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(54) **UTILITY GLOVE**

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(57) **ABSTRACT**

A utility glove having a palm side including a three dimensional molded palm portion formed of an elastomeric material with a thumb portion and at least one finger portion and a back side of the glove comprising a fabric material. The molded palm portion may have one or more of thickened areas for abrasion resistance, padded areas for comfort, flex grooves for improved movement and textured grip areas for improved grip. The molded palm portion may be formed of different elastomeric materials to take advantage of the different characteristics of the particular materials.

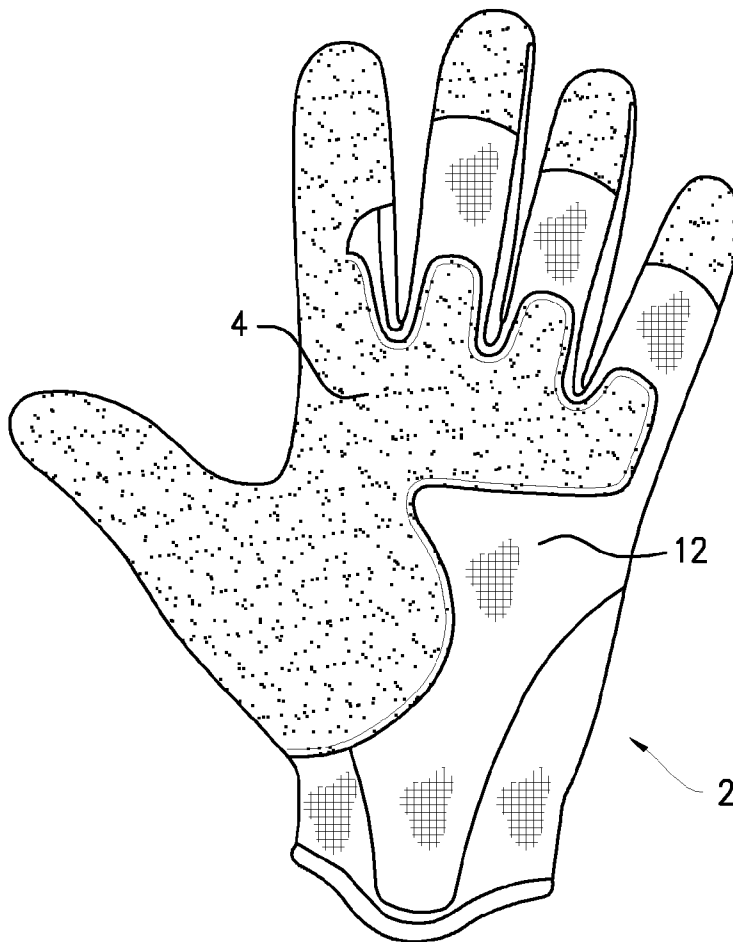
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**Related U.S. Application Data**

(60) Provisional application No. 60/950,028, filed on Jul. 16, 2007.

A molded portion of the utility glove may be formed by placing a piece of fabric against a mold part formed in the shape of at least a portion of a hand, bringing a corresponding mold part into molding relation with the mold part in the shape of at least a portion of the hand and injecting an elastomeric material into the mold to form the molded portion.



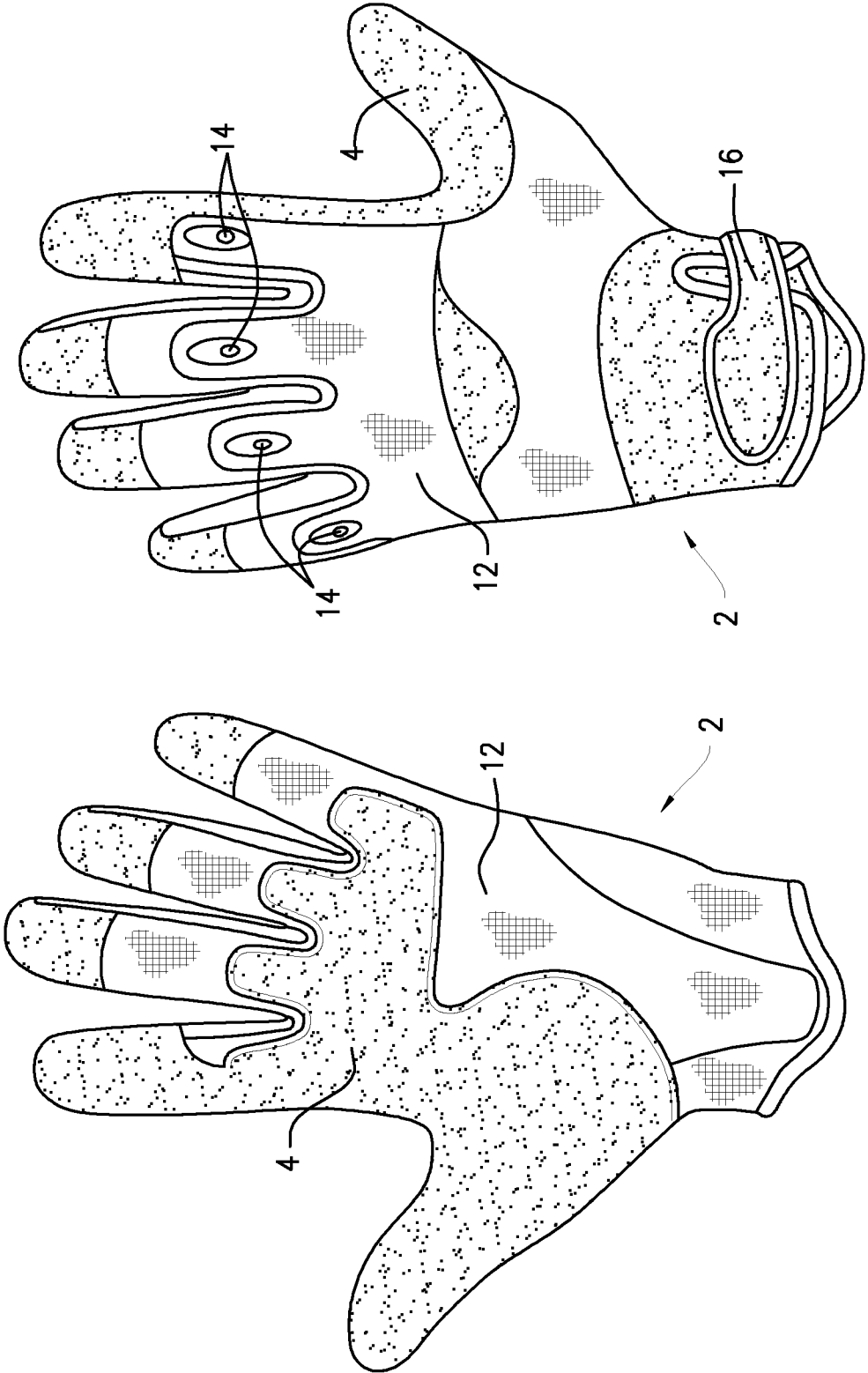


FIG. 2

FIG. 1

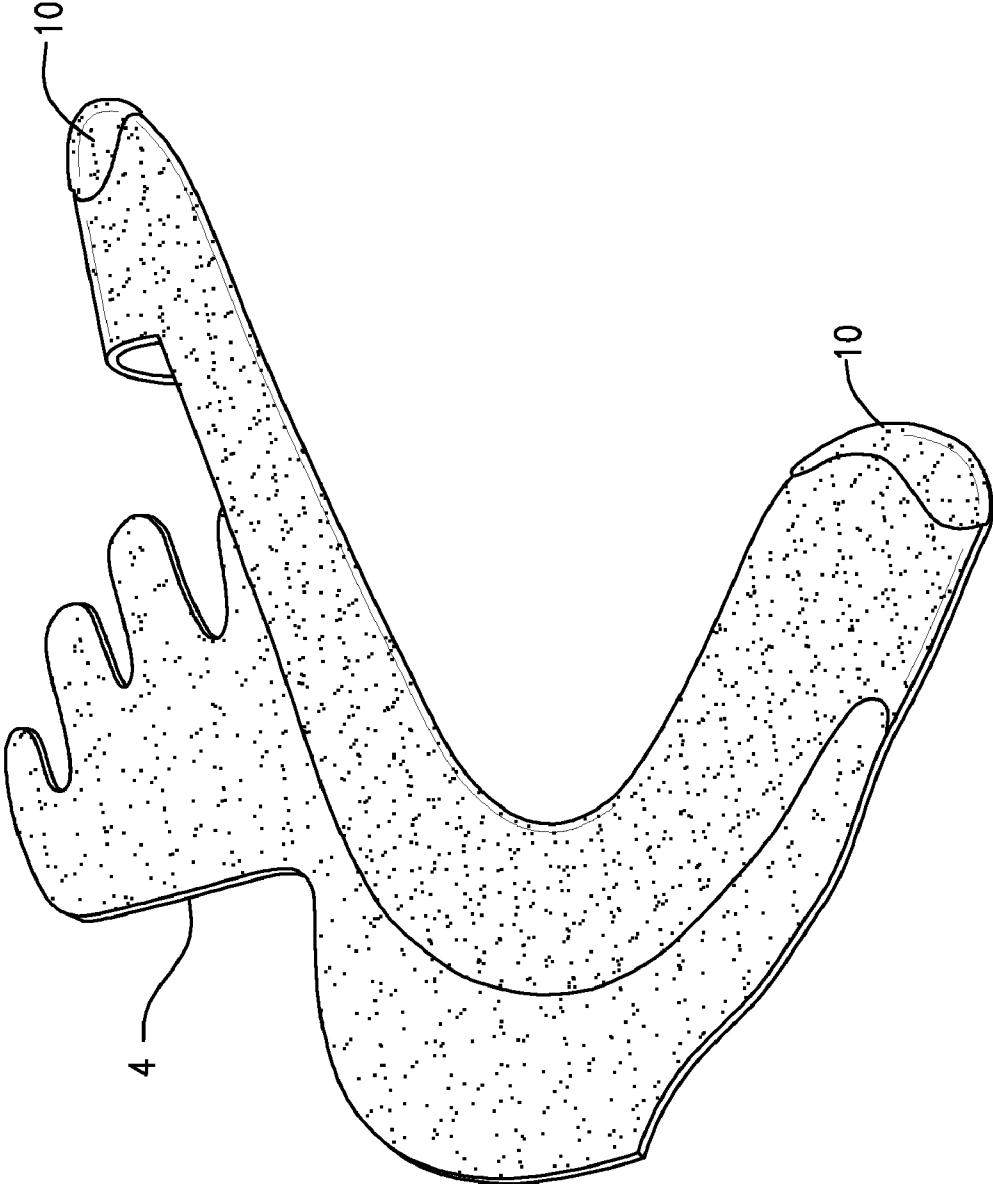


FIG. 3

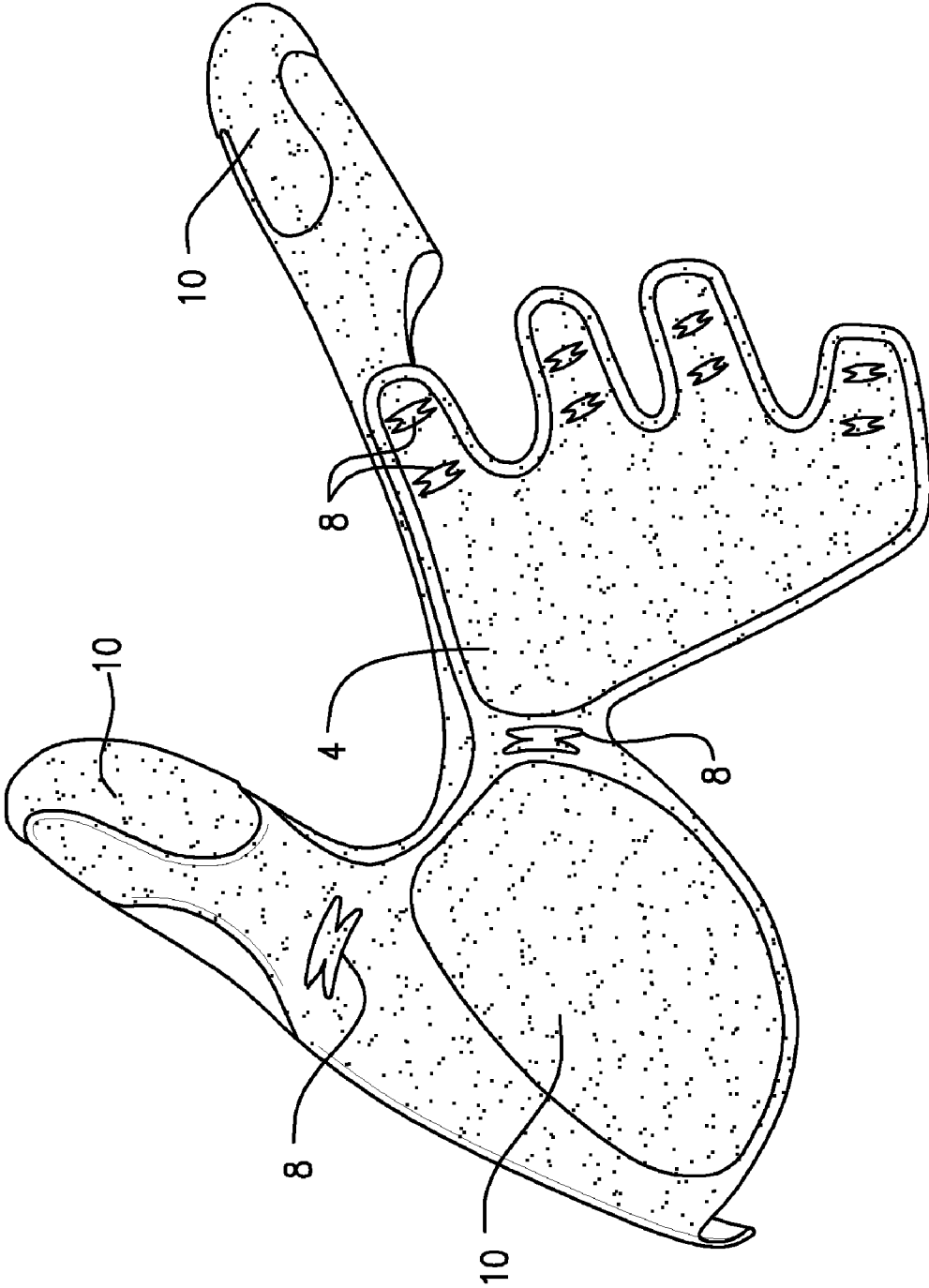


FIG. 4

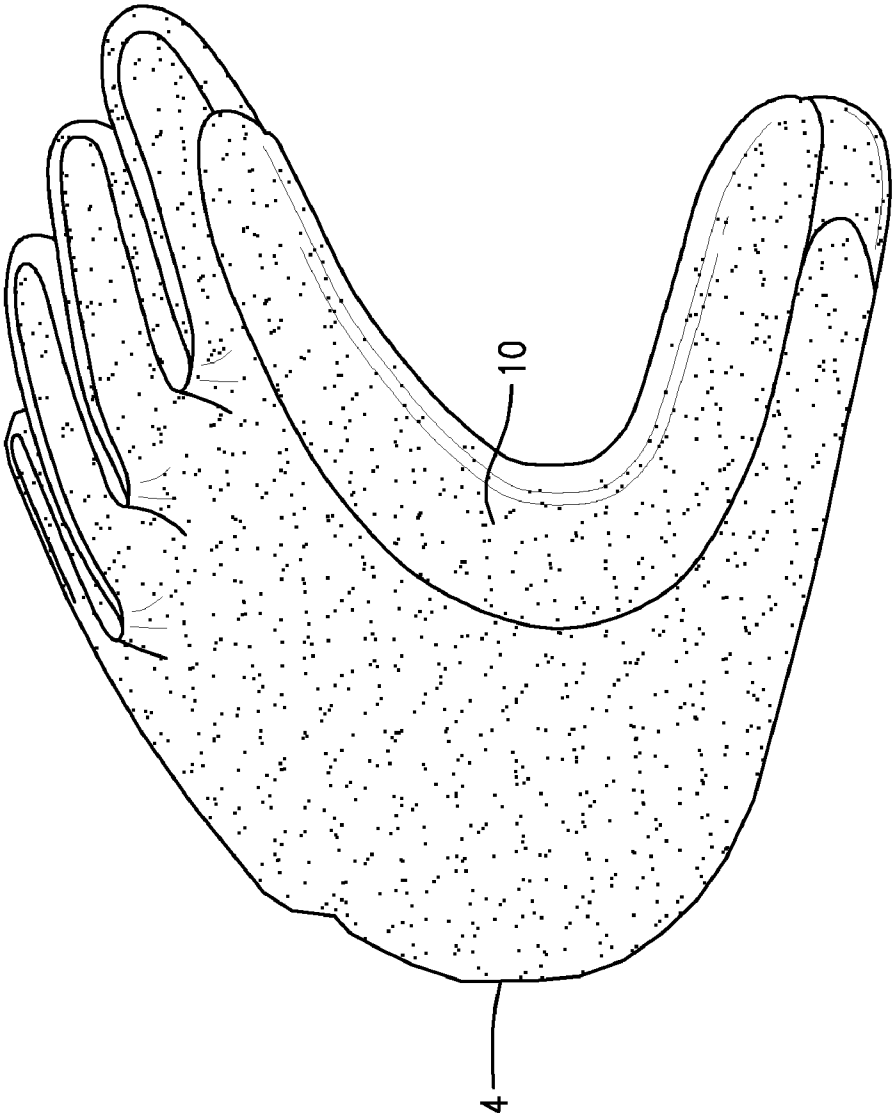


FIG. 5

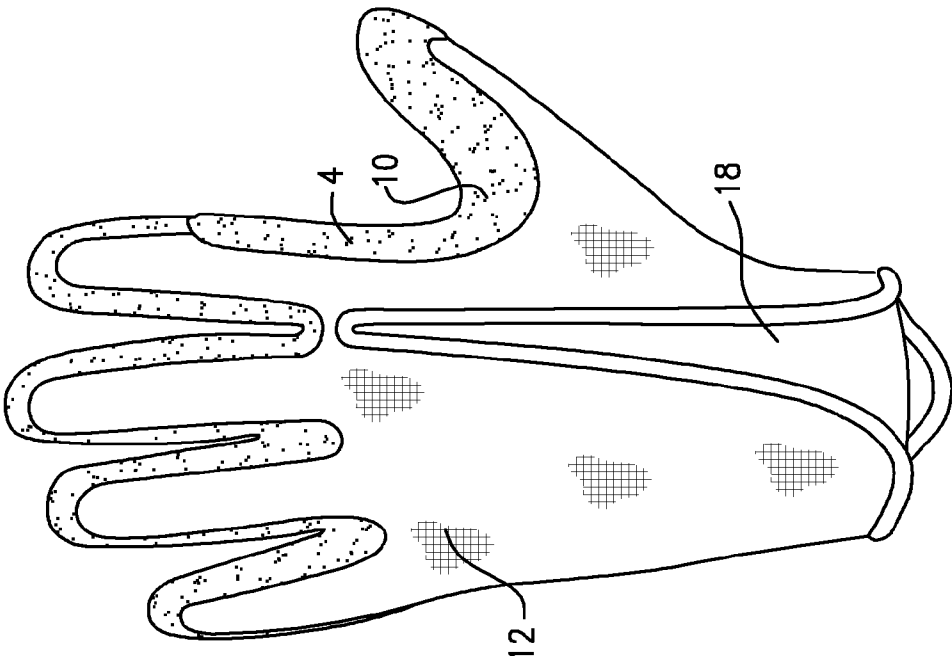


FIG. 7

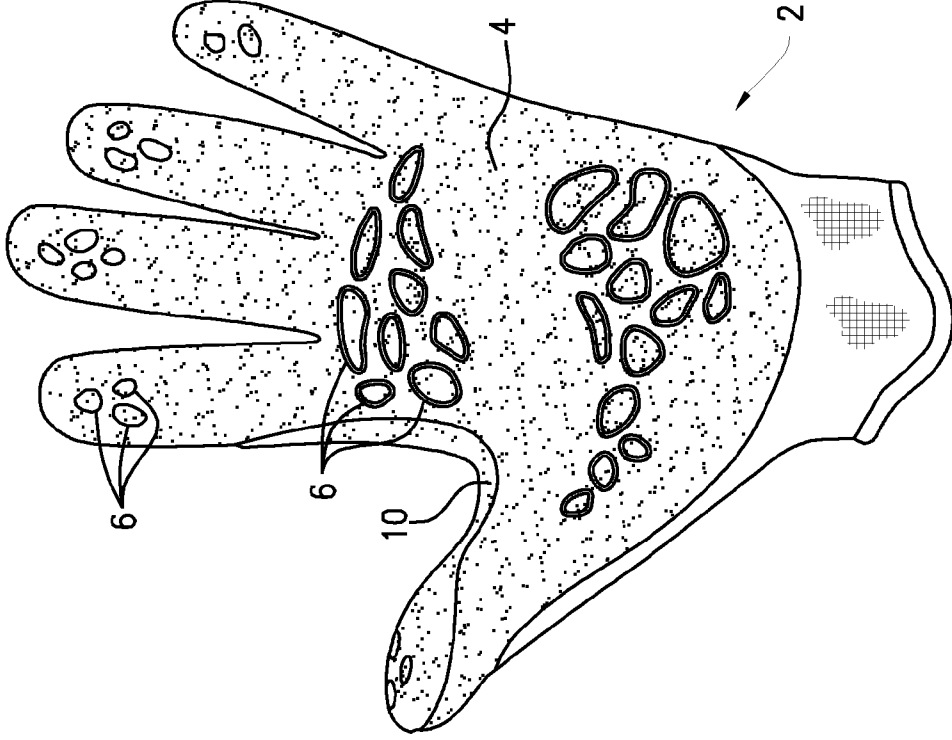


FIG. 6

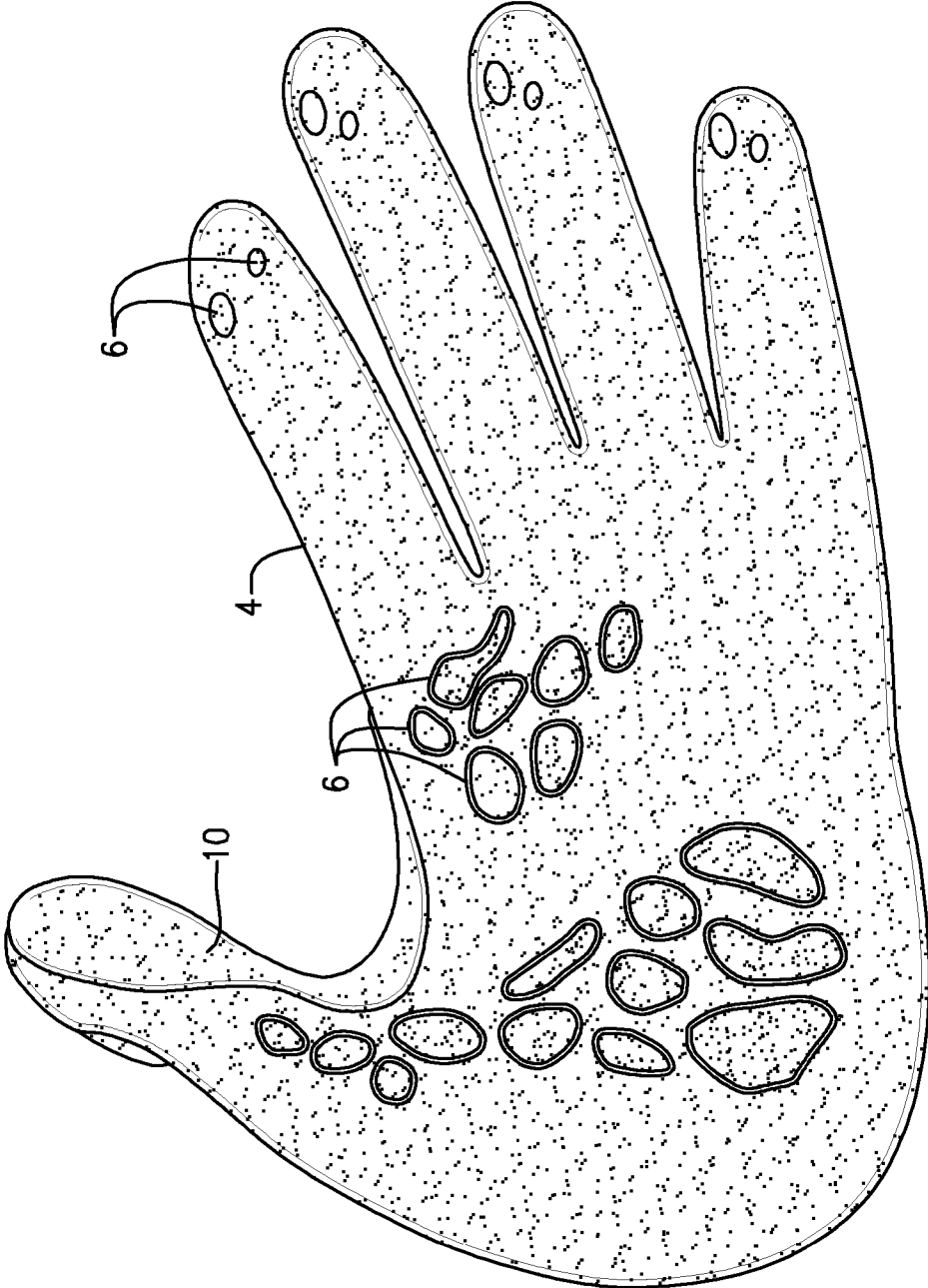


FIG. 8

**UTILITY GLOVE**

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application No. 60/950,028 filed on Jul. 16, 2007.

FIELD OF THE INVENTION

[0002] The present invention relates to the field of utility gloves, for work, gardening and the like and, more particularly, to utility gloves for work, gardening and the like having elastomeric reinforcements for improved protection of the wearers' hands.

BACKGROUND OF THE INVENTION

[0003] Utility gloves are used in areas such as gardening, construction or general work at a job site, production or garden facility or around one's home. These gloves usually contain a gripping portion that prevents items from slipping out of the user's hand, prevent injury to the user's skin such as cuts, scrapes and blisters, and provide a better grip when turning or grabbing objects. The gripping portion of the glove is usually applied to a knit nylon glove by dipping the nylon glove into an elastomeric material, such as natural or synthetic rubber, to apply an elastomeric gripping surface to the glove. This process increases the density of the glove and maintains a fabric portion which tends to absorb moisture and dirt and is hard to clean.

[0004] The purpose of the present invention is to create a utility glove with a seamless reinforcement in one or more zones most subject to abrasion. In addition to minimizing the seams, additional material or padding is provided in areas most subject to abrasion and/or impact, and this padding is preferably included without seams as well. In this regard, depending on the end usage envisioned, it is possible to adjust the amount of elastomeric material, including a natural or synthetic rubber, used in strategic areas to protect against impact and abrasion. Ultimately, the use of such padding provides the end user with a longer lasting, more comfortable glove. Additionally, the present invention includes the ability to provide different textures in the elastomeric material at strategic areas, to further provide one or more enhanced gripping surfaces.

SUMMARY OF THE INVENTION

[0005] It is therefore an object of the invention is to create a utility glove that is an improvement over typical dipped nylon knit utility gloves.

[0006] Another object of the invention is to provide additional durability and an ability to have varying palm thicknesses without having to increase the density of the knit utility glove.

[0007] A further object of the invention is to remove the reliance on fabric absorption of the elastomeric material to create density.

[0008] A still further object of the invention is to provide utility gloves with strategically placed padding and/or abrasion resistance zones as well as enhanced grip zones.

[0009] Yet a further object of the invention is to provide palm construction including an elastomeric material optionally without a knit backing, which typically absorbs excessive amounts of moisture and dirt. This allows for easier cleaning of the glove by simply being able to clean it off with a damp cloth as opposed to being laundered.

[0010] Another object of the invention is to create the maximum protection against abrasion in what typically are areas that require reinforcement, i.e., the index finger and thumb, as well as possibly the area between the index finger and thumb and the area directly below the base and crotch of each finger.

[0011] Still a further object of the invention is to provide abrasion and impact protection by raising the elastomeric material in the areas that are most likely to be subject to abrasion and impact, namely, the base of the thumb and the area of the palm directly below the fingers.

[0012] Another object of the invention is to create a molded component that can be altered to have varying elastomeric materials in different areas to provide for improved characteristics of the glove, and most particularly grip and flexibility. For example, softer elastomeric materials can be used for flexibility in areas less prone to wear and stronger, textured elastomeric materials can be used on in areas related to grip.

[0013] Still other objects and advantages of the invention will, in part, be obvious and will, in part, be apparent from the specification.

[0014] These and other objects are obtained through the utility glove of the present invention having a palm side including a three dimensional molded palm portion formed of an elastomeric material with a thumb portion and at least one finger portion and a back side of the glove comprising a fabric material. The molded palm portion may have one or more of thickened areas for abrasion resistance, padded areas for comfort, flex grooves for improved movement and textured grip areas for improved grip. The molded palm portion may be formed of different elastomeric materials to take advantage of the different characteristics of the particular materials.

[0015] It is also contemplated that the back side of the glove also includes a molded portion, such as to form a guard over the users knuckles or back of the hand that may be vulnerable to injury in some types of work.

[0016] A molded portion of a utility glove may be formed by placing a piece of heat resistant fabric against a mold part formed in the shape of at least a portion of a hand, bringing a corresponding mold part into molding relation with the mold part in the shape of at least a portion of the hand and injecting an elastomeric material into the mold to form the molded palm portion.

[0017] It is anticipated that the mold part in the shape of at least a portion of the hand is formed in different sizes relative to the glove sizes of the potential users and the corresponding mold part includes one or more of one or more textured areas, one or more thickened areas, one or more padded areas and one or more flex grooves. Preferably, the heat resistant is a knit hydrophilic material to improve absorbance of the elastomeric material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The present invention will be better understood when considered in view of the attached drawings, in which like reference characters indicate like parts. The drawings, however, are presented merely to illustrate the preferred embodiment of the invention without limiting the invention in any manner whatsoever.

[0019] FIG. 1 shows a front view, palm side, of a utility glove according to the invention;

[0020] FIG. 2 shows a back view of the glove of FIG. 1;

[0021] FIG. 3 shows the back of the palm side gripping portion of the glove of FIG. 1;

**[0022]** FIG. 4 shows the palm side of the palm gripping portion of the glove of FIG. 1 with embossed grip details;

**[0023]** FIG. 5 shows the inside of the palm gripping portion of the gardening glove embodiment;

**[0024]** FIG. 6 shows the palm side of the gardening glove with the gripping portions of FIG. 5;

**[0025]** FIG. 7 shows the back side of the glove of FIG. 6; and

**[0026]** FIG. 8 shows the palm side of the palm gripping portion of FIG. 5.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0027]** FIG. 1 shows the palm side of a utility glove 2 with a molded palm portion 4. The molded palm portion 4 of the glove 2 preferably has embossed gripping details 6, as shown in FIG. 6, debossed flex grooves 8, shown in FIG. 4 and raised textured grip areas 10, shown in FIGS. 4 and 6. In this regard, the molded palm portion 4 of the embodiment of FIG. 1 preferably includes raised textured grip areas 10 shown as a raised or thicker textured index finger tip and thumb tip for better gripping and reinforcement. The palm side of the utility glove 2 shown in FIG. 1 also includes a fabric material 12 in the area beyond the molded palm portion 4, although such a fabric material 12 is not required as an element of the palm side of the present invention.

**[0028]** FIG. 2 shows the back side of the glove 2 including a fabric material 12 and having, preferably, molded areas 14 applied with raised perforated protective shapes. Of course, any molded portion can be formed on the back side of the glove 2, including a molded portion that covers the knuckles where the fingers join the back of the hand or the back of the hand itself. The fabric material 12 on the back side is preferably formed with the fabric material 12 on the palm side of the glove or is sewn to the palm side of the glove 2, either to the molded palm portion 4 or the fabric material 12 of the palm side, as a matter of design choice. There is preferably also a closure element, shown as a molded wrist strap 16, provided to afford a better fit and help keep the glove 2 securely on the user's hand while in use.

**[0029]** The molded palm portion 4 of the glove 2, or any molded portion of the glove, is preferably manufactured by using heat resistant knit hydrophilic fabric that can withstand heat of approximately 400 degrees Fahrenheit with a mold that comprises a mold part in the shape of at least a portion of a hand and a corresponding mold part. The heat resistant fabric is preferably in the form of a glove or can be cut in the shape of the outlined elastomeric material mold that forms the molded palm portion 4 of the glove 2, as shown in FIGS. 3-4 and/or FIGS. 5 and 8, illustrating an alternative embodiment of the molded palm portion 4 preferred for a gardening glove embodiment. The knit hydrophilic heat resistant fabric is placed against the mold part in the shape of at least a portion of the hand and the corresponding mold part is brought into molding relation to create the mold. Once complete, the molder proceeds to inject the part and bond the elastomeric material to the knit hydrophilic fabric to form the molded portion.

**[0030]** For the three dimensional portion of the mold, namely the thumb and index finger in the embodiment of FIGS. 3 and 4 and each of the fingers in the embodiment of FIGS. 5 and 8, a stay can be inserted that ensures the fingers, including the index finger and thumb, keep their shape, however, the part is preferably formed by corresponding mold

parts. In either event, the molded elastomeric material is intended to adhere to all areas of the fabric, including the cap for covering the entire tip of the thumb and index finger or fingers, as well as the majority of the circumference of the thumb and fingers to be covered, that is at least 50% of the circumference of the user's thumb and fingers, as desired.

**[0031]** Optionally, a thin lining material can be inserted into the flat side of the mold prior to shooting the elastomeric material so that whatever portion of the mold that would be in contact with the palm, thumb and fingers of the user would be lined. Fabric could then be stitched onto the contour of each finger and reinforcement area of the glove 2, if desired.

**[0032]** The final bonded component forming the molded palm portion 4 is then attached to the balance of the glove 2. Preferably, the fabric that is visible on the back of the molded fingers, including the back of the thumb and the back of the index finger in FIGS. 1-4 and all fingers in FIGS. 5-8, is not stitched, but is bonded to the elastomeric material in the molding process.

**[0033]** In the embodiment of FIGS. 1-4, the molded palm portion 4 is molded about the tip of the thumb and index finger, to form a cap over the tip of the thumb and index finger, and across the palm in the area below the fingers, including up onto a lower portion of the fingers adjacent the fourchettes for the purposes of creating as much of a waterproof construction as possible. The mold would also rise in between the index finger and the thumb for enhanced grip to enable the user to grip trowels, rakes, etc. more effectively. Flex grooves 8 are preferably placed in the areas of at least some of the joints of the hand on the molded palm portion 4, including in the palm area and at the fingers to provide improved flexibility. Raised portions 10, for abrasion resistance or padding, are included at the tips of the thumb and index finger for improved abrasion resistance.

**[0034]** With respect to the elastomeric materials used in the formation of the molded palm portion 4, different compositions of elastomeric material can be used in the formation of the molded palm portion 4 or parts thereof. For example, an elastomeric material that is less slippery when wet may be used along the area between the thumb and index finger, allowing the glove to be more versatile in wet conditions. Moreover, if abrasion resistance is of particular importance in an area of the molded palm portion, a denser material can be used in that area. Similarly, where impact resistance is of particular importance in an area, such as a padded area, a less dense elastomeric material may be preferred there. The proper applications of such variations will be apparent to one skilled in the art.

**[0035]** In another embodiment as shown in FIGS. 5-8, molded palm portion 4 preferably covers the entire palm side and the majority of the sides of all fingers, i.e., at least 50% of the circumference of the fingers, which is desirable for gardening gloves. The molded palm portion 4 preferably contains embossed gripping details 6, such as textured loops, to increase gripping and enhance the protection of the user. The back portion of the glove 2 preferably includes a closure element, shown in the form of a stretchable material 18 rather than a wrist strap 16, to provide a tight and comfortable fit while permitting easy insertion and removal of the wearer's hand.

**[0036]** Of course, the molded palm portion 4 of the glove 2 of FIGS. 5-8 is also amenable to molding with any variety of different patterns shapes and designs, including padded or raised portions 10, flex grooves 8 or textured areas 6. The

benefits of these features would similarly be the cosmetic value, waterproofing, which may be important for some uses such as gardening, as well as providing padding in critical impact areas, and additional grip and or abrasion resistance in critical areas of the glove.

[0037] Moreover, as will be apparent to those skilled in the art, the glove 2 of the present invention can be designed with different combinations of the components described above. For example, the glove 2 of FIGS. 1-2 could be fashioned with a stretchable material 18 rather than a wrist strap 16, or could include a molded palm portion 4 that covers the front and sides of all of the fingers. Additionally, although the only embodiments shown include a molded palm portion over only the index finger and thumb or all fingers and thumb, it is understood that the front and sides of any number of fingers can be covered.

[0038] It will thus be seen that the objects set forth above, among those made apparent in the preceding description, are sufficiently obtained and, since certain changes may be made in the above constructions without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative, and not in a limiting sense.

[0039] It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention, herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

- 1. A utility glove comprising:
  - a palm side of the glove comprising a three dimensional molded palm portion formed of an elastomeric material having a thumb portion and at least one finger portion; and
  - a back side of the glove comprising a fabric material.
- 2. The utility glove of claim 1 where the molded palm portion comprises one or more thickened areas.
- 3. The utility glove of claim 2 where the thickened areas are raised in relation to adjacent areas of the molded palm portion.
- 4. The utility glove of claim 1 where the molded palm portion comprises one or more padded areas.
- 5. The utility glove of claim 1 wherein the molded palm portion comprises textured gripping portions.
- 6. The utility glove of claim 1 wherein at least one of the thumb portion and at least one finger portion terminate in a cap for covering the tip of at least one of the thumb and at least one finger.

7. The utility glove of claim 1 where the palm side of the glove further comprises a fabric material adjacent the molded palm portion.

8. The utility glove of claim 7 where the fabric material is secured to the molded palm portion by one of placing the fabric material in the area of the mold prior to molding the molded palm portion and sewing the fabric material to the molded palm portion.

9. The utility glove of claim 1 wherein the molded palm portion comprises a lining material.

10. The utility glove of claim 1 wherein the thumb portion and the at least one finger portion is formed to over 50% of the circumference of at least one of the wearer's thumb and at least one finger.

11. The utility glove of claim 1 further comprising one or more flex grooves associated with at least one joint in a user's hand.

12. The utility glove of claim 1 where the molded palm portion includes a thumb portion and four finger portions.

13. The utility glove of claim 12 where the tip of each of the thumb and finger portions terminate in a cap for covering the tip of the user's thumb and each finger.

14. The utility glove of claim 12 wherein the thumb portion and each finger portion is formed to over 50% of the circumference of the user's thumb and each finger.

15. The utility glove of claim 1 wherein the molded palm portion has different areas formed from different compositions of elastomeric materials.

16. The utility glove of claim 2 further comprising a molded portion on the back side of the glove.

17. A method of forming a molded portion of a utility glove comprising the steps of placing a piece of fabric against a mold part formed in the shape of at least a portion of a hand, bringing a corresponding mold part into molding relation with the mold part in the shape of at least a portion of the hand and injecting an elastomeric material into the mold to form the molded portion.

18. The method of claim 17 wherein the fabric is a heat resistant knit hydrophilic fabric.

19. The method of claim 17 where the mold part formed in the shape of at least a portion of the hand is formed in the shape of a hand and the fabric is formed in the shape of a glove that covers at least a portion of the mold part.

20. The method of claim 17 where the corresponding mold part includes one or more of one or more textured areas, one or more thickened areas, one or more padded areas and one or more flex grooves.

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