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(54) **INSECT PROTECTION GARMENT**

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(57)

**ABSTRACT**

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A one piece, self-supporting total body covering for protection against insects to be used by campers, hikers, fisherman, hunters or by professionals who work in the outdoors such as scientists and photographers. The garment will be mostly made of a see-through material impervious to insects. What is new and different about this garment is that it will create an area inside the netting large enough to eat, read, etc, and keep the user protected from insects and comfortable for long periods of time. It will be easy to deploy, wear, remove and transport.

**Related U.S. Application Data**

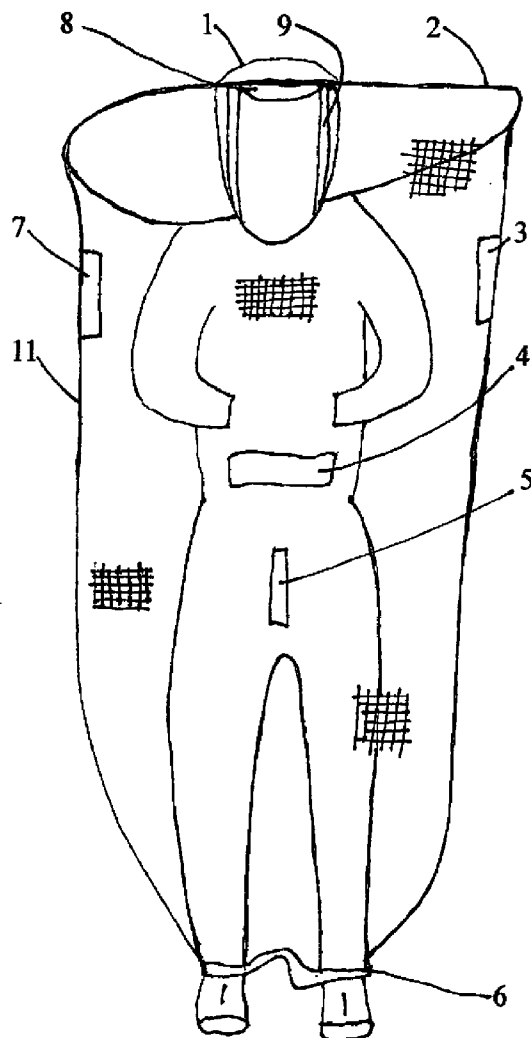
(63) Continuation-in-part of application No. 12/480,111, filed on Jun. 8, 2009, now abandoned.

**Publication Classification**

(51) **Int. Cl.**

*A41D 13/00*

(2006.01)



**FIG. 1**

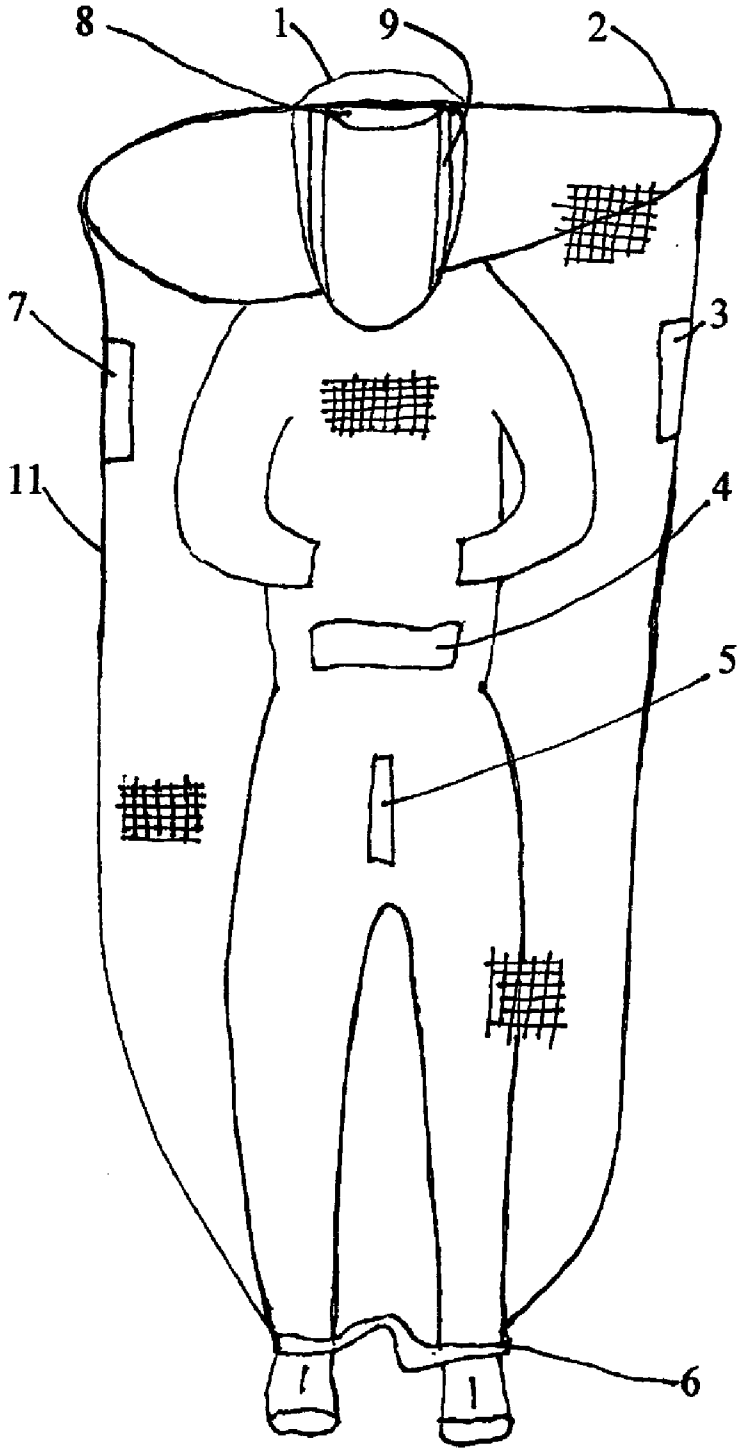
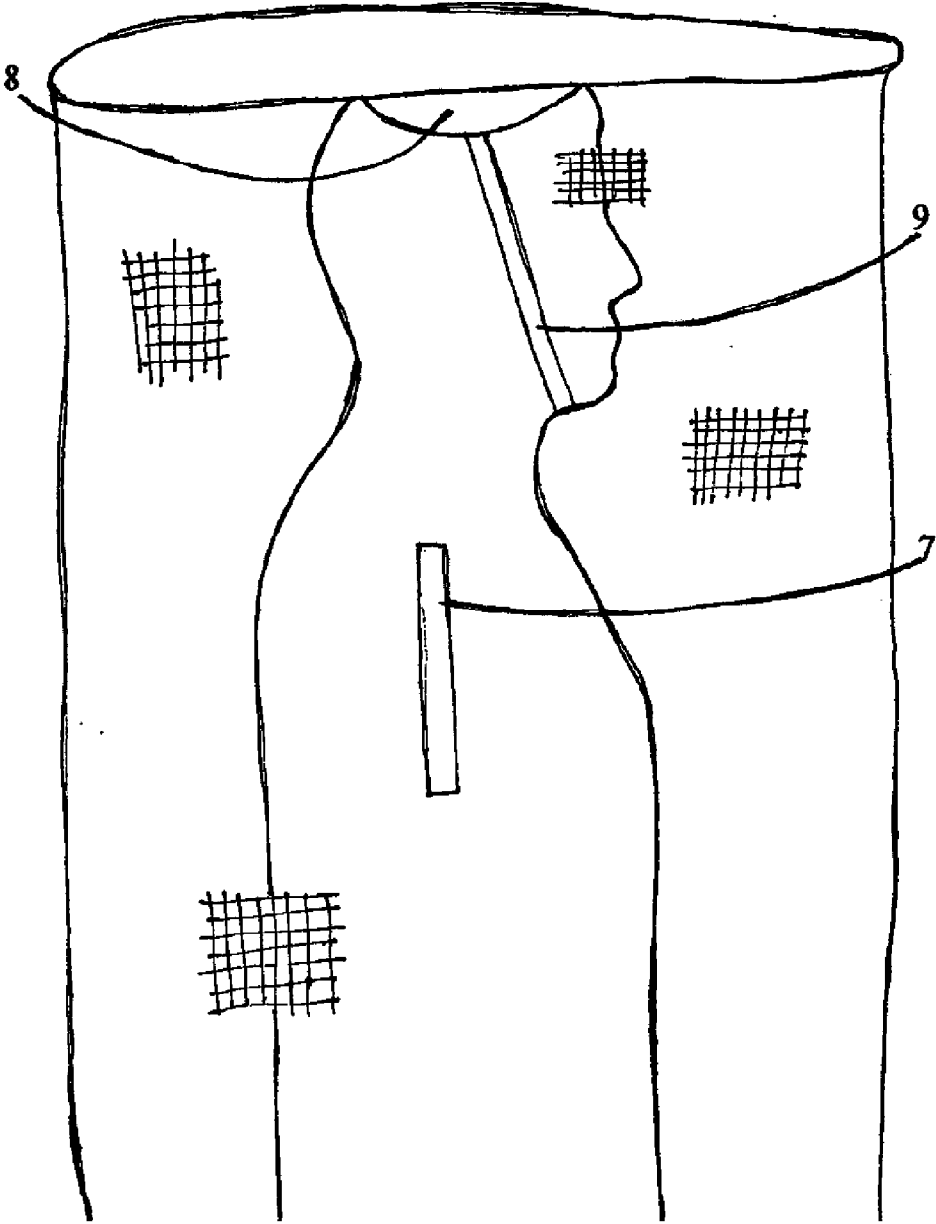
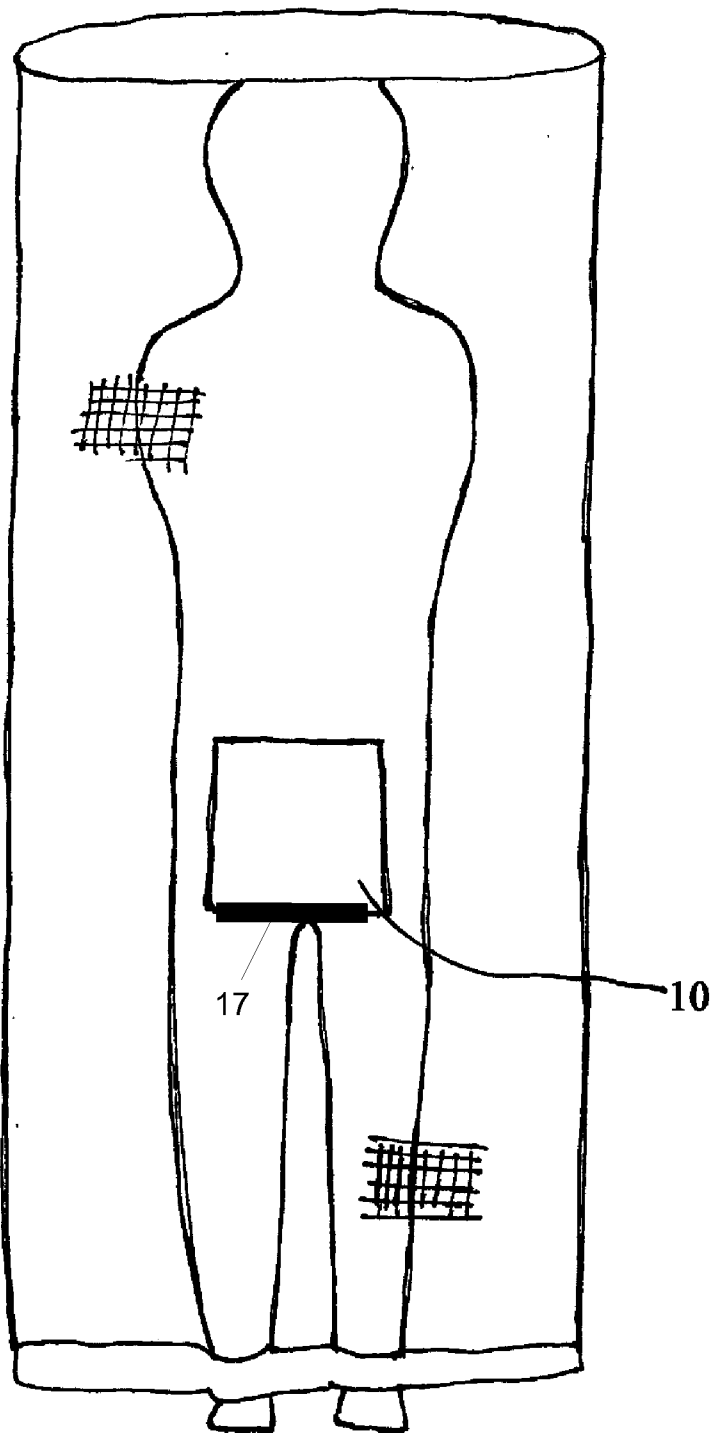


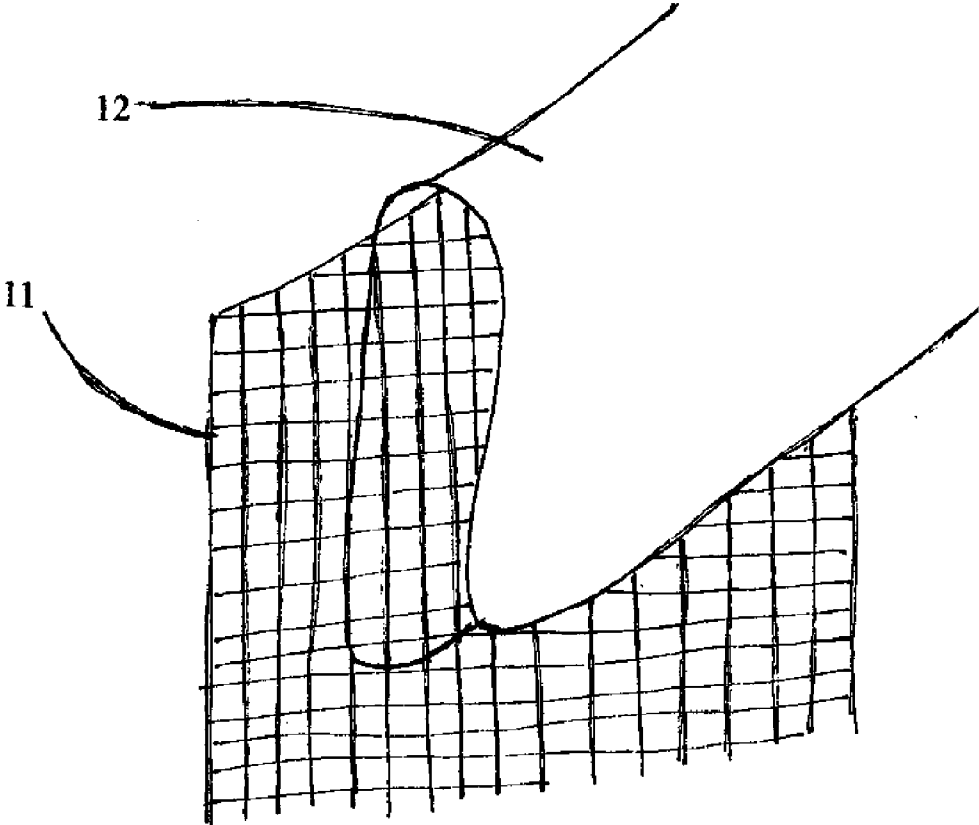
FIG. 2



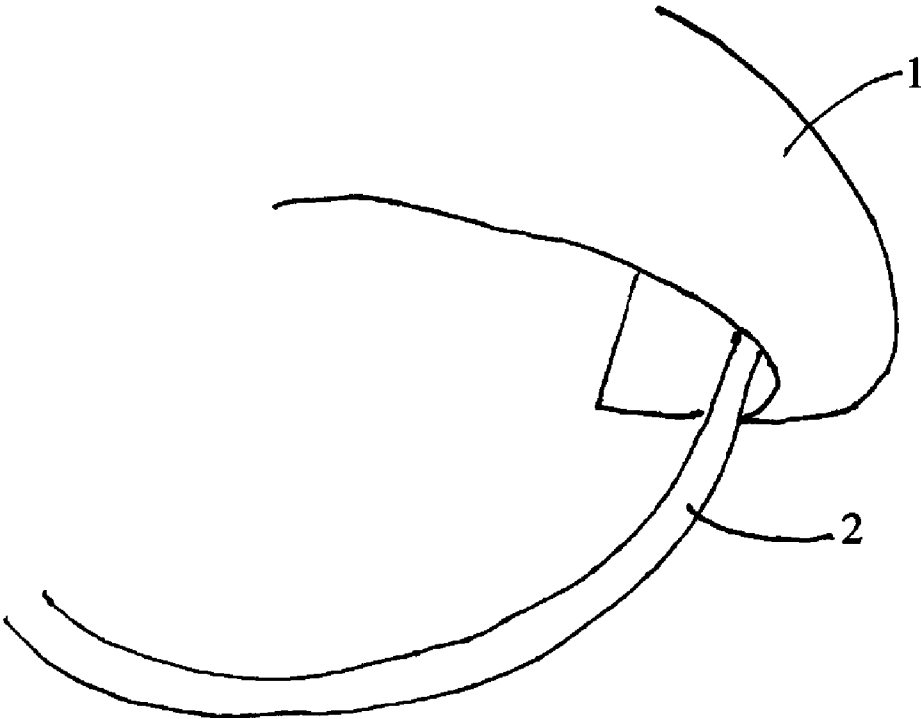
**FIG. 3**



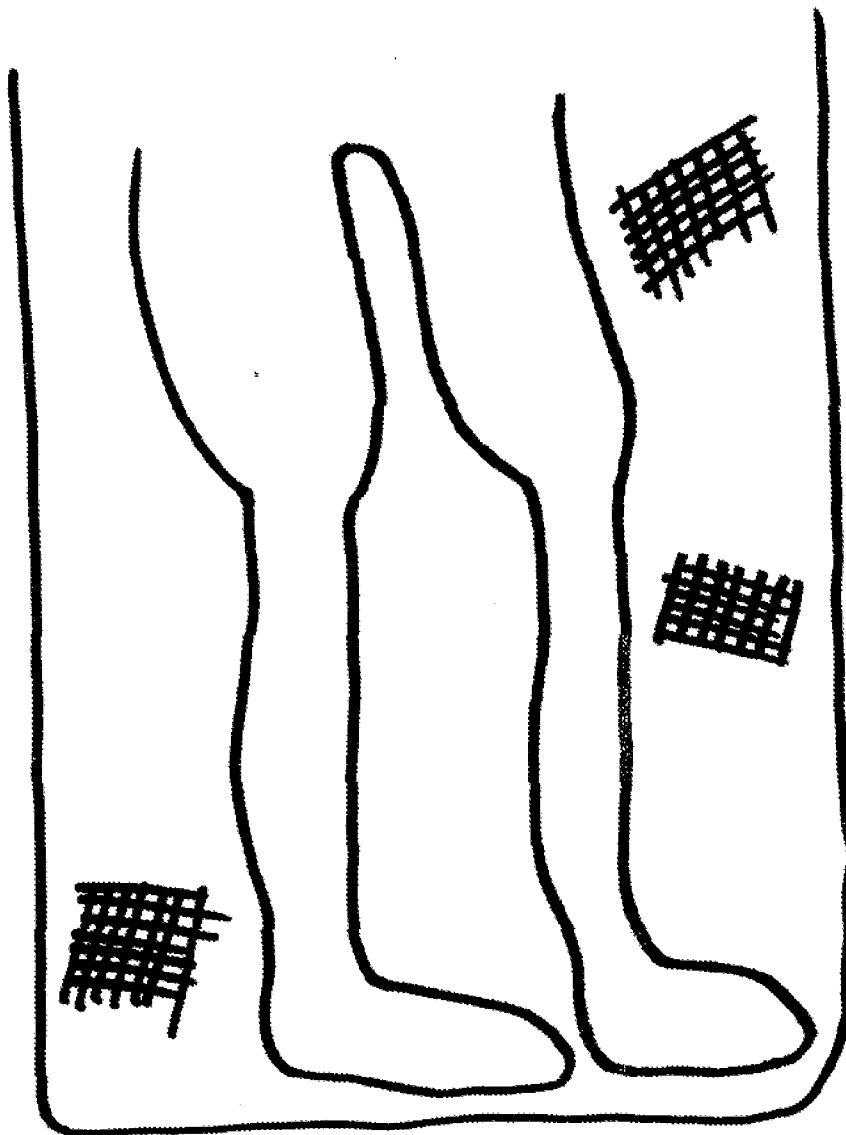
**FIG. 4**



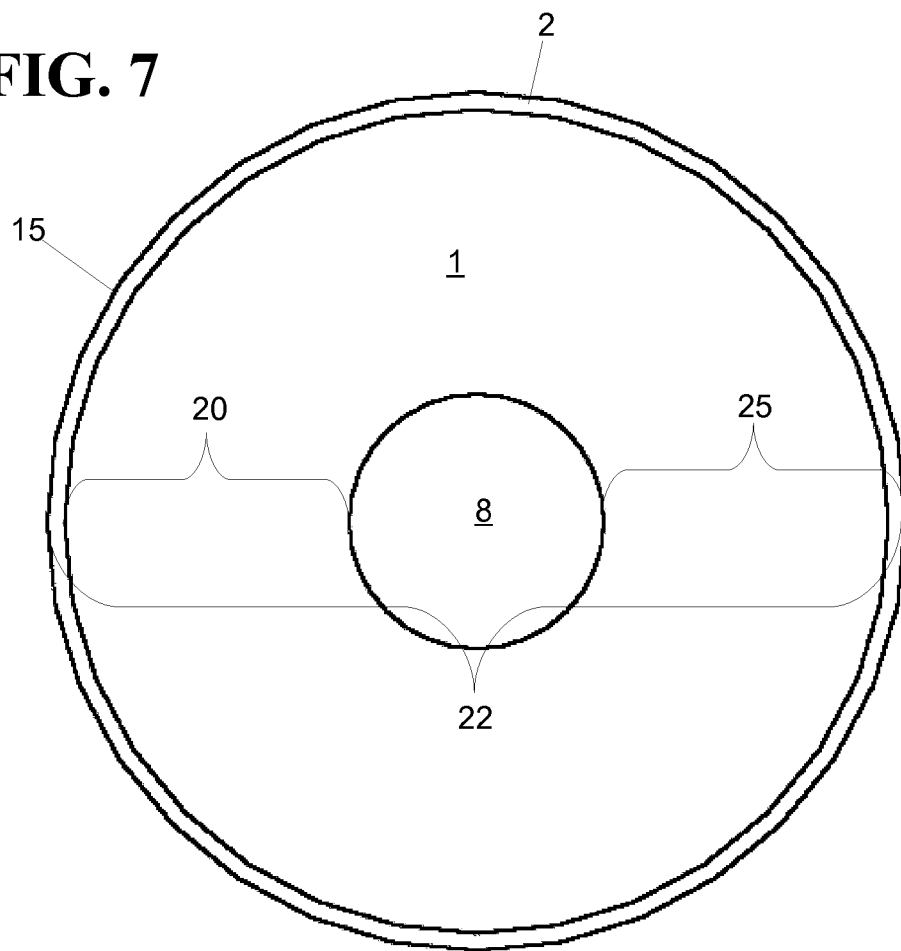
**FIG. 5**



**FIG. 6**

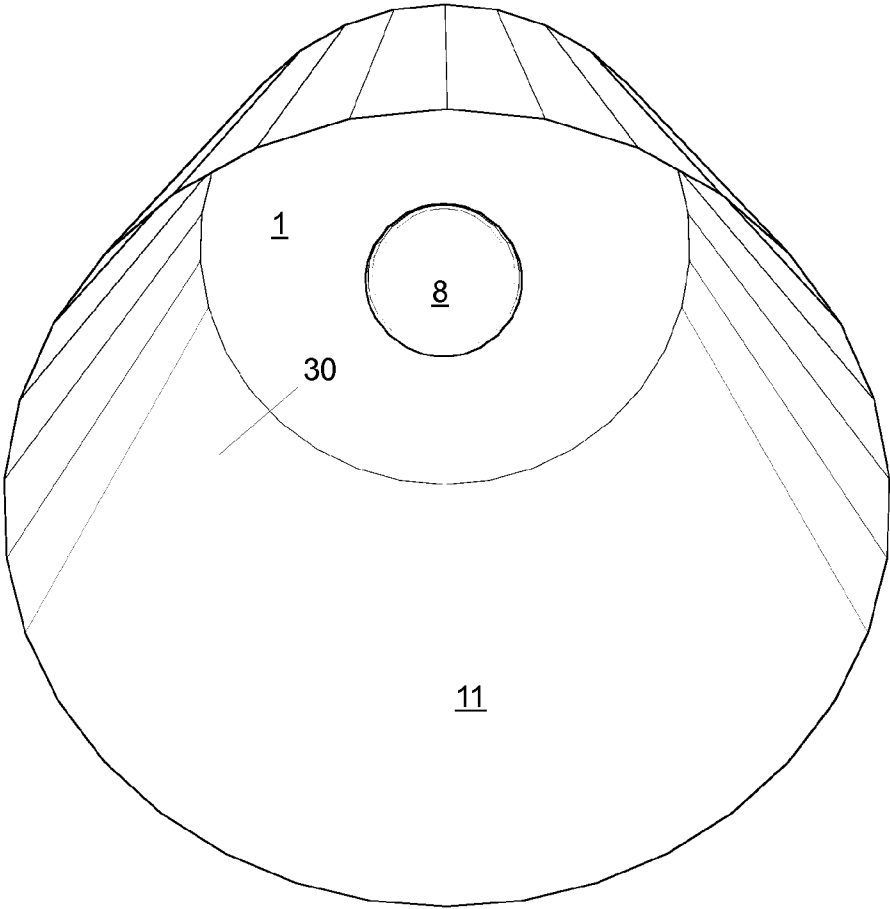


**FIG. 7**

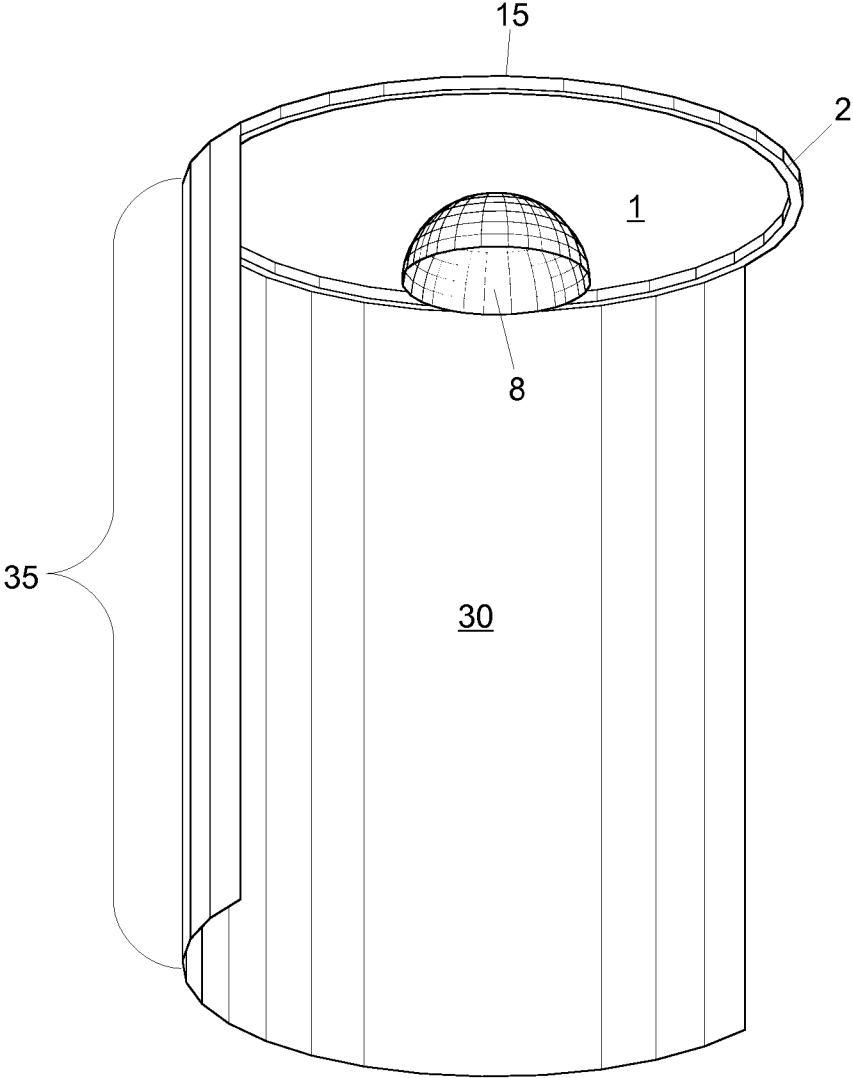




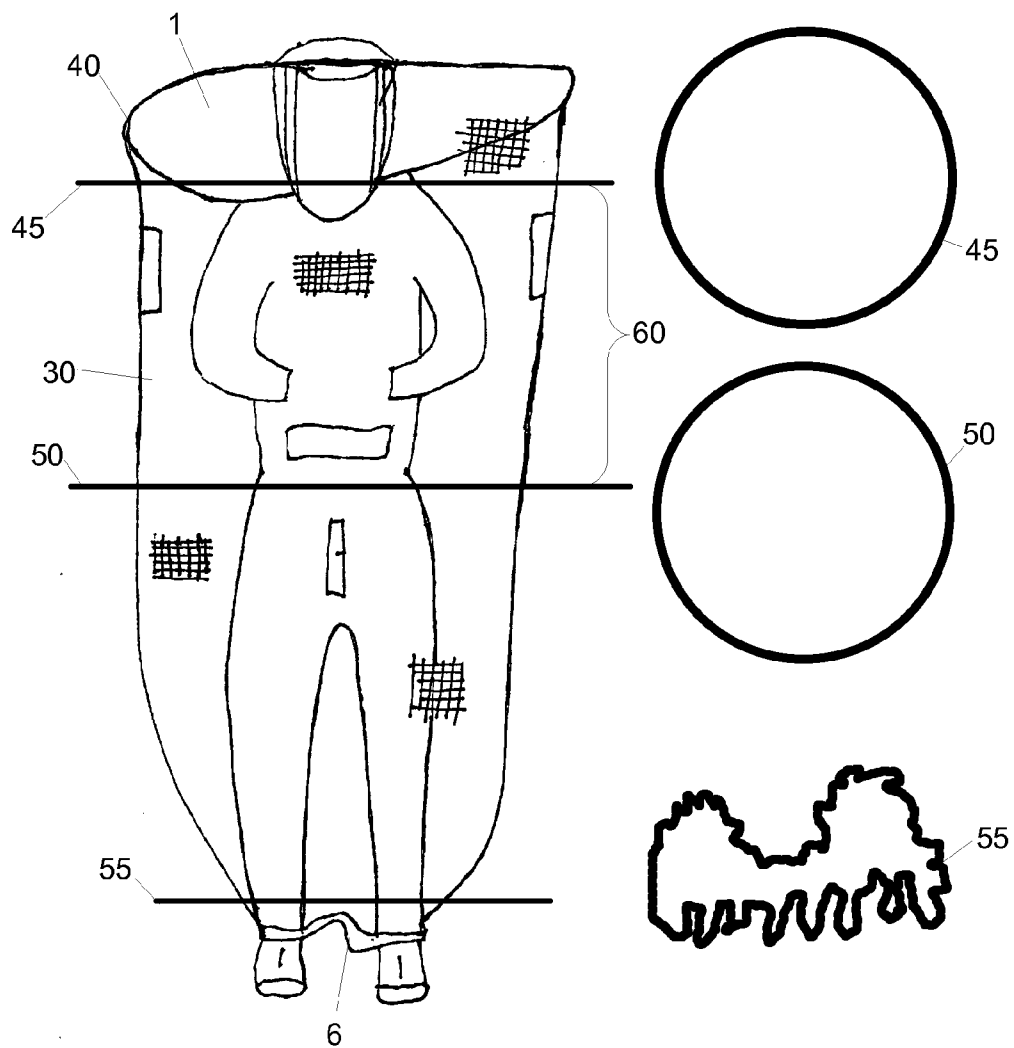
**FIG. 8**



**FIG. 9**



**FIG. 10**



**INSECT PROTECTION GARMENT**

**REFERENCE TO CO-PENDING APPLICATION**

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 12/480,111 entitled "Insect Protection Garment" that was filed Jun. 8, 2009 by Gary Hunt, the entire contents of which are herein incorporated by reference.

**OVERVIEW**

[0002] This invention is for protection from bothersome and biting insects normally occurring in outdoor areas. It is a one piece, self-supporting total body covering. It will be made mostly of see-through netting material impervious to insects. Most importantly it will create a large enough space, inside the netting, to allow the wearer to eat, drink and relax while doing normal activities, without having to remove the garment, thus reducing exposure to annoying and harmful insects. The netting will be well away from the face making it comfortable to wear for long periods of time. It will be easy to deploy, wear, remove and transport.

**FIELD OF DISCLOSURE**

[0003] This invention is an improvement on all other types of insect protection garments for anyone in an outdoor area where bothersome insects are present. It is designed to be easy to use and comfortable to wear.

**BACKGROUND OF THE INVENTION**

[0004] Previously users of the outdoors have had to use either a head net or a head net in combination with a full body suit to protect themselves from insects. Head nets are uncomfortable, especially if you have to wear one for hours, or all day, or day after day as is the case when working or camping outdoors. The netting is only inches from the face, which gets annoying very quickly and makes activities such as eating very difficult. To eat, the head net must either must be removed thus exposing the person to the insects, or the user can try to pull the neck elastic out far enough to get a fork full of food into the mouth, which is difficult, and also creates an opening for insects to enter, thus undermining the protective aspect of the head net. Some try to solve this problem by eating in a tent, this is not recommended because animals are attracted to food smells and bears, skunks etc may come to the tent looking for a meal.

[0005] Suit type body protection must be worn over full length clothing as the netting cannot be held away from the skin. This makes suit types very uncomfortable on hot days when insects are present. They also must be used in conjunction with a head net which fails to address the problem of how to eat and perform other necessary tasks without creating an opening for insects to enter or removing the head net.

[0006] Some users of the outdoors rely on chemical repellents on their skin or clothing. Recent reports on these chemicals safety on the body make many reluctant to place it on the skin or inhale the vapors given off by these harsh chemicals even when placed on clothing. Some have label warnings of chemical stains if placed on clothing, and have to be re-applied frequently to be effective.

[0007] The Alquist et al, U.S. Pat. No. 5,717,990 is a hood arrangement, and fails to address the need for a larger inside area to eat, read etc. The Alquist hood also hangs very close to the face which is annoying. It also fails to address the ability to be folded into a small and more pack able size. Also the

crown piece is made of mesh material that provides little shade and no rain protection. It can be raining hard enough to get a person wet, yet not deter the insects. It also appears that the reinforcing cross strips on top lay directly on the head potentially making it uncomfortable after many hours of use. The Alquist et al hood has no openings for convenience, necessitating it to be opened or removed frequently to perform simple tasks.

[0008] The Merrill, U.S. Pat. No. 5,091,993 and Myers U.S. Pat. No. 4,395,781 are both suit type of garments that would be extremely hot on even moderately warm days. The face netting can be opened for eating etc, but there is nothing to prevent insects from flying inside the head piece while opened, thus undermining the protective aspect of the garment.

[0009] So what is desired is a garment that is one piece, light weight, covers the whole body and has a large enough inside space so you can eat, read etc and has openings for convenience so the garment will need to be removed as little as possible. It has a top that not only blocks insects from entering, but also provides shade and rain protection and allows the user to wear shorts and tee shirt on hot days.

**SUMMARY**

[0010] This invention is intended to be worn to provide protection from insects and to be easy to deploy, wear, remove and transport. It is to be used by people who wish to engage in outdoor activities where enjoyment of such activities may be compromised by bothersome or biting insects.

[0011] It can also be used by military personnel deployed in areas where biting insects are a big problem and they are faced with long exposure times and where the possibility of contracting malaria is a factor. This invention could also help the populations in poorer countries or any place where there is a danger of malaria. There are bug nets for the heads and beds but none for the body, this invention fills that need.

[0012] A key of this invention is to have insect protection that can be worn over regular clothing, including light weight shirts and shorts that are normally worn outdoors when the weather is hot. Biting insects thrive in hot weather and having to wear a long sleeve shirt and long pants on 90 degree plus days is dreadful and possibly dangerous as such clothing could facilitate heat stroke.

[0013] It is the object of this invention to provide a large enough inside space as to not be annoyed by netting close to the face. Also to allow a large enough inside space for activities such as eating, drinking, smoking, sewing, repairing, cleaning gear or reading a map or book or writing in a journal, without fear of biting bugs.

[0014] A key of this invention is the spring steel, or plastic ring of the top to be the only support necessary for this garment. Also, the ring of the top will hold the netting well away from the face of the wearer creating a space inside impervious to bugs. Another key to this invention is that the ring on top will be sewn into the outer edge of the top material so as to allow it to be twisted and folded to approximately one third of its unfolded size to make it much easier to pack and transport.

[0015] Another important aspect to this invention is the opening in the front, at approximately waist level, will have a fabric hook and loop fastener or similar closure that is large enough to pass a plate of food, a book, etc inside. The opening for men will be located where a zipper on a regular pair of

men's pants is located to facilitate the use of a restroom as needed. This will also have a fabric hook and loop fastener or similar closure.

[0016] The seating area, which is in back, at waist level, extending down to just above the back of the knee, will be made of a durable material such as nylon so as to reduce the possibility of wear and tear when sitting on abrasive surfaces such as rocks or logs. The opening in the seating area will also be large enough to allow the use of a restroom without removing the garment and will have a fabric hook and loop fastener or similar closure.

[0017] There will also be a round piece of cotton or other soft material sewn onto the inside of the top to deny insects the ability to bite the wearer on the head. There will also be a chin strap made of elastic strap material or cloth string with a cord lock, permanently attached to the round piece of cloth material attached to the top. It will be long enough to comfortably reach under the chin of the wearer to hold the garment in place.

[0018] There will be a strip of the durable nylon material at the bottom to prevent wear if dragged on the ground. There will be elastic straps sewn to the bottom strip that can be looped under the shoes to hold the garment down far enough to prevent insects from entering from the bottom.

[0019] The garment can be rolled up to waist level or to shoulder or neck level depending on how much of the body the wearer wants to protect.

[0020] The entire bottom of the garment will be open to allow entry into the garment and make removal easy. Also the garment can be closed at the bottom around the shoes to keep insects from getting inside. This also will allow the wearer to walk around the campsite, etc. Also, if the wearer prefers to bring the feet inside, the entire bottom of the garment can be sealed with the fabric hook and loop fastener.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The above-mentioned aspects of the present invention and the manner of obtaining them will become more apparent and the invention itself will be better understood by reference to the following description of the embodiments of the invention, taken in conjunction with the accompanying drawings, wherein:

[0022] FIG. 1 is the front elevation of the garment.

[0023] FIG. 2 is the right elevation of the garment.

[0024] FIG. 3 is the rear elevation of the garment.

[0025] FIG. 4 demonstrates how a nylon strip of material should be attached to the top and the bottom of the netting material.

[0026] FIG. 5 demonstrates how the spring steel or plastic hoop should be sewn into the material on the top piece of the garment.

[0027] FIG. 6 illustrates the lower details of the insect protection garment.

[0028] FIG. 7 illustrates a bottom view of the insect protection garment.

[0029] FIG. 8 illustrates a lower perspective view of the insect protection garment.

[0030] FIG. 9 illustrates a side perspective view of the insect protection garment with a portion of the mesh netting removed.

[0031] FIG. 10 illustrates a front view of the insect protection garment with cross-sections at various elevations.

DETAILED DESCRIPTION

[0032] The embodiments of the present invention described below are not intended to be exhaustive or to limit the invention to the precise forms disclosed in the following detailed description. Rather, the embodiments are chosen and described so that others skilled in the art may appreciate and understand the principles and practices of the present invention.

[0033] In FIG. 1 the front elevation of the garment for the protection from insects is illustrated, it is a one piece total body covering. It can be made as a large size for adults or smaller sizes for smaller adults or children. It will be constructed mostly out of see-through insect barrier netting and nylon. The top piece 1 is made of nylon or other similar material that will provide a barrier from insects and shade and rain protection for the wearer. Sewn into the outer edge of top piece 1 is preferably a narrow spring steel hoop, but maybe a strong plastic hoop 2 that will provide support for the garment and should have the ability to be twisted and folded for packing convenience.

[0034] The top piece 1 will be made of a circular piece of nylon or similar material that is commonly used to make outdoor clothing or tents. The edge will be sewn in such a way as to prevent fraying.

[0035] The spring steel or plastic hoop 2 will be sewn into the outer edge of top piece 1. Top piece 1 will be folded over at the edge so the hoop 2 will be between the layers of material. Double stitching for strength is recommended.

[0036] The netting 11, that extends down below the top piece 1 will be sewn to the outer edge of the top piece 1. Before sewing the netting 11 to the top piece 1, a strip of nylon 12 should be sewn to the top of the netting 11 where it will be attached to top piece 1. The strip of nylon 12 should be folded over so the top of the netting 11 will be between the layers of the folded nylon 12 and then double stitched for strength. Then the strip of nylon 12 with the netting 11 attached can be sewn to top piece 1 and double stitched for strength. The top piece 1 is tightly stretched across hoop 2 (or resilient loop) to transfer the weight of the netting 11 and hoop 2 to the head piece 8 with minimal sagging of the top piece 1.

[0037] The arm openings 3 and 7 may have a permanently attached sleeve (not shown) and allows the wearer to extend the hand and arm outside of the netting to cook, operate a camera, set up a tent, etc. If a sleeve is attached to openings 3 and 7, a strip of nylon should be sewn on the end of the sleeve that will be attached to the garment and then the nylon sewn to the garment. The sleeve should be made of netting or nylon material. With or without the sleeve the opening can be closed, preferably with a fabric hook and loop fastener, or with a zipper or other types of fabric closing systems. The upper front opening 4 should be large enough to pass a plate of food or an article of clothing, etc, inside the garment or passing such items outside of the garment. This opening will be closable with a fabric hook and loop fastener or similar system. The lower front opening 5 will be for the males convenience when using the restroom and can be closed with A fabric hook and loop fastener or similar system. FIG. 3 illustrates an example of a fabric hook and fastener 17 being secured adjacent to one of convenience openings.

[0038] The bottom opening 6 can be opened to a size large enough to allow the wearer to put the garment on and off. It can also be closed at the bottom with a fabric hook and loop fastener or similar system. It will have a strip of nylon sewn around the entire bottom to prevent wear. It should be sewn to

netting **11** the same way as the nylon strip **12** is sewn to netting **11** in FIG. **4**. Fabric hook and loop fastener can then be attached to the bottom strip of nylon so the entire bottom of the garment can be opened or closed. If the wearer wishes to pull the feet inside the garment the entire bottom of the garment can be closed with a fabric hook and loop fastener. If the wearer wishes to walk with the garment on, the bottom opening can be closed around the tops of the shoes and remain closed between the feet to allow mobility while still denying insects entry. The bottom strip may have two loops of elastic (not shown) that can be looped under the shoes to hold the garment down close to the shoes.

**[0039]** Before a fabric hook and loop fastener is attached to the garment it should be sewn to a piece of nylon first rather than sewing a fabric hook and loop fastener directly to the garment. Then the nylon with the fabric hook and loop fastener attached can be sewn to the garment. Double stitching for strength is recommended everywhere anything is attached.

**[0040]** The circular head piece **8** is sewn to the top piece **1** to keep insects from reaching the wearers head and as an attachment for chin strap **9**. The chin strap **9** keeps the garment from sliding around and keeps the garment in place if wind is present. It can be made of an elastic material or cotton, like a shoe string with an adjustable stop so the wearer can adjust for comfort under the chin.

**[0041]** FIG. **2** shows the garment from the right elevation, the left elevation is a mirror image of the right elevation. The circular head piece **8** is shown and should be sewn to the inside center of top piece **1** and should be large enough and thick enough to prevent insects from reaching the head when trying to bite through from the top of top piece **1**.

**[0042]** Chin strap **9** is made of either of thin elastic material or cotton material such as a shoe string that has adjustable cord lock, like the type found on stuff sacks, so the chin strap can be adjusted for comfort. It will be sewn to head piece **8** just above the ears. It will prevent the garment from sliding around and keeps the garment in place if wind is present.

**[0043]** The arm opening **7** is shown for the right arm to extend out as needed and close with a fabric hook and loop fastener.

**[0044]** FIG. **3** shows the rear elevation. The rear convenience flap **10** is shown. It will be a flap type or trap door type opening similar to the rear opening seen in one piece long underwear. It will have a fabric hook and loop fastener or similar closer on the left, right and bottom that can be opened for restroom use. The fabric hook and loop fastener should be sewn to the nylon flap along the left, right and bottom edges, and fabric hook and loop fastener sewn to nylon strips and then sewn to the left, right and bottom edges of the opening in the garment. The top of flap **10** will be sewn to the garment.

**[0045]** FIG. **4** shows the way the nylon strip of material **12** is folded over netting material **11** so that the netting material **11** is sandwiched between the folded piece of nylon strip **12**. Then with double stitching die folded piece of nylon strip **12** with the netting material **11** between the fold of nylon strip **12** is all sewn together. Then nylon strip **12** can be attached along the outer edge of top piece **1**, double stitching is recommended.

**[0046]** FIG. **5** demonstrates how spring steel hoop **2** is sandwiched between the folded over edge of top piece **1**. The folded over edge of top piece **1** with spring steel hoop **2** between the fold of the edge of top piece **1** is all sewn together.

Double stitching is recommended on both sides of spring steel hoop **2**. FIG. **6** highlights the lower portions of the garment.

**[0047]** FIG. **7** illustrates a bottom view of the garment with the head piece **8** fully circumscribed by the outer perimeter **15** of the top piece **1**. Substantially all of the outer perimeter **15** of the top piece **1** is secured to the hoop **2** (also referred to as a loop). The head piece **8** is substantially separated from the outer perimeter **15** of the top piece and the hoop **2** in that there is a significant minimum separation of the head piece **8** from both the outer perimeter **15** and the hoop **2**. Substantially separated is herein defined to mean having a significant minimum separation between objects. In the illustrated example, the head piece **8** is separated from the hoop by a minimum hoop distance **20** of twelve inches. In an exemplary embodiment, the diameter **22** of the top piece is at least two feet. The head piece **8** is separated from the outer perimeter **15** by a minimum perimeter distance **25** of twelve and a quarter inches. It should be understood that these distance are examples, and other distances, such as 6 inches, 9 inches, 18 inches, and 24 inches may also be used as the minimum separation distances between the head piece **8** and the outer perimeter **15** and hoop **2**.

**[0048]** FIG. **8** illustrates a lower perspective view of the garment with the netting **11** in the form of a tube **30** fully circumscribing the head piece **8**. FIG. **9** illustrates a lower perspective view of an insect protection garment with a portion of the netting cut away. The netting **11** is in the shape of a cylindrical tube **30** that has a height **35** of at least three feet; however other embodiments will have a height **35** of between 5 and 7 feet. The outer perimeter **15** of the top piece **1** in the illustrated example has a length of at least six feet and the tube **30** has a similar circumference.

**[0049]** FIG. **10** illustrates an example of a mesh tube **30** having a bottom opening **6** near the feet of a user and a top opening **40** at the top piece **1**. Adjacent to the top opening the tube **30** has a first horizontal perimeter **45** that has a first length. Midway between the top opening **40** and the bottom opening **6**, the tube **30** of netting **11** has a second horizontal perimeter **50** that is the same length as the first horizontal perimeter **45**. Adjacent to the bottom opening **6**, the tube **30** has a third horizontal perimeter **55** that has the same length as the other two horizontal perimeters. In the illustrated example, the first and second horizontal perimeters (**45** and **50**) are substantially circular while the third horizontal perimeter has an erratic shape due to the netting being gathered around the feet of the user. In the illustrated example, the first horizontal perimeter **45** and the second horizontal perimeter **50** are separated by a distance **60** of at least two feet. In an exemplary embodiment, the first and second horizontal perimeters are separated by at least three feet with the total height of the mesh tube being approximately six feet. In an exemplary embodiment, the top piece is constructed of a canvas material that provides shade to the user while the mesh tube is see-through and only minimally obstructs the user's vision.

**[0050]** It should be understood that the descriptions of the invention were made as specific as possible and that changes in materials, openings, support systems and closer systems, fall within the true scope of the invention and are covered by the stated claims.

**[0051]** While exemplary embodiments incorporating the principles of the present invention have been disclosed herein, the present invention is not limited to the disclosed

embodiments. Instead, this application is intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

- I claim:
  1. An insect protection device configured to attach to a head of a user, the insect protection device comprising:
    - a head piece adapted to be directly secured to the head of the user;
    - a circular top piece secured above the head piece, the top piece having an outer perimeter circumscribing the head piece;
    - a resilient loop secured to the circular top piece at the outer perimeter;
    - a mesh tube secured to the circular top piece at the outer perimeter and having a height to extend beyond a waist of the user; and
    - the resilient loop and the mesh tube both substantially separated from and fully circumscribing the head piece.
  2. The insect protection device of claim 1 further comprising the circular top piece being tightly stretched across the resilient loop, and the mesh tube having a diameter of at least two feet.
  3. The insect protection device of claim 1 wherein the resilient loop is constructed of a spring steel.
  4. The insect protection device of claim 1 wherein the mesh tube includes at least two convenience openings selected from a group consisting of:
    - a left arm opening,
    - a right arm opening,
    - an upper front opening,
    - a lower front opening, and
    - a bottom opening.
  5. The insect protection device of claim 4 further comprising:
    - a fabric hook and loop fastener secured adjacent to at least one of the convenience openings.
  6. The insect protection device of claim 1 wherein the mesh tube has a bottom opening, the mesh tube has a first horizontal perimeter, with a first length, adjacent to the top piece, the mesh tube has a second horizontal perimeter, with a second length, midway between the top piece and the bottom opening, and the first length is equal to the second length.
  7. The insect protection device of claim 6 wherein the second horizontal perimeter is separated by the first horizontal perimeter by at least two feet.
  8. The insect protection device of claim 6 wherein the mesh tube has a third horizontal perimeter with a third length adjacent to the bottom opening, the third length being equal to the first length.
  9. The insect protection device of claim 8 further comprising the mesh tube including at least one convenience openings selected from a group consisting of:
    - a left arm opening located between the first horizontal perimeter and the second horizontal perimeter,
    - a right arm opening located between the first horizontal perimeter and the second horizontal perimeter,

- a lower front opening located between the first horizontal perimeter and the third horizontal perimeter, and a lower rear opening located between the first horizontal perimeter and the third horizontal perimeter.
- 10. The insect protection device of claim 1 wherein the circular top piece has a diameter of at least two feet, and the mesh tube includes a cylindrical portion with a circumference of at least six feet and a height of at least three feet.
- 11. The insect protection device of claim 1 wherein the top piece is made of a fabric, and only the fabric on the top piece connects the head piece to the resilient loop.
- 12. An insect protection device configured to attach to a head of a user, the insect protection device comprising:
  - a head piece adapted to be directly secured to the head of the user;
  - a circular top piece secured above the head piece, the top piece having an outer perimeter circumscribing the head piece;
  - a resilient loop secured to the circular top piece at the outer perimeter; and
  - a mesh tube
    - secured to the circular top piece at the outer perimeter, having a bottom opening,
    - having a first horizontal perimeter with a first length adjacent to the top piece,
    - having a second horizontal perimeter, with a second length, midway between the top piece and the bottom opening, and
    - wherein the first length is substantially equal to the second length.
- 13. The insect protection device of claim 12 wherein the second horizontal perimeter is separated by the first horizontal perimeter by at least two feet.
- 14. The insect protection device of claim 12 wherein the circular top piece is tightly stretched across the resilient loop, and the mesh tube includes a convenience opening located between the first horizontal perimeter and the second horizontal perimeter.
- 15. The insect protection device of claim 12 wherein the mesh tube has a third horizontal perimeter, with a third length, adjacent to the bottom opening, the third length being substantially equal to the first length.
- 16. The insect protection device of claim 15 further comprising the mesh tube including at least one convenience openings selected from a group consisting of:
  - a left arm opening located between the first horizontal perimeter and the second horizontal perimeter,
  - a right arm opening located between the first horizontal perimeter and the second horizontal perimeter,
  - a lower front opening located between the first horizontal perimeter and the third horizontal perimeter, and
  - a lower rear opening located between the first horizontal perimeter and the third horizontal perimeter.
- 17. The insect protection device of claim 12 wherein the top piece is made of a fabric, and only the fabric on the top piece connects the head piece to the resilient loop.
- 18. The insect protection device of claim 12 further comprising

the resilient significantly separated from and fully circumscribing the head piece.

**19.** The insect protection device of claim **12** further comprising

the mesh tube significantly separated from and fully circumscribing the head piece.

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