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(54) **SHARK REPELLING AQUATIC APPAREL**

Related U.S. Application Data

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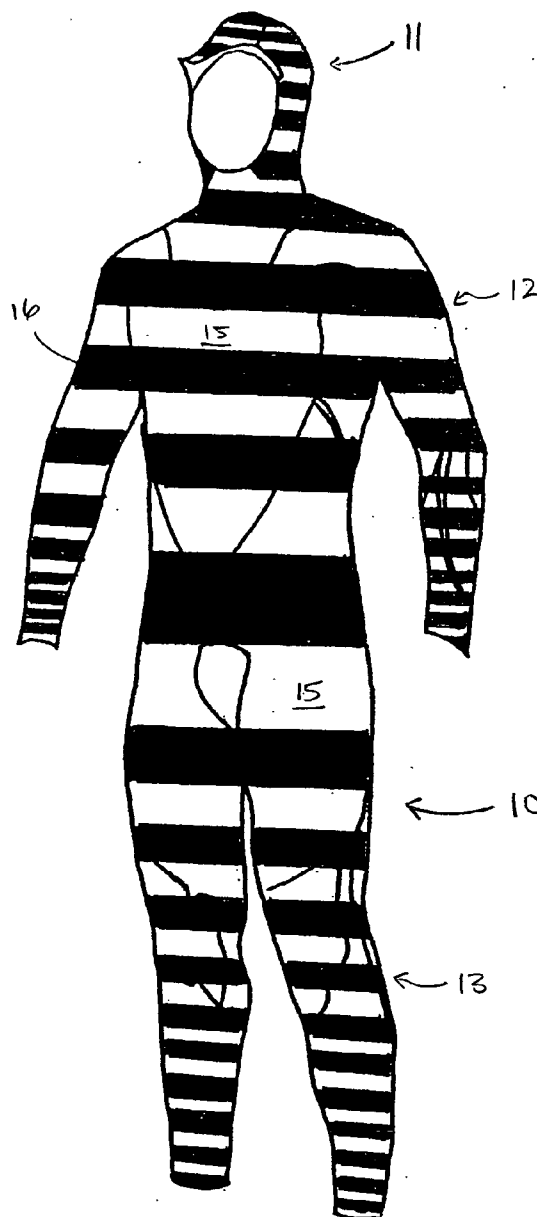
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(57) **ABSTRACT**

Water apparel for repelling sharks is provided comprising a garment having a plurality of divergent and distinct bands forming a striped pattern.

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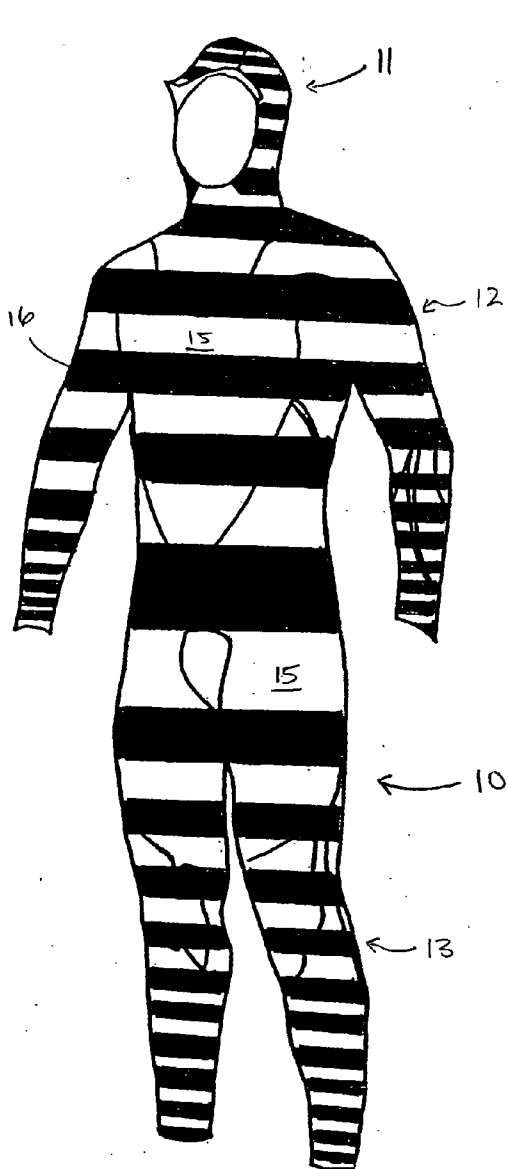


FIGURE 1

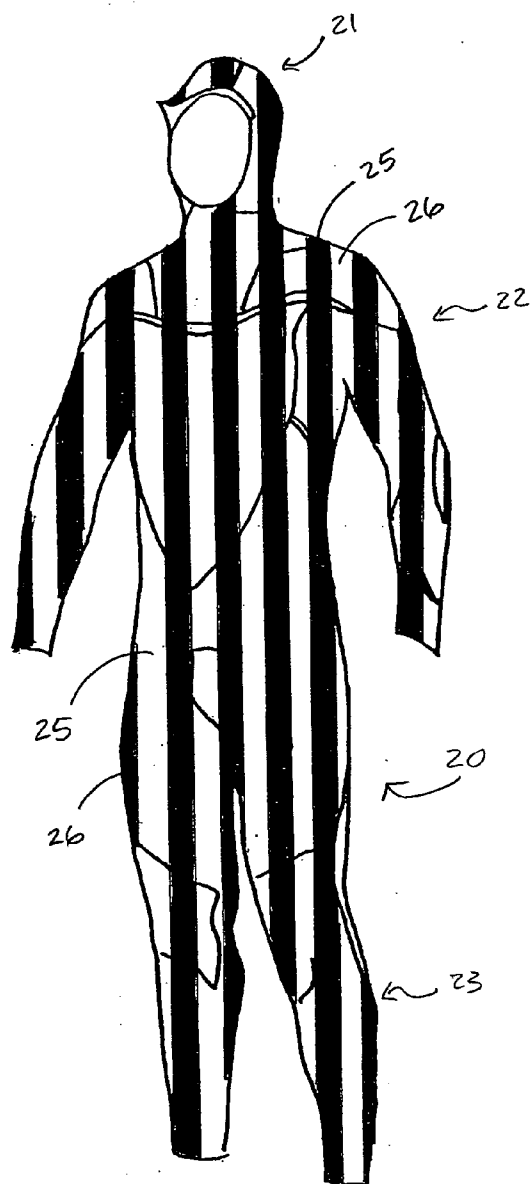


FIGURE 2

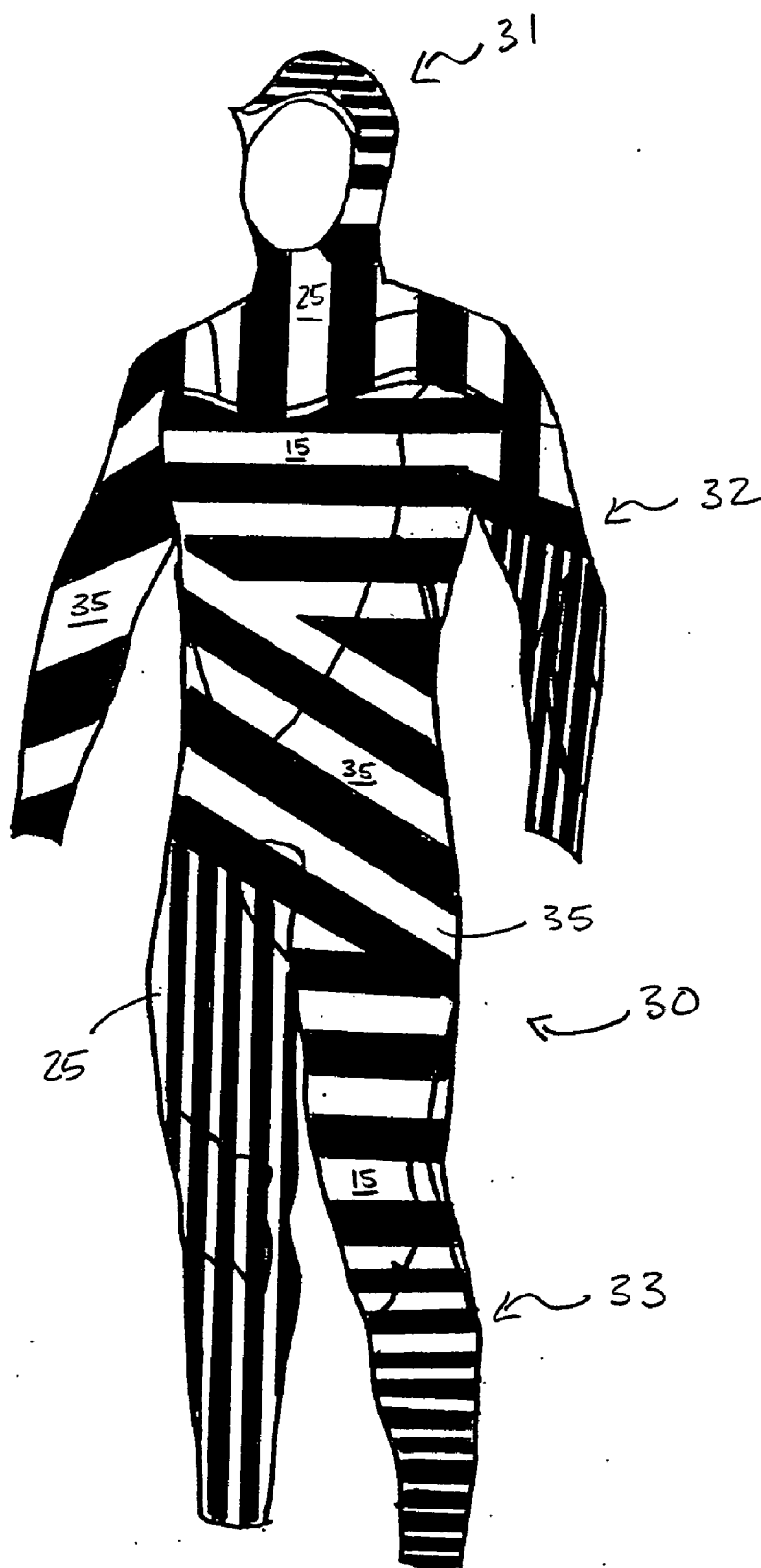


FIGURE 3

SHARK REPELLING AQUATIC APPAREL

RELATED APPLICATIONS

[0001] This application claims the benefit of priority from U.S. Provisional Application No. 60/627,893, filed Nov. 16, 2004, entitled STRIPED WETSUIT. The entirety of the contents of that application are incorporated by reference herein.

FIELD OF THE INVENTION

[0002] The invention relates to shark repelling apparel.

BACKGROUND

[0003] Shark attacks are a problem for surfers, divers, kite surfers, triathletes, water skiers, recreational ocean swimmers, sailors, persons lost at sea and those engaged in aquatic activities generally.

[0004] Numerous techniques have been attempted and suggested to protect those engaged in such activities from attack by sharks. Exemplary include chemical repellants, fixed barriers such as cages, electromagnetic repellants, and wearable metal barriers.

[0005] U.S. Pat. Nos. 5,616,333 and 4,602,384 are directed to and contain a discussion of chemical repellants. United States Patent Application Publication No. US2003/0233694 is directed to and contains a discussion of electromagnetic repellants. U.S. Pat. No. 4,833,729 is directed to a wearable metal barrier composed of metal spikes integrated into a rubber or rubber-like suit.

[0006] U.S. Pat. No. 4,494,245 discloses a wetsuit for repelling predatory marine animals that uses aposematic, or protective, coloration. As disclosed in that patent, aposematic coloration is a defense mechanism that certain organisms, animals and plants alike, use to ward off predators. These organisms have bright colors that make them readily identifiable by the predator. They are also very dangerous to the predator, for example they can be poisonous, so the predator readily learns to avoid them. Other organisms that are not dangerous to the predator also employ similar protective coloration, and this survival strategy is called mimicry. The '245 patent teaches the employment of this mimicry strategy in a method of repelling predatory animals by wearing a wetsuit having a coloration pattern that mimics that of the aposematic animal or its mimic, such as the sea snake Pelamis platurus, or the coral snake, which are known to elicit an avoidance responses in sharks. Taken as a whole, the '245 patent teaches that coloration is a key factor and that two or more colors should be employed, preferably chosen from yellow, black and red, in a pattern that reproduces the pattern of an organism known to be aposematic, or a mimic of an aposematic, for that predator.

SUMMARY OF THE INVENTION

[0007] The invention is based on the surprising discovery that it is the pattern, rather than the color alone or the combination of color and pattern, that is the critical element in repelling sharks. Specifically, it has been determined that a striped pattern is necessary and most effective in repelling sharks.

[0008] Accordingly, in one embodiment, the invention provides water apparel, for example, a wetsuit, having a

striped pattern on its exterior surface. The striped pattern should be completely visible to a human eye having 20/20 vision from a distance of at least one yard. The striped pattern can be made by applying a plurality of bands of a contrasting color to the exterior of a solidly colored wetsuit or the wetsuit can be made such that the plurality of bands are an integral part of the wetsuit. The bands may be straight or may form a wavy, drawn-out pattern similar to tiger or zebra stripping. In the latter case, the bands should preferably form arc-like, flowing curves.

[0009] With regard to the upright axis of the wetsuit, the bands can be arranged and disposed horizontally, vertically or diagonally. The horizontal, vertical or diagonal bands can be disposed in a substantially parallel arrangement to each other. The bands can be included in only a portion of the wetsuit or be included in or on the entire wetsuit. Further, the bands can be uniform or can vary in width and length. Additionally, a combination of bands, for example, vertical bands and diagonal bands, can be employed in or on the same suit of varying or of uniform widths, the vertical bands being disposed substantially parallel to each other and the diagonal bands being disposed substantially parallel to each other, but of course, not to the vertical bands.

DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is an illustration of the frontal view of a wetsuit having a plurality of horizontal bands of varying widths throughout the entire wetsuit.

[0011] FIG. 2 is an illustration of the frontal view of a wetsuit having a plurality of vertical bands of uniform width throughout the entire wetsuit.

[0012] FIG. 3 is an illustration of the frontal view of a wetsuit having a combination of horizontal, vertical and diagonal bands of varying widths.

DETAILED DESCRIPTION

[0013] Referring to FIG. 1, there is shown a wetsuit, 10, as is typically used by divers, surfers and the like, in an aquatic environment. Wetsuit 10 can be composed of one piece or of more than one pieces. As shown in FIG. 1, it is composed of one integral piece including a hood portion, 11, a torso portion, 12, including arms, and a bottom portion, 13, including legs. Alternatively, hood portion 11 could be formed as a separate and removable hood, torso portion 12 could be formed as a separate and removable top and bottom portion 13 could be formed as a separate and removable pair of pants. Further torso portion 12 can be sleeveless, short sleeve or long sleeve and likewise, bottom portion 13 can be thigh length or longer, to ankle length.

[0014] Wetsuit 10 in FIG. 1 is illustrated with a plurality of white bands, 15, on a black background, 16. White bands 15 are horizontally disposed and arranged on background 16 in relation to the upright axis of wetsuit 10. Horizontal white bands 15 have varying widths, narrow widths at the top of head portion 11, becoming wider in torso portion 12 and becoming narrower again in bottom portion 13.

[0015] In FIG. 2, there is illustrated another embodiment of the invention in which a plurality of bands are disposed and arranged on a background, 26, vertically in relation to the upright axis of the wetsuit, 20. As shown, vertical white bands 25 are of uniform width and length on black back-

ground **26** in this embodiment, in which the wetsuit, **20**, is composed of hood portion **21**, torso portion **22** and bottom portion **23**.

[0016] **FIG. 3** illustrates yet another embodiment of the invention in which the wetsuit, **30**, composed of hood portion **31**, torso portion **32** and bottom portion **33**, has combinations of white bands, disposed and arranged in relation to the upright axis of wetsuit **30** horizontally, **15**, vertically, **25**, and diagonally, **35**, on black background **36**.

[0017] It will be appreciated that the white bands and black background employed here are for illustration purposes only. The invention includes aquatic apparel having any combination of colors or hues, as long as the bands are composed of a color or hue that is divergent and distinct from the other colors or hues. For example, a suit of blue, green, violet or black may have a plurality of white, orange, red or yellow bands, or a combination of white, orange, red and yellow bands. A suit of white, orange, red or yellow may have a plurality of blue, green, violet or black, or a combination of blue, green, violet and black bands. A suit of lime green may have a plurality of violet, bright red, bright yellow or bright orange bands. What is important is that the colors selected be divergent and distinct from each other, such that the visual change from one color to another color is definitive and sudden or abrupt and the bands readily "stand-out" against a "background". The striped pattern should be completely visible to a human eye having 20/20 vision from a distance of at least one yard. Accordingly, combinations of highly saturated, ruminant, colors or hues are preferred.

[0018] Many different color combinations may be employed and their selection will depend on their hue and intensity. The skilled artisan will be able to readily select appropriate combinations and hues and intensities meeting these characteristics. Thus, in addition to the white and black combination exemplified, various combinations of highly saturated, ruminant, colors may be employed to create the divergent and distinct striped pattern.

[0019] It will also be appreciated that while the invention is described in terms of wetsuits, which are specialized aquatic garments typically composed of neoprene or other kinds of synthetic rubbers that have insulating characteristics, it may be employed for any kind of water apparel, for example boardshorts, rash and U.V. skins, whether full body, or tops and bottoms, swim tops, swim shorts and bathing suits. Likewise, while the invention is described in terms of hoods, it is equally applicable to gloves and boots.

[0020] Thus, although the invention has been described with respect to specific examples and embodiments, it is not intended that such specific references be considered limitations upon the scope of the invention, which is set forth in the following claims.

I claim:

1. Water apparel for repelling sharks comprising a garment having a background and a striped pattern.

2. The water apparel according to claim 1, wherein said striped pattern is formed by a plurality of bands arranged and disposed on or in said apparel, said bands being divergent and distinct from said background such that the visual

change from each of said bands to said background of said garment is definitive and sudden.

3. The water apparel according to claim 2, wherein said plurality of bands are applied to the exterior of said garment, said garment being of a solid hue.

4. The water apparel according the claim 2, wherein said plurality of bands are formed in an integral manner in said garment.

5. The water apparel according to claim 3, wherein said plurality of bands are disposed and arranged in a vertical manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

6. The water apparel according to claim 4, wherein said plurality of bands are disposed and arranged in a vertical manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

7. The water apparel according to claim 3, wherein said plurality of bands are disposed and arranged in a horizontal manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

8. The water apparel according to claim 4, wherein said plurality of bands are disposed and arranged in a horizontal manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

9. The water apparel according to claim 3, wherein said plurality of bands are disposed and arranged in a diagonal manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

10. The water apparel according to claim 4, wherein said plurality of bands are disposed and arranged in a diagonal manner in relation to the vertical axis of said garment and in substantially parallel relation to each other.

11. The water apparel according to claim 3, wherein said plurality of bands are disposed and arranged in any combination of vertical, horizontal or diagonal manners in relation to the vertical axis of said garment.

12. The water apparel according to claim 4, wherein said plurality of bands are disposed and arranged in any combination of vertical, horizontal or diagonal manners in relation to the vertical axis of said garment.

13. The water apparel according to claim 1, wherein said garment is a wetsuit or a rash or U.V. skin.

14. The water apparel according to claim 2, wherein said garment is a wetsuit or a rash or U.V. skin.

15. The water apparel according to claim 3, wherein said garment is a wetsuit or a rash or U.V. skin.

16. The water apparel according to claim 4, wherein said garment is a wetsuit or a rash or U.V. skin.

17. The water apparel according to claim 13, wherein said garment is composed of one piece or composed of more than one piece.

18. The water apparel according to claim 14, wherein said garment is composed of one piece or composed of more than one piece.

19. The water apparel according to claim 15, wherein said garment is composed of one piece or composed of more than one piece.

20. The water apparel according to claim 16, wherein said garment is composed of one piece or composed of more than one piece.

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