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(54) **INFANT HAIR CARE MITT**

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(57) **ABSTRACT**

A mitt for infant scalp and hair care is adapted to be worn over the four fingers of the hand of a person attending the infant. On at least one side of the mitt is a flexible material with integral fine bristles suitable both for cleaning abrasion of the infant's scalp during bathing and for application of baby oil and styling of the infant's hair after bathing. Some embodiments further comprise a thumb ring for retaining the mitt on the hand. Yet further, some embodiments are imbued with liquid agents suitable for scalp and hair care.

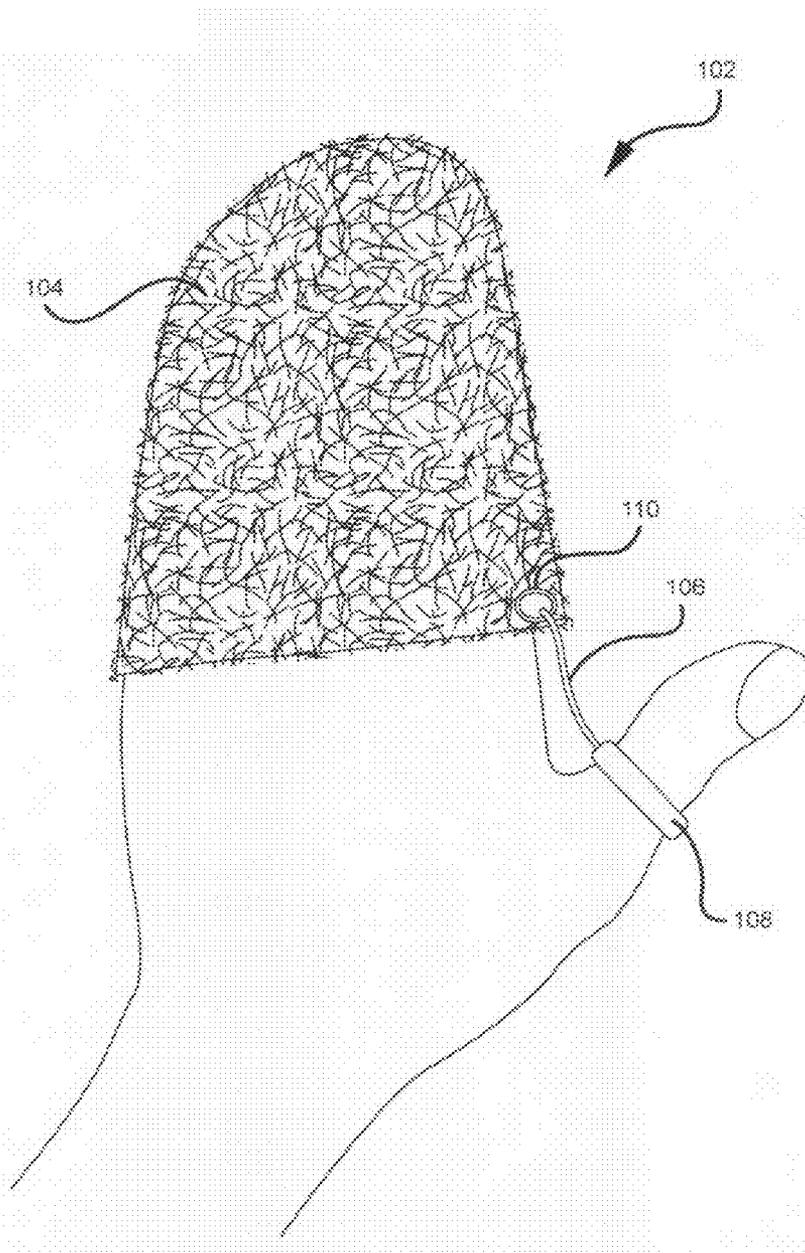
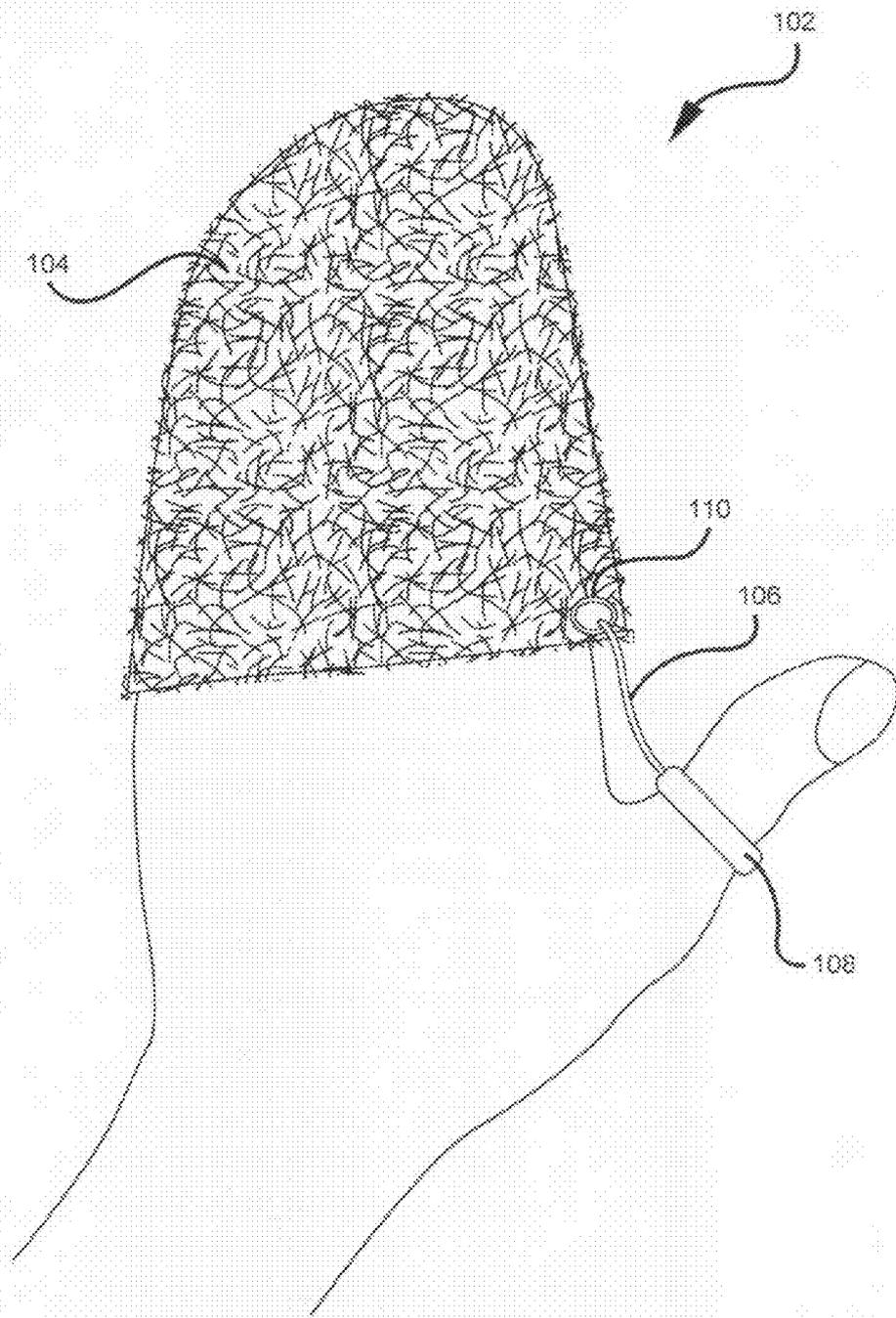


Fig. 1



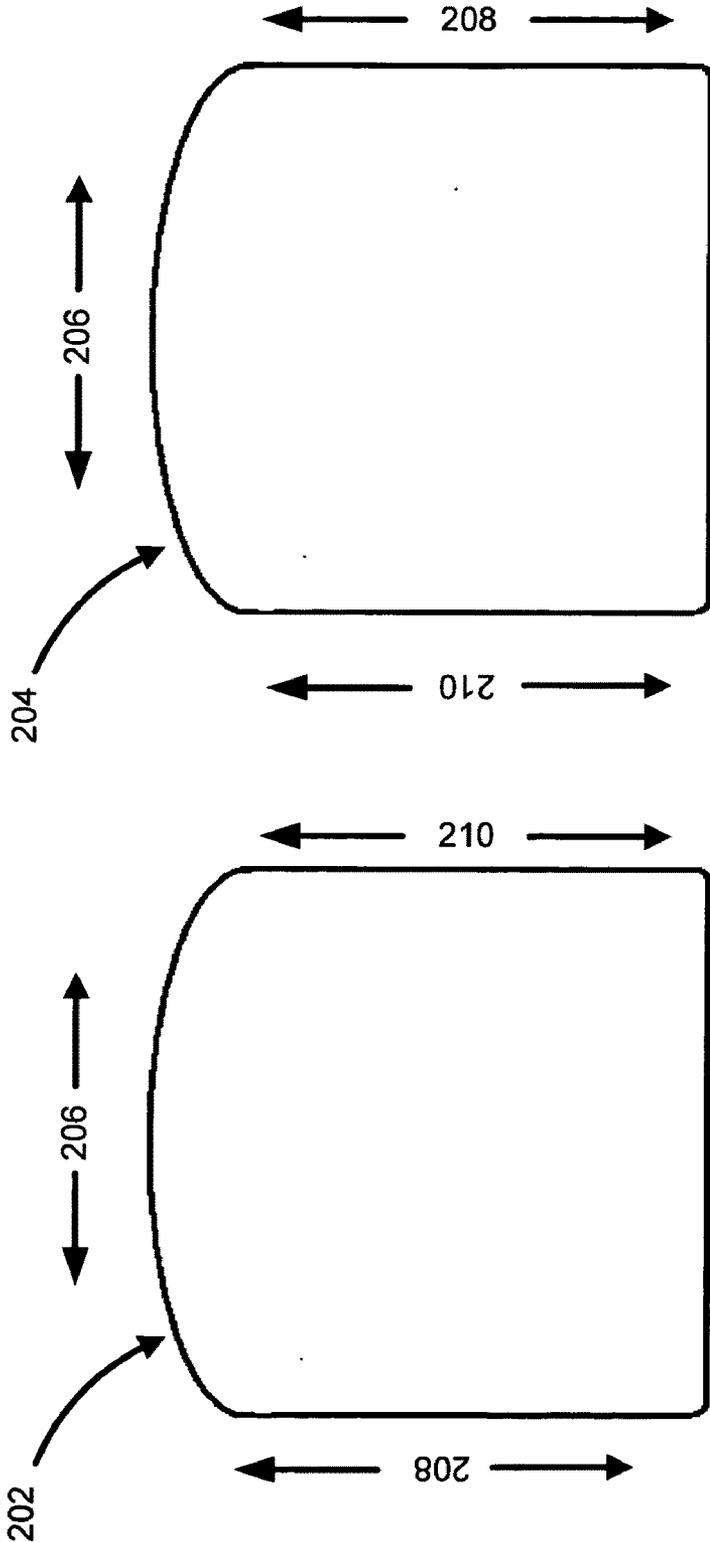


Fig. 2

INFANT HAIR CARE MITT

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to articles for care of hair. More particularly, this invention relates to a mitt adapted for cleaning, care and management of an infant's scalp and hair.

[0003] 2. Description of the Related Art

[0004] Hairbrushes and related hair care instruments specially adapted to the care of infant hair have been fashioned since ancient times. These articles differ to one degree or another from related articles for adults, principally because infants have particular requirements for hair care. First, their scalps are considerably thinner and more sensitive than those of adults. Use of an adult hairbrush on an infant can cause irritation or undesirable excessive abrasion of the infant scalp. Second, infant hair is typically many orders of magnitude finer than adult hair, requiring only a light touch for management. Third, there are hygienic and scalp health requirements, inapplicable to adults, that pertain specifically to infants.

[0005] In the prior art, typical infant hair and scalp care first entailed frequent washing of the infant's scalp, usually in conjunction with bathing the infant. The infant's scalp is washed with a cloth using gentle soap and then rinsed to remove grime, food residue, accumulated body oil and scaling skin, the latter of which, if allowed to accumulate, can lead to a form of dermatitis found only in infants known as "cradle cap." Next, the infant's scalp is dried with a soft, absorbent towel. Next, often a light oil, such as the light-weight petroleum oil known as "baby oil", is applied to the infant's scalp to replenish oils washed from the scalp. Finally, the infant's hair is brushed for a neat appearance with an infant hairbrush.

[0006] Infant hairbrushes are traditionally fashioned after the design of adult hairbrushes, the principal difference being that very fine and soft bristle is used for infant brushes, to minimize irritation to the infant scalp. While finer bristles are generally employed, it is common that the length of the bristles in infant hairbrushes is roughly commensurate with that of the bristles in adult hairbrushes. Because of the fineness of infant hair, along with the typically shallow overall depth of the infant's head of hair, however, commensurate bristle length between adult and infant hairbrushes is perhaps more a design aspect of the infant hairbrush than a requirement for its utility. In any case, the utility of the infant hairbrush is served if the bristles are sufficiently fine and are of adequate length that the bristles will yield and bend sufficiently for gentle hair management.

[0007] More recently, infant hair care instruments have been designed for use in connection with bathing the infant that provide both for hair and scalp cleaning and for the management of the infant's hair for appearance. Often provided by hospitals to mothers of newborn infants, such brushes (commonly called infant cradle cap soft brushes) are typically fabricated as an adult palm-sized rectangle of semi-rigid plastic such as polyethylene, on one side of which is a neoprene sponge, and on the other side of which depend integral soft plastic bristles.

[0008] Use of either the traditional infant hairbrush or the modern infant scrub brush can be awkward, however. Either brush must be held in the hand of the adult bathing the infant, who at the same time typically is also endeavoring to restrain the infant safely in the washing or grooming area. To address such shortcomings, the invention by Zielinski in U.S. Pat. No.

4,893,955 incorporates a brush such as the infant cradle cap soft brush into the finger portion of a scrubbing mitten specifically for therapeutic cleansing of infant's scalps. While Zielinski's mitten provides for more convenient washing of the infant scalp, its design and manufacture are more complex than most prior art infant hair care instruments. Further, because Zielinski's mitten is comprised of a plurality of co-joined components of different materials, it is of limited durability because its components are subject to breaking apart.

[0009] There remain further shortcomings to all the foregoing prior art infant hair care instruments. Traditional cloth washing of the infant scalp, while usually gentle enough to avoid irritating the delicate skin, is often not sufficiently abrasive to remove the scaling precursor to cradle cap. More modern developments, such as the polyethylene-neoprene scrub brush described above, may provide for more thorough scaling removal. However, neither the traditional infant hairbrush nor the modern infant scrub brush is well adapted to the application of baby oil to the infant scalp and the management of infant hair so oiled. Yet further, many infant hairbrushes are not easily washable, and, used repeatedly on oiled infant scalps, a traditional infant hairbrush will tend to gather baby oil on its bristles, leading to the unhygienic accumulation of grime and residual body oil over time. While more modern washable scrub brushes may be adapted to brush oiled baby hair, because their overall shape and the arrangement of their bristles are adapted principally for cleaning abrasion and not for hair management for appearance, the results of use of such brushes for infant hair styling are often not satisfactory. Further still, neither the traditional infant hairbrush nor the modern scrub brush presents a simple and direct way of applying baby oil to the infant's scalp. What is needed is an infant hair care instrument that overcomes these and other shortcomings of the prior art.

BRIEF DESCRIPTION OF THE INVENTION

[0010] The present invention is a mitt adapted to be worn over the four fingers of the hand of a person caring for an infant's scalp or hair. On at least one side of the mitt is a flexible material with integral fine bristles suitable either for cleaning abrasion of the infant's scalp during bathing or for application of baby oil and styling of the infant's hair after bathing. Some embodiments of the invention further comprise a thumb ring for retaining the mitt on the hand. Yet further, in some embodiments of the present invention, the bristles are imbued with an agent suitable for infant hair or scalp care.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The foregoing objects, as well as further objects, advantages, features and characteristics of the present invention, in addition to methods of operation, function of related elements of structure, and the combination of parts and economies of manufacture, will become apparent upon consideration of the following description and claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures, and wherein:

[0012] FIG. 1 is a front view of a mitt, illustrating integral fine bristles along with attached thumb ring, according to an embodiment of the present invention; and

[0013] FIG. 2 is a pattern for the mitt according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Referring to FIG. 1, illustrated is a front view of an embodiment of the present invention. In this embodiment, the grooming instrument 102 is comprised of a mitt portion 104 connected by filament 106 to thumb-ring 108. Mitt 104 consists of two roughly rectangular sheets of material (refer to FIG. 2) joined at a seam along three of their four sides, thereby forming a pocket in which the four fingers of the user may be inserted. The mitt comprises a soft plastic material consisting of a flexible sheet, on one side of which extend soft plastic bristles. While flexible, it is preferred that such material should be relatively durable and heat resistant up to normal clothes washing temperatures.

[0015] In some embodiments, the mitt is comprised of a suitably chosen thermoplastic material, such as linear low density polyethylene (LLDPE), a preferred material because of its toughness, flexibility, relative transparency and ability to form such lower gauge shapes as the bristles of the present invention. With stability as a solid up to at least 220 degrees Fahrenheit, mitts made of LLDPE may be washed many times in a normal load of clothes without breaking down.

[0016] Suitable for mitt 104 is LLDPE sheet material of 15 to 40 mil (0.381 to 1.106 millimeters) in thickness, fabricated, by thermal extrusion or other processes well known to those in the plastic fabrication arts, to extend integral bristles of 0.1 to 0.5 mm in diameter and 5 to 7 millimeters in length on one side of the sheet.

[0017] In the depicted embodiment, grooming instrument 102 further comprises an attached thumb ring. The purpose of this element is to enforce the retention of the mitt on the user's hand. In use, the user inserts her four fingers into the open end of the mitt, thereby covering her fingers above the palm with the bristle material of the mitt.

[0018] In the depicted embodiment, a perforation 110 at a corner on the open side of mitt 104 permits the attachment of filament 106 to retain a thumb ring 108. Perforation 110 may be reinforced, for example by means of a grommet or through thermal fabrication processes thickening the material of mitt 104 at perforation 110 as known to those of skill in the art and as discussed in reference to FIG. 2 below, in order to prevent tearing of the material of mitt 104 caused by tension on filament 106.

[0019] Filament 106 may be of any durable, flexible fiber material and is be fastened at one end to mitt 104 at perforation 110 and at the other end to thumb ring 108 by knotting or other means known to those in the art. For material for filament 106, embodiments may employ lightweight nylon line of an appropriate thickness such as 24 gauge line. The length of filament 106 should comfortably extend from the base of the index finger of the user to the user's thumb, a span of some five to ten centimeters. Thumb ring 108 may be fashioned of a durable plastic material, such as nylon, and should be of a diameter comfortably to fit over the user's thumb.

[0020] In such embodiments, the user orients the mitt over the fingers of her hand so that perforation 110 faces her thumb and then places thumb ring 106 over her thumb. While the depicted embodiment employs a connected thumb ring 108 for extra assurance in retaining the mitt, it will be understood by those of skill in the art that embodiments of the present

invention may be fabricated and used without an attached thumb ring, relying instead for retention only on the fit of mitt 104 on the user's fingers.

[0021] Turning now to FIG. 2, depicted are the patterns for two panels 202, 204 of bristled material cut for formation of a mitt. Panels 202, 204 are somewhat larger in dimension along sides 206, 208, 210 than analogous sides of the fabricated mitt, for reasons that will be apparent to those in the art based on the following description of the fabrication of the mitt.

[0022] For mitts made of thermoplastic material such as LLDPE, a mitt may be fabricated from panels 202, 204 as follows. As discussed above, such material is fabricated as a sheet with integral bristles on one side. For assembly of the mitt, panels 202, 204 are placed on top of each other, with bristles of one panel facing the bristles of another panel. A two-part form accommodating a mitt is used to provide thermoplastic welding of the two panels, by providing a heated edge around sides 206, 208, 210 of panels 202, 204, and heating the material along sides 206, 208, 210 to the glass liquefaction temperature of the panel thermoplastic material, whereby the three sides 206, 208 and 210 of panels 202, 204 are joined in a welded seam. After cooling and trimming of the seam along sides 206, 208, 210, the resultant fabrication is turned inside out, resulting in a mitt with bristles extending outward and an opening at one end to accommodate the user's fingers. In those embodiments employing a thumb ring (such as ring 106 discussed in relation to FIG. 1 above), a perforation to accommodate a filament for attaching the thumb ring may be made in the resultant mitt and reinforced by various means, such as insertion of an appropriately dimensioned grommet or by thermal formation of a ring of thickened thermoplastic material around the perforation in a manner well known to those in the thermoplastic fabrication arts.

[0023] The mitt as described above may be used repeatedly either for cleaning or for styling. For hygienic purposes, such a mitt may be washed periodically in a normal wash load of clothes, followed by air drying. As will be appreciated by those in the art, for those mitts employing a thumb ring, the mitt may be enhanced by variations to accommodate washing agitation. In some such embodiments, the thumb ring may be detachable from the mitt for washing. In some other such embodiments, a pocket may be fabricated within the mitt for retaining the thumb ring during washing and storage.

[0024] As discussed above the resultant mitt, with or without optional thumb ring, has various applications in infant scalp hygiene and hair management. To enhance the utility of the mitt in such applications, the mitt's bristles may be further imbued with liquid agents appropriate for the purpose. For example, some embodiments directed to scalp hygiene may provide mitt bristles imbued with a cleaning agent such as a mild liquid soap providing saponification for removal of body oils and grime and also amelioration of abrasive effect of the bristles. Other embodiments directed to infant hair styling may provide mitt bristles imbued with baby oil or other suitable agent providing hair management. Mitts in such embodiments may be so imbued by retaining the mitt, when not in use, in a container in which the mitt is immersed in such liquid agents.

[0025] Other embodiments may provide the mitt in a disposable form. In such embodiments, the mitt itself may be fabricated of easily disposable material such as paper fabric manufactured by Taizhou Jinjue Mesh Screen Co., Ltd. of Lunan Town, Luqiao District, Zhejiang, China. Bristles pro-

truding from an integral planar substrate, such as those formed of LLDPE as described above, may be affixed to the mitt by attaching the substrate to the appropriate part of the mitt by any of several means known to those of skill in the art, including hot bonding, plastic grommets and cyanoacrylate bonding agents. A plurality of disposable mitts may be provided in a dispenser that immerses the mitts in one or several of the aforesaid liquid agents for cleaning the infant's scalp or styling the infant's hair.

[0026] Although the detailed descriptions above contain many specifics, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. Various other embodiments and ramifications are possible within its scope, a number of which are discussed in general terms above. For example, because most thermoplastic sheet material is not porous, protracted wearing of a mitt comprised of such material may become uncomfortable. Accordingly, it may be preferable to fabricate the mitt of a material somewhat permeable to air, such as woven fabric, so long as the material provides soft bristles as required of the present invention.

[0027] While the invention has been described with a certain degree of particularity, it should be recognized that elements thereof may be altered by persons skilled in the art without departing from the spirit and scope of the invention. Accordingly, the present invention is not intended to be limited to the specific forms set forth herein, but on the contrary, it is intended to cover such alternatives, modifications and equivalents as can be reasonably included within the scope of the invention. The invention is limited only by the following claims and their equivalents.

I claim:

- 1. A mitt for cleaning and grooming infant hair and scalp, the mitt comprised of two roughly rectangular panels of flexible sheet material, the panels joined on three of four sides to form an envelope accommodating four fingers of an adult hand, the envelope covered in soft bristles.
- 2. A mitt according to claim 1, wherein the bristles are comprised of a flexible thermoplastic material.
- 3. A mitt according to claim 2, wherein the diameter of the bristles is in the range of 0.1 to 0.5 millimeters and the length of the bristles is in the range of 3 to 10 millimeters.
- 4. A mitt according to claim 3, wherein the flexible thermoplastic material is linear low density polyethylene.
- 5. A mitt according to claim 1, further comprising a filament of length in the range of 5 to 10 centimeters, the filament consisting of flexible fiber material, the filament further connected at one end proximal to a corner of the mitt and connected at the other end to a thumb ring.
- 6. A mitt according to claim 1, wherein the bristles are imbued with a liquid comprising one of the group consisting of a cleaning liquid and a hair styling liquid.
- 7. An article for cleaning and grooming infant hair and scalp, comprising
 - a roughly rectangular mitt of flexible sheet material, the mitt open on one side to form an envelope proportioned to receive four fingers of an adult hand, the mitt further comprised of soft bristles extending outward;
 - a thumb ring; and
 - a filament of 5 to 10 centimeters in length comprised of flexible fiber material, the filament connected at one end to the mitt proximal to the open side of the mitt and connected at the other end to the thumb ring.

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