.

[0018] FIGS. 5 and 6 illustrate examples of finger gloves with a variety of configurations of tails that may be manufactured in accordance with certain aspects of this disclosure.

[0019] FIG. 7 illustrates a finger glove that may be folded before use or after use in accordance with certain aspects of this disclosure.

[0020] FIG. 8 illustrates a finger glove that may be configured with an active dispensing component in accordance with certain aspects of this disclosure.

[0021] FIG. 9 illustrates a finger glove that may be configured with a spatula, dam, guide or scraper in accordance with certain aspects of this disclosure.

[0022] FIG. 10 illustrates a finger glove that includes a textured pattern in accordance with certain aspects of this disclosure.

DETAILED DESCRIPTION

[0023] The detailed description set forth below in connection with the appended drawings is intended as a description of various configurations and is not intended to represent the only configurations in which the concepts described herein may be practiced. The detailed description includes specific details for the purpose of providing a thorough understanding of various concepts. However, it will be apparent to those skilled in the art that these concepts may be practiced without these specific details. In some instances, well known structures and components are shown in block diagram form in order to avoid obscuring such concepts.

[0024] Certain aspects of the disclosure relate to a finger glove with a tail. In various embodiments, the finger glove may be constructed or may be configurable to fit at least a portion of at least one digit of a hand. In one example, a single digit finger glove may be configured or constructed to fit over at least the tip of one finger or a thumb, while remaining digits (fingers or thumb) are not covered by the single digit finger glove. The single digit finger glove may cover substantially all of the digit or a portion of the digit. The single digit finger glove may provide asymmetrical

coverage of the digit such that the different proportions of the front, back or sides of the digit are covered. In some instances, the single digit glove is manufactured from a deformable elastic material with sufficient stretch capability to fit differently sized digits. In some instances, the single digit glove is manufactured to provide a loose fit with sufficient capacity to fit or accommodate differently sized digits. In some examples, a single digit glove may be usable for covering a thumb or an index finger, including where the thumb is substantially thicker than the index finger. Certain aspects of the disclosure relate to a multidigit finger glove. In some examples, a multidigit finger glove may be configured to provide coverage for two or more fingers using a single sleeve. In some examples, a multidigit finger glove includes two or more sleeves configured to provide coverage for multiple digits, including combinations of the thumb and one or more fingers. It is contemplated that a single sleeve finger glove may be configured to provide coverage for a single digit and may also be used to cover two or more fingers, given sufficient deformability, elasticity and expandability. For the purposes of this disclosure, the example of a single-digit finger glove configured or manufactured to fit at least an index finger is described by way of non-limiting example. The concepts disclosed herein relate also to finger gloves with multiple sleeves and finger gloves with a single sleeve that can cover multiple digits. In one example, a single-sleeve finger glove can, at least partially, cover multiple fingers. In another example, a multi-sleeve finger glove may be used to cover the thumb and one or more fingers.

[0025] FIG. 1 illustrates a first example of a single-digit finger glove **100** configured in accordance with certain aspects of this disclosure. The finger glove may be configured to cover a portion or all of at least one finger of a wearer's hand **110**. The finger glove **100** may include a sleeve **102** and a tail **104**. In some examples, the finger glove **100** may include barrier materials or textiles such as non-woven and woven materials. In some examples, the finger glove **100** may include or be manufactured from vinyl, nitrile or latex or similar materials. In some examples, the finger glove **100** may be manufactured using a single layer of material. In some examples, the finger glove **100** may be manufactured with multiple layers and the layers are formed from the same material. In some examples, the finger glove **100** may be manufactured with multiple layers and two or more layers are formed using different materials. In some examples, the sleeve **102** and the tail **104** of the finger glove **100** may be manufactured using different materials or different combinations of materials. A closely fitting finger glove **100** is illustrated in FIG. 1 in order to enable outlines of joints and portions of the forefinger to be identified when the forefinger is covered by the finger glove **100**.

[0026] The finger glove **100** may be pulled securely over one or more digits of the hand. In the illustrated example, the sleeve **102** is configured to cover at least a portion of the index finger of the wearer's hand **110**, where the index finger may also be referred to as the forefinger, the first finger or the pointer finger. The sleeve **102** is closed at a first end **106** and open at a second end **108** (illustrated by the broken line in FIG. 1). The second end may be drawn over the index finger of the wearer to cover at least a portion of the index finger. Typically, the sleeve **102** covers at least the pad of the index finger when in place on the index finger.

[0027] For the purposes of this description, the pad **172** of a finger **160** is located on the palm side of the hand at the

distal end of the index finger and carries the friction ridges that make the fingerprint. The pad 172 may be substantially located on a palm side or inside of the finger 160 that is opposite the side of the finger 160 that includes the fingernail 164. For the purposes of this description, the pad 172 and fingernail 164 may be considered to be included in the fingertip 162. For the purposes of this description, the term fingertip 162 may refer to the portion of the finger 160 that extends from the outermost point 174 on the finger 160 to the first joint 166 of the finger 160. For the purposes of this description, the finger 160 includes a second joint 168 and a third joint 170, where the finger 160 is joined to the palm of the hand at the third joint 170.

[0028] The finger glove 100 may be constructed such that the sleeve 102 extends past the second end 108 along a portion of the circumference of the second end 108 to form the tail 104. In one example, the tail 104 may connect to the sleeve along 50% or more of the circumference of the second end 108. In other examples, the tail 104 may connect to the sleeve along less than 50% of the circumference of the second end 108. The percentage of circumference of the second end 108 connected to the tail 104 may be determinative of the width of the tail 104, at least at the line of connection with the sleeve 102.

[0029] The finger glove 100 may be worn on the hand 110 such that the sleeve 102 covers the index finger, and such that the tail 104 lies substantially flush with the surface of the palm 112 of the hand 110. In the illustrated example, the uncovered fingers and thumb 114 are shown in the process of closing. At least one of the uncovered fingers and thumb 114 may engage the tail 104 in order to apply a pressure on the surface of the tail 104 directed toward the surface of the palm 112. The pressure may be applied to hold the finger glove 100 securely in place during use or wearing. The application of pressure on the tail 104 may stabilize, lock or hold the sleeve 102 of the finger glove 100 in place without discomforting the wearer.

[0030] A finger glove 100 may be constructed with a sleeve 102 that is configured to cover any type of digit, including the index finger and the thumb. In some applications, the sleeve 102 may be mounted on any of the fingers or the thumb. In some applications, different variants of the finger glove 100 may be available with a sleeve 102 that can be mounted on a designated finger or the thumb. In some instances, the finger glove 100 may be pulled securely over more than one finger. For example, the sleeve 102 may be mounted over two or more fingers, or over the thumb and one or more fingers. The tail 104 may be shaped or configured to accommodate or enable it to be located in the palm of the hand and to facilitate access to other digits that can be used to apply a securing pressure to the tail 104.

[0031] In some examples, a finger glove 140 may be constructed with a sleeve 142 that is sized to accommodate one digit or multiple fingers. In one example, the sleeve 142 of the finger glove 140 may be manufactured from a deformable, elastic material that can expand to enable it to be pulled over at least two fingers 144 and that may take the general shape of a single-digit sleeve 102 when pulled over a single digit. In some examples, the shape and width of the tail 146 may be configured based on the structure or coverage of the sleeve 142.

[0032] In some examples, coverage of the thumb and one or more fingers can be accomplished using two single digit finger gloves 100 or using a multidigit finger glove 120 that

has two or more sleeves 122, 124 and a tail 126. The tail 126 of the multidigit finger glove 120 may include one or more portions sufficient in number, shaped and configured to maintain fit, orientation, stability or security of the sleeves 122, 124 regardless of the combination of fingers covered. In one example, the tail 126 of a two-sleeved multidigit finger glove 120 may be bifurcated with each branch of the tail 126 being angled to provide optimal security and stability for a corresponding sleeve 122 or 124.

[0033] A multidigit finger glove may cover any number of digits up to a configuration that includes 4 sleeves, which may be referred to herein as a finger mitten with tail. It is contemplated that a single digit thumb glove with tail and a finger glove 100, 120 with tail 104, 126 that covers one or more fingers may be joined, manufactured, configured or otherwise combined to enable grip and operation of tools by a wearer. For the purposes of this disclosure, various examples of a single digit finger glove, such as the finger glove 100, can be used to convey, illuminate and illustrate various aspects of the disclosure. The underlying concepts are applicable to multidigit finger gloves, such as the multidigit finger glove 120 illustrated in FIG. 1. Certain concepts disclosed herein are applicable to differently configured finger gloves and to combinations of finger gloves that may be worn concurrently.

[0034] The finger gloves 100, 120, 140 illustrated in FIG. 1 can be used as a liquid-impermeable and/or contaminant resistant barrier between one or more digits and a contact site or foreign matter located at or near the contact site. In some examples, at least a portion of the finger glove 100, 120, 140 is constructed from non-woven or woven web materials or from vinyl, nitrile, latex, certain other polymers or similar materials. In some examples, a finger glove 100, 120, 140 may be manufactured using a textile material that is bonded, stitched or sewn to create a sleeve 102, 122, 124, 142 that may also be referred to as a finger pocket. The tail 104, 126, 146 may be manufactured from the same sheet or layers of material used to manufacture the sleeve 102, 122, 124, 142 and can be provided or configured by extending the sleeve 102, 122, 124, 142 on at least one side. A sleeve 102, 122, 124, 142 manufactured from vinyl, nitrile, latex or another polymer may be formed as a single molded unit with the tail 104, 126, 146 extending on one side beyond the sleeve 102, 122, 124, 142. A finger glove 100, 120, 140 may be constructed with varying colors and sizes.

[0035] A finger glove 100, 120, 140 can be used as a barrier to prevent skin of the wearer from coming into contact with another surface while an activity is performed.

[0036] Barrier protection may be desirable or required when the wearer is applying diaper cream, engaged in personal hygiene activities or care of others. Barrier protection may be desirable or beneficial while the wearer is engaged in activities of daily living, food preparation, maintenance activities or otherwise wishes to avoid physical contact or prevent contamination. The finger glove 100, 120, 140 can be configured such that it is easily donned and can be securely held in place by gripping the tail 104, 126, 146. The finger glove 100, 120, 140 can be doffed by grasping the tail 104, 126, 146 and in a manner that provides for its disposal in an efficient, sanitary manner.

[0037] In some examples, the finger glove 100, 120, 140 has a sleeve 102, 122, 124, 142 that is manufactured from a material that has sufficient elasticity to provide a secure fit without constricting or compressing the finger. An overly

tight fit may cause discomfort and a loose fit may lack security and efficacy as a barrier. An overly tight fit may impede sliding of the sleeve 102, 122, 124, 142 over the finger and may render the glove difficult to don or doff. The tail 104, 126, 146 can be used to assist the wearer with donning the finger glove 100, 120, 140. When the sleeve 102, 122, 124, 142 is in place on the finger, the tail 104, 126, 146 may conform to the surface of the palm 112, where it may be held in place by the thumb or one or more other fingers that are not covered by glove. The wearer may apply pressure on the tail 104, 126, 146 through the other fingers or the thumb to create a secure fit. In some instances, the wearer may grasp the tail 104, 126, 146 using the other fingers or the thumb to secure the fit of the sleeve 102, 122, 124, 142 or to doff the finger glove 100, 120, 140.

[0038] The sleeves 102, 122, 124, 142 of the finger gloves 100, 120, 140 illustrated in FIG. 1 are shown as conforming closely to the shape of the fingers on which they are worn. In other examples, a finger glove may have a sleeve that loosely covers a finger. In these latter examples, the tail of the finger glove may receive substantially all of the restraining force that retains the finger glove in place or that prevents or limits slippage, twisting or rotation of the sleeve during use.

[0039] FIG. 2 illustrates a finger glove 200 worn in an open-palm configuration in accordance with certain aspects of this disclosure. The illustrated finger glove 200 may correspond in some respects to the finger glove 100, 120, 140 illustrated in FIG. 1 and may differ in other respects. For instance, the finger glove 200 may provide a looser fit with respect to the finger glove 100, 120, 140 illustrated in FIG. 1. In some aspects, the finger glove 200 may be illustrative of an optimal fit for a non-deformable finger glove used in some applications in which the index finger is fully extended. In the illustrated example, the sleeve 202 has sufficient length 212 to cover the entire finger from tip to base, while the tail 204 has a length 214 sufficient to reach the ball of the thumb 206. For the purposes of this description, the ball of the thumb 206 is located at the base of the thumb, adjacent to the second joint of the thumb, and may be referred to as the fleshy portion of the palm. In some instances, a shorter length may be preferred for the tail 204 when the hand is in a more closed configuration. The tail 204 may be configured with sufficient length to be reachable by an uncovered finger that can apply pressure to the tail 204 in order to hold the finger glove 200 securely in place. The length of the tail 204 may be selected to prevent a loose portion of the tail 204 from interfering with use of the finger glove 200. For example, a tail 204 that extends beyond the ball of the thumb 206, or that reaches the wrist may flap or fold back over the sleeve 202 and interfere with application of a material to an area being treated by the wearer of the finger glove 200.

[0040] FIG. 3 illustrates examples of finger gloves 300, 310, 320 that may be used in accordance with certain aspects of this disclosure. The illustrated finger gloves 300, 320 may correspond in some respects to the finger glove 200 illustrated in FIG. 2. In each of these examples, the sleeve 302, 322 of the finger glove 300, 320 is in place on an index finger that is slightly bent and the tail 304, 324 is being held in the palm of a hand that is somewhat curved. In this configuration the sleeve 302, 322 has been pulled away from the base of the finger and the tail 304, 324 may extend over at least a portion of the ball of the thumb. In some instances,

the tail 304, 324 may extend slightly beyond the ball of the thumb when the index finger is slightly bent or when the palm is somewhat curved. Side views of the finger gloves 300, 320 are shown in FIG. 3, enabling certain aspects of the connection between sleeve 302, 322 and tail 304, 324 to be observed.

[0041] In a first example, sleeve 302 covers substantially all of the index finger. Here, the tail 304 connects to the sleeve 302 along approximately half the circumference 306 of the sleeve 302. The width of the tail 304 may be selected to be less than or greater than half the circumference 306 of the sleeve 302 in accordance with the intended or expected use of the finger glove 300; to meet mechanical, structural or material design specifications; or for other reasons including aesthetic or ergonomic reasons. The length of the sleeve 302 and length of the tail 304 may also be selected according to intended or expected use of the finger glove 300. Selection of the length of the sleeve 302 and tail 304 may be further based on the type of material used to construct the finger glove 300.

[0042] In a second example, sleeve 312 has an enclosed section that is configured to fully cover a portion of the fingertip and to partially cover the remainder of the finger. In the illustrated example, the sleeve 312 is closed at one end and is configured to fully cover a first portion of the fingernail 316. The sleeve 312 is configured to leave a second portion of the fingernail 316 exposed as well as the majority of the back 314 of the finger.

[0043] In a third example, sleeve 322 has an enclosed section configured to cover a portion of the index finger. In the illustrated example, the sleeve 322 is closed at one end and fully covers the finger from the fingertip to the second joint 328. The enclosed section terminates along a second joint line 330 that roughly corresponds to the expected location of the second joint 328. In some instances, the sleeve 322 includes a middle portion 326 of the finger glove 320 that extends from the second joint line 330 to a line 332 that roughly corresponds to the expected location of the third joint where the finger meets the palm of the hand. In another example, the sleeve 322 and tail 324 meet at some intermediate line 334 within the middle portion 326 of the finger glove 320.

[0044] The nature or function of the middle portion 326 of the finger glove 320 may determine whether it belongs to the sleeve 322 or the tail 324. In one example, the sleeve 322 and the tail 324 are manufactured from different materials or with different numbers of layers. In another example, the sleeve 322 and the tail 324 have different tensile strengths or elasticities. In another example, the sleeve 322 and the tail 324 exhibit different permeabilities or different resistance to certain chemicals. In another example, the middle portion 326 may be used to anchor the finger glove 320 between two digits of the hand when in use and can be considered to function in some respects as part of the tail.

[0045] The width of the tail 304, 324 may be selected to be less than or greater than half the circumference 306, 336 of the sleeve 302, 322 based on the intended or expected use of the finger glove 300, 320 to meet mechanical, structural or material design specifications, or for other reasons including aesthetic or ergonomic reasons. The length of the sleeve 302, 322 and tail 304, 324 may also be selected according to intended or expected use of the finger glove 300, 320. Selection of the length of the sleeve 302, 322 and tail 304,

324 may be further based on the type of material used to construct the finger glove **300, 320**.

[0046] In one example, an inelastic non-deformable finger glove **300, 320** may be provided in multiple sizes to fit different hand sizes. In another example, an elastic deformable finger glove **300, 320** made from a material that can be stretched sufficiently to enable manufacture of a single sized finger glove that can fit a variety of hand sizes. An elastic deformable finger glove **300, 320** may enhance the security of fit. For example, elastic deformable materials may compress or tighten around the finger when the tail is gripped and/or when tension is applied. In some instances, the finger glove **300, 320** may include a tightening mechanism that can be engaged by the wearer or that is automatically engaged to provide a secure fit without compromising the ease of donning and doffing the finger glove. In one example, the tightening mechanism may be provided as a band of increased elasticity at the base of the sleeve **302**. In another example, the tightening mechanism may include a draw-string.

[0047] FIG. 4 illustrates configurations **400, 420** of a finger glove provided in accordance with certain aspects of the disclosure. The finger glove may correspond to the finger gloves **100, 200** or **300** illustrated in FIGS. 1-3, for example. In a first configuration **400**, the finger glove is not in use and in the second configuration **420**, the finger glove may be in use and stretched over a finger of a hand.

[0048] In the first configuration **400**, the material forming the sleeve **402** and the material in the tail **404** may be relaxed and in an unstressed or rest state. In some instances, the material forming the sleeve **402** and/or the material in the tail **404** may be inelastic or may resist deformation. The sleeve **402** and tail **404** may intersect along a transition line **406**. In some instances, the transition line **406** corresponds to a physical change in thickness, density or type of material or to a significant change in cross-sectional structure of the finger glove. In some instances, the sleeve is closed or substantially closed and the tail **404** has a width that is a fraction of the circumference of the sleeve **402** measured at the transition line **406**.

[0049] In the second configuration **420** the finger glove is being worn on one digit and held place by a securing digit **430** of the same hand. In one example, the finger glove is being worn on the right hand and is held in place by the thumb. In another example, the finger glove is being worn on the left hand and is held in place by an uncovered finger. Of course, the orientation, location and placement of the securing digit **430** may be different for different wearers or for different combinations of covered finger and securing digit **430**.

[0050] In the second configuration **420**, the finger glove may be constructed from a deformable, elastic material and may be stretched or deformed during use. A securing or retaining force or pressure may be applied by the securing digit **430** at a point on the finger glove that is displaced from the center line **440** of the finger glove and may result in an asymmetric deformation or stretching of the finger glove. In the illustrated example, asymmetric deformation or stretching is indicated by the angle of the transition line **426**. The stretched finger glove may have a maximum length **434** that exceeds the length **414** of the unstretched finger glove. In the illustrated example, the average stretched length of the sleeve **402** exceeds the length of the sleeve **402** when not being worn, and the average stretched length of the tail **404**

exceeds the length of the sleeve **402** when not being worn. In some implementations, the sleeve **402** and/or tail **404** may be relatively rigid and may not stretch significantly. The finger glove may have an average or median width **432** when worn that is less than the average or median width **412** when the finger glove is not in place on a finger and stretched. Differences in width at different locations along the length of the finger glove may change when the finger glove is pulled over a finger and held in place under an applied pressure or force.

[0051] The maximum length **434** of the finger glove in the second configuration **420** may be dependent on the point **428** at which securing pressure or force is applied by finger or thumb during use. In one example, application of securing pressure or force near the distal end (with respect to the sleeve **402**) of the tail **404** may cause a different deformation than the deformation caused when the securing pressure or force is applied to a point close to the sleeve **402** or to the sleeve **402** itself.

[0052] According to certain aspects of this disclosure, a finger glove may be manufactured with dimensions that obtain a desired coverage of a finger when the finger glove is in use. In many examples, coverage is desired for the entire finger, while in other examples coverage of at least a portion of the lower finger is optional or not required, and in at least some applications not desired. In some examples, the overall length of the finger glove may be determined as a multiple of digit length. In one example, a finger glove may have an "in-use" length that is 2.25 times the length of the covered finger portion. In another example the multiple of covered digit length may be selected to be at least 2.0 and may be selected to have a value up to 3.5. In another example the multiple of covered digit length may be selected to be less than 1.0, including a majority of at least one side of the finger is covered. In another example the multiple of digit length may be selected to be at least 0.5 and may be selected to have a value up to 4.5.

[0053] In some examples, the dimensions of the finger glove may be determined using a ratio of tail length **418, 438** to sleeve length **416, 436**. A base range of ratios for typical uses may provide that the ratio of tail length **418, 438** to sleeve length **416, 436** may range from 1:4 to 4:1. The ratio may be selected based on structure, stretchability and elasticity of the sleeve **402** and tail **404**, the maximum length of any portion of the finger covered by the sleeve **402** and/or anatomical aspects of a type of person expected to use the finger glove. In some examples, the ratio of tail length **418, 438** to sleeve length **416, 436** may range from 1:2 to 1:1. Some uses may support ratios of tail length **418** to sleeve length **416, 436** that lie outside the base range. In some instances, the dimensions of the finger glove may be selected as needed or desired to accommodate the anatomy of the intended or expected wearer. For example, the ratio or size of tail may be different for adults and children, and the tail may have a length suitable of use by young children in art projects, etc. In some examples, the dimensions of the finger glove may be selected based on anatomy of the intended or expected wearer in order to obtain a desired fit of the tail within the palm of the hand.

[0054] In some implementations, a finger glove may be sized to fit a range of finger sizes when the finger glove or a portion of the finger glove is manufactured using one or more materials that do not permit the sleeve **402** or tail **404** to be stretched. In these implementations, the finger glove

may be sized such that the tail **404** covers at least a portion of the ball of the thumb. In these implementations, the ratio of the tail length **418** to sleeve length **416** may be sized according to application and the width or circumference of the sleeve **402** may be sized to provide a fit that ranges from loose to snug depending on the dimensions of the covered finger.

[0055] In some implementations, the finger glove is constructed from stretchable elastic materials. These stretchable elastic materials may enable a single-sized finger glove (i.e., measured when not in use) to be used to cover a variety of finger sizes, palm sizes and hand sizes. The stretchable elastic materials may provide a snug fit that provides improved tactile feedback to the wearer and enables finer control during use and more precise placement of the finger glove and materials applied using the finger glove. The stretchable elastic materials may adapt to hands, palms and fingers of different proportions. For example, the stretchable elastic materials may enable a sleeve **402** to be stretched sufficiently to cover a desired portion, or all of a finger length, causing the tail **404** to extend further into the palm area. The securing pressure or force may be applied by finger or thumb to a part of the palm and through a point in the tail **404** that may vary with force applied to the sleeve **402** or amount of deformation resulting from the applied force. In one example, the proportion of the tail **404** that is stretched decreases as the securing pressure or force is applied closer to the transition line **406**, **426**, causing a corresponding reduction in variation of the maximum length **434** of the finger glove.

[0056] According to certain aspects of this disclosure, finger gloves may be configured with different sizes and shapes of sleeve **402** and tail **404** to enable use in different applications. In some instances, multiple sizes of finger gloves may be provided to support different sizes of hand, different proportions of fingers to palm size, or to enable multiple fingers to be covered while the finger glove is held in place by a single tail **404**.

[0057] In some instances, finger gloves may be sized to be worn over a glove. Various aspects of the disclosure are applicable to the use of finger gloves to provide an additional layer of protection from contamination or exposure to chemicals and other materials, or to provide additional layers of thermal or electrical insulation. In one example, a wearer of a finger glove may cover the entire hand with a glove that provides primary protection or insulation and may wear a finger glove to contact, apply or handle a chemical or other material without providing a contamination path between the underlying full glove and a location being manipulated by the wearer. The finger glove may prevent contamination from occurring in either direction.

[0058] Finger gloves may be manufactured using a colored material. Colors can be decorative or practical in nature. The composition and combination of materials used for manufacturing the finger gloves may be selected based on applications and cost factors. Disinfecting elements or other products may be integrated into materials used for manufacturing the finger gloves. In some implementations, reinforcements may be embedded in the materials used for manufacturing the finger gloves to strengthen certain portions of the device. In some implementations, reinforcements may be bonded to the finger gloves to strengthen certain portions of the device.

[0059] FIG. 5 illustrates finger gloves **500**, **510**, **520**, **530** provided with different tail configurations in accordance with certain aspects of this disclosure. Each of the finger gloves **500**, **510**, **520**, **530** has a sleeve **502**, **512**, **522**, **532** that is formed as a pocket **506**, **516**, **526**, **536** that can be slid over a finger. In some examples, the pockets **506**, **516**, **526**, **536** of the finger gloves **500**, **510**, **520**, **530** have a substantially cylindrical cross-section when fully opened. In some examples, the openings to the pockets **506**, **516**, **526**, **536** of the finger gloves **500**, **510**, **520**, **530** have a substantially elliptical cross-section when the pockets **506**, **516**, **526**, **536** are partially opened. The first finger glove **500**, which is provided for comparison purposes, may correspond to any of the finger gloves **100**, **200** or **300** illustrated in FIGS. 1-3. The first finger glove **500** has a tail **504** that is effectively an extension of a portion of the sleeve **502**.

[0060] In some examples, a finger glove may have multiple tails that can support a large number of gripping locations on the palm of the hand or on the back of the hand or between uncovered fingers. In some examples, a finger glove may be worn such that the tail extends from a portion of the sleeve that covers the back of one or more fingers or the back of the thumb. In the latter examples, the tail may be directed in a lateral direction along the base of the fingers and passed between two of the fingers onto the palm. A force or pressure may be applied to the tail as it passes between the two fingers. In some instances, another finger or the thumb is used to press the tail against the palm.

[0061] In some examples, a tail of a finger glove may be at least partially formed with one or more string, cord or wire portions. Increased gripping options may be obtained when the finger glove is manufactured with one or more string, cord or wire tails.

[0062] The second finger glove **510** has a tail that includes a string or cord **518** and, optionally, a grip **514**. In one example, the grip **514** may be omitted and a securing force may be applied when an uncovered finger or thumb presses the string or cord **518** against the palm. In another example, the grip **514** may be omitted and the string or cord **518** may be wrapped around an uncovered finger or thumb or held between two uncovered digits. When provided, the grip **514** may be configured to receive a pressure or force from an uncovered finger or thumb that causes the grip **514** and thereby the second finger glove **510** to be secured. In some instances, the string or cord **518** may be part of a drawstring that can be used to seal the opening to the pocket **516**.

[0063] The third finger glove **520** has a shaped tail **524**. The shape of the tail **524** may be selected to facilitate manipulation of the tail **524**, for comfort of the wearer, or for other reasons. In other examples, the proximal end of a tail (with respect to the sleeve) may taper toward the distal end. The distal end may be rounded or squared. In some instances, the distal end of the tail may be sculpted according to intended application. In the illustrated example, the tail **524** includes a contour section **528** that initially tapers toward the distal end before expanding again. In some instances, the tail **524** may be sculpted or contoured according to intended application.

[0064] The fourth finger glove **530** has an angled tail **534**. A central axis **540** of the tail **534** and a central axis **538** of the sleeve **532** intersect at the transition, join or boundary between the sleeve **532** and the tail **534**. In the illustrated example, the fourth finger glove **530** may be configured to be worn on the index finger of the right hand such that an

angle 542 provided between the central axis 540 of the tail 534 and a central axis 538 of the sleeve 532 causes the tail 534 to extend from the sleeve toward the center of the palm. The angle 542 may be provided to ensure the tail 534 does not interfere with work performed by the wearer, to facilitate grip or manipulation of the tail 534, for comfort of the wearer, or for other reasons.

[0065] In some examples, the tail 504, 524, 534, cord 518 or grip 514 extends from the sleeve 502, 512, 522 or 532 toward the palm or wrist of the hand on which the finger glove 500, 510, 520, 530 is worn. It is anticipated that in some applications, benefit may be derived from wearing the finger glove 500, 510, 520, 530 such that the tail 504, 524, 534, cord 518 or grip 514 lies on the back of the hand when in use. In these applications, the tail 504, 524, 534, cord 518 or grip 514 may be gripped or held against the back of the hand by a force applied by a finger of the user's other hand. In certain applications, the tail 504, 524, 534, cord 518 or grip 514 may be coated with a tacky or adhesive material that allows the tail 504, 524, 534, cord 518 or grip 514 to held in place without additional pressure or with reduced applied force.

[0066] For each of the illustrated finger gloves 500, 510, 520, 530, the tail 504, 524, 534 or grip 514 covers only a portion of the palm of the intended wearer. The tail 504, 524 or 534 may have a length or width selected based on an intended or possible use of the finger glove 500, 510, 520, 530. The width of the tail 504, 524, 534 or grip 514 may be less than the circumference of the corresponding sleeve or less than the width of corresponding sleeve when flattened. The distal end may be rounded or squared.

[0067] FIG. 6 illustrates additional examples of tail configurations for finger gloves 600, 620 manufactured in accordance with certain aspects of this disclosure. A left-handed finger glove 600 and a right-handed finger glove 620 are illustrated. The left-handed finger glove 600 may be configured to cover the index finger of the left hand or a finger to the left of the index finger on the right hand. The right-handed finger glove 620 may be configured to cover the index finger of the right hand or a finger to the right of the index finger on the left hand. The profile of both the left-handed finger glove 600 and a right-handed finger glove 620 is represented generally at 640.

[0068] In these examples, the tail 604 or 624 extends from the sleeve 602 or 622 toward the palm or wrist of the hand on which the finger glove 600, 620 is worn. It is anticipated that in some applications, benefit may be derived from wearing the finger glove 600, 620 such that the tail 604, 624 lies on the back of the hand when in use. In these applications, the tail 604, 624 may be gripped or held in place 606, 626 by a finger 608, 628 of the user's other hand. In certain applications, the tail 604, 624 may be coated with a tacky or adhesive material that allows the tail 604, 624 to held in place without additional pressure.

[0069] In the illustrated examples, each tail 604, 624 has a width 610, 630 that exceeds the width 612, 632 of the corresponding sleeve 602, 622. Each tail 604, 624 in the illustrated examples extends to one side of the corresponding sleeve 602, 622. In other examples, the tail 604 or 624 may extend symmetrically past two sides of the corresponding sleeve 602, 622. The extended portion of the tails may be tapered in either direction, scalloped or otherwise shaped to provide a comfortable or secure fit.

[0070] The tail 504, 524, 534, 604, 624, cord 518 or grip 514 of the finger gloves 500, 510, 520, 530, 600, 620 in FIG. 5 or 6 may be constructed from the same material used to construct the sleeve 502, 512, 522, 532, 602, 622 or from a different material. In one example, the sleeve 502, 512, 522, 532, 602, 622 may be elastic while the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may be inelastic. In another example, a sleeve 502, 512, 522, 532, 602, 622 may be constructed from a latex or nitrile material.

[0071] In some implementations, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may include one or more surfaces that enhance or provide grip. For example, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may include one or more surfaces that are formed, treated, coated or otherwise manufactured with a non-slip material that can enhance grip and secure fit. The tail 504, 524, 534, 604, 624, cord 518 or grip 514 may include multiple layers of material. In some instances, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 has increased thickness with respect to the walls of the corresponding sleeve 502, 512, 522, 532, 602, 622 to provide strength or increased substance for gripping. In some instances, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 has a slit provided therein, where the slit may enable a finger or thumb to pass through. In some instances, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 has one or more loops through which a finger or thumb can pass. In some instances, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 has one or more pockets that can engage a fingertip to create tension or secure fit of the sleeve. In operation, the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may serve as a handle.

[0072] One or more surfaces of the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may be coated or manufactured with a tacky or non-slip finish. The tail 504, 524, 534, 604, 624 or grip 514 may have any desired shaped shape or form extending from the sleeve 502, 512, 522, 532, 602, 622. In some implementations, an attachment mechanism or fastener may be coupled to the tail 504, 524, 534, 604, 624, cord 518 or grip 514 to secure the finger glove to a hand or wrist of the wearer. In some implementations, the tail 504, 524, 534, 604, 624 or grip 514 may be folded over to cover or encompass the sleeve 502, 512, 522, 532, 602, 622. In some implementations, a fastener at the distal end of the tail 504, 524, 534, 604, 624, cord 518 or grip 514 may be provided to enable the tail 504, 524, 534, 604, 624, cord 518 or grip 514 to be secured while folded over, covering or encompassing the sleeve 502.

[0073] The tail 504, 524, 534, 604, 624 or grip 514 of the finger gloves 500, 510, 520, 530, 600, 620 of FIG. 5 or 6 may be configured to serve as a protective barrier after use. For example, the tail 504, 524, 534, 604, 624 or grip 514 may be folded after use to cover the portion of the finger glove that contacts a surface being treated by the user in order to serve as a protective barrier and permit handling of the used finger glove in a sanitary, sterile and otherwise clean manner.

[0074] FIG. 7 illustrates a finger glove 700 that may be folded before use or after use in accordance with certain aspects of this disclosure. As shown generally at 710, the finger glove 700 may be folded before use to preserve the sterility or cleanliness of a surface of the sleeve 702. The finger glove 700 may be folded after use in order to contain materials adsorbed to the sleeve 702. For example, during certain uses, diaper cream, antiseptics, waste materials,

chemicals and other substances can adhere to a surface of the sleeve 702. In some examples, the tail 704 of the finger glove 700 may have a shape, length and width configured to provide a barrier for palm surfaces during use and to provide for safe handling when folded over the sleeve 702 after use.

[0075] The tail 704 may have a shape, length and width configured to enable the tail 704 to be used for pulling the sleeve 702 of the finger glove 700 on and off a finger or thumb. As shown generally at 720, a reverse force (the removal force 710) may be applied to the tail 704 in order to pull the finger glove 700 off the covered finger or thumb. As shown generally at 730, the removal force 710 applied to the tail 704 may pull the finger glove 700 inside out as the sleeve 702 is removed from the covered finger or thumb. The opening of the pocket 706 may have a notched shape 708 such that the apex 714 of the notched opening is connected to the tail 704 and the resulting graduated resistance to the application of the removal force 710 facilitates the folding of the sleeve 702 in a desired manner. For example, the apex 714 of the notched opening may be pulled away from the surface of the sleeve 702 in a manner that improved the ability of the finger glove 700 to capture or contain any contaminants on the surface of the sleeve 702. Folding the sleeve 702 causes an inner surface 712 of the sleeve 702 to become exposed and available for contaminant free contact when the wearer is removing the finger glove 700.

[0076] The tail 704 may have a shape, length and width sufficient to cover an exterior surface on a portion of the finger glove 700 when folded. Covering the exterior surface of the finger glove 700 can provide enhanced sanitary benefits by containing material that the finger glove 700 has contacted during use. The shape, length and width of the tail 704 may be configured based on intended use, and other product design considerations. For example, the shape, length and width of the tail 704 may be configured to accommodate variations of hand size.

[0077] The tail 704 of the finger glove 700 may be configured to provide certain additional beneficial functionalities. For example, the finger glove 700 is convenient to don as a finger can deftly slide into the opening of the pocket 706. The tail 704 enables the sleeve 702 to be pulled into its final configuration, which may provide a snug and secure fit for the finger. The tail 704 enables the finger glove 700 to be safely and hygienically removed after use, which use may include application of a product or chemical or the use of the covered finger to contact a potentially contaminated surface. Safe and hygienic removal of the finger glove 700 can be accomplished when the finger glove 700 is removed in a folded or unfolded configuration. Safe and hygienic removal of the finger glove 700 can be accomplished when the sleeve 702 is slid off the finger for disposal without any spread of product, contaminant or other substances to other uncovered parts of the hand or the surrounding environment. Safe and hygienic removal of the finger glove 700 can be accomplished when the sleeve 702 is removed with containment of products, chemicals, contaminant or other substances and with no additional contact between the skin of the user and the soiled area.

[0078] In some implementations, multiple finger gloves may be packaged such that the tails 704 of the finger gloves are coupled at the distal end. In one example, the tail 704 of each finger glove 700 may be initially longer than needed for the intended use and the extra length may be torn off as the

finger glove 700 is removed from packaging or cut as the finger glove 700 is removed from a dispenser.

[0079] The sleeve 702 of the finger glove 700 may include surface portions that have different mechanical properties, textures, treatments or finishes. In one example, soft or smooth finishes may be provided on the interior surface of the sleeve 702. Soft or smooth finishes may also be provided on portions or all of the outer surface of the sleeve 702, including when necessary to ensure non-irritating contact between skin and the sleeve 702. In some examples, the exterior surface of the sleeve 702 may include an absorptive material that enables the finger glove 700 to be used in applications that involve removal of fluids or other materials. In some examples, materials used to manufacture the sleeve 702 or the tail 704 may be infused with products that enable the resultant glove to be used in certain predefined applications. In one example, a surface of a sleeve may be treated with isopropyl alcohol, a biologic, moisturizer, an antiseptic or other topical medicine, natural remedy, analgesic or moisturizer when the tailed glove is expected to be used in the treatment of wounds, or conditions such as eczema, dermatitis and other conditions. In one example the finger glove 700 may be used as an alcohol wipe, antiseptic or other type of cleaning device. In another example, a surface of a sleeve 702 may be coated or treated with diaper cream.

[0080] FIG. 8 illustrates a finger glove 800 configured with an active dispensing component in accordance with certain aspects of this disclosure. In the illustrated example, the sleeve includes a reservoir 806. As shown in the first palm-side view 820, the reservoir 806 may be located at or near the tip of the finger glove 800. In one example, the reservoir 806 may include or be coupled to a channel, pipe, conduit or conductive material that allows a fluid, cream or other material in the reservoir 806 to be conducted to the surface of the sleeve 802. The reservoir 806 may be prefilled with a material. In some instance, the reservoir 806 may be filled with the material immediately prior to usages of the finger glove 800 that are expected to involve the application of fluids, creams or other materials. In one example, the reservoir 806 may be coupled or attached to the finger glove 500 during manufacture or prior to use. In another example, the reservoir may be formed as a pocket fluidically coupled to an outer surface of the sleeve 802 such that pressure applied to the outer surface causes a fluid to flow from the reservoir 806 onto the outer surface and then to an object or treatment location.

[0081] In the illustrated example, fluid exits the reservoir 806 through a nozzle 808 that is formed as a hole in the reservoir. In one example, the hole may be sufficiently small to resist outflows of the fluids maintained in the reservoir 806. In another example, the nozzle may include one or more flaps 810 that resist outflows of fluids. As shown generally at 812, the nozzle 808 may be sealed using a piece of film or tape 814 that may be removably attached when the finger glove 800 is manufactured, or after the reservoir 806 is filled or when the finger glove 800 is being prepared for use. In some instances, the tail 804 may be serve as a sealing film prior to use of the finger glove 800.

[0082] The second palm-side view 830 shows another example of an active dispensing component provided in accordance with certain aspects of this disclosure. Here a pump 818 is provided in or on the tail 804. In some examples, the pump 818 is located such that a wearer can

exert a force on the pump that pressurizes a conduit **816**. The conduit may be coupled to a reservoir or dispenser **812** and increased pressure in the conduit may force the contents of the reservoir through a nozzle **808**. In some examples, the pump **818** may also hold and supply apply fluids, creams or other materials to the dispenser **812**.

[**0083**] FIG. 9 illustrates a finger glove **900** that may be configured with a spatula, dam, guide or scraper in accordance with certain aspects of this disclosure. The spatula, dam, guide or scraper may be formed from a relatively stiff material and may be positioned, shaped, sized and oriented in accordance with its intended use. In one example, one or more sides of the sleeve **902** of the finger glove **900**, or in some instances, the tail **904**, include a structure **906** shaped as a spatula, dam, guide, scraper or other edge usable to spread ointment, cream, baker's frosting or other materials. The structure **906** is aligned in a lengthwise orientation with the sleeve **902** and is shown in a palm-side view **920**.

[**0084**] In the example shown generally at **930** a structure **908** shaped as a spatula, dam, guide, scraper or other edge usable to spread ointment, cream, baker's frosting or other materials is aligned in a lateral or sideways orientation with the sleeve **902**. In the example shown generally at **940** a structure **910** shaped as a spatula, dam, guide, scraper or other edge usable to spread ointment, cream, baker's frosting or other materials is provided on the tip of the sleeve **902**.

[**0085**] In the example shown generally at **950**, a structure **912** may be configured for use as a gouge, excavation tool, a writing tip, a highlighter tip or a pointer used to identify a location, object or area of attention. In some implementations, a writing tip or highlighter tip may be coupled to a reservoir that is configured to provide a supply of ink, colored fluid, graphite or other writing substance to the writing tip or highlighter tip. In some implementations, the writing tip or highlighter tip may be impregnated with an ink, colored fluid, graphite or other writing substance.

[**0086**] In some examples, a structure **906**, **908**, **910** or **912** may be configured with a sharp edge and/or a straight or serrated cutting edge. The structure **906**, **908**, **910** or **912** may be configured to pierce or penetrate a material. In one example, the structure **906**, **908**, **910** or **912** may serve as a letter opener, box cutter or the like.

[**0087**] In some examples, functionality may be enhanced by configuring the height, width or continuity (broken, unbroken, wavy, undulating, etc.) of the structure **906**, **908**, **910** or **912**.

[**0088**] FIG. 10 illustrates a finger glove **1000** that includes a textured pattern **1006**, **1008** on at least a portion of the surface of the sleeve **1002**, and/or in some instances on the tail **1004**. In one example, the textured pattern **1006** may include parallel lines as shown in the first palm-side view **1010**. In another example, the textured pattern **1008** may include dots as shown in the second palm-side view **1020**. Other shapes or patterns may be formed on the finger glove **1000**. The pattern may be embossed on the tip of the sleeve or brushed on to the sleeve **1002**. In some instances, a texture may be provided on the sleeve to improve grip, for example. The texture may vary along the length or across the width of the sleeve **1002**. Texture form, spacing and dimensions (of ridges, dots, chevrons etc.) may be selected to enhance fingertip functionality is enhanced.

[**0089**] In some examples, fingertip functionality may be enhanced by configuring the height, width or continuity

(broken, unbroken, wavy, undulating, etc.) of the parallel lines or dots in the textured pattern **1006**, **1008**. The functionality may be enhanced by including a mix of lines and/or dots in a textured pattern **1006**, **1008**, where the lines may be parallel, non-parallel, of the same or different lengths, of the same or different widths or of the same or different heights. The height and arrangement of the elements of the textured pattern **1006**, **1008** may be selected and configured to provide a universal or specialized gripping capability, or to serve some other purpose. In one example, the textured pattern **1006**, **1008** may provide a roughened surface that can be used as in applications that require or benefit from a rubbing, abrasive or abrading application of force applied by a digit of the wearer's hand. The roughened surface may be formed from a hard material when, for example, the area containing the textured pattern **1006**, **1008** is expected to be used as a rasp, a file or brush. In some instances, the roughened surface may be formed by attaching an emery board or brush material to a spatula, or spatula-like structure of the finger glove. In another example, the textured pattern **1006**, **1008** may provide an undulating surface that can be used in certain applications that involve massaging a surface or manipulating a material into a rough, uneven, creased, grooved or ridged surface by application of force applied by a digit of the wearer's hand.

[**0090**] The presently disclosed finger glove provides certain structural advantages over conventional devices. For example, the device includes (1) a tail that extends beyond one portion of the finger glove bottom; (2) the finger glove can be provided with a semi-loose fitting allowing for easy donning and doffing; (3) the unique tail design allows for a secure fit; and (4) the tail can be incorporated into dispensing unit for convenient and sanitary dispensing and donning of glove. The device can provide a convenient and hygienic way to provide a barrier without requiring a full glove.

[**0091**] Certain functions and processes performed using the disclosed finger gloves are enhanced, optimized and otherwise improved with respect to usage of conventional devices. In one example, a secure fit of the finger glove can be achieved by grasping the tail between the palm of hand and the thumb or one or more uncovered fingers, thereby securely holding the finger glove in place. In another example, the tail can be grasped with fingers and/or a thumb of an opposite hand to enable quick removal of the finger glove. In another example, finger and hand dexterity is maintained when the finger glove is worn and in use. In another example, the sleeve of the finger glove can be easily pulled over a finger or thumb without causing contact between skin and other surfaces.

[**0092**] According to certain aspects of the disclosure, a finger glove with a tail can be configured to cover one finger and may be used as a liquid-impermeable, contaminant resistant barrier between the finger and foreign materials including liquids at a contact site. Construction materials may be selected to provide a barrier to harmful or infectious materials and, in some instances, material with disinfecting components, characteristics or attributes may be used. The finger glove may operate as a barrier in applications where contact with another surface involves application of diaper cream, personal hygiene, care of others, activities of daily living, food preparation, maintenance activities and physical contact where it is desirable to avoid or prevent contamination or infection.

[0093] According to certain aspects of the disclosure, a finger glove, or the sleeve of a finger glove includes two or more layers of material that are bonded together. In some instances, the finger sleeve includes two or more layers of material that are stitched or sewn to obtain the finger sleeve. In some examples, a finger glove may be constructed from barrier materials, including textiles, or polymers including vinyl, nitriles, natural and synthetic latexes or similar materials. Textiles used for construction may be non-woven or woven. In some examples, a finger glove may be constructed from a material formed through a bonding or sewing process to create a finger pocket (the sleeve portion). Bonding or sewing enables the introduction of additional materials which may be needed or desired for certain applications. A finger glove may be manufactured as a single molded unit from latex, nitrile, vinyl or another polymer.

[0094] Certain materials used to construct a finger glove may be stretchable and may be used to form a finger glove that fits over one or more fingers or over a thumb and one or more fingers. A finger glove may be manufactured from a stretchable, elastic material to provide a secure fit while maintaining comfort of the wearer by limiting tightness of fit. In one example, a secure fit can be achieved when a stretchable, elastic material is configured to compress and tighten around a finger or thumb when the tail is gripped or when tension is otherwise applied to the sleeve portion. In some examples, a tightening mechanism may be engaged to provide a secure fit without compromising the ease of donning and doffing the finger glove.

[0095] In certain examples, a finger glove includes a finger sleeve that substantially covers or conforms to a finger, and a tail extending from the finger sleeve on one side of the finger toward the palm or wrist. The finger sleeve may form a barrier operable to prevent material contacting an outer surface of the finger sleeve from reaching an inner surface of the finger sleeve. The tail may include a gripping portion configured to receive a force sufficient to draw the finger sleeve into conformity with a shape of a portion of the finger. The gripping portion may be configured to enable the finger sleeve to be separated from the finger while preventing the material contacting the outer surface of the finger sleeve from reaching the finger.

[0096] According to certain aspects of this disclosure, a finger glove may be constructed with a sleeve that can cover at least a portion of any type of digit, including an index finger or a thumb. The tail may be shaped or be sufficiently flexible to accommodate usage in which different fingers or the thumb are covered. The sleeve may be sized to accommodate one digit or multiple fingers. Typically, coverage of the thumb and one or more fingers is accomplished using two single digit finger gloves or a specially configured multidigit finger glove that has at least two sleeves. In some examples, a multidigit finger glove is configured with one or more tails sufficient to maintain the fit, orientation, stability or security of the digital sleeves of the multidigit finger glove. The multidigit finger glove may cover any number of digits up to a configuration with 4 sleeves, referred to herein as a finger mitten with tail. It is contemplated that a single digit thumb glove with a tail and a finger glove with a tail that covers one or more fingers may be used concurrently, joined or manufactured as a single unit to enable a wearer to grip or operate a tool.

[0097] Each sleeve of a finger glove may be configured to cover at least a portion of the finger on the top side of hand.

Coverage can vary between partial covering and complete coverage. In one example, partial coverage includes the tip of a finger. Sleeves may be tapered towards tip of finger to provide better fit and more control for certain applications. At least a portion of the sleeve may be constructed from an elastic or deformable material that permits the sleeve to conform to the shape of the covered digit. A sleeve of a finger glove may include an interior surface that has a tacky surface that prevents lateral motion or rotation of the sleeve with respect to the finger upon which the sleeve is mounted.

[0098] The presently disclosed finger glove may be constructed from materials that are waterproof, water resistant, or that provide a moisture barrier. In some examples, the finger glove may be constructed from a material that is impervious to microbial, cellular or large molecules or that has been treated to provide a barrier to microbes, cells or large molecules.

[0099] A finger glove may be manufactured or augmented with one or more additional features that support or enable the use of the finger glove for certain specific or intended applications. In one example, the sleeve of the finger glove may have breakaway sides that enable a custom fit or improve comfort of the wearer. In another example, the sleeve portion may be reversed such that the outer surface during use becomes the inner surface after use, facilitating safe and hygienic disposal. In some examples, the finger glove may be manufactured from a material that can be washed, sanitized and/or sterilized, enabling multiple uses of the finger glove. In some instances, a silicone material may be used to manufacture a reusable finger glove.

[0100] A finger glove manufactured or configured in accordance with certain aspects of this disclosure may be used in various applications and manners. In one example, a finger glove may be employed to enable sanitary touch of keypads or touch screens in public areas, including automated teller machines (ATMs), card readers, self-service baggage at airports or other transportation departure points, keyless entry pads and other such devices. A finger glove may be used to protect an individual from contact with unsanitary objects or toxic chemicals, including when the individual is counting money, using glue, wax or adhesives. The finger glove may serve as a barrier that prevents or limits exposure to toxic chemicals or from potentially infectious contact with an object or another person. Moreover, the finger glove used as a barrier may protect an object from damaging exposure to oils, particles, dirt or fluids through direct contact with the skin of a person handling the object. A finger glove may be constructed of a material suitable for cleaning small spaces or fine objects.

[0101] In certain examples, a finger glove has a sleeve that is manufactured or configured to conform to a finger or thumb of a hand, the sleeve forming a barrier operable to prevent a substance contacting an outer surface of the sleeve from reaching an inner surface of the sleeve, and a tail extending from the sleeve and toward a wearer's palm or wrist and configured to receive a force from an uncovered digit of the hand, the tail being sufficient to retain the finger glove in place while the finger glove is worn on the hand. In some examples, the tail may extend to at least the ball of the thumb when the finger glove is worn on the hand. In some examples, the tail may extend from the sleeve to a location on the palm short of the wrist when the finger glove is worn on the hand. In some examples, the tail extends at an angle from the sleeve and across the palm. The angle 542 may be

provided or measured between the central axis **540** of the tail **534** and a central axis **538** of the sleeve **532** (see FIG. 5). The angle **542** may cause the tail **534** to extend from the sleeve toward the center of the palm. The angle **542** may cause the tail **534** to extend from the sleeve toward a far side or more distant side of the palm. In the latter examples, the tail may cover a portion of the ball of the thumb and/or a portion of the palm adjacent to the ball of the thumb. One or more portions of the finger glove may be manufactured from a stretchable, elastic material that enables the finger glove to be stretched to snugly or securely fit the finger or thumb of a hand.

[0102] In some examples, the tail has a gripping portion configured to receive the force. The force may be sufficient to draw the sleeve into conformity with a shape of a portion of the finger or thumb. The force may be sufficient to retain the configuration of the sleeve with respect to the finger or thumb. The gripping portion may be configured to facilitate separation of the sleeve from the finger or thumb while preventing the substance contacting the outer surface of the sleeve from reaching the finger. The gripping portion may be shaped to match a contour of the wearer's palm or wrist. The gripping portion may include a string.

[0103] In one example, the finger glove includes at least one additional sleeve that is manufactured or configured to conform to a second finger or the thumb. The inner surface of one or more of the sleeves may include or be covered with a tacky or semi-adhesive material configured to limit slippage or rotation of the sleeve relative the finger or thumb.

[0104] In one example, an outer surface of the sleeve is textured. In one example, an outer surface of the sleeve is bristled and configured to be used as a brush. In one example, an outer surface of the sleeve includes an absorptive material or an absorbent material may be applied to the outer surface of the sleeve.

[0105] In some examples, the finger glove has a reservoir or pocket fluidically coupled to an outer surface of the sleeve. Pressure applied to the outer surface may cause a fluid to flow from the reservoir or pocket onto the outer surface.

[0106] In one example, the finger glove has an edge formed from a material coupled to a side of the sleeve, the edge being configured as a spatula.

[0107] In one example, the finger glove is constructed from vinyl, nitrile or latex. In one example, the finger glove is constructed from a polymer. In one example, the finger glove is constructed from a woven material. In one example, the finger glove is constructed from a non-woven material. In one example, the finger glove includes two or more layers of material that are bonded together. In one example, the sleeve includes two or more layers of material that are stitched or sewn to obtain the sleeve.

[0108] In some examples, the sleeve is manufactured or configured to conform closely to the fingertip or the thumb tip. In some examples, the sleeve is manufactured or configured to cover substantially all of the finger or the thumb. In some examples, the sleeve is manufactured or configured to cover substantially all of a first side of the finger or the thumb and to partially cover a second side of the finger or the thumb. One example of partial coverage is shown in FIG. 3, where the middle portion **326** of the finger glove **320** is manufactured as part of the sleeve **322** or functions as part of the sleeve **322**.

[0109] It is contemplated that multiple modes of use may be enabled by a finger glove provided in accordance with certain aspects of this disclosure. In some examples, the finger gloves **300**, **320** illustrated in FIG. 3 include sleeves **302**, **322** that have multiple usable surfaces, including the surface covering the fingertip, the surface covering the pad of the finger, the surface covering the back of the finger and one or both sides of the finger. In these examples, a finger glove **300**, **320** is worn as illustrated in FIG. 3 in a first mode of use where work is performed using the pad of the finger, in a second mode of use where work is performed using the back of the finger (or fingernail), and in a third mode of use where work is performed using the side of the finger. Additional modes of use may be enabled when a finger glove **300**, **320** is rotated through 180° with respect to the orientation of wear illustrated in FIG. 3. The additional modes of use include modes when work is performed using the pad of the finger, using the back of the finger (or fingernail), or using the side of the finger. Further modes of use may be enabled when a finger glove **300**, **320** is rotated through 90° with respect to the orientation of wear illustrated in FIG. 3. The further modes of use include modes when work is performed using the pad of the finger, using the back of the finger (or fingernail), or using the side of the finger. When a finger glove **300**, **320** is rotated through 90° or 180° when worn, the tail **304**, **324** may be gripped differently than illustrated in FIG. 3. In one example, the tail **304**, **324** may be gripped on the back of the hand. In another example, the tail **304**, **324** may be or may be passed between two digits of the hand toward the palm and may be gripped or pinned by pressure applied by the two digits or may be gripped by pressuring a portion of the tail **304**, **324** toward the palm of the hand.

[0110] It is contemplated that different sized and different proportioned finger gloves may be used in different circumstances or applications. The length of the sleeve and the tail may be configured for different hand sizes or to facilitate gripping when certain fingers are expected to be engaged in work. Finger gloves constructed from deformable or elastic materials may fit hands that have a wide range of sizes. For example, a majority of wearers may obtain a good fit from a finger glove that is sized according to a suitable band of sizes (e.g., small, medium and large). In some instances, the ratio of sleeve length to tail length may vary between wearers to the extent that finger gloves may be configured for different sized fingers, for example. In some instances, differences in sleeve length to tail length ratio can be accommodated by manufacturing finger gloves with sleeves and tails that have different elasticities. In some instances, differences in sleeve length to tail length ratio can be accommodated by manufacturing finger gloves with sleeves and tails that have different elasticities. In some instances, differences in sleeve length to tail length ratio can be accommodated by manufacturing finger gloves with tails that can be reduced in size by tearing or cutting.

[0111] Some implementation examples are described in the following numbered clauses:

[0112] 1. A finger glove comprises a sleeve that is manufactured or configured to cover a fingertip on a finger of a hand or a thumb tip of a thumb of the hand, the sleeve forming a barrier operable to prevent a substance contacting an outer surface of the sleeve from reaching an inner surface of the sleeve; and a tail configured to extend from the sleeve and toward a palm

- or wrist of a wearer and further configured to receive a force from an uncovered digit of the hand, the force being sufficient to retain the finger glove in place while the finger glove is worn on the hand.
- [0113] 2. The finger glove as described in clause 1, wherein the tail is configured to extend to at least the ball of the thumb when the finger glove is worn on the hand.
- [0114] 3. The finger glove as described in any of clause 1 or clause 2, wherein the tail is configured to extend from the sleeve to a location on the palm short of the wrist when the finger glove is worn on the hand.
- [0115] 4. The finger glove as described in any of clauses 1-3, wherein the tail is configured to extend at an angle from the sleeve and across the palm.
- [0116] 5. The finger glove as described in any of clauses 1-4, wherein the tail comprises a gripping portion configured to receive the force, wherein the force is sufficient to draw the sleeve into conformity with a shape of a portion of the finger or thumb.
- [0117] 6. The finger glove as described in any of clauses 1-4, wherein the tail comprises a gripping portion configured to receive the force, wherein the force is sufficient to cause the sleeve to retain its configuration with respect to the finger or thumb while the finger glove is worn on the hand.
- [0118] 7. The finger glove as described in clause 6, wherein the gripping portion is configured to facilitate separation of the sleeve from the finger or thumb while preventing the substance contacting the outer surface of the sleeve from reaching skin of a wearer
- [0119] 8. The finger glove as described in clause 6 or clause 7, wherein the gripping portion is shaped to match a contour of the palm or wrist of the wearer.
- [0120] 9. The finger glove as described in any of clauses 8-8, wherein the gripping portion comprises a string.
- [0121] 10. The finger glove as described in any of clauses 1-9, further comprising an additional sleeve that is manufactured or configured to conform to a tip of second finger or the thumb.
- [0122] 11. The finger glove as described in any of clauses 1-10, wherein an inner surface of the sleeve comprises a tacky or semi-adhesive material configured to limit slippage or rotation of the sleeve relative the finger or thumb.
- [0123] 12. The finger glove as described in any of clauses 1-11, wherein an outer surface of the sleeve is textured.
- [0124] 13. The finger glove as described in any of clauses 1-12, wherein an outer surface of the sleeve is bristled and configured to be used as a brush.
- [0125] 14. The finger glove as described in any of clauses 1-13, further comprising a reservoir or pocket fluidically coupled to an outer surface of the sleeve, wherein pressure applied to the outer surface causes a fluid to flow from the reservoir or pocket onto the outer surface.
- [0126] 15. The finger glove as described in any of clauses 1-14, wherein an outer surface of the sleeve comprises an absorbent material.
- [0127] 16. The finger glove as described in any of clauses 1-15, further comprising an edge formed from a material coupled to a side of the sleeve, the edge being configured as a spatula.
- [0128] 17. The finger glove as described in any of clauses 1-16, wherein the finger glove is constructed using vinyl, nitrile or latex.
- [0129] 18. The finger glove as described in any of clauses 1-17, wherein the finger glove is constructed using a polymer.
- [0130] 19. The finger glove as described in any of clauses 1-18, wherein the finger glove is constructed using a woven material.
- [0131] 20. The finger glove as described in any of clauses 1-19, wherein the finger glove is constructed using a non-woven material.
- [0132] 21. The finger glove as described in any of clauses 1-20, wherein the sleeve is manufactured or configured to conform closely to the fingertip or the thumb tip.
- [0133] 22. The finger glove as described in any of clauses 1-21, wherein the sleeve is manufactured or configured to cover substantially all of the finger or the thumb.
- [0134] 23. The finger glove as described in any of clauses 1-21, wherein the sleeve that is manufactured or configured to cover substantially all of a first side of the finger or the thumb and to partially cover a second side of the finger or the thumb.
- [0135] 24. The finger glove as described in clause 23, wherein the first side and the second side are opposite sides of the finger or the thumb.
- [0136] 25. The finger glove as described in any of clauses 1-24, wherein the sleeve comprises two or more layers of material that are bonded together.
- [0137] 26. The finger glove as described in any of clauses 1-25, wherein the sleeve comprises two or more layers of material that are stitched or sewn to obtain the sleeve.
- [0138] Different features, variations and multiple different embodiments have been shown and described with various details. What has been described in this application at times in terms of specific embodiments is done for illustrative purposes only and without the intent to limit or suggest that what has been conceived is only one particular embodiment or specific embodiments. It is to be understood that this disclosure is not limited to any single specific embodiments or enumerated variations. Many modifications, variations and other embodiments will come to mind of those skilled in the art, and which are intended to be and are in fact covered by this disclosure. It is indeed intended that the scope of this disclosure should be determined by a proper legal interpretation and construction of the disclosure, including equivalents, as understood by those of skill in the art relying upon the complete disclosure present at the time of filing.
- What is claimed is:
1. A finger glove comprising:
 - a sleeve that is manufactured or configured to cover a fingertip on a finger of a hand or a thumb tip of a thumb of the hand, the sleeve forming a barrier operable to prevent a substance contacting an outer surface of the sleeve from reaching an inner surface of the sleeve; and
 - a tail configured to extend from the sleeve and toward a palm or wrist of a wearer and further configured to receive a force from an uncovered digit of the hand, the force being sufficient to retain the finger glove in place while the finger glove is worn on the hand.

2. The finger glove of claim 1, wherein the tail is configured to extend to at least the ball of the thumb when the finger glove is worn on the hand.

3. The finger glove of claim 1, wherein the tail is configured to extend from the sleeve to a location on the palm short of the wrist when the finger glove is worn on the hand.

4. The finger glove of claim 1, wherein the tail is configured to extend at an angle from the sleeve and across the palm.

5. The finger glove of claim 1, wherein the tail comprises: a gripping portion configured to receive the force, wherein the force is sufficient to draw the sleeve into conformity with a shape of a portion of the finger or thumb.

6. The finger glove of claim 1, wherein the tail comprises: a gripping portion configured to receive the force, wherein the force is sufficient to cause the sleeve to retain its configuration with respect to the finger or thumb while the finger glove is worn on the hand.

7. The finger glove of claim 6, wherein the gripping portion is configured to facilitate separation of the sleeve from the finger or thumb while preventing the substance contacting the outer surface of the sleeve from reaching skin of a wearer.

8. The finger glove of claim 6, wherein the gripping portion is shaped to match a contour of the palm or wrist of the wearer.

9. The finger glove of claim 6, wherein the gripping portion comprises a string.

10. The finger glove of claim 1, further comprising: an additional sleeve that is manufactured or configured to conform to a tip of second finger or the thumb.

11. The finger glove of claim 1, wherein an inner surface of the sleeve comprises a tacky or semi-adhesive material configured to limit slippage or rotation of the sleeve relative the finger or thumb.

12. The finger glove of claim 1, wherein an outer surface of the sleeve is textured.

13. The finger glove of claim 1, wherein an outer surface of the sleeve is bristled and configured to be used as a brush.

14. The finger glove of claim 1, further comprising: a reservoir or pocket fluidically coupled to an outer surface of the sleeve, wherein pressure applied to the

outer surface causes a fluid to flow from the reservoir or pocket onto the outer surface.

15. The finger glove of claim 1, wherein an outer surface of the sleeve comprises an absorptive material.

16. The finger glove of claim 1, further comprising: an edge formed from a material coupled to a side of the sleeve, the edge being configured as a spatula.

17. The finger glove of claim 1, wherein the finger glove is constructed using vinyl, nitrile or latex.

18. The finger glove of claim 1, wherein the finger glove is constructed using a polymer.

19. The finger glove of claim 1, wherein the finger glove is constructed using a woven material.

20. The finger glove of claim 1, wherein the finger glove is constructed using a non-woven material.

21. The finger glove of claim 1, wherein the sleeve is manufactured or configured to conform closely to the fingertip or the thumb tip.

22. The finger glove of claim 1, wherein the sleeve is manufactured or configured to cover substantially all of the finger or the thumb.

23. The finger glove of claim 1, wherein the sleeve that is manufactured or configured to cover substantially all of a first side of the finger or the thumb and to partially cover a second side of the finger or the thumb.

24. The finger glove of claim 23, wherein the first side and the second side are opposite sides of the finger or the thumb.

25. The finger glove of claim 1, wherein the sleeve comprises:

two or more layers of material that are bonded together.

26. The finger glove of claim 1, wherein the sleeve comprises:

two or more layers of material that are stitched or sewn to obtain the sleeve.

27. The finger glove of claim 1, wherein the sleeve is manufactured or configured to cover a portion of each of a plurality of fingers of the hand.

28. The finger glove of claim 1, wherein the barrier formed by the sleeve operates to prevent the substance contacting the outer surface of the sleeve from reaching uncovered portions of the hand.

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